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## INTRODUCTION

### Defining scope and intent of the study

Export restrictions are not a recent practice. Governments have used them as a tool in their industrial policy since at least the eleventh century<sup>1</sup>. The British Empire was, in particular, the first

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<sup>1</sup> For an historical overview of the progressive recourse to export restrictive measures, see Gorton, J., *British Preferential Export Taxes*, American Economic Association 1, no. 14, 1924, at 56-63; Edminster, L. R., *Control of Exports of Raw Materials: An International Problem*, Sage Publications, Inc. no. 150, 1930, at 89-97; Goode, R. and Lent, G., *Role of Export Taxes in Developing Countries*, Staff Papers-International Monetary Fund, no. 13, 1966, at 453-503; Devarajan, S., Go, D., Schiff, M. and Suthiwart-Narueput, S., *The Whys and Why Nots of Export Taxes*, Policy Research Working Paper 1684, 1996, at 1-25; Reinert, E. S., *How Rich Countries Got Rich...and Why Poor Countries Stay Poor*, Wimbledon Publishing Company and Anthem Press India, 2008; and Prestowitz, C. V., *Export Restraints: The Key to Getting Rich*, Foreign Policy Magazine, 7 July 2011. Although well-documented records of recourse to export restrictions date back to the eleventh century at the time of the British Empire, analysts have

great power to recur extensively to export restrictions and many analysts agree that in several cases their utilization contributed significantly in building England's industrial greatness<sup>2</sup>.

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found conclusive evidence that this type of instruments were utilized by the Roman Empire as well, at least with respect to certain goods. However, information on such measures remains vague and poorly documented. See Meredith, H., *Evaluating Movements of Open-Work Glassware*, in Mango, M.M. (ed.), *Byzantine Trade, 4<sup>th</sup>-12<sup>th</sup> Centuries, The Archaeology of Local, Regional and International Exchange, Papers of the Thirty-eighth Spring Symposium of Byzantine Studies, St John's College, University of Oxford, March 2004*, Ashgate, 2004, at 197.

<sup>2</sup> England started to introduce export restrictions in the form of taxes on the exportation of wool and hides in 1275 in order to promote domestic textile processing, and maintained such measures throughout several centuries (at least until 1660) in order to achieve industrial development. Particularly during the Tudor era, Britain achieved a substantial wool fabric monopoly through the export duties on raw wool applied during the realm of Henry VII and, even more, by means of the raw wool export ban subsequently introduced by Elizabeth I. For an analysis of the effects produced by the exploitation of the monopolistic position of Great Britain in the wool industry, particularly in terms of the competition with the Florentines, see Reinert, *supra* n. 1, at 80 et seq. During the same period, other European territories, such as Venice and Holland, used export restrictions as a tool of industrial and trade strategy in order to acquire "the same triple rent situation: a strong industrial sector, a raw material monopoly, and overseas trade" (*id.*). Another significant example of recourse to export restrictive measures as a means to achieve a dominant position in the international market, and thereby eliminate prospective competitors (in particular, the US), is the case of the export duty on tin ore introduced by Great Britain in the first decades of the twentieth century. In this case, England exploited its power of colonial dominion to apply a preferential export duty on tin ore shipped from British colonies such as the Federated Malay States and West Africa, i.e. a duty applied only on the exportation of tin ore to States different from the United Kingdom. See Gorton, *supra* n. 1, at 57 et seq. The tactic of the preferential adoption of export duties was frequently applied by Great Britain (e.g. a ban on untanned hides and skins coming from India was introduced in 1919; an export duty on crude rubber from the British Empire was applied in 1922 to eliminate the US competition; etc.). See Edminster, *supra* n. 1, at 89 et seq.

Although the use of restrictive measures on exports was progressively reduced starting from the nineteenth century, they were never completely eliminated in Europe<sup>3</sup> and, moreover, as from the twentieth century various forms of export restrictions started to appear in other areas as well, particularly Canada and several countries of Latin America<sup>4</sup>. The rationale associated to such measures was in most cases the protection of domestic industries and the promotion of higher value-added activities, together with –in the cases of lesser-developed and poorer countries in particular – the generation of government revenues<sup>5</sup>.

After the second World War, and progressively in parallel of decolonisation, an increasing number of countries, especially developing and least-developed countries, started to adopt restrictive measures on the exportation of primary commodities<sup>6</sup>, mainly agricultural commodities and raw materials, in an attempt to

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<sup>3</sup> The measures maintained by Great Britain (see *supra* n. 2) were in fact followed by the introduction of similar measures by Spain, which for instance introduced an export duty of 20 per cent on hides and skins similar to the 15 per cent *ad valorem* export duty maintained by England. Gorton, *supra* n. 1, at 58.

<sup>4</sup> See Viner, J., National Monopolies of Raw Material, Council on Foreign Affairs 4, no. 4, 1926, at 585-600, and Reubens, E., Commodity Trade, Export Taxes and Economic Development, The Academy of Political Science 1, no. 71, 1956, at 42-70.

<sup>5</sup> This rationale was particularly recurring among Latin America countries, such as Argentina and Chile. *Id.*, at 47 et seq.

<sup>6</sup> Primary commodities are conventionally defined as the products obtained from the primary sector, comprising agriculture (including hunting, forestry and fishing), mining, and utilities. Radetzki, M., A Handbook of Primary Commodities in the Global Economy, Cambridge University Press, 2008, at 22-23. For a more detailed definition, see *infra*, Chapter One, paragraph II, section A.

raise government revenues and to reduce volatility of markets which could significantly undermine their efforts towards economic development<sup>7</sup>. In the 1970's, in particular, a first wave of export restrictions on agricultural commodities, coinciding with the price spike of 1972-1974, involved a significant number of net food-exporting countries, mainly developing and least-developed countries<sup>8</sup>, showing for the first time some dangerous outcomes arising out of the domino effect<sup>9</sup> generated by subsequent recourses

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<sup>7</sup> A whole body of literature has extensively shown that there is a strong reverse correlation between the level of economic development and the share of primary sector in the economy. In other words, “the path of economic development can be seen as a process of dematerialization”. Radetzki M., *supra* n. 6, at 10. It follows that less developed countries are characterized by a relatively higher degree of national dependence on primary commodities, which in several cases account for a majoritarian share of national GDP. *Id.*, at 188 et seq. Accordingly, the highest incidence of restrictions in these countries happens to concern the exportation of primary commodities. See Piermartini, R., *The Role of Export Taxes in the Field of Primary Commodities*, ERSD, WTO Staff Paper, 2004, available at <http://dspace.cigilibrary.org/jspui/bitstream/123456789/21012/1/The%20Role%20of%20Export%20Taxes%20in%20the%20Field%20of%20Primary%20Commodities.pdf?1>.

<sup>8</sup> For a thorough analysis of the causes at the origin of the commodity boom during the 1970's see Mitra, S. and Josling, T., *Agricultural Export Restrictions: Welfare Implications and Trade Disciplines*, IPC Position Paper, Agricultural and Rural Development Policy Series, 2009, available at [http://www.agritrade.org/documents/ExportRestrictions\\_final.pdf](http://www.agritrade.org/documents/ExportRestrictions_final.pdf), at 13 et seq.

<sup>9</sup> The domino effect describes the phenomenon for which the application of an export restrictive measure by a State triggers the reaction of other countries sharing similar objectives with a two-fold effect: on the one hand, the multiplication of restrictive measures as their application spreads through different countries and, on the other, the annulment of the effectiveness of such measures. The latter effect, evidently, stimulates the former, creating a vicious cycle. For a thorough explanation of the domino effect, with particular respect to the dynamics involved in the application of restrictions on the exportation of food commodities, see Giordani, P., Rocha, N. and Ruta, M., *Food Prices and the*

to restrictive measures<sup>10</sup>. Nevertheless, the ascertaining of the turbulences caused by the phenomenon on the international markets did not induce any effective and timely reaction within the framework of the GATT because of the divergence of interests between commodity-exporting and importing countries<sup>11</sup>, and when a second wave of export restrictions exploded at the beginning of the 2000's – triggered, again, by the price spikes on primary commodities registered as from 2002-2003 after several decades of decline<sup>12</sup> – the specific issue of the improvement of multilateral disciplines on export restrictions had not yet been solved, although it had been inserted in the agenda of both the Negotiating Group on Agriculture and the Negotiating Group on Market Access for Non-Agricultural Products within the Doha Development Round<sup>13</sup>.

The second wave of export restrictions, further exacerbated by the eruption of the current financial crisis in 2009<sup>14</sup>, presents

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Multiplier Effect of Export Policy, ERSD, WTO Staff Paper, 2012, available at [http://www.wto.org/english/res\\_e/reser\\_e/ersd201208\\_e.pdf](http://www.wto.org/english/res_e/reser_e/ersd201208_e.pdf).

<sup>10</sup> For an analysis of the economic implications of the export restrictive measures adopted in those years on grains and other agricultural commodities, and their impact on world welfare, see Piermartini, *supra* n. 7, at 16 et seq.

<sup>11</sup> For an overview of the mixed reactions and the consequently weak initiatives undertaken within the context of the first wave of export restrictions on agricultural commodities, see Mitra and Josling, *supra* n. 8, at 14-15.

<sup>12</sup> Radetzki, *supra* n. 6, at 10.

<sup>13</sup> For an analysis of the proposals currently put forward, but not yet approved, with regards to the issue of export restrictions, see *infra*, Chapter Four, paragraph II.

<sup>14</sup> The practice of introducing restrictive trade measures during severe economic crises is not a new development for either developed or developing countries. In this perspective, the WTO has intensified its monitoring efforts in order to closely follow the national trade measures adopted by Members within the

distinctive features which pose fundamental challenges to the international trade system: first of all, the phenomenon is not limited to the agricultural sector – although the food crises of 2008 and 2010 have forced the international community and the WTO itself to envisage effective ways of disciplining agricultural export restrictions for the purposes of food security<sup>15</sup> – but has come to involve multiple sectors of the economy and, in particular, has involved the exportation of key industrial raw materials, such as minerals and metals<sup>16</sup>; secondly, the phenomenon has soon reached an alarming dimension, being the fastest growing component among the newly potentially restrictive measures adopted within the framework of the economic and financial crisis<sup>17</sup> and involving “large” countries often enjoying a quasi-monopolistic power in the international markets and thus able to affect, through the regulation of the export flows, access to raw materials; third, this second wave of export restrictions is characterized by a diversification of the rationales at the origin of such measures as a reflection of, on the one hand, the progressive recognizance of a whole body of public

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framework of the crisis and opportunely assess the incidence and impact of new potentially restrictive measures. For more details see *infra*, Chapter Two, paragraph I.

<sup>15</sup> Howse, R. and Josling, T., *Agricultural Export Restrictions and International Trade Law: A Way Forward*, IPC Position Paper, International Food and Agricultural Trade Policy Council, 2012, available at <http://www.agritrade.org/Publications/ExportRestrictionsandTradeLaw.html> (last access, 6 October 2012).

<sup>16</sup> See WTO Docs. WT/TPR/OV/W/1-6.

<sup>17</sup> Between 2010 and 2011, in particular, their incidence was more than 150 per cent higher than in the previous year. WTO Doc. WT/TPR/OV/14, at 17.



policy goals referring to non-economic and non-trade concerns, particularly with regards to environmental protection values and, on the other, the multiplication of the sectors involved, such as the mining sector<sup>18</sup>.

In the light of the above, the phenomenon of export restrictions has come to the forefront of the international trade debate and dramatically imposed itself as one of the most urgent topics the WTO will have to address in order to reassure the member states on the solidity of the multilateral trading system, within a context of the “crisis of the multilateralism”<sup>19</sup>. The proliferation of export restrictions has indeed progressively given voice to a sort of “conventional wisdom”, as Robert Howse has effectively suggested<sup>20</sup>, that WTO rules on the export side do not provide for an effective, sufficient and credible legal framework capable of preventing abuses in the use of export restrictive measures. That is, the GATT discipline on exports restraints would represent a “grey area” of under-regulation<sup>21</sup>. Accordingly, an increasing number of

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<sup>18</sup> See *infra*, Chapter Two, paragraph V, section B.

<sup>19</sup> Concerns about the future of multilateralism have been lately expressed by the Director General of the World Trade Organization, Pascal Lamy, in several occasions, such as the speech “Global Commodities Trade: Perspective of the WTO” given at the 9th Annual Global Conference on Commodities Finance held in Geneva on 14 June 2012, available at [http://www.wto.org/english/news\\_e/sppl\\_e/sppl236\\_e.htm](http://www.wto.org/english/news_e/sppl_e/sppl236_e.htm), and the inaugural speech given at the World Trade Forum 2012, “Multilateralism is struggling”, available at [http://www.wto.org/english/news\\_e/sppl\\_e/sppl244\\_e.htm](http://www.wto.org/english/news_e/sppl_e/sppl244_e.htm).

<sup>20</sup> Howse, and Josling, *supra* n. 15, at 10.

<sup>21</sup> See, for all, Karapinar, B., Export Restrictions and the WTO Law: How to Reform the 'Regulatory Deficiency', *Journal of World Trade*, 45 (6), 2011:

studies have started to address the matter, with the attempt to explore the legal and economic implications of the phenomenon with respect to the need to strengthen the current GATT disciplines on the export side<sup>22</sup>. In this respect, the terms of the debate have progressively taken the form of a “binary” or two-fold analysis: on the one hand, the eruption of the food crisis has generated the urgent need to investigate the implications of a massive recourse to agricultural export restrictions not only from an economic standpoint<sup>23</sup> but also having regard to the delicate issue of food security<sup>24</sup>. On the other hand, the eruption of the economic and financial crisis has shed light on a less evidently dramatic but creeping phenomenon: the emergence of a rising trend of export restrictions applied to a nucleus of non-energy minerals and metals

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1139–1155. For a critical discussion on the presumed “regulatory deficiency” within the WTO system see *infra*, Chapter Four.

<sup>22</sup>The OECD has been the first to effectively address the matter, with the launching, back in 2002, of a project on non-tariff measures which specifically focused on export restrictions in an attempt to understand the nature and effects of such measures. See OECD Doc. TD/TC/WP(2002)54/FINAL, Trade Directorate, Analysis of Non-Tariff Measures: The Case of Export Duties, 31 January 2003, available at [http://search.oecd.org/officialdocuments/displaydocumentpdf/?doclanguage=en&cote=td/tc/wp\(2002\)54/final](http://search.oecd.org/officialdocuments/displaydocumentpdf/?doclanguage=en&cote=td/tc/wp(2002)54/final) and OECD Doc. TD/TC/WP(2003)7/FINAL, Trade Directorate, Analysis of Non-Tariff Measures: The Case of Export Restrictions, 4 April 2003, available at [http://search.oecd.org/officialdocuments/displaydocumentpdf/?doclanguage=en&cote=TD/TC/WP\(2003\)7/FINAL](http://search.oecd.org/officialdocuments/displaydocumentpdf/?doclanguage=en&cote=TD/TC/WP(2003)7/FINAL).

<sup>23</sup> See Mitra and Josling, *supra* n. 8; Bouet, A., and Laborde Debucquet, D., The Economics of Export Taxes in the Context of Food Security, in OECD, The Economic Impact of Export Restrictions on Raw Materials, 2010, OECD Publishing, at 59-79.

<sup>24</sup> See, for all, Karapinar, B., and Haberli, C., Food Crises and the WTO, Cambridge University Press, 2010.

used in critical industrial sectors, i.e. sectors that have been traditionally pivotal in fostering economic recovery and growth (e.g. iron and steel), and/or are crucial to develop highly technological and environmentally friendly industry sectors in accordance with a model of sustainable growth and development based on a *green* economy. It is the latter category of restrictions that we intend to analyse in the present work.

The choice of focusing on export restrictions applied to mineral raw materials is motivated by several reasons: firstly, the identification of a core nucleus of mineral raw materials used by strategic industries permits to isolate some distinctive features so as to treat them, for methodological purposes, as a homogenous set; secondly, the recourse to export restrictive measures applied to industrial raw materials (minerals and metals) has increased dramatically since the unfolding of the financial crisis, and the total number of countries applying such measures rose by five from 2009 to 2010, showing the highest incidence of any sector<sup>25</sup>; thirdly, it is precisely over access to these hard core of strategic industrial commodities that we see the mounting conflict of interests between the poorly-endowed industrialized countries – the EU and the US *in primis*<sup>26</sup> – and the newly industrializing countries

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<sup>25</sup> See Fliess, B., Gou, H. and Mard, T., Taking Stocks of Measures Restricting the Export of Raw Materials: Analysis of OECD Inventory Data, OECD Trade Policy Working Paper no. 140, OECD Doc. TAD/TC/WP(2012)17/FINAL.

<sup>26</sup> In particular, the European Union has launched the so-called Raw Materials Initiative, following a Communication from the Commission to the European

(China, Russia, India, South Africa, but also Ukraine, Vietnam and Indonesia) abundant in mineral resources, aiming at fostering economic development by strengthening their industrial sectors in order to overcome the “Dutch disease”, on the one hand, and the “resource curse”, on the other<sup>27</sup>; finally, the terms of the debate with regards to mineral export restraints is further enriched by the invocation of non-economic concerns, either by making reference to the environmental externalities induced by the physical exploitation of mines or to the need to conserve finite extractive resources<sup>28</sup>, and this permits to address the *vexata quaestio* of the balancing between trade and non-trade concerns and the degree of openness to environmental values admitted by the WTO Agreement.

Within that framework, the present work will try to analyse the relationship between the proliferation of export restrictions applied to raw materials, with particular regards to critical minerals and metals, and the stated insufficiency of WTO disciplines in this area. The main research goal underlying this analysis is to investigate

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Council and Parliament “The Raw Materials Initiative – Meeting our Critical Needs for Growth and Jobs in Europe” (COM (2008) 699 final), 4 November 2008, available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0699:FIN:en:PDF>.

The EU’s Raw Materials Initiative is conceived as an integrated strategy based on three pillars: (i) reducing the EU’s consumption of primary raw materials; (ii) increasing the availability of raw materials sourced within the EU; (iii) promoting the sustainable supply of raw materials from third countries.

<sup>27</sup> For a description of the Dutch disease and of the resource curse theories see *infra*, Chapter Two, paragraph V, section A.

<sup>28</sup> See *infra*, Chapter Two, paragraph V, section B.

whether – and, if so, to what extent – the distinctive features of the recent recrudescence of export restrictions in this domain reveal that the current trends in the use of such measures are only a symptom of an evident under-regulation.

The panorama of export restrictions is accordingly “mapped” in the first part of the work, in order to identify relevant trends and criticalities with respect to the magnitude of the phenomenon, the actors involved, the functioning of the different types of measures adopted, their economic implications and the rationale behind them. The main findings are that, on the one hand, the stated proliferation is “vertically” oriented, involving a limited number of countries on an increasing number of tariff lines and, on the other hand, such countries seem to share some key characteristics: there are emerging economies dominating in most cases world production of both mining and primary materials as well as semi-processed products, and therefore controlling significant (when not dominant) export market shares; they are undertaking major industrialization plans aimed at boosting economic development and promote value-added processing sectors; they mostly recur to export duties invoking environmental protection and resource depletion concerns; and, they are newly acceding WTO Members (e.g. China, Russia but also Ukraine and Vietnam) that have agreed upon so-called “WTO-plus” obligations on the use of export duties.

In the second part of the work, these main findings are matched with an analysis of the relevant WTO disciplines on export restrictions with the aim to better understand and qualify the nature and the intensity of the relationship between the phenomenon of proliferation of export restrictions on minerals and metals and relevant WTO rules. In this respect, the study undertaken shows that, in contrast to a conventional view that WTO disciplines on export restrictions are meaningless, the phenomenon of proliferation cannot be directly attributed to a deficiency of regulation per se in that, on the one hand, more complex and intertwined dynamics are occurring at the international level with regards to emerging new patterns and leading actors in international trade and global supply chains and, on the other hand, the main shortcomings of WTO regulation on the export side are not as much a result of under-regulation, but rather of a lack of *consistency* in the discipline, with particular regards to the WTO rules on export duties as arising out of the accession regime of developing countries. Indeed, if it is true that all major developing countries identified as resorting to export taxes on critical minerals and metals are bound by WTO-plus obligations on export duties by terms of their respective accession protocols, the existence of varying, stand-alone and ultra-rigid accession requirements generates systemic imbalances by creating unequal rights and obligations among Members, and ultimately

poses dangerous threats to the integrity of the system. Indeed, according to the approach developed by Appellate Body in the recent case *China – Raw Materials*, the inclusion of such additional commitments into “self-contained” accession protocols determines the automatic, “schizophrenic” unavailability of legitimate public policy exceptions protected under Article XX, with the risk of creating an incentive towards a *traslatio* to quantitative export restrictions instead of export “tariffs” in the attempt to maintain the right to invoke the environmental exceptions provided for in Article XX (b) and (g). The last part of the present work will therefore explore the potential risks ascribable to the current, fragmented configuration of the WTO regime on export restrictions in order to critically examine the proposals for reform put forward within the NAMA DDA negotiations on export restrictions and finally present some ideas on how to restore the coherence of the system.

Tesi di dottorato "Emerging Trends in Critical Raw Materials Trade and WTO Regulation of Export Restrictions"  
di ESPA ILARIA

discussa presso Università Commerciale Luigi Bocconi-Milano nell'anno 2013

La tesi è tutelata dalla normativa sul diritto d'autore(Legge 22 aprile 1941, n.633 e successive integrazioni e modifiche).

Sono comunque fatti salvi i diritti dell'università Commerciale Luigi Bocconi di riproduzione per scopi di ricerca e didattici, con citazione della fonte.



## **PART ONE**

# **Mineral resources critical to the world economy and the emerging proliferation of export restrictions**

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“Trade in natural resources will take place regardless of whether the global community has adequate rules, as the needs that motivate these exchanges persist and increase over time” (WTO, World Trade Report 2010).

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## CHAPTER ONE

### Critical mineral resources, world trade and development

#### I. Introduction: the need to identify distinctive features and evolving patterns in mineral resources trade

The present wave of export restrictions on industrial raw materials, started in 2002-2003, has reached an alarming dimension towards the end of the 2000's, when export restraints have been registered to be the fastest growing component among the newly potentially restrictive measures adopted within the framework of the economic and financial crisis<sup>29</sup>. Accordingly, the issue of export restrictions has come to the forefront of the international

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<sup>29</sup> See *supra*, WTO Doc. WT/TPR/OV/14, at 17.

trade debate and dramatically imposed itself as one of the most urgent topic under the DDA agenda, as the emergence of a certain degree of “rhetoric” over the proliferation of export restraints<sup>30</sup> alimanted an ever mounting tension over access to critical minerals and metals opposing traditionally import-dependent industrialized countries and richly-endowed developing countries undergoing rapid industrialization paths. Within that framework, the terms of the debate have progressively evolved so as to give rise to a general perception of urgent need for strengthened rules in this domain, as if the denounced multiplication of export restrictions could not but originate from a generally stated “under-regulation” of WTO disciplines on the export side<sup>31</sup>.

The present work aims therefore at investigating whether the conventional wisdom on the presumed meaninglessness or insufficiency of WTO rules on export restraints could actually find support in the evidence of a direct and genuine link between the distinctive features of the recent recrudescence of export

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<sup>30</sup> By “rhetoric” of proliferation, we intend the conventional wisdom that has progressively referred to the proliferation of export restrictions on mineral resources without preliminarily identifying distinctive features and evolution patterns of the phenomenon with respect to its magnitude and impact on trade in critical minerals and metals. As we will see below, this rhetoric has been alimanted by a re-actualization of the terms of conflict between industrialized countries and developing countries, as a reflection of the heavily disproportionate geographical distribution of critical mineral and metals. See, in particular, *infra* paragraph II, section C, and paragraph III. For the analysis of the main characters of the phenomenon of proliferation as resulting from a “mapping” exercise of the network of export restrictive measures currently applied on critical minerals and metals see Chapter Two.

<sup>31</sup> Howse, and Josling, *supra* n. 15, at 10; Karapinar, *supra* n. 21, at 1139-1155.

restrictions in mineral resources, both in terms of their distribution and impact as well as in terms of the nature of the criticality associated to their use, and the existence of apparent loopholes or “grey areas” within the WTO disciplines on the export side the appeal to which would consent WTO Members to surreptitiously pursue protectionist goals while still remaining under the purview of WTO rules.

The first necessary step within such a research, carried on along this first part of the present work, is therefore represented by the need to qualify the phenomenon of proliferation of export restrictions on critical minerals and metals. The present chapter will accordingly investigate distinctive features and recent trends emerging with regards to the production, utilization and trade in minerals and metals with the aim, on the one hand, to identify relevant criteria for the assessment of the criticality of such raw materials and, on the other hand, to better understand the arguments at the basis of the invocation of proliferation of export restrictions on those minerals and metals the access to which is considered critical. Such analysis will, in turn, serve as a basis for the examination, in Chapter Two, of the magnitude of the phenomenon of export restrictions applied to critical minerals and metals, with regards to a series of factors such as the actors involved, the functioning of the different types of measures adopted, their economic implications and the rationales behind them.

Such analysis is not trivial in that, as it will emerge recurrently along the study, not only these measures are very complex and often intertwined between each other, but there appears to be a very thin line between their variety and their opacity, in terms of their distribution, functioning, implications and objectives. Hence, by shedding light on the key yet insufficiently explored dynamics at the core of the present wave of export restrictions on minerals and metals, the analysis hereby undertaken is necessarily propaedeutic to address the research question underlying the present work, i.e. to identify whether a direct link could be established between the proliferation of restrictive measures applied to critical raw materials and the alleged insufficiency of WTO disciplines on the export side and, if so, to understand its triggering elements so as to identify possible solutions to strengthen the rules and prevent any abuse likely to endanger dangerous shifts to protectionism.

## **II. Defining “critical” raw materials**

### **A. A definition of raw materials**

For the purposes of this study, a preliminary question to address is the definition of the raw materials targeted in the present work.

Firstly, it is probably useful to start by giving a definition of what we intend as raw materials. A survey of the existing literature



referring to the regulation and use of export restrictions with regards to raw materials shows that, at a first glance, terms like “raw materials”, “natural resources”, “primary products” or “primary commodities” seem to be used often interchangeably<sup>32</sup>. However, when we look for specific definitions, we find that according to the OECD Glossary of Statistical Terms the definition of “raw materials” is given by making reference to “natural resources”, described as

“natural assets (raw materials) occurring in nature that can be used for economic production or consumption”.

Thus it seems that raw materials coincide with natural resources. When investigating the relevant context to the definition, however, we find that “natural resources” should be intended as

“the naturally occurring assets that provide use benefits *through the provision of raw materials and energy used in economic activity* (or that may provide such benefits one day) and that are

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<sup>32</sup> The WTO Secretariat recognizes the difficulty inherent to this task by saying the “most people have an intuitive idea of what natural resources are, but “common sense” definitions cannot be relied upon since they eventually run into problems when dealing with ambiguous cases”. WTO World Trade Report 2010, Trade in Natural Resources, available at [http://www.wto.org/english/res\\_e/booksp\\_e/anrep\\_e/world\\_trade\\_report10\\_e.pdf](http://www.wto.org/english/res_e/booksp_e/anrep_e/world_trade_report10_e.pdf), at 42. Indeed, “all goods either embody natural resources (e.g. automobiles contain iron ore) or require resources for their production (e.g. food crops require land and water to grow). Such an approach would be logically consistent but otherwise unenlightening”. *Id.*

subject primarily to *quantitative depletion* through human use. They are subdivided into four categories: mineral and energy resources, soil resources, water resources and biological resources” (emphasis added).

Thus, raw materials do not coincide with natural resources for the purpose of definition, but are more precisely the materials *directly* obtainable (i.e. unprocessed) from the mineral and energy, soil, water, and biological resources naturally available on earth and which are or may be *economically valuable* in that they are essential to economic activity. Thus, raw materials cannot exist without natural resources for they are the economically valuable assets directly derivable from natural resources.

This finding can be matched with the definition of natural resources provided by the WTO Secretariat in its 2010 World Trade Report, which espouses for the purpose of the Report the following definition:

“stocks of materials that exist in the natural environment that are both *scarce* and *economically useful* in production and consumption, either in their raw state or after a minimal amount of processing”<sup>33</sup>.

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<sup>33</sup> *Id.*, at 46 (emphasis added).

Indeed, in the WTO definition, the key qualifier for the purpose of identifying what constitutes a natural resource is the “economically usefulness” criterion, implying that natural assets that fulfil this criterion qualify per se as natural resources. However, a closer look to the definition given by WTO confirms our previous observation, in that it is specified that:

“it is important to distinguish between natural resources as factors of production and natural resources as goods that can be traded internationally. For instance, minerals, oil, and various other materials can be extracted and enter into trade. However, other resources may form the economic basis for various sectors of the domestic economy, and therefore are only involved in trade in an indirect way. For example [...], agricultural land [i.e. which, under the OECD definition, would fall into the category of “land resources”, ed.], which is the archetypal ‘fixed, immobile’ natural resource, can be exported through agricultural commodities grown on that land. Hence, at a fundamental level, natural resources are often a reason for trade than tradable goods in their own right”<sup>34</sup>.

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<sup>34</sup> *Id.*

This essential clarification is important in two respects: first, it allows us to calibrate better our definition of raw materials, by clarifying that we intend as “raw materials” the goods which, among the economically valuable assets available in nature, can be traded directly or after a minimal amount of processing, i.e. unprocessed goods or eventually semi-processed goods (distinguishing them from manufactured goods); second, such clarification permits to mark a distinction between raw materials and other “primary products” or “commodities”. The latter expressions are indeed generally referred to as indicating the outputs from the primary sector, which conventionally comprises agriculture (including hunting, forestry and fishing), mining, and utilities<sup>35</sup>. In this respect, a major and commonly used categorization of primary commodities, leaning upon the Standard International Trade Classification (SITC)<sup>36</sup>, divides commodities into:

- (a) food in a broad sense (SITC 0 + 1+ 22+ 4);
- (b) agricultural raw materials (SITC 2 + 22+ 27+ 28)
- (c) minerals and metals (SITC 27+ 28 + 67+ 68)
- (d) mineral fuels or energy commodities (SITC 3)<sup>37</sup>.

While primary commodities as a broad category share the characteristic of being “undifferentiated goods”, i.e.

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<sup>35</sup> Radetzski, *supra* n. 6, at 22-23.

<sup>36</sup> The SITC was designed by the United Nations with the aim of distinguishing between different categories of goods in international trade.

<sup>37</sup> Radetzski, *supra* n. 6, at 24.

indistinguishable one from another and thereby impersonally exchangeable as opposed to manufactured products<sup>38</sup>, the identified subdivisions permit to distinguish between (a) and (b), agriculture-related products, on the one hand, and (c) and (d), mineral products, on the other hand. This categorization highlights, in addition to other useful features<sup>39</sup>, a main feature of raw materials we espouse in the present study: raw materials are not *created* by human activity, i.e. they exist naturally and do not require human activity to come into existence, whereas agricultural products are cultivated, requiring other natural resources as inputs, particularly land and water<sup>40</sup>. Thus, while agricultural products require intense human activity to be produced, mineral resources are natural capital

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<sup>38</sup> It is explained by Farooki that “The buyer can purchase an ounce of gold without needing to know who produced it, since gold from South Africa, or Ghana or China is to all intents and purposes identical. The same is true of a bushel of wheat or a bale of cotton. But it is not true for a watch, or a TV or a laptop computer, all of which are highly differentiated products, characterised not only by functional differences in how they work, but in the “personal” brand name that is attached to them”. Farooki, M. and Kaplinsky, R., *The Impact of China on Global Commodities Prices. The Global Reshaping of the Resource Sector*, Routledge Studies in Global Competition, 2012, at 48.

<sup>39</sup> For instance, a highly relevant characteristic of agricultural products is that they are very much dependant on the weather conditions and therefore exposed to high risk of price instability caused by supply side disturbances. On the other hand, the volatility of the price of mineral commodities is much more affected by variations on the demand side. Radetzky, *supra* n. 6, at 24.

<sup>40</sup> WTO, *World Trade Report 2010*, *supra* n. 32, at 46. According to this criterion, for instance, food is a primary commodity but not a raw material, while cotton is an agricultural raw material.

assets tradable in their raw state or, endorsing the WTO criterion, after a minimal amount of processing<sup>41</sup>.

Finally, another main characteristic that distinguishes raw materials *stricto sensu* from other primary commodities is the fact that the former are used as inputs in industry<sup>42</sup>. In this perspective, there are “primary” raw materials, as defined above, but also “secondary” raw materials, i.e. the materials used as inputs in the production process that, although not directly derivable from natural assets, result from the recycling process of formerly primary raw materials (e.g. waste and scrap metals). The inclusion of secondary raw materials does not alter the essential characteristics of the category of raw materials as previously identified: secondary raw materials are in fact economically valuable and scarce by definition in that they derive from the recycling of materials per se subject to depletion. Indeed, secondary mineral raw materials are included within the same SITC sub-category regrouping all “Metalliferous ores and metal scrap” (SITC 28)<sup>43</sup>.

In sum, the two key characteristics of the definition of raw materials that we intend to retain for the purposes of our research

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<sup>41</sup> See *infra*, section C, n. 68.

<sup>42</sup> In this respect, the category of “agricultural raw materials” (SIC 2 + 22 + 27 + 28) is properly classified in that products such as cotton and rubber are used by industry as inputs. See Radetzski, *supra* n. 6, at 24. Nevertheless, they do not classify as assets naturally occurring in nature without human activity for our purposes.

<sup>43</sup> See <http://unstats.un.org/unsd/cr/registry/regcs.asp?Cl=14&Lg=1&Co=28>.

focus are: on the one hand, raw materials are “stocks” available from naturally occurring assets which are essential to industrial production processes; on the other, being natural resources “subject to depletion”, raw materials are by definition scarce. In other words, the economic value attached to raw materials is related to two different elements: their economic usefulness in industrial production and their scarcity, which make them valuable commodities traded with the markets.

## **B. The “critical” component of the raw materials under review: distinctive features**

The minerals and metals isolated for the purposes of the present study were selected having regard to a number of shared features as to consider them as a homogenous set of products<sup>44</sup>. Some of them are common in that they arise out of the peculiarities of the extractive industry, and concern the inherent short- and long-run dynamics of the mining sector.

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<sup>44</sup> In this sense, we want to clarify that the following considerations are drawn having in mind the need to define a precise and consistent nucleus of “raw materials” for purposes of this study. As explained above, there is in fact no standardized definition and, moreover, as recognized by competent bodies, “regardless of the choice of definition, the line of demarcation between natural resources and other goods will always be somewhat arbitrary”. WTO World Trade Report 2010, *supra* n. 32, at 46.

The first characteristic shared by the targeted nucleus of raw materials is the fact that the minerals and metals covered in the present analysis are used as inputs into high-technology sectors, including environmental technologies and important industrial sectors such as the iron and steel industry, which are traditionally relied upon to foster economy and growth recovery<sup>45</sup>. Due to their strategic importance for the development and growth of key industrial sectors, these materials have been exposed to a particularly severe demand shock as from 2002-2003, when exceedingly fast macroeconomic expansion, triggered by the high growth performance of Developing Asia and, in particular, of China<sup>46</sup>, met with a tight production capacity situation and relatively small inventories. Indeed, the extended period of low mineral prices during the 1990's<sup>47</sup> had led to reduce investment in

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<sup>45</sup> Peeling, G., Stothart, P. and Toms, B., *Increasing Demand for and Restricted Supply of Raw Materials*, in OECD, *The Economic Impact of Export Restrictions on Raw Materials*, 2010, at 158.

<sup>46</sup> Starting from the 1990's, developing countries such as China and India have increasingly accelerated their consumption of resources to feed their economies, expanding at more than twice the OECD rate. Radetzki, *supra* n. 6, at 71. Moreover, the development stage of Asian emerging countries is proportionately much more intensive in primary materials use than the OECD economies, which have already reached a mature economy stage, characterized by a declining share of the primary sector. *Id.*, at 7-12.

<sup>47</sup> Metals and minerals are essential for economic growth and development in that the manufacture sector is critically dependent on raw materials availability. However, as for modern economies, "the volumes needed have shrunk impressively compared to the value of manufactured output" (Radetzki, *supra* n. 6, at 11) and, accordingly, metals and minerals account for a relatively small share of world industrial output. For the reasons outlined above (*supra*, n. 46 and



production and consequent decline in spare supply capacity<sup>48</sup>. Hence, the upward pressure in world demand resulted in commodity booming prices, which reached their peaks in mid-2009 and, after a decline produced by the eruption of economic and financial crises, started to progressively rise again reaching pre-crisis levels again in 2011<sup>49</sup>. The selective nature of recovery in world demand for the targeted minerals and metals is a reflection of the importance of the manufacturing industries which depend on their supplies, and the consequent need to revitalize key economic sectors and to point to highly innovative technologies in order to build a model of *green* economic growth inspired by the objective of sustainable development. The general price increases, moreover, are amplified by the typical functioning of the mining industry, which is characterised by a lagged response of supply to changes in demand. Indeed, given the regulatory, decisions and implementation lags for investments in the extractive industry, in addition to the risk associated to investments characterised by high capital intensity and long-term payback perspectives, new capacity expansion does not adjust to price change in the short-term but needs a time lag of 5 to even 7-8 years to become operational<sup>50</sup>.

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corresponding text), therefore, the share of global demand has been increasingly biased towards emerging economies. Peeling, *supra* n. 45, at 156.

<sup>48</sup> *Id.*

<sup>49</sup> Peeling, *supra* n. 45, at 157 and Farooki, *supra* n. 38, at 118 et seq.

<sup>50</sup> For a more detailed description of the relevant dynamics at the basis of the extractive industry see *infra*, Chapter Two, paragraph IV, section C. In general, moreover, it has been noted that “regulatory requirements facing new projects in

Within such framework, the targeted raw materials are typically unevenly distributed across the globe, and therefore their potential mining and export are concentrated in a small number of countries. For most of the selected materials, the top five producing countries account for over half of world production and, for some raw materials, almost the entire world production takes place in the top three mining regions<sup>51</sup>. In a limited number of cases, production is so concentrated that over half of the world production occurs in a single country<sup>52</sup>. Although the current geographical concentration of production does not necessarily reflect the global distribution of the reserve base<sup>53</sup> - and, therefore, possible future trends in world production<sup>54</sup> - the non-mobility of mineral resources and the

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both developed and developing countries have generally become more burdensome as public values such as environmental protection and the need for post mining reclamation have captured certain externalities and turned them into development costs while also driving environmental assessment processes to be more inclusive of social issues". Peeling, *supra* n. 45, at 159.

<sup>51</sup> See *infra*, section C.

<sup>52</sup> See, for instance, the case of antimony, rare earths and tungsten (*id.*).

<sup>53</sup> The reserve base includes all known deposits of the minerals, whether are not they are actually mined, including deposits that are not economically viable given present technologies, prices and production strategies. See *infra*, section C, n. 87.

<sup>54</sup> In some cases, in fact, the distribution of worldwide reserves is more widely dispersed than the current pattern of production would suggest, and this is for the most concentrated raw materials under examination. See *infra*, section C and sub-sections, and paragraph III. Although future production patterns may differ accordingly, for the purpose of this study, which aims at photographing the current situation so as to identify the geography and the implications of export restrictions, the actual configuration of world production is substantially fixed in that the mining sector needs long-term investments. This is all the more so if we consider that, as Davies effectively puts forward, it is not clear to what extent capacity additions are determined by natural endowments or by policy changes.

typical lagged response of the mining supply creates a (at least temporary) dependence on trade for net-importing countries on access over such raw materials and a parallel control over prices and quantities made available on world markets by net-exporters countries. In other words, trade becomes the only alternative to compensate for the relative scarcity of natural mineral resources endowments.

The criticality of access for net-importer countries of strategic minerals and metals is all the more challenged given that the bulk of world production is concentrated in developing countries and, more precisely, in a limited number of emerging economies which have been precisely the main actors responsible for the expansion of world demand<sup>55</sup>. Within such framework, key actors such as the European Union and the United States, which have historically relied on imports of primary supplies to feed strategic and highly innovative industrial downstream sectors, have started to fear the consequences of changing geo-political economic factors and started to develop reference frameworks to determine *ex-ante* the level of mineral criticality in order to identify target policies and strategies. The European Union, within the Raw Materials Initiative<sup>56</sup>, issued a Report, compiled by the *Ad-hoc* Working

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Davies, G., Trade in Mineral Resources, WTO Economic Research and Statistics Division, Staff Working Paper ERSD 2010-01, available at [http://www.wto.org/english/res\\_e/reser\\_e/ersd201001\\_e.pdf](http://www.wto.org/english/res_e/reser_e/ersd201001_e.pdf), at 11-12.

<sup>55</sup> See Radetzki, *supra* n. 6, at 70 et seq. and Farooki, *supra* n. 38, at 70 et seq.

<sup>56</sup> See *supra*, n. 26.

Group on defining critical raw materials<sup>57</sup>, where it elaborates a standard methodology based on elements such as supply risk, economic importance, and environmental risk for determining critical raw materials<sup>58</sup>. In a similar fashion, a Committee of experts created within the US National Research Council released a Report<sup>59</sup> which gives account of critical minerals and metals for the United States on the basis of a “criticality matrix” developed by means of considering key factors such as supply risk and importance in use. Interestingly, the two initiatives both identify a rather limited nucleus of minerals and metals that, for the most part, overlaps<sup>60</sup>. Indeed, most of them, and in any case all of the

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<sup>57</sup> See “Critical Raw Materials for the EU”, Report of the Ad-hoc Working Group on Defining Critical Raw Materials, 30 July 2010, available at [http://ec.europa.eu/enterprise/policies/raw-materials/files/docs/report-b\\_en.pdf](http://ec.europa.eu/enterprise/policies/raw-materials/files/docs/report-b_en.pdf).

<sup>58</sup> The Group elaborated the analysis with regards to current figures and on the basis of a static quantitative methodology. *Id.*, at 32.

<sup>59</sup> National Research Council, *Minerals, Critical Minerals and the US Economy*, The National Academies Press, 2008, available at [http://www.nma.org/pdf/101606\\_nrc\\_study.pdf](http://www.nma.org/pdf/101606_nrc_study.pdf).

<sup>60</sup> The critical minerals identified by the EU are antimony, beryllium, cobalt, fluorspar, gallium, germanium, graphite, indium, magnesium, niobium, platinum group metals, rare earths, tantalum, and tungsten. See Report of the Ad-hoc Working Group on Defining Critical Raw Materials, *supra* n. 57, at 42. Moreover, the Union identifies a nucleus of minerals and metals whose demand is expected to receive great impulse due to emerging technologies: gallium, germanium, indium, neodymium (rare earths), platinum groups metals, tantalum, silver, cobalt, palladium, titanium, copper, ruthenium, niobium, antimony, and chromium. *Id.*, at 42. The United States identifies copper, gallium, indium, lithium, manganese, platinum group metals, rare earths, tantalum, titanium, and vanadium as critical metals. The partial overlapping reflects mostly the different resources-endowments of the EU and the US, where the latter enjoys relatively rich-deposits for some of the minerals critical in use, although in most cases it does not yet exploit them economically. See National Research Council, *supra* n. 59; Peeling, *supra* n. 45, at 170; *infra*, section C. According to the EU, “critical”

overlapping minerals and metals, will be targeted in the present study.

Being mineral extractive resources, such materials share another characteristic: they are exhaustible by definition, in that they are naturally occurring scarce assets (i.e. fixed endowments) subject to depletion due to human exploitation. In this respect, OECD distinguishes between renewable and non-renewable resources, where renewable resources are

“natural resources that, after exploitation, can return to their previous stock levels by natural processes of growth or replenishment”<sup>61</sup>

while non-renewable resources are

“exhaustible natural resources such as *mineral resources* that cannot be regenerated after exploitation”<sup>62</sup>.

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minerals and metals should be differentiated from “strategic” minerals and metals in that the latter are materials used for military purposes (Report of the Ad-hoc Working Group, *supra* n. 57, at 23); however, for the purposes of the present study, the two expression would be used interchangeably.

<sup>61</sup> This does not mean that renewable resources cannot be subject to depletion in the long term. In fact, as the OECD clarifies, human exploitation of a resource can eventually reach a level “beyond which regeneration will become impossible [s]uch [a]s the case with the clear—cutting of tropical forests”. In this case, the resources would be called conditionally renewable natural resources. See OECD Glossary of Statistical Terms.

<sup>62</sup> *Id.* (emphasis added). However, it should be noted that history has repeatedly shown that non-renewable scarce resources are not becoming significantly more scarce thanks to the so-called phenomenon of the expansion of the frontier, where the frontier is defined as “a geographic region adjacent to the unsettled portions of the continent in which a low man-land ratio and unusually abundant, unexploited natural resources provide an exceptional opportunity for social and

Their exhaustibility renders them all the more economically valuable and exposes the countries exercising sovereignty upon them to the temptation of over-controlling and managing their exploitation in order to reach national economic interest and economic development goals<sup>63</sup>.

Strictly intertwined with the latter aspect is the question of the environmental externalities associated with the exploitation of strategic minerals and metals. On the one hand, indeed, being them non-renewable resources, their exploitation by human activity brings progressively closer their point of full depletion, at least with respect to the capacity of national reserves from the standpoint of each single State<sup>64</sup>. On the other hand, the extractive industry is a highly polluting and energy-intensive industry, potentially harmful for the surrounding environment and, if improperly managed, susceptible to cause widespread environmental damages. In this perspective, the raw materials at issue are recurrently administered having regard to the need to conserve them and manage them in sustainable way, having due regard not only to economic

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economic betterment to small-propertied individual”, as a response of society to the scarcity of key natural resource for global economic development. Barbier, E., *Scarcity and Frontiers: How Economies Have Developed Through Natural Resource Exploitation*, Cambridge University Press, 2011, at 10.

<sup>63</sup> It is not surprising, therefore, that in the first case concerning the legitimacy of some export restrictive measures adopted by China on a bunch of strategic raw materials, China evoked the relevance of the principle of permanent sovereignty over natural resources. See *infra*, Chapter Three, paragraph IV and Chapter Four, paragraph III, section B.

<sup>64</sup> See *infra*, Chapter Two, paragraph V, section B.

development concerns but also to social and environmental needs, in accordance with the objective of sustainable development as the “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”<sup>65</sup>.

### **C. The identification of critical raw materials**

Mineral raw materials are mineral constituents of the earth’s crust of economic value<sup>66</sup>. For trade purposes, the category of mineral commodities is conventionally referred to as to include the SITC 2-digit sections 27 (crude industrial minerals) and 28 (metalliferous ores and scrap), as well as 67 (iron and steel) and 68 (non-ferrous metals)<sup>67</sup>. An analysis of the related sub-divisions suggests that mineral raw materials are regrouped having regards to a comprehensive definition which includes the so-called “mine output” as well as the output from processing at or near the mines,

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<sup>65</sup> United Nations World Commission on Environment and Development, *Our Common Future*, 1987.

<sup>66</sup> See World Mining Data Report 2012, available at <http://www.bmwfj.gv.at/EnergieUndBergbau/WeltBergbauDaten/Documents/WMD2012.pdf>, at 2.

<sup>67</sup> According to some authors, section 66 (non-metallic mineral manufactures), including lime, cement, building stone, clays and precious stones such as diamonds, 96 (coin, other than gold coin), 97 (non-monetary gold, excluding ores and concentrates) should be included in minerals and metals aggregations. See Davies, *supra* n. 54, at 3.

e.g. the up-grading of ores to concentrates<sup>68</sup>. Indeed, due to their relatively low price per ton, ores are rarely traded internationally before undergoing to at least some processing at or near the extraction site in order to increase their value per unit weight prior to shipment<sup>69</sup>. Moreover, the classification also includes the so-called “primary materials”, i.e. marketable products obtained by processing crude minerals up to the first processing stage (for instance, metals, alloys, oxides or powders)<sup>70</sup>, as well as “secondary” materials, i.e. waste and scrap metals. Such a broad classification would be taken into account in the present analysis for various reasons: first, ores and concentrates and their metals are frequently exported simultaneously, the mix often depending on how far each is being transported and how this drives the benefit of

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<sup>68</sup> Ores are a concentration of mineralization that occurs either in proximity of surface or underground. They are liberated from surrounding rock and brought to the surface by means of energy-intensive and capital-intensive mechanical techniques. These procedures include relatively low-technology loaders and scrapers in the case of some industrial minerals as well as highly sophisticated technological processes to mine several kilometres underground. The creation of concentrates from ore requires additional applications of energy, labor and capital at the surface. In this respect, some authors suggested that “mining is therefore very similar to manufacturing. The main difference is that with manufacturing raw materials are brought to fixed locations where they are combined with labor and capital, while in mining labor and capital are brought to the raw materials and combined at the location of the rock”. *Id.*, at 2.

<sup>69</sup> For instance, iron is upgraded and lumped or pelletized into iron ore, cooper is concentrated to a concentrate containing some 30% cooper and industrial minerals are washed, ground and sized. Radetzski, *supra* n. 6, at 23.

<sup>70</sup> See World Mining Data Report 2012, *supra* n. 66, at 2.



value-added processing<sup>71</sup>; second, when this is not so, it may result of interest to explore the determinants of different trade patterns where the mere extraction and extractive-related processing phase are detached from the primary mineral production<sup>72</sup>; third, the inclusion of waste and scrap metals information is all the more relevant giving the rising international trade in recycles and the increasingly important value of scrap in providing critical supplies<sup>73</sup>.

The minerals and metals analysed in the present work were identified having regard to the criticality of mineral raw materials as emerging, in the light of the defining factors described *supra*, from a cross-search of the information contained in the World Mining Data<sup>74</sup>, the United States Geological Survey publications<sup>75</sup>,

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<sup>71</sup> Commodities that are sent to neighbour countries for processing may be shipped in concentrate form, while commodities sent further afield may be processed into a final metal form to conserve on transportation costs. Davies, *supra* n. 54, at 3. The secular abatement of transportation costs, and the consequent globalization of primary commodity markets has greatly increased international trade in minerals and metals. Radetzski, *supra* n. 6, at 12-15. Indeed, world mineral production grew at 2.7% annually from 1950 to 2003 but worldwide export volume grew by 4.1 per cent annually in the same period and the value of annual mineral and metal exports rose from \$23 billion to \$671 billion. Maxwell, P., Trade in Minerals, in Maxwell, P. (eds.), Australian Mineral Economics: A Survey of Important Issues, Carlton, The Australian Institute of Mining and Metallurgy, at 27-34.

<sup>72</sup> Such analysis will prove relevant both in the context of verifying whether these decisions are in any way related to the imposition of an export restrictive policy from the part of the mine deposits bearing country and for the purposes of analysing the extent of the “resource course” argument (*infra*, Chapter Two, paragraph V, section A).

<sup>73</sup> Davies, *supra* n. 54, at 3.

<sup>74</sup> World Mining Data 2012, *supra* n. 66.

and the key findings of the EU *Ad-hoc* Working Group on defining critical raw materials<sup>76</sup>.

Accordingly, the basic information provided within this section will concern, for each of the targeted material, the most accurate and up-to-date information on distribution of mine production and, when necessary and/or available, of production of primary materials; the production data will also be compared with the information on the distribution of currently known world reserves, in order to identify prospective changes in distribution of production; information about the average rate of recycling will also be indicated when available<sup>77</sup>. Moreover, the analysis will extend to the main end-uses of each materials as well as

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<sup>75</sup> The US Geological Survey annually publishes a series of studies related to mineral commodities and, in particular, the Minerals Yearbook (available at <http://minerals.usgs.gov/minerals/pubs/myb.html>) and the Mineral Commodities Summaries (available at <http://minerals.usgs.gov/minerals/pubs/mcs/>).

<sup>76</sup> See Report of the *Ad-hoc* Working Group on defining critical raw materials, *supra* n. 57 and, in particular, the Annex V to the Report, available at [http://ec.europa.eu/enterprise/policies/raw-materials/files/docs/annex-v\\_en.pdf](http://ec.europa.eu/enterprise/policies/raw-materials/files/docs/annex-v_en.pdf).

<sup>77</sup> It should be noted that in the case of recycling the information vary considerably by region, product, different applications, and available technology, which makes it very difficult to identify final values for global-average recycling rates. Moreover, most often the recycling literature does not give up-to-date and consistent information. For instance, one of the most recent and comprehensive studies on the subject, released by UNEP on May 2011, denounces that the years for which figures are available mostly refer to the 2000-2005 period, and consequently relies on informed estimates by industry exports to provide with more up-to-date information or for filling significant gap in the data sets. See UNEP, Recycling Rates of Metals – A Status Report, A Report of the Working Group on the Global Metal Flows to the International Resource Panel. Graedel, T.E.; Allwood, J.; Birat, J.-P.; Reck, B.K.; Sibley, S.F.; Sonnemann, G.; Buchert, M.; Hagelüken, C., 2011, available at [http://www.unep.org/resourcepanel/Portals/24102/PDFs/Metals\\_Recycling\\_Rates\\_110412-1.pdf](http://www.unep.org/resourcepanel/Portals/24102/PDFs/Metals_Recycling_Rates_110412-1.pdf), at. 18.

prospective trends in consumption in the light of the expanding needs of new emerging technologies, in order to identify eventual trends of rising demand and prospective criticalities in physical availability in this respect; information on the potential for substitutability will also be provided<sup>78</sup>. Finally, the position of the two traditional commodity-importing and industrialized actors, the EU and the US, will be analysed so as to identify their respective degree of dependence for imports of primary supplies and the related criticality level in access to such supplies.

Having regard to the above-declined shared features, the present paragraph reviews twenty mineral raw minerals, a large majority of which falls into the category of iron and ferro-alloy metals (chromium, cobalt, manganese, molybdenum, nickel, rhenium, tantalum-columbium, titanium, tungsten, and vanadium); a significant number belongs to the category of non-ferrous metals (antimony, copper, gallium, germanium, indium, lithium, rare-earths); platinum group metals and silver are, finally, precious metals<sup>79</sup>.

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<sup>78</sup> As we will see below, substitutability is one of the determinants of the elasticity of demand, and therefore is key to define the economic implications of export restrictive measures. See *infra*, Chapter Two, paragraph IV, section C.

<sup>79</sup> This classification draws on the World Mining Data Report (various years), issued yearly by the Austrian Ministry of Economy, Family and Youth and available at <http://www.bmwfj.gv.at/energieundbergbau/weltbergbaudaten/Seiten/default.asp> X.

### a. Antimony<sup>80</sup>

Antimony is a non-ferrous metal that is mined as a principal product<sup>81</sup> or, very often, results as a by-product of the smelting of base-metal ores such as gold, silver, lead, tungsten or zinc<sup>82</sup>. Pure antimony is only used in very small quantities due to its poor mechanical properties, while larger amounts are used for alloys (mostly with lead and zinc) and in antimony compounds (antimony trioxide)<sup>83</sup>.

The main end-use for primary antimony products are flame-retardants for plastics (72 per cent of world consumption), where antimony is used in the form of antimony trioxide, and lead-acid batteries (19 per cent), where antimony is instead utilized in its metal form; antimony trioxide is also used for the manufacture of glass and ceramics (9 per cent); as an alloy, antimony is associated to zinc and lead to increase hardness. Prospective applications of antimony include compounds semiconductors and antimony-tin oxide, which can find application in LDC displays, OLEDs or

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<sup>80</sup> According to the 2007 Harmonized System (HS), the tariff lines for antimony are: 2617.10.0000 (ore and concentrates); 2825.80.0000 (antimony oxide); 8110.00.0000 (antimony and article thereof, including waste and scrap).

<sup>81</sup> Antimony occurs in volcanic rocks and in sandstone. There are more than 100 minerals containing antimony, the most important of which is antimonite (it contains 71.7 per cent antimony). See Annex V *supra* n. 76, at 7.

<sup>82</sup> USGS, Mineral Yearbook 2010: Antimony, available at <http://minerals.usgs.gov/minerals/pubs/commodity/antimony/myb1-2010-antim.pdf>.

<sup>83</sup> See Annex V, *supra* n. 76, at 8.

photovoltaic cells. There are substitutes for antimony for all its most important applications<sup>84</sup>.

Secondary antimony, which is almost entirely derived from recycled lead-acid batteries and contained in antimonial lead, is used in the manufacture of new batteries. However, due to changing trends in the battery industry following the advent of new generation batteries in the last 10 years, the amount of recycled antimony is now substantially lower (11 per cent on average)<sup>85</sup>. Moreover, other uses such as flame-retardants, are dissipative (i.e. there is no recycling possible).

The world's leading producer of antimony by far is China, which produced 150,000 tonnes over a worldwide production of 167,000 metric tons (accounting for approximately 90 per cent of total production) in 2010<sup>86</sup>; Bolivia (3 per cent), together with Russia (2 per cent), South Africa (2 per cent) and Tajikistan (1.2 per cent) rounded out the world top-five producers, representing more than 97 per cent of world production. Other minor mine producer are Turkey, Kyrgyzstan, Kazakhstan, Thailand, Australia, Iran, Peru, Mexico, Canada and Pakistan. The geographical

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<sup>84</sup> *Id.*, at 10.

<sup>85</sup> *Id.*, at 10-11, citing Carling, J.F. (2006), Antimony recycling in the United States in 2000, USGS Circular 1196-Q. In the case of antimony, available information varies from 3 to 20 per cent recycled antimony from old scrap. However, this percentage takes into account metal applications only, while the greater part of antimony applications is used in oxide form, from which the recycled part is absolutely marginal. See UNEP, *supra* n. 77, at 35.

<sup>86</sup> USGS, Mineral Commodities Summaries 2012, available at <http://minerals.usgs.gov/minerals/pubs/mcs/2012/mcs2012.pdf>; Antimony.

distribution of world reserves<sup>87</sup> is again concentrated in the current top-producing countries, with (in descending order) China, Russia, Bolivia and South Africa counting cumulatively for more than 90 per cent of total known reserves<sup>88</sup>. Principal identifies world resources are located in Bolivia, China, Mexico, Russia and South Africa<sup>89</sup>.

Antimony production has been declining since 2006<sup>90</sup>, mainly due to the lower importance for batteries and flame-retardants<sup>91</sup>. The world demand for antimony is therefore expected to decrease in the next decades, considering that new technology-related used will only require minimum amounts<sup>92</sup>.

Both the European Union and the United States heavily depend on imports for their antimony primary supplies. The European Union, in particular, entirely relies on antimony imports, whose

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<sup>87</sup> For the purposes of statistical classification, the U.S. Geological Survey Mineral Yearbook commonly distinguishes between world resources (i.e. “the concentration of naturally occurring solid, liquid, or gaseous material in or on the Earth’s crust in such form and amount that economic extraction of a commodity from the concentration is currently or potentially feasible”), identified resources (i.e. resources whose location, grade, quality, and quantity are known or estimated from specific geological evidence), reserve base (i.e. that part of an identified resource that meets specified minimum physical and chemical criteria related to current mining and production practices, including those for grade, quality, thickness, and depth) and reserves (i.e. that part of the reserve base which could be economically extracted or produced at the time of determination”, including only recoverable materials).

<sup>88</sup> USGS, *supra* n. 86: Chromium.

<sup>89</sup> *Id.*

<sup>90</sup> World Mining Data 2012, *supra* n. 66.

<sup>91</sup> See Annex V, *supra* n. 76, at 10.

<sup>92</sup> *Id.*

main sources are Bolivia (76,8 per cent), China (15,4 per cent), and Peru (6,1 per cent)<sup>93</sup>. As for the US, 87 per cent of its primary antimony supplies are imported, and mainly from China (56 per cent), Mexico (28 per cent) and Belgium (7 per cent)<sup>94</sup>.

### **b. Chromium<sup>95</sup>**

Chromium is an essential component of stainless steel and other alloys steels, where it is used in the form of the alloy ferro-chromium. It is found in many different minerals, but only chromite is used as commercial source for chromium<sup>96</sup>. Around 94 per cent of global chromite production is devoted to metallurgical industry for the production of ferro-chromium. Apart from steel, chromium products are used for manufacturing bricks and other devices in the refractory industry, for pigments, chemicals, jet engines and gas turbines, magnetic tape used in high performance

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<sup>93</sup> *Id.*

<sup>94</sup> USGS, *supra* n. 88. However, the report specifies the partial share of imports for different category of primary materials, i.e. antimony metal: China, 68%; Mexico, 14%; Peru, 8%; and other, 10%; ore and concentrate: Bolivia, 59%; China, 28%; and other, 13%; oxide: China, 53%; Mexico, 32%; Belgium, 8%; and other, 7%.

<sup>95</sup> The various forms of chromium classified in the HS 2007 are the following tariff lines: ore and concentrate (2610.00.0000); Ferrochromium: carbon more than 4% (7202.41.0000) and carbon more than 3% (7202.49.1000); Carbon more than 0.5% (7202.49.5010); other (7202.49.5090); Ferrochromium silicon (7202.50.0000); Chromium metal: Unwrought, powder (8112.21.0000) and Waste and scrap(8112.22.0000); other (8112.29.0000).

<sup>96</sup> Annex V, *supra* n. 76, at 37.

audiotape. Emerging technologies requiring chromium are seawater desalination and orthopaedics implants. Chromium has no substitutes in the metallurgical sector (e.g. for stainless steel)<sup>97</sup>; however, it has been progressively replaced in dyes and pigments because of its carcinogenic effect<sup>98</sup>. The recycling rate of chromium is not available worldwide, nor there are official data on recycling in Europe<sup>99</sup>; in the United States, recycled chromium accounted in 2011 for 40 per cent of apparent consumption<sup>100</sup>.

The largest world mine producer of chromium is South Africa, accounting in 2010 for approximately 43 per cent of total world production<sup>101</sup>; other top-producers are Kazakhstan (around 20 per cent of total production) and India (13 per cent). Minor producers include, in descending order, Turkey, Finland, Pakistan, Oman, Brazil, Russia, Zimbabwe, Albania, Iran, China, and Australia<sup>102</sup>. The leading producers of ferrochromium are South Africa (around 40 per cent), China (approximately 23 per cent), Kazakhstan (14 per cent) and China (10 per cent)<sup>103</sup>. Kazakhstan and South Africa host cumulatively around 95 per cent of world reserves, which become almost 100 per cent (99,96 per cent)

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<sup>97</sup> USGS, *supra* n. 88.

<sup>98</sup> Annex V, *supra* n. 76, at 40.

<sup>99</sup> *Id.*, at 39.

<sup>100</sup> USGS, *supra* n. 88.

<sup>101</sup> World Mining Data 2012, *supra* n. 66.

<sup>102</sup> *Id.*

<sup>103</sup> USGS Mineral Yearbook 2010: Chromium, available at <http://minerals.usgs.gov/minerals/pubs/commodity/chromium/myb1-2009-chrom.pdf>, table 9.



including India<sup>104</sup>. World resources of chromite are estimated to be larger than 12 billion tons, which is considered enough to cover the world's chromium demand for centuries<sup>105</sup>.

Approximately half of the European Union's needs are met by European production (Finland provides for over 99% of the EU production)<sup>106</sup>. The remaining supplies are imported predominantly from South Africa (80 per cent), Turkey (16 per cent) and, only in minor part, from Albania, Pakistan and Madagascar<sup>107</sup>. The United States rely on imported chromium supplies for 60 per cent, and their main sources of imports of chromite ore, chromium ferroalloys and metal, and stainless steel mill products and scrap are South Africa (34 per cent); Kazakhstan (17 per cent); Russia (9 per cent); and China (5 per cent)<sup>108</sup>.

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<sup>104</sup> USGS, *supra* n. 88.

<sup>105</sup> Annex V, *supra* n. 76, at 37.

<sup>106</sup> *Id.*, at 38. European chromite ore production account for 9,3 per cent of world production.

<sup>107</sup> *Id.*

<sup>108</sup> USGS, *supra* n. 88.

### c. Cobalt<sup>109</sup>

Cobalt is an iron and ferro-alloy metal generally associated with copper or nickel in minerals. About 85 per cent of current cobalt world production derives from nickel (50 per cent) and copper (35 per cent), with only a minor share (15 per cent) arising from cobalt only operations<sup>110</sup>.

The main applications cobalt is used for are rechargeable batteries (27 per cent of total consumption) including nickel-cadmium batteries, nickel-metal hydride batteries and lithium-ion batteries, with the highest proportion of cobalt found in high-performance models; its traditionally most important use consists in the creation of corrosion and wear resistant superalloys with other metals (predominantly nickel, but also iron) for application in jet engines, all type of turbines, space vehicles, chemical equipment, and in magnetic alloys, where it ensures permanent and stable magnetism (26 per cent); it is also used in the manufacture of carbide and diamond tools in the hardmetal industry (14 per cent), and in catalysts are widely used in the petro-chemical and plastic

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<sup>109</sup> The 2007 HS cobalt-related tariff lines are: Cobalt ores and concentrates (2605.00.0000); Chemical compounds: Cobalt oxides and hydroxides (2822.00.0000), Cobalt chlorides (2827.39.6000), Cobalt sulfates (2833.29.1000), Cobalt carbonates (2836.99.1000), Cobalt acetates (82915.29.3000); Unwrought cobalt, alloys (8105.20.3000); Unwrought cobalt, other (8105.20.6000); Cobalt mattes and other intermediate products, cobalt powders (8105.20.9000); Cobalt waste and scrap (8105.30.0000); Wrought cobalt and cobalt articles (8105.90.0000).

<sup>110</sup> Annex V, *supra* n. 76, at 47.

industries (9 per cent). In the form of oxides or salts, it is used as pigment in ceramic and glazing (10 per cent)<sup>111</sup>. Future consumption is expected to increase significantly in the rechargeable batteries industry (especially due to high growth rates of Asian markets) as well as in the chemical application, which will likely stimulate demand for cobalt chemicals, particularly of cobalt-based catalysts<sup>112</sup>. The unique properties of cobalt makes it very difficult to find substitutes capable of ensuring the same level of performance. However, the significant price volatility of cobalt primary products has encouraged substitution for less-demanding magnet applications<sup>113</sup>.

Recycling of cobalt is significantly developed and recovered cobalt is obtained mainly from the superalloy and metal carbide sectors in alloyed or mixed form, from hardmetal materials and from catalysts and batteries. The end-of-life recycling rate is estimated at 68 per cent and the recycling-content at 32 per cent<sup>114</sup>.

The world mine production of cobalt is heavily concentrated in Democratic Republic of Congo, which accounted in 2010 for more than 65 per cent of world mine production (70,000 metric tons over

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<sup>111</sup> *Id.*, at 50.

<sup>112</sup> *Id.*, at 51.

<sup>113</sup> *Id.*, at 52.

<sup>114</sup> See UNEP, *supra* n. 77, at 31. The end-of-life recycling rate is defined as the amount of metal that is collected for functional recycling, and includes recycling as a pure metal and as an alloy. *Id.*, at 15. The recycling-content “describes the fraction of secondary (scrap) metal in the total metal input of metal production. *Id.*, at 16.

107,251 metric tons)<sup>115</sup>, followed by distance by Zambia (8,2 per cent), China (6 per cent), Australia (4,5 per cent), Canada (4,2 per cent), Cuba (3,5 per cent), Russia (2, 4 per cent), Morocco (1.4 per cent), and Brazil (1,3 per cent). Other minor producers include New Caledonia, South Africa, Indonesia, Uganda, Botswana, Zimbabwe, and Finland<sup>116</sup>. The worldwide refinery production of cobalt is dominated by China (32,900 metric tonnes in 2010 over a total of 76,400, accounting for 44 per cent), which produces mainly cobalt metals, metal powders, oxides and salt; the European Union is also an important player worldwide for the production of cobalt powders and chemicals, with an output ranging between 10,000 and 15,000 tons (13-15 per cent of total production). Other major producers are, in descending order, Zambia, Democratic Republic of Congo, Canada, and Australia. Identifies cobalt resources are approximately 15 million tons. The vast majority of these resources are in nickel deposits in Australia, Canada, Russia and in sedimentary copper deposits in Democratic Republic of Congo and Zambia<sup>117</sup>.

World production of cobalt has almost quadrupled since 1995. During the first half of 2011, the world availability of refined cobalt was 12 per cent higher than that of the first half of 2010<sup>118</sup>.

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<sup>115</sup> World Mining Data 2012, *supra* n. 66.

<sup>116</sup> *Id.*

<sup>117</sup> USGS, *supra* n. 86: Cobalt.

<sup>118</sup> USGS, Mineral Yearbook 2010: Cobalt, available at <http://minerals.usgs.gov/minerals/pubs/commodity/cobalt/myb1-2010-cobal.pdf>.

The future consumption patterns will be affected by the fast growth of production of chemical applications and rechargeable batteries, as well as by the high growth of use sectors in Asia and, especially, China.

The European Union completely relies on primary cobalt supplies from outside its territory to feed its cobalt industry. Its main sources of imports are the Democratic Republic of Congo (70.3 per cent of total imports), Russia (19,1 per cent of total imports), Brazil (2.0 per cent of total imports), and only marginally China (0,2 per cent of total imports). On the contrary, China was a leading supplier of cobalt imports to the United States (18 per cent of total imports), followed by Norway (16 per cent), Russia (13 per cent) and Canada (10 per cent). On the overall, the US net import reliance for primary cobalt products is 75 per cent<sup>119</sup>. The EU and US cobalt industries are increasingly suffering the competition with China, already the leading producer of refined cobalt, which has been adopting an “aggressive” policy aimed at securing access to primary supplies in African countries, and especially Congo Kinshasa and acquiring higher shares in the international market through a “erratic” pricing policy (prices for added value products are quoted below metal price, due to State incentive policies)<sup>120</sup>.

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<sup>119</sup> USGS, *supra* n. 117.

<sup>120</sup> Annex V, *supra* n. 76, at 52-3.

#### d. Copper<sup>121</sup>

Copper is a major non-ferrous metal, ranking third after iron and aluminium in terms of quantities consumed worldwide<sup>122</sup>. Historically, it played a key role in Europe's economic growth and it still is crucial to the economy because it has many different application in wide range of pivotal economic sectors: (i) transportation (41 per cent of total consumption), being used for radiators, brakes and wiring in motor vehicles; (ii) construction (31 per cent), for wire, plumbing pipes and fittings, electrical outlets, switches and locks as well as roofs; (iii) electrical (10 per cent), serving for electron tubes used in television and computer monitors, audio and video amplification and internal component of household applications such as microwave ovens, cooking pans, lighting and clocks. Improvements in electronics have led to an increase in the use of copper in modern cars for powered accessories. An increasing trend in the use of copper is also envisaged given the expanded emphasis on renewable electricity and the resulting need for more cables and generators, as well as the development of commercial electric and hybrid vehicles, which require significantly more copper than existing vehicles, and other

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<sup>121</sup> HS 2007 copper-related tariff lines are: Copper ores and concentrates (2603.00.0000); Unrefined copper anode (7402.00.0000); Refined and alloys; unwrought (7403.00.0000); Copper wire (rod) (7408.11.6000).

<sup>122</sup> Annex V, *supra* n. 76, at 55.

applications to reduce pollution<sup>123</sup>. Substitution for copper is difficult but aluminium is used in a wide range of non-electrical construction application in alternative to copper<sup>124</sup>. The end-of-life recycling rate of copper is 68 per cent and the recycling-content 32 per cent<sup>125</sup>.

The world mine production is relatively less concentrated compared to the distribution in production of other strategic minerals and metals. The leading mine producer is Chile, whose production of mined copper accounted for almost 34 per cent of total production in 2010, followed by Peru (7.8 per cent), China (7,2 per cent), United States (6,9 per cent) and Indonesia (5,4 per cent)<sup>126</sup>. The top-five producers accounted in 2010 more than 60 per cent of world production. Other minor sources are, in descending order, Australia, Zambia, Russia, Poland, Canada, Kazakhstan, Congo Kinshasa, Mexico, Brazil and Argentina. Between 1998 and 2012 world production of copper has increased 50 per cent from 9.8 million tons to more than 16 million tons. This is mostly due to the expansion of production in Latin America and, in particular, in Chile (whose share of global mine production in 1998 was only 16 per cent)<sup>127</sup>. The vast majority of copper reserves are found in Latin America (Chile, Peru and Mexico. Other

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<sup>123</sup> *Id.*, at 59.

<sup>124</sup> USGS, *supra* n. 86: Copper.

<sup>125</sup> See UNEP, *supra* n. 77, at 31.

<sup>126</sup> World Mining Data 2012, *supra* n. 66.

<sup>127</sup> Annex V, *supra* n. 76, at 57.

significant deposits are located, in Australia, Mexico, Indonesia, Russia, Poland and Canada. A preliminary assessment estimates that global land-based resources exceed 3 billion tons, thereby excluding physical shortages in the coming decades<sup>128</sup>.

The world smelter production (combining both primary and secondary production) is mostly concentrated in Russia, the United States, South Korea and Zambia as at 2010<sup>129</sup>, while the top-three world refinery producers in the same year were China, United States, Japan and Russia. The geographical distribution of the semi-manufactured copper production reflect an emerging trend taking place as from the last decade, i.e. the major relocation of global manufacturing capacity towards the Asian emerging economies, especially China<sup>130</sup>.

Currently, the European Union's import dependence for copper is 47 per cent and EU copper net imports equate to 20 per cent of total world production<sup>131</sup>. The Union's main sources for imports are Chile (36,2 per cent), Indonesia (18,6 per cent), Peru (13,8 per cent), Canada (1,9 per cent), and Australia (1,5 per cent). The United States count on the importation of copper supplies for 37 per cent. The major providers of unmanufactured copper are

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<sup>128</sup> USGS, *supra* n. 124.

<sup>129</sup> USGS, Mineral Yearbook 2010: Copper, available at <http://minerals.usgs.gov/minerals/pubs/commodity/copper/myb1-2010-coppe.pdf>.

<sup>130</sup> Annex V, *supra* n. 76, at 57.

<sup>131</sup> *Id.*



Chile (42 per cent), Canada (33 per cent), Peru (13 per cent), and Mexico (6 per cent)<sup>132</sup>.

### e. Gallium<sup>133</sup>

Gallium is a non-ferrous metal similar to aluminium. It occurs in very small concentrations in ores of other metals. Most gallium is produced as a by-product of treating bauxite, as well as from zinc-processing residues. Only a small fraction of the gallium present in bauxite and zinc ores is recoverable, and the factors controlling the recovery are very much dependent on the underlying dynamics governing the exploitation of major metals<sup>134</sup>. Therefore, an estimate of current reserves comparable to the definition of reserves of other minerals cannot be made<sup>135</sup>. The world bauxite reserves are so large that much of them will not be mined for many decades; hence, most of the gallium in the bauxite reserves cannot be considered to be available in the short term<sup>136</sup>. World resources gallium in bauxite are estimated to be more than 1

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<sup>132</sup> USGS, *supra* n. 124.

<sup>133</sup> The HS 2007 gallium-related tariff lines are Gallium arsenide wafers (2853.00.0010), undoped Gallium arsenide wafers (3818.00.0010), and doped Gallium metal (8112.92.1000).

<sup>134</sup> The concentration of gallium in bauxite varies between 0.003 and 0.008 per cent, making it uneconomical to mine bauxite for its gallium component. Annex V, *supra* at 76, at 74.

<sup>135</sup> *Id.*

<sup>136</sup> USGS, *supra* n. 86: Gallium.

billion kilograms, and a relevant quantity is present also in zinc reserves<sup>137</sup>.

Gallium is mainly used as a compound with arsenic as gallium arsenide, an important semiconducting material, in applications such as integrated circuits used in defence applications, high-performance computers and telecommunications (66 per cent of total consumption), laser diodes and photodetectors (18 per cent) used for manufacturing optoelectronic devices used in areas such as aerospace, consumer goods, industrial equipment, medical equipment, and telecommunications (including cable television transmission, commercial wireless infrastructure, power electronics, and satellite markets), such including laser diodes, light-emitting diodes (LEDs), and photodetectors, and solar cells (2 per cent). Following the increasingly rapid growth of third- and fourth-generation “smartphones,” which employ considerably more gallium arsenide content than standard cellular handsets, the gross consumption of Gallium is expected to grow at a rate of approximately 10 per cent yearly until 2020<sup>138</sup>. Moreover, new uses in alloys and fuel cells continue to be discovered<sup>139</sup>. It is estimated that the gross consumption of gallium will growth 10 per cent

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<sup>137</sup> *Id.*

<sup>138</sup> UNEP- Öko-Institut (2009), *Critical Metals for Future Sustainable Technologies and their Recycling Potential*, available <http://oeko.de/oekodoc/1070/2009-129-en.pdf>, at 23.

<sup>139</sup> Annex V, *supra* n. 76, at 74.

yearly until 2020<sup>140</sup>, of which about 45 per cent will be for the photovoltaic sector<sup>141</sup>.

Some gallium-based applications can be substituted: liquid crystals made from organic compounds can replace LEDs; indium phosphide components can be used instead of gallium arsenide in laser diodes, silicon can replace gallium arsenide in solar cell applications. However, gallium arsenide used in most defence-related applications has currently no substitutes<sup>142</sup>. Gallium is not recycled currently from old scrap, but new scrap produced during the manufacture of gallium arsenide is reprocessed in Germany, Japan, the United Kingdom, and the United States<sup>143</sup>. It is estimated that approximately 40 to 50 per cent of gallium will result from recycling in the future<sup>144</sup>.

In 2010, the leading mining producer was China (52,7 per cent of total mine production), followed by distance by Ukraine (18,6 per cent), Kazakhstan (15,7 per cent), Japan (7,1 per cent), and Hungary (5,7 per cent)<sup>145</sup>. The world primary gallium production was 182 tons in 2010 and is estimated to grow 19 per cent in 2011, reaching 216 metric tons, with China, Germany, Kazakhstan, and

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<sup>140</sup> UNEP- Öko-Institut, *supra* n. 138, at 23.

<sup>141</sup> Annex V, *supra* n. 76, at 76.

<sup>142</sup> *Id.*, at 77.

<sup>143</sup> USGS, *supra* n. 136.

<sup>144</sup> Annex V, *supra* n. 76, at 77. World recycling capacity in 2011 was estimated to be 198 tons. USGS, *supra* n. 136.

<sup>145</sup> World Mining Data 2012, *supra* n. 66.

Ukraine as leading producers<sup>146</sup>; countries with lesser output were Hungary, Japan, the Republic of Korea, and Russia. Refined gallium production, including scrap refining, was estimated to be about 310 tons, with China, Japan, the United Kingdom, and the United States as main producers of refined gallium. Gallium was recycled from new scrap in Canada, Germany, Japan, the United Kingdom, and the United States<sup>147</sup>. Gallium is among the raw materials for which emerging technologies demand is expected to reach by 2030 levels considerably higher than actual level of production (603 tons)<sup>148</sup>.

Both the European Union and the United States heavily rely on imports of gallium primary supplies. The EU companies, located in Germany, Hungary, France, Slovakia and Czech Republic, mainly produce gallium metal<sup>149</sup>. The US net import dependence for gallium primary supplies is 99 per cent<sup>150</sup>; its main sources of imports are Germany (27 per cent), Canada (20 per cent), United Kingdom (19 per cent), and China (17 per cent)<sup>151</sup>.

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<sup>146</sup> USGS, *supra* n. 136.

<sup>147</sup> *Id.*

<sup>148</sup> Report of the Ad-Hoc Working Group on Defining Critical Raw Materials, *supra* at 57, at 42.

<sup>149</sup> Annex V, *supra* n. 76, at 75.

<sup>150</sup> USGS, *supra* n. 136.

<sup>151</sup> *Id.*

## f. Germanium<sup>152</sup>

Germanium is non-ferrous metal that is almost exclusively produced as a by-products of other metals such as copper, lead or zinc. Accordingly, there is no quantitative data available on germanium resources<sup>153</sup>. Traded germanium is for the greatest part enriched in refineries<sup>154</sup>.

Germanium played historically a key role in the development of transistors. Although it has now been replaced by cheaper silicon for this end, germanium is used in a whole range of applications such as: fiber optic systems (30 per cent of total consumption), for instance in telecommunication optical fibers; infrared optics (25 per cent); polymerisation catalysts (25 per cent), used in the production of polyesters and synthetic textile fibers; electric and solar electric applications (15 per cent), including solar cells, LEDs, and photodetectors<sup>155</sup>. Substitutability for gallium applications in electronic devices is envisaged through the recourse to silicon, although in the case of LEDs and other high-frequency applications germanium ensures better performance and it is more economical than substitutes; titanium is a potential replacement for catalysts<sup>156</sup>.

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<sup>152</sup> The HS 2007 tariff lines for germanium are: germanium oxides (2825.60.0000); metal, unwrought (8112.92.6000); metal, powder (112.92.6500); metal, wrought (88112.99.1000).

<sup>153</sup> Annex V, *supra* n. 76, at 80.

<sup>154</sup> *Id.*, at 79.

<sup>155</sup> *Id.*, at 81.

<sup>156</sup> *Id.*

At the global level, approximately 30 per cent of total consumption of germanium is produced from recycled materials, mostly new scrap recovered from the manufacture of optical devices (60 per cent) and in minor part derived from the window blanks in decommissioned tanks and other military vehicles<sup>157</sup>.

The germanium world mine production in 2010 was 59 tons, with China accounting for 54.2 per cent, followed by Ukraine (34 per cent), the United States (8,5 per cent), and Russia (3.4 per cent)<sup>158</sup>. World refinery production was 118 tons in 2010 with China (67,8 per cent), Russia (4,2 per cent), and the United States (2,5 per cent) as the top-three producers<sup>159</sup>. The high rates of growth in the demand for germanium are expected to increase in the upcoming decades, triggered by the high demand of optical fibers and, prospectively, for other high-technology applications such as night sight devices in automobiles<sup>160</sup>. In particular, it is estimated that the demand for germanium 2030 will reach 220 tons<sup>161</sup>, placing germanium among the raw materials for which emerging technologies demand is expected to exceed actual level of production<sup>162</sup>. These projections highlight criticalities in access to supplies and the possibility of shortages of germanium in the

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<sup>157</sup> USGS, *supra* n. 86: Germanium.

<sup>158</sup> World Mining Data 2012, *supra* n. 72.

<sup>159</sup> USGS, *supra* n. 157.

<sup>160</sup> Annex V, *supra* n. 76, at 81.

<sup>161</sup> *Id.*

<sup>162</sup> Report of the Ad-Hoc Working Group on Defining Critical Raw Materials, *supra* n. 57, at 42.

future, which is reflected in the increasing price of germanium primary products<sup>163</sup>.

Both the European Union and the United States are net-importers of primary germanium supplies. The European Union is almost completely dependent on imports of germanium ore, but seven companies reportedly produce germanium metal and oxide. The main source of imports for the EU is China (72.3 per cent), followed by the United States (18,6 per cent), and Hong Kong (7,1 per cent)<sup>164</sup>. The United States rely on imported germanium primary supplies for 90 per cent. The main sources of imports are China (41 per cent), Belgium (29 per cent), Russia (17 per cent), and Germany (9 per cent)<sup>165</sup>.

### **g. Indium**<sup>166</sup>

Indium is a minor metal with no primary mining, since it is exclusively produced as a by-product of lead and zinc<sup>167</sup>.

The main application of indium (amounting to 74 per cent of its total consumption) consists in the production of indium tin oxide

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<sup>163</sup> USGS, Mineral Yearbook 2010: Germanium, available at <http://minerals.usgs.gov/minerals/pubs/commodity/germanium/myb1-2010-germa.pdf>.

<sup>164</sup> Annex V, *supra* n. 76, at 79.

<sup>165</sup> USGS, *supra* n. 163.

<sup>166</sup> The 2007 HS tariff line for indium is 8112.92.3000 (Unwrought indium, including powders).

<sup>167</sup> Annex V, *supra* n. 76, at 91.

that is essential for flat display panels; indium tin oxide is also used for architectural glass and windscreens (10 per cent). Other applications include low melting point alloys used as solders for temperature indicators in fire-control systems (10 per cent), minor alloys for dental application, and nuclear engineering applications (1 per cent), intermetallic compounds used as semiconductors for laser diodes and photomultipliers (2 per cent)<sup>168</sup>. New emerging technologies such as thin-layer photovoltaic cells, displays and white LEDs expected to induce an upsurge in future demand, which is also projected to be triggered by thin-film of indium tin oxide coating, copper-indium-selenide thin-film solar cells and indium-gallium-nitride for Blue-ray discs<sup>169</sup>. According to some estimates, the pattern of indium consumption driven by emerging technologies demand is expected to increase by a factor of eight until 2030, exceeding by far actual level of production (1.911 tons)<sup>170</sup>.

These projections, along with the limited possibilities for recycling<sup>171</sup>, have induced an upward pressure on the indium price,

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<sup>168</sup> *Id.* and USGS, Mineral Yearbook 2010: Indium, <http://minerals.usgs.gov/minerals/pubs/commodity/indium/myb1-2010-indiu.pdf>.

<sup>169</sup> Annex V, *supra* n. 76, at 94.

<sup>170</sup> Report of the Ad-Hoc Working Group on Defining Critical Raw Materials, *supra* n. 57, at 42.

<sup>171</sup> Indium is mainly recycled from indium tin oxide products such as LCD panels, but the process is highly inefficient and permits to recover only minimal quantities of indium (less than 1 per cent). This process is concentrated in China, Japan, and the Republic of Korea. USGS, *supra* n. 73: Indium. Indium-containing materials (e.g. tailings and slags) have been stored in smelters due to



which remains quite high and volatile<sup>172</sup>. Accordingly, the incentive to find substitute materials has led to the discoveries of alternatives to indium in some of its most important applications (antimony tin oxide instead of indium tin oxide, carbon nanotube coatings replacing indium tin oxide in flexible displays, solar cells and touch screens, gallium arsenide in semiconducting products and hafnium in nuclear reactor control rod alloys)<sup>173</sup>.

The leading world refinery producers of indium in 2010 were China (340 metric tons), which alone account for approximately 56 per cent of total production, Republic of Korea (11,5 per cent), Japan (11,5 per cent), Canada (11 per cent), and Belgium (4.9 per cent). Other minor producers are, in descending order, Germany, Brazil, Italy, the United Kingdom, Russia (for which 2010 statistics are not available, but which accounted for 0,73 per cent of world refinery production in 2009)<sup>174</sup>, the Netherlands, and Peru<sup>175</sup>. The Indium Corporation has indicated that the total world residue reserves amount to over 15.000 metric tons of indium and that another 500 metric tons of indium is generated every year in

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uneconomical costs. However, they could be treated once demand and price would make it convenient. Annex V, *supra* n. 76, at 95.

<sup>172</sup> The price of indium rose significantly in 2007, following particularly pessimistic estimates on reserves (6,000 tons). Since then, new deposits have been identified or have become economical, but indium still remains a quite expensive raw material. *Id.*, at 91.

<sup>173</sup> Annex V, *supra* n. 76, at 95.

<sup>174</sup> USGS Mineral Commodities Summaries 2011: Indium, available at <http://minerals.usgs.gov/minerals/pubs/commodity/indium/mcs-2011-indiu.pdf>.

<sup>175</sup> USGS, *supra* n. 86: Indium.

residue form. This feature, combined with continued improvements in recoveries of virgin and reclaimed materials, and on-going explorations, seems to ensure that indium demand at present growth rates can be met without incurring in physical supply shortages (the world production in 2010 amounted to 609 metric tons)<sup>176</sup>.

The European Union is import dependent on the hosts of indium, lead and zinc<sup>177</sup>, therefore it is net-importer of indium as well. Its main sources of import supplies are China (81,3 per cent), Hong Kong (4 per cent), the USA and Singapore (3,8 per cent each), Russia (2,7 per cent), Peru (2,6 per cent), and Japan (0,9 per cent)<sup>178</sup>. The United States entirely rely on import of indium supplies, which arrive mainly from China (31 per cent), Canada (25 per cent), Japan (16 per cent), and Belgium (19 per cent)<sup>179</sup>

## **h. Lithium**<sup>180</sup>

Lithium is a non-ferrous metal and the 27<sup>th</sup> most abundant

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<sup>176</sup> Annex V, *supra* n. 76, at 95.

<sup>177</sup> *Id.*, at 91-2.

<sup>178</sup> *Id.*

<sup>179</sup> USGS, *supra* n. 175.

<sup>180</sup> The lithium-related HS 2007 tariff lines are the following: 2805.19.9000 (other alkali metals); 2825.20.0000 (Lithium oxide and hydroxide); 2836.91.0010 (Lithium carbonate); U.S.P. grade (2836.91.0010); 2836.91.0010 (Other).

element in the earth crusts<sup>181</sup>. The most important mineral containing lithium is spodumene, but in the recent years brines in salt lakes have also become an important commercial sources for lithium<sup>182</sup>.

The main end-use market for lithium products are ceramic and glasses (37 per cent of total consumption), rechargeable high-performance batteries in portable electronic devices (20 per cent), aluminium smelting (7 per cent), lubricating greases for automotive and industrial purposes (11 per cent), air and gas treatment (5 per cent), synthetic rubber and plastics (3 per cent), and pharmaceuticals (2 per cent). A still minor application is in lithium-aluminium alloys used in the aircraft industry (1 per cent) but which is considered to have very high potential in future technology<sup>183</sup>. Substitutes materials for lithium compounds are available for batteries, ceramics, greases, and manufactured glass<sup>184</sup>. The dominant use for lithium by 2050 is projected to be for electric and hybrid car batteries<sup>185</sup>.

The expected upsurge in lithium demand, however, does not seem to be likely to endanger physical scarcity in the foreseeable future. The world mine production is currently concentrated in

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<sup>181</sup> Annex V, *supra* n. 76, at 109.

<sup>182</sup> USGS, Mineral Yearbook 2010: Lithium, available at <http://minerals.usgs.gov/minerals/pubs/commodity/lithium/myb1-2010-lithi.pdf>.

<sup>183</sup> *Id.*

<sup>184</sup> Annex V, *supra* n. 76, at 112.

<sup>185</sup> USGS, *supra* n. 86: Lithium.

Chile (accounting for 47,8 per cent of total production), Australia (22 per cent), Argentina (15,6 per cent), the United States (6,7 per cent), and China (6 per cent). Cumulatively, the top-five producers account for almost 98 per cent of world mine production<sup>186</sup>. Other minor producers are, in descending order, Portugal, Zimbabwe, and Brazil<sup>187</sup>. The identified world lithium resources are approximately of 30 millions tons across the world and are mainly located in Chile (9 millions tons) and Bolivia (over 7,5 millions tons), but also in China (5.4 millions tons), Argentina (2.6 millions tons) and the United States (1.8 millions) Minor deposits are also located in Brazil, Democratic Republic of Congo, Serbia (1 millions each), and Canada (360,00 metric tons)<sup>188</sup>. The current known reserves amount to 13 millions tons, mostly concentrated on Chile and China, amounting respectively to 58 per cent and 27 per cent (cumulatively 85 per cent of total reserves), followed by Australia (7,5 per cent), Argentina (6,53 per cent) and, in minor shares, the United States, Zimbabwe, Brazil and Portugal<sup>189</sup>.

In addition to the current volume of production and reserves, the amount of recycled lithium, historically irrelevant<sup>190</sup>, has been growing due to the growth in consumption of lithium batteries. The European Union has indeed set a mandatory target of 45 per cent of

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<sup>186</sup> World Mining Data 2012, *supra* n. 66.

<sup>187</sup> *Id.*

<sup>188</sup> USGS, *supra* n. 185.

<sup>189</sup> *Id.*

<sup>190</sup> *Id.*

recycling for lithium batteries by 2016<sup>191</sup>.

The European Union is a net-importer of lithium: the Union's leading import sources are Chile (64 per cent), the United States (16, 7 per cent) and China (16 per cent). Minor shares of supplies come from Russia, Argentina, and Australia. Currently, lithium is produced within the EU in Portugal and Spain; a mining project is under development in Finland<sup>192</sup>. Identified resources are also in Finland, Sweden, Austria, France and Ireland. The United States is not a net importer of lithium, but its main sources of imports are Argentina (50 per cent), Chile (47 per cent), and China (2 per cent)<sup>193</sup>.

### **i. Manganese**<sup>194</sup>

Manganese is the second most common heavy metal in the earth's crust and, as a base metal, it always occurs in compounds<sup>195</sup>. To be of economical interest, the ore should have

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<sup>191</sup> Annex V, *supra* n. 76, at 112.

<sup>192</sup> *Id.*, at 109-10.

<sup>193</sup> USGS, *supra* n. 182.

<sup>194</sup> The HS 2007 classification of manganese includes the following tariff lines: Ore and concentrate (2602.00.0040/60); Manganese dioxide (2820.10.0000); High-carbon ferromanganese (7202.11.5000); Silicomanganese (7202.30.0000); Metal, unwrought (8111.00.4700/4900).

<sup>195</sup> There are approximately 300 known minerals containing manganese, but only a dozen are of economic importance for mining. Annex V, *supra* n. 76, at 121.

manganese content between 30 and 55 per cent<sup>196</sup>.

Manganese is one of the most important iron and ferro-alloy metals in that it is fundamental for the production of steel. Its dominant use (90 per cent of world consumption) is indeed in steel metallurgy as a desulphurization agent and an alloying agent for the purposes of providing hardness and wear resistance. It is also used with the same function in many aluminium alloys (e.g. beverage cans) that contain up to 9 per cent manganese, as well as in copper and nickel alloys (6 per cent). Recently, many non-metallurgy and innovative applications have emerged, especially including dry cell batteries, micro-electronic capacitors, tailored blanks and airframe light weight construction (used to reduce weight in car bodies and in aviation), lithium-manganese batteries, corrosion-resistant material for desalination of seawater<sup>197</sup>. These innovation applications currently count for only a minor share of global consumption patterns (4 per cent)<sup>198</sup>.

Manganese is normally incidentally recycled as a minor constituent of ferrous and non-ferrous scrap. However, scrap recovery specifically for manganese was negligible. Estimations differ from 1 per cent and 25 per cent of recycled manganese content from old scrap<sup>199</sup>. Manganese has no substitutes and it is instead a suitable alternative for other raw materials such as

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<sup>196</sup> *Id.*, at 120.

<sup>197</sup> *Id.*, at 122-3.

<sup>198</sup> *Id.*, at 122.

<sup>199</sup> USGS, *supra* n. 86: Manganese.

primary chromium and vanadium<sup>200</sup>.

World mine production is relatively heavily concentrated, with the leading producers being in 2010 South Africa (18,9 per cent of total production), Australia (18,7 per cent), China (15,6 per cent), India (10,1 per cent), and Gabon (9,9 per cent). The top-five producers account for 73,4 per cent of world mine production<sup>201</sup>. Other producers were, in descending order, Kazakhstan, Brazil, Ukraine, Malaysia, Ghana, and Mexico. Minor shares were produced in Georgia, Cote d'Ivoire, Morocco, Bulgaria, Russia, and Iran<sup>202</sup>. The current known reserves are estimated to amount to 630,000 metric tons, with the highest deposits located in South Africa (23,8 per cent), Ukraine (22,2 per cent), Brazil (17,4 per cent), Australia (14,7 per cent), and India (8,8 per cent)<sup>203</sup>. Minor reserves are also situated in Gabon and Mexico. Identifies land-based world manganese resources, including low grade ore, are estimated to amount to several billions; however, when considering only high grade ore, manganese resources reach 540 millions tons and are very heavily concentrated, with over 75 per cent of the high grade ore (defined as having more than 44 per cent of manganese content) located in South Africa; other main sources are Ukraine (10 per cent), as well as Australia, Brazil and Gabon<sup>204</sup>. Ghana and

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<sup>200</sup> *Id.*, at 123.

<sup>201</sup> World Mining Data 2012, *supra* n. 66.

<sup>202</sup> *Id.*

<sup>203</sup> USGS, *supra* n. 199.

<sup>204</sup> Annex V, *supra* n. 76, at 121.

India, both large suppliers in the past, are now exporting only limited quantities of low or medium grade ore. The same applied to Russia and ex-soviet countries, which used to be the largest producer of manganese ore at the beginning of the twentieth century and which are now left with low grade ore which has to be upgraded for commercial use<sup>205</sup>.

The European Union produces manganese mainly in Bulgaria, Hungary, Romania, and Italy for a total of 49,575 metric tons in 2010<sup>206</sup>. Nevertheless, the Union is a net-importer of manganese, which arrives from Brazil (37, 6 per cent of total imports), South Africa (31 per cent) and Gabon (25 per cent). The United States net import dependence is 100 per cent<sup>207</sup>. The main sources of imports of manganese ore are Gabon (57 per cent), Australia, (15 per cent), South Africa (12 per cent), and Brazil (4 per cent). The leading exporters of ferromanganese are South Africa (50 of total imports); China (19 per cent); Ukraine (6 per cent), and Mexico (6 per cent)<sup>208</sup>.

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<sup>205</sup> *Id.*

<sup>206</sup> World Mining Data 2012, *supra* n. 66.

<sup>207</sup> USGS, *supra* n. 199.

<sup>208</sup> *Id.*



## j. Molybdenum<sup>209</sup>

Molybdenum is an iron and ferro-alloy metal that occurs as the principal metal sulphide in large low-grade porphyry molybdenum deposits and as an associated metal sulphide in low-grade porphyry copper deposits<sup>210</sup>. With its estimated abundance of 1 to 1.5 ppm in the earth's crust, it belongs to the rare elements<sup>211</sup>. It is mined as primary product and as a by-product of copper<sup>212</sup>.

The dominant use for molybdenum is as an alloying agent in the iron, steel and superalloy industry. Indeed, a small amount of molybdenum, primarily in the form of molybdic oxide or ferromolybdenum is frequently used in combination with or added to aluminium, chromium, manganese, lead, nickel, niobium, tungsten, or other alloy metals in order to increase hardenability, strength, toughness and corrosion resistance<sup>213</sup>. Molybdenum is

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<sup>209</sup> The HS 2007 tariff lines for molybdenum-related materials are: molybdenum ore and concentrates, roasted (2613.10.0000); molybdenum ore and concentrates (2613.90.0000); other molybdenum chemicals: molybdenum oxides and hydroxides (2825.70.0000); molybdates of ammonium (2841.70.1000); molybdates, all others (2841.70.5000); molybdenum pigments, molybdenum orange (3206.20.0020); ferroalloys, ferromolybdenum (7202.70.0000); molybdenum metals: powders (8102.10.0000); unwrought (8102.94.0000); wrought bars and rods (8102.95.3000); wrought plates, sheets, strips, etc. (8102.95.6000); wire (8102.96.0000); waste and scrap (8102.97.0000); other (8102.99.0000).

<sup>210</sup> Annex V, *supra* n. 76, at 125.

<sup>211</sup> *Id.*

<sup>212</sup> USGS, Mineral Yearbook 2010: Molybdenum, available at <http://minerals.usgs.gov/minerals/pubs/commodity/molybdenum/myb1-2010-molyb.pdf>.

<sup>213</sup> *Id.*

indispensable for a variety of metallurgical applications: cast iron, constructional steel, stainless steel, tool steel and super alloys, as well as the manufacture of armour, aircraft parts, electrical contacts, industrial motors and filaments<sup>214</sup>. Molybdenum compounds are also used in numerous chemical applications, including catalysts, pigments, corrosion inhibitors, lubricants, and refractories. Moreover, there are many high-tech applications that require molybdenum, such as rotating X-ray anodes used in clinical diagnostics, high temperature heating elements, glass melting furnace electrodes, heat sinks for semiconductor industry, sputtered layers for LDC displays, sprayed coatings on automotive piston rings<sup>215</sup>.

Molybdenum is not recovered from scrap steel<sup>216</sup>, but some molybdenum content is recovered from the recycling of steel alloys. Other sources for recycled molybdenum are catalysts used in the oil industry (containing between 2 and 10 per cent of molybdenum) and superalloy scrap. There is little substitution for molybdenum in its major application as an alloying element in steels and cast irons but chromium, vanadium and niobium are possible alternatives in alloys steel, tungsten can replace molybdenum in tool steel, and tantalum can be used for refractory

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<sup>214</sup> Annex V, *supra* n. 76, at 128.

<sup>215</sup> *Id.*

<sup>216</sup> USGS, *supra* n. 86: Molybdenum.

materials in high-temperature electric furnaces<sup>217</sup>.

World mine production in 2010 was mainly concentrated in China, while alone produced 94,000 metric tons accounting for 37,5 per cent of total production (250,314 metric tons), the United States (22.4 per cent), Chile (14,80 per cent), Peru (9,8 per cent), and Mexico (4,3 per cent)<sup>218</sup>. The top-five producers accounted for almost 90 per cent of world mine production. Other producers were, in descending order, Canada, Iran, Armenia, Russia, Mongolia, Uzbekistan, Argentina, Kazakhstan and Kirgystan<sup>219</sup>. The current reserves are mostly concentrated on China (43 per cent), followed by the United States (27 cent) and Chile (12 per cent)<sup>220</sup>. Identified world resources are approximately 20 millions tons<sup>221</sup> and are adequate to supply world needs for the foreseeable future. Due to its metallurgical properties, in fact, molybdenum demand is highly correlated to demand for steel and superalloy products, but it is used in very small quantities<sup>222</sup>.

The European Union is completely dependent on imports since there is no production of molybdenum within the Union<sup>223</sup>. The leading exporters to the European Union are the Unites States (47

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<sup>217</sup> Annex V, *supra* n. 76, at 129.

<sup>218</sup> World Mining Data 2012, *supra* n. 66.

<sup>219</sup> *Id.*

<sup>220</sup> USGS, *supra* n. 216.

<sup>221</sup> *Id.*

<sup>222</sup> Annex V, *supra* n. 76, at 125.

<sup>223</sup> However, a copper mine in Sweden was reportedly to start producing molybdenum in 2010. *Id.*, at 127.

per cent), Chile (31,5 per cent of total imports), China (10 per cent) and Peru (6.2 per cent)<sup>224</sup>. The EU molybdenum industry consists of a few companies, which import ore and concentrates, and technical oxide and scrap, and mainly produce molybdenum oxide, ferro-molybdenum and metal powders and products. The United States, on the contrary, are net exporters of molybdenum products. The main sources of imports of ferromolybdenum are Chile (61 per cent), China (19 per cent), and Canada (10 per cent); molybdenum ores and concentrates are mainly imported from Mexico (32 per cent), Chile (30 per cent), Peru (20 per cent), and Canada 17 per cent)<sup>225</sup>.

#### **k. Nickel<sup>226</sup>**

Nickel is a ferrous metal used primarily as an alloying agent in the steel industry. Traditionally, approximately two thirds of global primary nickel consumption are used in steel to increase strength and resistance to corrosion and make stainless steel<sup>227</sup>. Nickel-containing alloys are essential in application such as turbines and jet engines. Nonferrous alloys accounted for about 12 per cent of

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<sup>224</sup> *Id.*, at 126.

<sup>225</sup> USGS, *supra* n. 216.

<sup>226</sup> The HS 2007 tariff lines for nickel products are nickel oxide, chemical grade (2825.40.0000); ferronickel (7202.60.0000); Unwrought nickel, not alloyed (7502.10.000).

<sup>227</sup> USGS, Mineral Yearbook 2010: Nickel, available at <http://minerals.usgs.gov/minerals/pubs/commodity/nickel/myb1-2010-nicke.pdf>.

primary nickel use, followed by electroplating and other surface finishing (11 per cent) used in medical equipment, construction materials and household cutlery and fittings, as well as for CD/DVD manufactures. Nickel is also used to make batteries (5 per cent), together with other metals such as cadmium, and in a wide range of chemical processes including fertilizer production (1 per cent). Because of its extensive use possibilities, nickel is normally referred to as an “enabling technology”, not just an industry processing primary material<sup>228</sup>. Indeed, nickel plays a key role in supporting the competitiveness of crucial industrial sectors in the EU, such as aerospace, automotive, oil refining and optical media. Moreover, platform technologies based on nickel and nickel compounds are fundamental for environmentally friendly technologies which will prove critical in the upcoming decades in order to fight climate change (batteries in hybrid electric vehicles, sweetening of sour gas, carbon capture and storage, tubing for steam generators in nuclear power plants, rotor hub in wind turbines, solar power tower systems and second generation biofuels)<sup>229</sup>.

The secondary supply of nickel mainly consists of scrap metal linked to end-of-life steel scrap. The end-of-life recycling rate is 56 per cent and the recycled content rate is 41 per cent<sup>230</sup>. These rates

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<sup>228</sup> Annex V, *supra* n. 76, at 138.

<sup>229</sup> *Id.*, at 139-40.

<sup>230</sup> *Id.*

are generally higher than for other metals, reflecting both nickel's suitability for recycling and the incentive provided by the high and often volatile price of nickel. In the light of the volatility of nickel price, alternatives to stainless steel have been developed such as low-nickel, duplex or ultra-high-chromium stainless steels in construction applications, and nickel-free specialty steels in the power-generating and petrochemical industries; titanium alloys are used as an alternative to nickel metal or nickel-based alloys in corrosive chemical environments. However, nickel has currently no substitutes in engineering, chemical processing, automotive sector, aerospace and aircraft sectors, as well as the electronic sector<sup>231</sup>.

The world mine production of nickel in 2010 was of 1.528,766 metric tons<sup>232</sup>. Although the global recession of 2008-9 induced some slowing down in terms of volume of mine production<sup>233</sup>, the world production has increased significantly from the 1.380,618 metric tons of 2009. Moreover, the world production has almost doubled since 1995, when it was of 920,000 tons<sup>234</sup>.

Nickel world mine production is relatively geographically distributed: the top world producers in 2010 were Russia (269,000 metric tons, accounting for approximately 17 per cent of total world production), Indonesia (14,6 per cent), Australia (10,7 per cent), Canada (9,9), Philippines (10,9 per cent), and Canada (9,9

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<sup>231</sup> *Id.*

<sup>232</sup> World Mining Data 2012, *supra* n. 66.

<sup>233</sup> USGS, *supra* n. 227.

<sup>234</sup> Annex V, *supra* n. 76, at 133.

per cent). The top-five producers accounted for 49,2 per cent. Other minor producers include China (4,8 per cent), Colombia (4,5 per cent), Cuba (4,4 per cent) and South Africa (2,5 per cent)<sup>235</sup>. Current reserves amount to 80 millions tons, with Australia detaining the highest share (30 per cent), followed by New Caledonia (13,3 per cent), Brazil (10,9 per cent), Russia (7,5 per cent), and Cuba (6,8 per cent). Other reserves are located, in descending order, in South Africa, Indonesia, Canada, China, Philippines, and Dominican Republic<sup>236</sup>. Identified world resources containing nickel amount to 130 millions tons of nickel<sup>237</sup>. The vast majority of world resources are located in Australia, Russia and the Americas (Canada, Cuba and Brazil). More than 10 per cent of the reserves are situated in New Caledonia, which is a French colony<sup>238</sup>.

The European Union is a net-importer of mine product as well as nickel metal and nickel containing intermediates (e.g. oxides, mattes and sinters for refining). The EU's mine production represents only 8,6 per cent of the world total<sup>239</sup> and is mainly located in Greece, Spain, Finland and New Caledonia<sup>240</sup>. The main

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<sup>235</sup> USGS, *supra* n. 86: Nickel.

<sup>236</sup> *Id.*

<sup>237</sup> *Id.*

<sup>238</sup> Annex V, *supra* n. 76, at 133.

<sup>239</sup> *Id.*

<sup>240</sup> The EU has reportedly undertaken 22 mining projects, 16 of them take place in Finland and 6 in Sweden: at the moment, 14 are in conceptual phase and 8 in pre-feasibility phase. *Id.*, at 133.

sources of supplies for the EU are imported from Australia (90 per cent of total imports) and Canada (4,5 per cent). The United States, on the contrary, rely on imports of nickel supplies only for 47 per cent. The leading import sources are Canada (38 per cent), Russia (17 per cent), Australia (10 per cent), and Norway (10 per cent)<sup>241</sup>.

### **1. Platinum-group Metals**

The expression Platinum Group Metals (PGMs) indicates a group of six precious metals with similar chemical and physical properties: rhenium, rhodium, and palladium, collectively known as light platinum metals; and, osmium, iridium and platinum, known as heavy platinum metals<sup>242</sup>. PGMs are very rare metals in the earth's crust that occur and are mined always together as coupled elements (either as primary products or as by-products of nickel), with platinum and palladium as major metals. Accordingly, the supply of the minor metals is strongly correlated to the demand for platinum and palladium<sup>243</sup>.

The main end-use market for PGMs are automotive catalytic converters and diesel particulate filters in order to reduce pollution (53 per cent of total consumption); 20 per cent is used for

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<sup>241</sup> USGS, *supra* n. 235.

<sup>242</sup> Annex V, *supra* n. 76, at 152.

<sup>243</sup> *Id.*



jewellery; PGMs also find application in a whole range of electronic and electric applications such as computer hard disks, multilayer ceramic capacitors and hybridized integrated circuits (11 per cent); they are also used as catalysts in the chemical industry and for petroleum refining (6 per cent), for dental applications (6 per cent) and glass making equipment including LCDs (2 per cent)<sup>244</sup>. Furthermore, PGMs are expected to play a pivotal role in emerging technologies, particularly with regards to fuel cell driven vehicles, “four way catalysts” used to control emissions, emission control systems in stationary applications such as generators and turbines, nickel-based super alloys used in turbine blades for jet engines, medical applications in anti-cancer drugs or implantable cardiac defibrillators<sup>245</sup>.

Due to the multiplication of high-tech applications requiring platinum and other PGMs, the price of platinum has steadily increased over the last 20 years and demand by 2030 is expected to grow significantly, most probably exceeding current production levels<sup>246</sup>. Increasing world demand, triggered by expanding markets for fuel cell driven vehicles especially, may therefore challenge the physical availability of platinum and palladium<sup>247</sup>. However, recycling of PGMs is quite efficient for some of the main end-use of and platinum and palladium, i.e. automotive catalysts

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<sup>244</sup> *Id.*, at 154-5.

<sup>245</sup> *Id.*

<sup>246</sup> Report of the Ad-hoc Working Party, *supra* n. 57, at 42.

<sup>247</sup> *Id.*

(recovery rate between 50 to 60 per cent), and electronic applications (recovery rate around 10 per cent)<sup>248</sup>. Generally, PGMs can substitute for each other, but since they are mined together this does not solve the physical availability issue but rather shifts the scarcity from one metal to another. New improvements in automotive catalysts technologies, however, will permit to use increasingly smaller quantities of PGMs and still achieve good performances<sup>249</sup>.

The world leading mine producers of platinum in 2010 were South Africa, accounting alone for 77,6 per cent of total production (around 190,000 kilograms), followed by Russia (13,5 per cent), Zimbabwe (4,6 per cent), the United States (1,8 per cent), and Canada (1,6 per cent); the same geographical distribution is more or less reproduced for world mine production of palladium, although the share of mine production between the two main producers, South Africa and Russia, is much more balanced and reversed: the former, is the top producer, accounting for approximately 44,2 per cent of world production in 2010 (over 191,000 kilograms), while the latter follows with a share of 41,8 per cent; the United States (6,1 per cent), Zimbabwe (3,6 per cent) and Canada (3,5 per cent) are again among the top-five producers<sup>250</sup>. World reserves are estimated to be 66,000 tons;

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<sup>248</sup> *Id.*, at 156.

<sup>249</sup> *Id.*

<sup>250</sup> World Mining Data 2012, *supra* n. 66.

almost 90 per cent are located in South Africa, while the remaining 10 per cent is distributed between the other top-producers<sup>251</sup>. World resources of PGMs are estimated to amount to 100 million kilograms<sup>252</sup>.

The European Union relies entirely on imports of PGMs for there is no direct mining in the Union's territory<sup>253</sup>. The main import sources for the European Union are South Africa (approximately 60 per cent) and Russia (over 30 per cent)<sup>254</sup>. The United States currently counts on platinum imports for 88 per cent and for palladium imports for 56 per cent. The main import sources of platinum are Germany (17 per cent), South Africa (17 per cent), United Kingdom (9 per cent) and Canada (5 per cent); palladium supplies are predominantly imported from Russia (42 per cent), South Africa (24 per cent), United Kingdom (9 per cent), and Norway (5 per cent)<sup>255</sup>.

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<sup>251</sup> USGS, *supra* n. 86: Platinum Group Metals.

<sup>252</sup> *Id.*

<sup>253</sup> Although there is no direct mining within the European Union, marginal production of platinum (in Finland and Poland) and palladium (in Poland) has been reported. World Mining Data 2012, *supra* n. 66.

<sup>254</sup> Annex V, *supra* n. 76, at 153.

<sup>255</sup> USGS, *supra* n. 251.

### m. Rare Earths<sup>256</sup>

Rare earth elements are a set of 17 elements in the periodic table, namely 15 elements belonging to the family of lanthanides (lanthanum, praseodymium, neodymium, promethium, samarium – also known as light rare elements – and europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, and lutetium – constituting the heavy rare elements) plus scandium and yttrium<sup>257</sup>. Although their collective denomination suggests a physical scarcity, rare elements are not as rare, although discovered minable concentrations are less common than for most other ores: they occur mostly in the minerals bastnaesite and monazite and can only be mined together. Their production in pure form is cost-intensive<sup>258</sup>.

These elements play a critical role in the development of many high technology goods and environmental technologies for they are essential inputs to the manufacture of items such as hybrid vehicles, mobile telephones, portable computers, plasma screens,

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<sup>256</sup> The rare earths-related HS 2007 tariff lines are: 2612.20.0000 (horium ores and concentrates (monazite)); 2805.30.0000 (Rare-earth metals, scandium and yttrium, whether or not intermixed or interalloyed); 2846.10.0000 (Cerium compounds); 2846.90.2010 (Mixtures of REOs (except cerium oxide)); 2846.90.2050 (Mixtures of rare-earth chlorides (except cerium chloride)); 2846.90.8000 (Rare-earth compounds, individual REOs (excludes cerium compounds)); 3606.90.3000 (Ferrocerium and other pyrophoric alloys).

<sup>257</sup> USGS, Mineral Yearbook 2010: Rare Earths, available at [http://minerals.usgs.gov/minerals/pubs/commodity/rare\\_earths/myb1-2010-raree.pdf](http://minerals.usgs.gov/minerals/pubs/commodity/rare_earths/myb1-2010-raree.pdf).

<sup>258</sup> Annex V, *supra* n. 76, at 160.

energy efficient lights, as well as military applications<sup>259</sup>. The most common application of rare earths (47 per cent) is for catalysts (lanthanum, for instance, is used in catalytic cracking in oil refineries, while cerium is necessary in catalytic converters for automobiles); 13 per cent is used in metallurgical applications and alloys in the steel industry, to improve mechanic properties of alloyed steel, to bind trace elements in stainless steel and for desulphurization; nickel metal hydride batteries containing lanthanum are used for portable tools and in hybrid vehicles; a smaller share (11 per cent) is also used in magnesium and aluminium alloys. Many rare earths have important magnetic characteristics and are used for high temperature superconductors and permanent magnetic substances; other applications include the manufacturing of ceramics (5 per cent) and the processing of phosphors and pigments for computer monitoring, lighting, radar, televisions, and x-ray intensifying film (5 per cent)<sup>260</sup>. Furthermore, the properties of rare earths make them essential for merging technologies such as the anodes of solid state fuel cells, high temperature superconductors, lasers, high performance magnets in the context of electromobility and wind power generators<sup>261</sup>. Emerging Technologies rare earths demand, and especially demand for neodymium, is expected to exceed current level of production

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<sup>259</sup> USGS, *supra* n. 257.

<sup>260</sup> *Id.* and Annex V, *supra* n. 76, at 162.

<sup>261</sup> *Id.*

by 2030 by far<sup>262</sup>.

Only small quantities (approximately 1 per cent) of rare earths are recycled from old scrap and for most applications substitute are available but will loss of performance<sup>263</sup>.

The world leading producer of rare earths is by far China, whose production in 2010 almost coincided with the total production (130,000 tons out of the 133,000 tons produced worldwide, accounting for almost 98 per cent), enjoying a *de facto* monopolistic power. India is the second producer, with a marginal 1.9 share, followed by Brazil (0,19 per cent)<sup>264</sup>. China has over 50 per cent of world's reserves (amounting to 110 millions tons); the Commonwealth of Independent States and the Unites States have relatively abundant reserves (respectively accounting for 17 and 12 per cent of total reserves). Minor reserves are also located in India (2,8 per cent) and Australia (1,5 per cent)<sup>265</sup>.

Both the European Union and the United States are completely dependent on rare earths imports<sup>266</sup> and both of them heavily rely on China for their supplies (respectively, 89,7 per cent and 79 per cent). Other sources of imports are, for the European Union, Russia (9,2 per cent) and only marginally Kazakhstan (0,6 per cent), India

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<sup>262</sup> Report of the Ad-Hoc Working Group, *supra* n. 57, at 42.

<sup>263</sup> USGS, *supra* n. 86: Rare Earths.

<sup>264</sup> World Mining Data 2012, *supra* n. 66.

<sup>265</sup> USGS, *supra* n. 263.

<sup>266</sup> Although rare earth elements are not produced within the European Union, known deposits exist in Sweden amounting to approximately 500,000 tons. Annex V, *supra* n. 76, at 161.

(0,4 per cent) and Vietnam (0,1 per cent), and for the United States France (6 per cent), Estonia (4 per cent), and Japan (3 per cent)<sup>267</sup>.

#### **n. Rhenium<sup>268</sup>**

Rhenium is a rare metallic element produced primarily as a by-product of the processing of porphyry copper-molybdenum ores<sup>269</sup>.

The two most important uses of rhenium have been in high-temperature superalloys (approximately 70 per cent of production) and platinum-rhenium catalysts (approximately 20 per cent)<sup>270</sup>. Rhenium is an important component in superalloy for blades in turbine engines used, for instance, in aircraft, where it allows operation at higher temperatures and thereby prolongs engine life and increases engine performance and operating efficiency<sup>271</sup>. Platinum-rhenium catalysts are used in petroleum reforming catalysis in the production of high-octane hydrocarbons, used for

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<sup>267</sup> USGS, *supra* n. 263.

<sup>268</sup> The HS 2007 classification includes the following rhenium-related tariff lines: Salts of peroxometallic acids, other— ammonium perrhenate (2841.90.2000); Rhenium, etc., (metals) waste and scrap (8112.92.0600); Rhenium, (metals) unwrought; powders (8112.92.5000); Rhenium, etc., (metals) wrought; etc. (8112.99.9000).

<sup>269</sup> Annex V, *supra* n. 76, at 166.

<sup>270</sup> USGS, Mineral Yearbook 2010: Rhenium, available at <http://minerals.usgs.gov/minerals/pubs/commodity/rhenium/myb1-2010-rheni.pdf>.

<sup>271</sup> *Id.*

lead-free gasoline<sup>272</sup>. Other applications of rhenium (10 per cent), primarily as tungsten-rhenium and molybdenum-rhenium alloys, include crucibles, electrical contact points, electromagnets, electron tubes and targets, flashbulbs, heating elements, ionization gauges, mass spectrographs, metallic coatings, semiconductors, temperature controls, thermocouples, vacuum tubes, and x-ray tubes and anodes. Only a minor fraction (approximately 13 per cent) of rhenium is currently being recycled from old scrap<sup>273</sup>. The majority of rhenium is recycled in Germany and the United States, but significant amounts are also being recovered in Estonia and Russia<sup>274</sup>. Materials that can substitute for rhenium in various end uses are: cobalt and tungsten for coatings on copper x-ray targets, rhodium and rhodium-iridium for high-temperature thermocouples, tungsten and platinum-ruthenium for coatings on electrical contacts, and tungsten and tantalum for electron emitters<sup>275</sup>. Other alternative materials are constantly being tested, due to the scarcity and minor output of rhenium, as well as the volatility of its price<sup>276</sup>.

The leading producer of rhenium is Chile, which accounts for over half of the world production (amounting to 47,200 kilograms), followed by the United States (13 per cent), Peru (10,6 per cent),

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<sup>272</sup> Annex V, *supra* n. 76, at 168.

<sup>273</sup> *Id.*

<sup>274</sup> USGS, *supra* n. 270.

<sup>275</sup> Annex V, *supra* n. 76, at 169.

<sup>276</sup> USGS, *supra* n. 86: Rhenium.



Poland (10 per cent) and Russia (3,2 per cent)<sup>277</sup>. Chile is also the country where almost 50 per cent of world reserves are located; the United States and Russia host respectively 15,6 per cent and 12,4 per cent of world known reserves. Minor deposits are also situated in Armenia, Kazakhstan, Peru and Canada. World resources are estimated to amount to 11 millions kilograms, 5 of which are located in the United States alone (accounting for 45,6 per cent)<sup>278</sup>.

The European Union is totally import-dependent in that there is no reported rhenium mining activity within the Union's territory. The EU almost completely relies on US imports for its rhenium supply, with only a minimal percentage of Canadian imports<sup>279</sup>. Despite its considerable reserves and production, the United States imports 87 per cent of its rhenium primary supplies, mostly from Chile (84 per cent) and only marginally from Netherlands (8 per cent), Germany (5 per cent) and other countries (3 per cent)<sup>280</sup>.

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<sup>277</sup> *Id.*

<sup>278</sup> *Id.*

<sup>279</sup> *Id.*, at 165.

<sup>280</sup> USGS, *supra* n. 276.

## **o. Silicon<sup>281</sup>**

Silicon is a light chemical element with metallic and nonmetallic characteristics that is rarely found free in nature. It most often combines with oxygen and other elements to form silicates, which comprise more than 25% of the Earth's crust<sup>282</sup>. Silica (SiO<sub>2</sub>) as quartz or quartzite is used to produce silicon ferroalloys for the iron and steel industries (four-fifths of world production)<sup>283</sup> and silicon metal for the aluminum and chemical industries<sup>284</sup>. Silicon metal that is refined into semiconductor-grade metal is used for computer chips (5 per cent of total silicon metal demand)<sup>285</sup>. Silicon metal is also used directly in an upgraded metallurgical form and used in silicon-based photovoltaic cells or refined into wafers to power solar batteries<sup>286</sup>.

The leading world producer of silicon<sup>287</sup> in 2010 was by far China, accounting for 4,920 thousands metric tons out of 7,290

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<sup>281</sup> The 2007 HS tariff lines related to silicon are: silicon, more than 99.99% Si (2804.61.0000); Silicon, 99.00%–99.99% Si (2804.69.1000); Silicon, other (2804.69.5000); Ferrosilicon, 55%–80% Si: More than 3% Ca (7202.21.1000); Other (7202.21.5000); Ferrosilicon, 80%–90% Si (7202.21.7500); Ferrosilicon, more than 90% Si (7202.21.9000); Ferrosilicon, other: More than 2% Mg (7202.29.0010); Other (7202.29.0050).

<sup>282</sup> USGS, Mineral Yearbook 2010: Silicon, available at <http://minerals.usgs.gov/minerals/pubs/commodity/silicon/myb1-2010-simet.pdf>.

<sup>283</sup> USGS, *supra* n. 86: Silicon.

<sup>284</sup> *Id.*

<sup>285</sup> USGS, *supra* n. 283.

<sup>286</sup> *Id.*

<sup>287</sup> The data drawn on USGS (*supra* n. 283) and are calculated on the basis of the silicon content of both ferrosilicon and silicon metal.

thousands tons of total world production (over 67 per cent), followed by Russia (8,8 per cent), Norway (4,15 per cent), Brazil (3,1 per cent), the United States (2,4 per cent), South Africa (1,9 per cent), and Ukraine (1,7 per cent). Other minor producers are, in descending order, Iceland, India, Canada, and Venezuela<sup>288</sup>. Quantitative estimates on reserves and resources are not available, although reserves in major producing countries are considered to be ample in relation to demand and adequate to supply world requirements for many decades<sup>289</sup>.

The United States import 43 per cent of its silicon supplies. The major sources for ferrosilicon are imported from China (41 per cent), Russia (33 per cent), Venezuela (13 per cent), Canada (9 per cent). The leading importers of silicon metal are Brazil (39 per cent), South Africa (22 per cent), Canada (13 per cent), and Australia (10 per cent). In total, the major importers of silicon for the United States are China (22 per cent), Brazil (20 per cent), Russia (17 per cent) and Canada (11 per cent)<sup>290</sup>. Data on the European Union reliance on silicon are not available, nor silicon appears among the raw materials considered critical for the EU within the context of the Raw Materials Initiative<sup>291</sup>.

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<sup>288</sup> *Id.*

<sup>289</sup> *Id.*

<sup>290</sup> *Id.*

<sup>291</sup> Report of the Ad-Hoc Working Group on Defining Critical Raw Materials, *supra* n. 57, and Annex V, *supra* n. 74.

## p. Silver<sup>292</sup>

Silver is a precious metal mainly obtained as a by-product of copper and lead-zinc ores (60 per cent) and only for the 29 per cent as the result of primary mining<sup>293</sup>.

Silver's dominant end-use market is non-industrial, in that it is used for jewellery, coins and silverware (34 per cent of total consumption)<sup>294</sup>. However, the demand of silver for industrial applications has been steadily growing. Indeed, silver is used in a wide range of electrical and electronics applications (24 per cent of total consumption) despite its higher price compared to materials such as copper, because of its high conductivity; it is also used for photographic equipment due to its high optical reflectivity, although at declining rates since the advent of digital cameras since the late of 1990's<sup>295</sup> (20 per cent); its catalytic properties make it an ideal catalyst in oxidation reactions (6 per cent). Moreover, silver world demand is expected to increase significantly as merging technologies continue to develop, including RFID-tags and solar panels, which will require large amounts of silver as contacting materials on the panel; other emerging industrial applications are bandages for wound care, clothing to minimize odour, and medical applications such as dental implants where silver is essential due to

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<sup>292</sup> The HS 2007 tariff line for silver is 261610 (Silver ores and concentrates).

<sup>293</sup> Annex V, *supra* n. 76, at 178.

<sup>294</sup> *Id.*, at 179-80.

<sup>295</sup> USGS, *supra* n. 86: Silver.

its bactericide and odour absorbing properties<sup>296</sup>. Although these applications require a minimal amount of silver per piece, their mass application is expected to produce significant impacts on the world demand<sup>297</sup>.

The end-of-life recycling rate for silver is between 30 and 50 per cent. However, it varies significantly across sectors: the traditional applications such as jewellery, silverware and coins account for the most part, and a significant proportion also comes from the recycling of industrial applications such as catalysts and photographic residues. However, the most innovative applications and the potential future applications use silver in a dissipative way (e.g. RFID and textiles) or are in any case very difficult to recycle<sup>298</sup>. Silver can be substituted in most of its electrical and electronic uses by aluminium, copper, gold, palladium, platinum and numerous refractory metals, although with some loss of performance<sup>299</sup>; alternative metals for catalysts are instead more costly<sup>300</sup>; substitution for photographic equipment has improved with the advent of digital technology<sup>301</sup>. No substitutes are currently available for dissipative and high-tech uses of silver<sup>302</sup>.

The surge in demand for industrial applications and the

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<sup>296</sup> Annex V, *supra* n. 76, at 180.

<sup>297</sup> Report of the Ad-hoc Working Group, *supra* n. 57, at 42.

<sup>298</sup> Annex V, *supra* n. 76, at 180.

<sup>299</sup> *Id.*

<sup>300</sup> USGS, *supra* n. 295.

<sup>301</sup> *Id.*

<sup>302</sup> Annex V, *supra* n. 76, at 181.

corresponding increase of silver prices in the last years boosted world mine production to the record output of 22,600 tons in 2010 as well as continued investment interest in silver exploration<sup>303</sup>. The leading mine producers were Peru (16,2 per cent), China (15,5 per cent), Mexico (13,8 per cent), Australia (8,3 per cent), and Chile (5,7 per cent). The top-five producers accounted for almost 60 per cent of total supply. Other important producers were the United States (5,6 per cent), Bolivia (5,5 per cent), Poland (5,1 per cent), Russia (5 per cent), Argentina (3,1 per cent), and Canada (2,6 per cent)<sup>304</sup>. World silver resources are estimated to amount to 530,000 metric tons, with Peru, Poland, Chile, Australia, and China the most-endowed countries<sup>305</sup>.

The European Union relies on silver imports for less than 40 per cent, since Poland is a very important source of silver, providing 5,1 per cent of total mine production and over 40 per cent of the Union's needs<sup>306</sup>. The United States is a net importer of silver primary products for 75 per cent. The mains sources of imports are China (26 per cent), Turkey (20 per cent), the United Kingdom (19 per cent), and Mexico (16 per cent)<sup>307</sup>.

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<sup>303</sup> World Mining Data 2012, *supra* n. 66.

<sup>304</sup> *Id.*

<sup>305</sup> USGS, *supra* n. 295.

<sup>306</sup> Annex V, *supra* n. 76, at 178.

<sup>307</sup> USGS, *supra* n. 295.

## q. Tantalum<sup>308</sup>

Tantalum is a base metal whose most important chemical property is that it is extraordinarily resistant to corrosion against many organic and inorganic acids below 100° Celsius. Tantalum often occurs with niobium (columbium), but it is more than ten times less abundant than niobium<sup>309</sup>. Tantalum-containing minerals like tantalite, wodginite, microlite or columbite are geographically widespread, but they rarely have significant tantalum content<sup>310</sup>.

The vast majority of tantalum consumption (around 60 per cent) is used in form of metal powder for electrolytic capacitors, which are basic components of modern IT and telecommunication devices (mobile, notebooks and digital cameras); it is also used in a wide range of medical applications (6 per cent), as well as in the production of superalloys, especially with tungsten, for jet engine components, chemical process equipment, nuclear reactors, steam turbines and missile parts; a minor share of consumption is in the optical industry for heat-reflecting, high refractive index and low

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<sup>308</sup> The HS 2007 tariff lines for tantalum primary products are: Synthetic tantalum-niobium concentrates (2615.90.3000 ); Tantalum ores and concentrates (2615.90.6060); Tantalum oxide (2825.90.9000); Potassium fluotantalate (2826.90.9000); Tantalum, unwrought: Powders (8103.20.0030); Alloys and metal (8103.20.0090); Tantalum, waste and scrap (8103.30.0000); Tantalum, other (8103.90.0000).

<sup>309</sup> Annex V, *supra* n. 76, at 188.

<sup>310</sup> *Id.*

optical scattering<sup>311</sup>. Future demand is expected to rise in the upcoming decades triggered by the coating industry and micro-electronics, and the 2030 emerging technologies tantalum demand is projected to exceed current level of world production<sup>312</sup>. Recycling of tantalum is concentrated in the cemented carbide and alloy sectors, and recycling rate data differ significantly varying between 1 and 9 per cent<sup>313</sup>. However, more that 20 per cent of world supply arises from the recycling of secondary materials containing tantalum<sup>314</sup>. Most applications requiring tantalum can be produced using substitutes, but usually with a loss of performance<sup>315</sup>.

The main tantalum mine producers in 2010 were Brazil, accounting for 26,4 per cent of total production, followed by Mozambique (17,6 per cent) and Rwanda (16,1 per cent). Other minor producers were Burundi, Democratic Republic of Congo, Ethiopia, Uganda and Zimbabwe<sup>316</sup>. However, the World Mining Data 2012 provides with data on the world production of tantalum-columbium (as said, the most commonly form of tantalum):

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<sup>311</sup> *Id.*

<sup>312</sup> Report of the Ad-hoc Working Group, *supra* n. 57, at 42.

<sup>313</sup> UNEP, *supra* n. 77, at 31.

<sup>314</sup> *Id.*, at 189.

<sup>315</sup> USGS, *supra* n. 86: Tantalum. Example of alternative materials are niobium in carbides; aluminium and ceramics in electronic capacitors; glass, niobium, platinum, titanium, and zirconium in corrosion-resistant equipment; and hafnium, iridium, molybdenum, niobium, rhenium, and tungsten in high-temperature applications.

<sup>316</sup> *Id.*



according to the WMD, Brazil is by far the leading producers of columbium, with a share of more than 90 per cent of total production. Canada follows with a modest 6,7 per cent. Other minor producers (of the magnitude of less than 1 per cent of world production) are Rwanda, Nigeria, Democratic Republic of Congo, Mozambique, Australia, Ethiopia, Burundi, and Somalia. The greatest reserves are located in Brazil and Australia (cumulatively accounting for 120,000 metric tons), whose production is indeed projected to intensify in the next years<sup>317</sup>. The United States has circa 1,500 tons of tantalum resources in identified deposits, but they are considered uneconomic at the current prices<sup>318</sup>.

The European Union's tantalum industry has historically been among the top ranking suppliers of tantalum products on the world market, but it is entirely dependent on access to raw materials on the international markets since European member States are not endowed with tantalum deposits. The EU's main sources of imports are Japan (60 per cent), Kazakhstan (27 per cent) and China (13 per cent)<sup>319</sup>. The United States also entirely rely on import of tantalum supplies, and their major importers are China (18 per cent), Germany (13 per cent), Kazahstan (10 per cent) and Australia (10 per cent)<sup>320</sup>.

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<sup>317</sup> The USGS, Mineral Yearbook 2010: Tantalum, available at <http://minerals.usgs.gov/minerals/pubs/commodity/niobium/>.

<sup>318</sup> USGS, *supra* n. 315.

<sup>319</sup> Annex V, *supra* n. 76, at 188-9.

<sup>320</sup> USGS, *supra* n. 317.

## r. Titanium<sup>321</sup>

Titanium is a light iron and ferro-alloy metal that, together with aluminium, iron and magnesium, belongs to the most common metals in the earth's crust<sup>322</sup>. The major titanium mineral concentrates of commercial importance for titanium are ilmenite, leucoxene and rutile. The predominant share of titanium mineral concentrates is used by titanium dioxide (around 95 per cent)<sup>323</sup>. Titanium dioxide is used to produce mainly non-toxic pigments that find application in cosmetics, food industry and enamels (56 per cent of total consumption); residual applications are plastics (23 per cent), paper industry (11 per cent) and ceramics (5 per cent)<sup>324</sup>. Titanium metal alloys are predominantly used for their high strength-to-weight ratio and corrosion resistance in the aircraft industry (67 per cent)<sup>325</sup>; other end-use are medical applications, desalination plants and nuclear reactors in industries such as the

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<sup>321</sup> The 2007 HS tariff lines for titanium products are: Titanium oxides (unfinished TiO<sub>2</sub> pigments) (2823.00.0000); TiO<sub>2</sub> pigments, 80% or more TiO<sub>2</sub> (3206.11.0000); TiO<sub>2</sub> pigments, other (3206.19.0000); Ferrotitanium and ferrosilicon titanium (7202.91.0000); Unwrought titanium metal (8108.20.0000); Titanium waste and scrap metal (8108.30.0000); Other titanium metal articles (8108.90.3000); Wrought titanium metal (8108.90.6000).

<sup>322</sup> Annex V, *supra* n. 76, at 199.

<sup>323</sup> USGS, Mineral Yearbook 2010: Titanium, available at <http://minerals.usgs.gov/minerals/pubs/commodity/titanium/myb1-2010-titan.pdf>.

<sup>324</sup> Annex V, *supra* n. 76, at 201.

<sup>325</sup> USGS, *supra* n. 323.

food industry and chemicals, sport goods and lenses with refractive power<sup>326</sup>. A significant quantity of titanium in the form of ferrotitanium, scrap, and sponge is consumed in the steel and nonferrous alloy industries. In the steel industry, titanium is used for deoxidation, grain-size control, and controlling and stabilizing carbon and nitrogen content<sup>327</sup>.

Titanium demand is expected to grow quite rapidly due to its increasing use possibilities along new technologies such as microcapacitors, orthopaedic implants, sea water desalination and dye-sensitised solar cells<sup>328</sup>.

While titanium minerals are used in a dissipative way, the produced titanium metal can be recycled: new scrap metal recycled by the titanium industry totalled about 27,000 tons in 2011 and old scrap metal reclaimed totalled around 1,000 metric tons<sup>329</sup>.

The leading mine producers of titanium in 2010 were Australia and South Africa, with a share on total production of respectively 20,79 per cent and 20,29 per cent, followed by Canada (16,49 per cent), China (9,07 per cent), Ukraine (6,60 per cent), Norway (6,27 per cent), India (5,27 per cent), Vietnam (5,09 per cent) and the United States (3,30 per cent). Minor shares were produced in Brazil, Russia and Kazakhstan<sup>330</sup>. Titanium world

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<sup>326</sup> Annex V, *supra* n. 76, at 201.

<sup>327</sup> USGS, *supra* n. 323.

<sup>328</sup> Annex V, *supra* n. 76, at 201.

<sup>329</sup> USGS, *supra* n. 86: Titanium.

<sup>330</sup> World Mining Data 2012, *supra* n. 66.

resources are estimated more than 2 billions tons. About 90 per cent of titanium world's consumption is supplied by limonite<sup>331</sup>. The major primal ores deposits (limonite) are located in Norway, Russia, Finland, Canada and the United States while the secondary ore deposits (limonite- and rutile sands) are situated in South Africa, Brazil, Malaysia, Egypt, Australia and India<sup>332</sup>.

Both the European Union and the United States heavily rely on titanium imports. There is no titanium production within the European Union<sup>333</sup>, and the main sources of imports are Norway (25,5 per cent), Canada (21,8 per cent), Australia (21,6 per cent); other minor sources are South Africa (9,5 per cent), Vietnam (4,8 per cent) and Ukraine (1,4 per cent)<sup>334</sup>. The United States counts on imports of titanium dioxide and titanium mineral concentrates for t for almost 70 per cent. The main sources of imports of the former are Canada (41 per cent), China (13 per cent), Germany (6 per cent) and Finland (6 per cent); titanium mineral concentrates are predominantly imported from South Africa (44 per cent), Australia (30 per cent), Canada (14 per cent), Mozambique (6 per cent)<sup>335</sup>.

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<sup>331</sup> USGS, *supra* n. 329.

<sup>332</sup> Annex V, *supra* n. 76, at 198.

<sup>333</sup> Although numerous ilmenite deposits have been discovered in Finland and Sweden, there are not exploited at the moment, due to economical and environmental issues. *Id.*, at 200.

<sup>334</sup> *Id.*

<sup>335</sup> USGS, *supra* n. 329.

### s. Tungsten<sup>336</sup>

Tungsten is an iron and ferro-alloy metal that occurs in nature only in the form of chemical compounds; the two main tungsten bearing minerals are wolframite and scheelite<sup>337</sup>.

Tungsten's many unique properties make it indispensable for a wide range of commercial, industrial, and military applications. The leading use is as tungsten carbide in cemented carbides (60 per cent of total consumption), which are wear-resistant materials used by the construction, metalworking, mining, and oil and gas drilling industries. Pure or doped tungsten metal contacts, electrodes, and wires are used in electrical, electronic, heating, lighting, and welding applications (17 per cent). Tungsten is also used to make alloys and composites to substitute for lead in ammunition and other products; heavy-metal alloys for armaments, heat sinks, radiation shielding, and weights and counterweights (13 per cent); superalloys for turbine engine parts; tool steels; and wear-resistant alloy parts and coatings (6 per cent). Tungsten chemicals are used to make catalysts, corrosion-resistant coatings, inorganic dyes and pigments, fire-resistant compounds, high temperature lubricants,

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<sup>336</sup> The HS 2007 tariff lines for tungsten are: Ore (2611.00.3000); Concentrate (2611.00.6000); Tungsten oxide (2825.90.3000); Ammonium tungstate (2841.80.0010); Tungsten carbide (2849.90.3000); Ferrotungsten (7202.80.0000); Tungsten powders (8101.10.0000).

<sup>337</sup> Annex V, *supra* n. 76, at 204.

phosphors, and semiconductors<sup>338</sup>.

Recycling is an important factor in world's tungsten supply and it averagely amounts to 35-40 per cent. The importance of recycling is due to the fact that tungsten scrap has a very high tungsten content and that the tungsten processing industry is able to treat almost every kind of tungsten-bearing scrap and waste<sup>339</sup>. Potential substitutes exists and are mainly molybdenum-containing compounds, but there are deemed to result in higher costs, loss of product performance or more toxic and less environmentally friendly alternatives<sup>340</sup>.

The world mine production of tungsten is dominated by China, which in 2010 accounted alone for 85, 3 per cent of world production, followed by Russia (3 per cent), Bolivia (1,93 per cent), Vietnam (1,46 per cent) and Austria (1,24). Other minor producers are Rwanda, Portugal, Peru, Thailand, Canada, Democratic Republic of Congo<sup>341</sup>. China ranks first in the world in term of tungsten resources and reserves (over 60 per cent) and has some of the larger deposits. Other countries with relatively big resources are Canada, Kazakhstan, Russia and the United States<sup>342</sup>.

The European Union has historically had a top ranking tungsten industry but it is overall dependent on imports of primary tungsten

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<sup>338</sup> *Id.*, at 206.

<sup>339</sup> *Id.*, at 207.

<sup>340</sup> *Id.*, at 208.

<sup>341</sup> World Mining Data 2012, *supra* n. 66.

<sup>342</sup> USGS, *supra* n. 86: Tungsten.

raw materials. The European Union imports its tungsten supply predominantly from Russia (75,6 per cent), and only marginally from China (0,4 per cent), which has progressively become the main competitor for the European industry in the international market<sup>343</sup>. In a similar fashion, the United States, which is globally not a net-importer of tungsten, relies for 36 per cent on tungsten imports, mainly ores and concentrates containing tungsten, intermediate and primary products, wrought and unwrought tungsten, as well as waste and scrap. Its main sources of imports are China (44 per cent), Bolivia (8 per cent), Canada (8 per cent) and Germany (7 per cent)<sup>344</sup>.

#### t. Vanadium<sup>345</sup>

Vanadium is an iron and ferro-alloy metal. The major vanadium commodities are aluminium-vanadium master alloys; ferrovanadium; vanadium-bearing ash, residues, and slag; vanadium chemicals; and V<sub>2</sub>O<sub>5</sub> and other oxides and hydroxides

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<sup>343</sup> Annex V, *supra* n. 76, at 209.

<sup>344</sup> USGS, *supra* n. 342.

<sup>345</sup> The 2007 HS tariff lines for vanadium products are: Vanadium pentoxide anhydride (2825.30.0010); Vanadium oxides and hydroxides, other (2825.30.0050); Vanadates (2841.90.1000); Ferrovanadium (7202.92.0000); Aluminum-vanadium master alloys (7601.20.9030).

of vanadium<sup>346</sup>.

The main share of vanadium is consumed in the form of ferrovanadium, which is used as a means of introducing vanadium into steel, in which it provides additional strength and toughness. These properties are especially important in high-strength low-alloy (HSLA) steels, which account for around 36 per cent of overall world consumption of vanadium, and whose main application is for tools and construction purposes. Vanadium steel (i.e. vanadium alloyed with iron to make carbon steel) is used to make armour plating for military vehicles and other defence vehicles, to make car engine part such as piston rods and crank shafts, as well as the steel “skeleton” or frames of high-rise buildings and oil drilling platforms. In general, metallurgical applications account for 93% of reported world consumption<sup>347</sup>. Non-metallurgical applications include catalysts, ceramics, electronics, and vanadium chemicals (5 per cent). Recently, new researches have discovered that a mixture of vanadium and gallium can find application in superconductive magnets<sup>348</sup>. At the moment, most steels alloys can substitute vanadium as an alloying agent except for titanium alloys used in aerospace industry<sup>349</sup>. The

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<sup>346</sup> USGS, Mineral Yearbook 2010: Vanadium, available at <http://minerals.usgs.gov/minerals/pubs/commodity/titanium/myb1-2010-vanad.pdf>.

<sup>347</sup> *Id.*

<sup>348</sup> Annex V, *supra* n. 76, at 212.

<sup>349</sup> *Id.*, at 346.



recycling rate of vanadium is only a few per cents<sup>350</sup>.

The leading vanadium-producing countries are South Africa and China, accounting respectively for 36,75 per cent and 35,77 per cent of world production, followed by Russia (24,39 per cent). The top-three producers account then for 96,91 per cent of worldwide production of vanadium from mined ore. A minor quantity of vanadium is produced by Kazakhstan and the United States (respectively, 1,63 per cent and 1,46 per cent) are recovered from petroleum residues<sup>351</sup>. World vanadium reserves, exceeding 63 million metric tons (Mt), are sufficient to meet vanadium needs into the next century at the present rate of consumption. China and Russia are the leading countries in terms of reserves (cumulatively accounting for more than two thirds of world reserves), followed by South Africa (around 25 per cent of total reserves)<sup>352</sup>.

The European Union relies entirely on vanadium imports since there are no mining activities within the territory. The United States relies on vanadium imports for 80 per cent of their supply base. The main source of imports for the European Union is South Korea (over 90 per cent), followed by Japan and Venezuela<sup>353</sup>. The main sources of ferrovanadium are Republic of Korea (45 per cent), Canada (26 per cent), Austria (15 per cent), Czech Republic (12 per cent); the major importing countries of vanadium pentoxide are

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<sup>350</sup> *Id.*

<sup>351</sup> USGS, *supra* n. 346.

<sup>352</sup> *Id.*

<sup>353</sup> Annex V, *supra* n. 76, at 211.

Russia (46 per cent), South Africa (33 per cent), and China (20 per cent)<sup>354</sup>. Secondary vanadium production from various industrial waste materials, such as vanadium-bearing fly ash, petroleum residues, pig iron slag, and spent catalysts, are the leading source of U.S. vanadium production<sup>355</sup>.

### III. Preliminary observations

The analysis conducted for each targeted element permits *prima facie* to identify some interesting patterns which help to better understand and further qualify the nature of the criticality associated to access to strategic industrial minerals and metals.

A first interesting element is the very factual observation that, notwithstanding the prospective trend of growing world demand estimated for almost all the assessed raw materials (with the relevant exception of antimony), the physical availability of the vast majority of the analysed elements is not in danger with respect to current and projected levels of production and estimated level of reserves, although in most cases an upward pressure on the level of prices is envisaged<sup>356</sup>. This seems to be generally true also for the

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<sup>354</sup> USGS, *supra* n. 86: Vanadium.

<sup>355</sup> USGS, *supra* n. 346.

<sup>356</sup> This is all the more so if we consider that published reserve figures do not reflect the total amount of mineral potentially available for mining companies normally only invest what they require for their short-term needs to prove

minority nucleus of strategic raw materials (gallium, germanium, indium, platinum group metals, rare earth, and tantalum) for which the expansion of world demand due to the development of innovative applications linked to emerging technologies and environmental friendly techniques alone is projected to exceed, sometimes by far (for instance, in the case of gallium and indium) current levels of production in the medium-term<sup>357</sup>. However, with respect to some of them (e.g. gallium and germanium) the adequateness of world reserves to supply world requirements cannot be directly tested, being them coupled elements whose mining is strongly related to the demand of major metals (e.g. bauxite, and zinc reserves). Although in these cases the current level of world reserves is not available, the expansion of world demand and parallel rise in the world price is likely to endanger renewed investment interest and to render economical the extraction of by-products which can generate additional revenues within the prospected timeframe. Furthermore, the recycling rate of these

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reserves and thus justify commercial investment decisions over a limited timeframe (usually over 20 years). The reserve is in fact defined as “the part of the resource which has been fully geologically evaluated and is commercially and legally mineable”. See *supra*, n. 87. Indeed, over the last decades the reserves have been constantly replenished from undiscovered and identified resources and the calculated life time of reserves and resources has continually been extended further in the future thanks to renovated investment interest and technological progress in exploring, mining and processing raw materials. Report of the Ad-Hoc Working Group, *supra* n. 57, at 16.

<sup>357</sup> *Id.*, at 42.

materials is quite high compared to other raw materials, and most of them can be substituted in their main applications<sup>358</sup>.

Although world reserves are generally adequate to meet world demand in the medium-term, availability of reserves may be scarce at regional level. In other words, the physical availability *ab absoluto* is not at risk at worldwide level, but the fact that the production is highly geographically concentrated can challenge the access to primary supplies for regions of the world that are not well-endowed with strategic raw materials indispensable for feeding their key industry compounds. Indeed, the level of world production concentration is quite impressive in most cases: in only three cases out of the twenty considered (i.e. copper, nickel, and silver), the top-three world mine producers accounted for less than half of the total production, and only in the case of nickel the majoritarian share did neither lie within the top-five producers (which, however, were responsible for 49,2 per cent). In all the remaining cases, the top-three producers accounted for more than 70 per cent of total mine production, with the exception of manganese and titanium, which however reached and exceeded this proportion when considering the top-five producers. In seven cases (antimony, germanium, lithium, platinum group metals, rare earths, tungsten, and vanadium), the top-three producers account for more

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<sup>358</sup> It should be noted, however, that some of the substitutes discovered for the raw materials at issue are indeed other strategic raw materials. This is the case for instance for gallium and indium, for platinum and palladium. See *supra*, paragraph II, section C.

than 90 per cent of total production. In a case (germanium), production is so heavily concentrated that there are only four producers worldwide undertaking mining activities. Moreover, frequent are the cases where the leading producer enjoys either a dominant position with respect to the distribution of the residual production worldwide (South Africa for chromium, 43 per cent of total production; Democratic Republic of Congo for cobalt, 65 per cent; China for gallium, more than 50 per cent; China for germanium, 54,2 per cent; China for indium, 56 per cent; Chile for lithium, 47,8 per cent, China for molybdenum, 35,5 per cent; South Africa for platinum, 77,6 per cent and together with Russia for palladium, accounting respectively for 44,2 and 41,8 per cent; Chile for rhenium, 50 per cent; China for silicon, 67 per cent), and in rare but relevant cases even a quasi-monopolistic power (antimony, over 90 per cent, rare earth, almost 98 per cent, and tungsten, 85,3 per cent). The high-tech minerals and metals prospectively exposed to a higher supply risk, at least in the short-term, due to the expansion of emerging technologies demand are all interested by heavily concentrated geographical distribution, with the exception of tantalum for which the leading producer, Brazil, only accounts for 26,4 per cent<sup>359</sup>.

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<sup>359</sup> However, it should be noted that, as already explained, tantalum occurs coupled with columbium (niobium), and when taking into account the coupled mining productions Brazil holds an almost monopolistic position accounting for more than 90 per cent of global mine production. See *supra*, paragraph II, section C, sub-section q).

Another significant feature is that the current distribution in production is predominantly axed towards a bulk of major recurring producers, mainly located in Asia (China, India, Russia, Kazakhstan), Latin America (Brazil, Chile, Mexico, Argentina, Peru, Bolivia) and Africa (South Africa, Democratic Republic of the Congo), mostly belonging to the category of developing countries or, more precisely, newly industrialized or emerging economies<sup>360</sup>. Among them, in particular, China appears to hold a significantly dominant position in the majority of the strategic raw materials examined, among which figure the nucleus of high-tech elements potentially at supply risk (with the exception of platinum group metals and tantalum, mainly located, respectively, in Africa and Latin America). Moreover, it is always China to enjoy the *de facto* monopolistic power within the international market for antimony, rare earths and tungsten. It is also worth-noting that in several cases where China is the major and dominant producer, the distribution of reserves is much more widely dispersed (for instance, in the case of antimony, rare earths and tungsten)<sup>361</sup>, suggesting that China is currently exploiting at the highest possible

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<sup>360</sup> For the implications of the current configuration of worldwide production with respect to the idea of development promoted within the leading word producers through access and exploitation of strategic raw materials and, accordingly, the recently emerging trade patterns underlying this basic idea see *infra*, Chapter Two, paragraph V.

<sup>361</sup> It should be recalled that for some of the Chinese dominant productions data on availability of reserves are not provided, being coupled raw materials (e.g. gallium and germanium). See *supra*, paragraph II, section C, sub-sections f) and g).

rate its deposits in order to feed the massive primary needs of its growing industry. In the same perspective, it is also worth-noting that notwithstanding “unfavourable” distribution of mining production at the worldwide level, China appears to be a top-producer of the primary and semi-processed materials containing most strategic raw materials (e.g. chromium, cobalt, copper, nickel and, generally, most of the ferro-alloy metals<sup>362</sup>), suggesting that China, on the one hand, has been progressively recurring to international markets to import primary supplies whose consumption exceeds its domestic supply, thereby putting pressure on world demand and supply<sup>363</sup> and, on the other hand, it is rapidly becoming the main competitor for traditionally industrialized actors such as the European Union and the United States<sup>364</sup>. In this respect, moreover, the European Union has denounced in several

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<sup>362</sup> Indeed, China was in 2010 the leading producer of austenitic stainless steel, accounting for about 38% of world output, and producing more austenitic stainless steel than the United States and all of the countries in the European Union combined. Accordingly, in 2010 world production of stainless steel reached an all-time high of 31.1 Mt. International Stainless Steel Forum, 2012, Stainless and heat resisting steel— Crude steel production (ingot/slab equivalent), 2001 through 2010 [by region]: Brussels, Belgium, International Stainless Steel Forum, available at <http://www.worldstainless.org/Statistics/Crude/2010.htm>.

<sup>363</sup> For a thorough analysis of the magnitude of the Chinese industrial growth and its implications both in terms of pressure on world supply and demand, see Farooki, *supra* 38.

<sup>364</sup> In this perspective, the EU and the United States compete with Chinese counterparts at two levels: first, they compete internationally for access to feed supplies, with respect to which a level playing field is a fundamental prerequisite; second, they are increasingly confronted with Chinese competition on the export market for semi-manufactured and final goods.

cases the predatory pricing policy adopted by China to increase its export share within international markets, which is considered to be destructive of the normal price structure and harmful for the European Union competitiveness at the international level<sup>365</sup>.

In this regard, it has to be noted that both the United States and, even more, the European Union appear very vulnerable as to their net import dependence for most of the strategic raw materials examined and, in this sense, remain the biggest markets for developing country exporters of natural resources<sup>366</sup>.

The European Union, in particular, completely relies on imports for the sourcing of the primary supplies of almost half of the raw materials examined (antimony, cobalt, germanium, indium, molybdenum, platinum group metals, rare earths, rhenium, tantalum, titanium, and vanadium), including all the elements exposed to a high supply risk in consideration of the emerging technologies demand<sup>367</sup>; in most cases, concentration is particularly high and most often involves a Chinese dominant position. In all the other cases, however, the EU remains a net-importer and the internal supply of primary raw materials covers at the very

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<sup>365</sup> See, for instance, the discussion on the specific issues encountered by the EU cobalt industry, the molybdenum industry, and the tungsten industry. Annex V, *supra* n. 76, at 52-53, 130-131, and 209-210.

<sup>366</sup> World Trade Report 2010, *supra* n. 32, at 115.

<sup>367</sup> Gallium is the only exception to this trend of integral dependence, although the only European member producing primary gallium is Hungary, which accounts for only 5,7 per cent of total production. See *supra*, paragraph II, section C, sub-section g).



maximum up to 40 per cent of internal needs (for instance, in the case of chromium, copper, and silver), even in sectors where traditionally the EU has had a top ranking industry (e.g. cobalt, tantalum, tungsten). Furthermore, no significant change in the distribution of production is envisageable for the time being, for the EU Members states are very poorly endowed with strategic raw materials.

The United States and other developed countries such as Australia and Canada, on the contrary, appear better endowed with strategic raw materials with respect to the EU. The United States, in particular, are entirely dependent on imports of primary supplies in a limited number of cases (indium, manganese, rare earths, and tantalum) which, with the exception of the monopolistic case of rare earths, coincide with some of the less concentrated distribution cases; and, they rely on imports for more than 70 per cent of their primary supplies needs for one third of the targeted raw materials (antimony, cobalt, gallium, germanium, rhenium, platinum, and vanadium). Moreover, North America and Australia are often more abundant in strategic raw materials than the current geographical concentration of production may induce to think. For instance, this is the case of molybdenum and rare earths for the United States, tantalum for Australia, cobalt for Canada and Australia, nickel and silver for Australia. Only in few cases, this state of things reflects typical economic considerations related to the cost-effectiveness of

increasing mining capacity within the framework of the price trends of the minerals and metals at issue (for instance, tantalum for the United States). Most commonly, indeed, environmental concerns act as an additional deterrent for companies from investing in extending mining capacity, boosting national companies to increasingly rely on imports (e.g. titanium for the European Union<sup>368</sup>, rare earths for the United States<sup>369</sup>).

In sum, although each of the strategic raw materials analysed in the present study is by definition exhaustible and subject to varying points of depletion according to current level of reserves and estimated trends of world demand, growing concerns over access to strategic raw materials have been arising not as much over physical availability, but rather with regards to the high geographic concentration of world production that, in combination with the important changes occurring in the geopolitical and economic framework, is producing an upward pressures on world prices and affecting traditional equilibrium of world supply and demand, historically axed towards industrialized actors such as the United States and the European Union depending on imports of raw materials supplies. Within this framework, unrestricted trade is vital to secure sustainable access to strategically important minerals and metals.

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<sup>368</sup> Annex V, *supra* n. 76, at 200.

<sup>369</sup> Gu, B., *Mineral Export Restraints and Sustainable Development – Are Rare Earths Testing the WTO’s Loopholes?*, *Journal of International Economic Law*, 14(4), 2011: 765-805, at 774.

## CHAPTER TWO

### **The proliferation of export restrictions: trends, economic and political reasons**

#### **I. Introduction: challenges to the identification and framing of restrictive measures on the exportation of critical raw materials**

The first challenge in addressing the phenomenon of export restrictions within the framework of the multilateral trading system is that the General Agreement on Tariffs and Trade<sup>370</sup> itself does not contain any definition of export restrictions, despite the fact that at least one GATT provision, Article XI, explicitly deals with

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<sup>370</sup> General Agreement on Tariffs and Trade 1994 (April 15, 1994), Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, 1867 UNTS 187, 33 ILM 1153 [hereinafter GATT 1994].

export restrictive measures and forbids “prohibitions or restrictions...on...exportation” alongside with import restrictions<sup>371</sup>. A clear definition of “export restraint” for the purpose of WTO disciplines was indeed given by the Panel in the *US – Export Restraints* case<sup>372</sup>: “a border measure that takes the form of a government law or regulation which expressly limits the quantity of exports or places explicit conditions on the circumstances under which exports are permitted, or takes the form of a government-imposed fee or tax on exports of the products calculated to limit the quantity of export”<sup>373</sup>.

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<sup>371</sup> Article XI:1, entitled "General Elimination of Quantitative Restrictions", states: "No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licences or other measures, shall be instituted or maintained by any contracting party on the importation of any product of the territory of any other [Member] or on the exportation or sale for export of any product destined for the territory of any other [Member]." For a thorough analysis of the Article XI:1 GATT, see *infra*, paragraph II. The absence of clarity in identifying the type of measures susceptible to fall within the scope of the GATT is a reflection of the “asymmetry” between the import and the export side in international trade disciplines on the use of export measures which, as we will see below, is rooted on the historical premises under which the GATT was given birth. See *infra*, Chapter Three, paragraph I.

<sup>372</sup> As we shall see more in detail *infra* (Chapter Three), WTO case law has often play a fundamental role of guidance with respect to the definition of the legal boundaries incumbent on WTO Members on the use of export restrictions through the interpretation of the reach of the relevant GATT provisions. For a thorough analysis of the subject, see Karapinar, B., *Defining the Legal Boundaries of Export Restrictions: A Case Law Analysis*, 15 (2) *Journal of International Economic Law* (2011), at 443-479. The GATT and the WTO case law addressing export restrictions will be analysed in detail *infra*, Chapter Three.

<sup>373</sup> Panel Report, *US – Measures Treating Export Restrictions as Subsidies*, WT/DS/194/R, adopted 29 June 2001, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds194\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds194_e.htm) (visited 7 August 2012), paras. 8.16 and 8.76.

This definition is quite comprehensive in scope<sup>374</sup>, as it qualifies as an export “restriction” for the purpose of GATT disciplines both price measures (i.e. measures that operate by changing relative price) and quantity measures (i.e. measures that work by directly limiting the quantity of some activity) imposed at the border<sup>375</sup>; moreover, the broad interpretation of the category of export restrictions also encompasses what are normally referred to as administrative measures, which work by conditioning the export of a certain products on the respect of certain conditions<sup>376</sup>.

Within such various panorama, however, the distinctive feature of all types of export restrictions, which is the only one which qualifies them under the scope of WTO disciplines, is that they have restrictive trade effects for they either explicitly (e.g. in the

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<sup>374</sup> The extensive interpretation of “export restrictions” adopted by the Panel in the US – *Export Restraint* case is confirmed by the interpretation given by some panels of the meaning of “restrictions” in Article XI:1. See *infra*, Chapter Three, paragraph III, section A. In particular, the Panel in *India – Quantitative Restrictions* concluded that the scope of the term “restriction” is “broad” and it refers to “a limitation on action, a limiting condition or regulation”. See Panel Report, *India – Quantitative Restrictions on Imports of Agricultural, Textile and Industrial Products*, WT/DS90/R, adopted 22 September 1999, upheld by Appellate Body Report WT/DS90/AB/R, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds90\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds90_e.htm).

<sup>375</sup> Export restrictions are “at the border-measures” for they are imposed on national goods at the custom, at moment of the exportation. They are different from behind-the-border measures, which are applied internally at the domestic level both on national and on foreign (imported) goods (thus raising national treatment issues under Article III of the GATT 1994). See WTO World Trade Report 2012, *Trade and Public Policies: A Closer Look at Non-Tariff Measures in the 21<sup>st</sup> Century*, available at [http://www.wto.org/english/res\\_e/booksp\\_e/anrep\\_e/world\\_trade\\_report12\\_e.pdf](http://www.wto.org/english/res_e/booksp_e/anrep_e/world_trade_report12_e.pdf), at 51.

<sup>376</sup> *Id.*

case of an export quotas) or implicitly (e.g. in the case of export taxes and other administrative measures) limit the volume of the exports of the targeted products<sup>377</sup>.

Having this broad definition in mind, the following sections aim at identifying the different types of export restrictive measures relevant for the purposes of GATT regulation and analysing the nature and the characteristics of the most recurring categories among them. For each identified export restrictive measures, the magnitude of the phenomenon is examined both at a general level and with a particular focus on the critical raw materials targeted in the present study, with reference to the striking features emerged above with regards to the strategic industrial importance associated to their exploitation, the criticality of access to supplies for key actors such as the United States and the EU, together with the information regarding their physical scarcity and the distribution of world production. The objective is to identify any significant trend in trade of strategic raw materials, and to pose the basis for the analysis of their potential economic implications and rationale.

Such analysis required a reconstruction of the practice of WTO Members with regards to the most commonly applied export restrictions as well as a focused analysis on the functioning of the specific measures adopted to regulate trade in strategic raw

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<sup>377</sup> Staiger, R.W., *Non-Tariff Measures and the WTO*, Geneva, Working Paper ERSD, 2012, available at [http://www.wto.org/english/res\\_e/reser\\_e/ersd201201\\_e.pdf](http://www.wto.org/english/res_e/reser_e/ersd201201_e.pdf), at 2.

materials. Such efforts encountered significant difficulties considering that most of the measures affecting exports in the industrial raw materials sectors are not notified under current multilateral trade rules<sup>378</sup> and that the level of information on exports restrictions varies greatly from State to State and on average is very low. Accordingly, the lack of consistent data represented a major challenge.

Within such framework, it is very appreciable that the WTO itself and the OECD have started to address the transparency issue. As from 2009, the WTO Secretariat established a joint report with the secretariats of the OECD and UNCTAD to monitor trade and investment measures in the context of the global financial and economic crisis. The report is issued twice a year, pursuant to a request by the G20, and significantly includes information on new export restrictive measures adopted by Members in the unfolding of the international economic and financial crisis as well as the removing of restrictive measures occurred<sup>379</sup>. While the joint

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<sup>378</sup> See *infra*, Chapter Three, paragraph II, section A.

<sup>379</sup> The first report was distributed in January 2009 and the most recent one in May 2012. All of them are available at [http://www.wto.org/english/news\\_e/archive\\_e/trdev\\_arc\\_e.htm](http://www.wto.org/english/news_e/archive_e/trdev_arc_e.htm) (last access 20 October 2012). This surveillance mechanism continues to prove its importance against the background of commitments undertaken by the G-20 economies in November 2008. Indeed, in the Statement released at the conclusion of the Washington G-20 Summit, the countries agreed that "within the next 12 months, [they] will refrain from raising new barriers to investment or to trade in goods and services, imposing new export restrictions, or implementing World Trade Organisation inconsistent measures to stimulate exports"; a similar commitment was reiterated in April 2009 in London, where the leaders "reaffirm[ed] the

reports cover G20 countries only, the Trade Policy Review Body (TPRB) has progressively intensified the coverage of export restrictions within the annual reports issued by the Director General, which give an overview of developments in the international trading environment<sup>380</sup>, as well as through the launching of periodical trade policy monitoring reports by the Director General to the TPRB<sup>381</sup>. Moreover, the Trade Policy Review Body undertakes periodical reviews of each country member of the WTO, the frequency of which varies according to each country's share of world trade, in order to monitor closely the trade policies implemented at national levels: each review follows a standard template and, among the parameters surveyed, an apposite section of the Part III devoted to "Policies by Sector" is specifically dedicated to "Measures affecting exports", and includes a survey of the various export restrictions eventually in place in the country at issue. However, such reports fail to provide systematic and detailed information on the use of export restrictions in particular: information on this specific topic is, indeed, frequently

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commitment made in Washington: to refrain from raising new barriers to investment or to trade in goods and services, imposing new export restrictions, or implementing World Trade Organisation inconsistent measures to stimulate exports. In addition [they committed to] rectify promptly any such measures [and] extend this pledge to 2010".

<sup>380</sup> WTO Docs. WT/TPR/OV/1 and subsequent (various years).

<sup>381</sup> Starting in 2009, the said reports are issued twice a year to closely monitor the financial and economic crisis and trade-related developments. The first report was issued on 20 April 2009, and the most recent on June 28, 2012. There are available at [http://www.wto.org/english/news\\_e/archive\\_e/trdev\\_arc\\_e.htm](http://www.wto.org/english/news_e/archive_e/trdev_arc_e.htm) (last access, 20 October 2012).



inconsistent, in most cases reflecting the varying degree of detail provided by governments on the issue<sup>382</sup>.

In the same perspective, the OECD has in the last few years intensified its attention towards the phenomenon of export restrictions through a number of studies on export duties<sup>383</sup> and export restrictions in general<sup>384</sup>, aimed at shedding light on their economic impact and their pattern of use<sup>385</sup>. All these studies have effectively highlighted several criticalities in terms of transparency as well as the urgent need to frame and follow the phenomenon in a more systematic way. In this direction, the efforts of the OECD Trade Committee have recently been canalized towards the creation of a factual inventory of export restrictions applied on industrial raw materials<sup>386</sup> in order to improve the transparency of government's practices in this area and help understand the economic effects of such restrictions. The creation of such database has been made possible through the consistent passage of information from the European Union that, within the framework

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<sup>382</sup> This is an issue that has been frequently recognized by the Director General Pascal Lamy in its reports to the TPRB. See WTO Docs., WT/TPR/OV/W/1 and subsequents (various years, as from 2009). In the attempt to amend such gap, the transparency issue regarding export restrictions has come to the forefront of the debate within the NAMA Negotiating Group of DDA. See *infra*, Chapter Four, paragraph II.

<sup>383</sup> OECD Doc. TD/TC/WP(2002)54/FINAL, *supra* n. 22.

<sup>384</sup> OECD Doc. TD/TC/WP(2003)7/FINAL, *supra* n. 22.

<sup>385</sup> OECD, *The Economic Impact of Export Restrictions on Raw Materials*, OECD Publishing, 2010.

<sup>386</sup> The data of the inventory cover 75 non-energy minerals and metals in their unprocessed as well as semi-processed form, and include waste and scrap. Fliess, *supra* n. 25, Annex 1.

of the Raw Materials Initiative<sup>387</sup>, had compiled an export restrictions database as from 2009, covering 30 countries<sup>388</sup>. The OECD Inventory goes in the sense of filling “a void at the international level, where systematic and comparable data are unavailable as far as export regulation is concerned”<sup>389</sup>. However, work is still under progress in that it has come to include data for 53 countries so far<sup>390</sup>, covering only data for 2009 and 2010. The EU Commission, for its part, has also intensified its monitoring activities towards potentially restrictive measures since the outbreak of the crisis, and has been periodically releasing a report compiled by the DG Trade on the matter since 2008<sup>391</sup>.

In the light of the above, the following survey is the result of a reconstruction of all pieces of latest information available from the TPR reviews, the WTO monitoring reports, the EU Commission

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<sup>387</sup> See *supra*, Introduction, n. 26 and corresponding text.

<sup>388</sup> European Commission, Directorate-General for Trade, EU Trade Policy for Raw Materials: Second Activity Report, 30 May 2012, available at [http://trade.ec.europa.eu/doclib/docs/2012/may/tradoc\\_149515.pdf](http://trade.ec.europa.eu/doclib/docs/2012/may/tradoc_149515.pdf), at 14.

<sup>389</sup> Fliess, *supra* n. 25, at 19.

<sup>390</sup> Nevertheless, its importance is invaluable for the purposes of our investigation for it covers a high share of world production and trade. Indeed, the five leading countries in term of global production in 2009 have already been included in the study (*id.*, Annex 4) and, as analysed *supra*, the bulk of production for most of the strategic raw materials considered in the present study is highly concentrated. See *supra*, Chapter One, paragraph III.

<sup>391</sup> The DG Trade has recently released the Ninth Report on Potentially Restrictive Measures identified in the context of the financial and economic crisis in May 2012, covering the measures adopted from September 2011 to 1 May 2012, available at [http://trade.ec.europa.eu/doclib/docs/2012/june/tradoc\\_149526.pdf](http://trade.ec.europa.eu/doclib/docs/2012/june/tradoc_149526.pdf) (last access, 20 October 2012).

reports and the OECD inventory data, as well as the online search available on government official websites.

## **II. The proliferation of export duties or taxes**

Among the different types of export restraints adopted by WTO Members, export duties are the most commonly used. In particular, the number of countries applying export duties has progressively increased in the last decade and in 2012 export duties were applied by half of the WTO Members<sup>392</sup>.

### **A. Definition issues**

Despite being the most frequently used and reported export-restrictive measure, no definition of “export duty” for the purposes of WTO regulation is contained in the GATT, nor the latter consistently makes reference to export duties; rather, it utilizes different expressions without including any specific guidance on whether they are used with the same meaning (see Table 1 below). Article XI of GATT 1994, the key provision relevant to export restrictions, refers *inter alia* to:

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<sup>392</sup> See *infra*, section B.

“duties, taxes or other charges...instituted or maintained by any contracting parties on the...exportation...of any product destined for the territory of any other contracting party”<sup>393</sup>.

**Table 1: Terminology used for export duties in the GATT 1994**

Export duties	Article VIII of GATT (exclusion of application)
Customs duties on exportation	Article I of GATT
Duties on exportation	Article XI of GATT (exclusion of application), Article VII of GATT (customs valuation)
Export taxes	Indicative List annexed to Decision on Notification Procedures, TPR reports, <i>GATT Analytical Index</i>
Taxes on exportation	Article XI of GATT (exclusion of application)
-export charges	Article VIII (all charges) of GATT, TPR reports
-customs charges on exportation	Article I of GATT
-charges on exportation	Article XI of GATT (exclusion of application)
-export fees	Article VIII of GATT (all fees)

\*Source: OECD (2002), *supra* n. 22, at 6.

It seems to be generally recognized that the expressions “export duties” and “export tariffs” refer to the same type of measure,

<sup>393</sup> For an analysis of the interpretation of the legal boundaries inferable from the text of Article XI:1, see *infra*, Chapter Three, paragraph III, section A.

namely in the sense of “(customs) duties on export”<sup>394</sup>. The *GATT Analytical Index* uses in fact both terms indifferently<sup>395</sup>, and the *Black Law Dictionary* defines “customs duties” as

“taxes on the importation and exportation of commodities, merchandise and other goods”, explicitly including in the definition “export taxes”<sup>396</sup>.

A different meaning and scope seems however to be attached to other export-related “charges”, namely referred to with expressions such as “export levies” and “export charges”. These expressions are not synonymous with export duties or taxes and refer to the wide range of fees and formalities normally rendered in connection with exportation (as well as importation) corresponding to the service rendered. Indeed, such measures are specifically subject to the disciplines of Article VIII GATT, which explicitly states that “export duties”, in the sense mentioned above, are excluded from the scope of application<sup>397</sup>.

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<sup>394</sup> OECD (2002), *supra* n. 22, at 5. The study excludes that tax credits on exports would fall into the definition for they represent export subsidies that fall within the scope of the Agreement on Subsidies and Countervailing Measures. In particular, the OECD interpreted the two expressions to refer to the same substance and meaning in the WTO regime, although it observed that the term “export taxes” is preferred within the context of analysis of the national treatment of internal taxation whereas the expression “export duties” is chiefly used within the context of customs-related matters. *Id.*, at 7.

<sup>395</sup> WTO Analytical Index, GATT Analytical Index, available at [http://www.wto.org/english/res\\_e/booksp\\_e/gatt\\_ai\\_e/gatt\\_ai\\_e.htm](http://www.wto.org/english/res_e/booksp_e/gatt_ai_e/gatt_ai_e.htm).

<sup>396</sup> Black’s Law Dictionary, West Publishing Co.

<sup>397</sup> The relationship between the measures respectively falling within the scope of Article VIII and Article XI is further specified by the Appellate Body in *China – Raw Materials*. See *infra*, Chapter Three, paragraph III.

The fact that an export tax or duty is levied by customs, moreover, explains why these measures are often referred to as “export tariffs”<sup>398</sup>. The symmetry between import and export taxes was first formally articulated by A. P. Lerner<sup>399</sup>; indeed, export taxes are specular to import tariffs in that their primary effect is on the price of traded goods. However, because this price effect impacts on trade volumes, producing a reduction in the volume of exports, export duties are normally discussed under the category of export restrictions and, more generally, of non-tariff measures<sup>400</sup>.

Export duties consist of statutory rates and applied rates; applied rates tend to be lower than statutory rates. They are normally applied on an MFN-basis. In several countries, the administrative bodies are accordingly given the power to raise the applied rates under the ceiling rates without the approval of the legislative branch, thereby creating uncertainty. The applied rates can be specific, specified as a fixed amount to pay per unit of a product (e.g. 10 euros/tonne) or *ad valorem*, in the form of a percentage tax of the value of the product. Sometimes, the two

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<sup>398</sup> Moreover, as we shall see *infra* (paragraph IV), export taxes are specular to import tariffs also from an economic point of view, for their primary effect is on the price of traded goods. However, because this price effect impacts on trade volumes, export duties are normally discussed under the category of export restrictions. OECD (2003), *supra* n. 22, at 5.

<sup>399</sup> Lerner, A.P. , The Symmetry between Import and Export Taxes, *Economica* 3(11), 1936, at 306-313.

<sup>400</sup> For a compelling case for the inclusion of export taxes, together with other export restrictions, among the non-tariff measures and its implications see *infra*, Chapter Three, paragraph I.

components may be combined (i.e. a 15 per cent duty, but not less than 10 euro/tonne). It can also be a progressive tax in the sense that the tax rate increases the higher is the value of the product<sup>401</sup>. Finally, export duties are generally applied on a limited number of products, although there are examples of countries – normally LDCs – which adopt export duties generally covering all products<sup>402</sup>.

## **B. The mounting phenomenon of export taxes**

A first indicator of the increasing relevance of the phenomenon of export taxes at an aggregate level is the number of countries progressively resorting to such measures within the last decade. The analysis of the information provided by the trade policy reviews conducted periodically for each WTO Members is useful for this purpose and shows an unambiguous trend of progressive multiplication of the number of countries applying and/or maintaining export duties. Indeed, the number of member countries

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<sup>401</sup> It is interesting to observe that an export duty of such a form would configure a reverse tariff escalation. For a more detailed description of tariff escalation and the use of export duties as a means to “annul” its effects see *infra*, paragraph V, section A.

<sup>402</sup> See, for instance, Argentina, Bangladesh, Chad, Gambia, and Niger. Jeonghoi, K., *Recent Trends in Export Restrictions on Raw Materials*, in OECD (2010), *supra* n. 385, at 13-59, Annex 1.A1.

imposing export taxes went from 39 in the period 1995-2002<sup>403</sup> to 65 in the period 2003-2009<sup>404</sup>. Considering that the number of WTO Members reviewed in the two different periods was, respectively, 100 and 128, it means that the number of countries recurring to export duties has progressively increased from 39 per cent of WTO Members to almost 51 per cent.

The geographical “distribution” of the countries resorting to export taxes is pretty much consistent, being these measures adopted mostly in developing and least developed countries<sup>405</sup>. In particular, the region registering the highest incidence in the use of export taxes in both periods is Africa, with 17 countries imposing export taxes in 1995-2002 out of 26 countries reviewed (almost two thirds of the African countries reviewed), and 30 out of 35 in 2003-2009 (more than four fifths of the countries reviewed), accounting for 44 per cent and 46 per cent of the total number respectively. The increase in the number of countries resorting to export duties in the two periods was particularly relevant in America, where 18 countries adopted export taxes in 2003-2008 against the 9 countries in 1995-2002 (28 per cent of the total against the 23 per cent in 1995-2002). It is also significant to note that, out of the total number of countries imposing export taxes, 10 were LCDs in the period 1995-2002 and 21 in the period 2003-2009, respectively

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<sup>403</sup> OECD (2003), *supra* n. 22, at 13.

<sup>404</sup> Jeonghoi, K., *supra* n. 402, at 16.

<sup>405</sup> For the breakdown of the data provided by the OECD studies see below, Table 2.



accounting for 26 per cent and 32 per cent of the total. The highest number of countries resorting to such measures remains that of developing countries, 26 in 1995-2002 and 40 in 2003-2009.

This trend is reinforced if we take into account the latest trade policy reviews for the years 2009-2012. Indeed, an analysis of the information available on the TPR reports carried on until October 2012<sup>406</sup> permits to conclude that an ever increasing number of WTO Members recurs to export taxes, bringing the total number of countries where such measures are applied to 75, corresponding to approximately 52 per cent of the total number of the countries reviewed. Again, particularly significant is the increase in the number of African countries resorting to export taxes, which 2003-2012 accounted for almost 50 per cent of the total number of countries imposing export duties. The highest share of countries applying export duties still belongs to the category of developing countries, accounting for 55 per cent of the total.

It is also relevant for our purposes that the number of countries imposing export taxes on minerals and metals has also been steadily increasing, going from 17 in the period 1995-2002<sup>407</sup> to 28

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<sup>406</sup> The analysis was conducted following the same methodology carried on by the OECD in its studies of 2003 and 2010. During the period 2003-2012, some WTO Members were reviewed two or three times, but were counted as one and the latest information was considered. The EU was counted as 27.

<sup>407</sup> OECD (2002), *supra* n. 22, at 13.

in the period 2002-2009<sup>408</sup>, and reached 32 in the period 2002-2012<sup>409</sup>.

**Table 2: Trend and geographical distribution of export taxes from 1995-2002 to 2003-2012<sup>410</sup>**

	WTO Members reviewed by TPRB 1995-2002	WTO Members reviewed by TPRB 2003-2009	WTO Members reviewed by TPRB 2003-2012	WTO Members imposing export duties 1995-2002	WTO Members imposing export duties 2003-2009	WTO Members imposing export duties 2003-2012
Europe/Middle East	29	39	44	2	4	5
America	26	31	31	9	18	18
Asia/Pacific	19	23	26	11	13	17
Africa	26	35	41	17	30	36
Total	100	128	142	39	65	75
LDCs	15	25	31	10	21	27
OECD	30	31	31	3	4	5
Others	55	72	80	26	40	41

The analysis of the data on the cumulative number of WTO member countries resorting to export taxes by itself only does but indicates that, on a general level, recourse to export taxes has spread to an increasingly high number of countries, giving rise to a

<sup>408</sup> OECD (2010), *supra* n. 385, at 16.

<sup>409</sup> The new Members reviewed by the TPRB as from 2010 up to October 2012 resorting to export taxes on minerals and products are Cote d'Ivoire (WT/TPR/266), Democratic Republic of the Congo (WT/TPR/240), Nepal (WT/TPR/257), and Zimbabwe (WT/TPR/252). However, it has to be noted that, for the purposed of OECD classification, the category "minerals and metals" includes both energy and non-energy minerals and metals. Accordingly, our analysis in this section has taking into account also energy minerals.

<sup>410</sup> Source: OECD (2002) and (2010), *supra* nn. 22 and 385, at 13 and 16, and independent calculations for the period 2003-2012.

sort of “horizontal” proliferation of export taxes. However, another fundamental piece of information in order to investigate the magnitude of the phenomenon is to understand how many measures of such type have been taken in the past years. In this regard, a measure of the acceleration occurred since 2008 during the unfolding of the international economic and financial crisis is provided by the WTO trade monitoring reports and the DG Trade Reports: according to the information hereby provided, in fact, the number of new trade restrictions adopted in the form of taxes applied at the exportation as from 2008 have been steadily increasing. Indeed, export taxes were reportedly the most popular measure in each considered time-period<sup>411</sup> and, accordingly, their use has been growing in parallel with the steady proliferation of new export restrictive measures, which went from 20 October 2008 and October 2009<sup>412</sup> (of which only 8 were export taxes<sup>413</sup>) to 25 new export restrictive measures between November 2009 to mid-October 2010<sup>414</sup>, and then reached the peak level of 64 new export restrictions between October 2010 and October 2011, thereby generating growing concerns within the framework of the WTO

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<sup>411</sup> WTO Doc. WT/TPR/OV/W/2-6.

<sup>412</sup> WTO Doc. WT/TPR/OV/W/4, at 13.

<sup>413</sup> WTO Doc. WT/TPR/OV/W/5/Rev. 1, at 20. See also the Fifth Report on Potentially Restrictive Measures of the DG Trade, available at [http://trade.ec.europa.eu/doclib/docs/2009/november/tradoc\\_145270.pdf](http://trade.ec.europa.eu/doclib/docs/2009/november/tradoc_145270.pdf), at 16.

<sup>414</sup> WTO Doc. WT/TPR/OV/W/4, at 13.

system<sup>415</sup>. Only in the period from mid-October 2011 to mid-May 2012 the incidence of newly applied export taxes started to decline, accounting for only four out of the 19 new export restrictions registered for the time-period<sup>416</sup>.

Finally, not only recourse to export taxes has been generally increasing both in terms of the number of countries applying such measures and in terms of the absolute number of new export taxes introduced by WTO Members, especially since the outbreak of the crisis, but the trend is significantly higher if we break the data down in order to verify the incidence of export taxes with respect to industrial raw materials. In this regard, whereas measures such as temporary export bans and quotas seem to be more frequent with regards to food and other agricultural commodities<sup>417</sup>, export taxes were the most common measure applied to the exportation of industrial raw material<sup>418</sup>. This trend is indeed confirmed by the

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<sup>415</sup> See WTO Doc. WT/TPR/OV/W/3, paras. 2, 8 and, in particular, 44; DG Trade, Seventh Report on Potentially Restrictive Measures, available at [trade.ec.europa.eu/doclib/docs/2010/october/tradoc\\_146796.pdf](http://trade.ec.europa.eu/doclib/docs/2010/october/tradoc_146796.pdf), at 19 and 69 s.; See WTO/TPR/OV/W/5/Rev.1, paras. 4-7, and Box 1 at and the Eight Report on Potentially Restrictive Measures, available at [trade.ec.europa.eu/doclib/docs/2011/october/tradoc\\_148288.pdf](http://trade.ec.europa.eu/doclib/docs/2011/october/tradoc_148288.pdf), at 4 and 93 et seq.; See WT/TPR/OV/W/6, at 1. As we will see *infra*, the proliferation of export taxes is a matter of concern not only because of its high incidence but also because export taxes are a type of export restriction whose adoption is indeed consistent with GATT commitments en virtue of Article XI:1 GATT. See Chapter Three, paragraph II, section A.

<sup>416</sup> See WTO Doc. WT/TPR/OV/W/6, Annex 1 and the Ninth Report of the DG Trade, *supra* n. 391, at 118 et seq.

<sup>417</sup> For a general overview see WTO Doc. WT/TPR/OV/W/5/Rev. 1 and WT/TPR/OV/W/6.

<sup>418</sup> *Id.*

OECD, whose inventory on industrial raw materials indicated that “export taxes are by far the leading type of export restrictions”<sup>419</sup>, covering at least 46 materials out of the 75 interested by the study and 19 out the 35 countries examined<sup>420</sup>.

### **C. The “proliferation” of export duties applied to critical raw materials**

Within a general framework of increasing recourse to export taxes, especially since the outbreak of the economic and financial international crisis in 2008, it is now interesting to see whether this trend is confirmed for strategic non-energy minerals and metals and, if so, which are the main features which emerge from an analysis of the export taxes applied to them. Table 3 indicates all the information on the export taxes in place up until 31 October 2012, recollected from an extensive survey of the TPRs, the WTO trade monitoring reports, the reports of the DG Trade of the European Commission, and relevant OECD studies as well as official governmental websites.

Indeed, the incidence of export taxes applied on the category of export restrictions as defined in the present study is very high. The first striking feature is that, out of the twenty minerals and metals

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<sup>419</sup> Fliess, *supra* n. 25, at 13.

<sup>420</sup> *Id.*, at 12-14.

targeted in the present study, all the considered elements but lithium are (or, in a limited number of cases, have been<sup>421</sup>) subject to taxation on the exportation at least in one form and at least in one country. Export taxes are often applied at different levels corresponding to different stages of the mining production and, when so, they often vary depending on whether they are applied on ores and concentrates or on unwrought metals, oxides, powders, alloyed or not alloyed form or on waste and scrap metals<sup>422</sup>. Very often export taxes are applied in combination with other type of export restrictions<sup>423</sup>. In some cases, the country imposing the export tax resorted to it through an *ad-hoc* measure which is intended to be applied temporarily (for instance, the temporary duty applied on the exportation of copper waste by Pakistan) – although not always it is (for instance, in the case of Argentina); in other cases the national governments are used to periodically review a

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<sup>421</sup> There have been cases, especially in the last few years, in which the export taxes applied to certain forms of raw materials were removed. However, in most cases this practice was accompanied by the introduction of another type of export restrictions on the material concerned. This is the case of China, which has lately removed (in 2010) the export taxes applied on some forms of ferro-alloys, but has in the meantime targeted the same materials through quotas on the exportation. See *infra*, Table 3. For an explanation of this trend, see *infra*, Chapter Three, paragraph V.

<sup>422</sup> The OECD inventory, released out of the compilation of the first two years of data sets (2009 and 2010) for 75 industrial raw materials and 53 countries, has put emphasis on the fact that an emerging trend of export restrictions on waste and scrap metals is begin to be observable, and that there is also the tendency of States to introduce export restrictions and, in particular, taxes not only on ores and concentrates but also on primary materials and semi-processed materials. See Fliess, *supra* n. 25, at 19-20.

<sup>423</sup> See *infra*, Section B.

list of commodities subject to export tax and/or the level of export duty applied to them<sup>424</sup>. In the latter case, at least for the materials under review in the present study, an upward trend in the level of the duty applied is observable in the recent years (for instance, for nickel and copper, as well as rare earths). In some other cases, for example in the case of Argentina, the export taxes are by default applied on a general level at all the primary commodities, and then diversified upward, in the case of some strategic raw materials such as copper<sup>425</sup>.

A second striking feature is that, on the one hand, the number of countries imposing the export taxes covering the quasi-totality of strategic raw materials is not very high and, on the other, the bulk of export taxes are applied by the same recurring countries, predominantly China and Russia, but also India, Ukraine, Vietnam, and some African countries such as Democratic Republic of the Congo and Zambia. Apart from Argentina, Latin America countries do not apply export taxes, although some of them (for instance Chile, Brazil, Peru) are leading mine producer of some strategic

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<sup>424</sup> In the case of China, for instance, the government yearly reviews and prepares in January the list of commodities subject to export taxes within the China Tariff Implementation Schedule. Since 2008, the number of HS-8 tariff lines subject to statutory export duties has been increasing, going from the 95 HS-8 tariff lines in 2009 to 99 tariff lines in 2011. Most often, the *interim* rate is lower than the statutory rate, although there were few cases in 2011 where the contrary was true. Moreover, *interim* export taxes are also applied to 237 tariff lines that were not subject to statutory export taxes. See WTO Doc. WT/TPR/S/264/Rev.1, Part 3, paras. 137-141.

<sup>425</sup> See *infra*, n. 437 and corresponding text.

raw materials (respectively, copper, lithium, rhenium for Chile, tantalum for Brazil, and silver for Peru)<sup>426</sup>.

Although not surprising in the light of the highly concentrated distribution of production of strategic raw materials, this second feature permits to further qualify the phenomenon of proliferation of export taxes with respect to the targeted raw materials as a “vertical” phenomenon, as opposed to the horizontal diffusion of export taxes highlighted with reference to the multiplication of the number of countries resorting to such measures on a general level. In other words, with regards to strategic raw materials, recourse to export taxes has involved only a limited number of countries applying a mix of export taxes on an increasingly high number of tariff lines: however, being such countries leading world producers within a pattern of highly concentrated resource-endowment, the combination of such measures results into covering the dominant share of world mining and primary production of critical minerals and metals<sup>427</sup>.

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<sup>426</sup> However, the difference between these countries and other countries recurring to export duties is that the former’s dominance with respect to the primary materials production is not as high as to reflect their importance in mine production. See *supra*, Chapter One, paragraph II, section C and sub-sections.

<sup>427</sup> This is very important for the analysis of the economic implications of export taxes and, in general, for export restrictions. See *infra*, paragraph IV. The amplification of the economic effects resulting from the “vertical” proliferation of export restrictions is all the more considerable if we consider that not only it is the “larger” countries (in an economic sense, see *infra* paragraph IV, section A) that are intensifying the use of export restrictions on critical minerals and metals, but they are also generally lifting the duty rate applied on the exportation of those minerals and metals already subject to export taxes. See *infra*, Table 3.



In this perspective, China's mix of export taxes is particularly relevant in that it imposes export taxes to different forms of all of the strategic raw materials for which it enjoys a dominant and/or a quasi-monopolistic position in mining production (antimony, gallium, germanium, indium, molybdenum, rare earth, silicon, and tungsten, vanadium), not only on ores and concentrates, but also on important primary materials (especially in the case of steel-making raw materials such as molybdenum and silicon). In other cases where China is not a leading mine producer, moreover, China's export taxes on strategic raw materials have nevertheless a great impact for China in most cases represents the leading or one of the leading producers of related primary materials. In such cases, Chinese export taxes on ores and concentrates, when applied, are generally higher, reflecting the scarcity of domestic production compared to the needs of the relative – and growing – downstream sectors, and are often associated to taxes on primary materials, also averagely higher – for which China often enjoy a dominant position within the international market. This general scheme applies in particular for the raw materials that are fundamental for metallurgical industry. For instance, in the case of chromium, for which China has a very marginal share of mine production (amounting to less than 1 per cent of world production), China imposes a 15 per cent tax on the exportation of chromium ores and concentrates (compared to the 10 per cent export duty on antimony

ores and concentrates, for instance); moreover, it also taxes ferrochromium, for which it is a major producer, as well as unwrought chromium and waste, as a reflection of the increasing expansion of the Chinese steel industry<sup>428</sup>. Similar trends are also increasingly evident for copper and cobalt, where Chinese industry is clearly emerging internationally and progressively challenging traditional top industries such as the European industry<sup>429</sup>. In other words, the “skeleton” of Chinese export duties reveals an underlying industrial policy strategy as it becomes clear that, within a context of major industrialization plans<sup>430</sup>, the export restrictive measures on the domestic primary supplies are associated to an emerging leading role in and downstream sectors value-added products (e.g. in the case of the Chinese cobalt, tungsten, and copper industry, as well as for the steel industry<sup>431</sup>).

Russia is another emerging economy that increasingly recurs to export taxes. Again, among the raw materials subject to such measures figure products such as nickel and copper, with respect to which Russia is among the leading producers, as well as other strategic raw materials such as PGMs. Russia also applies several export taxes on waste and scrap metals, which are significantly higher for products which it is not well-endowed with (e.g. titanium).

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<sup>428</sup> See *supra*, Chapter One, paragraph III, n. 362 and corresponding text.

<sup>429</sup> See Ninth Report of the DG Trade, *supra* n. 391, at 9 et seq.

<sup>430</sup> See *infra*, paragraph V, section A.

<sup>431</sup> See *supra*, Chapter One, paragraph III, n. 362 and corresponding text.

Another common element to China and Russia, also shared by other emerging economies applying to strategic raw materials (i.e. Ukraine and Vietnam), is that they accepted to abide by specific obligations on the use of export taxes as part of their accession package of commitments transposed into their Protocol of Accession<sup>432</sup>. It is interesting to note, at this point of our analysis, that, on the one hand, the obligations accepted by these countries often involve the elimination and/or the progressive phasing down (according to an agreed upon timeline) of the export duties applied to strategic raw materials<sup>433</sup> and, on the other hand, the most recent measures adopted by these WTO Members are frequently inconsistent with the commitments undertaken in the Protocol of Accession<sup>434</sup>. Indeed, the 2011 decision taken by the Chinese

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<sup>432</sup> The so-called “WTO-plus” obligations are additional, country-specific obligations not otherwise contemplated in the Multilateral Agreements to which newly WTO acceding Members commit to abide by in the process of negotiation of their terms of accession with the incumbent WTO Members. Ya Qin, J., “WTO-Plus” Obligations and their implications for the World Trade Organization Legal System – An appraisal of the China Accession Protocol, *Journal of World Trade*, 37 (2003): 483-522. The commitments on the use of export duties relevant for the present study are inserted at the Table 3, respectively sourced from WTO Docs. WT/L/432 (China), WT/ACC/VNM/48 (Vietnam), WT/ ACC/UKR/152 (Ukraine), and WT/MIN/11(2) (Russian Federation).

<sup>433</sup> See, for instance, the Annex 6 of China’s Protocol of Accession, which lists the maximum export duty rates for 84 (WTO Doc. WT/L/432), and Part V of the Russian Federation’s Schedule annexed to the Accession Protocol, which contains bound rates of export duties for over 700 tariff lines (WTO Doc. WT/MIN112A1).

<sup>434</sup> In this perspective, it is important to investigate whether, and under what conditions, WTO Members that have undertaken additional obligations on the

government to impose a 25 per cent duty on the exportation of ferro-alloys containing more than 10 per cent of rare earths, for instance, is but one recent example of an extensive practice of imposing export duties that are not admitted by terms of the obligations assumed by China in its Accession Protocol<sup>435</sup>; a less evident trend is also observable in some decisions of other WTO Members, such as the nickel export duty applied by the Russian Federation, in excess of the transitional rate fixed in the Protocol of Accession<sup>436</sup>.

In conclusion, the uncertainty underlying the presumed temporary nature of most of the measures described, in addition to the frequent inconsistency of new measures with respect to country-specific obligations assumed by newly acceding WTO Members that are dominant producers of strategic raw materials and to varying level of transparency associated to the introduction

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use of export duties may resort to such measures without incurring in a WTO violation. See *infra*, Chapter Three, paragraph II, section B.

<sup>435</sup> Indeed, as we shall see *infra* (Chapter Three, paragraph II) China's export regime has been challenged twice before the WTO dispute settlement system and was already condemned in *China – Raw Materials* by both the Panel and the Appellate Body. See Panel Report, *China – Measures Related to the Exportation of Various Raw Materials*, WT/DS394/R, WT/DS395/R, WT/DS398/R, adopted on 5 July 2011) and Appellate Body Report, *China – Measures Related to the Exportation of Various Raw Materials*, WT/DS394/AB/R, WT/DS395/AB/R, WT/DS398/AB/R, adopted on 31 January 2011, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds398\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds398_e.htm). A second case, *China – Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum* concerning the export regime on rare earths is currently at the attention of the Panel. See WTO Docs. WT/DS431/1, WT/DS432/1, and WT/DS433/1.

<sup>436</sup> See *infra*, Table 3.

of new measures, produce a general lack of predictability for several WTO Members and make it very hard to have a clear, stable and complete picture of the overall framework of export taxes currently in place.

**Table 3: Export taxes applied to strategic raw materials as of 31 October 2012**

Country	Strategic Raw Material	Form	Applied export duty	Date	Source
Argentina <sup>437</sup>	Cobalt	Waste and Scrap	5%	2009	OECD (2010) OECD (2012)
		Semi processed products; articles of cobalt	5%	2009	OECD (2010) OECD (2012)
	Copper	Ores and concentrates	10%		OECD (2010)
China	Antimony	Ores and Concentrates	10%	2008	OECD (2010) OECD (2012)
		Antimony Unwrought	5%	2008	OECD (2010) OECD (2012)
		Antimony	20%		WT/L/432 <sup>438</sup>

<sup>437</sup> Following devaluation of the peso in 2002, all Argentinean exports were subject to export duties. Resolution No. 11/2002 of the former Ministry of the Economy and Infrastructure established export duties of 10 per cent on a specific set of goods (including metal minerals and their concentrates) and of 5 per cent on all other goods except fuels, in addition to duties existing at that time. Although export duties have been applied on a temporary basis under Resolution No. 11/2002, neither the resolution itself nor its complementary or amendatory regulations contain any timetable for phasing out the duties. As stipulated in the relevant instruments, export duties were introduced as price policy tools, to contrast exchange-rate fluctuations on domestic prices, particularly those of household necessities, and to counter the sharp fall in tax revenue. As a result, export duties have become a major source of public revenue. Between 2002 and 2005, revenue collected from these duties averaged nearly 2.2 per cent of GDP, the highest level recorded in the historical series that began in 1932. During that period, income from export duties represented 9.2 per cent of exports and 9.9 per cent of total public revenue. WTO Doc. WT/TPR/S/176.

		unwrought			
		Crude antimony (HS 26171010)	20%		WT/L/432
		Antimony waste and scrap; Antimony powders	20%		WT/L/432
	Chromium	Ores and concentrates	15%	2008	OECD (2010)
		Ferrochromium	40%		WT/L/432
		Ferrochromium	5%	2005	OECD (2010)
		Ferrochromium (HS 7202)	0%	1/1/2010	WT/TPR/OV/13
		Unwrought chromium	15%	2008	OECD (2010)
		Scrap	15%	2005	OECD (2010)
	Cobalt			2009	OECD (2012)
	Copper	Ores and concentrates	10%		OECD (2010)
		Copper, alloyed unwrought	30%		WT/L/432
		Unrefined copper; copper anodes	30%		WT/L/432
		Copper cathodes	30%		WT/L/432
		Refined copper	30%		WT/L/432
	Gallium		5%		OECD (2010)
	Germanium	Germanium oxide	5%		OECD (2010)
	Indium		15%		OECD (2010)

<sup>438</sup> As a newly acceding WTO member, China has agreed to bind the export duty for a list of 84 commodities, indicated in the Annex 6 of its Protocol of Accession. Among these 84 products figure several strategic raw materials. See WT/L/432, Annex 6, at 93-95. The Note to Annex 6 specifies that the level indicated is the maximum rate that can be imposed by China for each of the products listed. However, the Note specifies that China needs to consult with affected Members when it intends to increase the applied export duty on a listed product, even when this does not exceed the maximum rate indicated in the Annex 6. For the implication of the nature of the commitments undertaken by China see *infra*, Chapter Three, paragraph II, sections B and C.

					Annex V, Report of the <i>ad hoc</i> Working Group EU
	Manganese	Ores and concentrates	15%	2009	
		Waste and scrap	20%	2009	
		Unwrought manganese powder	20%	2009	
		Ferro-manganese	20%		WT/L/432
		Ferro-manganese (HS 7206)	0%	1/1/2010	WT/TPR/OV/13
	Molybdenum	Molybdenum concentrates and oxides and ferromolybdenum	10%	1/1/2007	OECD (2010)
		Molybdenum powder, unwrought molybdenum and scrap	15%	1 January 2007	OECD (2010)
		Ferromolybdenum	20%	1 January 2008	OECD (2010)
		Ferromolybdenum (HS 7206)	0%	1/1/2010	WT/TPR/OV/13
	Nickel	Ores and concentrates	15%	2008	OECD (2010)
		Ores and concentrates	0%	2009	OECD (2012)
		Unwrought nickel, not alloyed	40%		WT/L/432
		Unwrought nickel alloys	40%		WT/L/432
	Rare earths	Europium, terbium, dysprosium,	25%	2008	OECD (2010)

		yttrium as oxides, carbonates or chlorides rare earth metals (except neodymium)			
		All other rare earth oxides, carbonates and chlorides; neodymium metal	15%	2008	OECD (2010)
		Ferro rare earth alloys	20%	2008	OECD (2010)
		Certain rare-earth minerals, neodymium (HS 2805.30.11) and lanthanum chloride	25%	1 January 2011	WT/TPR/OV/W /5/Rev. 1
		Ferroalloy containing rare earth elements more than 10% (HS 7202.99.91)	25%	1 January 2011	WT/TPR/OV/W /5/Rev. 1
	Silicon	Ferro-silicon	25%		WT/L/432
		Silicon metal	10%	2008	OECD (2010)
		Silicon metal	15%	2009	WT/TPR/OV/1 2 WT/TRP/OV/W /1
	Silver	Ores and concentrates	10%	2008	OECD (2010)
	Tantalum	Ores and concentrates	30%		WT/L/432
	Tungsten	Ores and concentrates	20%		WT/L/432
		Tungsten scrap	15%	1 November 2006	OECD (2010)



		Ferro-tungsten	10%	1 Novembre 2006	OECD (2010)
		Ferro-tungsten (HS 7203)	0%	1/1/2010	WT/TPR/OV/1 3
		Ammonium paratungstate, tungsten trioxide, and unwrought tungsten metal and powder	5%	2007	OECD (2010)
	Vanadium	Ores and concentrates	30%		WT/L/432
Democratic Republic of the Congo	Mineral products and concentrates thereof	Relevant for cobalt and, marginally, for copper and tantalum	10%		WT/TPR/S/240
	Cobalt	Ores and concentrates	60 \$/ton	2010	USGS (2010)
Gabon	Manganese		3%	Since 2001	OECD (2010)
Ghana	Manganese		6%	Since 2001	OECD (2010)
India	Chromium	Ores	INR3,000/ton	April 2008	OECD (2010)
	Manganese	Ores	Rs 20/ton	2006	OECD (2010)
		Dioxide	20%	2006	OECD (2010)
Pakistan	Copper	Waste	25%	13 March 2010 - 30 June 2010	WT/TPR/OV/W /3 WT/TPR/OV/1 3
Russia	Antimony	Waste and scrap	6,5%	2008	OECD (2010)
	Cobalt	Scrap	30% but not less than 1,200EUR/to nne		OECD (2010)
	Copper	Copper oxides and hydroxides	6,5%	2012- 2015	WT/MIN(11)2
		Copper cathode	10%	2008	WT/TPR/OV/1

					2 (HS 7403)
	Copper cathode	0%	21 January 2010		WT/TPR/OV/W /1 Sixth Report DG Trade
	Copper cathode <sup>439</sup>	10%	19 December 2010		WT/TPR/OV/1 3 WT/TPR/OV/W /5/Rev.1
	Copper cathode	10%	2012-2015		WT/MIN(11)2
	Copper cathode	0%	2015-		WT/MIN(11)2
	Refined copper and copper alloys	10%	2008		OECD (2010)
	Unrefined copper	10%	2008		OECD (2010)
	Unrefined copper, copper anode	10%	2012-2015		WT/MIN(11)2
	Unrefined copper, copper anode	0%	2015-		WT/MIN(11)2
	Copper waste and scrap	10%	2008		OECD (2010)
	Gallium	Waste and scrap	6,5%		OECD (2010)
	Germanium	Waste and scrap	6,5%	2012-2015	OECD (2010) WT/MIN(11)2
		Waste and scrap	0%	2015-	WT/MIN(11)2
	Indium		6,5%		OECD (2010)
	Manganese		6,5%		OECD (2010) Annex V, Report of the <i>ad</i>

<sup>439</sup> The measure at issue has been reintroduced as a result of the implementation of the Custom Union of the Russian Federation with Belarus and Kazakhstan (which are not WTO Members). As a consequence of the entry into force of the said Union, not only the export tariff profile of the Russian Federation has changed significantly (with regard to the copper and nickel export tariffs, as reported in the table), but the interest of the WTO has indirectly extended to Belarus and Kazakhstan which has since then been included into the monitoring report although not yet become Members of the WTO. WT/TPR/OV/W/Rev. 5.

					<i>hoc</i> Working Group EU
Manganese	Waste and scrap	6,5%	2012-2015	OECD (2010)	WT/MIN(11)2
	Waste and scrap	0%	2015-	WT/MIN(11)2	
	Unwrought manganese; powders	6,5%	2012-2015	WT/MIN(11)2	
	Unwrought manganese; powders	0%	2015-	WT/MIN(11)2	
Molybdenum	Ores and concentrates	6,5%		OECD (2010)	
	Waste and scrap	6,5%		OECD (2010)	
	Unwrought molybdenum	6.5%	2012-2015		
	Unwrought molybdenum	0%	2015-	WT/MIN(11)2	
Nickel	Nickel matters and non-alloyed nickel	5%	2008	OECD (2010)	
	Nickel oxides and hydroxides	6.5%	2012-2015	WT/MIN(11)2	
	Waste and scrap	30%	2008	OECD (2010)	
	Non alloyed nickel	5%	21 January 2010	WT/TPR/OV/W /1 Fifth Report DG Trade	
	Unwrought nickel, not alloyed	5%	16 December 2009	WT/TPR/OV/W /3	
	Not alloyed nickel	5%	27 January 2010	WT/TPR/OV/13	
	Not alloyed nickel	10%	from 19 December 2010	WT/TPR/OV/W /5/Rev.1	
	Unwrought nickel, Not alloyed nickel	5%	2012-2015	WT/MIN(11)2	
	Unwrought	0%	2015-	WT/MIN(11)2	

		nickel, Not alloyed nickel			
		Not alloyed nickel	New determination depending on world market prices		WT/TPR/OV/14
		Nickel waste and scrap	30% but not less than EUR720/ton	2012-2015	WT/MIN(11)2
		Nickel waste and scrap	10% but not less than EUR720/ton	2015	WT/MIN(11)2
	Palladium		6,5%		OECD (2010)
	Platinum		6,5%		OECD (2010)
	Rhenium		6,5%		OECD (2010)
	Tantalum	Waste and scrap	6,5%		OECD (2010)
		Unwrought Tantalum	6,5%	2012-2015	WT/MIN(11)2
		Unwrought Tantalum	0%	2015-	WT/MIN(11)2
	Titanium	Scrap	30% but not less than USD 1,091/ton		OECD (2010)
		Unwrought titanium; powders, ingots, slabs and other products	6,5%		OECD (2012)
	Tungsten	Unwrought tungsten	6,5%	2009	OECD (2012)
		Unwrought tungsten	6,5%	2012-2015	WT/MIN(11)2
		Unwrought tungsten	0%	2015-	WT/MIN(11)2
		Waste and scrap	6,5%	2012-2015	WT/MIN(11)2
		Waste and scrap	0%	2015-	WT/MIN(11)2
	Vanadium	Vanadium oxides and hydroxides	6,5%	2012-2015	OECD (2010) WT/MIN(11)2

		Vanadium oxides and hydroxides	0%	2015-	WT/MIN(11)2
Ukraine	Chromium	Ferrochromium	21% but not less 0.28 €/kg	2011	WT/ACC/UKR/152
			18% but not less than 0.24 €/kg	2012	WT/ACC/UKR/152
			15% but not less than 0.2 €/kg	2013-	WT/ACC/UKR/152
	Cobalt	Waste and Scrap; unwrought cobalt;	21% but not less 2.8 €/kg	2011	WT/ACC/UKR/152
			18% but not less than 2.4 €/kg	2012	WT/ACC/UKR/152
			15% but not less than 2 €/kg	2013-	WT/ACC/UKR/152
	Copper	Unrefined copper; copper anodes	21% but not less 0.7 €/kg	2011	WT/ACC/UKR/152
			18% but not less than 0.6 €/kg	2012	WT/ACC/UKR/152
			15% but not less than 0.5 €/kg	2013-	WT/ACC/UKR/152
	Nickel	Copper powders; Waste and scrap	21% but not less 3.85 €/kg	2011	WT/ACC/UKR/152
			18% but not less than 3.30 €/kg	2012	WT/ACC/UKR/152
			15% but not less than 2.75 €/kg	2013-	WT/ACC/UKR/152
	Titanium	Waste and scrap	21%	2011	WT/ACC/UKR/152
			18%	2012	WT/ACC/UKR/152
			15%	2013-	WT/ACC/UKR/152
Tungsten	Waste and scrap	21% but not less 7 €/kg	2011	WT/ACC/UKR/152	

			18% but not less 6 €/kg	2012	WT/ACC/UKR/152
			15% but not less 5 €/kg	2013-	WT/ACC/UKR/152
	Ferrous scrap	Postponement in the reduction of export duties			WT/TPR/W/OV/W/6
Vietnam	Copper	Waste and scrap	2012	22%	WT/ACC/VNM/48
	Metal scraps	Increase of export duties on mineral			Ninth Report of the DG Trade
	Nickel	Nickel waste and scrap	22%	2012	WT/ACC/VNM/48 OECD (2012)
	Molybdenum			2009	OECD (2012)
	Tungsten			2009	OECD (2012)
	Minerals products and Metal scraps	Increase of export duties			Circular 157/2011/TT-BTC Ninth Report of the DG Trade
Zambia	Copper	Concentrates	15%	2008	WT/TPR/S/219
	Temporary export restrictions on minerals, ores and mineral products lifted on 6 October 2011				Announced on 19 October 2011

#### **D. Cont.: VAT rebates on exports**

Finally, it is also interesting to note that, although not exactly classifiable as an export tax *stricto sensu*, another form of restriction on exports that is assimilated in the substance to an export tax is the VAT rebate reduction or withdrawal. The expression makes reference to the practice of differentiating the taxation regime on exports, by denying in whole or part VAT reimbursement on export and thereby making it less advantageous to export a product. The difference between the VAT rate actually paid and the rebate rate constitutes, in sum, a levy on exports, and thus may be adjusted by national governments as a means to control the exports of certain products<sup>440</sup>. The reduction of VAT rebate is, in other words, a price measure that, analogously to an export tax, “raises” the cost of exports and thereby may reduce the export volume<sup>441</sup>.

However, this instrument to date has received limited application and, with regards to industrial raw materials and, in particular, strategic raw materials, it has been registered only in the case of China<sup>442</sup>. However, the lack of transparency as well as the

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<sup>440</sup> Fliess, *supra* n. 25, at 23.

<sup>441</sup> In this perspective, a VAT rebate is an export restriction insofar as it produces trade restrictive effects. WTO Doc. WT/TPR/OV/W/5/Rev.1, at 17.

<sup>442</sup> WTO Doc. WT/TPR/S/264/Rev.1, at 59.

highly fragmented reporting on such measure<sup>443</sup> makes it very difficult to acquire detailed information on the products for which such restrictions are currently in place<sup>444</sup>.

In general, China resorts to VAT rebates withdrawals and often associates them to a differentiated VAT refund policy on exports of value added<sup>445</sup>, mostly with regards to semi-processed products, steel-making raw materials<sup>446</sup>, and key industry primary materials, e.g. molybdenum and tungsten<sup>447</sup>. It is interesting to note that the differentiated VAT regime maintained by China has been denounced as unfairly encouraging export of value added products through the inducement of a dual pricing regime on raw materials to the benefit of domestic producers, whereby value added products are sold by Chinese competitors on the international market at prices eventually lower than the input costs, causing a deterioration of the terms of competition<sup>448</sup>.

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<sup>443</sup> As already said, export taxes are the most commonly reported type of export restrictions, in addition to being the easiest to detect. This is why the studies on export restrictions have focussed on export taxes and other more common measures, and only marginally approached the VAT rebate, considered “implicit” export restrictions. WTO Doc. WT/TPR/OV/W/5/Rev.1, at 17 and WTO Doc. WT/TPR/S/230/Rev.1, at 44.

<sup>444</sup> The OECD in its inventory has identified only two tariff lines which in 2009 were subject to VAT tax rebate reduction and/or withdrawal and 30 tariff lines in 2010, only with respect to China. Fliess, *supra* n. 25, at 12.

<sup>445</sup> Annex V, *supra* n. 76, at 269.

<sup>446</sup> However, the WTO Secretariat reported that, on June 2010, China eliminated VAT rebates on 406 tariff lines, covering *inter alia* exports of steel and semi-finished copper products. WTO Doc. WT/TPR/S/264/Rev. 1, at 59.

<sup>447</sup> Annex V, *supra* n. 76, at 130 and 209.

<sup>448</sup> *Id.*



### **III. Quantitative restrictions on exports**

Another frequently used form of export restriction is the imposition of a quantitative restriction on exports, i.e. a measure that limits the quantity of a product that may be exported. Such a broad definition permits to include in this category different type of export restrictions having negative trade effects: export prohibitions or bans, export quotas, export licensing requirements, and minimum export prices.

#### **A. Export prohibitions or bans**

Export bans are total prohibitions on the exportation of a given product, which may be absolute or conditional (i.e. only applicable in cases when certain conditions are not met) and are in place in general for a specific purpose, sometimes not related to trade considerations. Indeed, a plurality of States traditionally recur to export ban on rare and/or endangered animals and plants as well as to prevent exports of dangerous materials, in accordance with multilateral conventions such as the Basel Convention on the Control on Trans-boundary Movements of Hazardous Waste and their Disposal or the Convention on International Trade in

Endangered Species of Wild Fauna and Flora (CITES). These kinds of export prohibition are generally aimed at the protection of the environment and of human health, as well as the preservation of natural resources.

More recently, especially since the outbreak of the economic and financial crisis, States have increasingly resorted to export bans on a temporary basis to face special circumstances, particularly on food and agricultural commodities to prevent food shortages<sup>449</sup> and severe price increases of essential foodstuff<sup>450</sup>. However, the use and the effectiveness of this policy are seriously undermined in the long-term because of the anticipation of the ending of the ban<sup>451</sup>.

Export bans are not frequently introduced on industrial raw materials<sup>452</sup> and, in any case, no export prohibitions result to be applied to critical raw materials by the countries that predominantly recur to export taxes. Although the quality of information on export prohibitions for minerals and metals is rather poor and inconsistent, a significant trend of bans on the exportation of waste and scrap metals can be observed in general<sup>453</sup>, even if it does but marginally

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<sup>449</sup> Recent examples include temporary export bans on wheat, rice, onions, and sugar. WTO Doc. WT/TPR/OV/W (various years)

<sup>450</sup> For an extensive description of the economic implications of export restrictions, see *infra* paragraph IV.

<sup>451</sup> Piermartini, *supra* n. 6, at 3.

<sup>452</sup> The OECD Inventory registered the application of export bans only for a few tariff lines both 2009 and in 2010. Fliess, *supra* n. 25, at 12.

<sup>453</sup> The OECD Inventory reports 61 entries for waste and scrap items in 2009 and over 200 entries in 2010 by a total of 41 countries (excluding Europe and North America), configuring an incidence of respectively 10 and 28 per cent over the

concern the critical raw materials targeted in the present study, for which an export ban is presently applied by Tanzania alone. In the latter case, Tanzania imposed an export ban on several scrap metals (cobalt, copper, chromium, indium, manganese, nickel, tantalum, tantalum, and tungsten)<sup>454</sup>. Recently, the Indonesian Ministry of Energy and Mineral Resources (ESDM) adopted the Regulation No. 7 of 2012 on Increasing Value-Added Minerals Through Processing and Refining bans the exports of unprocessed minerals, except coal, starting from 2014<sup>455</sup>.

## B. Export quotas and licenses

### a. Definitions

Export quotas are the quantitative restrictions *par excellence*, and consist of a ceiling imposed by an exporting country on the total volume of the product that is allowed to be exported<sup>456</sup>.

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total number of export restrictions registered for waste and scrap of metal. *Id.*, at 10. However, the vast majority of entries refer to iron and steel waste and scrap, which are also among the products that count most HS 2006 (the level of classification thereby provided) lines. According to the OECD calculation, overall the export restrictions on waste and scrap of metals affects at least 19 per cent of waste and scrap of iron and steel, 14 per cent of waste and scrap of copper and 4 per cent of waste and scrap of aluminium in 2009. *Id.*, at 11.

<sup>454</sup> Korinek, J. and Jeonghoi, K., Export Restrictions on Strategic Raw Materials and their Impact on Trade and Global Supply, in OECD (2010), *supra* n. 385, at 123 et seq.

<sup>455</sup> Ninth Report of the DG Trade, *supra* n. 391, at 39.

<sup>456</sup> Fliess, *supra* n. 25, at 22.

Recourse to export quotas on exports by WTO member countries is extensive and mostly respondent to the need to protect non-economic values, such as environmental protection, conservation of natural resources, control of weapons and arms trade and, more in general, compliance with international obligations arising from multilateral conventions in areas such as public health, safety, environmental protection and security<sup>457</sup>. A survey of the TPRs suggests that even countries that do not maintain export taxes generally apply quantitative restrictions on some export<sup>458</sup>. Indeed, a plurality of States traditionally recur to export quotas in pursuance of international obligations contained in MEAS such as the Basel Convention on the Control on Trans-boundary Movements of Hazardous Waste and their Disposal or the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

On a general basis, the implementation of export quotas is frequently administered through export licenses or licensing requirements. This expression indicates the “requirement of obtaining prior approval, in the form of a license, to export a good or a commodity”<sup>459</sup>. There are two type of licensing requirements: automatic and non-automatic. Automatic export licensing indicates a system where “approval is granted in all cases, usually

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<sup>457</sup> *Id.*

<sup>458</sup> Jeonghoi, K., *supra* n. 402, at 17. See also World Trade Report 2010, *supra* n. 32, Table 10.

<sup>459</sup> Fliess, *supra* n. 25, at 22.

immediately upon standardised application”<sup>460</sup>. Being automatic, no extra-burden is imposed on exporters and indeed automatic licenses mainly fulfil statistics purposes: accordingly, they are not included among the export restrictive measures having an impact on trade volumes<sup>461</sup>. Non-automatic licenses, on the contrary, are released only upon submission of an application or other documentation to relevant administrative bodies as a prior condition for exportation<sup>462</sup>. Non-automatic licenses used in conjunction with export quotas are released to exporters being granted a quota allocation on the basis of the documentation submitted. However, the scope of application of export quotas and licences do not coincide for, if quotas need to be administered in order to decide which are the exporters that qualify for the allocation of the total ceilings between different enterprises, exports can be conditioned upon the fulfilment of certain conditions independently from the setting of a global *plafond* on the total quantity to be exported of a products. In this perspective, the range of export licensing requirements is far from varied than the export quotas currently in place<sup>463</sup>. Although they do not

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<sup>460</sup> *Id.*

<sup>461</sup> *Id.*

<sup>462</sup> This definition draws heavily upon the definition of import licencing procedures contained in Article 1.1 of the Agreement on Import Licensing Procedures.

<sup>463</sup> Indeed, a survey of the TPRs of WTO Members reveals that export licenses or permits are required for a whole variety of non-economic reasons, from

constitute a restriction *per se*, they could negatively impact on export volumes is granted in a stringent or opaque manner<sup>464</sup>.

### **b. The export quotas and licenses applied to critical raw materials**

The dimension of the phenomenon of export quotas is quite limited when we focus on industrial raw materials<sup>465</sup> and, in particular, on critical raw materials. In this respect, indeed, China appears to be the only country implementing export quotas, but it does so on a variety of different strategic raw materials.

China's legislative system for the imposition of the export quotas is quite sophisticated and comprises a series of measures that consists of a basic framework legislation (the *Foreign Trade Law*) and an implementing regulation (the *Regulation on Import and Export Administration*<sup>466</sup> and the *Export Quota Administration Measures, Export Quota Administration Measures, and Export Quota Bidding Measures*), as well as specific annual measures that set the ceiling per specific products. The most recent one is the

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national security to public health, from morality and religion grounds to compliance with international obligations.

<sup>464</sup> Jeonghoi, K., *supra* n. 402, at 109.

<sup>465</sup> According to the OECD, 19 and 26 entries were subject to export quotas for respectively primary and semi-processed industrial products in 2010, uniquely adopted by China. Fliess, *supra* n. 25, at 12.

<sup>466</sup> Recently, moreover, China published its Revised Regulation on the Administration of Certificates of Import and Export Licensing. MOFCOM Decree No. 1/2012, 4 February 2012, in WTO Doc. WT/TPR/OV/W/6.

*Catalogue of Commodities subject to Export Licence Administration 2012*<sup>467</sup>.

China's *Foreign Trade Law* confers the authority to restrict the exportation of products through export quotas in pursuance of certain specific objectives listed at Articles 16 and 17 of the Law (e.g. human life and health protection, conservation of exhaustible resources), and identifies the Chinese Ministry of Commerce (MOFCOM) as the entity responsible for the centralized administration of all export quotas for China<sup>468</sup>. Accordingly, MOFCOM, in collaboration with Customs, is responsible for formulating, adjusting and publishing the catalogue listing all goods subject to export quotas, and determines and announces the total amount of the annual ceilings for each product covered by the relevant measure by October 31 of the previous year. The annual quotas are allocated twice a year, in December of the preceding year and in July (first and second batch). Enterprises that are approved to export are issued a certificate of quota that entitles them to apply for an export licence<sup>469</sup>.

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<sup>467</sup> See MOFCOM Announcement No. 98/2011, dated 30 December 2011, effective as from 1 January 2012. The description of the export quota and license regime applied by China draws heavily from the investigation conducted by Panel in *China – Raw Materials*, *supra* n. 435, at 61 et seq.

<sup>468</sup> Article 19, *Foreign Trade Law*.

<sup>469</sup> The export licence must be issued within three working days of receiving the application. See Article 19 of the *Measures for the Administration of License for the Export of Goods*.

The allocation of quotas is done either directly or through a quota bidding system. In the former case, MOFCOM determines the total ceiling for quotas<sup>470</sup> and receives the applications for export quotas submitted by both national and foreign-invested enterprises. It then distributes the quotas directly or through local administrative authorities, usually differentiating the quotas directed to Chinese enterprises and foreign-invested companies.

According to the *Export Quotas Administration Measures*, in deciding on the allocation of quotas, MOFCOM should take into account: (i) the export performance of the particular good; (ii) the utilization ratio of the export quota; (iii) the business management and/or the operation capacity of the application; (iv) the production scale and resource status of the applicant enterprise or area during the previous three years<sup>471</sup>. MOFCOM is also entitled to review the allocation of quotas following to major changes in the international market or in the domestic demand patterns, as well as in consequence of manifest imbalances in the “quota-use pace”

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<sup>470</sup> According to Article 10 of the *Export Quotas Administration Measures*, the determination of MOFCOM should be based on the weighting of multiple factors and, in particular, it should take into account China’s economic development needs. Indeed, the safety of the national economy and the protection of limited domestic resource are priority considerations, which have to be evaluated within the framework of the planning of national industrial objectives and policies, as well as the demands on the international and domestic markets, and the production and sales status.

<sup>471</sup> Article 19. Prior eligibility requirements for enterprises are also imposed by means of Article 14, which requires that only enterprises that have the license or qualification for import and export management and whose economic activities did not violate laws and regulations in the most recent three years are admitted to be considered as applicants for quotas.



between enterprises or areas<sup>472</sup>. On the basis of the annual catalogue that every year sets the ceiling for specific products, the sector-specific eligibility requirements may vary depending on national production and exports trends, as well as specific capital requirements. Furthermore, eligibility requirements vary significantly depending on the nationality of the enterprise – and foreign-invested enterprises are often required more stringent criteria. Moreover, in specific cases foreign-invested companies are not entitled to any allocation of export quotas in that there are some products subject to state trading<sup>473</sup>. Indeed, as for critical raw materials targeted in this study, antimony ore and antimony products, silver and tungsten ore and tungsten products are subject to state-trading arrangements<sup>474</sup> and thus are not exportable from foreign companies<sup>475</sup>. Apart from antimony, silver, and tungsten,

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<sup>472</sup> Article 20 of the *Export Quota Administration Measures*.

<sup>473</sup> It should be noted that state trading itself is considered an implicit form of export restriction, in that exports subject to state trading must always be exported by state trading enterprises (STEs).

<sup>474</sup> WTO Doc. WT/TPR/S/264/Rev. 1, at 207. Other products subject to export state trading are rice, maize, cotton, coal, crude oil and processed oil, as well as tobacco. Chinese authorities maintain that state trading on such exports responds to the need to ensure stable domestic supply, avoid excessive price volatility and safeguard food safety, as to the agricultural commodities, and, as far as industrial raw materials are concerned, to protect exhaustible and non-recyclable natural resources and the environment. WTO Doc., G/STR/N/9/CHN/Add.1, 14 July 2003.

<sup>475</sup> It should be recalled that China is a dominant producer of both antimony and tungsten. See *supra*, Chapter One, paragraph II, section C, sub-sections a) and s). However, Chinese authorities maintain that export prices charged by STEs are decided by the enterprises themselves based on domestic prices plus

other critical raw materials subject to directly allocated export quotas are indium and indium products, and molybdenum<sup>476</sup>. It is relevant to note that all of them have been also subject to export taxes at least with regards to one tariff line<sup>477</sup>.

The 2012 ceilings for each of the materials were so determined by MOFCOM: molybdenum and molybdenum products: 40,862 metric tons, down about 2 per cent from 2011; 18,967 metric tons for tungsten, up about 11 per cent from 2011; 67,787 metric tons for antimony, down 0.7 per cent from 2011; 232 metric tons for indium, down 0.4 per cent from 2011; and 5,387 metric tons for silver, down 5 per cent from 2011<sup>478</sup>. In general, for each of the product categories subject to export quotas is that the ceiling yearly determined by MOFCOM has been steadily decreasing, most often in terms of absolute value and, in any case, as a percentage of total Chinese production<sup>479</sup>. A striking example in this perspective is that

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transportation and storage costs, interest rates, inspection fees and international market prices. WT/TPR/S/264/Rev. 1, at 61.

<sup>476</sup> According to the Announcement No. 98/2011, dated 30 December 2011, molybdenum products are, on the contrary, only subject to export licensing but not to a quota.

<sup>477</sup> See *supra*, paragraph II, section C, Table 3.

<sup>478</sup> MOFCOM, Announcement No. 98/2011, dated 30 December 2011, effective as from 1 January 2012.

<sup>479</sup> Korinek, *supra* n. 454, where the progressive evolution of the ceiling applied by China for most of the concerned products is analysed since 2006, at 123 et seq.

of rare earths, whose quota allocation has been progressively and significantly decreasing year by year (see Table 4 below)<sup>480</sup>.

**Table 4: Chinese export quotas on rare earth**

	2005	2006	2007	2008	2009	2010	2011	2012
Chinese companies	48,010	45,000	43,574	34,156	31,310	22,513	22,712	NA
Foreign invested companies	17,570	16,070	16,069	15,834	16,845	7,746	7,472	NA
Total	65,580	61,070	59,643	49,990	48,155	30,259	30,184	30,996

Source: Morrison, M. and Tang, R. (2012)<sup>481</sup>, WT/TPR/OV/W/6, WT/TPR/OV/13-4

Although the 2012 quota are 2,7 per cent higher than 2011, it nevertheless represents a strong reduction of the quota for exports of rare earths because the list of products covered by includes “ferro-alloys” as from 2011. Some estimates indicate that by including this new category of products in the quota, China in fact reduced the 2011 rare earth export quota by as much as 30%, while passing the message that the 2011 quota was not reduced when

<sup>480</sup> Rare earths related measures have been intensifying in the past years as a result of the "Rare Earths Industry Development Plan in 2009-2015" drafted by the country's Ministry of Industry and Information Technology. Fifth Report of the DG Trade, *supra* n. 413, at 52.

<sup>481</sup> Morrison, M. and Tang, R., China's Rare Earths Industry and Export Regime: Economic and Trade Implications for the United States, CRS Report for Congress, 30 April 2012.

compared to that of 2010<sup>482</sup>. Moreover, it also has to be underlined that the Chinese government has gradually reduced the number of licensed companies in recent years through tightening licensing rules and environmental regulations since 2011. In 2006, 47 Chinese domestic and 12 joint-venture rare earth companies received export licenses. In 2009, there were 23 domestic and 11 joint-venture licensees. These numbers were further reduced to 22 domestic and 10 joint-venture license holders in 2010 and, to 22 domestic and 9 joint ventures companies in 2011 and to 24 for 2012<sup>483</sup>.

Export quotas in China may also be allocated through a bidding process<sup>484</sup>. The rules and procedures governing the quota bidding process are set out in the *Export Quota Bidding Measures* in conjunction with the *Export Quota Bidding Implementation Rules*. According to Article 2 of the former act, quota bidding is “the procedure through which an export enterprise may obtain with certain compensation the quota, through voluntary bidding”. Among the goods that can be subject to quota bidding figure “non-renewable, staple-resource type” goods as well as goods “well

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<sup>482</sup> See Ninth Report of the DG Trade, *supra* n. 391, at 119.

<sup>483</sup> No specific information is available about the breakdown of domestic and foreign-invested companies for 2012. Morrison, M. and Tang, R., *supra* n. 481, at 18.

<sup>484</sup> Article 39 of the *Regulation on Import and Export Administration*.

positioned on the international market and upon the export volume of which the impact of price fluctuations is relatively small”<sup>485</sup>.

MOFCOM is responsible for the centralized administration of export quota bidding, for determining the types of goods that are subject to export quota bidding, and for determining the total quantity of export quotas to be allocated through bidding. MOFCOM is also responsible for leading and supervising the work of Export Quota Bidding Committee<sup>486</sup>, which in turn follows each step of the quota-bidding application process<sup>487</sup>, such as setting of a base or minimum bid price and/or a maximum and minimum quantity that each enterprise may bid or annulling excessively high bidding offers as well as establishing a Bidding Office for each

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<sup>485</sup> Article 6 of the *Export Quota Bidding Measures*.

<sup>486</sup> Articles 3 and 7 of the *Export Quota Bidding Measures*.

<sup>487</sup> Among the various responsibilities of the Committee, this body is responsible for: i) determining the quantity of the export quotas, the bidding mode adopted for each bidding, the number of biddings and the quantity to be distributed under each bidding mode; (ii) determining the plan of quota bidding for each good, take charge of opening and evaluating the bids and approving the outcome of the bidding procedure; (iii) publishing all necessary notices and announcements; (iv) accepting the filings submitted by local bidding offices on unused quotas that are returned to the Ministry of Commerce, or quotas that the winning companies may assign and transfer to other companies; (v) inspecting the collection of security deposits and bid-winning prices; and (vi) and determining the qualifications that bidders should have, verifying the existence of these qualifications and approving the list of companies that have the right to participate in the bidding procedure in accordance with these qualifications. See *Export Quota Bidding Measures*, Articles 8 and *Export Quota Bidding Implementation Rules*, Article 3.

commodity subject to biddings under the relevant chambers of commerce<sup>488</sup>.

The *Export Quota Bidding Measures*, in conjunction with the *Export Quota Bidding Implementation Rules*, sets forth certain general eligibility criteria that bidders must satisfy in order to participate in the bidding process, which are common for both Chinese and foreign-invested enterprises<sup>489</sup>. Additional criteria are also established for each round of product-specific quota bidding.<sup>490</sup> In addition to being approved to participate in export quota bidding, an enterprise must also be awarded a portion of the export quota as part of the bidding process in order to export. Thus, any interested enterprise must submit a bidding price<sup>491</sup> and bidding quantity<sup>492</sup> to China's Bidding Office and must apply for an export licence.<sup>493</sup> China's Bidding Office then determines based on

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<sup>488</sup> *Id.*, Article 17.

<sup>489</sup> According to Article 11 of the *Export Quota Bidding Measures*, enterprises must be: (i) qualified for engaging in export; (ii) registered with the business administration authority; (iii) Members of the relevant chamber of commerce for import and export (in case of foreign-invested enterprises, Members of the China Association of Enterprises with Foreign Investment); and (iv) have exported or supplied for export volumes of the relevant commodity that "reach a certain level".

<sup>490</sup> *2009 First Round Export Quota Bidding Announcement; 2009 Second Round Export Quota Bidding Announcement.*

<sup>491</sup> The bidding price represents the amount per metric tonne that a bidding enterprise is willing to pay for the right to export. *Export Quota Bidding Measures*, Article 20; *Export Quota Bidding Implementation Rules*, Article 14.

<sup>492</sup> The bidding quantity is the amount of the relevant material the enterprise seeks to export. *Id.*

<sup>493</sup> *Export Quota Bidding Measures*, Article 14; *Export Quota Bidding Implementation Rules*, Articles 20 and 21.

the applicable rules the enterprises that will receive an allocation (or share) of the export quota based on the submitted bidding price and bidding quantity: first, it ranks all bids from enterprises in descending order, based on the bidding prices that are submitted<sup>494</sup>; secondly, it adds up the bid quantities proposed by the bidding enterprises in this descending list until the total quantity bid is equal to the total quantity of quota available; finally, it determined the winning bidders based on the highest bid prices until the bid quantities fall within the total quantity of quota available<sup>495</sup>.

Enterprises that are awarded a portion of the quota must pay the balance of the bid-winning price and a security deposit before applying for an export licence.<sup>496</sup> An enterprise may pay the full award price where it wishes to export the full allocation or a proportionate amount where it wishes to export less than the full allocation. The Bidding Office will refund the corresponding bid price that has been paid, although it will not refund the security deposit.<sup>497</sup> An enterprise that is allocated a quota through bidding must present a certificate of quota issued by China's Bidding Office when applying for an export licence.<sup>498</sup> Exporting enterprises

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<sup>494</sup> *Export Quota Bidding Implementation Rules*, Article 5.

<sup>495</sup> *Export Quota Bidding Measures*, Article 19; *Export Quota Bidding Implementation Rules*, Article 19.

<sup>496</sup> *Export Quota Bidding Measures*, Article 25, 25(2), and 26. *Export Quota Bidding Implementation Rules*, Article 20, 20(II), and 21.

<sup>497</sup> *Export Quota Bidding Implementation Rules*, Articles 21, and 23.

<sup>498</sup> *Export Quota Bidding Measures*, Articles 32-33; *Export Quota Bidding Implementation Rules*.

must present the export licence to China's Customs authorities for declaration and examination.<sup>499</sup>

On the basis of the MOFCOM Announcement No. 98/2011, silicon carbide is, among the critical raw materials targeted in the present study, the only primary material subject to export quotas through bidding, notwithstanding that in the recent *China – Raw Materials* case the 2009 export quotas on silicon carbide have been challenged, with success, by the EU, the US, and Mexico for the Panel found them inconsistent with Article XI: 1 GATT and not justifiable under Article XX b) of the GATT<sup>500</sup>.

Apart from China, no other WTO Member is currently applying export quotas to industrial raw materials and, in particular, to critical minerals and metals. However, there are a few other countries implementing non-automatic export licensing requirements on export of critical raw materials<sup>501</sup>. The level of detail about such measures is in any case rather poor, due to difficulties in acquiring detailed information on the functioning of this measure<sup>502</sup>. Accordingly, although export licensing requirements may potentially have significant impacts on exports,

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<sup>499</sup> *Regulation on Import and Export Administration*, Article 41.

<sup>500</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, at 133-168.

<sup>501</sup> According to the OECD, thirteen countries resorted to export permits for industrial raw materials in 2010, with 78 entries for primary materials and 429 tariff lines for semi-processed materials. The use of export licenses has been registered to increase from 2009, and represented 17 per cent of the total recorded measures. Fliess, *supra* n. 25, at 12.

<sup>502</sup> Korinek, J., *supra* n. 454, at 109.



they have drawn relatively less attention in literature and reporting<sup>503</sup> and it is difficult to review them in a systematic way<sup>504</sup>.

Despite considerable lack of information and the smallness of the numbers, certain tendencies can be observed. The first figure is that, with the exception of China, the countries mostly recurring to export licenses do not make use of other types of export restrictions. This is the case, for instance, of South Africa, which requires export licenses for a wide range of critical raw materials, i.e. lithium ore, molybdenum ores and concentrates, tantalum ores and concentrates, tungsten ores and concentrates, copper alloys, refined copper other copper anodes and cathodes, chromium, germanium, vanadium, gallium, and indium metals)<sup>505</sup>.

The second is that export licenses “alone” – again with the exception of China – are generally imposed by non-dominant producers and thus are not likely to impact significantly the world demand and supply patterns. In the case of South Africa, for instance, among the wide range of raw materials exposed to export licensing requirements, chromium is the only element for which South Africa is a leading mine producer<sup>506</sup>. In Ukraine, as from 23

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<sup>503</sup> Significantly, the TPRs often review export licensing together with export prohibitions, and do not make a sufficiently clear distinction between automatic and non-automatic licensing systems. OECD (2003), *supra* n. 22, at 15.

<sup>504</sup> The lack of coherence in the scope, type and level of detail of the information provided is in most cases a reflection of the lack of transparency within the current system of notification. See *infra*, Chapter Three, paragraph II.

<sup>505</sup> WTO Doc. WT/TPR/S/222, Rev.1, Table A.III.3.

<sup>506</sup> *Id.*

December 2009, copper primary materials (unrefined copper; copper anodes, copper cathodes, copper alloys, and powders) are subject to licensing requirements<sup>507</sup>, while in May 2011 the delegation of Ukraine announced that the concession of export permit requirements for non ferrous-metals would be granted to specialized metallurgical processing plants with export certificates of quality until 2015 for 32 tariff lines, including copper, tungsten, cobalt, and titanium articles<sup>508</sup>.

Finally, scrap and waste metals are frequently subject to export licensing requirements. South Africa imposes export licensing requirements for a variety of waste and scrap metals (antimony, copper, nickel, molybdenum, tantalum, tungsten, chromium, germanium, vanadium, gallium, and indium). With the exception of manganese, they are all materials that South Africa does not produce (or in any case, only marginally produces) in their primary form<sup>509</sup>. Scrap and waste metals are subject to export licensing requirements also in other countries, such as Turkey, where exports of copper scrap are subject to additional conditions prior to exportation that are so stringent to amount, according to some commentator, resulting in to a *de facto* export ban. The distribution of export licenses is indeed conditioned upon the fulfilments of three conditions as from 21 May 2010, which add to a former

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<sup>507</sup> WTO Doc. WT/TPR/OV/W/3; WT/TPR/OV/13.

<sup>508</sup> WTO Doc. WT/TRP/OV/W/6.

<sup>509</sup> See *supra*, Chapter One, Paragraph II, section C.

*communiqué* according to which registration of copper scrap export by the Exporters Associations was dependent upon the obtaining of a registry certificate amounting to an export license: (i) : copper scrap which will be exported shall be pre-investigated on site by supervisors from the Standardisation Department of the Foreign Trade; (ii) submission of written confirmation received from at least three domestic producers showing that copper scrap would not be used for their production; (iii) submission of a contract that shows export connection<sup>510</sup>. Finally, several developing and least-developed countries impose export licenses on waste and scrap of selected metals due to difficulties in determining the origin of and/or the purity of the contents of the materials<sup>511</sup>.

### **C. Minimum export prices**

A minimum export price is a minimum allowable price for a good being exported. It does not necessarily result in a binding price, but may also be used as a reference price<sup>512</sup>. The classification of this type of export restriction among the quantitative restrictions on exports is quite controversial in that a minimum export price requirement is often associated with an

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<sup>510</sup> WTO Doc. WT/TPR/OV/13.

<sup>511</sup> Jeonghoi, K., *supra* n. 402, at 110 and Annex 1.A2.

<sup>512</sup> Fliess, *supra* n. 25, at 22.

export tax. Indeed, it is often used as a base to calculate export taxes and normally entails similar effects; at the same time, however, it is not an export duty in the sense described above, and its implementation triggers quantitative restrictions on the volume of exports. Accordingly, MEP are normally considered to belong to the category of implicit quantitative restrictions on exports<sup>513</sup>.

The imposition of a minimum export price is not a frequently used measure with respect to industrial raw materials. Indeed, the OECD registered China as the only country resorting to such measure in 2010<sup>514</sup>. China's regime of minimum export prices was indeed challenged before the DBS bodies in the *China – Raw Materials* case as an opaque system of coordinated export prices based on informal statements and oral agreements between traders and export regulators through the direction of China's Chamber of Commerce of Metals, Minerals and Chemicals Importers and Exporters (CCCME)<sup>515</sup>, and the imposition of penalties by MOFCOM against non-conforming exporters as well as licensing authorities issuing licenses to non-conforming exporters<sup>516</sup>.

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<sup>513</sup> See, for instance, Van De Bossche, P., *The Law of the World Trade Organization*, Cambridge University Press, at 444; WTO Doc. WT/TPR/OV/W/4, at 13.

<sup>514</sup> Fliess, *supra* n. 25, at 12. The tariff lines identified were 28.

<sup>515</sup> Panel Report, *China – Raw Materials*, *supra* n. 432, at 243-263.

<sup>516</sup> *Id.* Within the *China – Raw Materials* case, the complainants argued that such system was applied, *inter alia*, on various forms of bauxite, coke, fluorspar, magnesium, silicon carbide, yellow phosphorus, and zinc – all materials for which China applied export taxes. However, given the lack of transparency of Chinese MEP requirements, information about other raw materials whose price

However, the Panel itself ascertained that China's system remained in place until July 2010, when the CCCMC *Resolution on Abolition of Coordination and Administration of Export Commodities* was adopted and China thereby abandoned price coordination<sup>517</sup>. The only other country that imposes minimum export prices is Argentina, which introduced precautionary price references for copper exports in 2009<sup>518</sup>, and recently adjusted them in the beginning of 2012<sup>519</sup>.

#### IV. The economic implications of export restrictions

The recent recrudescence of export restrictions applied to critical minerals and metals has been generating increasing concerns in terms of its potential medium and long-term economic impacts. Indeed, the high geographical concentration of production and the fact that a vast majority of export restrictions are applied by leading producers, controlling high shares of world production and exports, precludes to have significant impacts on world supply. Moreover, the key feature of the extractive industry, characterised by lagged response of the supplying industry to upward pressures

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was subject to coordination in view of exportation is vague. Nothing is found in China's Trade Policy Reviews in this respect. WTO Docs. WT/TPR/S/199 (12 August 2008), WT/TPR/S/230 (26 April 2010), WT/TPR/S/264 (8 May 2012).

<sup>517</sup> Panel Report, *supra* n. 432, at 252.

<sup>518</sup> WT/TPR/OV/12.

<sup>519</sup> WT/TPR/OV/W/3.

in world demand patterns introduces another elements of instability, and may lead to an amplification of the distorting effects produced by export restrictions in terms of price dynamics. This is why it proves important to understand how an export restriction works and what are the implications that its use may trigger in world production, supply and demand, as well as prices.

### **A. The standard economic theory of export restrictions<sup>520</sup>**

The standard economic theory of export restrictions generally tends to focus on the economic effects attributable to export taxes, in that – being price measures – their impacts appear more directly measurable compared to quantity measures such as export quotas and other quantitative restrictions on exports. However, the general functioning mechanisms of export restrictions are common, to a bigger or lesser extent, to all type of export restrictions. Indeed, independently from the fact that they impose a higher price on exports (in the case of export taxes) or not, the effect of a restrictions on exports generally reduces the volume of exports of the product affected by the restriction, and therefore induces a diversion of production from exports directed to the international market to the domestic market (i.e. a reduction of world supply, whose impact would vary upon the incidence of the country on the

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<sup>520</sup> The following discussion heavily borrows from Piermartini, *supra* n. 7.

total volume of production, and an increase in domestic supply. Accordingly, the domestic price of the products would decrease, while the reduced supply in the world market may generate, depending on the export shares of the country imposing the restriction, turbulences on the world supply patterns and, consequently, volatility in world prices. In order to analyse the different components contributing to generate such effects, and the variables responsible for the determination of their magnitude, we will focus on the functioning of an export tax, and then highlight which differences in terms of impacts ascribable to the application of different type of export restrictions.

On a general level, an export tax raises the cost of exported products (so-called price effect) and, accordingly, induced a reduction of the volume of exports of the taxed products (so-called trade effect). The reduced volume of exports, in turn, generate a parallel increase in the domestic market of the supply diverted from the international market (so-called supply-side effect), which ultimately leads to a diminution of domestic price, creating a wedge between domestic prices and the price charged to foreign consumers. However, depending on whether the domestic country imposing the restriction depend on whether the latter is a “large”

country or a “small country”, the welfare implications associated with an export tax may differ significantly<sup>521</sup>.

The standard economic theory on the effects of an export tax can be described as follows: the implementation of an export tax induces an increase in the commodity export prices. Finding it more expensive to export the taxed product, exporters in the domestic country will prefer to offer their supply on local markets (untaxed) rather than on the international market (taxed) and will thus decrease the volume of their exports and divert their supply in the domestic market. In a small country, unable to affect foreign prices, the increase in the domestic market supply will reduce the domestic price of the taxed goods below the world price up until the point when the price differential between the latter, which remains unchanged, and the domestic price equals the amount of the tax. Accordingly, the domestic production will adjust at the level below the pre-tax equilibrium. When a country is large, the reduction of the supply of the exported good will raise the world price of the taxed product, thereby causing the reduction of the international demand for the product. The reduced exports to the rest of the world will be then diverted onto the domestic market, where the domestic price of the taxed product will fall, creating a differential between the latter and the world price up until the

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<sup>521</sup> From an economic standpoint, a “large” country is a price setter in the sense that it is assumed to export a significant share of world exports such that if these exports are reduced, world supply significantly declines and, as a result, the world price increases. *Id.*, at 3.



domestic suppliers of the latter receive the same price for their product at home and abroad (i.e. until the price differential equal the tax) and producing a parallel decline in output in the home country. However, since in this latter case the world price experiences an upward pressure, the price differential between the reduced domestic price of the taxed good and the increased world price is significantly higher than in the case of the small country.

In the case of the quantitative restrictions on exports, the main difference is that the trade effect and the supply-side effect are not triggered by a price effect, in that the reduction in the volume of exports of the restricted products is not conditioned upon the imposition of a price on exports but upon the restrictive impact produced by the introduction of a ceiling on the quantity of exports of a certain commodity or the stringency of the conditions prior to exportation. Of course, the tougher the conditions or the ceiling with respect of the level of traditional exports (with the highest incidence being represented by the export ban), the higher the trade-effect and the consequent supply-side effect<sup>522</sup>.

In sum, the standard economic theory on the economic implications of an export tax predicts the following effects:

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<sup>522</sup> Indeed, from a strict economic point of view, it is always possible to “convert” export restrictions into their equivalent export taxes, i.e. to determine the level of export tax that would have produced the same trade effect on the volume effect as the quantitative restriction. See Mitra and Josling, *supra* n. 8, at 24 et seq. Moreover, economic theory suggests that excessively high level of export taxes or low level of quotas, as well as extraordinarily stringent conditions posed upon exportation amount to an export ban. Piermartini, *supra* n. 7, at 8.

1. a substitution effect on domestic consumption: *ceteris paribus*, the reduction in the domestic price produced by the diversion of exports to the domestic market induces an increase in the domestic consumption of the taxed good;
2. a substitution effect on domestic production: *ceteris paribus*, the downward pressure on domestic price produced by the increase in domestic supply leads to a decrease of domestic production of the commodity;
3. an impact on world price: when the exporting country is large, the reduction of volume exports increases the world price.

**B. The welfare implications of an export tax: efficiency and terms-of-trade effects<sup>523</sup>**

The implementation of an export restriction produces two distinct effects: a terms-of-trade effect and an efficiency effect.

In the exporting country, a restriction on exports induces efficiency losses ascribable to the distortions on both production and consumption as a result of the above-described substitution effects. As a matter of fact, domestic producers produce and sell less at a lower price, while consumers benefit from the decrease in

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<sup>523</sup> The following discussion heavily draws from Piermartini, *supra* n. 7.

the domestic price and consume too much. As to the terms-of-trade effect<sup>524</sup> a gain is realized when the exporting country is a large country because of the upward influence on the world price of the taxed commodity. In the case of a small country, however, the terms-of-trade benefit disappears in that variations in the volume of export will not affect the world price. Hence, an export tax induces in the domestic country a negative efficiency effect and a positive terms-of-trade effect when the country imposing an export tax is large. In this case, the measure may improve national welfare. If a country is small, however, there is no terms-of-trade gain and thus the cost of implementing an export tax unambiguously exceeds its benefits.

In the importing country, the implementation of an export restriction abroad would produce losses both in terms of efficiency and in terms-of-trade, independently from the fact that the country imposing the measure can affect foreign prices or not. In other words, the export tax is a “beggar-thy-neighbour” policy<sup>525</sup>, in the sense that it unambiguously reduces the national welfare of the importing countries. As a result of the export restrictions, in fact, foreign producers are led to produce locally what would have been

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<sup>524</sup> The terms-of trade indicates the ratio between the price of a country’s exports over the price of its imports. An increase in terms-of-trade is associated to an increase in a country’s welfare, since it implies an improvement in terms of real income. Krugman, P., *International Economics: Theory and Policy*, Sixth Edition, 2003, at 101 et seq.

<sup>525</sup> A beggar thy-neighbour policy is defined as a policy that benefits the home country only because it worsens economic conditions abroad. *Id.*, at 544.

more efficiently produced in the exporting country while foreign consumers consume too little. Finally, there is no terms-of-trade gain for the importing country, regardless of the size of the exporting country imposing the export tax.

On a worldwide level, the implementation of an export tax will then unambiguously reduce the overall net welfare: the eventual terms-of-trade gain associated to the adoption of an export restrictions by a large exporting country is equal to the terms-of-trade loss of the importer countries. Thus, the overall impact on the world welfare as a result of the efficiency losses deriving from the production and consumption distortions unambiguously produces a net-negative effect on global welfare<sup>526</sup>. On a global level, in fact, efficient domestic producers are discouraged in the exporting countries whereas foreign producers are led to produce locally what would have been more efficiently produced in the exporting country; on parallel, too much of the taxed good is consumed in the exporting country while consumers in the foreign country consume too little as a result of the substitution of cheaper imports with inefficient domestically-produced commodities.

When considering the internal redistributive effects for both the exporting and the importing countries as a result of the implementation of an export restrictions in a large country, it is

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<sup>526</sup> It has to be noted that this analysis is static, in the sense that it does not take into account that such measures may be adopted to respond to market failures, to address negative externalities and/or to fulfil essential public policy objectives. Piermartini, *supra* n. 7, at 4.

clear the consumers in the exporting countries benefit from lower domestic prices, while the producers are worse-off because of price decline in the home country and consequent decline in domestic production. In the foreign country, however, there will be redistribution of income from consumers, penalized by increasing prices, to producers, expanding production due to price upsurge. In the case of the small country, no redistributive impact would be borne by the importing country, while in the exporting countries there will still be a redistribution from producers to consumers.

### **C. Amplification of the effects linked to export restrictions when applied to critical mining raw materials**

Bearing in mind the general dynamics showed by standard economic theory on the effects of export restrictions, it is important to put them in relation to the peculiarities of the extractive industry in order to better understand the economic implications of the export restrictions under review. Indeed, the key characteristic of the mining sector, in addition to the reflections of the current geo-economic framework on world demand and supply patterns of critical raw materials, seem to determine an amplification of the effects generally ascribable to export restrictions.

The first relevant element in assessing the impact of export restrictions applied to critical minerals and metals is that, given the

highly concentrated distribution of world production, the export restrictions under review are mostly imposed by major producers and, therefore, are susceptible of influencing world prices<sup>527</sup>. In this respect, the upward pressure exercised on the world price of critical raw materials adds to the trend of increasing prices of metals and minerals which has its roots in the beginning of the twentieth century, when the strength of the world demand triggered by the new geo-economic framework induced the longest and most comprehensive commodity boom so far<sup>528</sup>.

Second, structural characteristics of the mining sector, characterised by low price elasticity of both supply and demand<sup>529</sup> add to this framework and further exacerbate the upward trend

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<sup>527</sup> It should also be noted that the prices of raw materials tend to increase by category, i.e. if the price of an iron-ferro mineral goes up, then the other categories of iron-ferro minerals' prices would tend to raise as well. Radetzski, *supra* n. 6, at 24.

<sup>528</sup> *Id.*, at 66 et seq. However, this framework – which is further complicated by the fact that “economic” depletion issues (see *infra*, paragraph V), inherent to exhaustible mineral resources, induce upward costs and prices as volumes expands with economic growth over time, notwithstanding cost-reducing technological process (Radetzski, *supra* n. 6, at 7) may make it more difficult to ascertain to what extent the price increased is due to the imposition of an export restriction instead of being the natural consequence of the strength of world demand. Furthermore, the picture is complicated by the fact the actors having the highest share in the growth of world demand of raw materials are precisely the ones which recur to export restrictions (e.g. China).

<sup>529</sup> Demand elasticity is defined as “the percentage fall in the demanded quantity of a good as its price increases by one per cent”. In a specular way, supply elasticity indicates “the percentage increase in the quantity of a good produced following a one per cent increase in its price”. Piermartini, *supra* n. 7, at 6. The higher elasticity the higher the responsiveness of, respectively, demand and supply to price variations.

pattern attributable to export restrictions<sup>530</sup>. Indeed, in the short-term the price elasticity of demand for critical minerals and metals is low, due to both the difficulty of substitution of such materials<sup>531</sup> and the often marginal contribution of such materials to the total costs of manufacturing of processed products<sup>532</sup>. Furthermore, because of lagged response of the supply industry to changes in demand patterns<sup>533</sup>, the price elasticity of world supply is also very low, and thus contributes to amplify the volatility of global market for minerals and metals<sup>534</sup>.

Moreover, the uncertainty induced by the imposition of export restrictions may also affect long-term investment and production response, especially considering the high risk of a domino effect in the application of export restrictions<sup>535</sup>. Insecure business environment is particularly harmful for the mining sector, characterized by high capital intensity and long-term payback revenues<sup>536</sup>, and reduces and/or delays incentives for the suppliers

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<sup>530</sup> Gomes-Sabaini, J. C., Role of Export Taxes, in Tanzi, V. (ed.), Fiscal Policy in Open Developing Economies, International Monetary Fund, Washington, 1998, at 47.

<sup>531</sup> See *supra*, Chapter One, paragraph II.

<sup>532</sup> Notwithstanding the price increases, most materials are indeed used in small quantities, especially for the most high-technology applications. See, for instance, antimony, molybdenum, rare earths, etc. (Chapter One, paragraph II, section C, sub-sections a), j), and m)).

<sup>533</sup> See *supra*, Chapter One, paragraph II, section B.

<sup>534</sup> Farooki, *supra* n. 38, at 104 et seq.

<sup>535</sup> Korinek, *supra* n. 454, at 116.

<sup>536</sup> *Id.*

to increase their production and investment<sup>537</sup>, thereby aggravating international prices increases and supply instability<sup>538</sup> even in the long-run, when supply is normally deemed to adjust to new incentives<sup>539</sup>.

Finally, another element that contributes to further complicate the picture, and to amplify the economic implications of export restrictions is that, as our previous analysis shows, export duties, quotas and other forms of export restrictions are frequently applied simultaneously so that the overall impact of cumulative measures is even more difficult to understand and ascertain unambiguously<sup>540</sup>.

The combination of these elements, together with the relatively recent practice of countries to recur to export restrictions on minerals and metals<sup>541</sup>, makes it difficult to elaborate sophisticated models of analysis to detect the economic effects directly

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<sup>537</sup> In this perspective, the application of an export restriction may actually increase global welfare insofar as it is applied to correct market distortions, i.e. to discourage the overexpansion of primary production during a period of sharp increases in price in the international markets. Evidently, this function is particularly important for the mining sector, which requires long period of maturation, since capacity additions may begin to show results when prices start to fall again: thus, they may help to rationalize entrepreneurial decisions and to canalize funds in a more efficient way. Gomes-Sabaini, *supra* n. 530, at 46.

<sup>538</sup> Peeling, *supra* n. 45, at 166.

<sup>539</sup> Piermartini, *supra* n. 7, at 6.

<sup>540</sup> In this respect, the non-directly measurable effects associated with non-price restrictions on exports such as quotas or licensing requirements renders them more market distorting in may produce more uncertainty, especially if applied for only a limited period. Gomes-Sabaini, *supra* n. 530, at 46.

<sup>541</sup> In this perspective, the effects of export restrictions have been studied in detail and fully understood with respect to the first wave of export restrictions occurred in the 1970's. See, Piermartini, *supra* n. 7, at 16 et seq. and the bibliography hereby cited.



attributable to each export restrictive measures. However, studies conducted so far have underlined that the negative overall welfare implications associated to the application of export restrictions are most often justified by the exporting country with reference to pursuance to major public policy goals, most commonly the preservation of exhaustible resources and environment stability but also the promotion of downstream activities and the raising of government revenues<sup>542</sup>. Accordingly, on the one hand, the effects ascribable to export restrictions do seldom completely adhere to predictions of standard economic theory and, on the other hand, they often disregard their stated objective. This is the case, for instance, of the set of export restrictive measures applied by China on molybdenum primary materials, whose global effect, despite the environmental protection and conservation goals proclaimed by Chinese government, has been mainly that of boosting domestic production of molybdenum articles, instead of a production decline, through the incentives provided by decreased domestic price of primary products<sup>543</sup>. Indeed, the European Union has denounced that the complex mix of export restrictive measures applied by China on various forms of molybdenum primary materials<sup>544</sup>, of

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<sup>542</sup> See *infra*, paragraph V.

<sup>543</sup> Korinek, *supra* n. 454, at 111-2.

<sup>544</sup> See *supra*, paragraph II, section C, Table 3. Moreover, the imposition by China of various types of export restrictions on molybdenum products dates back to 2007. Korinek, *supra* n. 454, at 125.

which China is furthermore a dominant producer<sup>545</sup>, is clearly determining a *de facto* dual pricing system on raw materials, whereby the price differential between the domestic price of molybdenum primary supplies and the world price has been exploited by domestic producers as to increase exports of value added products at below-the market prices, thus deteriorating the terms of competition with traditionally powerful players such as the European Union<sup>546</sup>. The same logic, notwithstanding again the proclaimed non-economic rationale<sup>547</sup>, is applicable, in the light of the registered implications, for the complex of export restrictions applied by China on other materials for which it enjoys a *quasi*-monopolistic share of world production and export, i.e. the rare earths elements<sup>548</sup>. As a matter of fact, the increasingly tight controls on the export on rare earths<sup>549</sup>, together with the great

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<sup>545</sup> See *supra*, Chapter One, paragraph II, section C and paragraph III.

<sup>546</sup> Annex V, *supra* n. 76, at 130-1.

<sup>547</sup> It has to be noted that the export restrictive measures applied to both molybdenum products and rare earths elements have indeed been recently subject by the European Union, the United States, and Japan, before the WTO dispute settlement system, after the *China – Raw Materials* which already condemned China's export regime on various forms of raw materials. See Panel Report, *China – Raw Materials*, *supra* n. 435 and *infra*, Chapter Three. The complainants argue that such measures are indisputably leading to high incentives for domestic producers to move up along the value chain and produce value-added products. *Id.* The filing of a second challenge concerning China's restrictions on exportations of raw materials reflects the mounting tension arisen between China, on the one hand, and industrialized resource-scarce countries like the United States and the European Union, on the other, over access to critical minerals and metals.

<sup>548</sup> See *supra*, Chapter One, paragraph II, section C, sub-section m).

<sup>549</sup> See *supra*, paragraph II, section C, Table 3.

uncertainty produced by the expectation of progressive reduction in the volume of exports, has produced great turbulence within the international market despite the relatively minor amount of rare earths-containing products<sup>550</sup>. Indeed, the quota allocations are differentiated from Chinese to foreign-invested companies to the advantage of the former, and it has been estimated that the domestic price of rare earths in China is more than 30 per cent lower than the corresponding world price<sup>551</sup>. No exception is the case of tungsten, for which the combination of export taxes and quotas on primary materials and VAT rebates on exports of value added products has led a situation of dual pricing as evident as it permits Chinese producers to sell value added product in the international market as prices which are lower than the input costs, thereby heavily distorting international competition to the detriment of other competitors<sup>552</sup>.

Apart from these singular and particularly alarming cases involving China as a dominant producer, the general effect of the export restrictions applied to critical raw materials have the general effect to keeping the upward pressure on world prices and, moreover, are responsible for significant diversion of imports from

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<sup>550</sup> Korinek, *supra* n. 454, at 117-9.

<sup>551</sup> Annex V, *supra* n. 76, at 163.

<sup>552</sup> *Id.*, at 209. Indeed, the export restrictions applied to tungsten products have also been subject to WTO scrutiny within the context of the rare earths case brought before the WTO dispute settlement body in 2011. See Panel Report, *China – Raw Materials*, *supra* n. 435.

net-importing countries as a response to reduced volumes by major world producers. Indeed, among the critical raw materials examined, the import choices of the European Union and the United States, with respect to the world distribution of production, seems clearly affected by the implementation of export restrictive measures. This is the case, for instance, of antimony, whose leading producer (again, China, accounting for more than 90 per cent of total production) applies both an export tax on ore and concentrates and an export quota on ores and concentrates as well as on antimony products. This seems to affect the import choices of the European Union and the United States. Indeed, the former heavily relies on Bolivia, while the latter, although predominantly relies on Chinese primary antimony imports (58 per cent) on an overall basis, it does limit imports of antimony ore and concentrates (only 28 per cent), predominantly counting as well on Bolivia (58 per cent). The higher percentage in antimony imports of antimony metal or oxide, on the other hand, may be the result of two combined effect: the effect of the export tax on the ore and concentrate and the absence of export tax in the metal form of antimony<sup>553</sup>. The same scheme holds true, to mention some more examples, for Russian imports of nickel, as well as for chromium imports from India<sup>554</sup>.

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<sup>553</sup> See *supra*, paragraph II, section C, Table 3.

<sup>554</sup> *Id.*, paragraph II, section C. See also Korinek, *supra* n. 454, at 114-6.

**V. The public policy objectives associated to export restrictions: legitimate aspiration towards sustainable development or resurgence of national resource nationalism?**

The range of different rationales proclaimed by export countries to justify export restraints has traditionally been very wide, and comprised mostly economic objectives such as the mitigation of commodity price volatility, the stabilization of fiscal revenues, the control of inflationary pressures and currency devaluation, the contrast to tariff escalation<sup>555</sup>, and the safeguard of adequate domestic supplies<sup>556</sup>. However, while the several economic goals just cited mostly reflect the realities of most poor countries (developing and least-developed), heavily dependent on a few, highly volatile (agricultural) commodities for their export

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<sup>555</sup> The expression tariff escalation refers to the phenomenon for which imports tariffs are incrementally higher the higher the products move up along the value chain. That is, import tariffs on processed goods are higher than they are on primary commodities. Piermartini, *supra* n. 7, at 12. Indeed, the mechanism of export restrictions inherently represents a reverse tariff escalation. For a critical discussion on tariff escalation and its negative impacts on commodities-exporting countries in the perspective of vertical diversification, with particular regards to agricultural commodities, see Third World Network, *The Benefits of Export Taxes*, 2009, available at [twinside.org.sg/title2/par/Export\\_Taxes.doc](http://twinside.org.sg/title2/par/Export_Taxes.doc), at 13.

<sup>556</sup> For instance, within the context of the recent food crises, several countries resorted to export ban of grains and other agricultural commodities in order to ensure sufficient domestic supply. WTO Doc. WT/TPR/OV/W/1-6; see also Mitra and Josling, *supra* n. 8, at 4 et seq.

earnings<sup>557</sup>, the panorama of the rationales put forward by commodity-exporting countries to justify the introduction and maintenance of export restrictions on critical minerals and metals reflects two central elements: the first is that the highly concentrated geographical distribution of production and the crucial role played by critical raw materials as inputs for key industrial sectors, on the one hand, renders net-importers countries dependent on trade for access to resources but, on the other, generates upward pressures on natural resources for commodity-exporting countries which, as emerging economies, determinately refuse to be “locked” in a natural resource-led development and look forward to move up along the value chain in order to diversify exports and promote higher value-added activities in order to achieve economic development. Thus, the “development” question

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<sup>557</sup> The so-called “mono-economies”, i.e. the countries heavily relying on the exports of one or a few commodities, can be divided between fuel (and of course, mainly oil)-dependent economies (whose high and stable revenues are generally ensured, other than by means of the cartels of OPEC countries, by the international high demands triggered by the entry of other big players such as the emerging economies responsible of the wave of minerals export restraints) and non-energy commodities dependent economies. Among them, the poorest countries are exposed to the highest risk of destabilisation in that they heavily rely on exports of agricultural volatile exports. Radetzki, *supra* n. 6, at 188-199. The net-exporters countries responsible of the wave of mineral export restrictions, on the contrary, although being abundant in a wide range of mineral resources, have already reached a transitional level of development and diversification which requires them to be great importers of primary products while, at the same, being leading exporters of abundant minerals and metals. Indeed, the efforts of these countries towards economic development are reflected in the ever-raising levels of exports of semi-processed and processed products. See, for all, Farooki, *supra* n. 38, at 70 et seq.

is central when approaching the issue of export restrictions to minerals and metals and, in a way, the current wave of minerals export restrictions, as a tool to “break” the traditional international trade structure within a context of international economic transition<sup>558</sup>, builds tension and re-actualizes the old debate between North and South<sup>559</sup>.

The second element is that among the most frequently stated policy goals for export restraints applied to minerals and metals non-economic concerns and, in particular, environment-motivated objective are predominant<sup>560</sup>. This trend is, on the one hand, a reflection of the increasing sensitivity towards environmental degradation issues and of the definitive recognizance, both internationally and at national levels, of the value of sustainable development; on the other, it is rooted on the peculiarities of the mining industry, which is traditionally characterized by harmful and widespread environmental impacts<sup>561</sup>.

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<sup>558</sup> Of this opinion, Gu, *supra* n. 369, 765-805. For a more radical opinion, see Chang, H.J., *Kicking Away the Ladder: An Unofficial History of Capitalism, Especially in Britain and the United States*, Challenge, 45 (5), 2002, at 63-97.

<sup>559</sup> For an analysis of the implications of the ideology brought into the debate over access and exploitation of critical raw materials on the legal defence of such measures by commodity-exporting countries see *infra*, Chapter Four, paragraph III.

<sup>560</sup> Korinek, *supra* n. 454, at 110; Fliess, *supra* n. 25, at 15-16.

<sup>561</sup> OECD, *Minerals and Pro-Poor Growth*, in *Natural Resources and Pro-Poor Growth: The Economics and Politics*, A Good Practice Paper, DAC Guidelines and Reference Series, 2008, available at <http://www.oecd.org/dac/environmentanddevelopment/42440224.pdf>, at 138-9.

### **A. Export restrictions as a development tool: emerging national resources nationalism in the name of industrial diversification**

The common, although not always explicitly stated<sup>562</sup>, objective linked to the application of export restrictions on critical minerals and metals is the promotion of downstream processing, i.e. the policy choice to provide domestic producers with the incentive to process locally the primary materials extracted through mining, in order to boost industrial development and thereby diversify the export base in favour of higher value-added exports<sup>563</sup>. The underlying economic argument for export restrictions in this perspective is the so-called infant industry protection, i.e. the belief that a temporary protection or subsidisation of a newly established domestic processing industry may serve the purpose of giving it the time sufficient to become competitive internationally and potentially develop a comparative advantage<sup>564</sup>, thereby providing the exporting country with the chance to diversify its export base moving up along the value chain through the development of a strong industrial sector. Within such framework, export restrictions would provide with an indirect subsidy to downstream producers, in that the downward pressure on the domestic price of the

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<sup>562</sup> See *infra*, section B.

<sup>563</sup> Korinek, *supra* n. 454, at 110 ss.; Fliess, *supra* n. 25, at 15-16.

<sup>564</sup> For a thorough discussion of the economic rationales of the infant industry arguments see, among others, Krugman, *supra* n. 524, at 256 et seq. For an analysis of the limits of such argument see Piermartini, *supra* n. 7, at 10.



commodities restricted creates a price differential between the country imposing the measures and the rest of the world. In the case of a large country, as are several of the countries resorting to such measures in the case of critical minerals and metals, moreover, the wedge between domestic and world price is even higher, the restriction on exports inducing an upward pressure on the latter which adds to the decline of the former<sup>565</sup>. Hence, the introduction of an export restriction ensures to downstream producers a higher domestic supply at below world market prices, and incentivizes them to increase production.

The tension of developing countries and, in particular, of newly emerging economies towards the development of the manufacturing sector and the diversification of exports away from primary mining is rooted in the determination to “break” the traditional patterns of international trade which, through most of the twentieth century, have seen the developed countries as dominant producers of higher-value added (more dynamic) goods and importers of raw materials, while the heavy commodity dependence typically occurred in developing nations<sup>566</sup>. In other words, the upgrade of the economic and trade structure is seen by these countries as the only way to “catch up” and fill the

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<sup>565</sup> See *supra*, paragraph IV, section A.

<sup>566</sup> See, for all, Leamer’s description of the international trade structure and, in particular, the concept of “development ladder”. Leamer, E., *Sources of International Comparative Advantage: Theory and Evidence*, Cambridge: MIT Press, 1984, in particular Table 4.4 and Table 4.5.

development gap with respect to highly industrialized countries and as an instrument to achieve higher level of growth and economic performance through the exportation of greater volumes of higher-value added products<sup>567</sup>.

Indeed, in promoting such vision developing countries rely on an whole body economic literature which has progressively theorized and documented multiple examples taken by the empirical evidence that suggest a negative correlation between high growth rates, on the one hand, and resource-led development on the other<sup>568</sup>. In particular, Sachs and Warner<sup>569</sup> have elaborated the theory of the so-called “resource curse”, according to which mineral-dependent countries would suffer from slower economic growth rates and social progress compared to that of other countries at corresponding levels of economic development due to the combination of a series of factors peculiarly afferent to the mining sector, such as high market volatility, deficient governance of large mineral rents due to corruption and absence of reallocation of macroeconomic level, and social tensions arising out of it<sup>570</sup>.

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<sup>567</sup> Piermartini, *supra* n. 7, at 9.

<sup>568</sup> For an overview of the importance of diversifying the export base see Rodrick, D., What you export matters, *Journal of Economic Growth*, 12 (1), 2007, at 1-25.

<sup>569</sup> Sachs, J. And Warner, A., Natural Resources and Economic Development: The Curse of Natural Resources, *European Economic Review*, 45 (2), 2001.

<sup>570</sup> *Id.*

Moreover, the spectrum of the so-called Dutch disease<sup>571</sup> is often evoked by developing countries as a reason to exploit mineral booms “domestically”, i.e. to boost internally a domestic processing industry for minerals and metals instead of merely relying on high profits arising out of raw materials’ export earnings. According to such theory, in fact, there is an inherent risk of shrinkage of the manufacturing sector in the exploitation of a mineral resource bonanza as the excess profits produced by a mineral boom – generated by increased mineral exports and, thus, by large external surplus – induce an appreciation of the real exchange rate which, in turn, decrease the competitiveness of other domestic tradable goods (i.e. manufactured goods) and thereby generates a production contraction of those goods up to the point when the mineral-abundant country becomes a mono-economy<sup>572</sup>.

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<sup>571</sup> Davies describes the Dutch disease as “a morbid term that simply denotes the coexistence of booming and lagging sectors in an economy due to a temporary of sustained increase in export earnings”. Davies, G., *Learning to Love the Dutch Disease: evidence from the mineral economies*, *World Development* 23(10): 1765-79. The expression was coined in the late 1970’s to describe the weakening of the manufacturing sector experienced by the Netherlands throughout the decade as a consequence of the booming exploitation of natural gas earnings. However, some authors pointed out that the name chosen is misleading, in that the Dutch case was not the first nor the most significant, the empirical examples dating back to the booms of gold mining in Australia, guano exportation in Chile and Peru, and sugar in Cuba more than a century ago. Radetzki, *supra* n. 6, at 207.

<sup>572</sup> For a detailed description of the mechanism described as the Dutch disease see Davies, *supra* n. 54, at 14-18. It has to be noted, however, that the reallocation effect endangered by the commodity boom increases the overall national welfare and, therefore, would not *per se* constitute a disease susceptible to undermine economic growth and development. However, according to Davies,

If it is true that evidence on the presumed negative effects linked to mineral-dependence is non-conclusive<sup>573</sup> and that there are also successful stories of resource-led development<sup>574</sup>, it is undeniable that the emerging economies predominantly recurring to export restrictions on critical minerals and metals are determined to pursue economic development through the promotion of the manufacturing sector. Indeed, countries such as China, India, South Africa and Ukraine have all been undertaking major industrialization plans whose common element is the combination of industrial policy measures with trade policy measures in order to accelerate economic diversification and promote industrial base

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“the Dutch disease truly becomes a problem if there exists some market failure inhibiting an appropriate structural adjustment or if there is some existing distortion in the economy which is intensified by the mineral export boom”. *Id.*, at 16. Radetzki underlines, moreover, that the complete reliance on mineral exports would not *per se* be harmful as long as it ensures profitable exploitation if it wasn't for the fact the bonanza “often ends with a bang” (*supra* n. 6, at 208), mainly due to depletion, emerging commodity surplus or technical innovation which renders the commodity redundant or substitutable.

<sup>573</sup> Indeed, a whole series of studies rejected the generality of the resource curse case on the basis of compelling empirical evidence. See Davies, *supra* n. 54; Maddison, A., Explaining the Economic Performance of Nations, in Baumol W., Nelson, R., and Wolff, E., (eds.), *Convergence of Productivity*, Oxford University Press, 1994; Maxwell, P., *Chile's Recent Copper Driven Prosperity*, *Minerals and Energy*, 19 (1), 2004; Wright, G., and Czelusta, J., *The Myth of the Resource Curse*, *Challenge*, 47 (2), 2004.

<sup>574</sup> See Findlay, R. and Lundhal, M., *Resource-Led Growth – A Long-term Perspective: The Relevance of the 1870-1914 Experience for Today's Developing Economies*, World Institute for Development Economics Research Working Paper No. 162/1999. This work are particularly relevant for it shows that, in the case of Western Europe and North America in the past century, there has been a strong correlation between the exploitation of mineral resources (fossil fuels, minerals and iron ore) and growth.

growth<sup>575</sup>. Significantly, the European Commission has underlined that the latest years show “a consolidation of trade measures as part of industrial policy”<sup>576</sup>.

Symptomatic of this trend is, once again, the Chinese case. In 2011, China launched its twelfth National Five-Year Plan (2011-2015), which aims at uplifting and reconstructing traditional industries, including iron/steel and non-ferrous metals, construction, equipment manufacturing, shipbuilding, and automotive, as well as boosting seven strategic emerging industries (energy conservation and environmental protection, new generation information technology, bio-technology, high-end manufacturing equipment, new energy and materials, new-energy vehicles)<sup>577</sup>. As known, the identified sectors require utilization of critical raw materials, and indeed it is not surprising that China identified rare earths, tungsten, antimony, molybdenum, tin, indium, germanium, gallium, tantalum, and zirconium as strategic for its

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<sup>575</sup> India approved on 25 November 2012 the first National Manufacturing Policy 2011 in an attempt to increase manufacturing’s share of national output so as to foster economic growth through the next decade. South Africa is now implementing the second Industrial Action Plan which, for the next four years, aims at promoting a wide range of industrial sectors including metals, transport equipment, green energy, ship and automotive, aerospace, defence, and electro-technical. Ukraine adopted on 12 September 2011 a Programme to Develop Domestic Production, with the objective of increasing economic diversification. For further information, see Ninth Report on Potentially Restrictive Measures of the DG Trade, *supra* n. 391, at 9-12.

<sup>576</sup> *Id.*, at 9.

<sup>577</sup> *Id.*, at 10.

development<sup>578</sup>, as it is not surprising that it imposes on them a set of export restrictions<sup>579</sup>. As a follow-up of the National Plan, China has been elaborating various sector-specific plans aimed at imposing targeted objectives for the reinforcement of “national champions” in the different industries, such as the raw materials industry. Such plans encompass the identification of strategic industrial development policies, and generally match these policies with trade-restrictive measures, such as export restraints. For instance, the increasingly stringent restrictions on the exportation of rare earths element fall within the scope of the latest Five-year Rare Earths Industry Development Plan drafted by the country’s Ministry of Industry and Information Technology<sup>580</sup>.

Within this framework, and in the light of the geography of export restrictions identified in the course of the present work, it seems that the choice of emerging economies to recur to trade-distorting measures on the exportation of critical raw materials, indispensable for fuelling the process of economic transition currently in place and whose effects would be to encourage the processing of minerals and raw materials before exporting, is attributable to a general resistance of these countries to the perpetuation of a traditional international trade structure which would lock them in a pattern of resource-led export base and

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<sup>578</sup> MOFCOM Declaration, “Ten Rare Metals Are Put Into Consideration for Strategic Stockpiles”, cited in Gu, B., *supra* n. 369, at 768.

<sup>579</sup> See *supra*, paragraph II, section C, Table 3.

<sup>580</sup> See Fifth Report of the DG Trade, *supra* n. 413, at 52.

development. In other words, the current wave of mineral export restraints applied by emerging economies as dominant world producers is for these countries an instrument for accelerating a process of economic development based on the upgrade of the industrial structure and on the diversification of national exports away from a dangerous dependence on commodity-led growth. That is, it is attributable to a deep modification in the geo-political and economic dynamics at the basis of the determination of international trade patterns.

## **B. Environmental concerns and the goal of sustainable development**

The most commonly referred to public policy goal declared by countries resorting to export restrictive measures on minerals and metals is the fulfilment of environmental protection objectives, namely the preservation of exhaustible mineral resources and the protection of the natural environment as well as public health and the ecosystems<sup>581</sup>. In this perspective, export restrictions on minerals and metals would serve to correct a typical market failure

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<sup>581</sup> Korinek, *supra* n. 454, at 110; Fliess, *supra* n. 25, at 15-16.

of the mining sector, the so-called environmental externalities linked to the extraction and use of mineral resources<sup>582</sup>.

Indeed, on the one hand, being mineral resources by definition finite, their “extraction and consumption today would irreversibly alter the extraction and consumption possibilities for the future”<sup>583</sup>, in that the depletion point would inexorably become closer over time due to non-renewability<sup>584</sup>. On the other, insufficient and/or relaxed regulations on mining activities may result in severe environmental degradation given that the extractive industry is a highly polluting and energy-intensive industry, potentially harmful for the surrounding environment. The negative environmental impacts of mining include energy and water consumption, air, water and land pollution, subsidence, land erosion and alteration,

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<sup>582</sup> An externality occurs when an economic activity impacts on a party that is not directly involved in such activity. It follows that price does not reflect the full costs or benefits in production or consumption of a certain good or service. WTO, World Trade Report 2010, *supra* n. 32, at 88.

<sup>583</sup> *Id.*, at 75.

<sup>584</sup> This central element was at the basis of the classical Harold Hotelling’s economic prediction according to which, due to finite availability, scarcity and prices of mineral resources were destined to increase over time. *Id.* However, history has repeatedly shown that non-renewable scarce resources are becoming significantly more scarce. Indeed, factors such as the discovery of new deposits and technological progress in extraction technology and in the development of new use patterns requiring progressively smaller amount of minerals and/or permitting to resort to substitutes has contributed to the alimentionation of a process of on-going and constant renewable of non-renewable resources both within individual countries as well as across continents (so-called expansion of the frontier, *supra* n. 59) so that “the more that is learned about the effects of deposits features on “discoverability”, with the information gain that occurs from continued exploration with regions, the more it is evident that the potential for expansion of the resource base is vast if not unlimited”. See Wright, G., and Czelusta, J., *supra* n. 573, at 34.



deforestation, and consequent damages to in public health and ecosystems<sup>585</sup>. In this perspective, the insistence on the environment-related rationale for resorting to export restrictions seems intended to ensure a full and effective realization of the objective of a sustainable development, as defined by the Brutland Report<sup>586</sup>.

Accordingly, an increasing attention towards the theme of environmental degradation in emerging economies as well as developing countries has been generally showed by the progressive imposition of tightening regulatory standards and rules and environmental regulations<sup>587</sup>. In this perspective, it is emblematic the case of China, whose massive multiplication of environment-related containing measures with regards to mineral resources has been defined as “impressive” by the WTO Panel itself within the *China – Raw Materials* case<sup>588</sup> and has been subject to further expansion in the past few years in an attempt to put forward a comprehensive mineral conservation policy and environmental protection framework in accordance with the objective of

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<sup>585</sup> OECD (2008), *supra* n. 561, at 138-9.

<sup>586</sup> See *supra*, Chapter One, paragraph II, section B, n. 65 and corresponding text.

<sup>587</sup> For an overview, see the section IV “Mining Sectors” of the latest TPRs of countries such as China, India, South Africa, but also of Democratic Republic of the Congo and Brazil, as well as Chile, Peru and Bolivia.

<sup>588</sup> See *infra*, Chapter Three, paragraph IV, section A and B.

sustainable development<sup>589</sup>. Indeed, China has been constantly proclaiming that the environmental goal is the priority objective underlying its recourse to trade-restrictive measures on exports and has accordingly centred its defence of export restrictions before the WTO DSB bodies on this theme on both the *China – Raw Materials* case and the prospective *Rare Earths* case<sup>590</sup>.

However, despite the stated environmental goal, which in principle export restrictions would seem to contribute to insofar as, according to the standard economic theory, they would induce a price decline in the domestic country<sup>591</sup>, the achievement of the conservation objective and/or the minimization of public health and environmental impacts is *de facto* undermined by the framework of high-speed industrialization occurring in emerging economies, which alters the standard theoretical functioning of export

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<sup>589</sup> See the list of measures provided by the Panel within the context of the *China – Raw Materials* case, at xxi-xxxi. With the issuance of the Guidelines for Development of National Mineral Resources 2008-2015, the Chinese government has tighten its control over exploration, extraction and exploitation of mineral resources, with the stated goal of protecting and rationally utilizing China's valuable resources. The MOFCOM has consistently reiterated that the environmental concerns were at the centre of Chinese wave of export restraints in multiple declarations. See for instance, the Declaration by the Spokeman of China's Ministry of Commerce, China's rare earth policy justified, 16 March 2012

(<http://english.mofcom.gov.cn/aarticle/counselorsreport/europereport/201203/20120308027910.html>)

<sup>590</sup> See *infra*, Chapter Two. The progressive stringency of environmental standards with regards to rare earths mining is documented in Morrison, W., and Tang, R., *supra* n. 481, at 16 ss. For a detailed description of the environmental damages linked to uncontrolled rare earths mining see Gu, *supra* n. 369, at 774.

<sup>591</sup> See *supra*, paragraph IV, section A.

restrictions and introduces a strong incentive for downstream producers to exploit the domestic price decline resulting from the application of the restriction on exports. Indeed, as seen *supra*, in the case of critical minerals and metals the application of a restriction on export has not generated a production decline but, on the contrary, has boosted production and encouraged an uplift along the value chain in more than one case<sup>592</sup>. Accordingly, the combination of the environmental rationale – however authentic it may be according to the proclaimed intentions of the government involved<sup>593</sup> –, with the objective to promote higher value-added activities, even if indirectly resulting out of the implementation of major economic transitions, jeopardizes the capacity of export restrictions to respond to non-economic concerns. In this respect, it has been suggested that export restrictions may not be the most appropriate tool to achieve environment-related goals in comparison of alternative option such as regulation on production<sup>594</sup>.

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<sup>592</sup> See *supra*, paragraph IV, section C.

<sup>593</sup> Indeed, it would depend upon an empirical evaluation on a case-by-case basis to assess whether the environmental rationale was put forward as a “pretext” to introduce creeping trade-distorting measures primarily aimed at achieving economic goals or whether the failure to achieve social objectives is but a side-effect of the process of economic development in place in the country at issue, independently from protectionist intentions from the State.

<sup>594</sup> Korinek, *supra* n. 454, at 119; see also *infra*, Chapter Three, paragraph IV, section C.

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## **PART TWO**

### **WTO disciplines on export restrictions and hypothesis of reform: available solutions to ensure fair access to critical mineral resources**

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“WTO rules were not drafted specifically to regulate international trade in natural resources. This has arguably led in some cases to regulatory gaps, or at the very least to a lack of clarity about the precise applicability of the rules in the particular circumstances that characterize natural resources trade” (WTO, World Trade Report 2010).

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## CHAPTER THREE

### **WTO disciplines on export restrictions: GATT rules, WTO-plus obligations, and the *China – Raw Materials* case**

#### **I. Introduction: export restrictions as NTMs within the WTO system**

The first part of the present work investigated the recent trends emerging with regards to export restrictions in critical minerals and metals, in order to identify the magnitude of the phenomenon, the actors involved, the functioning of the different types of measures adopted, their economic implications and the rationales behind them. In the light of the above-mentioned findings, the present chapter intends to identify the international trade rules applicable to export restrictions within the WTO Agreement and, in particular, the GATT 1994. The analysis of the current WTO disciplines on the export side is the necessary second step of the two-tiered

analysis undertaken in the present work, whose aim is to investigate whether and, if so, to what extent the proliferation of export restrictive measures on critical minerals and metals, as qualified in the first part of the present work, can be directly attributable to a “lack” of discipline or in any case to an insufficiency of the GATT regulation of export flows.

Indeed, the mounting tension over access to critical raw materials, further exacerbated by some degree of “rhetoric” over the proliferation of export restrictions as a reflection of a re-actualization of the terms of the conflict between the North and South<sup>595</sup>, has inoculated a general perception of urgent need for strengthened rules in this domain, and consequently given rise to an increasingly recurrent tendency to point to a presumed “under-regulation” of GATT disciplines as the cause at the origin of the multiplication of export restrictions<sup>596</sup>. Undoubtedly, this perception found vital lymph in the ascertainment of two main

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<sup>595</sup> By “rhetoric” of proliferation, we intend the conventional wisdom that has progressively referred to an unqualified “proliferation” of export restrictive measures on critical mineral resources. Indeed, as highlighted *supra* (Chapter Two), an analysis of the trends and key factors qualifying the phenomenon shows that the recent proliferation of export restraints is a vertical one, involving a very limited number of “large” countries. For an interpretation of the emerging clash between different conceptions of the use and utility of export restrictions between industrialized resource-scarce countries, on the one hand, and abundantly-endowed developing countries, on the other, and the implications inherent to such conflict in terms of legal solutions to improve WTO disciplines on exports see, respectively, Chapter Four, paragraphs I and III in particular.

<sup>596</sup> OECD (2003), *supra* n. 22, at 7 et seq. and OECD (2010), *supra* n. 385, at 22 et seq.; Karapinar, B., *supra* n. 21, at 1139-1155.

elements, directly linked to the historical premises under which the GATT itself was given birth<sup>597</sup>.

First, the fact that the GATT, originally conceived as one part of the comprehensive but ill-fated Havana Charter establishing the International Trade Organization<sup>598</sup>, was launched as a tariff agreement in the form of a provisional protocol and, in its early decades, mainly served as a negotiating forum for reciprocal, voluntary and non-discriminatory (MFN) tariff bindings<sup>599</sup> aimed at improving market access for foreign exporters<sup>600</sup>. The GATT architecture was indeed clearly affected by the general assumption that the removal of import barriers, which had caused countries to close up against each other during the period between the two wars, would be pivotal to prevent disasters linked to trade warfare such as the Second World War. At the time of the GATT drafting, in fact, substantial balance of payments problems created by decades

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<sup>597</sup> For an extensive overview of the history of the conception of the GATT, see Jackson, J.H., *World Trade and the World of GATT*, Indianapolis: Bobbs-Merrill Co., Inc., 1969.

<sup>598</sup> For a thorough description of the Havana Charter see Sacerdoti, G., *Havana Charter (1948)*, in *Max Planck Encyclopaedia of Public International Law*. The bailing out of the great project inspired by the Havana Charter was confirmed once it became clear that the United States, indeed the main promoters of the project, would not ratify the Havana Charter. For an extensive analysis of the political and economical issues at stake during the ITO Charter negotiations, with particular regard to the premises of the USA-UK relationship within the more general framework of the post-Second World War institutional foundations of the Bretton Wood system see Gardner, R., *Sterling-Dollar Diplomacy in Current Perspective*, Columbia University Press, 1980.

<sup>599</sup> For an analysis of the MFN clause as a key principle of the multilateral trading system see *infra*, n. 628 and the cited references.

<sup>600</sup> Staiger, *supra* n. 377, at 8-9.

of trade instability and the Second World War legitimately seemed to exclude that future patterns of protectionist temptations would be oriented towards the limitation of export flows. Within this framework, while tariff removal became the cornerstone of the system, the issue of export taxes was not addressed, as export taxes were less often used than import tariffs, at least with regard to developed countries that were the major actors in GATT-sponsored negotiated liberalization<sup>601</sup>.

The second element has to do with the fact that export restrictions have long been “neglected” within the multilateral trade system as a category of trade restrictive measures on its own, with peculiar characteristics and dynamics<sup>602</sup>, and have generally been included, by contrast, within the category of non-tariff measures

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<sup>601</sup> However, it has been observed that in the negotiations leading up to the creation of GATT, the United States pushed for a prohibition of export taxes. See Irwin, D., Mavroidis, P.C. and Sykes A.O., *The Genesis of the GATT*, Cambridge University Press, 2008, at 69-70. While the U.S. efforts in this regard did not prevail and no such prohibition was ultimately included in GATT, this observation does indicate that export taxes were an important trade policy concern in the pre-GATT era to at least some of the major trading countries. However, it has to be recalled that the USA position might have been most probably dictated by the need to level the playing field, being the US pre-empted to recur to such measures by means of Article I, § 9, cl. 5 of the Constitution, and thus probably eager to prohibit other countries from the possibility to have this instrument at their disposal. For a detailed description of the rationale behind such prohibition see Jensen, E., *The Export Clause*, 6 Florida Tax Review 1 (2003).

<sup>602</sup> Indeed, as we underlined *supra*, the inherent dynamics and functioning of export restrictions have started to be investigated only very recently, contextually with the emergence of the second wave of export restrictions. See, in particular, Chapter Two, paragraph I.

(NTMs)<sup>603</sup>, explicitly defined by the WTO Secretariat as “policy measures, other than tariffs, that can potentially affect trade in goods”<sup>604</sup>. This is true for both quantitative restrictions on exports and export duties or taxes, notwithstanding their specularly with import tariffs<sup>605</sup>. Both types of measures have indeed been consistently included among the non-tariff measures since the first Non-Tariff Measure Inventory was compiled by the GATT Secretariat on the basis of member’s reverse notifications<sup>606</sup> on 1968<sup>607</sup>.

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<sup>603</sup> A pre-eminent author has identified the rationale for opposing tariff measures to all other trade-restrictive measures, unified under the label “non-tariff measures”, in the fact that “it is import tariffs alone that are the policy measure with which negotiated market access commitments are made through negotiated tariff bindings and in this way, tariffs have a special place relative to all non-tariff measures in the GATT/WTO”. Staiger, *supra* n. 377, at 6.

<sup>604</sup> WTO World Trade Report 2012, *supra* n. 375, at 38.

<sup>605</sup> See *supra*, Chapter Two, paragraph II, section A, nn. 398 and 399 and corresponding text, and paragraph IV, section A.

<sup>606</sup> A “reverse” notification is a notification made by a member identifying measures imposed by other Members, in contrast with the general practice of notification which requires Members to provide information on their own policies. WTO World Trade Report 2012, *supra* n. 375, at 97.

<sup>607</sup> See the Inventory on Non-Tariff Measures of the Committee on Industrial Products, document COM.IND/6 and Addenda, of 11 December 1968; the Note by the Executive Secretariat of the GATT entitled “Inventory of Non-Tariff Measures – Balance sheet of notifications”, document COM.IND/W/102 of 11 April 1973; the GATT’s Secretariat Analysis of the documentation of the Technical Group on Quantitative Restrictions and other Non-Tariff Measures, GATT Document NTM(TG)/W/5 of 28 February 1989, Annex 10 (QRs) and 12 (NTMs other than QRs); the WTO Secretariat’s report JOB(03)/128, which compiled information of notifications in the TN/MA/W/25 series; and, the WTO Secretariat’s report JOB(04)/62/Rev.7, which compiled information of notifications in the TN/MA/W/46 document series. In all these documents, export restrictions were classified under Part IV “Specific limitations”, encompassing different relevant headings such as “quantitative restrictions”,

The interaction between these two factors has determined a situation for which not only export restrictions, and export taxes in particular, were not specifically addressed by the drafters of the GATT<sup>608</sup>, but the subsequent negotiating efforts towards the definition of elements of progressive reforms on the NTMs side have dispersed among an ever increasingly diverse set of policy measures<sup>609</sup>, thus obscuring the parallel reality of export restrictions and its peculiar logics<sup>610</sup>. As a result, improvements on

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“export taxes” and “export restraints”. Moreover, the “Indicative list of Notifiable measures” annexed to the Decision on Notification Procedures adopted at the conclusion of the Uruguay Round puts “export taxes” in the category of non-tariff measures.

<sup>608</sup> As we will see *infra*, the GATT does not contain any specific provision dealing exclusively with export restrictions and, moreover, it explicitly admits the use of export taxes. GATT Article II on Schedule of Concessions, in fact, only concerns import duties and charges in connection with importation. See paragraph II, section A.

<sup>609</sup> NTMs comprise an extremely diverse set of policy measures, which have been identified by qualified experts according to whether they are applied at the border, to exports and imports, or behind the border. Staiger, *supra* n. 377, at 2. The great and ever evolving complexity of the nature and importance of non-tariff measures is beyond the scope of this study. Indeed, the classification and quantification of non-tariff measures is a long-standing area of research. See Baldwin, R.E., *Nontariff Distortions in International Trade*, Washington D.C., the Brookings Institution, 1970; Laird, S. and Yates, A.J., *Quantitative Methods for trade-barrier analysis*, New York, New York University Press, 1990; Deardoff, A.V. and Stern, R.M., *Measurement of Nontariff Barriers*, Ann Arbor, MI, University of Michigan Press, 1998; Dee, P.S. and Ferrantino, M.J., *Quantitative Methods for Assessing the Effects of Nontariff Measures and Trade Facilitation*, Singapore, Asia-Pacific Economic Cooperation (APEC) and World Scientific, 2005.

<sup>610</sup> Indeed, as seen *supra* (Chapter One, paragraph I), the inherent dynamics of export restrictions were already emerging in the 70’s with the first wave of export restrictions, but the reform in the subsequent rounds were anyways addressed within the more general category of Non-Tariff Measures. See *infra*, Chapter Four, paragraph I.

NTMs regulations have progressively evolved, but none of the results achieved so far has involved the area of export restrictions<sup>611</sup>.

Indeed, while the first GATT negotiating rounds clearly focused on achieving significant overall tariff reductions<sup>612</sup>, the Kennedy Round (1964-67) inaugurated a somewhat different approach, as it was beginning to be clear that GATT would succeed in ensuring increased market access only insofar as it would provide with backstop provisions aimed at avoiding that NTMs frustrate the trade-opening impact of binding tariff reductions. GATT drafters, in fact, had recognized that, once a country constrained its tariffs as a result of a negotiation, it might be tempted to introduce non-tariff measures as way to disguisedly pursue import protection goals<sup>613</sup>; however, their approach towards NTMs was not comprehensive<sup>614</sup> but rather influenced by the contingent use of NTMs envisageable at the time. As a result, detailed and complex provisions were

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<sup>611</sup> For an analysis of the main difficulties and impediments to a reform of the multilateral disciplines on the export side and the reverberations of such difficulties in the actual debate within the DDA NAMA Negotiating Group see *infra*, Chapter Four, paragraph II.

<sup>612</sup> In particular, the first five GATT negotiating rounds, which took place, respectively, in Geneva (1947), Annecy (1949), Torquay (1951), Geneva (1956) and Dillon (1969-1). See Jackson, J.H., *supra* n. 596.

<sup>613</sup> Hudec, R.E., *The GATT Legal System and World Trade Diplomacy*, Salem: Butterworth Legal Publishers, 1990.

<sup>614</sup> In particular, the United States strongly advocated a “blanket” approach prohibiting all quantitative restrictions and most other NTMs under a comprehensive code governing world trade. Gardner, *supra* n. 598 and WTO World Trade Report 2012, *supra* n. 375, at 39 et seq.

included to regulate use of quantitative restrictions<sup>615</sup>, the most important legacy of the Second World War<sup>616</sup>, but they proved insufficient to encompass the increasing variety, scope and use of NTMs. Accordingly, the Tokyo Round (1973-1979) expanded rules on NTMs<sup>617</sup>, significantly improving the system's efforts to effectively ensure that non-tariff measures were not discriminatory or unnecessarily trade restrictive. Non-tariff measures remained a key priority in the Uruguay Round under the broad mandate formulated in the 1986 Punta del Este Declaration, according to

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<sup>615</sup> Article XI provides for a general elimination of quantitative restrictions, both new and incumbent, with significant exceptions to reinsure the Members' preoccupations over the need to pursue domestic objectives and interests, including the balance-of-payment exception (Article XII to XV), the agricultural support exception and the infant industry and economic development exception for LDCs. WTO World Trade Report 2012, *supra* n. 375, at 43 et seq.

<sup>616</sup>The United Kingdom and other European countries experiencing serious balance-of-payment problems in the aftermath of the Second World War were not ready to give up trade and exchange controls for they considered them key instruments to preserve macroeconomic stability and achieve full employment. On the other hand, developing countries also looked at trade controls as a means to pursue domestic development and industrialization strategies and to obtain international commodity agreement. See Gardner, *supra* n. 598, at 145 et seq.

<sup>617</sup> In the Ministerial Declaration launching the Round, one of the stated priorities was to "reduce or eliminate non-tariff measures or, where this is not appropriate, to reduce or eliminate their trade restricting or distorting effects, and to bring such measures under more effective international discipline" Accordingly, a special sub-committee of the Trade Negotiations Committee, the sub-Committee on non-tariff measures, was instituted in February 1974. The main result achieved by the sub-committee was the negotiations of six "codes" (the Standards code, the Customs Valuation Code, the Subsidy and Countervailing Measures Code, the Antidumping Code, the Import Licensing Procedures Code, the Government Procurement Code), configuring a comprehensive regime for NTMs. However, these were codes remained voluntary agreements with limited membership, albeit the MFN clause applied to all codes except the government procurement code. WTO World Trade Report 2012, *supra* n. 375, at 42.



which “negotiations shall aim to reduce or eliminate non-tariff measures, including quantitative restrictions”. The Round which gave birth to the WTO marked a major expansion of international trade rules on NTMs, including the GATS and the TRIPs among the multilateral agreements subject to a single undertaking, together with a series a plurilateral agreements containing disciplines on technical barriers to trade, sanitary and phytosanitary measures, subsidies and countervailing measures, anti-dumping measures, import licensing procedures, government procurement and so on, covering a various range of NTMs. However, no substantive change and/or improvement were brought to the disciplines on border NTMs on the export side. Only with the launching of the Doha Round in 2001, aimed *inter alia* “to reduce, or as appropriate eliminate tariffs [...] as well as non-tariff barriers” according to paragraph 16 of the Doha Declaration on market access for non-agricultural products states, the issue of export restrictions gained *momentum*, and started to be expressly addressed within the Negotiating Group on Market Access for non-Agricultural Products<sup>618</sup>.

In sum, while the historical “asymmetry” between the import and the export side has marked the genesis and the evolution of the GATT Agreement, the presumed deficiency of the WTO regulation on exports, which the conventional wisdom has identified as the

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<sup>618</sup> See *infra*, Chapter Four, paragraph II.

cause of the proliferation of export restrictions, remains to be “tested” against the peculiar characteristics that qualify the recent phenomenon of proliferation with regards to critical raw materials. The present chapter aims therefore at providing with an overview of the GATT rules relevant to export restrictions, as well as to any other WTO rule which is relevant in this respect, and investigating the applicability of such rules in trade in raw materials –with particular regards to the peculiar dynamics and patterns at the basis of international trade in critical minerals and metals –, as emerging from an analysis of WTO case law. Indeed, as many authors have correctly pointed out<sup>619</sup>, the role of guidance of WTO case law with respect to GATT export disciplines should not be underestimated in that it plays a key role in interpreting the “space” left to WTO member States to resort to export restrictive measures. In this perspective, particular attention will be devoted to the *China – Raw Materials* case, for it represents a landmark case for the definition of the reach of WTO disciplines on export restraints and their applicability to trade in industrial raw materials, and will most certainly constitute an obliged point of reference for the purpose of assessing the consistency of similar measures<sup>620</sup>, at least until a

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<sup>619</sup> For a thorough analysis of the legal boundaries incumbent on WTO Members on the use of export restrictions see Karapinar, B., *supra* n. 372, at 443-479. See also Howse and Josling, *supra* n. 15, at 15. Significantly, moreover, both studies underline the central role played in this respect by the most recent WTO case concerning export restrictions, *China – Raw Materials* (see *supra*, n. 435).

<sup>620</sup> In particular, such framework is to prove crucial with regards to the new dispute on rare earths involving China (*Id.*) Indeed, the new dispute on rare earth

reform of multilateral rules in this respect will be finalized<sup>621</sup>. Indeed, in *China – Raw Materials* the dispute settlement bodies clarified for the first time the scope of, and the interactions between, the provisions of the GATT Agreement relevant to export restrictions, with particular regards to the requirements set out under Article XI:2 (a) GATT and its relationship with Article XX (g) of the GATT 1994; the “systemic” relationship between Article XX defences and different instruments of the WTO Agreement, namely with respect to the availability of Article XX for violations of WTO obligations, such as the “WTO plus” commitments

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shares most significant features (in terms of the parties involved, the type of measures challenged, and the provisions invoked) with the *China – Raw Materials* case. The key issues addressed therein are thus most likely to constitute too the pivotal elements within a dispute on rare earth. As a matter of fact, although the Appellate Body has indicated that panel reports do not constitute subsequent practice for the purposes of article 31(3)(b) of the Vienna Convention, the WTO panels are often referred to in successive cases as if they were case law. As the Appellate Body stated in *Japan – Alcoholic Beverages*: “Adopted panel reports are an important part of the GATT *acquis*.... They create legitimate expectations among WTO Members and, therefore, should be taken into account where they are relevant to any dispute”. See Appellate Body Report, *Japan – Taxes on Alcoholic Beverages*, AB-1996-2, Report of 4 October 1996, WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds11\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds11_e.htm), at 14. Indeed, the complainants’ representatives in the new rare earths dispute made clear that the United States, the European Union and Japan expect China’s export regime on rare earth elements to be found inconsistent with China’s WTO obligations in line with the previous ruling in *China – Raw Materials*. See, for instance, the Statement released by the EU Trade Commissioner Karel De Gucht at the time of the submission of the request for consultation (<http://trade.ec.europa.eu/eutn/psendmessage.htm?trandid.=6924>).

<sup>621</sup> For a critical discussion of the various proposals put forward within the DDA NAMA negotiations on the necessity to strengthen the discipline on export restrictions see *infra*, Chapter Four, paragraph II.

contained in new Members' accession protocols, falling outside the scope of the GATT 1994; and, the scope for resorting to export restrictions under the general exceptions provided for in Article XX (b) and (g) of the GATT 1994.

## II. Relevant WTO disciplines on export taxes

### A. The admissibility of export duties under Article XI:1 of the GATT

The general critiques over the supposed insufficiency of WTO disciplines on the export side generally refer to the fact that the only GATT provision relevant to the regulation of export duties or taxes, Article XI:1 of the GATT, explicitly admits the use of export duties for WTO Members, independently of their rationale<sup>622</sup>. Under the GATT 1994, in fact, WTO Members are not under any obligation with regards to the use of export duties insofar as Article XI:1 reads:

“No prohibitions or restrictions *other than duties, taxes or other charges*, whether made effective

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<sup>622</sup> See, among others, Howse and Josling, *supra* n. 15, at 15; Karapinar, *supra* n. 372; Crosby, D., WTO Legal Status and Evolving Practice of Export Taxes, International Centre for Sustainable Development, Bridges, Volume 12, Number 5, November 2008; Ya Qin, J., Reforming WTO Discipline on Export Duties: Sovereignty over Natural Resources, Economic Development and Environmental Protection, *Journal of World Trade* 46 (5), 2012, 1147-1190.

through quotas, import or export licenses or other measures, shall be instituted or maintained by any contracting party on the importation of any product or the territory of any other contracting party or on the exportation or sale for export of any product destined for the territory of any other contracting party” (emphasis added).

Hence, Article XI:1 provides for a general obligation to refrain from all prohibitions and quantitative restrictions on exports but leaves the possibility to institute or maintain export taxes and duties.

The exclusion of “duties, taxes or other charges...on the exportation”, as opposed to quantitative exports restrictions, from the scope of application of Article XI:1 mirrors in a way the traditional scheme adopted in the GATT with regards to imports, i.e. the choice of “tariffs”<sup>623</sup> over quantitative restrictions as the lawful means of restricting imports and exports<sup>624</sup>. However, while GATT contains a detailed framework for binding import tariffs and protecting the binding from erosion, no provision was specifically

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<sup>623</sup> See *supra*, paragraph I.

<sup>624</sup> Indeed, as seen *supra*, export taxes are the least damaging export control measures compared with other forms of controls for they are more transparent and predictable in their effects, simpler to administer and income-generating. See also Bonarriva, J., Koscielski, M., and Wilson, E., *Export Controls: An Overview of their Use, Economic Effects, and Treatment in the Global Trading System*, US International Trade Commission, Office of Industries Working Papers, August 2009, at 16.

envisaged to provide for an obligation to bind export duties in a manner similar to import tariffs<sup>625</sup>. Article II:1 (b), in fact, prohibits all *import* duties and charges in connection with importations other than ordinary custom duties on products bound in Schedules of Concessions, notwithstanding that, on the one hand, Article XI:1 (a) does not exclude the possibility of binding export tariffs<sup>626</sup> and, on the other, Article XXXVIII(*bis*):1 encourages

“negotiations on a reciprocal and mutually advantageous basis, directed to the substantial reduction of the general level of tariffs and other charges on imports *and exports*” (emphasis added).

Indeed, the Marrakesh Protocol to the GATT 1994, in its paragraph 6, did create a non-mandatory mechanism for scheduling

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<sup>625</sup> It should be noted that there are at least two known cases of export duty concessions in GATT history. The first was a concession done by the United Kingdom to the Malayan Union on tin ore and concentrates in the early years of the GATT, and the second was made by Australia in the Uruguay Round of 1994 on certain iron ore, titanium ore, zirconium ore, coal, peat, coke, refined copper, unwrought nickel, nickel oxide, and lead waste and scrap in respect of the European Communities. In both cases, the concessions were extended to all Members under the MFN clause, and were set out in the tariff schedules annexed to the GATT. See Ya Qin, J., *supra* n. 622, at 1152.

<sup>626</sup> Indeed, Article II:1 (a) states: “Each contracting party shall accord to the commerce of the other contracting parties treatment no less favourable than that provided for in the *appropriate Part of the appropriate Schedule* annexed to this Agreement”. Thus, Article II:1 (a) assumes that each member will concede measures on an MFN basis in an appropriate part of the Schedules, but does not expressly circumscribe such practice to import tariffs negotiations only. On the contrary, the terms of Article II:1 (a) leave the space for Members to negotiate other type of commitments in other parts of the Schedule. See *infra*, n. 627 and corresponding text.

non-tariff measures in Part III of the Schedules of Concessions but, failing any definition of non-tariff measures, this mechanism has not been used except for rare examples of import licensing and no country has assumed the obligation of scheduling on export duties in the Part III of its schedule<sup>627</sup>.

If such state of things confirms that export taxes were not considered a pressing issue for the world trading system at the time of GATT's creation, either because future potential concerns were underestimated by GATT drafters or because they intentionally meant to reserve this areas to Members as "policy space"<sup>628</sup>, it is particularly striking in that, as known, it is now widely recognized that an excessively high export tax, which WTO Members are allowed to adopt, may amount to a *de facto* export prohibition, and thus have the same effect of a total ban on the exportation of a product which, on the contrary, is expressly forbidden by means of the same article<sup>629</sup>.

Although admissible by terms of Article XI:1 GATT, WTO Members are nevertheless obliged to apply them on a non-discriminatory basis, i.e. having due regard to the most-favoured

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<sup>627</sup> Paragraph 6 of the Protocol to the Marrakesh Agreement reads: "In cases of modification or withdrawal of concessions relating to non-tariff measures as contained in Part III of the schedules, the provisions of Article XXVIII of GATT 1994 and the "Procedures for Negotiations under Article XXVIII" adopted on 10 November 1980 (BISD 27S/26-28) shall apply. This would be without prejudice to the rights and obligations of Members under GATT 1994".

<sup>628</sup> Crosby, D., *supra* n. 622, at 3.

<sup>629</sup> See *supra*, Chapter Two, paragraph IV, section A.

nation treatment. Indeed, Article I:1 applies “with respect to custom duties and charges of any kind imposed on or in connection with importation *or exportation...*” (emphasis added)<sup>630</sup>. Moreover, in a manner similar to import tariff, export taxes are to be administered in a transparent and reasonable manner by terms of Article X GATT, which requires WTO Members to: (i) publish trade-related law, regulations, rulings and agreements in prompt and accessible manner; (ii) abstain from enforcing measures of general application prior to their publication; and (iii) administer such measures in a uniform, impartial and reasonable manner<sup>631</sup>. Apart from a general rule on publications of regulation, however, no obligation of notification exists under this article.

Indeed, lack of transparency is one major concern with respect to the use of export duties. In the attempt to improve the monitoring of export duties, the Ministerial Decision on Notification Procedure adopted at Marrakesh<sup>632</sup> provided for a Notification Procedure and an indicative list of notifiable measures,

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<sup>630</sup> According to the most-favoured nation treatment, all WTO Members must refrain from treating the products originating in or destined for another member less favourably than the “like” products originating in or destined for any other country. For a thorough analysis of the implications of the MFN treatment, see Jackson, *supra* n. 596, at 249 et seq. For a detailed examination of the criteria used in WTO case law for the determination of the likeness of products see Won-Mog, C., 'Like products' in international trade law: towards a consistent GATT/WTO jurisprudence, Cambridge University Press, 2003.

<sup>631</sup> See GATT Analytical Index, at 293-312.

<sup>632</sup> See the Ministerial Decision on Notification Procedures adopted by the Trade Negotiating Committee on 15 December 1993, available at [http://www.wto.org/english/docs\\_e/legal\\_e/33-dnotf\\_e.htm](http://www.wto.org/english/docs_e/legal_e/33-dnotf_e.htm).



which included export taxes as well as other type of export restrictions. However, a Note to this indicative list clarified that it would not alter existing notification requirements in the Multilateral Agreements and the Plurilateral Agreements, thereby rendering the actual disciplines of notification on export taxes dependent upon the substantive provisions of Agreements in Annex 1A or related WTO decisions<sup>633</sup>. After the Uruguay Round, a decision by the Council for Trade in Goods (CTG) in 1995 created a so-called reverse notification procedure to allow Members to indicate specific non-tariff measures of Members for transparency purposes, including export taxes and restrictions in general, but this mechanisms has only been used in two occasion so far<sup>634</sup>.

In sum, by terms of the GATT 1994, export taxes are admissible for WTO Members<sup>635</sup> and no obligation of notification under the Agreement is currently in force. The Notification Procedures provided for by the Ministerial Decision on Notification Procedures of 1993 and the Council for Trade in Goods decision

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<sup>633</sup> For a discussion on the proposals and the initiative carried on with respect to the transparency issue within the framework of the DDA negotiations in order to establish a mandatory notification procedure for export restrictive measures see *infra*, Chapter Four, paragraph II.

<sup>634</sup> See decision G/L/60 on “Reverse Notification of Non-Tariff Measures”. In the same year, the CTG also adopted decision G/L/59 that established a biennial notification for quantitative restrictions, clearly not applicable to export taxes.

<sup>635</sup> However, it has been suggested that, at least in the case when export duties are applied jointly with other restrictions on exports, they should be subject to Article XI. See OECD (2010), *supra* n. 385, at 8. The case is particularly relevant for critical raw materials in that, as seen *supra* (Chapter Two), export taxes on critical minerals and metals are often associated with other quantitative restrictions on exports.

G/L/60 of 1995, moreover, do not prove adequate to ensure prompt and exhaustive information and monitoring on the utilization of export duties. The combination of these two elements has generated great concerns over the possibility for countries detaining a dominant share in the world export share of key economic sectors to abuse of the use of export duties as disguised protectionist measures.

### **B. The emerging practice of “WTO-plus obligations” on the use of export duties for newly acceding WTO Members**

Against this general framework, some newly acceding WTO Members have agreed to abide by country-specific obligations on the use of export duties within the context of their accession negotiations and, in some cases, have negotiated commitment “schedules” for export duties. Such practice, which has intensified in the last years as a result of the increasing attention gained by the phenomenon of export restrictions and by the strategic natural endowments of some newly acceding Members in particular, is part of a more general tendency by WTO incumbent Members to request – and, according to some authors, impose<sup>636</sup> – to aspiring WTO Members requirements which either exceed the obligations

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<sup>636</sup> See Ya Qin, *supra* n. 622, at 1157.

arising out of multilateral WTO Agreements (so-called “WTO-plus” obligations) or do not otherwise exist for WTO Members on the basis of the WTO Agreement for they concern issues lying outside the current WTO mandate (so-called “WTO-extra” obligations). Although the WTO Agreement does not contain, as seen *supra*, any specific commitment in the area of export taxes, the country-specific obligations on the use of export taxes agreed by certain newly acceding WTO Members have been categorized as “WTO-plus” obligations in light of the possibility left to WTO members to negotiate export concessions under Article II GATT<sup>637</sup>.

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<sup>637</sup> The distinction between WTO-plus and WTO-extra obligations borrows from Horn, H., Mavroidis, P.C. and Sapir, A., *Beyond the WTO? An Anatomy of EU and US Preferential Trade Agreements*, *The World Economy*, 33 (11), 2010: 1565-1588, at 1567. The authors compellingly argue in favour of the categorization of the obligations on export duties binding upon new WTO Members as WTO-plus obligations in that, because of the potentiality for export concessions’ negotiations left to WTO Members, “a WTO instrument already exists in this area” (*id.*, at 1571). For an extensive overview and analysis of the panorama of WTO-plus obligations contracted by newly acceding Members within the framework of their accession negotiations, see Charnovitz, S., *Mapping the Law of the WTO Accession*, in Janow, M. E., Donaldson, V., and Yanovich, A. (eds.), *The WTO: Governance, Dispute Settlement and Developing Countries*, Juris Publishing, 2008. The country subject to the largest number of WTO-plus obligations is China. Ya Qin, J., *supra* n. 432, at 483-522. Some authors have indeed pointed out that “China-specific commitments (that is, accession terms that apply to China alone) are unprecedented in the history of the WTO and are unparalleled by those undertaken by any other acceding WTO member”. Wu, X., *No Longer Outside, Not Yet Equal: Rethinking China's Membership in the World Trade Organization*, 10 *Chinese J. Int'l L.* 227, 260 (2011), at 239. According to Nicholas Lardy, the accession terms negotiated by China are “so onerous that they violate the fundamental principles of the WTO”, such as reciprocity and non-discrimination. See Lardy, N., *Integrating China into the Global Economy*, Brookings Institution Press, Washington DC, 2002, at 9. The “unique” terms of accession of China are the result of a controversial fifteen-year long process of negotiation that required China to commit to a

Hence, while original WTO Members are not under any obligations by terms of the GATT 1994 with respect to the use of export duties, several countries are bound by their accession agreements to observe at least some obligations with regards to the use of export duties, either concerning the phasing out and/or the elimination of export duties or the binding of a designated number of tariff lines at specific rates. In most cases, the Member-specific commitments are set out in the respective accession protocols, which constitute “integral part” of the WTO Agreement and are thus enforceable under WTO law<sup>638</sup>; for some countries, however, the use of export duties has been regulated through commitments undertaken in Working Party Reports<sup>639</sup>. The scope and scale of

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unique set of additional concessions in order to overcome WTO Members’ concerns over China’s economic size and competitiveness and their reluctance to admit into the system the largest trading nation with a transition economy and socialist form of government. See Bhala, R., *Enter the Dragon: An Essay on China’s WTO Accession Saga*, 15 *American University ILR* (2000), 1469-1538.

<sup>638</sup> Each accession protocol declares itself “integral part” of the WTO Agreement, and the Panel itself in *China – Raw Materials* reiterated that the accession protocols are an integral component of the WTO Agreement, altogether with the commitments included in the Working Party Report that are incorporated therein by cross-reference. Because the WTO Agreement is a “covered agreement” for the purpose of WTO dispute settlement, WTO Members can initiate WTO dispute settlement proceedings on the basis of a claim of violation of accession protocols’ provisions. Panel Report, *China – Raw Materials*, *supra* n. 435, paras. 7.111-5. For a discussion on the modalities of integration of accession protocols’ provisions into the WTO Agreement espoused by the dispute settlement bodies in *China – Raw Materials* case, see *infra*, Section C.

<sup>639</sup> The commitments contained in the Working Party reports are legally binding insofar as they are contained in paragraphs that have been incorporated into the respective accession protocols of the acceding countries. See *supra*, n. 638. See,

such “stand-alone” commitments greatly varies from country to country, and generally depends on several factors including the particular political dynamics of an accession process – often specific to each country<sup>640</sup> – as well as the relevance of export restrictions in the trade policies of the acceding countries.

Generally, the working party reports include a section on “Export Regulation” under which the export policy of the acceding Members is reviewed with regards to three pillars, namely quantitative restrictions (including prohibitions), export duties, and export licensing. In the vast majority of cases, apart from minor commitments on a specific policy and/or clarifications as to future application of export restrictions<sup>641</sup>, the working party reports

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for instance, the language of paragraph 1.2 of China’s Accession Protocol and paragraph 342 of the Working Party Report, incorporated into the former.

<sup>640</sup> The doctrine has identified a problem of “political imbalance” in WTO accession negotiations, linked to the fact that “[u]nlike WTO multilateral negotiations, in which diverse interests among Members can be expected to provide the checks and balances necessary to produce carefully drafted rules, WTO accession is a process in which the applicant country must negotiate against the entire incumbent Membership, through both bilateral and multilateral procedures”. Ya Qin, *supra* n. 622, at 1157. For a more general discussion on the supposed iniquity of the accession negotiations see Jones, K., *The Political Economy of WTO Accession: the Unfinished Business of Universal Membership*, 8 *World Trade Review*: 279-314 (2009).

<sup>641</sup> For instance, Cambodia, which acceded the WTO in 2003, declared that it would maintain the right to reintroduce restrictive measures in the future in the case such measures would prove necessary to prevent or relieve critical shortages of foods (as justified by Article XI:1 (a), see *infra*, paragraph III, section B). Working Party on the Accession of Cambodia, Report of the Working Party on the Accession of Cambodia, WT/ACC/KHM/21, 15 August 2003. Saudi Arabia committed to abolish its requirement of approval in place for the re-exportation of food products as from the date of accession. Working Party on the Accession

simply include a standard broad formula according to which, from the date of accession, the country declares that it will apply its laws and regulations governing export measures (thus, export duties as well) “in conformity with the relevant provisions of the WTO”<sup>642</sup>. In such cases, the language of this formula – which frequently includes express reference to an (indicative) list of GATT provisions, most frequently encompassing Article I, XI, XVII, XX, and XXI of the GATT 1994 and the Agreement on Subsidies and Countervailing Measures – seems to leave to the new Members a significant margin of manoeuvre in the use of export duties, comparable to that of the original WTO Members.

However, among the twenty-nine countries that have acceded to the WTO as of 31 October 2012, nine have agreed to abide by WTO-plus commitments on export duties in particular (in order of accession, Mongolia, Latvia, Croatia, China, Saudi Arabia, Vietnam, Ukraine, Montenegro, and Russia). Again, the degree to which commitments on export duties have been modulated is quite uneven, with some countries accepting to phase down and/or eliminate export duties, either totally or on specific products, and some others abiding by the obligation to bind export duties on a list of products – more or less comprehensive – at specific rates. The

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of Saudi Arabia, Report of the Working Party on the Accession of Saudi Arabia, WT/ACC/SAU/61, 1 November 2005.

<sup>642</sup> For a more detailed description of the section on “Export regulations” generally contained in the accession documents, see Karapinar, *supra* n. 372, at 458-9.

legal techniques adopted to negotiate export duty commitments greatly vary as well. Only in one case, however, the level of commitment undertaken by terms of the accession documents amounts to a mere reiteration of the obligations contained in the WTO Agreement, thereby leaving to the acceding country a policy space that in the substance is almost identical to that of original WTO Members. This is the case of Croatia which, by terms of paragraph 101 of its Working Party Report, committed to “apply export duties only in accordance with the provisions of the WTO Agreement”<sup>643</sup>, after confirming that it did not impose any export duty at the time of accession<sup>644</sup>.

The most comprehensive and absolute obligation taken by virtue of the accession packages on export duties is that of Montenegro, which entered the WTO only very recently<sup>645</sup>.

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<sup>643</sup> Report of the Working Party on the Accession of Croatia to the World Trade Organization, WT/ACC/HRV/59, 29 June 2000, para. 101.

<sup>644</sup> It should be noted that Croatia retained the authority to impose export duties “in exceptional cases for the protection of exhaustible resources, or to ensure essential materials to the domestic industry and to prevent shortages in domestic supply”. *Id.*, para 100. Some authors (see Ya Qin, *supra* n. 622, at 1153), have pointed out that, being paragraph 100 not incorporated into Croatia’s Accession Protocol, it is therefore not legally binding. However, it seems nevertheless that in such case Croatia could legitimately resort to export duties referring to such rationales for they are explicitly stated at Article XX of the GATT 1994 (see *infra*, paragraph IV), and thus they fall within the “provisions of the WTO Agreement” expressly referenced in paragraph 101, which is incorporated into the Accession Protocol of Croatia.

<sup>645</sup> Montenegro officially became a Member of the WTO on April 29, 2012. Along with Russia, which finally acceded to the Organization on August 22, 2012, after a two-decades long negotiation process, is the most recent acceding member having undertaken WTO-plus obligations on the use of export duties.

Montenegro committed in fact not to apply or reintroduce any export duty as from the date of accession<sup>646</sup>, therefore integrally limiting its future margin of manoeuvre as to the utilization of export duties for whatever products, independently of the rationale that would in principle inspire them.

A particularly stringent regime on export duties has also been undertaken by China by terms of Paragraph 11.3 of China's Accession Protocol<sup>647</sup> and the related provisions of the Working Party Report<sup>648</sup>. According to Paragraph 11.3,

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<sup>646</sup> Report of the Working Party on the Accession of Montenegro to the World Trade Organization, WT/ACC/CGR/38, 5 December 2011, para. 133. The integrality of such commitment, however, has to be put in relation to the fact that at the time of accession no export duties were applied by Montenegro at all. Indeed, as clarified in paragraph 132 of the Working Party Report, Montenegro had applied an export duty of 15 per cent on ferrous metals and scrap steel, and 20 per cent on raw hides, which had been however eliminated back in 2005 and 2006 respectively.

<sup>647</sup> Accession of the People's Republic of China, Protocol on the Accession of the People's Republic of China, WT/L/432, 23 November 2001.

<sup>648</sup> Report of the Working Party on the Accession of China, WT/ACC/CHN/49, 23 November 2001. In *China – Raw Materials*, the Panel and the Appellate Body identified Paragraph 155 and 156 of the Working Party Report as the relevant context for Paragraph 11.3 of China's Accession Protocol. The said paragraphs, in fact, fall under section C "Export Regulations" and deal solely with the commitment undertaken by China with respect to the elimination of export duties that does not otherwise exist in the GATT 1994. Paragraph 155 reads: "taxes and charges should be eliminated unless applied in conformity with GATT Article VIII or listed in Annex 6 to the Draft Protocol". Paragraph 156 confirms: "China noted that the majority of products were free of export duty, although 84 items, including tungsten ore, ferrosilicon and some aluminium products, were subject to export duties". Panel Report, *China – Raw Materials*, *supra* n. 435, paras. 7.130-7.148. See also Appellate Body Report, *China – Raw Materials*, *supra* n. 435, paras. 294-9.



“China shall eliminate all taxes and charges applied to exports unless specifically provided for Annex 6 of this Protocol or applied in conformity with the provisions of Article VIII of the GATT 1994”.

Annex 6 to China’s Accession Protocol, entitled “Products Subject to Export Duty”, lists 84 different products (each identified by an eight-digit Harmonized System number) for which maximum levels of export duty are provided. According to the Note to Annex 6,

“China confirmed that the tariff levels included in this Annex are maximum levels which will not be exceeded. China confirmed furthermore that it would not increase the presently applied rates, except under exceptional circumstances. If such circumstances occurred, China would consult with affected Members prior to increasing applied tariffs with a view to finding a mutually acceptable solution.”

It is worth-noting that among the 84 products listed in Annex 6 figure some of the critical minerals and metals targeted in the present study, namely tungsten ores and concentrates, tantalum and vanadium ores and concentrates, crude antimony, various forms of ferro-silicon and ferro-manganese, as well as ferro-chromium,

unrefined copper, copper anodes and cathodes, alloyed copper and copper waste and scrap, unwrought, not alloyed nickel, and unwrought alloyed nickel. The bound export duty rate ranges from 20 per cent to 40 per cent<sup>649</sup>. Interestingly, the identified range of export taxes applied by China to the critical raw materials analysed *supra* is not limited to the list of permitted products as from the Annex 6 of China's Accession Protocol, but goes greatly beyond what would be allowable therein. In this respect, in particular, it should be noted that China's export regime on industrial raw materials has indeed been subject to two different cases before the WTO dispute settlement bodies. In the first landmark case, *China – Raw Materials*, the Panel and the Appellate Body interpreted for the first time the scope of Paragraph 11.3 of China's Accession Protocol and the related provisions of China's Working Party Report with regards to the consistency of a wide range of export duties that China maintained on various forms of bauxite, coke, fluorspar, magnesium, manganese, silicon metal, yellow phosphorous, and zinc – all products *not* listed in Annex 6 with the only exception of yellow phosphorus<sup>650</sup>.

According to the Panel, by terms of paragraph 11.3 of its Accession Protocol China undertook a general obligation to eliminate all taxes and charges applied to exports of products,

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<sup>649</sup> See Annex 6 to China's Protocol of Accession, *supra* n. 647.

<sup>650</sup> The specific forms of the raw materials subject to the complainants' claims in *China – Raw Materials* can be found at Paragraph 2.2 of the Panel Report (*supra* n. 435).

unless those which fall within the scope of a *specific* set of exceptions: those covered those covered by GATT Article VIII and those applied in conformity with Annex 6<sup>651</sup>. In parallel, by terms of the Annex 6 of its Accession Protocol, China agreed to bind the export duties applied to 84 products, and therefore maintained the power to alter and even increase the export duty applied on those products with respect to the applied rate at the time of accession, when “exceptional circumstances” occur and after consultation with the affected parties, insofar as the modified rate does not exceed the maximum rate indicated for each product in the Annex. In sum, as clarified by the Appellate Body, the language of Paragraph 11.3, read in conjunction with the Annex 6 and the Note to Annex 6, indicates that: (i) China cannot apply export duties on products not listed in Annex 6<sup>652</sup>; (ii) the “exceptional circumstances” provided for in the Note to Annex 6 cannot be invoked to impose export duties on non-listed products<sup>653</sup>; (iii) in

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<sup>651</sup> *Id.*, para. 7.126. Article VIII allows WTO Members to impose, at the border, a wide range of fees or charges insofar as they are limited in amount to the approximate costs of services rendered and that they are imposed on or in connection with importation or exportation. However, the Appellate Body clarified that export duties regulated under Paragraph 11.3 of China’s Accession Protocol do not fall within the scope of Article VIII GATT. Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 290.

<sup>652</sup> According to the Appellate Body, “Paragraph 11.3 requires China to eliminate taxes and charges applied to exports unless such taxes and charges are ‘*specifically provided for*’ in Annex 6’ of China’s Accession Protocol”. *Id.*, para. 284 (emphasis added).

<sup>653</sup> The Appellate Body notes that “The Note to Annex 6 clarifies that the maximum rates set out in Annex 6 ‘will not be exceeded’ and that China will ‘not increase the presently applied rates except under exceptional circumstances’.

the case of the 84 listed products, China could increase the applied export duties only up to the maximum rate set out in Annex 6<sup>654</sup> by invoking the “exceptional circumstances” exception provided for in the Note to Annex 6, but only insofar as it fulfils the prior consultation requirement<sup>655</sup>.

Within such a framework, what becomes critical is whether the challenged measures are maintained on products listed in Annex 6 of China’s Accession Protocol or not. Accordingly, in *China – Raw Materials*, China’s duties on various forms of bauxite, coke, fluorspar, magnesium, manganese, silicon metal, and zinc were all considered inconsistent with Paragraph 11.3 as products *not* listed in Annex 6. The only exception was represented by the “special” export duty of 50% applied on yellow phosphorus in addition to the “regular” export duty of 20% provided for in Annex 6 but,

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The Note therefore indicates that China may increase the ‘presently applied rates’ *on the 84 products listed in Annex 6* to level that remain within the maximum levels listed in the Annex”. *Id.*, para. 284 (emphasis added).

<sup>654</sup> *Id.*, para. 285. This is because the word “furthermore” in the second sentence of the Note to Annex 6 was interpreted by the Appellate Body as indicating that the obligation contained in the second and third sentence of the Note, i.e. the “exceptional circumstances” requirement and the consultation requirement are “in addition to China’s obligation under the first sentence not to exceed the maximum tariff levels provided for in Annex 6”. *Id.*, para. 287.

<sup>655</sup> With regard to the obligation of prior consultation with the affected Members, it should be noted that the Appellate Body reversed the Panel’s finding that “China acted inconsistently with its obligations under Annex 6 because it failed to consult with other affected WTO Members prior to imposing export duties on the raw materials at issue” (Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.104). The Appellate Body found that, since the raw materials at issue were not included in Annex 6, “the consultation requirements contained in the Note to Annex 6 are not applicable”. Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 287.

regrettably, the Panel made no findings with respect to the measure at issue because it considered it fell outside of its terms of reference<sup>656</sup>. Similarly, the export duties challenged under Paragraph 11.3 in *China – Rare Earths* – still pending before the Panel – are to be presumed in breach of Paragraph 11.3 for they are imposed on different forms of rare earths, tungsten and molybdenum<sup>657</sup>, which are all materials not listed in Annex 6 of China’s Accession Protocol with the only exception of tungsten<sup>658</sup>. In this latter case, the invocation of the occurrence of the “exceptional circumstances” mentioned in the Note to Annex 6 by China could allow for clarification of the scope of this exception<sup>659</sup>.

Although particularly severe, China is not the only country that has undertaken additional obligations on a wide range of products. Similarly, Latvia committed to abolish all the export duties which it

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<sup>656</sup> See Panel Report, *China – Raw Materials*, *supra* n. 435, paras. 7.69-7.71.

<sup>657</sup> See WTO Docs. WT/DS431/6, WT/DS432/6 and WT/DS433/6.

<sup>658</sup> See the list of the challenged items, identified by the HS number, in the request for the establishment of the Panel. *Id.*

<sup>659</sup> Indeed, whereas the AB clarified in *China – Raw Materials* that China could not invoke the Article XX defences to justify export duties on listed products in excess of the maximum levels set forth in Annex 6 (Appellate Body Report, *supra* n. 435, para. 284), it did not, however, specify whether and, if so, to what extent, the scope of the “exceptional circumstances” requirement for listed products which are not in excess of the maximum Annex 6 levels may be considered to overlap with the scope of Article XX of the GATT 1994, as China argued (*Id.*, para. 282). In any case, however, chances that China may be successful in invoking the “exceptional circumstances” justification are almost null since it reportedly did not fulfil the additional prior consultation requirement set out in the Note to Annex 6. The export duties imposed on rare earths, tungsten and molybdenum have in fact raised great concern precisely because they were adopted unilaterally by China without any form of prior consultation. See Gu, B., *supra* n. 369, at 771-773.

maintained at the time of accession (over 50 products) by terms of paragraphs 68 and 69 of its Working Party Report<sup>660</sup>, with the only exception of antiques which however it consented to bind<sup>661</sup>. Both categories of products are listed on Annex 3 of Latvia's Accession Protocol. Among the products for which Latvia undertook the obligations not to use any export duty as from the date of accession, figure mainly woods products as well as various forms of iron and steel scrap. Latvia is therefore pre-empted from reintroducing any export tax on such products. It is worth-noting that critical minerals and metals do not figure among the products for which Latvia undertook any commitments; however, our previous analysis showed that Latvia does not hold any significant

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<sup>660</sup> Paragraph 68 reads: “[...] the representative of Latvia said that all goods were zero-rated with the exception of certain wood products, metal waste and scrap, and antiquities. Export duties on certain mineral products falling within HS Chapter 25 were eliminated with effect from 17 July 1996. Latvia would abolish export duties by year 2000, with the exception of duties on specific antiques [...]”. Paragraph 69 reads: “The representative of Latvia confirmed that present export tariff rates related only to the goods listed in Annex 3 Export Duty Tariffs [...]. Latvia would abolish all export duties listed in Annex 3 by 1 January 2000 with the exception of the duty on antiques. The timetable for elimination of export duties would be similar for regional trade agreement partners and partners to which MFN treatment was applied as indicated in Annex 3. The Working Party took note of these commitments”. By terms of paragraph 131 of Latvia's Working Party Report, the commitments undertaken by virtue of paragraph 69 are incorporated into Latvia's Accession Protocol and are, therefore, legally binding on Latvia as well as enforceable before the dispute settlement system. Report of the Working Party on the Accession of Latvia to the World Trade Organization, WT/ACC/LVA/32, 19 February 1999.

<sup>661</sup> In contrast to the structure of China's WTO-plus commitments, however, Annex 3 does not provide with the possibility for Latvia to recur to the “exceptional circumstances” clause in order to increase the applied rate up to the maximum rate therein indicated. *Id.*, Annex 3.

mine production for any of the targeted materials<sup>662</sup>. Also, it is significant to note that Latvia remains in principle free to introduce export duties on products that at the moment of the accession were not subject to export duties and, thus, were not included in the obligation commitments by terms of the Annex 3 of Latvia's Accession Protocol.

A number of other newly acceding countries abided by additional obligations on the use of export duties on specific products. Mongolia undertook the commitment to eliminate, within ten years from its accession to WTO, export duties on raw cashmere<sup>663</sup>. Saudi Arabia agreed not to impose any export duty on iron and steel scrap<sup>664</sup>. Vietnam committed to gradually reduce the specific rates of the export duties applied to various forms of

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<sup>662</sup> See *supra*, Chapter One, paragraph II, section C.

<sup>663</sup> See Report of the Working Party on the Accession of Mongolia, WT/ACC/MNG/9, 27 June 27 1996, under the heading "Export Measures", at 12. It should be noted that, at the time of accession, Mongolia maintained an export prohibition on raw cashmere, which it agreed to convert, as from the date of accession, into an *ad valorem* export duty of no more than 30 per cent.

<sup>664</sup> See Paragraph 184 of Saudi Arabia's Working Party Report (WT/ACC/SAU/61, 11 December 2005), which states: "Some Members of the Working Party requested information on export duties applied by Saudi Arabia. Those Members noted that the export duties applied by Saudi Arabia appeared to be imposed only for revenue purposes and would have trade-distorting effects. In response, the representative of Saudi Arabia stated that Article XI of the GATT 1994 expressly permitted the imposition of export duties, and did not restrict the right to impose such duties. Export duties applied only to un-tanned hides and skins, falling under HS Nos. 4101, 4102 and 4103. The rate of export duty was SAR 2000/ton (roughly 20 per cent). The representative of Saudi Arabia confirmed that Saudi Arabia would not impose export duties on iron and steel scrap. The Working Party took note of this commitment". The commitments undertaken by Saudi Arabia by terms of paragraph 184 are incorporated into the Accession Protocol by virtue of paragraph 315.

ferrous and non-ferrous scrap metals<sup>665</sup>, including copper and nickel waste and scrap<sup>666</sup>. Ukraine promised to phase down and bind, according to a detailed timetable contained in Table 20 (b) of its Working Party Report<sup>667</sup>, the export duties applied at the time of accession on a wide range of oil seeds, live cattle and hides, and non-ferrous scrap metals, including various forms of cobalt, ferrochromium, unrefined copper, copper anodes and copper waste and scrap, alloyed copper and copper powders, as well as nickel, titanium and tungsten waste and scrap<sup>668</sup>. Finally, Russia agreed to phase down and bind the export duties for over 700 tariff lines, including several critical minerals and metals (various forms of copper, germanium, manganese, molybdenum, nickel, tantalum, tungsten, and vanadium)<sup>669</sup>, according to the “terms, conditions or

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<sup>665</sup> See paragraph 260 of Vietnam’s Working Party Report (WT/ACC/VNM/48, 11 January 2007), incorporated by terms of paragraph 527 into Vietnam’s Accession Protocol and Table 17 of the Accession Protocol. Moreover, Table 16 of the Working Party Report lists 43 products to which Vietnam applies export duties at the time of accession in pursuance to Decision No. 45/2002/QD/BTC dated 10 April 2002 by the Ministry of Finance and indicates the respective export duty rates. According to paragraph 257 of the Working Party Report, Vietnam defended that the imposition of export duties is consistent with WTO rules.

<sup>666</sup> *Id.*, Table 17.

<sup>667</sup> See Report of the Working Party Report on the Accession of Ukraine, WT/ACC/UKR/152, 16 May 2008, paragraph 240. This paragraph is incorporated into Ukraine’s Accession Protocol by means of paragraph 512.

<sup>668</sup> See *supra*, Chapter Two, paragraph II, section C, Table 3. Ukraine does not seem to have applied any export duties in excess of those admitted by terms of Table 20 (b) of its Working Party Report.

<sup>669</sup> *Id.*



qualification set forth in [Part V of the Schedule of Concessions and Commitments on Goods of the Russian Federation]”<sup>670</sup>.

In all cases of product-specific commitments, they are formulated in a way as to leave the new Members free to impose export taxes on the “others” products (i.e. the non-specified products for which new Members did not explicitly take any commitments), as it is allowed by terms of Article XI:1 GATT<sup>671</sup>. In most cases, this marge of manoeuvre is expressly reclaimed by the acceding country. This is the case of Vietnam, for instance, whose representative during the accession negotiations stated that the imposition of export duties is consistent with WTO rules<sup>672</sup>. In this perspective, the list of export duties indicated at Table 16 of the Working Party Report, which gives notice of the duties applied at the moment of Vietnam’s accession, is not meant to bind Vietnam, nor does it pre-empt it from imposing export duties on different products from the ones therein indicated<sup>673</sup>. In a similar way, Ukraine indicated in Table 20 (a) the list of export duties applied at the time of accession and in Table 20 (b) the list of

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<sup>670</sup> See Russia’s Accession Working Party Report, WT/ACC/RUS/70, paragraph 638, incorporated into Russia’s Accession Protocol by means of paragraph 1450.

<sup>671</sup> See Mongolia’s Working Party Report, WT/ACC/MNG/9, under the heading “Export Measures”, at 12; Saudi’s Arabia’s Accession Protocol, paragraph 184; Vietnam’s Accession Protocol, paras. 257 and 260; Ukraine’s Accession Protocol, paras. 230 and 240; Russia’s Accession Protocol, WT/ACC/RUS/70, paragraph 638. However, being the list of binding export tariffs so extensive, the policy space left to Russia is severely hampered in that the “remaining” products are very limited.

<sup>672</sup> See Vietnam’s Working Party Report, *supra* n. 665, para. 257.

<sup>673</sup> *Id.*, para. 260.

phasing down and binding commitments with regards to specific products. While Ukraine promised not to “increase [the latter] export duties, nor to apply any equivalent measures”<sup>674</sup>, no such obligation was undertaken for the former duties nor Ukraine seems pre-empted from introducing export duties on “new” products (with the exception of those listed in Table 20 (b)) which at the time of the accession did not exist<sup>675</sup>.

In sum, an analysis of the WTO-plus obligations on the use of export duties undertaken by newly acceding Members reveals a great asymmetry not only between original WTO Members and new Members, but also within the latter group, for the additional obligations on export duties undertaken by new Members greatly vary in scope and coverage, leaving each country with uneven “policy space” with regards to the application of export duties. This element is further amplified by the fact that none of the existing WTO accession protocol provides for the possibility for amendment, thereby “crystalizing” the obligations agreed upon therein. Indeed, in all cases but Russia, the WTO-plus obligations on export duties have been undertaken within the Accession Protocol, whose lack of flexibility determines the non-adjustability of export duty commitments<sup>676</sup>. Such inflexibility significantly

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<sup>674</sup> See Ukraine’s Working Party Report, para. 240.

<sup>675</sup> *Id.* Indeed, Ukraine’s representative stated that export duties “are per se consistent with the WTO Agreements”. See para. 230.

<sup>676</sup> It has to be noted that there are two different visions with regards to the scope for amendment of new Members’ accession protocols. According to the former,

clashes with the regime on import duty concessions established by terms of the GATT Agreement, which provides for specific procedures for adjustment, as GATT Schedules are formally incorporated in Article II of the GATT and thus in the GATT itself.

Indeed, according to Article XXVIII:1, labelled “Modification of Schedules”,

“On the first day of each three-year period<sup>677</sup>,  
[...] a contracting party [...] may, by negotiation and agreement with any contracting party with which such concession was initially negotiated and with any other contracting party determined by the Contracting Parties to have a principal supplying interest (which two preceding categories of contracting parties, together with

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accession terms are permanent and immutable in that they constitute pre-conditions for the WTO Membership. In this respect, once accession is completed, such conditions cannot be renegotiated for every alteration would disturb the balance of concessions established in the negotiations for WTO accession. The new member could then only withdraw from the WTO altogether, the only exception being the market accession commitments incorporated into the schedules of GATT and GATS, for the Agreements themselves provides for specific adjustment procedures (see *supra*, section A). In the latter view, accession protocols are organically integrated into the WTO Agreement and serve a supplemental function with respect to WTO agreements with the respect to the identification of country-specific obligations. Hence, they could be amended through the same procedures required for other WTO Agreements. However, Article X of the WTO Agreement requires “acceptance by a majority of two thirds” thereby rendering virtually impossible for an amendment to actually pass. For a more detailed overview of the two theories, see Ya Qin, *supra* n. 622, at 1157-8.

<sup>677</sup> The first three-year period (generally referred to as “open season” renegotiation) started on 1 January 1958 and the last one on 1 January 2012.

the applicant contracting party, are in this Article hereinafter referred to as the “contracting parties primarily concerned”), and subject to consultation with any other contracting party determined by the Contracting Parties to have a substantial interest in such concession, modify or withdraw a concession included in the appropriate schedule annexed to this Agreement”.

Furthermore, according to paragraphs 2 and 3 of Article XXVIII, although the contracting party is expected to “maintain a general level of reciprocal and mutually advantageous concessions not less favourable to trade than that provided for in this Agreement prior to such negotiations”, namely by conceding compensatory adjustment with respect to other products, the failure to reach such agreement does not pre-empt the party in question to pursue the planned modification, provided that the affected Members will also be free to withdraw substantially equivalent concessions<sup>678</sup>. Article

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<sup>678</sup> According to Article XXVIII,3 (a), indeed, “If agreement between the contracting parties primarily concerned cannot be reached before 1 January 1958 or before the expiration of a period envisaged in paragraph 1 of this Article, the contracting party which proposes to modify or withdraw the concession shall, nevertheless, be free to do so and if such action is taken any contracting party with which such concession was initially negotiated, any contracting party determined under paragraph 1 to have a principal supplying interest and any contracting party determined under paragraph 1 to have a substantial interest shall then be free not later than six months after such action is taken, to withdraw, upon the expiration of thirty days from the day on which written notice of such withdrawal is received by the Contracting Parties, substantially equivalent concessions initially negotiated with the applicant contracting party”.

XXVIII:3 and 4 also leave the contracting parties free to enter into negotiations for modifications or withdrawal of concessions at any time in special circumstances, provided certain conditions and procedures are respected<sup>679</sup>. Article XXVIII is not, moreover, the only GATT provision admitting modification of import duty concessions; several GATT Articles, in fact, do provide for the possibility to alter them in the occurrence of specific circumstances: this is the case of Article XVIII:7, which admits the case of a modification or a withdrawal of concessions in order “to promote the establishment of a particular industry with a view to raising the general standard of living of its people” (i.e. infant industry argument); Article XXIV:6, which admits the modifications brought on, in accordance with the procedure set forth at Article XXVIII, consequent to the formation of a custom union; and, Article II:6, which allows for the adjustment of specific duties due to currency revaluation.

Such framework reveals that the legal technique adopted to negotiate WTO-plus obligations incumbent upon newly acceding Members on the use of export duties pre-empts such Members from adjusting their commitments to eventual relevant changes in circumstances, including development needs and/or industrial

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<sup>679</sup> However, approval of negotiation requests outside of the open season timeframe has become a routine matter. Hoda, A., *Tariff Negotiations and Renegotiations under the GATT and the WTO: Procedures and Practice*, Cambridge University Press, 2001, at 88.

policies objectives<sup>680</sup>. This is because the country-specific obligations on the use of export duties were negotiated within the context of the respective accession negotiations and included either within the accession protocol or into legally binding provisions of the Working Party reports. This is true for all newly acceding country undertaking additional obligations on export duties except Russia. Indeed, Russia has created a new “Part V – Export Duties” in its GATT Schedule<sup>681</sup>, and has agreed to bind over 700 tariff lines within such schedule<sup>682</sup>. Such new “frontier” in the treatment of export duty commitments clearly resents from the fact that Russia was the last big market exceptionally-endowed with mineral and energy resources, including several critical minerals and metals<sup>683</sup>, excluded from the World Trade Organization; at the same time, however, being Russia the last country committing on product-specific WTO-plus obligations on export duties to have acceded WTO, it seems reasonable to believe that it has intended to explicitly reserve the right to amend its additional obligations in

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<sup>680</sup> Significantly, in the sole GATT era, more than 40 Members made a total of 270 requests to modify their concessions, while 34 requests to enter into negotiations under Article XXVIII have been put forward since the establishment of the WTO. See WTO, Current Situations of Schedules of WTO Members, available at [http://www.wto.org/english/tratop\\_e/schedules\\_e/goods\\_schedules\\_table\\_e.htm](http://www.wto.org/english/tratop_e/schedules_e/goods_schedules_table_e.htm).

<sup>681</sup> GATT Schedule CLXV – The Russian Federation.

<sup>682</sup> According to the introductory statement of Part V of the Russian Schedule, Russia agreed “not to increase export duties, or to reduce or to eliminate them, in accordance with the following schedule, and not to introduce or increase beyond the levels indicated in this schedule, except in accordance with the provisions with GATT 1994”.

<sup>683</sup> See *supra*, Chapter One, paragraph II, section C.

accordance with applicable GATT provisions, in the light of the emerging difficulties experienced in this respect by other new Members<sup>684</sup>. Indeed, although the focus of Article XXVIII is undoubtedly on the renegotiation of import concessions<sup>685</sup>, this Article is titled “Modification of Schedules” and it explicitly applies to concessions “included in the appropriate Schedule annexed to this Agreement”. Hence, it has been suggested that it can equally apply for export duty commitments, insofar as included in a member’s GATT schedule, such as in the case of Russia. As seen *supra*, in fact, other relevant GATT provisions, such as Article I, Article II:1 (a) and Article XXVIII *bis* are set out or potentially admit to regulate both import and export restrictions<sup>686</sup>.

In conclusion, the panorama of WTO-plus obligations on the use of export duties undertaken by a limited nucleus of newly acceding countries (nine out of twenty-nine new Members) greatly

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<sup>684</sup> See *infra*, section C.

<sup>685</sup> Indeed, Article XXVIII expressly refers to the Members with “a principal supplying interest” in a concession, thereby revealing that the reference framework is that of import duty concessions. However, apart from this reference, the provision can be used for both import and export concessions. See Ya Qin, *supra* n. 622, at 1160-1.

<sup>686</sup> See *supra*, section A. In this perspective, the focus on the import side has been consistently interpreted as to reflect the historical dominance of import concessions, while export concessions were not negotiated at the time GATT was drafted. Hence, such “asymmetry” has not been considered as indicative of an intention on the part of the drafters to exclude export concessions from the coverage of Article II: 1 (b) and Article XXVIII. *Id.*; see also Matsushita, M., Export Control of Natural Resources: WTO Panel Ruling on the Chinese Export Restrictions of Natural Resources, 3 (2) Trade Law and Development, 267 (2011), at 274.

varies in scope and coverage, introducing an element of significant asymmetry in WTO Membership. Moreover, while the great majority of countries abiding by additional obligations on export duties are pre-empted from modifying and/or withdrawing their export duty commitments agreed upon by terms of their respective accession protocols, Russia seems so far to “have broken new ground in the legal treatment of export duty concessions”<sup>687</sup> by including a specific new part (Part V) on export duties within its GATT schedule with the view to subject it to the GATT-specific adjustment procedures traditionally applied for import duty commitments.

**C. Systemic issues posed by varying accession requirements on export duties: the issue of the availability of Article XX for violations of WTO-plus provisions in the light of *China – Raw Materials***

As explained *supra*, the GATT Agreement expressly allows WTO Members to introduce and/or maintain export taxes or duties by terms of Article XI:1, irrespectively of the rationale associated to them. Against this framework, a number of newly acceding countries have “voluntarily” limited their respective policy space in this regards by agreeing upon additional obligations on the use of

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<sup>687</sup> Ya Qin, *supra* n. 622, at 1160.



export duties, thereby renouncing on the possibility to introduce export duties or to increase export duties beyond a certain threshold on a quite uneven range of specific products.

The asymmetry arising out of varying accession requirements on the use of export duties is further enriched by another important element, highlighted in the recent case *China – Raw Materials*: the issue of availability of GATT exceptions to export duty commitments contained in newly acceding Members' accession protocols and, in particular, the public policy general exceptions provided for in Article XX<sup>688</sup>. Indeed, in the light of the most commonly referred to rationales put forward by governments resorting to export restrictions, with particular regards to those applied to critical mineral resources<sup>689</sup>, some public policy goals recognized by terms of Article XX GATT seem particularly relevant and would in principle ensure that, even in the cases when new Members undertook WTO-obligations on export duties, they could derogate from them in the name of authentic non-trade concerns. However, the approach to the applicability of Article XX defined by the Panel and confirmed by the Appellate Body in *China – Raw Materials* has clarified that Article XX exceptions are not available for violations of non-GATT obligations, such as the

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<sup>688</sup> For a detailed analysis of the scope, coverage and applicability of Article XX exceptions with regards to export restrictions see *infra*, paragraph IV.

<sup>689</sup> See *supra*, Chapter Two, paragraph V.

WTO-plus provisions contained in the accession protocols of some newly acceding Members, unless specific conditions are met.

The WTO dispute settlement bodies defined such approach while having to decide whether China could legitimately resort to the “environmental” defences provided for in Article XX (b) and (g) of the GATT 1994<sup>690</sup> to justify the export duties that resulted in a breach of Paragraph 11.3 of China’s Accession Protocol. Indeed, China had not contested that the challenged export duties were inconsistent with its WTO-plus commitments but argued that Paragraph 11.3 and the reference to “exceptional circumstances” in Annex 6 would support its right to resort to GATT Article XX<sup>691</sup>. The complainants, however, maintained that China was to be *a priori* precluded from invoking Article XX for violations of Paragraph 11.3<sup>692</sup>.

Following a “standard” interpretative methodology based on the

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<sup>690</sup> Article XX (b) of the GATT 1994 permits WTO Members to resort to otherwise GATT-inconsistent measures when “necessary to protect human, animal or plant life or health”; Article XX(g) allows WTO Members to adopt measures “relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption” even if they may result in violations of GATT provisions. Measures falling within the scope of either exception have also to comply with the requirements established in the chapeau of Article XX, i.e. they cannot be “applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade”. For a critical discussion on the implications of the particular “force” of the exceptions invoked, see *infra*, Chapter Four, paragraph IV, sections B and C.

<sup>691</sup> Panel Report, *China Raw Materials*, *supra* n. 435, para. 7.110.

<sup>692</sup> *Id.*, para. 7.108.

customary rules of interpretation of international law<sup>693</sup>, the Panel and the Appellate Body both considered that a textual interpretation of Paragraph 11.3, read in the context provided by the relevant provisions of China's Working Party Report<sup>694</sup>, permits to conclude that there is no legal basis for China to invoke the Article XX exceptions to justify export duties found to be inconsistent with Paragraph 11.3 of China's Accession Protocol<sup>695</sup>.

The DSB bodies reached this conclusion by noting, first, that the language found in Paragraph 11.3 of China's Accession Protocol expressly includes, on the one hand, Article VIII of the GATT 1994 but, on the other, leaves out reference to any other specific provisions of the GATT 1994 available as exceptions such as

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<sup>693</sup> According to Article 3.2 of the DSU, the dispute settlement system serves "...to clarify the existing provisions of those agreements in accordance with customary rules of interpretation of public international law". The DSB bodies have thus traditionally applied the general rule of interpretation as codified by Articles 31 and 32 of the Vienna Convention on the Law of Treaties [done at Vienna, 23 May 1969, 1155 UNTS 33; 8 ILM 679]. The Appellate Body clarified such methodology in *US – Shrimp*: "A treaty interpreter must begin with, and focus upon, the text of the particular provision to be interpreted. It is in the words constituting that provision, read in their context, that the object and purpose of the states parties to the treaty must first be sought. Where the meaning imparted by the text itself is equivocal or inconclusive, or where confirmation of the correctness of the reading of the text itself is desired, light from the object and purpose of the treaty as a whole may usefully be sought". Appellate Body Report, United States—Import Prohibition of Certain Shrimp and Shrimp Products, adopted on 12 October 1998, WT/DS58/AB/R, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds58\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds58_e.htm), para. 114.

<sup>694</sup> According to the Panel, the provisions of the Working Party Report contribute to "shed light on the interpretation to be given to related provisions of the Working Party Report or China's Accession Protocol". Panel Report, *China Raw Materials*, *supra* n. 435, para. 7.144.

<sup>695</sup> *Id.*, para. 7.160; Appellate Body Report, *China Raw Materials*, *supra* n. 435, para. 307.

Article XX<sup>696</sup>, as well as any general references to the WTO Agreement that could be interpreted as indicating that Paragraph 11.3 incorporates the flexibilities of GATT Article XX, in contrast to other Paragraphs of China's Accession Protocol<sup>697</sup>. Then, they found support for this interpretation in the context provided by the other sub-paragraphs of Paragraph 11 – which both include the phrase “in conformity with the GATT 1994”<sup>698</sup> – and by the relevant provisions of the Working Party Report, which analogously prohibit the use of export duties providing for the same set of *specific* exceptions – those covered in Annex 6 and in GATT Article VIII – without incorporating any GATT 1994 flexibilities<sup>699</sup>. Hence, they concluded that:

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<sup>696</sup> Panel Report, *China Raw Materials*, *supra* n. 435, paras. 7.126-9. Appellate Body Report, *China Raw Materials*, *supra* n. 435, para. 291. Moreover, the Appellate Body clarified that the reference to Article VIII in Paragraph 11.3 of China's Accession Protocol cannot be interpreted, as China had claimed (see China's appellant's submission, para. 225), to confirm the availability of Article XX of the GATT 1994 in that the matter governed by the two provisions are different. According to the AB, in fact, “the fact that Article XX may be invoked to justify those fees and charges regulated under Article VIII does not mean that it can also be invoked to justify export duties, which are not regulated under Article VIII”. *Id.*, para. 290.

<sup>697</sup> Panel Report, *China Raw Materials*, *supra* n. 435, para. 7.124 and Appellate Body Report, *China Raw Materials*, *supra* n. 435, para. 304. The reference is to Paragraph 5.1 of China's Accession Protocol whose language had been considered by the Appellate Body to allow China to resort to Article XX in *China – Audiovisuals*. See Appellate Body Report, *Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products*, adopted on 21 December 2009, WT/DS363/AB/R, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds363\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds363_e.htm).

<sup>698</sup> Panel Report, paras. 7.136-8 and Appellate Body Report, para. 293.

<sup>699</sup> Both the Panel and the Appellate Body identified Paragraph 155 and 156 of China's Working Party Report as the relevant context for Paragraph 11.3 of the

“the *deliberate choice of language* providing for exceptions in Paragraph 11.3, together with the *omission of general references* to the WTO Agreement or to the GATT 1994, suggest that the WTO Members and China did not intend to incorporate into Paragraph 11.3 the defences set out in Article XX of the GATT 1994”<sup>700</sup>.

Nor, being the challenged measures applied on non-listed products, the reference to the “exceptional circumstances” in the Note to Annex 6 could play any role in supporting China’s right to invoke the defences of Article XX<sup>701</sup>.

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Accession Protocol (see *supra* n. 648) in contrast with China, which had insisted on the relevance of Paragraph 170. According to China, the latter had to be regarded as the relevant context for Paragraph 11.3 for it had the same heading (“Taxes and Charges Levied on Import and Exports”) and read: “Upon Accession, China would ensure that its laws and regulations relating to all fees, charges or taxes levied on imports and exports would be in full conformity with its WTO obligations, including Articles I, III:2 and 4, and XI:1 of the GATT 1994...” – thus incorporating a general reference to the WTO Agreement. However, the DSB bodies considered that Paragraph 170, inserted in Section D of the Working Party Report dealing with “Internal Policies Affecting Foreign Trade in Goods”, referred to *domestic* charges and taxes levied on imports *and* exports, and thus merely repeated the commitments existing under certain GATT rules. Panel Report, *China – Raw Materials*, *supra* n. 435, paras. 7.130-7.148. See also Appellate Body Report, *China – Raw Materials*, *supra* n. 435, paras. 294-9.

<sup>700</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.129 (emphasis added). The Panel further reiterated: “If China and WTO Members wanted the defences of GATT Article XX to be available to violations of China's export duty commitments, they could have said so in Paragraph 11.3 or elsewhere in China's Accession Protocol”. Para. 7.140. See also Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 293.

<sup>701</sup> *Id.*, para. 284.

On the basis of the approach followed in *China – Raw Materials*, China's margin of manoeuvre to institute export duties appears severely limited. The interpretation of Paragraph 11.3 of China's Accession Protocol given by the Panel and the Appellate Body has, in particular, relevant implications for the new dispute on rare earths. China's export duties on rare earths, tungsten and molybdenum are in fact very likely to be found in breach of Paragraph 11.3 of China's Accession Protocol, regardless of the proclaimed environmental protection and conservation rationale to which China has continuously referred to, making explicit reference to Article XX b) and g) of the GATT 1994<sup>702</sup>. This venue is in fact *a priori* precluded in the light of the approach developed in *China – Raw Materials* with regards to the applicability of Article XX GATT.

However, the importance of the conclusion reached by the WTO dispute settlement bodies goes beyond the fact that, for the first time, such bodies shed light on Paragraph 11.3 and related provisions of China's Working Party Report and decided on the non-availability of Article XX for violations of China's WTO-plus obligations on export duties contained therein. It was not the first time, in fact, that a dispute had arisen on the basis of a claim of

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<sup>702</sup> See, for all, the Comments by Head of MOFCOM Department of Treaty and Law on US, EU and Japan Requests of Consultations on China, 15 May 2012, available at <http://english.mofcom.gov.cn/aarticle/newsrelease/policyreleasing/201203/20120308016675.html>.

violation of China's Accession Protocol<sup>703</sup>, and not even with regard to the availability of Article XX as a defence for violations of China's WTO-plus obligations. A similar matter was indeed addressed in *China – Audiovisuals*<sup>704</sup> where, in a specular way with respect to *China – Raw Materials*, the Appellate Body ruled in favour of the applicability of Article XX of GATT 1994 for violations of China's WTO-plus commitment on state trading contained in Paragraph 5.1 on the basis of the wording of the introductory clause of Paragraph 5.1 – “without prejudice to China's right to regulate trade in a manner consistent with the WTO Agreement” –, which it interpreted to mean that the defences provided for in Article XX were available, by way of incorporation,

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<sup>703</sup> Indeed, China-specific provisions have been the matter of contention in a variety of disputes. See, for instance, China—Measures Affecting Imports of Automobile Parts, WT/DS339, adopted on 15 December 2008, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds342\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds342_e.htm); China—Measures Related to the Exportation of Various Raw Materials, *supra* n. 435; China—Measures Affecting Financial Information Services and Foreign Financial Information Suppliers, WT/DS372, WT/DS373, WT/DS378, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds378\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds378_e.htm); Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products, WT/DS363, *supra* n. 697; European Communities— Definitive Anti-Dumping Measures on Certain Iron or Steel Fasteners from China, WT/ DS397, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds397\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds397_e.htm); United States of America—Definitive Anti-Dumping and Countervailing Duties on Certain Products from China, WT/DS379, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds379\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds379_e.htm). See Ya Qin Julia, The Challenge of Interpreting “WTO-plus” Provisions, July 2009, Wayne Ste University Law School Research Paper No. 09-18.

<sup>704</sup> Appellate Body Report, *China – Audiovisuals*, *supra* n. 697.

for violations of the commitments provided for in that paragraph<sup>705</sup>. In *China – Raw Materials*, however, such approach was further developed by the dispute settlement bodies so as to define a “systemic” framework of reference on the relationship between the GATT 1994 and the other instruments of the WTO Agreement. The Panel in fact, by drawing a contrast between Paragraph 5.1 and Paragraph 11.3 of China’s Accession Protocol, clarified that there was no legal basis for applying GATT Article XX with regards to China’s WTO-plus commitments on the export duties in that Paragraph 11.3 of China's Accession Protocol and related provisions of the Working Party Report<sup>706</sup> lack any reference to

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<sup>705</sup> *Id.*, para. 230. It is noteworthy to recall that the AB reversed the Panel interpretation. Karapinar, *supra* n. 372, at 462.

<sup>706</sup> It should be noted that China’s insistence upon the relevance of Paragraph 170 of Working Party Report as the context for Paragraph 11.3 of China’s Accession Protocol (see *supra*, n. 699) was motivated by the intent to establish that Paragraph 170 had to be equated with Paragraph 5.1 so as to allow recourse to Article XX of the GATT 1994. Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.138 and Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 291. As known, Paragraph 170 reads: “Upon Accession, China would ensure that its laws and regulations relating to all fees, charges or taxes levied on imports and exports would be in full conformity with its WTO obligations, including Articles I, III:2 and 4, and XI:1 of the GATT 1994...”. China maintained that the phrase “in full conformity with its WTO obligations, including...” had to be regarded as synonymous with the introductory clause contained in Paragraph 5.1 of the Accession Protocol in that the term “including” would have to be interpreted as if the list of provisions was not exhaustive. China argued in fact that “any flexibilities that Paragraph 170 affords to China to adopt otherwise WTO-inconsistent export ‘taxes’ and ‘charges’ must extend equally to Paragraph 11.3”. China’s appellant submission, para. 246. However, the Panel considered that Paragraph 170 could not be equated with Paragraph 5.1 and the Appellate Body upheld this conclusion. Panel Report, *China – Raw Materials*, *supra* n. 435, paras. 7.130-7.148 and Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 291.



Article XX of the GATT 1994 as well as any general reference to the flexibilities of the GATT 1994 or the WTO Agreement<sup>707</sup>. The Appellate Body, confronted with China's request to reverse the Panel's conclusion, confirmed that no legal basis could be found to allow China to resort to Article XX defences failing in Paragraph 11.3 any reference to GATT XX, either specifically or by means of a general reference to the GATT 1994 or the WTO Agreement such as in Paragraph 5.1<sup>708</sup>. The dispute settlement bodies have thus made clear that access to the GATT Article XX defences for WTO-plus obligations in general could be granted only insofar as language to that effect is incorporated therein or elsewhere in the Accession Protocol by way of reference. Moreover, they formulated their reasoning in a way so as to be applicable not only to WTO-plus obligations, but also, more generally, to other obligations failing outside the scope of GATT 1994. Indeed, on the one hand, the Panel clarified that Article XX defences are by default available only for GATT violations and there is no such "umbrella clause" in the WTO Agreement which would allow WTO Members to resort to Article XX GATT for violations of any provision of the WTO Agreement. The Panel reached this conclusion by observing that

“each WTO agreement provides for its own set of exceptions or flexibilities applicable to the

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<sup>707</sup> Panel Report, *China – Raw Materials*, *supra* n. 435 para. 7.147.

<sup>708</sup> Appellate Body, *China – Raw Materials*, *supra* n. 435, para. 307.

specific obligations found in each covered agreement”<sup>709</sup>

and that the language of the introductory phrase of Article XX – “nothing in this Agreement should be construed to prevent the adoption or enforcement of...” – seems to exclude the direct applicability of Article XX to other components of the WTO Agreement<sup>710</sup>. On the other hand, the Panel did not exclude *ab absoluto* that Article XX would not be available for violations of obligations falling outside the scope of the GATT 1994. Rather, noting that WTO Members have, on occasion, incorporated Article XX defences into other instruments of the WTO Agreement by way of reference<sup>711</sup>, it concluded that access to Article XX GATT could be granted for violations of non-GATT obligations insofar as language to that effect is incorporated therein by cross-reference. In other words, the legal basis for applying GATT Article XX exceptions to obligations arising out of other components of the WTO Agreement is, as reiterated by the Appellate Body<sup>712</sup>, the very text of the incorporation.

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<sup>709</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.150.

<sup>710</sup> According to the Panel, “*A priori*, the reference to *this* Agreement suggests that the exceptions therein relate only to GATT 1994, and not to other provisions”. *Id.*, para. 7.153.

<sup>711</sup> See, e.g., the TRIMs Agreement, whose Article 3 states: “All exceptions under GATT 1994 shall apply, as appropriate, to the provisions of this Agreement”.

<sup>712</sup> Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 303.

Hence, the merit of the approach reached by the Panel and the Appellate Body in *China – Raw Materials* lies in that fact that the decision on the non-availability did not arise out of an *ad hoc* reasoning developed with respect to Paragraph 11.3 of China's Accession Protocol only, but it directly stemmed from a more general, "systemic" approach to the applicability of Article XX GATT based on the clarification of the relationship between GATT 1994 and other WTO obligations arising from different instruments of the WTO Agreement. Within such general framework of reference, in fact, China's WTO-plus commitment under Paragraph 11.3 is regarded, more generally, as a WTO obligation falling outside the scope of the GATT 1994 in the light of the legal status of the accession protocols as integral parts of WTO Agreement, the violation of which could only be justified insofar as language to that effect is incorporated therein.

Such conclusion carries important implications for newly acceding Members that have agreed to abide by WTO-plus obligations by terms of their accession protocols. On the basis of the general approach developed in *China – Raw Materials*, in fact, it is possible to determine whether the other countries assuming WTO-plus obligations on export duties by terms of their accession protocol and/or legally binding provisions of their respective Working Party reports may resort to Article XX exceptions for violations of such commitments. As to the great majority of the

newly acceding Members, whose accession protocols or Working Party reports simply include a standard formula according to which, from the date of accession, the country would apply its laws and regulations governing export measures in conformity with the relevant provisions of the WTO, it seems that they would not even be required to prove that the export duties fall within the scope of one of the exceptions provided for in Article XX GATT for they are left with a margin of manoeuvre in the use of export duties comparable to that of the original WTO Members.

With regards to the other new Members which have undertaken, along with China, additional obligations on the use of export duties within their Accession Protocol, an analysis of the language of the respective provisions setting forth the country-specific requirements reveals that the issue of non-availability represents another elements of asymmetry between varying accession requirements. Indeed, on the one hand, Montenegro agreed upon a comprehensive and absolute obligation not to introduce any export duty by terms of paragraph 133 of its Working Party Report without negotiating any sort of Article XX flexibilities<sup>713</sup>, thereby renouncing on *any* use of export duties on *any* product,

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<sup>713</sup> Paragraph 133 of Montenegro's Working Party Report (*supra*, section B, n. 646) reads: "The representative of Montenegro confirmed that, from the date of accession, Montenegro would not apply or reintroduce any export duty. The Working Party took note of this commitment".

irrespectively of its potential rationale<sup>714</sup>. In a similar way, Latvia limited its future margin of manoeuvre as to the utilization of export duties by committing to abolish all the export duties that it maintained at the time of accession, with the exception of antiques, without including any express reference to Article XX GATT or any general references to the WTO Agreement that could be interpreted as indicating the incorporation of Article XX flexibilities. Latvia is therefore pre-empted from reintroducing any export tax on such products and is bound to the maximum rates indicated for antiques products in Annex 3 of the Accession Protocol with no possibility of derogation<sup>715</sup>. The same holds true for Mongolia and Saudi Arabia which, although committing to eliminate export duties “only” on specific products – respectively, on raw cashmere and iron and steel scrap – have not incorporated

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<sup>714</sup> The integrality of such commitment, however, has to be put in relation to the fact that at the time of accession no export duties were applied by Montenegro at all. See *supra*, section B, n. 646. It is also worth-noting that Montenegro is not, for the purposes of the present study, well-endowed with mineral resources. See *supra*, Chapter One, paragraph II, section C.

<sup>715</sup> According to Paragraph 69 of Latvia’s Accession Protocol (see *supra* n. 660), “[t]he representative of Latvia confirmed that present export tariff rates related only to the goods listed in Annex 3 Export Duty Tariffs. All customs tariff changes were published in the official journal of the Republic of Latvia - the newspaper "Latvijas Vēstnesis". Latvia would abolish all export duties listed in Annex 3 by 1 January 2000 with the exception of the duty on antiques. The timetable for elimination of export duties would be similar for regional trade agreement partners and partners to which MFN treatment was applied as indicated in Annex 3. The Working Party took note of these commitments”.

in the respective provisions of the Working Party Report a reference to either Article XX GATT or the WTO Agreement<sup>716</sup>.

On the other hand, Vietnam and Ukraine similarly included in their respective Working Party Report's provisions on export duties a specific reference to GATT exceptions. In the former case, paragraph 260 of Vietnam's Working Party Report, by terms of which Vietnam agreed to reduce export duties on ferrous and non-ferrous scrap metals in accordance with Table 17, states that

“[t]he representative of Viet Nam confirmed that Viet Nam would apply export duties, export fees and charges, as well as internal regulations and taxes applied on or in connection with exportation in conformity with the GATT 1994”.

In the latter case, by terms of paragraph 240 of its Working Party Report, Ukraine committed to phase down and bind Ukraine, according to a detailed timetable contained in Table 20 (b) of its Working Party Report<sup>717</sup>, the export duties applied at the time of accession on a wide range of oil seeds, live cattle and hides, and non-ferrous scrap metals, and

“confirmed that as regards these products, Ukraine would not increase export duties, nor

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<sup>716</sup> See Mongolia's Working Party Report, *supra* section B, n. 663, at 12; and, para. 184 of Saudi Arabia's Working Party Report, *supra* section B, n. 664.

<sup>717</sup> See Ukraine's Working Party Report, *supra* section B, n. 667, para. 240. This paragraph is incorporated into Ukraine's Accession Protocol by means of paragraph 512.

apply other measures having an equivalent effect, unless justified under the exceptions of the GATT 1994”.

Finally, the most successful example of inclusion of Article XX flexibilities is represented by Russia, which committed to implement its export duty commitments contained in Part V of its schedule, as from the date of accession. Indeed, according to paragraph 638 of Russia’s Accession working Party Report,

“...from the date of accession, [...] products described in Part V of [the Schedule of Concessions and Commitments on Goods of the Russian Federation] would, subject to the terms, conditions or qualifications set-forth in that Part of the Schedule, be exempt from export duties in excess of those set-forth and provided therein. The representative of the Russian Federation further confirmed that the Russian Federation would not apply other measures having an equivalent effect to export duties on those products. He confirmed that, from the date of accession, the Russian Federation would apply export duties *in conformity with the WTO Agreement*, in particular with Article I of the GATT 1994...The representative of the

Russian Federation confirmed that the Russian Federation would, from the date of accession to the WTO, administer export tariff rate quotas (TRQs) *in a manner that is consistent with the WTO Agreement and in particular the GATT 1994 and the WTO Agreement on Import Licensing Procedures*<sup>718</sup>.

Moreover, Part V of the Russia Schedule starts with this statement:

“The Russian Federation undertakes not to increase export duties, or to reduce or to eliminate them, in accordance with the following schedule, except in accordance with the provisions of the GATT 1994”. Hence, Russia has explicitly reserved the right to invoke all applicable GATT exceptions with respect to its export duty commitments”.

In sum, the panorama of WTO-plus obligations on the use of export duties is quite various in both scope and coverage, but also with regards to the possibility for new Members to resort to Article XX GATT exceptions in relation to important public-policies and non-trade national interests. It is interesting to note that all of the countries successfully negotiating Article XX flexibilities (i.e. Vietnam, Ukraine and Russia) have committed to bind export

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<sup>718</sup> See Russia’s Accession Working Party Report, *supra* section B, n. 670.



duties of specific products rather than generally undertaking an obligations on the elimination of export duties, either integral or an a specific range of products<sup>719</sup>. Furthermore, all of them have concluded their accession packages after the issue of the admissibility of Article XX GATT had gained the forefront of the debate within newly acceding countries, driven by China's peculiar position within the multilateral trading system and its unique commitments on export duties<sup>720</sup>.

### **III. Relevant WTO disciplines on export quantitative restrictions**

#### **A. The general obligation of elimination under Article XI:1 GATT**

Article XI:1 GATT expressly allows the use of export duties or taxes by means of contrast with other forms of export restrictions which are instead expressly prohibited. Article XI:1, entitled “General Elimination of Quantitative Restrictions”, in fact reads:

*“No prohibitions or restrictions other than duties, taxes or other charges, whether made effective through quotas, import or export licences or*

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<sup>719</sup> See *supra*, section B.

<sup>720</sup> See Ya Qin, *supra* n. 622, n. 1156 and corresponding text. For an analysis and a critique of the result of the dispute settlement bodies approach to the applicability of Article XX GATT in the perspective of the internal coherence of the WTO system see *infra*, Chapter Four, paragraphs III and IV.

*other measures*, shall be instituted or maintained by any contracting party on the importation of any product of the territory of any other [Member] or *on the exportation* or sale for export of any product destined for the territory of any other [Member]” (emphasis added).

The main purpose of Article XI:1 is to provide for a general obligation of elimination of both prohibitions and restrictions on exports as well as imports. While the scope of the “prohibitions” elimination is straightforward in that it applies to measures restricting the exportation (or the importation) of a product in an absolute way (i.e. the bans as defined *supra* in Chapter Two), Article XI does not expressly mention the whole range of “restrictions” potentially falling within its scope. Indeed, the expression “*whether* made effective through quotas, import or export licences *or other measures*” (emphasis added) indicates, on the one hand, that the forms of restriction explicitly evoked are only illustrative and that other types of restrictive measures can thus potentially fall within the scope of “*other measures*”; and, on the other hand, that the “capacity” of the “other measures” venue depends on the scope of the term “restrictions” under the purview of Article XI:1. In this perspective, it is essential to investigate how the dispute settlement bodies have interpreted the term “restriction” and how they have put it in relation with the fact that Article XI:1

admits by its terms restrictions implemented through a variety of means and not solely through a category of measures that may be considered formal quantitative restrictions, such as quotas.

In such analysis, particular attention will be devoted to the GATT/WTO case law related to export restrictions. Indeed, the dispute settlement bodies have so far ruled on five cases specifically relating to export restrictive measures<sup>721</sup>: *Canada – Herring and Salmon* (1988)<sup>722</sup>, *Japan – Semiconductors* (1988)<sup>723</sup>, *Argentina – Hides and Leather* (2001)<sup>724</sup>, *US – Treating Export Restrictions as Subsidies* (2001)<sup>725</sup>, and *China – Raw Materials* (2011)<sup>726</sup>. Another case, *China – Rare Earths*, is still pending before the Panel. Significantly, the cases challenged the consistency of a various range of measures under Article XI:1

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<sup>721</sup> For a synthetic yet complete overview of the case law relating to export restrictive measures see Karapinar, B., *China's Export Restriction Policies: complying with "WTO-plus" or undermining multilateralism*, *World Trade Review* (2011), 10:3, at 389-408; Id., *supra* n. 372.

<sup>722</sup> GATT Dispute Settlement Report, *Canada – Measures Affecting Exports of Unprocessed Herring and Salmon*, L/6268 – 35S/98, adopted on 22 March 1988, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/87hersal.pdf](http://www.wto.org/english/tratop_e/dispu_e/87hersal.pdf).

<sup>723</sup> GATT Dispute Settlement Report, *Japan – Trade in Semi-Conductors*, L/6309 – 35S/116, adopted on 4 May 1988, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/87semcdr.pdf](http://www.wto.org/english/tratop_e/dispu_e/87semcdr.pdf).

<sup>724</sup> WTO Panel Report, *Argentina – Measures Affecting the Export of Bovine Hides and the Import of Finished Leather*, WT/DS155/R, adopted on 16 February 2001, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds155\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds155_e.htm).

<sup>725</sup> WTO Panel Report, *US – Measures Treating Exports Restrictions as Subsidies*, WT/DS194/R, adopted on 29 June 2001, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds194\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds194_e.htm).

<sup>726</sup> WTO Panel Report and Appellate Body Report, *China – Raw Materials*, *supra* n. 435.

GATT and, in almost all cases, the dispute settlement bodies condemned such measures by terms of Article XI:1<sup>727</sup>.

Such circumstance has been possible, preliminarily, given the fact that the scope of the term “restrictions” for the purposes of Article XI:1 has been consistently interpreted by various Panels – although not always ruling on export-related restrictions – in a broad sense so as to cover a wide range of measures. Indeed, in *India – Quantitative Restrictions* the Panel concluded that the scope of the term “restriction” is “broad” and, in terms of its ordinary meaning, is “a limitation on action, a limiting condition or regulation”<sup>728</sup>. In *India – Autos*, the Panel further elaborated on the meaning of the term “restrictions” for the purposes of Article XI:1 and stated:

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<sup>727</sup> The only exception is the case *US – Treating Export Restrictions as Subsidies*, but in the instant case the complainant (Canada) had challenged certain export restrictions raised by the United States on softwood lumber products under Article 1.1 (a) of the SCM Agreement, claiming that they amounted to a subsidy to American processing industries for they resulted in lowered domestic input costs. However, the Panel concluded that “an export restraint as defined in this dispute [see *supra*, Chapter Two, paragraph I, n. 372 and corresponding text] cannot constitute government-entrusted or government-directed provision of goods in the sense of sub-paragraph (iv) and hence does not constitute a financial contribution in the sense of Article 1.1. (a) of the SCM Agreement”. *Id.*, para. 8.75. No claim under Article XI:1 GATT was filed before the Panel and, consequently, the latter did not find whether such measures would have been inconsistent under such Article. See Crosby, *supra* 622, at 4.

<sup>728</sup> WTO Panel Report, *India – Quantitative Restrictions on Imports of Agricultural, Textile and Industrial Products*, WT/DS90/R, adopted on 22 September 1999, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds90\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds90_e.htm), para. 5.128.

“On a plain reading, it is clear that a ‘restriction’ need not be a blanket prohibition or a precise numerical limit. Indeed, the term ‘restriction’ cannot mean merely ‘prohibition’ on importation, since Article XI:1 expressly covers both ‘prohibition and restriction’. Furthermore, the Panel considers that the expression ‘limiting condition’ used in *India – Quantitative Restrictions* panel to define the term ‘restriction’ and which this Panel endorses, is helpful in identifying the scope of the notion in the context of the facts before it. That phrase suggests the need to identify not merely a condition placed on importation, but a condition that is limiting, i.e. that has a limiting effect. In the context of Article XI, that limiting effect must be on importation itself”<sup>729</sup>.

In a most recent case, the panel in *Colombia – Ports of Entry* concluded that “restrictions” in the sense contemplated by Article XI:1 refers to measures that create uncertainties and affect investment plans, restrict market access for imports, or make

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<sup>729</sup> WTO Panel Report, *India – Measures Affecting the Automotive Sector*, WT/DS146/R, adopted on 5 April 2002, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds146\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds146_e.htm), para. 7.240.

importation prohibitively costly.<sup>730</sup> Significantly, moreover, in *China – Raw Materials* the panel cited with approval the interpretation that the term “restrictions” in Article XI:1 refers to the imposition of a “limiting condition”<sup>731</sup> and, most importantly, for the first time the Appellate Body endorsed such a broad interpretation<sup>732</sup>.

Against such framework, the panels have condemned under Article XI:1 the most various export restrictive measures. In *Canada – Herring and Salmon*, the measure at issue was a Canadian regulation adopted within the framework of Canada’s fishery legislation that placed a prohibition on the exportation of “any sockeye or pink salmon unless it is canned, salted, smoked, dried, pickled or frozen”. The panel concluded that such regulation was inconsistent with Article XI:1 for the obligation imposed in Article XI:1 explicitly forbids Members from maintaining a prohibition”. *Japan – Semi-conductors* is the only case related to export restrictions not applied on primary commodities but on processed goods, namely semi-conductors. The challenged measure was an arrangement between Japan and the United States on trade in semi-conductors, by terms of which Japan voluntarily agreed to

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<sup>730</sup> WTO Panel Report, *Colombia – Indicative Prices and Restrictions on Ports of Entry*, WT/DS366/R, 20 May 2009, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds366\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds366_e.htm), para. 7.240.

<sup>731</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, paras. 7.206, 7.894-5, 7.1077-9.

<sup>732</sup> Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 319.

monitor cost and prices of certain types of semi-conductors when exported to the US with a view to protect the US market from the inflow of cheap products. According to the complainant, the European Economic Community (EEC), such arrangement had resulted in an increase in the price of Japanese semi-conductors, and therefore in a disadvantage for the European industries which relied on imports from Japan<sup>733</sup>. Clearly, the case mainly concerned the introduction by Japan of a type of export restrictive measure that was not addressed in the present study, i.e. a voluntary export restraint (VER)<sup>734</sup>. However, the multiple profiles emerged within the case with regards to the examination of the applicability of Article XI to VERs, and the peculiar nature of such measure – which includes aspects linked to MEPs as well as export licensing – gave the panel the chance to clarify some interesting elements. First, confronted with the argument brought by Japan according to which the challenged measures provided for a mere “administrative guidance” to the manufacturers and traders of semi-conductors thus

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<sup>733</sup> GATT Dispute Settlement Report, *Japan – Semiconductors*, *supra* n. 723, para. 30.

<sup>734</sup> Indeed, while very common in the past decades, VERs are not currently implemented in trade in critical raw materials. For more details see Gu, *supra* n. 369, at 778 et seq.; Tancredi, A., Il perdurante ricorso agli accordi di limitazione delle esportazioni come strumento di protezione commerciale, in Ligustro, A. and Sacerdoti, G., *Problemi e tendenze del diritto internazionale dell'economia, Liber Amicorum* in onore di Paolo Picone, Editoriale Scientifica, 2011, at 451 et seq. In the case at issue, moreover, the Japanese VER on semi-conductors was imposed in order to prevent dumping, and another important question addressed by the panel was thus the question of whether the Japanese government's measures were inconsistent with Article VI GATT.

constituting “voluntary” guidelines instead of legally binding regulations, the panel clarified that, since Article XI refers not to law or regulations but more broadly to “measures” irrespective of their legal status, non-mandatory measures may well fall within the scope of Article XI:1 GATT as long as they result in a *de facto* restriction on the exportation<sup>735</sup>. Second, by concluding that “the complex of measures [adopted by the Japanese government] amounts to a coherent system restricting the sale for export of

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<sup>735</sup> GATT Dispute Settlement Report, *Japan – Semiconductors*, *supra* n. 723, paras. 104-117. It is interesting to note that the Panel reached this conclusion by relying on the no-effects-cum-no-intent test developed in its previous case law and, in particular, in *US – Superfund* (GATT Dispute Settlement Report, *United States – Taxes on Petroleum and Certain Imported Substances*, L/6175 – 34S/136, adopted on 5 June 1987, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/87superf.pdf](http://www.wto.org/english/tratop_e/dispu_e/87superf.pdf)). In that dispute, the Panel inferred that “[j]ust as the very existence of a regulation providing for a quota, without it restricting particular imports, has been recognized to constitute a violation of Article XI:1, the very existence of mandatory legislation providing for an internal tax, without it been applied to a particular imported product, should be regarded as falling within the scope of Article III:2, first sentence” (*id.*, para. 5.2.2) from the fact that “both articles are not only to protect current trade but also to create the predictability needed to plan future trade” (*id.*). However, there is a fundamental difference between *US – Superfund* and *Japan – Semiconductors*: the former concerns in fact a case of a *de jure* violation of Article III (which is compared to the case of a *de jure* quantitative restriction, i.e. a measure imposing a numerical ceiling), the latter refers to a *de facto* quantitative restriction (i.e. a series of measures which induced Japanese companies producing semi-conductors to raise their prices when exporting to the EU market). Hence, as it has been correctly pointed out, the Panel “then rushed to apply the same standard of review in *de facto* cases as well, without thinking whether a more nuanced approach was appropriate”. Mavroidis, P.C., *Trade in Goods: the GATT and the other agreements regulating trade in goods*, Oxford University Press, 2012, at 69. Indeed, in the view of the Panel, “it satisfied itself that Japan was in violation of its GATT obligations by the mere fact that it provided incentives that could (but not necessarily) affect the behaviour of private parties”. *Id.*, at 67.



monitored semi-conductors at prices below company-specific costs to markets other than the United States”<sup>736</sup>, the panel tested the applicability of Article XI:1 to minimum export price requirements, and concluded that a regulation preventing exportation below a minimum price level was a restriction on exportation inconsistent with Article XI:1<sup>737</sup>. Finally, the panel addressed the issue of whether non-automatic export licensing could fall within the scope of Article XI:1 and concluded that, since in the case of Japan there had been undue delays in the issuance of export licenses for specific semi-conductors, such circumstance constituted a breach of Article XI:1<sup>738</sup>.

The applicability of Article XI:1 to *de facto* restrictions was then reiterated in *Argentina – Hides and Leather*. The dispute involved the European Community and Argentina, with the former challenging an Argentinean regulation that authorized the presence of domestic tanners representatives in the custom inspection procedures for hides destined for export operations. According to the EC, this practice would discourage exporters of raw materials by delaying customs procedures thus amounting to a *de facto*

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<sup>736</sup> GATT Dispute Settlement Report, *Japan – Semiconductors*, *supra* n. 723, para. 117.

<sup>737</sup> *Id.* In doing so, the panel expressly referred to the rationale applied in *EEC – Minimum Import Prices*, where the panel found that the minimum export price system applied by the European Economic Community on the importation of tomato concentrates amounted to a restriction “other than duties, taxes and other charges” within the meaning of Article XI:1. See *Id.*, para. 4.9.

<sup>738</sup> *Id.*, para. 118.

restriction. The Panel recognized that a quantitative restriction does not necessarily have to set an explicit numerical ceiling to be covered by Article XI:1, but it is sufficient that the measure produces the same effect, i.e. has the effect of reducing the volume of exports<sup>739</sup>. However, it considered that in the case at issue there was insufficient evidence that the mere presence of the representative of the downstream sector in customs control would per se operate as an export restrictions inconsistent with Article XI:1.

The most recent case concerning export restrictive measures, *China – Raw Materials*, is again pivotal in confirming the dispute settlement bodies' orientation towards a broad interpretation of Article XI:1 with regards to its applicability to a wide range of export restrictions. In the case at issue, China's complex export regime on various forms of bauxite, coke, fluorspar, magnesium, manganese, silicon metal, yellow phosphorous, and zinc was challenged under Article XI:1 with respect to a number of different quantitative restrictions, namely quotas, export licensing requirements and minimum export prices. As to the consistency of

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<sup>739</sup> In this respect, the Panel in *Argentina – Hides and Leather* elaborated on the “blanket” acceptance of the no-effects-cum-no-intent test in *Japan – Semiconductors* by distinguishing between *de jure* and *de facto* quantitative restrictions. In the former case, the mere existence of a quota is sufficient to configure a violation of Article XI; in the latter case, “it is necessary for a complaining party to establish a causal link between the contested measure and the low level of exports [through] a persuasive explanation of precisely how the measure at issue causes or contributes to the low level of exports”. Panel Report, *Argentina – Hides and Leather*, supra n. 724, para. 11.22.

China's export quotas on bauxite, coke, fluorspar, silicon carbide, and zinc, the Panel, after recalling and approving the previous panels embracing a broad interpretation of the term "restriction" within the meaning of Article XI:1 GATT<sup>740</sup>, confirmed that

"the obligation imposed in Article XI:1 is to explicitly forbid Members from maintaining a restriction made effective through a prohibition or quota on the exportation of any product"

and clarified that

"[e]xport quotas are inconsistent with Members' obligation by virtue of Article XI:1 because they have a restrictive or limiting effect on exportation"<sup>741</sup>.

The reasoning provided by the Panel to ascertain the inconsistency of China's export licensing on certain forms of bauxite, coke, fluorspar, manganese, silicon carbide and zinc is particularly relevant in that it sheds light on the applicability of Article XI:1 to export licensing. Indeed, the Panel recalled a previous case, *India – Quantitative Restrictions*, where the panel had indicated that "a discretionary or non-automatic import licensing requirement is a

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<sup>740</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.206.

<sup>741</sup> *Id.* para. 7.207. Moreover, the Panel recalled that quotas have indeed been found to be inconsistent with Article XI:1 on a number of occasions, and cited various panel reports such as GATT Panel Report, *France – Import Restrictions*; GATT Panel Report, *Japan – Agricultural Products I*; GATT Panel Report *US – Sugar*; GATT Panel Report, *US – Sugar Waiver*. See Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.206.

restriction prohibited by Article XI:1"<sup>742</sup>. However, the Panel highlighted that in that occasion the panel found that the specific licensing system at issue was discretionary because “licenses are not granted in all cases, but rather on unspecified merits”<sup>743</sup>, but failed to provide with a specific explanation on why non-automatic licensing systems should be prohibited under Article XI:1 as such. The Panel clarified that the categorization of a licensing system as “automatic” or “automatic” serves no purpose for determining whether or not a measure is permissible under Article XI:1; instead, what is useful is “the design and the structure of the licence to determine if it has a ‘limiting’ or ‘restrictive’ effect”<sup>744</sup>. In this perspective, the Panel noted that, apart from the label, a licensing system that operates by granting an import or export licences to each and every applicant would not breach Article XI:1, in that it would not imply “any restriction or limiting effect on importation or exportation in connection with the application and granting of the licence”<sup>745</sup>. On the contrary, a system requiring an applicant to satisfy certain prerequisites before being granted an import or export licence would not necessarily run afoul of Article XI:1

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<sup>742</sup> Panel Report, *India – Quantitative Restrictions*, *supra* n. 728, para. 5.129.

<sup>743</sup> *Id.*, para 5.130.

<sup>744</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.915. Indeed, the Panel noted: “the obligation set forth in Article XI:1 does not distinguish between types of import or export licences that would be prohibited, be they automatic, non-automatic or discretionary. Rather, it concerns ‘prohibitions and restrictions’ including those ‘made effective through...import or export licences’”.

<sup>745</sup> *Id.*, para. 7.916.

unless the prerequisite itself creates a restriction or limiting effect on exportation<sup>746</sup>. In this respect, according to the Panel, a system where

“a licensing agency has discretion to grant or deny a licence based on unspecified criteria...would always have a restrictive or limiting effect”<sup>747</sup>;

that is, a discretionary system would always run counter of Article XI:1 GATT because the undefined and generalized requirement leave licensing agencies with unfettered discretion to reject a licence application. In conclusion, while non-automatic licence requirements are not per se impermissible under Article XI:1, discretionary licensing systems are always inconsistent with Article XI:1 for they results in a restriction additional to that inherent in a permissible measure. Finally, with respect to the requirement to export at a coordinated minimum prices for bauxite, coke, fluorspar, magnesium, silicon carbide, yellow phosphorus and zinc, the Panel cited with approval the two GATT cases *EEC – Minimum Import Prices* and *Japan – Semiconductors* on the applicability of Article XI:1 to minimum price requirements and, further elaborating on that approach, affirmed that

“the authority to determine and require exporters to follow a particular export price level and not

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<sup>746</sup> *Id.*, paras. 7.917-8.

<sup>747</sup> *Id.*, para. 7.921.

deviate below it without facing what amounts to a strict penalty, including revocation of the right to export altogether, has the potential to restrict trade. The restriction or limitation on exportation arises from the possibility that a price is set at such level that exporters cannot find a potential buyer in order to sell their product [...]. The Panel considers the very *potential* to limit trade to constitute a ‘restriction’ within the meaning of Article XI:1 of the GATT 1994”<sup>748</sup>.

Thus, it concluded that China’s system of coordinated prices, which require them to export at a set price in order to avoid penalties and/or preserving their exporting rights<sup>749</sup>, amounted to a restriction under the purview of Article XI:1 GATT<sup>750</sup>.

In conclusion, all the types of “quantitative” export restrictions currently applied to critical raw materials and analysed in the present study fall within the scope of Article XI:1 GATT, either *ab assoluto* or potentially. The former case applies for export prohibitions and quotas, unless permitted or justified under other provisions<sup>751</sup>, being such restrictions unambiguously restrictive on exports by explicitly limiting the traded quantities of the targeted products; the latter case applies to “other measures”, including

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<sup>748</sup> *Id.*, para. 7.1081 (original emphasis).

<sup>749</sup> See *supra*, Chapter Two, paragraph III, section B.

<sup>750</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.1082.

<sup>751</sup> See *infra*, section B, and paragraph IV.

those “made effective through...export licences” as well as minimum export prices, when their design and structure reveals that they result in a “restriction” (that is, within the broad meaning of Article XI:1), additional to that inherent in a permissible measure. In this latter case, the alleged restricting and limiting effects to trade, either actual or potential, either *de iure* or *de facto*, have to be ascertained by the dispute settlement bodies on the basis of an evidence-based examination where the burden of the proof to demonstrate that the disputed measures are in fact trade restrictive lies in the complainant party<sup>752</sup>.

**B. The scope of Article XI:2 (a) as interpreted in *China – Raw Materials* and its relationship with Article XX exceptions directly related to the issue of exhaustibility**

According to Article XI:1 GATT, WTO Members are generally pre-empted from introducing any quantitative restriction on exportation. However, Article XI:2 mitigates the general prohibition contained in paragraph 1, by providing that the latter does not extend to, *inter alia*,

- (a) Export prohibitions or restrictions temporarily applied to prevent or relieve critical shortages of foodstuffs or other products essential to the exporting contracting party;

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<sup>752</sup> See Karapinar, *supra* n. 372, at 448.

(b) Import and export prohibitions or restrictions necessary to the application of standards or regulations for the classification, grading or marketing of commodities in international trade;<sup>753</sup>

For the purposes of the present study and in the light of the peculiar characters of trade in critical minerals and metals as well as of the rationales linked to the export restrictions imposed on such products, however, the relevant exception to Article XI:1 in terms of its applicability to mineral resources is the one provided for in Article XI:2 (a), which allows for export restrictions applied to prevent or relieve a critical shortage of an essential product<sup>754</sup>.

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<sup>753</sup> A third condition, indicated at Article XI:2 (c), does not apply for the purposes of the present study in that it concerns “[i]mport restrictions on any agricultural or fisheries product, imported in any form, necessary to the enforcement of governmental measures which operate: (i) to restrict the quantities of the like domestic product permitted to be marketed or produced, or, if there is no substantial domestic production of the like product, of a domestic product for which the imported product can be directly substituted; or (ii) to remove a temporary surplus of the like domestic product, or, if there is no substantial domestic production of the like product, of a domestic product for which the imported product can be directly substituted, by making the surplus available to certain groups of domestic consumers free of charge or at prices below the current market level; or (iii) to restrict the quantities permitted to be produced of any animal product the production of which is directly dependent, wholly or mainly, on the imported commodity, if the domestic production of that commodity is relatively negligible.

<sup>754</sup> However, it should be recalled that in one case, *Canada – Herring and Salmon* (*supra*, n. 721), the panel was called to interpret the exception defined by Article XI: 2(b) which Canada had invoked to justify its prohibition on the exportation of unprocessed salmon. The panel interpreted rather strictly the exception provided for in Article XI:2 (b) GATT by stating that its aim is to cover export restrictions designed to promote the marketing of the restricted



Indeed, as seen *supra*<sup>755</sup>, one of the most commonly proclaimed public goals under the imposition of export restrictive measures on critical mineral and metals is the need to conserve scarce exhaustible resources.

Significantly, the specific exception to the general prohibition of quantitative restrictions under Article XI:2 (a) was interpreted by both the Panel and the Appellate Body only very recently, within the context of *China – Raw Materials*. The occasion was given by the fact that, on the one hand, China tried to defend its export quotas on various forms of bauxite, coke, fluorspar, silicon carbide, and zinc by arguing that the complainants failed to establish a violation under Article XI:1 for they could not demonstrate that the measures at issue did not fall within the terms of Article XI:2(a); and, on the other hand, China claimed its export quotas on refractory-grade bauxite were justified under Article XI:2 (a).

On the first claim, the Panel clarified that the burden to provide evidence that the requirements under Article XI:2 (a) are met, and therefore no inconsistency arises under Article XI:1, should rest on China as the defendant party<sup>756</sup>. In the Panel's view, the language of the chapeau of Article XI:2, which refers to the general obligation to eliminate quantitative restrictions set out in Article

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product by spreading its supplies over a longer period and not to restrict the exportation of a product with the intention to promote the marketing of another. For a more detailed description, see Karapinar, *supra* n. 369, at 456-7.

<sup>755</sup> See Chapter Two, paragraph V.

<sup>756</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.210.

XI:1 and stipulates that the provisions of Article XI:1 “*shall not extend*” to the types of export restriction listed in Article XI:2(a)-(c), makes in fact clear that Article XI:2 does not provide for “positive rules establishing obligations in themselves”, but rather for “affirmative defences” for violations of Article XI:1 which would be on the respondent party to establish<sup>757</sup>. Hence, the Panel concluded that for each of the products at issue, the series of measures applied by China resulted in the imposition of a “restriction” on their exportation in breach of Article XI:1<sup>758</sup>.

On the second point, following its traditional interpretative approach<sup>759</sup>, the Panel and the Appellate Body clarified the legal scope of Article XI:2 (a) by addressing the definitions of all terms contained therein and interpreting their ordinary meaning in the light of the context provided for by the entire provision and by all other relevant provisions<sup>760</sup>. Firstly, the dispute settlement bodies agreed that the term “temporarily applied” is to be understood as meaning that the application of an export restrictions or prohibition

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<sup>757</sup> *Id.*, para. 7.211.

<sup>758</sup> The Panel concluded that, in the case of zinc, China maintained an “effective prohibition” (or a zero quota) for China had not published any quota for the exportation of zinc in 2009. *Id.*, para. 7.217.

<sup>759</sup> See *supra*, paragraph II, section C, n. 693 and corresponding text.

<sup>760</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.256. Following China’s claim of appeal with regard to the Panel’s interpretation and application of Article XI:2 (a), the Appellate Body assessed the Panel’s interpretation of the terms “temporarily applied” and “critical shortage” in Article XI:2 (a) and then considered whether the Panel erred in finding China’s export quota on refractory-grade bauxite did not meet those requirements. Appellate Body Report, *China – Raw Materials*, *supra* n. 435, paras. 314-17.

must be finite, i.e. limited in time<sup>761</sup>. Moreover, the Appellate Body further clarified that the fact that an export restriction such as China's export quotas on refractory-grade bauxite is subject to annual review is not sufficient to demonstrate that it would be maintained for the time necessary to prevent or relieve a critical shortage in accordance with the temporal requirement under Article XI: 2(a)<sup>762</sup>. Indeed, China's export quota on refractory-grade bauxite was maintained by China since 2000 "with no indication that it would be withdrawn and every indication that it will remain

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<sup>761</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, paras. 7.255 and 7.260. Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 323. However, the Appellate Body disagreed with the Panel's interpretation that the application of the measure should be accompanied by the fixation of a time-limit and stated that whether a measure is applied short-term or long-term is not relevant for the consideration of its temporariness. This circumstance has been criticized by part of the doctrine, which considered that "the AB missed an opportunity to bring in some degree of predictability by failing to confirm the panel's interpretation that there needs to be an indication of a specific timeline set in advance as to when the restrictive measure would be withdrawn. It could have provided some flexibility by confirming that the length of a specified timeline could vary in relation to the effect of the measure in question in preventing or relieving critical shortages; however such a time-limit requirement would have contained some of the damages that the unpredictability of these measures inflict on the world trading system". Karapinar, *supra* n. 372, at 451.

<sup>762</sup> Appellate Body Report, *China – Raw Materials*, *supra* n. 435, paras. 339-44. Confronted with China's claim according to which the Panel erred in the interpretation and in the application of the temporal and the criticality criterion, the Appellate Body upheld the Panel's conclusion by recognizing the relevance of the various elements of evidence that the Panel took into account: (i) the decennial application of the measure; (ii) China's reference to the estimated exhaustibility of the resource within 16 years; (iii) the existence of a conservation plan aimed at preserving the reserves of refractory-grade bauxite. The Appellate Body further clarified that "a panel did not err simply because it declines to accord to the evidence the weight that one of the parties believes should be accorded to it". *Id.*, para. 341.

in place until the reserves have been depleted”<sup>763</sup>. In this perspective, the critical shortage criterion could not apply either, for the assessed elements of evidence suggested that the measure addressed a situation of *permanent* shortage falling outside within the scope of Article XI:2 (a)<sup>764</sup>. According to the dispute settlement bodies, in fact, the temporal requirement contextually informs the notion of “critical shortage” in the sense that the restrictions should be applied “in the interim, to provide relief in extraordinary condition in order to bridge a passing need”<sup>765</sup>. Hence, the Panel clarified that a “critical shortage” refers to

“those deficiency in quantity that are crucial, that amount to a situation of decisive importance or that reach a vitally important or decisive stage, or a turning point”<sup>766</sup>.

In this perspective, the finite availability of a product is insufficient to constitute a “critical shortage” because cannot be

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<sup>763</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.350.

<sup>764</sup> In the words of the Panel, “a measure destined to be in place permanently – i.e. for the full 16 years until its object has disappeared – seems to suggest it is addressing something other than a ‘critical shortage’ as the term is used in Article XI: 2 (a)”. *Id.*, para. 7.351.

<sup>765</sup> Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 330. See also Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.297. The Appellate Body further clarified that, contrary to what the Panel had stated, the finite nature of the export quotas does not necessarily require that the duration of the measure must be fixed in advance. Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 331.

<sup>766</sup> *Id.*, para. 324. See also Panel Report, *China – Raw Materials*, *supra* n. 435, paras. 7.284-5.

remedied or prevented through “temporally applied” restrictions. In other words,

“if there is no possibility for the shortage ever to cease to exist, it would not be possible to ‘relieve or prevent’ it through an export restriction applied only for a limited period of time”<sup>767</sup>.

With regard to the essentialness criterion, the Panel and the Appellate Body agreed that Article XI:2 (a) does not limit *a priori* the types of “other products” that may be subject to export restrictions in derogation from Article XI:1<sup>768</sup>, but requires that the product in question must be “‘important’ or ‘necessary’ or ‘indispensable’” to a particular Member. They also clarified that the determination of whether a particular product is ‘essential’ within the meaning of Article XI:2 (a) should take into account “the particular circumstances faced by that Member at the time when a Member applies a restriction or prohibition”<sup>769</sup>. Within such

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<sup>767</sup> *Id.*, para. 7.297.

<sup>768</sup> The Appellate Body further clarified that “by including, in particular, the word ‘foodstuffs’, Article XI:1 (a) provides a measure of what might be considered a product “essential to the exporting Member but it does not limit the scope of other essential products to only foodstuffs”. Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 326.

<sup>769</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.277. The Panel concluded that the language of Article XI:2 (a) does not imply that a Member has an exclusive margin of manoeuvre when determining the essentialness of a product to it by drawing a contrast with the language of Article XX (b) of the GATT 1994, which reads “[no]thing in this Agreement shall be construed ... to prevent any contracting party from taking any action *which it considers necessary* for the protection of its essential security interests”. *Id.*, para. 7.276 (emphasis not added).

framework, the dispute settlement bodies did not provide with an exhaustive list of the guiding factors apt to inform the essentialness requirement, but considered criteria such as the product's importance in use, the contribution to national economic development, the complexity in substitutability as indicative factors of the essentialness of a product<sup>770</sup>. However, the Panel specified that “the mere designation of a product as essential or the imposition of conservation-related restrictions imposed on extraction or processing should not be relevant to the assessment of whether a product is ‘essential’ to a Member” for it would have the effect to “allow a Member to manufacture ‘essentialness’ when none exists”<sup>771</sup>.

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<sup>770</sup> Accordingly, the Panel considered refractory-grade bauxite “essential” to China within the meaning of Article XI:2 (a) on the basis of a comprehensive body of quantitative and qualitative evidence submitted by China. In particular, the Panel considered that refractory-grade bauxite is an “indispensable” input to the Chinese iron and steel industries, which in turn are key sectors for the economic development and a significant source of employment for China, in addition to represent a major share of the worldwide production. Moreover, the Panel attached particular significance to the peculiar characteristics of the product at issue, which undermine its substitutability. *Id.*, paras. 7.341-7.344. Indeed, refractory grade bauxite is recognized to have peculiar chemical and physical characteristics that distinguish it from other products falling under the same heading (Chinese HS number 2508.3000) but is considered to have peculiar chemical and physical characteristics that distinguish it from other products falling under the same heading. *Id.*, para. 7.244.

<sup>771</sup> *Id.*, para. 7.345. Similarly, the Panel also rejected “the argument that regulatory environmental or conservation-related restrictions imposed by China on the extraction or processing of a product in China should be taken into consideration when assessing whether a ‘critical shortage’ of a product exists”. *Id.*, para. 7.352.

It has been noted that the approach defined in *China – Raw Materials* suggests “the unacceptability of taking an intransigently beggar-thy-neighbour response to the scarcity or finitude of natural resources, while at the same time recognizing that a state can legitimately put the pressing needs of its own citizens first in a time of crisis”<sup>772</sup>. Indeed, the Appellate Body interpreted Article XI:2 (a) quite narrowly and ruled that “[the] evaluation of whether a particular measure satisfies the requirements of Article XI:2 (a) requires a case-by-case analysis taking into account the nexus between the different elements contained in Article XI:2 (a)”<sup>773</sup>.

Within this framework of reference, the interpretation of Article XI:1 (a) given in *China – Raw Materials* is important in two respects. First, the dispute settlement bodies shed light on the inherent interconnections between the various requirements provided for in Article XI: 2 (a), and clarified that the different requirements contained therein impart meaning to each other and contribute, *in concert*, to define its scope. Accordingly, the invocation of Article XI:2 (a) to justify export restrictions as a response to the finite availability of essential products

“must be carefully policed and circumscribed through the case-by-case application of the legal rules by the dispute settlement bodies”<sup>774</sup>.

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<sup>772</sup> Howse and Josling, *supra* n. 15, at 14.

<sup>773</sup> Appellate Body, *China – Raw Materials*, *supra* n. 435, para. 328.

<sup>774</sup> Howse and Josling, *supra* n. 15, at 14.

Second, the narrow approach to Article XI:2 (a) promoted in *China – Raw Materials* is informed by the consideration of the other GATT exceptions related to the issue of exhaustibility provided for in Article XX as relevant context, with particular regards to Article XX (g)<sup>775</sup> and, to some extent, (j)<sup>776</sup>. In particular, the Appellate Body explained the nature of the relationship between Article XI:2 (a) and Article XX (g) in the light of the principle of effective interpretation<sup>777</sup>. The Appellate Body made clear that the two types of exceptions “are intended to address different situations and must mean different things”<sup>778</sup>:

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<sup>775</sup> Article XX (g) permits the adoption of measures that are “related to the conservation of exhaustible natural resources”, provided that such measures are “made effective in conjunction with restrictions on domestic productions or consumption”. See *infra*, paragraph IV.

<sup>776</sup> Article XX (j) allows WTO Members to take measures that are “essential to the acquisition or distribution of products in general or local supply; *Provided* that any such measures shall be consistent with the principle that all contracting parties are entitled to an equitable share of the international supply of such products, and that any such measures, which are inconsistent with the other provisions of the Agreement shall be discontinued as soon as the conditions giving rise to them have ceased to exist” (original emphasis). See *infra*, paragraph IV.

<sup>777</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.256; Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 333. According to the principle of effective interpretation, all applicable provisions of a treaty should be interpreted in a way as to give effect to all of them without rendering them useless, redundant or irrational. See Van Damme, I., *Treaty Interpretation by the WTO Appellate Body*, Oxford University Press, 2009.

<sup>778</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.300; Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 337. The Panel considered that concluding otherwise would mean that Members could resort indistinguishably to either of the two provisions to address the problem of exhaustible natural resources, thereby rendering Article XX (g) redundant. Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.258. Coherently, the Appellate Body clarified that “where the requirement of Article XI:2 (a) are met,



Article XI:2 (a) is an exception to the obligations contained in Article XI:1 in order to prevent or relieve critical shortages of products essential to the Member resorting to it; Article XX (g) operates as a general exception to the obligations contained in other provisions of the GATT, including Article XI:1, to protect the reserves of exhaustible natural resource and, accordingly, provides for “additional protections” provided in the chapeau to Article XX<sup>779</sup>. Hence, since the reach of Article XI:2 (a) is different from that of Article XX (g), the Appellate Body has not *a priori* excluded that measures addressed at restricting the exportation of exhaustible natural resources under Article XI:1(a)

“might operate *simultaneously* with a conservation measure complying with the requirements of Article XX (g)”<sup>780</sup>.

However, in so admitting, it provided the example of a natural disaster causing a “critical shortage” of an of an exhaustible natural resource already subject to a conservation measure under Article XX (g), thereby reinforcing the view that the criticality criterion requires

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there would be no scope for the application of Article XX, because no obligation exists”. Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 334.

<sup>779</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.257-8. As known, according to the chapeau of Article XX, a Member could resort to conservation measures pursuant to Article XX (g) only insofar as “such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade”.

<sup>780</sup> Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 337.

“a situation of decisive importance or that reaches a vitally important or decisive stage”

susceptible to pose an extraordinary need. In this respect, China’s defensive arguments under Article XI:2 (a) were flawed by a misinterpretation of its scope with regards to its relationship with Article XX (g). Indeed, by insisting on conservation-related facets of the export quotas applied to refractory-grade bauxite, China was expecting to establish a more persuasive evidence of compliance with Article XI: 2 (a); on the contrary, it made evident to the dispute settlement bodies that the provision invoked could not apply to the facts of the case.

With regards to Article XX (j), the Appellate Body again reinforced its strict interpretation of Article XI:2 (a) by drawing a contrast between the wording of the two provisions. According to the AB, in fact,

“Contrary to Article XI:2 (a)...Article XX (j) does not include the word “critical” or another adjective further qualifying the short supply. We must give meaning to this difference in the wording of these provisions. To us, it suggests that the kinds of shortages that fall within Article XI:2 (a) are more narrowly circumscribed than

those falling within the scope of Article XX  
(j)”,<sup>781</sup>.

Finally, the strict interpretation of Article XI:2 (a) provided by the Appellate Body in *China – Raw Materials* is particularly instructive in the light of the new rare earth dispute, for China’s export regime on rare earth elements responds to identical concerns to those advanced by China in justifying the export quota on refractory-grade bauxite under Article XI:2 (a)<sup>782</sup>; such circumstance renders the challenged measures very unlikely to be successfully justified by means of Article XI:2 (a)<sup>783</sup>. Indeed,

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<sup>781</sup> *Id.*, para. 325. It should be recalled, however, that there have been no WTO dispute settlement proceedings addressing this provision so far. See *infra*, paragraph IV.

<sup>782</sup> As for refractory-grade bauxite, China has claimed that its export quota regime on rare earths is part of a more comprehensive and sustainable mineral conservation policy while at the same time insisting that strong foreign demand, physical exhaustibility and domestic regulatory limits on access render access to these critical elements subject to increasingly critical shortage of supply. See the Comments by the Head of the Chinese Ministry for Commerce (MOFCOM), Department of Treaty and Law on US, EU and Japan Requests of Consultations on China, 15 May 2012, available at <http://english.mofcom.gov.cn/aarticle/newsrelease/policyreleasing/201203/20120308016675.html>. According to the Chinese government, if the exploitation of these resources is not controlled, they could be exhausted in 20-30 years. See MOFCOM, China’s Rare Earths Reserve Will be Used Up in 20 Years, available at [http://news.xinhuanet.com/mil/2010-10/17/C\\_12668271](http://news.xinhuanet.com/mil/2010-10/17/C_12668271).

<sup>783</sup> The Panel reached this conclusion on the basis of a comprehensive body of quantitative and qualitative evidence submitted by China that includes “geological, technical, environmental, social, economic and political factors”. Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.338 and paras. 7.310-7.318. In particular, the Panel considered that refractory-grade bauxite is an “indispensable” input to the Chinese iron and steel industries, which in turn are key sectors for the economic development and a significant source of employment for China, in addition to represent a major share of the worldwide production. Moreover, the Panel attached particular significance to the peculiar

although the strategic importance of the rare earth elements<sup>784</sup> may contribute to establish evidence of the essentialness of rare earths when looking at the particular circumstances faced by China<sup>785</sup>, the measures would hardly meet the “temporarily applied” and “critical shortage” requirements. On the one hand, in fact, it is questionable whether the extraordinary pressure on demand for rare earths that China has claimed to constitute a “situation of decisive importance” could inform the “critical shortage” criterion under the purview of Article XI: 1 (a). On the other hand, even admitting so, the estimated trends China has been referring to do not envisage that it would eventually come a time when such pressure will no longer be critical. In light of the effectiveness principle, the consideration that China’s export quotas on rare earths date back to early 2000s<sup>786</sup> and have steadily undergone to significant annual reduction, in addition to the reference to the estimated exhaustibility of these resource within a time-frame of 20-30 years<sup>787</sup>, seem indeed to suggest that the Panel would have sufficient evidence before it to conclude that these measure would

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characteristics of the product at issue, which undermine its substitutability. *Id.*, paras. 7.341-7.344.

<sup>784</sup> See *supra*, n. 782. Some authors have indeed referred to our contemporary era as the “Rare Earths Age”. Bin Gu, *supra* n. 369, at 766.

<sup>785</sup> By the 2015, China’s output is expected to reach 160,000 tons per year. However, the rare earths market has been growing in the range of 8-11% per year over the past decade, and experts believe by 2014 global demand will exceed 200,000 tons per year. See Hurst, C., *China’s Rare Earths Industry: What Can the West Learn*, Institute for the Analysis of Global Security, 2010, at 27.

<sup>786</sup> Korinek and Jeonghoi, *supra* n. 454, at 13 and 19-22.

<sup>787</sup> See *supra*, nn. 782 and 785.

apply permanently until full depletion of the resource, thus running counter of the “temporarily applied” requirement.

#### **IV. Relevant general exceptions under Article XX GATT and the scope to address environmental concerns through export restrictions in light of *China – Raw Materials***

A measure violating any provisions of the GATT or, according to the approach developed in *China – Raw Materials*, any WTO obligation falling outside the GATT but incorporating by cross-reference the related flexibilities<sup>788</sup>, can be justified if it qualifies for an exception under GATT Article XX. Entitled “General Exceptions”, Article XX includes 10 sub-paragraphs, letters (a) from (j), each admitting certain measures, even if inconsistent with GATT obligations, provided that

“...such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade” (so-called chapeau of Article XX).

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<sup>788</sup> See *supra*, paragraph II, section C.

For the purposes of the present study, which is to investigate the legal boundaries applicable to export restrictions under GATT rules, the relevant provisions of Article XX are sub-paragraphs (g) and (j) in that they relate directly to the issue of exhaustibility, typically inherent to finite – and thus scarce – mineral resources<sup>789</sup>, as well as sub-paragraph (b), which admits measures taken to protect human, animal and plant life or health and can thus have relevant implications for the measures at issue, given that they apply to resources of the highly polluting mining industry<sup>790</sup>.

The Appellate Body has explained that the exceptions are “limited and conditional” and that, in order to be protected by Article XX, national conducts have to pass a two-tiered test<sup>791</sup>: first, the measure at issue must fall within the scope of one of the sub-paragraphs in Article XX and, if so, meet the terms of the specific exception; second, when a measure is provisionally justified under one of the specific exceptions, the measure must be applied in a manner that is consistent with the requirements set forth by the chapeau of Article XX.

As to the first “step” of the two-tiered process, the dispute settlement bodies could provisionally justify export restrictive measures applied to critical minerals and metals when: (i) necessary to protect human, animal or plant life or health under

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<sup>789</sup> See Chapter Two, paragraph V, section A.

<sup>790</sup> *Id.*, section B.

<sup>791</sup> Appellate Body Report, *United States – Shrimp*, *supra* n. 693, para. 157.

Article XX (b); (ii) related to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption under Article XX (g); essential to the acquisition or distribution of products in general or local short supply insofar as they are consistent with the principle that all contracting parties are entitled to an equitable share of the international supply of such products under Article XX (j).

With regards to the latter exception, as seen *supra*, the legal scope of Article XX (j) has never been interpreted by the dispute settlement bodies, and, indeed, it seems that the local short supply exception was also rarely used under the GATT<sup>792</sup>. However, according to the WTO Secretariat, this exception

“would provide WTO Members with some flexibility to take trade-restrictive action when a particular resource becomes temporally scarce”<sup>793</sup>.

Indeed, it seems that the expression “general or local short supply” was intended to apply to

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<sup>792</sup> See *GATT Analytical Index*, at 594. Moreover, this provision was originally conceived to last only for a limited period of time, as instrumental to “take care of temporary situations arising out of the war”. GATT, 3d Supp. BISD 230 (1955). It became a permanent provision by virtue of the Decision L/3361, 17S/18 adopted on February 20, 1970.

<sup>793</sup> WTO World Trade Report 2010, *supra* n. 32, at 168.

“cases where a product, although in international short supply, was not necessarily in short supply in all markets throughout the world. It was not used in the sense that every country importing a commodity was in short supply”<sup>794</sup>.

Moreover, as implicitly admitted by the Panel in *China – Raw Materials*, the absence of the qualification of “critical” short supply seems to indicate that Article XX (j) could provide with a practicable and broader venue to justify responses to the pressing supply needs<sup>795</sup>. Finally, as to the additional requirement which imposes to respect the principle of equitable shares for Members, the 1950 Working Party on “The Use of Quantitative Restrictions for Protective and Other Commercial Purposes” clarified that such principle differs from the principle of non-discrimination and noted that the determination of equitableness “will depend upon the facts in...any given circumstances”, further elaborating that a Members which “diverts an excessive share of its own supply to individual countries”<sup>796</sup> will run afoul of the principle of equitable distribution.

In contrast to Article XX (j) of GATT, the so-called “environmental” exceptions provided for in Article XX have already been tested with regards to their applicability to export

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<sup>794</sup> *Id.*, citing EPCT/A/PV/30, at 22.

<sup>795</sup> See *supra*, paragraph III, section B, n. 782 and corresponding text.

<sup>796</sup> *Id.*



restrictive measures. In particular, in *Canada – Herring and Salmon* Canada tried to defend its prohibition on certain salmon and herring products by resorting to Article XX (g), while in *China – Raw Materials* China invoked both exceptions to defend its complex regime of export duties and quotas on several raw materials<sup>797</sup>. Although the Panel concluded that the defences under Article XX were not available for export duties in breach of Paragraph 11.3 of China’s Accession Protocol, it decided to examine China’s related defences based on Article XX exceptions, together with those applicable to export quotas,

“in order not to undermine the parties’ right to prompt settlement of the dispute”<sup>798</sup>.

Such interpretative exercise is particularly enlightening in that the Panel addressed the link between the design of export restrictions and the proclaimed environment-related rationale in light of the legal prongs required by both exceptions as interpreted by relevant

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<sup>797</sup> China sought to justify the duties imposed on the exportation of various forms of coke, magnesium, manganese (excluding manganese ore and concentrates) and zinc under Article XX (b), and of fluorspar pursuant to Article XX (g). In addition, China invoked Article XX (b) to justify export quotas on coke and silicon carbide and Article XX (g) to justify the export quota maintained on refractory-grade bauxite.

<sup>798</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.230. In pursuing its reasoning, the Panel followed China’s approach of defending collectively its export duties and export quotas in the context of its Article XX defence, and grouped some arguments under Article XX (g) and others under Article XX (b). Indeed, China had grouped its argumentations under Article XX (b) and (g) with regards to export duties and quotas together after considering the two measures “functionally equivalent”, i.e. with “similar effect on the volume of the export and, hence, international and domestic supply”. *Id.*, para. 7.231.

case law and, by so doing, it defined the policy space left to WTO Members for resorting to export restriction to address environmental concerns under the legal boundaries resulting from Article XX.

### **A. Article XX (g) GATT and the principle of sovereignty over natural resources**

As known, Article XX (g) permits to resort to measures which: (i) relate to the conservation of an exhaustible natural resource<sup>799</sup>; and, (ii) are made effective in conjunction with restrictions on domestic production or consumption. Article XX (g) was invoked to justify export restrictive measures in two cases. In *Canada – Herring and Salmon*, the Canadian regulation prohibiting the exportation of unprocessed forms of salmon and herrings<sup>800</sup> was not considered to fall within the scope of Article XX (g) for the Panel judged it to run afoul of both prongs of Article XX (g).

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<sup>799</sup> As known, the term “exhaustible” resource has been consistently interpreted by the relevant case law in an extensive way. See, for all, Appellate Body Report, *United States – Standard for Reformulated and Conventional Gasoline*, WT/DS2/AB/R, adopted on 29 April 1996, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds2\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds2_e.htm) and Appellate Body Report, *US – Shrimp*, *supra* n. 693; and, for a general overview, WTO World Trade Report 2010, *supra* n. 32, at 168 et seq. Mineral are thus to be presumed to fall within the meaning of Article XX (g).

<sup>800</sup> GATT Dispute Settlement Report, *Canada – Herring and Salmon*, *supra* n. 722.

According to the Panel, in fact, the first prong was to be interpreted as requiring that a restrictive measure be primarily aimed at conservation; the second, that a measure be aimed at rendering effective the restrictions on domestic production or consumption<sup>801</sup>. Within this framework, since the regulation at issue only applied to supplies in unprocessed forms without covering exports of the same varieties in general, and was targeted at foreign processors and consumers only, excluding from its scope domestic processors and consumers, the Panel concluded that

“these prohibition could not be deemed to be primarily aimed at the conservation of salmon and herring stocks and at rendering effective the restrictions on the harvesting of these fish”<sup>802</sup>.

The level of sophistication and complexity of both China’s export regime and argumentations under Article XX (g) required the Panel to elaborated a much more comprehensive approach in *China – Raw Materials*; such approach includes several elements of potential innovation with respect to the traditional interpretation of the legal benchmarks as standardized through abundant and consistent case law<sup>803</sup>.

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<sup>801</sup> *Id.*, para. 4.6.

<sup>802</sup> *Id.*, para 4.7.

<sup>803</sup> For a comprehensive yet synthetic overview of the case law relating to Article XX (g) of the GATT, see WTO Doc. WT/CTE/W/203, GATT/WTO Dispute Settlement Practice Relating to GATT Article XX, Paragraphs (b), (d) and (g), 8 March 2002 and subsequent revisions.

With regard to the first prong, it is interesting to note that China invoked the defence of Article XX (g) to justify its export duties on various forms of fluorspar, and the export quota on refractory-grade bauxite in case it would run afoul of Article XI: 2 (a), claiming that refractory-grade bauxite and fluorspar were scarce and not easily substitutable exhaustible resources<sup>804</sup> and, most importantly, contending that the export restrictions at issue formed an integral part of a set of measures relating to conservation adopted within the framework of a comprehensive mineral policy aimed at managing China's mineral resources in accordance with the objective of sustainable development<sup>805</sup>. Interestingly, the Panel did agree to evaluate the measures at issue in the light of the whole set of measures put forward by China as evidence of a comprehensive conservation-related mineral policy, and recognized that the fact that Article XX (g) refers to measures "relating to conservation" does not exclude *per se* that a measure aimed, *inter alia*, at pursuing social and economic development goals may fall within the scope of such exception if the defendant can prove it was adopted as part of a "comprehensive policy comprising a

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<sup>804</sup> China claimed that, at the 2009 rate of extraction, reserves of fluorspar are deemed to last for 4.5 years and those of refractory-grade bauxite 16 years. Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.411.

<sup>805</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, paras. 7.356 and 7.363-4. China supported this claim by listing thirteen measures relevant for its conservation programme on refractory-grade bauxite and nine measures for fluorspar. *Id.*, paras. 7.420-1 and 7.448.

multiplicity of interacting measures”<sup>806</sup>. According to the Panel, in fact, a proper reading of the term “conservation” should be informed by the objective of sustainable development stated in the Preamble of the WTO Agreement<sup>807</sup> and, more importantly, by the principle of sovereignty over natural resources<sup>808</sup>. In the Panel’s view, moreover, the first recital of the Preamble provides for relevant context to Article XX (g) in that the conservation of scarce exhaustible resources incorporates the notion of sustainable

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<sup>806</sup> This is because, according to the Panel, the different policy objectives “cannot be viewed in isolation: they are related facets of an integrated whole”. *Id.*, para. 7.376.

<sup>807</sup> The Panel considered the Preamble of the GATT 1994 as relevant context to Article XX (g) in accordance with Article 31 (2) of the VCLT, according to which the context of the treaty includes its “text, including its preamble and annexes”. The first recital of the Preamble recognizes that trade relations between WTO Members should be conducted in a way that allows “for the optimal use of the world’s resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development”. The Panel recalled that the Appellate Body had recognized that “the Preamble gives ‘colour, texture, and shading to the interpretation of the agreements annexed in the WTO Agreement, in this case, GATT 1994’”. Panel Report, para. 7.373, quoting Appellate Body Report, *US - Shrimp*, *supra* n. 693, para. 153.

<sup>808</sup> The principle of sovereignty over natural resources allow states to freely use and exploit their natural wealth and resources wherever deemed desirable by them for their own development”. Resolution 1803 (XVII), Permanent Sovereignty Over Natural Resources, 14 December 1962. See Schrijver, N., Permanent Sovereignty over Natural Resources, in *Max Plank Encyclopaedia of Public International Law* and, for a more detailed treatment of the principle, *infra*, Chapter Four, paragraph III, section B, n. 976 and the bibliography hereby cited. In the Panel’s view, the principle of sovereignty over natural resources is a “relevant rule of international law applicable in the relations between the parties” which should be taken into account by the interpreter together with the context in pursuance to Article 31 (3) of the VCLT. For the potential implications linked to such explicit recognizance see *infra*, Chapter Four, paragraph III, section B in particular.

management of those resources. The interpretation of Article XX (g) should thus take into account the principle of sovereignty over natural resources as to permit Members to resort to measures aimed at managing the supply and use of exhaustible resources in a sustainable manner, i.e.

“to promote their own development while regulating the use of these resources to ensure sustainable development”<sup>809</sup>.

Hence, in the Panel’s view, nothing *a priori* precludes that a “comprehensive policy comprising a multiplicity of interacting measures [qualifies as] an appropriate policy to conserve natural resources”<sup>810</sup> within the meaning of Article XX (g) – even if it includes multi-faceted objectives – insofar as it is an expression of a Member’s sovereignty over its natural resources exercised in respect of the requirements of Article XX (g)<sup>811</sup>.

Despite the broad interpretation given of the first prong of Article XX (g), the Panel considered that China failed to establish

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<sup>809</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.381.

<sup>810</sup> *Id.*, para. 7.376.

<sup>811</sup> *Id.*, paras. 7.375-6 and paras. 7.381-3. In the words of the Panel, “Conservation and economic development are not necessarily mutually exclusive policy goals; they can operate in harmony. So too can such policy goals operate in harmony with WTO obligations, for Members must exercise their sovereignty over natural resources consistently with their WTO obligations”. In the complainants’ view, however, such interpretation would extend the scope of Article XX (g) so as to “permit WTO Members to deviate from WTO rules in order to promote and realize their own self-interested economics goals”. *Id.*, para. 7.366.

the existence of a “close and genuine relationship”<sup>812</sup> between the export restrictions at issue and the stated conservation goal. Indeed, the Panel noted that the specific measures restricting the exportation of fluorspar and refractory-grade bauxite did not refer to the goal of conservation<sup>813</sup>, nor the evidence submitted by China relating to its comprehensive mineral policy showed the existence of measures specifically related to the conservation of refractory-grade bauxite or fluorspar<sup>814</sup>. Moreover, and most importantly, the Panel considered that the very nature of measures such as export restrictions, which are “measures that increase the costs of refractory-grade bauxite and fluorspar to foreign consumers but decrease their costs to domestic users” is *per se* “difficult to reconcile with the goal of conserving refractory-grade bauxite and fluorspar”<sup>815</sup>.

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<sup>812</sup> The Panel recalled that, in *US – Shrimp* (see *supra*, n. 693), the Appellate Body stated: “Article XX (g) requires that the measure sought to be justified be one which ‘relat[es] to’ the conservation of exhaustible natural resources. In making this determination, the treaty interpreter essentially looks into the relationship between the measure at stake and the legitimate policy of conserving exhaustible natural resources”. Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 7.370, quoting the *US – Shrimp* Appellate Body Report, *supra* n. 693, para. 135.

<sup>813</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.418.

<sup>814</sup> *Id.*, paras. 7.422-6.

<sup>815</sup> *Id.*, para. 7.434. China claimed that the export restrictions at issue would contribute to conservation of refractory-grade bauxite and fluorspar by reducing foreign demand and, therefore, domestic production. However, the Panel considered that “for the purpose of conservation of a resource, it is not relevant whether the resource is consumed domestically or abroad; what matters is its pace of extraction”. *Id.*, para. 7.428. Indeed, the Panel did not find evidence of the any significant effect of extending the lifespan of the materials at issue as a

The Panel then examined whether the export restrictions at issue were “made effective in conjunction with restrictions on domestic production or consumption”. According to the Panel, this benchmark permits trade measures relating to the conservation of exhaustible resources when they operate jointly with even-handed domestic restrictions<sup>816</sup>. In particular, the Panel clarified that

“to benefit from the justification permitted under paragraph (g), a Member cannot seek to rely on a future or potential domestic restriction; nor will measures enacted concurrently but which only have effect or are foreseen to have effect only in the future respect the Article XX(g) criteria, for they must not only exist concurrently; they must *operate concurrently*”<sup>817</sup>.

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result of the application of such measures, while it acknowledged a significant increase in the domestic consumption of refractory-grade bauxite and fluorspar compared to exports during the period the measures were in effect. *Id.*, paras. 7.429-33.

<sup>816</sup> It should be noted that the Panel referred to *Canada – Herring and Salmon* (*supra*, n. 722) and interpreted this legal benchmark as to impose that the conservation measure be primarily aimed at making effective certain restrictions on domestic production or consumption. Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.397. However, the Appellate Body reversed this interpretation by stating that nothing in Article XX (g) suggests that, in addition to operate concurrently with even-handed domestic restrictions on production or consumption, a trade restriction must be primarily aimed at ensuring the effectiveness of domestic restriction. Appellate Body, *China – Raw Materials*, *supra* n. 435, paras. 360-361.

<sup>817</sup> Panel Report, Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.455 (emphasis added).



As to the even-handedness requirement, the Panel reiterated that Article XX (g) does allow WTO Members to exercise their sovereign rights over natural resources so as to

“manage the supply and use of non-renewable resources through conservation-related measures that foster sustainable development of their domestic economies”<sup>818</sup>,

but clarified that a member is entitled to invoke its sovereign rights over its natural resources insofar as they are exercised within the parameters of Article XX (g). In other words, a Member cannot invoke the principle of sovereignty over natural resources to justify conservation-related trade measures when even-handed restrictions are not imposed on domestic supply. The Panel reiterated that the even-handedness requirement does not require an identical treatment but posited:

“it is difficult to see how - if *no* similar or parallel restrictions are imposed at all on domestic users or on domestic consumption and all limitations are places upon the foreign consumers *alone* – the export restrictions can be considered even-handed”<sup>819</sup>.

On the basis of this interpretation, the Panel concluded that China failed to meet the requirements established by the second

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<sup>818</sup> *Id.*, para. 7.404.

<sup>819</sup> *Id.*, para. 7.465 (original emphasis).

legal benchmark provided for in Article XX (g). Among the set of measures that China put forward as evidence of restrictions on domestic production, in fact, the Panel did not find any specific provision setting restrictions on domestic production or consumption of refractory-grade bauxite and fluorspar<sup>820</sup>. The Panel did note that some of the 2010 measures to which China referred to provide for the introduction of caps on mining and production but considered that they were admittedly foreseen to have effect in limiting domestic production *in the future*<sup>821</sup>. Furthermore, the Panel considered that China failed to demonstrate that “the impact of the export duty [on fluorspar] or export quota [on refractory-grade bauxite] is somehow balanced with some measure imposing restrictions on domestic users and consumers”<sup>822</sup> and thus concluded that such measures resulted in imposing an uneven-handed burden on foreign and domestic consumers”<sup>823</sup>. Finally, in the light of the caps on mining and production

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<sup>820</sup> *Id.*, para. 7.440. The Panel noted that, out of eight pre-2009 measures invoked by China, two contained aspects specifically related to the production of refractor-grade bauxite and fluorspar, i.e. a resource tax of 1% on entities exploiting mineral products and a 2% compensation fee for the extraction of the materials at issue. However, the Panel considered that China failed to establish evidence of their effectiveness in limiting mineral production. *Id.*, paras. 7.442-7.

<sup>821</sup> The 2010 Quota of High-Alumina Refractory-Grade Bauxite and Fluorspar indeed set a production cap for the materials at issue but the target level was still above the production rates and therefore not effective in limiting production. Admittedly, China indicated that it was aimed at providing domestic producers and consumers with a “transitional period” during which to expect the target levels to decrease year by year. *Id.*, paras. 7.454-8.

<sup>822</sup> *Id.*, para. 7.465.

<sup>823</sup> *Id.*, paras. 7.463-6.

introduced in 2010, the Panel recognized that, were they eventually to amount to effective restrictions on domestic consumption and production, they might in the future permit China's challenged measures to be justified under Article XX (g).

## **B. Article XX (b) GATT and the availability of WTO-consistent alternatives**

Article XX (b) permits Members to recur to measures “necessary to protect human, animal or plant life or health”. This exception was invoked by China in *China – Raw Materials* to justify the export duties and quotas maintained on various raw materials which China grouped into two categories for the purposes of its defensive arguments: the “EPR products”, i.e. energy-intensive, highly polluting, resource-based products; and the “scrap products”, i.e. inputs for secondary production and/or recycled materials<sup>824</sup>. According to China, the export restrictions on EPR products would reduce the pollution associated to their extraction and production by inducing a production decrease; in turn, the

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<sup>824</sup> China sought to justify under Article XX (b) the export duties imposed on various forms of coke, magnesium, manganese (excluding manganese ore and concentrates) and zinc, as well as the export quotas maintained on coke and silicon carbide. It regrouped coke, magnesium mater, manganese metal and silicon carbide under the category “EPR products”, and magnesium scrap, manganese scrap and zinc scrap under the category of “scrap products”. *Id.*, paras. 7.470-73.

export restrictions on scrap products would ensure a steady supply to the recycling industry, and thus facilitate a transition towards a much less polluting secondary economy<sup>825</sup>. Moreover, China argued that the export restrictions at issue played a key role within the context of its comprehensive environmental framework aimed at minimizing the environmental and health impacts resulting from the extraction of mineral resources<sup>826</sup>.

Following previous WTO case law on the interpretation of Article XX (b)<sup>827</sup>, the Panel first assessed whether China's export restrictions fall within the range of policies designed to protect human, animal or plant life or health as required by the first

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<sup>825</sup> *Id.*, paras. 7.470-2.

<sup>826</sup> In addition to the various announcements of the application of the export duties and quotas at issue, China referred to the Eleventh Five-Year Plan for Environmental Protection (2006-2010) and a series of contemporaneous laws and regulations adopted between 2005 and 2010 in the attempt to substantiate its claim that a comprehensive environmental framework had been put in place in China and that such export restrictions were an integral part of it. *Id.*, paras. 7.502-7.511. Within the context of such framework, the measures on EPR and on scraps products operate jointly and simultaneously. This is why, although China grouped the materials defended under Article XX (b) into two categories, the Panel often analysed China's argumentations on scrap products within the context of its argumentation on EPR products. *Id.*, para. 7.524.

<sup>827</sup> The Panel recalled the *EC – Tariff Preferences* case, where the Panel clarified the requirements of Article XX (b): “in order to determine whether the [measure at issue is] justified under Article XX(b), the Panel needs to examine: (i) whether the policy reflected in the measure falls within the range of policies designed to achieve the objective of or, put differently, whether the policy objective is for the purpose of, 'protect[ing] human ... life or health'. In other words, whether the measure is one designed to achieve that health policy objective;....”. See Panel Report, para. 7.479 and n. 751, citing Panel Report, *European Communities – Conditions for the Granting of Tariff Preferences to Developing Countries*, WT/DS246/R, adopted on 20 April 2004, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds246\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds246_e.htm), para. 7.199.

prong<sup>828</sup>. The Panel found no reference of environmental or health concerns in the measures imposing such restrictions, nor any mention of how levying such export restrictions would contribute to reduce pollution with a view to protect the health of the Chinese population<sup>829</sup>. The Panel then reviewed the broad collection of documents that China submitted to demonstrate its contention that the export restrictions are an integral part of its comprehensive environmental policy<sup>830</sup>. However, it could not find therein any reference to the challenged export duties and quotas, nor any persuasive evidence of a meaningful connection between the

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<sup>828</sup> The Panel cited *US – Gasoline* (*supra*, n. 799) and *Brazil – Retreated Tyres* (Appellate Body Report, *Brazil – Measures Affecting Imports of Retreated Tyres*, WT/DS332/AB/R, adopted on 3 December 2007, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds332\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds332_e.htm)) to recall that a broad range of policies have been recognized as falling within the scope of Article XX (b). Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.479.

<sup>829</sup> The Panel noticed that the 2009 Further Adjust of Import and Export Tariffs announces the introduction of export restrictions “targeted at high-energy consumption commodities, high-pollution commodities and resources-based commodities” but underlined that it does not establish a link between those measures and the objective of reducing pollution resulting from the production of these goods with the view to improving the health of China’s population. *Id.*, para. 7.506. Indeed, “[t]he reference to serious pollution is descriptive of the products affected by the restrictions”. *Id.*, para. 7.508.

<sup>830</sup> The Panel recalled that in *Brazil – Retreated Tyres* the Appellate Body recognized that “a ‘necessary’ measure could contribute to one of the objectives protected under Article XX (b) as part of a policy framework comprising different measures, relating in possible synergies between those measures”. *Id.*, para. 7.485, quoting Appellate Body Report, *Brazil – Retreated Tyres*, *supra* n. 828, para. 151.

application of such export restrictions and the stated environmental objective<sup>831</sup>. Moreover, the Panel observed that

“some of the evidence submitted by the complainants seems to indicate that, contrary to China’s assertions, the export duties at issue bear a direct relationship to the economic goal of moving the products up the value chain”<sup>832</sup>.

Hence, the Panel concluded that China failed to prove that its export restrictions on EPR and scrap products were adopted as part of a comprehensive environmental programme aiming at reducing the pollution associated with the production of the materials at issue<sup>833</sup>. In the Panel’s view, in fact,

“a Member must do more than simply produce a list of measures referring, *inter alia*, to environmental protection and polluting products.

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<sup>831</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, paras. 7.502-13. The Panel underlined that, among the array of measures examined, none contained any explanation on how such restrictions would contribute to reduce polluting and thus fulfil the stated environmental objective. Moreover, and more interestingly, the Panel also emphasized that China was maintaining similar export restrictions on products similar to the materials at issue but not seeking to justify them under Article XX (b). Thus, the Panel considered that “China did not explain the relationship between the invocation of its broad societal environmental and health concerns and other export restrictions for which it is not attempting to offer any (environmental-health) justification”. *Id.*, para. 7.496.

<sup>832</sup> *Id.*, para. 7.515. According to the complainants, “China’s invocation of environmental and health concerns is merely a *post hoc* rationalization developed solely for the purpose of [the] dispute”. *Id.*, para. 7.499.

<sup>833</sup> *Id.*, paras. 7.516 and 7.595.

It must be able to show how these instruments fulfil the objective it claims to address”<sup>834</sup>.

The Panel then turned to the second prong and analysed whether the challenged measures could be considered “necessary” within the meaning of Article XX (b). Recalling the previous case law on the assessment of “necessity”<sup>835</sup>, the Panel examined first whether the export restrictions at issue contributed “materially” to the stated environmental goal and/or were “apt to contribute” to achieve it in the medium or long run<sup>836</sup>. China submitted both quantitative and qualitative argumentations to demonstrate that such measures contributed materially to the objective of reducing health risks associated to the polluting production of EPR products, and claimed that the results of multiple simulation studies proved that such export restrictions, by reducing the demand of exports, decrease domestic production<sup>837</sup>. However, the Panel was not persuaded by the results provided, and considered the estimations

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<sup>834</sup> *Id.*, para. 7.511.

<sup>835</sup> According to the Appellate Body in *Brazil – Retreaded Tyres*, “[i]n order to determine whether a measure is ‘necessary’ within the meaning of Article XX(b) of the GATT 1994, a panel must consider the relevant factors, particularly the importance of the interests or values at stake, the extent of the contribution to the achievement of the measure’s objective, and its trade restrictiveness.” Appellate Body Report, *Brazil – Retreaded Tyres*, *supra* n. 828, para. 150.

<sup>836</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.484.

<sup>837</sup> China referred to standard economic theory according to which, as a result of the reduced foreign demand of the good that bears the export duty or quota, supply shifts to the domestic market thereby putting downward pressure on the domestic price of the product and ultimately triggering a decrease in domestic production. See *supra*, Chapter Two, paragraph IV.

“highly speculative given the lack of adequate data”<sup>838</sup> as well as flawed in the methodology used to assess the effectiveness of the measures at issue. In particular, the Panel noted that China’s estimations of the effect of the challenged measures were done “in isolation”, and failed to take into account the additional downstream pollution which, in the light of the important vertical structure of the metal industry in terms of upstream and downstream interactions, is very likely to result from the additional units of EPR available to domestic consumption at a lowered price<sup>839</sup>. Analogously, the Panel considered that China was not able to show persuasive evidence that the export restrictions on scrap products, by reducing the price for secondary production relative to primary production of the metal, would foster the consumption of secondary, less-polluting production. Indeed, not only were the quantitative assessments put forward by China methodologically

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<sup>838</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.531. The Panel observed that China estimated the effects of the export restrictions on manganese and magnesium metal and the export quotas on silicon carbide considering that the domestic supply and demand elasticity were the same of cokes, while the standard economic theory suggests are rather specific for every product. *Id.*, paras. 7.528-31.

<sup>839</sup> *Id.*, para. 7.533. China claimed that the additional downstream pollution would be relatively minor because the most polluting stage of the production process is the upstream production. However, the Panel considered that China did not submit any evidence of the (allegedly minor) magnitude of additional pollution generated by the increase in consumption by the domestic downstream industry, and most importantly it did not provide the Panel with the data concerning the amount of additional intermediate products producible using the additional unites of EPR products available as domestic consumption. *Id.*, para. 7.534.



incorrect<sup>840</sup>, but again they were conducted in isolation, without taking into account the potentially conflicting effects of export restrictions imposed in other related sectors at the same time, e.g. on EPR products<sup>841</sup>.

China also claimed the export restrictions were “apt to contribute” to the objective of reducing the health risks of the Chinese population by triggering a “virtuous cycle of development and environmental protection”<sup>842</sup>: according to China, in the long-run the export restriction on EPR products would produce a shift in production up the value chain, thereby boosting economic growth and higher income per capita<sup>843</sup>; in turn, higher growth would produce environmental gains<sup>844</sup>. Moreover, the export restrictions

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<sup>840</sup> *Id.*, para. 7.599-601.

<sup>841</sup> *Id.*, paras. 7.526, 7.603 and 7.608.

<sup>842</sup> *Id.*, para. 7.521. China also claimed that the measures at issue would produce medium term gains through the selection effect, i.e. by forcing small-scale inefficient producers out of the market at the benefit of large-scale, efficient and less-polluting producers. However, the Panel considered that the selection effect does not reflect the modern economic theory on firm behaviour. *Id.*, paras. 7.539-41.

<sup>843</sup> China made reference to the theory of so-called “export sophistication externalities”. See Hausmann, R. and Rodrik, D., What you export matters, *Journal of Economic Growth* 12 (2007), at 1-25. According to China, such theory confirms that “if countries consume, rather than export, raw and basic materials and make efforts to produce and export ‘sophisticated’ bundles of goods, they can achieve higher growth”. China’s comments on the complainants’ response to Panel question No. 22 following the second substantive meeting, para. 87.

<sup>844</sup> In making such argument, China referred to the empirical evidence of the so-called “Environmental Kuznets Curve”. Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.551. For a treatment of the Kuznets curve, see Levinson, A., *Environmental Kuznets Curve*, in *The New Palgrave Dictionary of Economics*, 2<sup>nd</sup> Edition, 2008.

on scrap products would ensure a stable supply and predictable market for scrap and thereby facilitate a transformation into a recycle economy.

With regard to the latter measures, the Panel considered that, Chinese exports of scrap being quite modest, it would be difficult to see how export restrictions could guarantee a “critical mass of scrap products” and help develop the recycling industry; furthermore, China could not establish any evidence that foreign demand for scrap was the cause of the low level of such industry<sup>845</sup>. As to the export restrictions on EPR products, the Panel observed that

“the fact that [the products at issue] are important inputs in industries that are central to the Chinese economy does not imply that [...] China’s aggregate growth would necessarily increase by supporting these sectors”<sup>846</sup>.

In the Panel’s view, China failed to take into consideration the possibility that, regardless of the crucial role played in China by industries such as steel and iron in moving up the value chain toward more sophisticated products, the metal industry could have a higher growth potential<sup>847</sup>. Moreover, the Panel also found that,

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<sup>845</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.606.

<sup>846</sup> *Id.*, para. 7.548.

<sup>847</sup> In this latter case, the flow of resources from the metal industry to the iron and steel industries may actually slow down aggregate economic growth compared to the situation with a larger metal industry. *Id.*, para. 7.549.

although an empirical correlation has been found between higher growth and environmental gains<sup>848</sup>, China did not prove that export restrictions were “necessary” for environmental gains.

Within this framework, the Panel found that China did not substantiate its claim that export restrictions are apt to make a material contribution to the objective of reducing pollution related to the production of the materials at issue. In the Panel’s view, concluding otherwise would significantly alter the interpretation and application of Article XX (b) as to allow a Member to resort to export restrictions “on any raw materials simply because they help increase growth and, in turn, eventually reduce pollution”<sup>849</sup>. As the previous WTO jurisprudence makes clear, instead, the WTO-inconsistent measure is “necessary” within the meaning of Article XX (b) insofar as it is the least trade-restrictive among the reasonably available alternatives that provide for an equivalent level of protection of the stated objective<sup>850</sup>.

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<sup>848</sup> Some explanations for such link include “(i) the composition of production and/or consumption that moves away from natural resources goods; (ii) the preference for environmental quality; (iii) the development of institutions introducing the proper regulatory measures to address environmental problems; and/or (iv) the arising economies of scale associated with pollution abatement technologies.” *Id.*, para. 7.551.

<sup>849</sup> *Id.*, para. 7.515.

<sup>850</sup> *Id.*, paras. 7.489-92, making reference to the *acquis* of *Korea – Various Measures on Beef* (Appellate Body Report, Korea – Measures Affecting Imports of Fresh, Chilled and Frozen Beef, WT/DS/161/AB/R, WT/DS169/AB/R, adopted on 11 December 2000, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds161\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds161_e.htm)), *US – Gambling* (Appellate Body Report, United States – Measures Affecting the Cross-Border Supplies of Gambling and Betting Services, WT/DS/285/AB/R

In this respect, the Panel first noted that China's challenged export restrictions, even if modest<sup>851</sup>, would still have a very significant distortive impact on the world market given the high export market share enjoyed by China<sup>852</sup>. Then, it observed that the complainants indicated several WTO-consistent alternatives to export restrictions on EPRs and scrap products which could permit China to achieve the same level of environmental and health protection, such as investment in more environmentally friendly technologies and recycling infrastructures, recycling of consumer goods, increasing environmental standards, introducing production restrictions and incentives to stimulate the recycling industry of scrap<sup>853</sup>; according to the Panel, by contending that all such measures were already in place, China implicitly acknowledged

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adopted on 7 April 2005, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds285\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds285_e.htm)), and *Brazil – Retreaded Tyres* (*supra* n. 828).

<sup>851</sup> The Panel recalled that, except for zinc, China did not maintain any full bans on export and thus, “in absolute terms, the level of export duties is relatively low and the quotas are also relatively open”. Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.563.

<sup>852</sup> Indeed, as the Panel recalled, China's share of global exports is 43.5% for coke, 74.2% for magnesium containing  $\geq 99.8\%$  by weight of magnesium, 57.9% for magnesium containing  $< 99.8\%$  by weight of magnesium, and 74.2% of manganese. Panel Report, para. 7.558. China tried to argue that, in the long term, the distortive effects on trade would vanish as new producers enter the market attracted by the higher world market prices thereby causing it to go back to their initial level. However, the Panel considered that this consideration “does not imply that the short-term costs associated with the measure are not highly restrictive”. *Id.*, para. 7.563. For the amplification of the economic effects ascribable to export restrictions when the country is “large”, see *supra*, Chapter Two, paragraph IV, section A.

<sup>853</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, paras. 7.575-83 and 7.610.

they qualified as “available” alternatives within the meaning of Article XX (b)<sup>854</sup>. The Panel thus examined the alternative measures and concluded that: (i) China did not submit sufficient evidence to permit the Panel to assess the effectiveness of such measures in achieving the desired environmental objective<sup>855</sup>; (ii) China did not put forward any evidence as to why such environmental measures could not be as effective as export restrictions; and, (iii) China failed to explain why existing measures could not be improved or intensified to serve as an alternative to its export restrictions<sup>856</sup>. Furthermore, the Panel rejected China’s argumentation that export restrictions bring *additional* environmental benefits compared to those resulting from reliance on environmental regulations<sup>857</sup> by considering that

“export restrictions are not an efficient policy to address environmental externalities when they derive from domestic production rather than export or imports [since] the issue is the

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<sup>854</sup> *Id.*, para. 7.568.

<sup>855</sup> In particular, the Panel underlined how a number of the measures put forward by China identify “goals rather than specific standards and do not provide evidence as to whether any policies were implemented to seek to achieve those goals”. *Id.*, para. 7.583. Thus, the Panel concluded that “the lack of evidence of implementation procedures and outcomes creates an incomplete picture of the extent of the impact of China’s domestic environmental measures on the EPR products at issue”. *Id.*, para. 7.581.

<sup>856</sup> *Id.*, para. 7.590.

<sup>857</sup> According to China, export restrictions would internalize the social environmental cost associated to the *production* of the materials at issue, which the latter alone cannot fully eliminate. *Id.*, para. 7.585.

production itself and not the fact that it is traded”<sup>858</sup>.

The Panel thus concluded that China failed to prove that the less restrictive and WTO-consistent available alternatives already in place couldn’t be used instead of export restrictions to achieve the same desired level of environmental protection from health risks to the Chinese population<sup>859</sup>. Accordingly, the Panel concluded that the challenged measures could not be justified under Article XX (b) of the GATT 1994.

### **C. The scope to address environmental concerns through export restrictions in light of *China – Raw Materials***

The Panel’s findings with regard to the applicability of Article XX (b) and (g) to export restrictions suggest that the very nature of such measures renders them hardly justifiable – even provisionally – under the “environmental” exceptions provided for in the GATT<sup>860</sup>. As to Article XX (b), the Panel has indeed recognized that export duties and quotas are not an effective tool to address environmental externalities when they depend from domestic

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<sup>858</sup> *Id.*, para. 7.586.

<sup>859</sup> *Id.*, para. 7.590.

<sup>860</sup> Indeed, even if export restrictions were to be found meeting the terms of the specific exceptions provided for in Article XX (b) or (g) in the first step of the two-tiered process, such measures would have in any case to respect the conditions set forth in the chapeau of Article XX.

*production* and not from trade; accordingly, they are in principle doomed to fail the “necessity test” for they cannot be considered to provide a higher level of protection in comparison to other available alternatives (i.e. restrictions in production) – especially when, as it is the case of China for a great majority of critical minerals and metals subject to export restrictions, the export market share of the exporting country is predominant<sup>861</sup>.

In a similar fashion, the Panel recognized that measures such as export restrictions would hardly qualify as “related to conservation” within the meaning of Article XX (g). Indeed, the inherent rationale of such export restrictions has little to do with domestic *production* – which is ultimately all that matters when it comes to conservation of a resource – and much more to do with the distribution between domestic and foreign consumption of the targeted product. Such circumstance, according to the Panel, renders the essence of such measures *per se* “difficult to reconcile with the goal of conservation”<sup>862</sup>.

However, the Panel also interestingly suggested that a measure’s compliance with the requirements set out in Article XX (b) or (g)

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<sup>861</sup> See *supra*, Chapter One, paragraph III.

<sup>862</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.434. China had claimed that the export restrictions at issue would contribute to conservation of refractory-grade bauxite and fluorspar by reducing foreign demand for the resource and, therefore, domestic production. However, the Panel considered that “for the purpose of conservation of a resource, it is not relevant whether the resource is consumed domestically or abroad; what matters is its pace of extraction”. *Id.*, para. 7.428.

of the GATT 1994 may be evaluated by analysing the measure within the context of its comprehensive policy framework, and recognized that the fact that such framework comprises different multi-faceted measures would not preclude *a priori* that such measure falls within the scope of Article XX (b) or (g). In other words, the Panel agreed that the fact that the challenged measures at issue pursue, *inter alia*, social, economic and/or environmental objectives is not per se a circumstance which pre-empts the successful invocation of Article XX (b) and (g). Interestingly, moreover, the Panel significantly extended the scope of Article XX (g) by recognizing that Article XX (g) can be interpreted harmoniously with the principle of sovereignty over natural resources.

This is not to say, however, that the mere reference to a list of measures that, more or less directly, proclaim a conservation or an environmental goal is in itself sufficient to establish that a measure is “necessary” to protect health as required by Article XX (b) or “relates to conservation” within the meaning of Article XX (g), and looked for evidence of actual implementation, rather the mere existence of regulation<sup>863</sup>. As the Panel clearly stated, in fact, a clear link between the challenged measure and the proclaimed non-trade goal should be established by strong and reliable evidence, and such effect should indisputably be associated to the measure at

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<sup>863</sup> In this perspective see Karapinar, *supra* n. 372, at 464-475.



issue. Moreover, in the case of Article XX (b), a measure should be the least-trade restrictive among all other alternative measures which provide an equivalent level of protection whereas, under Article XX (g), the measure at stake should be coupled with similar or parallel restrictions on domestic *production*, such as effective caps on extraction and mining, in accordance with the even-handedness requirement.

## V. Preliminary observations

The present chapter aimed at providing with an overview of the GATT rules on export restrictions, as well as to any other WTO rule relevant in this respect, and investigating the applicability of such rules in trade in mineral resources as emerging from an analysis of WTO case law. Particular attention was devoted to *China – Raw Materials* as the leading case on export restrictions which, for the first time, clarified the scope of Article XI:2 (a) GATT and its relationship with Article XX (g) of the GATT 1994; the “systemic” relationship between Article XX defences and different instruments of the WTO Agreement, with particular regards to the issue of the availability of Article XX for violations of “WTO plus” commitments contained in new Members’ accession protocols; and, the scope for resorting to export restrictions under the general exceptions provided for in Article XX

(b) and (g).

The comprehensive framework emerged from such analysis permits to identify some key elements which are to prove critical in the determination as to whether and to what extent the proliferation of export restrictive measures on critical minerals and metals, as qualified in the first part of the present work, can be directly attributable to a “lack” of discipline or in any case to an insufficiency of GATT regulations on export restraints. Indeed, if we put the WTO disciplines on exports in relation with the main characters of the proliferation of export restrictions in critical minerals and metals, it is possible to qualify the otherwise general calls for strengthened rules in this domain, which oversimplistically refer to an unspecified “under-regulation” of GATT rules on the export side.

As seen *supra*, the architecture of the GATT fairly simply distinguishes between export duties or taxes, explicitly admitted by terms of Article XI:1, and quantitative export restrictions, generally prohibited under the same Article. The latter category has been consistently interpreted as to include a broad range of measures and, in any case, has already been considered by the dispute settlement bodies as to encompass all forms of quantitative export restrictions identified in the first part of the present work as affecting critical minerals and metals and, more generally, trade in

industrial raw materials<sup>864</sup>. Although prohibited under Article XI:1 GATT, otherwise WTO-inconsistent quantitative export restrictions may be legitimately applied by WTO Members if they fall within the scope of the Article XI:1-specific exception provided for in Article XI:2(a), which permits WTO Members to resort to export restrictions when applied to prevent or relieve a critical shortage of an essential product or, alternatively, if they can be justified by terms of the general exceptions provided for in Article XX GATT. In consideration of the intent of the present study, which focuses on mineral resources, the relevant Article XX exceptions are sub-paragraphs (g) and (j), in that they relate directly to the issue of exhaustibility, and sub-paragraph (b), given the highly polluting nature of the extractive industry.

Against this general framework, however, some newly acceding WTO Members have agreed to abide by country-specific additional obligations on the use of export duties that do not otherwise exist for original WTO Members on the basis of GATT within the context of their accession negotiations. Although the new Members undertaking WTO-plus obligations on export duties are quite a minority (nine of twenty-nine new Members), among them figure some of the most abundantly-endowed countries in critical minerals and metals, and, more importantly, those mineral-rich countries which were identified in the first part of the present

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<sup>864</sup> See *supra*, Chapter Two, paragraphs II and III.

study as most frequently applying restrictive measures on the exportation of such materials (China, Russia, Ukraine, and Vietnam). Hence, a first striking element when dealing with the presumed “deficiency” of WTO disciplines on export restrictions and, in particular, export taxes is that the great majority of such measures – and, in any case, the totality of export taxes susceptible to have significant economic impacts, given the dominant share of worldwide production of the exporting countries – are imposed by States that, as opposed to original WTO Members and the majority of newly acceding Members, which remain free to resort to export duties in all cases, have undertaken specific additional commitments on export duties.

The scope and coverage of the WTO-plus obligations agreed upon those countries greatly varies, as well as the legal techniques chosen for each of them to incorporate such additional commitments into the respective accession protocols. For the purposes of the present study, however, two elements should be retained. The first is that, for all the identified countries, the WTO-commitments undertaken involve – to a greater or lesser extent – critical minerals and metals. In this respect, the most severe regime has been agreed by China, which negotiated a maximum rate ranging between 20 and 40 per cent for tungsten ores and concentrates, tantalum and vanadium ores and concentrates, crude antimony, various forms of ferro-silicon and ferro-manganese, as

well as ferro-chromium, unrefined copper, copper anodes and cathodes, alloyed copper and copper waste and scrap, unwrought, not alloyed nickel, and unwrought alloyed nickel, while promising to eliminate and/or refrain from introducing export duties on any other form of the selected critical raw materials. Vietnam and Ukraine, instead, agreed uniquely to bind the export duties applied on specific products: various forms of ferrous and non-ferrous scrap metals including copper and nickel waste and scrap for the former; a wide range of oil seeds, live cattle and hides and non-ferrous scrap metals, including various forms of cobalt, ferro-chromium, copper, nickel, titanium and tungsten waste and scrap for the latter. Finally, Russia agreed to phase down and bind the export duties for over 700 tariff lines, including various forms of copper, germanium, manganese, molybdenum, nickel, tantalum, tungsten, and vanadium within the context of a specific Part (Part V) of its Schedule of Concessions.

The second element is that the matching of the country-specific commitments on export duties with the network of export taxes applied to critical raw materials reveals that only in one, pre-eminent case – that is, China – the export restrictions in place extensively and systematically violate the specific obligations agreed upon by terms of each country's accession protocol<sup>865</sup>. That

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<sup>865</sup> It should also be noted that, apart from the violation of paragraph 11.3 of China's Accession Protocol specifically dealing with the use of export duties, China's network of export taxes potentially violates other WTO-plus obligations

is, out of the proliferating number of export taxes applied to critical minerals and metals, and notwithstanding the fact that all countries most frequently resorting to export taxes on such products have abided by specific obligations on their use, as required by the incumbent WTO Members within the respective accession negotiations, China seems the only country putting in place WTO-inconsistent export duties<sup>866</sup>.

Such circumstance has mostly to do with the great asymmetry of the additional commitments agreed by those countries and, in particular, with the fact that Vietnam, Ukraine and Russia have consented to bind export duties of specific products rather than

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– specific, again, to China only – such as paragraph 18 of China’s Working Party Report, which states: “[t]he representative of China further confirmed that China would provide the same treatment to Chinese enterprises, including foreign-funded enterprises, and foreign enterprises and individuals in China. China would eliminate *dual pricing* practices as well as differences in treatment accorded to goods produced for sale in China in comparison to those produced for export. The Working Party took note of these commitments”. Evidently, such provision has relevant implications for the scope left to China to resort to export duties, insofar as China’s dominant – and in some cases quasi-monopolistic – export power can affect the magnitude of the economic implications associated to their use with respect to the price differential created between the world price, increased as a result of the implementation of the export tax, and the domestic price. Indeed, in more than one case China’s competitors have claimed China’s regime of export taxation resulted in dual pricing practices. See *supra*, Chapter Two, paragraph IV, section C.

<sup>866</sup> As Table 3 (*supra*, Chapter Two, paragraph II, section C) shows, some of the export duties in place in Ukraine, Vietnam and Russia are also in violation of the respective additional obligations undertaken in the respective accession protocols, insofar as they exceed the bound rate and do not respect the timeline specifically provided for the gradual phasing down of the bound rate. However, those are “isolated” cases and the export duties in place in such countries fall for the greatest part within the terms negotiated with the WTO Membership at the time of the accession negotiations.

generally undertaking an obligations on the elimination of export duties, either integral or an a specific range of products such as China. This asymmetry is further amplified by another element of incoherence, which in turn negatively impacts on the overall integrity of the system, namely the unavailability of Article XX (b) and (g) exceptions on the part of China for violations of paragraph 11.3 of its Accession Protocol. The unavailability of Article XX defences for violations of China's WTO-plus obligations on export duties not only clashes with the terms agreed by Vietnam, Ukraine and Russia, which have all successfully negotiated Article XX flexibilities<sup>867</sup> - but, more importantly, introduces and additional, and potentially most dangerous, element of disturb in the multilateral trading system: the temptation of China to divert export taxes into export quantitative restrictions, in the attempt to maintain the right to invoke the environmental exceptions provided for in Article XX. Indeed, as noted *supra*<sup>868</sup>, China has been consistently insisting in the environment-related nature of the rationale behind

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<sup>867</sup> In this respect, it seems not to be a case that each of those countries concluded their accession packages after the issue of the admissibility of Article XX GATT had gained the forefront of the debate within newly acceding countries, driven by China's peculiar position within the multilateral trading system and its unique commitments on export duties. Indeed, such circumstance suggests that such countries were determined to their right in the light of the emerging consequences of China's locked-in position as crystalized in paragraph 11.3. Indeed, See Ya Qin, *supra* n. 622, n. 1156 and corresponding text. For an analysis and a critique of the effects of the dispute settlement bodies' approach to the applicability of Article XX GATT in the perspective of the internal coherence of the WTO system see *infra*, Chapter Four, paragraph IV.

<sup>868</sup> See *supra*, paragraph IV.

its export restrictive measures, and has strenuously invoked Article XX environmental exceptions in *China – Raw Materials* as well as in the pending case *China – Rare Earths*, insisting on the fact that such measures were an integral part of comprehensive mineral conservation and environment-related policies. In this perspective, although the Panel’s findings *on arguendo* on the applicability of Article XX (b) and (g) to export restrictions in *China – Raw Materials* suggest that the very nature of such measures renders them hardly justifiable – even provisionally – under the “environmental” exceptions provided for in the GATT<sup>869</sup>, such measures represent nevertheless a potentially important venue insofar as the Panel did agree that a measure’s compliance with the requirements set out in Article XX (b) or (g) of the GATT 1994 may be evaluated by analysing the measure within the context of its comprehensive policy framework, and recognize that the fact that such framework comprises different multi-faceted measures, pursuing a plurality of social, economic and/or environmental objectives is not per se a circumstance which pre-empts the successful invocation of Article XX (b) and (g). Interestingly, moreover, the Panel significantly extended the scope of Article XX (g) by recognizing that Article XX (g) can be interpreted harmoniously with the principle of sovereignty over natural resources.

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<sup>869</sup> *Id.*



In the light of the above, the *automatic* unavailability of such venue for violations of paragraph 11.3 of its Accession Protocol on the basis of the approach to Article XX developed in *China – Raw Materials a priori* pre-empts China from resorting to export duties which it clearly considers indispensable sustainable development tools in a critical phase of its development pattern<sup>870</sup>. Hence, the only “space” left to China to adopt export duties that could potentially fall under Article XX (b) and (g) would be to adopt measures in violation of GATT violations, i.e. Article XI:1 GATT. In this perspective, it is interesting to note that such *traslatio* seems to have already occurred with regards to at least some critical minerals and metals and, in particular, for rare earths<sup>871</sup>.

Such substitution process will however be detrimental to the multilateral trading system in that it would “encourage” the use of quantitative restrictions instead of export taxes, thereby running counter to the cornerstone principle upon which the GATT itself was edified, i.e. the choice of “tariffs” over quantitative restrictions

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<sup>870</sup> For a more detailed explication of the vision promoted by China and other major developing countries of export restrictions as a tool of development see *infra*, Chapter Four, paragraph III.

<sup>871</sup> Indeed, rare earths are not listed in the Annex 6 of China’s Accession Protocol and China’s would thus be automatically pre-empted from resorting to export taxes on such minerals irrespectively of their rationale. See *supra*, paragraph II, sections B and C. In this perspective, it is interesting to note that in 2001 China strong reduced the quota for exports of rare earths by including a new category of “ferro-alloys” which were until then subject to export taxes. See *supra*, Chapter Two, paragraph II, section C, n. 421.

as the lawful means of restricting imports and exports<sup>872</sup>, with a view to reserve the right to regulate trade in a manner that promotes fundamental conservation and public health interests as recognized in Article XX (b) and (g).

In conclusion, the analysis of the phenomenon of proliferation of export restrictions on critical minerals and metals, on the one hand, and of the relevant WTO disciplines on export restraints, on the other hand, has permitted to shed light on the nature and the intensity of the relationship between the two and, in particular, to better qualify the presumed yet unspecified insufficiency of WTO regulations on the export side which the conventional wisdom has progressively been referring to. In this respect, while it seems quite “unfair” to track the said proliferation back to a lack of discipline on export restraints only, considering more complex and intertwined dynamics are occurring at the international level with regards to emerging new patterns and leading actors in international trade and global supply chains, as well as the unfolding effects of an unprecedented financial and economic crisis, it is true that the actual configuration of WTO disciplines on export restrictions presents great elements of asymmetry, ultimately susceptible to undermine the overall integrity of the system. Accordingly, the following chapter will further explore the potential risks ascribable to WTO regulations as currently

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<sup>872</sup> See *supra*, paragraph I.

designed, in order to critically examine the proposals for reform put forward within the NAMA DDA negotiations and finally present some ideas on how to restore the coherence of the system.

Tesi di dottorato "Emerging Trends in Critical Raw Materials Trade and WTO Regulation of Export Restrictions"  
di ESPA ILARIA

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## CHAPTER FOUR

### **Alternative scenarios to ensure fair access to mineral resources: Doha negotiations on export restrictions and beyond**

#### **I. Introduction: the imbalances produced by the absence of a system-wide discipline on exports and the emergence of a “developmental” view on export restrictions**

The analysis of the WTO disciplines on export restrictions undertaken in Chapter Three has permitted to identify some significant “systemic” issues susceptible to disturb and ultimately underline the internal coherence and integrity of WTO system. On the one hand, the GATT does not require its Members to limit the use of export duties, irrespectively of their rationale; on the other hand, China and other acceding developing countries have abided

by WTO-plus obligations on export duties, greatly varied in scope and coverage. This inherent differentiation produces imbalanced legal outcomes as to the applicability of WTO rules relevant to export duties, with particular respect to GATT Article XX which, in turn, addresses some of the most common legitimate concerns associated to the use of export restraints in mineral and metals. In this respect, it has been correctly noted that the WTO regime on export restrictions, and particularly the existence of varying accession requirements on export duties, has generated a “four-tier Membership” with regards to the rights and obligations on the use of such measures incumbent on different WTO Members<sup>873</sup>. The first tier regroups the great majority of WTO Members which, as original Members, are only bound by GATT rules and therefore remain free to recur to export duties<sup>874</sup>; the second tier includes Russia which, in contrast with all other newly acceding Members

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<sup>873</sup> See Ya Qin, *supra* n. 622, at 1161-2.

<sup>874</sup> It should be recalled, however, that such unrestrained policy space with respect to the use of export duties presents potential elements of contrast with the general obligation of elimination of quantitative export restrictions under Article XI:1 GATT, in that economic theory proves that an excessively high export duty amounts to a *de facto* prohibition. Some authors have thus interestingly proposed a restrictive interpretation of the scope of “tax” for the purposes of Article XI:1 GATT on the basis of an analogy with Article VIII GATT, according to which the permitted taxes would only be those taxes adopted for revenue-raising purposes, and not encompass those primarily aimed at achieving trade or industrial purposes. Such interpretation would permit to consider all Members bound by the implicit obligation to eliminate all trade-restricting export duties. Howse and Josling, *supra* n. 15, at 17. However, an analysis of the relevant case law shows that the dispute settlement bodies have not endorsed this view at least for now.

undertaking WTO-plus obligations on export duties, successfully negotiated its export duties' bound rates for more than 700 tariff lines in an apposite Part (Part V) of its Schedule of concessions, thus retaining the right to invoke all applicable GATT provisions with respect to such additional commitments; the third tier consists of Ukraine and Vietnam, which have consented to bind the export duties on a limited range of specific products, while successfully negotiating Article XX flexibilities; finally, the fourth tier comprises Montenegro, China, Latvia, Saudi Arabia and Mongolia, all new Members which undertook the obligation to eliminate, to a greater or lesser extent, the use of export tariffs without possibility to resort to Article XX defences. The existence of varying accession requirements, as seen *supra*<sup>875</sup>, ultimately poses coherence and integrity challenges to the multilateral trading system insofar as it creates unequal rights and obligations between Members as a result of an "ad hoc rule-making"<sup>876</sup>.

Such framework is further complicated by the fact that, on the one hand, all newly acceding Members accepting additional commitments on export duties seems pre-empted, with the only relevant exception of Russia, from modifying their export concessions given the uncertainty surrounding the amendment procedures of accession protocols<sup>877</sup>. The resulting effect is that of

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<sup>875</sup> Chapter Three, paragraph II, section C and paragraph V.

<sup>876</sup> Ya Qin, *supra* n. 622, at 1162.

<sup>877</sup> See *infra*, Chapter Three, paragraph II, section B.

an “ironclad discipline imposed on the selected acceding Members”<sup>878</sup>, whose inflexibility not only significantly clashes with the regime on import duty concessions established by terms of the GATT Agreement, which provides for specific procedures for adjustment<sup>879</sup>, but ultimately risks to contradict the overall object and purpose of the overall WTO architecture, i.e. the fundamental principles of reciprocity and non-discrimination<sup>880</sup>.

The systemic issues arising out of the above-described WTO accession regime on export duties have recently gained political *momentum*, as tension over access to critical raw materials and, in particular, to strategic minerals and metals has arisen between China, on the one hand, and import-dependent industrialized countries such as the United States, the European Member States and Japan, leading to two related cases before the WTO dispute settlement bodies concerning China’s export regime, *China – Raw Materials* and *China – Rare Earths*, the latter of which is still pending before the Panel<sup>881</sup>. As explained *supra*<sup>882</sup>, the

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<sup>878</sup> Ya Qin, *supra* n. 622, at 1148.

<sup>879</sup> Baroncini, E., La politica cinese sulle esportazioni dinanzi al sistema di risoluzione della controversie dell’OMC: il Report del Panel nel caso *China – Raw Materials*, *Cuadernos de Derecho Transnacional*, 3 (2), 2011, 203-248, at 220.

<sup>880</sup> In this perspective see Xiaohui, *supra* n. 637, at 260. Moreover, it should be noted that, within this framework, the WTO-plus commitments have become “more ‘sacred’ obligations than the most fundamental principles of WTO”, such as the most-favoured nation treatment or the national treatment principle, which can be derogated under the specific and general exceptions contemplated by terms of GATT. Ya Qin, *supra* n. 622, at 1156.

<sup>881</sup> See *supra*, Chapter Three.



comprehensive approach adopted in the first case by the Appellate Body, according to which China (and by analogy the other acceding Members undertaking WTO-plus obligations on export duties) would be *automatically* deprived of the possibility to invoke Article XX failing in the accession provision an express reference to such flexibilities, further stressed the dangerous “schizophrenias” ascribable to the fragmentation inherent to a four-tiered regime on export duties. Not surprisingly, the case has generated strong and nationwide nationalistic reactions in China against a perceived “unequal clause” and a general malcontent over a system perceived as irresponsible to the problems and specific needs of developing countries<sup>883</sup>. Following WTO ruling, China has been prompted to divert export taxes into export quantitative restrictions<sup>884</sup>, in the attempt to maintain the right to invoke the environmental exceptions provided for in Article XX<sup>885</sup>. China’s

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<sup>882</sup> *Id.* and, in particular, paragraph II, sections B and C.

<sup>883</sup> See Ya Qin (*supra* n. 622, at 1177), bringing multiple sources of evidence of the general support for export restrictions among Chinese public opinion, together with the belief that “China must ‘fight the battle’ to protect its strategic resources from the grab of Western powers”.

<sup>884</sup> See *supra*, Chapter Three, paragraph V.

<sup>885</sup> In particular, it has to be noted that, since *China – Raw Materials*, and presumably in light of the new dispute on *Rare Earths*, China has significantly reformed its rare earths strategy through the release, in April 2011, of a new policy document oriented toward a reinforcement of the government’s control over the production of rare earths through, *inter alia*, tighter environmental regulations, stricter rules on the closing of illegal mining sites, higher resource tax. See State Council, Several Opinions on the Promotion of Sustaining and Healthy Development of Rare Earths Industry, Guofa (2011), No. 12, 10 May 2011. However, it has been correctly pointed out that the implementation of such renewed policy on rare earths may trigger other WTO-inconsistent practice on

determination not to “sacrifice” the environmental justification provided by in Article XX (b) and (g) is deeply rooted in the awareness that Article XX represents but the only venue left to developing countries to defend export duties and restrictions as legitimate tools for development<sup>886</sup>. Indeed, as we will see *infra*<sup>887</sup>, neither the GATT architecture nor the most recent proposals put forward within the DDA NAMA negotiations acknowledged the developmental function of export duties and their ensuing utilities for developing countries, and generally aimed at regulating export duties more strictly than import duties<sup>888</sup>. In this respect, not only the rigidity of inherently “discriminatory” stand-alone commitments on the use of export duties generates dangerous nuisances to the overall integrity and coherence of the multilateral trading system, but also risks undermining the support for system-wide reforms of WTO disciplines on export duties.

Within such framework, the present chapter aims at examining the recent proposals tabled in the context of the Doha Round within

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the part of China, in that the Chinese government has also significantly envisaged mandatory planning directed at the consolidation of the industry through the mergers and acquisition of small and medium sized companies, generally private, and the acquisition of a dominant position of a few big state-owned enterprises (SOEs). Ya Qin, *supra* n. 622, at 1176. Indeed, China has also undertaken WTO-plus obligations on state trading (see paragraph 5.1 of its Accession Protocol).

<sup>886</sup> For a detailed critical analysis of the development-oriented “claims” with respect to the need to reform the WTO regime on export duties see *infra*, paragraph III.

<sup>887</sup> *Id.*, paragraphs II and III.

<sup>888</sup> Ya Qin, *supra* n. 622, at 1180-1.

the NAMA Negotiating Group, in order to investigate their underlying conception and the reasons why they have been consistently objected by developing countries. The analysis of the limits of such proposals would then help to better understand the fundamental yet “latent” battle over export restrictions which has consistently undermined the multilateral efforts towards a reform of the disciplines on export restraints since the Tokyo Round and which, since the unfolding of the “Chinese case”, has broken out as to configure, according to some authors, a re-acutization of the North/South conflict over development<sup>889</sup>. Indeed, such analysis will emphasize that there is still much ideology in the debate over export restrictions and the related hypothesis of reform, in particular with regards to industrial raw materials whose geographical configuration is highly – when not totally – biased towards developing countries<sup>890</sup>. In this respect, it is perhaps not irrelevant that the principle of permanent sovereignty over natural resources has been progressively evoked as a guiding principle in the configuration of whatever solution to the emerging instability of the WTO regime on export duties, either system-wide or partial, in the sense of preserving the developmental function of export restrictions and the need for developing countries to legitimately resort, under certain conditions, to measures apt to contribute to the full achievement of the objective of sustainable development as

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<sup>889</sup> In this respect see Gu, *supra* n. 369, at 768.

<sup>890</sup> Chapter One, paragraph II, section C.

stated in the first recital of the Preamble of the WTO Agreement. If such polarized qualification of the debate over the reform of the WTO accession regime on export duties poses significant challenges to the actual achievement of a system-wide reform, the present Chapter concludes by prospecting *interim* solutions, immediately available and more easily enforceable (e.g. through the ruling in *China – Rare Earths*), which would effectively restore at least partially the most irrational elements of the current disciplines.

## **II. The textual proposals on export restrictions promoted within the DDA NAMA Negotiations: underlying conception and main features**

### **A. The legacy of previous negotiating rounds: the divergence of interests between developed and developing countries**

In the spirit of the progressive liberalization of exchanges underlying the very mission of the World Trade Organization, the issue of reform of WTO rules on export restrictions has been consistently framed with a view to improve conditions of access to supplies. However, the discussion over the different modalities to

reform such discipline has in parallel been marked by the persistent objection of commodity-exporting countries to which such restrictions apply<sup>891</sup>. These countries felt in fact that, on the one hand, any reassessment of GATT provisions relating to export restrictions would be unbalanced if it did not also deal with the linked question of access to markets; and, on the other, that the principle of permanent sovereignty over natural resources had to be preserved in any GATT effort in this area<sup>892</sup>. Thus, they strongly advocated the opportunity for negotiating “exchanging” commitments on the elimination and/or reduction of export restrictions (i.e. access to supplies) against the parallel reduction in restrictions affecting their trading partners’ imports of products which use materials affected by export restrictions (i.e. access to markets)<sup>893</sup>.

Within such framework, the issue of export restrictions was taken up in various *fora* dating back to the Tokyo Round. In the “Framework” Group of the Tokyo Round, in particular, the question of whether there was need for greater comparability between GATT rules on import restrictions and on export restraints was addressed but soon triggered vivid debates over the concrete configuration of possible action on export measures. One view, that of commodity-importing countries, supported the adoption of a

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<sup>891</sup> Ya Qin, *supra* n. 622, at 1180.

<sup>892</sup> GATT Doc. MTN.GNG/NG2/W/40.

<sup>893</sup> *Id.*

code of conduct containing a blanket prohibition on export restrictions; another view, that of abundantly-endowed developing countries, insisted on the need to differentiate concessions on a product-by-product basis “provided that major importing countries made substantial moves in the direction of dismantling trade barriers which they maintained against imports of processed resource products”<sup>894</sup>. However, the developed countries’ delegations stressed that they were not prepared to accept such a link<sup>895</sup>, and the Framework Group thus limited its tasks by drafting an “Understanding regarding export restrictions and charges”<sup>896</sup> which was adopted by the Trade Negotiating Committee at the end of the Tokyo Round<sup>897</sup>. In the Understanding, the participants requested the Contracting Parties

“to reassess, as one of their priority tasks after the conclusion of the Tokyo Round, the provisions relating to export restrictions and charges, in the context of the international system as a whole, *taking into account the development, financial and trade needs of the developing countries*” (emphasis added).

In particular, the developing countries’ delegations expressed the view that whatever reassessment of the GATT rules on export

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<sup>894</sup> *Id.*, para. 15.

<sup>895</sup> GATT Doc. MTN/3B/18.

<sup>896</sup> GATT Doc. MTN/FR/6.

<sup>897</sup> GATT Doc. MTN/28.

restraints should be inspired by the principle of sovereignty over natural resources and take into account

“the need for developing countries to utilize their resources for their development in the most optimal manner as considered appropriate for them, including processing of their raw materials, setting up industries to diversify their economies and ensuring supplies to domestic industries”<sup>898</sup>.

Interestingly, moreover, within the Group “Sector Approach” of the Tokyo Round negotiations, some discussion was specifically held on the question of export measures applying to mineral ores and metals, whose main outcome was the suggestion to elaborate provisions establishing the purposes and conditions under which export restrictions might or might not be used as well as relating to the binding of export taxes and the inconsistencies surrounding their use<sup>899</sup>. However, despite significant efforts to address the issue of export restrictions in the Tokyo Round, the unsolved questions at the basis of the debate determined the exclusion of the topic of export restrictions from the Declaration adopted at the end of the Ministerial meeting in 1982<sup>900</sup>.

It is interesting to note that, today as back then, the knotty issues relating to export restrictions are still impeding the reach of a broad

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<sup>898</sup> GATT Doc. MTN.GNG/NG2/W/40, para. 15.

<sup>899</sup> GATT Doc. MTN/SEC/W/21.

<sup>900</sup> GATT Doc. BISD, 29/S/9.

consensus towards a system-wide reform of the discipline within the Doha Round. Indeed, some commentators have correctly pointed out, in our view, that it can almost be said that the rigidity of stand-alone commitments on export duties creating multiple tiers of Members and ultimately undermining the overall integrity of the system is but a by-product of the failure of the multilateral negotiations up to now, almost if an *interim, ad-hoc* solution was taken, in the context of accession, to control the proliferation of export restrictions<sup>901</sup>. The key issues identified during the Tokyo Round are in fact the same issues discussed with as much difficulty within the NAMA Negotiating Group, and perhaps not surprisingly the Director-General of the WTO, Pascal Lamy, recently invited to reflect on the fact that

“[t]rade in commodities is indeed a specimen of its own, if I may say so. It is an area of world trade where distortions remain significant relative to other areas [...]. In no other area of world trade does the question of national sovereignty take this dimension”<sup>902</sup>.

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<sup>901</sup> According to Julia Ya Qin, “proposals to strictly limit the use of export duties have met continued resistance from developing countries. Unable to effect a systemic change, the WTO has nonetheless required a few acceding countries to make sweeping export-duty commitments”. See *supra*, n. 622, at 1185-6.

<sup>902</sup> See WTO Director-General, Pascal Lamy, Speech on “Global Commodities Trade: Perspective of the WTO”, *supra* n. 19.



In this perspective, the main challenge to any effort to reform the WTO disciplines to export duties lies in the need to find a proper balance between the need of the importing countries to secure access to supplies and the need to respond to the exporting countries' legitimate concerns<sup>903</sup>. Accordingly, in continuity with the legacy of former negotiating rounds, the solutions tabled within the DDA negotiating still aim at addressing the same recurring focal points: (i) the question of transparency, in order to contrast the lack of predictability under the current regime<sup>904</sup>; (ii) the question of negotiating concessions relating to export duties and/or generally prohibiting recourse to export duties; (iii) the question of establishing the purposes for and the conditions under which export restrictions might or might not be used.

In the light of the above, the following sections will examine the concrete proposals currently under discussion within the NAMA Negotiating Group.

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<sup>903</sup> See in this perspective Karapinar, *supra* n. 21, at 1151.

<sup>904</sup> The desirability of additional data on export restrictions was already emphasized within the context of the Tokyo Round and, in particular, within Group 3(b). GATT Doc. MTN/3B/18.

## B. The EC<sup>905</sup> Proposal for a WTO Agreement on Export Taxes

According to Paragraph 16 of the DDA mandate, Members agreed “to reduce or as appropriate eliminate tariffs, including the reduction or elimination of tariff peaks, high tariffs, tariff escalation, as well as non-tariff barriers, in particular on products of export interest to developing countries”. In line with the mainstreaming definition of non-tariff barriers adopted within the multilateral trading system<sup>906</sup>, the initial submission to the Negotiating Group on Market Access by the European Communities advocated the inclusion of export restrictions, including export duties, within the broad coverage of negotiations<sup>907</sup>. The EC itself, in particular, was the first member to promote an important textual proposal for systemically reforming the WTO disciplines on export duties<sup>908</sup>. The solution proposed by

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<sup>905</sup> Following the entry into force of the Lisbon Treaty in 2009, the European Union has substituted the European Communities in the WTO.

<sup>906</sup> See *supra*, Chapter Three, paragraph I.

<sup>907</sup> In the view of the European Communities, “the Ministerial Declaration stresses that the product coverage for the negotiations should be comprehensive and without *a priori* exclusions. This mandate is more ambitious than the negotiating mandates for previous rounds, and requires a correspondingly ambitious approach to the negotiations”. WTO Doc. TN/MA/W/1, para. 3. Accordingly, the EC affirmed that “[n]egotiations should also address export restrictions, including export duties” as “non-tariff barriers which considerably hamper trade and have a serious impact on the activity of trade operators”. *Id.*, para. 8.

<sup>908</sup> WTO Doc. TN/MA/W/11/Add. 6 “Negotiating Proposal on Export Taxes” submitted by the European Communities on 27 April 2006.

the European Communities, in fact, is a new WTO Agreement on Export Taxes on all non-agricultural products. The underlying objective at the basis of such a project is preliminarily clarified by the EC as:

“to address distortions to international trade caused by those export taxes used for the purpose of (or otherwise having the effect of):

- Artificially transferring gains from trade between WTO Members (beggar thy neighbour);
- Creating unfair advantages to domestic industries involved in international trade at the expense of other WTO Members’ producers, including infant industries in developing countries; or
- Evading existing WTO disciplines on export restrictions by shifting to more or less prohibitive taxes on the exportation of goods”<sup>909</sup>.

Accordingly, in line with the general DDA mandate to reduce or as appropriate eliminate non-tariff barriers, the general principle established by the proposed Agreement (and, indeed, expressed by terms of Article 1) is that of the complete elimination of all export duties<sup>910</sup>. In parallel, Article 2 and 3 of the proposed Agreement

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<sup>909</sup> *Id.*, at 1.

<sup>910</sup> Article 1 of the proposed Agreement, annex to the EC Negotiated Proposal on Export Taxes (*Id.*) states: “No duties, taxes or other charges imposed on or in

envisage the possibility for developing countries and especially LDCs to maintain, and correspondingly list and bind in their respective schedules of commitments, export taxes “for a limited number of products, at low level” provided that:

“a) they are necessary, in conjunction with domestic measures, to maintain fiscal stability, to satisfy fiscal needs, or to facilitate economic diversification and avoid excessive dependence on the export of primary products; and

b) they do not adversely affect international trade by limiting the availability of goods to WTO Members in general or by raising world market prices of any goods beyond the prices that would prevail in the absence of such measures, or otherwise cause serious prejudice to the interest of developing country Members”<sup>911</sup>.

Article 4, moreover, provides for the full implementation of the general elimination and the subsidiary reduction of export taxes under Article 2 and 3 within three years after the entry into force of

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connection with the exportation of non-agricultural goods destined for the territory of any other Member, as well as internal taxes and other charges on products exported to any other Member that are in excess of those imposed on like products destined for internal sale, shall be instituted or maintained”.

<sup>911</sup> Article 3, paragraph 1 of the Proposed Agreement. According to paragraph 2, such countries are required to provide most-favoured national treatment in case of any remaining export taxes.

the proposed Agreement for developing countries and five years for LDCs.

The root conception at the basis of the proposed Agreement on Export Taxes is therefore the general elimination of export duties, with only a “residual” policy space left, in the form of a limited flexibility, to developing and LDCs countries to maintain export taxes in very specific cases, defined as to exclude *a priori* the contemplation of use of export duties for industrial policy or trade policy<sup>912</sup>. In this respect, although appreciable in the perspective of a systemic clarification as to the applicability of WTO rules to export restrictions, the subsequent Articles of the proposed Agreement providing for the exceptions to the general prohibition and/or reduction commitment, appear at least partially “deprived” of their full “potential” scope of application. Indeed, on the one hand, Article 9 clarifies that

“GATT Article XXVIII and the Understanding on the Implementation of Article XXVIII of GATT 1994 shall apply *mutatis mutandis* to the modification of a schedule within the meaning of Article 2”,

but, in reality, the scope for modification is limited to the remaining export taxes which the developing countries would bind in their schedules in pursuance of the severe criteria provided for in

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<sup>912</sup> See *supra*, Chapter Two, paragraph V, section A.

Article 3:1 (a) and (b), drafted in a way as to exclude any export taxes pursuing trade-related goals. On the other hand, Articles 5 and 6 provide for clarification of the possibility of all WTO Members (including the developed Members excluded from the scope of application of Articles 2 and 3) to impose fees and charges on exports in accordance with Article VIII GATT and, more importantly, with the exceptions admitted by terms of GATT Article XII (Restrictions to Safeguard the Balance of Payments), XVIII (Governmental Assistance to Economic Development), XX (General Exceptions) and XXI (Security Exceptions). Even if these Articles would beneficially go in the direction of a greater comparability of GATT rules applicable to export restrictions with those for handling import restrictions<sup>913</sup>, nonetheless the actual legitimacy of export duties other than those admitted by term of Article 2 under one of the exceptions listed in Article 6 would have to meet a very high burden of the proof. The very premises under which the whole architecture of the proposed Agreement is edified, as stated in the preliminary statement of the proposal, seem in fact to imply that, despite the formal applicability of GATT exceptions, all export taxes introduced for beggar thy neighbour purposes would have to be eliminated<sup>914</sup>. Indeed, immediately after defining the underlying objective of the proposal, the EC clarifies that it “has been carefully drafted so as to discipline the use of export

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<sup>913</sup> See *infra*, paragraph III.

<sup>914</sup> See *supra*, n. 910 and corresponding text.

taxes to the detriment of other WTO Members while not affecting the right to introduce export taxes for legitimate purposes in line with current WTO rules (notable GATT Article XX)<sup>915</sup>, so as to suggest that, in any case, the former would hardly be justified under the latter. Hence, it seems reasonable to conclude that the invocation of one of the exceptions expressly incorporated by terms of Article 6 of the proposed Agreement would in any case fail to legitimize recourse to export taxes when the latter were to respond to industrial or trade policy goals running counter to the very core purpose of the proposed Agreement itself<sup>916</sup>. In this respect, the scope of application of such exceptions would then be interpreted quite narrowly<sup>917</sup>, at least with regards to key supplying countries recurring to highly distortive export duties<sup>918</sup>.

In light of the above features, the strong bias towards the needs of importing countries to improve conditions of access to supplies, reflected in the general imposition of an elimination commitment of all export duties, met with the resistance of a number of developing countries who argued that export duties are legitimate

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<sup>915</sup> WTO Doc. TN/MA/W/11/Add.6, at 1.

<sup>916</sup> *A fortiori*, see also the subsequent revised proposal on export taxes, WTO Doc. TN/MA/W/101, para. 4 (1).

<sup>917</sup> According to Article 8 of the proposed Agreement, the provisions of the Dispute Settlement Understanding would apply to consultations and settlement of disputes under the Agreement.

<sup>918</sup> According to the EC, in fact, the proposal “seeks to establish a workable compromise in the area of export taxes between those many countries affected by ‘beggar thy neighbour’ measures adopted by a few major supplier and other large economies, and the use of export taxes by small economies, which includes the majority of developing countries”. *Id.*, para. 5.

tools of economic development<sup>919</sup>. The EC accordingly revised its submission mitigating most of its most controversial elements.

### C. The EC Revised Submission on Export Taxes

On 16 January 2008, the EC submitted a revised proposal on export taxes with the aim to catalyse consensus towards a less ambitious project which could still provide “appropriate remedies to the specific problem related to the use of export taxes as ‘beggar thy neighbour’ instruments”<sup>920</sup>. In this respect, the premises at the basis of the revised proposal are thus similar in inspiration to the first proposal, i.e. the need to contrast the distortive effects on global commodity trade linked to the introduction of export taxes, especially “when used for industrial or trade policy purposes”<sup>921</sup>. In the view of the EC, this core objective not only is in line with the DDA mandate – and is thus imposed by the need to keep the pace with the important progresses registered with regards to the minimization of NTMs on the import side<sup>922</sup> – but it is all the more urgent in consideration of “the recent proliferation in the use of these instruments”, on the one hand, and of “the short global supply of some specific commodities, despite their abundance in a few

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<sup>919</sup> WTO World Trade Report 2010, *supra* n. 32, at 184.

<sup>920</sup> WTO Doc. TN/MA/W/101, para. 6.

<sup>921</sup> *Id.*, para. 1.

<sup>922</sup> *Id.*, para. 3.



countries – a situation that is aggravated by export taxes in key supplying countries”, on the other<sup>923</sup>. Hence, the EC recommends that any revised approach ensure, “*as a minimum*, increased transparency and predictability”<sup>924</sup>.

With regards to the transparency requirement, the EC recognized that the limits of the Ministerial Decision on Notification Procedures adopted by the Trade Negotiating Committee on 15 December 1993<sup>925</sup>, which aimed at establishing a notification requirement on export taxes, “has had little, if any, practical effects on Members’ level of transparency”<sup>926</sup>. Hence, it envisaged a reinforcement of transparency provisions on export duties as “to ensure that existing obligations are made operational and enforced in a satisfactory manner”<sup>927</sup>, and called on Members to agree on transparency commitments along the lines of the Uruguay Round Understanding on the Interpretation of Article

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<sup>923</sup> *Id.*, para. 2. Moreover, the EC underlines that such situation could be particularly detrimental for developing countries themselves, and especially the least developed among them, for such practice could frustrate their aspiration “to build new (infant) processing industries in specific sectors where export taxes by other [developing] countries are prevalent on the raw materials or other inputs”. *Id.*, para. 1. In this respect, the EU has correctly emphasized that the phenomenon of export taxes is highly disturbing for developing countries themselves. See Michalopoulos, C., Trade Policy and Market Access Issues for Developing Countries, World Bank Policy Research Working Paper, 1999, available at <http://elibrary.worldbank.org/content/workingpaper/10.1596/1813-9450-2214>.

<sup>924</sup> WTO Doc. TN/MA/W/101, para. 6 (emphasis added).

<sup>925</sup> See *supra*, Chapter Three, paragraph II, section A, n. 632 and corresponding text.

<sup>926</sup> WTO Doc. TN/MA/W/101, para. 7.

<sup>927</sup> *Id.*

XVII of GATT 1994 on the notification requirements for state trading enterprises, provided limited flexibilities for developing and least-developed country Members<sup>928</sup>. The cited Understanding significantly imposes to each Member to

“conduct a review of its policy with regard to the submission of notifications on state trading enterprises to the Council for Trade in Goods, taking account of the provisions of this Understanding”

and specifies that

“[i]n carrying out such a review, each Member should have regard to the need to ensure the maximum transparency possible in its notifications so as to permit a clear appreciation of the manner of operation of the enterprises notified and the effect of their operations on international trade”<sup>929</sup>.

Moreover, it also contemplates the possibility for each Member that has reason to believe that another Member has not adequately met its notification obligation to raise the matter and, under certain conditions, make a counter-notification to the Council for Trade in

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<sup>928</sup> *Id.*

<sup>929</sup> Uruguay Round Understanding on the Interpretation of Article XVII of GATT 1994, para. 2. The notifications have to be compiled in accordance with an apposite questionnaire on state trading adopted on 24 May 1960. See BISD 9S/184-185.

Goods<sup>930</sup>. Both notifications and counter-notifications are to be regularly reviewed, on behalf of the Council for Trade in Goods, by a working party that may make recommendations with regard to the adequacy of notifications and the need for further information<sup>931</sup>. Hence, the auspices of the EC are for the elaboration of detailed and enforceable notification commitments on the introduction or modification of export duties so as to ensure an adequate and reliable level of transparency. In this respect, the indication of the Uruguay Round Understanding on the Interpretation of Article XVII of GATT 1994 as a point of reference seems to raise the level of ambition in comparison with Article 7 on transparency of the former proposed Agreement on Export Taxes<sup>932</sup>.

As to the rules on predictability, the EC proposes that the WTO Members

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<sup>930</sup> WTO Doc. TN/MA/W/101, para. 4.

<sup>931</sup> *Id.*, para 5.

<sup>932</sup> According to Article 7 of the proposed Agreement, in fact, “Members reaffirm, with respect to export taxes, their commitment to obligations on transparency and notification in Article X of GATT 1994 and in the Ministerial Decision on Notification Procedures adopted on 15 April 1994. Any new export taxes and any increase in existing export taxes must be notified to the WTO Secretariat 60 days before their entry into force. The notification shall contain a detailed description of the export taxes in question, their product and trade coverage, and their applied levels. Upon request, the Member seeking to institute new or raise existing export taxes shall afford adequate and prompt opportunity for consultations and provide information on the reasons for the export taxes, on their potential effects and on other matters of interest or concern to any other Member. The Member shall also allow a reasonable interval between the adoption of the measure instituting new or raising existing export taxes and its entry into force.”

“*should* undertake to schedule export taxes on non-agricultural products in their Schedules of Concessions and bind the export taxes at a level to be negotiated”<sup>933</sup>,

in a similar way to import duties<sup>934</sup>. Special flexibilities are again envisaged for least developed countries, which would be requested to schedule export taxes while remaining free to maintain these export rates unbound (for a number of tariff lines to be negotiated), in line with “their specific developmental interests and concerns”<sup>935</sup>. The revised approach has thus the merit to shift from a general prohibition of export taxes, albeit mitigated by GATT rules applicable to export restrictions, to an approach based on a negotiated system-wide solution that goes in the direction of a greater comparability between GATT rules on import and export restrictions. However, it has to be noted that, in contrast with the first proposal, the revised submission of the EC does not specifically address the question of the applicability of GATT rules to export taxes but simply states that the suggested approach would be without prejudice of “the right of WTO Members to apply export taxes when exceptional circumstances under GATT rules are

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<sup>933</sup> TN/MA/W/101, para. 9 (emphasis added).

<sup>934</sup> *Id.*, paras. 8 and 9. The EC specifies that the export taxes would have to be bound at a level apt to “reduce or eliminate tariff peaks, high tariffs, and tariff escalation” in pursuance of the DDA mandate as defined in paragraph 16 of the Hong Kong Declaration.

<sup>935</sup> TN/MA/W/101, para. 9.

invoked”<sup>936</sup>. In this respect, given that the revised EC proposal has been inserted into the fourth revision of draft modalities for non-agricultural market access<sup>937</sup>, it remains to be seen whether such reference is intended to imply, by analogy, the applicability of the whole range of flexibilities and exceptions expressly mentioned in the proposed Agreement on Export Taxes or if – due regard paid to the above-identified limits inferable from its underlying conception against beggar thy neighbour measures –, on the contrary, such general reference is intended to be interpreted as to include only those GATT exceptions conceived to apply to both import and export indifferently (e.g. Article XX) and not also to import-specific exceptions (e.g. Article XVIII) as well as GATT provisions allowing for the flexibility of import concessions<sup>938</sup>.

#### **D. The Protocol on Transparency in Export Licensing to the General Agreement on Tariffs and Trade 1994**

On 11 June 2008, Japan and the United States submitted to the Negotiating Group on Market Access a communication on

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<sup>936</sup> *Id.*

<sup>937</sup> WTO Doc. TN/MA/W/103/Rev. 3.

<sup>938</sup> See *supra*, Chapter Three, paragraph II, section A, nn. 685 and 686 and corresponding text. In this respect, it may well be that the “vagueness” of this proposal has become its main force with respect to its incorporation into the fourth of draft modalities on non-agricultural products.

enhanced transparency on export licensing aimed at introducing a textual proposal for a new Protocol on Transparency in Export Licensing to the General Agreement on Tariffs and Trade 1994<sup>939</sup>. The proposal has then been rapidly co-sponsored by other WTO Members, i.e. the Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu<sup>940</sup>, the Republic of Korea<sup>941</sup>, Ukraine<sup>942</sup>, Chile<sup>943</sup>, and Costa Rica<sup>944</sup>.

In the intention of the sponsors, the Protocol would serve to “fill up a gap by providing a set of procedural rules for Members to follow in order to achieve greater transparency in running their respective

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<sup>939</sup> WTO Doc. TN/MA/W/15/Add.4/Rev.1. The proposal for a new Protocol had originated back in 2006, when Japan started to promote the idea of a new Protocol to the WTO Agreement on order to achieve the objective of enhances transparency on export restrictions. In the initial proposal of Japan, the text of the Agreement was based almost integrally on the Agreement on Import Licensing Procedures, with only some relevant changes pertinent to the changed scope of application. The idea was in fact to bridge the gap between transparency disciplines on import and export licensing. See WTO Doc. TN/MA/W/15/Add.4. Interestingly, Japan noted that the issue was initially identified with respect to export restrictions on mineral resources but was then decided to approach it “horizontally” in accordance with the paragraph 22 of the Hong Kong Ministerial Declaration in light of the difficulties in importation claimed by numerous Members with respect to other products, such as wood products. *Id.*, para. 1.

<sup>940</sup> WTO Doc. TN/MA/W/15/Add.4/Rev.2, 7 July 2008.

<sup>941</sup> WTO Doc. TN/MA/W/15/Add.4/Rev.3, 18 March 2009.

<sup>942</sup> WTO Doc. TN/MA/W/15/Add.4/Rev.5, 7 September 2009.

<sup>943</sup> WTO Doc. TN/MA/W/15/Add.4/Rev.6, 23 September 2010.

<sup>944</sup> WTO Doc. TN/MA/W/15/Add.4/Rev.7, 27 September 2010.

export licensing regimes in conformity with WTO obligations<sup>945</sup>.

Indeed, the Protocol does not intend to strain any legitimate export restriction that complies with WTO legal disciplines, including the transparency requirements applicable to export licensing, such as Article X. 2<sup>946</sup> and Article XIII.5<sup>947</sup>, but it only concerns certain procedural methods of bringing transparency to export licensing measures in order “to secure effectiveness of the provisions mentioned and give substance to the ideal of transparency under GATT” including Article X.2 and Article XIII.5 of GATT. This fundamental goal is evident in the Preamble of the proposed Agreement whose first recitals, in a manner similar to the Preamble of the Agreement on Import Licensing Procedures and in line with the language utilized in some pertinent GATT rules such as Article X, state:

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<sup>945</sup> WTO Doc. TN/MA/W/130, 11 December 2009.

<sup>946</sup> According to Article X.2, “No measure of general application taken by any contracting party effecting an advance in a rate of duty or other charge on imports under an established and uniform practice, or imposing a new or more burdensome requirement, restriction or prohibition on imports, or on the transfer of payments therefor, shall be enforced before such measure has been officially published.”

<sup>947</sup> Article XIII.5 reads: “The provisions of this Article shall apply to any tariff quota instituted or maintained by any contracting party, and, in so far as applicable, the principles of this Article shall also extend to export restrictions”, thereby extending the principle of disclosure of detailed administrative procedures of licensing (Article XIII.3) to export restrictions, as far as applicable.

“Desiring to ensure that export licensing procedures are not utilized in a manner contrary to the principles and obligations of GATT 1994;  
 Convinced that export licensing should be implemented in a transparent and predictable manner;  
 Desiring to bring transparency to the procedures and practices related to export licensing so as to inform traders and Members and facilitate trade in these products;”

Two more recitals, moreover, seem to specifically respond to developing countries’ concerns over the stringency of the requirements set forth in the proposed Protocol<sup>948</sup> and declare:

“Convinced that access to information on export licensing measures benefits traders in both developed and developing country Members;  
 Recognizing that the obligations set out in this Protocol are without prejudice to a Member’s rights and obligations under Article XX of the GATT 1994<sup>949</sup>”.

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<sup>948</sup> The Fourth and the Fifth recitals were not included in the first draft of the proposed Agreement submitted by WTO Doc. TN/MA/W/15/Add.4/Rev.1 but were inserted in WTO Doc. TN/MA/W/15/Add.4/Rev.4.

<sup>949</sup> The express reference to Article XX GATT is not contemplated in the Agreement on Import Licensing Procedures. In this respect, the approach espoused in the proposed Agreement reflects, on the one hand, the fact that the focus of the Agreement is not the export licensing measure *per se* but merely the



The text of the proposed Agreement is fairly simple and is composed of only five articles. Article 1 proposes a definition of export licensing, inspired by the Agreement on Import Licensing Procedures, providing that export licensing means

“any administrative procedures involving the submission of an application or other documentation (i.e., other than that required for custom purposes) to the relevant administrative bodies as a prior condition for exportation from the customs territory of the exporting Member”.

It is important to note in this respect that, in contrast with the Agreement on Import Licensing, the proposed Agreement does not distinguish between automatic and not automatic licensing and therefore, according to its underlying objective, is neutral as to the permitted and not permitted forms of licensing<sup>950</sup>.

Article 2 poses a general obligation of notification whereby country Members are required, within 60 days after the entry into force of the proposed Agreement, to notify in writing to the Committee on Market Access all existing measures and,

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transparency procedures adopted to notify such measure to other country Members and, on the other, the fact that the original target of the proposed Agreement were natural resources whose trade regulation at the State level, as seen *supra*, may often present public policy profiles of the type provided for in Article XX GATT.

<sup>950</sup> In this regard, this decision seems in line with the Panel in *China – Raw Materials*, according to which the label of a licensing measure should not govern the decision on its admissibility on the basis of GATT rules. See *supra*, Chapter Three, paragraph III, section A.

subsequently, any new measures or modification of existing measures on export licensing within 60 days after the effective date of such measures<sup>951</sup>. In both cases the Member is required to contextually provide a copy of the relevant measure<sup>952</sup>. The notification shall indicate, similarly to what required by the relevant provision in the Agreement on Import Licensing, all relevant information for importing country Members, such as the list of products subject to the measure, the description of the procedures as well as the eligibility criteria fixated by the measure, the expected duration, the indication of whether the export licensing is associated to any other measures (e.g. a quota) together with their functioning and rationale, and the contact details of the pertinent administrative bodies. However, perhaps as a reflection of the peculiar obstacles to transparency of export licensing which, as already underlined *supra*<sup>953</sup>, are in way inherent to the nature and dynamics of export restrictions, and quantitative export restrictions in particular, the “standard” notification requirement is further reinforced by the inclusion of a counter-notification requirement along the lines of that contemplated in the proposed Agreement on Export Taxes<sup>954</sup>. Furthermore, Article 3, paragraph 1 of the

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<sup>951</sup> See Article 2, para. 1.

<sup>952</sup> See Article 2, para. 2.

<sup>953</sup> See Chapter Two and, in particular, paragraph I.

<sup>954</sup> According to Article 2, paragraph 4: “Any interested Member which considers that another Member has not notified a new or existing measure on export licensing or modification thereto in accordance with the provisions of paragraph 1 and 2 may bring the matter to the attention of such other Member. If

proposed Agreement contemplates a supplementary element in addition to the general notification requirement provided for in Article 2, and gives to each country Member the possibility to request to any Member:

“(a) all relevant information concerning:

(i) the administration of the measure on export licensing, including the information listed in Paragraph 2 of Article 2;

(ii) the export licenses granted over a recent period; and

(iii) measures, if any, taken in conjunction with export licensing, including but not limited to restrictions on domestic production or consumption, and governmental stabilization plans for a good; and

(b) where available, all relevant information concerning:

(i) the distribution of such licenses among importing countries, including importing countries’ shares, i.e., by quantity and/or value as relevant, of any quota currently allocated; and

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notification is not made promptly thereafter, the interested Member may itself notify the measure on export licensing or changes therein, including all relevant information”.

(ii) the most recent available statistics (i.e., value and/or volume) on the amount expected to be produced, actually produced, expected to be exported, and actually exported with respect to the product subject to export licensing”.

Finally, Article 4 clarifies that the requirements under the Agreement are not to impose on Members the obligation to share confidential information the disclosure of which could prejudice “legitimate commercial interests of particular enterprises”, or be contrary to “public interest” or “essential security interests”, and Article 5 provides that the Committee on Market Access establish a registry of notifications submitted in pursuance of the Protocol, to be made available to the public, and periodically review (at least once every two years) the implementation and operation of the Protocol having due regard of its underlying objectives.

In light of the spirit of the proposed Agreement on export licensing and in consideration of the specific provisions which have so far been elaborated so as to ensure enhanced transparency of such measures, the fact that the Japanese proposal has encountered increasing favour among WTO Members and has been inserted into the fourth draft modalities for non-agricultural market access<sup>955</sup> can but only constitute a positive step towards the bridging of the

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<sup>955</sup> WTO Doc. TN/MA/W/103/Rev. 3.

considerable informational gap which characterizes the world of export restrictions and, in particular, the application of quantitative export restrictions<sup>956</sup>. In this respect, while the contribution of a prospective Agreement on enhanced transparency for export licensing would certainly go in the right direction, it is however important to note that, due to the complexity and the interrelatedness of a great number of export restrictions – and not only with respect to critical minerals and metals – it may be useful to raise the level of ambition at least on the transparency side and to envisage similarly stringent disciplines with respect to other forms of quantitative restrictions on export, following the horizontal approach indicated in the Hong Kong Declaration<sup>957</sup>. Failing for the time being a comprehensive approach towards the transparency issue affecting the panorama of export restrictions, the additional notification requirements provided for in the proposed Agreement are all the more appreciable and, in particular, provisions such as Article 3.1 (a), point (iii), which provides WTO Members with the faculty to require any other Member to furnish

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<sup>956</sup> See *supra*, Chapter Two.

<sup>957</sup> Similarly, the transparency requirements on export taxes envisaged within the context of the revised EC proposal could be further strengthened so as to bring greater comparability to the respective disciplines between different forms of export restrictions. Alternatively, the proposal on the predictability side could be further specified and improved on its own, while the transparency discipline could be integrated into the comprehensive framework addressing the transparency of export restrictions.

any relevant information on any measure taken in conjunction with export licensing, may prove particularly important in this respect.

### **III. The development-oriented approach to a system-wide reform of WTO rules on export restrictions: towards a renewed role of the principle of sovereignty over natural resources?**

The analysis of the DDA proposals on how to reform WTO disciplines on export restrictions and, in particular, export taxes indicates that the need to garner the support of major developing country Members has “imposed” a shifting to less ambitious system-wide projects, as a result of the strong bias towards the need to eliminate export taxes altogether inherent in the DDA mandate. Although the solution of a new Agreement on export taxes has been replaced by much more contained objectives of enhanced transparency and predictability, it remains to be seen – apart from what will be the destiny of the unfortunate “development” round<sup>958</sup>

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<sup>958</sup> As known, the Doha Round, inaugurated back in 2001 as the “Development Round”, has encountered many difficulties throughout the way and, despite the intensification of the appeals of DG Pascal Lamy for a successful and credible conclusion of the round, it has been stalling for years. For an overview of the history of the Round, its original conception and the mandate, the major areas of negotiation and the latest negotiating text, as well as the key controversial issues stalling it see the portal of the WTO, available at [http://www.wto.org/english/tratop\\_e/dda\\_e/dda\\_e.htm](http://www.wto.org/english/tratop_e/dda_e/dda_e.htm).

– whether consensus could eventually be reached on the concrete modalities to implement the predictability side of the revised proposal currently inserted in the fourth revision of draft modalities for NAMA. Indeed, if it is true that the revised proposal indisputably goes in the direction of a greater comparability between the rules applicable to import and export restrictions, it nonetheless moves from the same underlying conception against beggar thy neighbour measures, thereby seemingly opposing as a matter of principle the use of export duties for industrial or trade purposes<sup>959</sup>.

In this perspective, some commentators embracing “the cause of development” claimed by acceding developing countries bound by additional obligations on export duties<sup>960</sup> have interpreted the

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<sup>959</sup> See *supra*, paragraph II, section C.

<sup>960</sup> Julia Ya Qin has recently organically systematized her development-oriented “proposal” for reform of the WTO disciplines on export duties (*supra*, n. 622), but the main elements of her theory can be identified *in nuce* in some interesting previous works of hers (Id., The Challenge of Interpreting ‘WTO-Plus’ Provisions, 44 *Journal of World Trade*, 2010, at 127 et seq.; Id., *supra* n. 432; Id., The Predicament of China’s ‘WTO-Plus’ Obligation to Eliminate Export Duties: A Commentary on the China-Raw Materials Case, 11 *Chinese Journal of International Law*, 2012, at 237 et seq.). While the merit of the approach suggested by Ya Qin is that she designs a general framework with the aim to indicate a way to a system-wide reform of WTO rules on export restrictions, other authors have endorsed the need to identify effective means to leave developing countries with sufficient “space” to use export duties as tools for development but did not go all the way to envisage a system-wide reform; rather, they suggested alternative interpretative approaches that could guide the dispute settlement bodies in further disputes (and, in particular, the forthcoming *China - Rare Earths*) in the direction of at least allow for the availability of Article XX exceptions as the only “venue” within the WTO system to implicitly legitimize

current DDA proposals in a line of continuity with the approach espoused in WTO accession regime in the sense of, on the one hand, denying the legitimate developmental function of export duties and thereby depriving developing countries of an important venue to achieve economic and, ultimately, sustainable development goals and, on the other hand, preserving dangerous elements of incoherence with respect to the GATT architecture on import duties. According to this approach, the lack of recognition of the developmental function of export restrictions at a systemic level would be at the origin of both the imposition of stand-alone obligations on export duties on several newly acceding Members and the failure to reach a multilateral consensus on a system-wide reform of the rules on export duties. As a result, the current configuration of the WTO export duty regime would, at least in the context of accession, permanently deprive new Members from “the only legitimate means available under WTO law for Members to exercise their sovereign right to natural resources for the purpose of developing domestic industries”<sup>961</sup>, in apparent contradiction not only with the WTO rules on the import side but with the general international law principle of permanent sovereignty over natural resources.

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development-related goals (Gu, *supra* n. 369; but also Xiaohui Wu, *supra* n. 637, at 227-260). For a more detailed treatment, see *infra*, paragraph IV.

<sup>961</sup> Ya Qin, *supra* n. 622, at 1169.



The present paragraph will try to understand the arguments of such development-oriented approach and to critically examine the proposed solutions for a system-wide reform of WTO rules on export duties while still preserving the balance between the interests of importing countries and exporting countries. The case for a development-oriented reform of WTO rules on export duties is, in fact, particularly relevant for the purposes of the present work, whose focus is on export restrictions applied to critical minerals and metals whose exploitation is strategic to the development of processing and downstream industries pivotal for economic development<sup>962</sup>.

**A. The premises of the development-oriented approach:  
export duties as legitimate tools for economic  
development and the ultra-rigidity of WTO-plus  
obligations**

The point of depart of the development-oriented approach towards export duties is that export duties have been proven to represent an important instrument of industrial policy, especially for developing countries heavily reliant an primary commodity exports, in order to promote processing and downstream industries

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<sup>962</sup> See *supra*, Chapter One, paragraph II, section B.

and thus diversify their economies in the view of achieving economic development<sup>963</sup>.

Within this perspective, according to the development-oriented approach, tariffs as opposed to quantitative restrictions should remain a lawful means for restricting imports as well as exports for the purpose of promoting domestic industries. According to this view, such approach would be in line with the general architecture of GATT. On the one hand, in fact, the GATT rules on the import side provide for a general framework which expressly allows Members, and especially developing country Members, to use export duties as a tool to foster economic development in that: (i) most WTO Members continue to maintain import duties on a wide range of tariff lines<sup>964</sup>; (ii) all deviations from import tariff bindings are in principle justifiable by invocation of public policy exceptions; (iii) all import concessions can be renegotiated on a regular basis and/or modified or withdrawn even unilaterally under Article XXVIII GATT; (iv) import-specific GATT exceptions such as Article XVIII allow Members to derogate from GATT obligations on import restrictions to promote infant industries, and

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<sup>963</sup> See *supra*, Chapter Two, paragraph V, section A and, for an overview of the historical successful examples of utilization of export duties for industrial purposes, Chapter One, paragraph I, n. 1 and 2 and the bibliography hereby cited.

<sup>964</sup> The average duty rate have of course significantly decreased over time; however, in the perspective of the development-oriented approach all that matters is that States continue to extensively utilize import duties after eight rounds of negotiations and have not been required to generally eliminate them altogether as it is the case for export duties. Ya Qin, *supra* n. 622, at 1180.

an apposite Part (Part IV) of the GATT, entitled “Trade and Development”, specifically recognizes the need for developing countries to diversify their economic structure and avoid an excessive dependence on the export of primary products<sup>965</sup>; (v) developing countries enjoy greater flexibility in the use of import duties in that they are not required to make concessions inconsistent with their “development, financial and trade needs”<sup>966</sup>. On the other hand, Article XI:1 has left WTO Members free to recur to export duties. The development-oriented approach has thus interpreted the policy space left to country Members to resort to export duties in pursuance of Article XI:1 as the means to preserve under WTO law the specular need to promote economic development on the export side, failing an express incorporation into the GATT of export-specific development-oriented exceptions similar to those provided within the context of import duties regulation<sup>967</sup>. In this perspective, the practice of “imposing” WTO-plus obligations on export duties is all the more detrimental in that not only it results in the annulment of such policy space for

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<sup>965</sup> See GATT Articles XXXVI-XXXVIII and, in particular, XXXVI:4 and 5 and Article XXXVIII:2 (a). These provisions focus on the improvement of market access and conditions for the primary and processed products from developing countries.

<sup>966</sup> GATT Doc. L/4903, BISD 26S/203, Differential and More Favourable Treatment, Reciprocity and Fuller Participation of Developing Countries (The Enabling Clause), 28 November 1979, para. 5.

<sup>967</sup> In this respect, the “shortcomings” in GATT regulation of export duties are attributable to the bias towards market access rather than access to supplies as a reflection of the peculiar historical premises under which the Agreement was given birth. See *supra*, Chapter Three, paragraph I.

selected developing countries but, in the light of the approach designed in *China – Raw Materials* according to which “each accession protocol is as self-contained agreement, independent from the rest of the WTO Agreement”<sup>968</sup>, it turns additional commitments on export duties into *de facto* permanent obligations without any realistic chance to be adjusted<sup>969</sup>. This character of ultra-rigidity associated to WTO-commitments on export duties would ultimately *a priori* deprive developing country Members from the possibility to resort to export duties with the view to promote economic development, in contrast with WTO disciplines on the import side. According to the development-oriented approach, in fact, the introduction of stand-alone commitments on export duties would introduce a further element of asymmetry in the treatment of import and export restrictions, ultimately ascribable to the fact that, in the context of accession, developing countries would be permanently (i.e. without possibility of renegotiation and/or withdrawal, as it is provided for in Article XXVIII GATT for import duties concessions) and automatically (i.e. without possibility to invoke any public policy exceptions for four-tiered Members, and in any case any development-specific exceptions, which the GATT itself explicitly envisaged with

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<sup>968</sup> Ya Qin, *supra* n. 622, at 1156.

<sup>969</sup> *Id.*, at 1170. For a discussion of the non-adjustability of WTO-plus obligations as provisions arising out of accession protocols only and thus from inflexibility of such instruments also in the light of the approach adopted in *China – Raw Materials*, see *supra*, Chapter Three, paragraph II, section B.

regards to import restrictions only<sup>970</sup>) deprived from the possibility to use export duties as tools of economic development.

In the light of the above, the development-oriented approach not only condemns the incoherence generated from the inequality among multiple tiers of Member arising out of the country-specific regime of WTO-plus obligations<sup>971</sup>, but it insists on the need to reform *systemically* the WTO disciplines on export duties as the only way to ensure an effective comparability between WTO rules for import and export restrictions and, accordingly, to actually maintain both means in the availability of developing countries for promoting economic development<sup>972</sup>. According to this view, in fact, the legitimate function of export duties as tools for development would be sufficiently acknowledged under WTO law only insofar as export duties are regulated in the same way as import duties. In this perspective, while appreciable in their intent to provide for a systemic reform, the DDA proposals on export taxes would not go in the right direction in that they originate from the underlying conception that export duties used as beggar thy neighbour policies (i.e. for industrial policy or trade purposes) are to be eliminated<sup>973</sup>.

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<sup>970</sup> See Ya Qin, *supra* n. 622, at 1168 et seq.

<sup>971</sup> *Id.*, at 1161-2.

<sup>972</sup> *Id.*, at 1180-1.

<sup>973</sup> *Id.*, at 1186.

## **B. The role of the principle of permanent sovereignty over natural resources in the promotion of a development-oriented systemic reform of WTO disciplines on export duties**

According to the development-oriented approach, “the legitimacy of export duties for economic development stems ultimately from the principle of sovereignty over natural resources”<sup>974</sup>. In the view of the promoter of such approach, in fact, there is a fundamental difference between export duties applied on (mineral) natural resources and simple beggar thy neighbour policies condemned under WTO law: in the former case, in fact, the country Member is using a trade measure with the aim to exploit its natural endowment, i.e. it is exercising its ownership rights over the resources within its territory in accordance with the principle of sovereignty over natural resources<sup>975</sup>.

As known, the principle of permanent sovereignty over natural resources is a principle of general international law<sup>976</sup> originally

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<sup>974</sup> *Id.*, at 1163.

<sup>975</sup> *Id.*, at 1164.

<sup>976</sup> For a comprehensive analysis of the origin of the principle, its status under international law, its evolution and the rights and duties emanating from it see Chambers, W. and Reid, J., *Limitations on Sovereignty over Natural Resources*, Int. Pers., 1977, at 13 et seq.; Waart, P.J.I.M., *Permanent Sovereignty over natural resources as a cornerstone for international economic rights and duties*, NILR, 1977, at 304 et seq.; Rajan, M.S., *Sovereignty over natural resources*, New Delhi, 1978; Zakariya, H.S., *Sovereignty over natural resources and the search of a New International Economic Order*, New York, 1980; Schrijver, N.,

emerged in the early 1950's within the United Nations as a corollary of the right to self-determination of colonial peoples and was invoked by newly independent countries in an attempt to enhance their opportunities for development by reserving their right to enjoy the benefits of resource exploitation<sup>977</sup>. The first document

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Sovereignty Over Natural Resources: Balancing Rights and Duties, Cambridge University Press, 1997 and 2008; Zambrano, V., *Il principio di sovranità permanente sulle risorse naturali tra vecchie e nuove violazioni*, Giuffé, Milano, 2009.

<sup>977</sup> The historical premises under which the concept of sovereignty over natural resources was given birth led to a formulation of the right of “peoples and nations” to permanent sovereignty (e.g. GA Resolution 837 (IX), 1314 (XIII), and 1803 (XVII)). Accordingly, “the self-determination and human rights codification movement became identified with permanent sovereignty over natural resources”. Schrijver, *supra* n. 975, at 387. Indeed, the UN Covenants on Civil and Political Rights, and on Economic, Social and Cultural Rights, share an identical Article 1.2 which states: “All peoples may, for their own ends, freely dispose of their natural wealth and resources without prejudice to any obligations arising out of international economic co-operation, based on the principle of mutual benefit, and international law”. Article 47 of the Covenant, moreover, provides that “Nothing in the present Covenant shall be interpreted as impairing the *inherent* right of all peoples to enjoy and utilize fully and freely their natural wealth and resources”; similarly, Article 25 of the Covenant on Economic, Social and Cultural Rights. After an interlude during which the connection with “peoples” diminished and special attention was given to the permanent sovereignty of States (see *infra*, n. 979 and corresponding text), the Declaration on the Right to Development, adopted by the General Assembly by means of Resolution 41/28 (4 December 1986), recognized the right to development as an “inalienable right” (Article 1, paragraph 1) and determined that “[t]he human right to development also implies the full realization of the right of peoples to self-determination, which includes, subject to the relevant provisions of both International Covenants on Human Rights, the exercise of their inalienable right to full sovereignty over all their natural wealth and resources” (Article 1, paragraph 2). Ever since, the emphasis on “peoples” as the ultimate beneficiary of permanent sovereignty over natural resources has progressively evolved in parallel with the emergence of a whole body of duties incumbent on the State informing the interpretation of the principle as a result of the increasing qualification of the concept of sovereignty. See Jackson, J.H., *Sovereignty, the WTO and Changing Fundamentals*, Cambridge University Press, 2006 and *infra*,

proclaiming the permanent sovereignty over natural resources is General Assembly (GA) Resolution 626 (VII)<sup>978</sup>, according to which states are entitled to “freely use and exploit their natural wealth and resources wherever deemed desirable by them for their own progress and economic development”. In the following decades, as the decolonization process unfolded and the developing countries struggled to achieve and secure economic self-determination, the concept of permanent sovereignty over natural resources served as a core principle to pose the basis of a New International Economic Order (NIEO)<sup>979</sup>. In this respect, the

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n. 981. In this perspective, the State is “merely a representative of its citizens in exercising this right and [...] has the duty to exercise such right diligently and in the best interest of its population”. Ya Qin, *supra* n. 622, at 1165.

<sup>978</sup> GA Resolution 626 (VII), Right to Freely Exploit Natural Wealth and Resources, 21 December 1952.

<sup>979</sup> See GA Resolution 1803 (XVII), Declaration on Permanent Sovereignty over Natural Resources, 14 December 1962, UN Doc. A/AC.97/SR.1, at 4; GA Resolution 2158 (XXI), Permanent Sovereignty over Natural Resources, 19 December 1968; GA Resolution 2386 (XXIII), Permanent Sovereignty over Natural Resources, 19 December 1968; GA Resolution 2692 (XXV), Permanent Sovereignty over Natural Resources of Developing Countries and Expansion of Domestic Sources of Accumulation for Economic Development, 11 December 1970; GA Resolution 2016 (XXVII), Permanent Sovereignty over Natural Resources of Developing Countries, 18 December 1972; GA Resolution 3171 (XXVII), Permanent Sovereignty over Natural Resources, 17 December 1973; GA Resolution 3201 (S-VI), Declaration on the Establishment of a New International Economic Order, 1 May 1974; GA Resolution 3202 (S-VI), Programme of Action on the Establishment of a New International Economic Order, 1 May 1974; GA Resolution 3281 (XXIX), Charter of Economic Rights and Duties of States, 12 December 1974; GA Resolution 32/176, Multilateral Development Assistance for the Exploration of Natural Resources, 19 December 1977; GA Resolution 33/194, Multilateral Development Assistance for the Exploration of Natural Resources, 29 January 1979. For a thorough analysis of the evolution of the concept and the specification of the rights emanating from the principle of permanent sovereignty over natural resources see Schrijver,



emphasis shifted to States as the main subject invested with the right to “permanent” sovereignty to be exercised in the interest of the national economic development and the well being of the people concerned<sup>980</sup>. However, the abandonment of the NIEO framework and the “failure” on the part of developing countries to establish, and in a way impose on developed countries, their vision of the governing principles of international economic relations seemed to parallelly obscure the importance of the principle of sovereignty over natural resources or at least to considered it surpassed as a core principle of international law upon which to base certain restrictive economic practices<sup>981</sup>.

Nevertheless, the combination of the emergence of global supply chains and rapid industrialization of developing countries, on the one hand, and the increased competition over access to critical (mineral) resources between traditionally import-dependent industrialized countries and emerging economies as global demand soared for those resources on the part of latter, on the other hand, recently triggered renewed attention towards a principle which has been widely recognized as giving rise to a series of resource-related rights including

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*supra* n. 976, at 36 et seq.; for a comprehensive description of the genesis, evolution and abandonment of the NIEO framework see Sacerdoti, G., *New International Economic Order (NIEO)*, Max Plank Encyclopedia of Public International Law.

<sup>980</sup> Schrijver, *supra* n. 976, at 82 et seq.

<sup>981</sup> This is true particularly in the context of foreign investment law. *Id.*, at 171 et seq.

“the right to possess, use and freely dispose of natural resources within its own territories; the right to determine freely and control the exploration, development, exploitation, use and marketing of natural resources, [and] *the right to manage and conserve natural resources pursuant to national developmental and environmental policies*”<sup>982</sup>.

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<sup>982</sup> *Id.*, at 391 (emphasis added). In this latter respect, in particular, it has to be noted that, while the original conception of the principle of sovereign right over natural resources was strongly biased towards the formulation of resource-related rights strengthening the sovereignty, new emerging trends in international economic relations and the development of international environmental law, together with the ensuing changing perception of the role of the State in economic development, have posed significant challenges to the concept of sovereignty as traditionally intended in international law (see Shan S. and Singh (eds.), *Redefining Sovereignty in International Economic Law*, Hart Publishing, 2008; Puissechot, J.P., *L'Etat souverain dans le monde d'aujourd'hui*, Paris, 2008). Hence, the current interpretation and application of the principle of sovereignty over natural resources has progressively changed as to imply, in a specular way to rights, duties on the State, which becomes increasing accountable, also at an international level, for how it manages its natural resources. In this perspective, States are under an obligation to exercise permanent sovereignty over natural resources in the interest of national development and in a way as to ensure that the whole population benefits from the exploitation of resources and the resulting national development, as well as to prevent harm to the environment and “to ensure sustainable production and consumption, both in the interest of their own people, other States and humankind in general, including future generations” (Schrijver, *supra* n. 976, at 391-2). In this respect, the link between the principle of sovereignty over natural resources and sustainable development, already acknowledged back in 1992 by the UN Commission on Natural Resources (*Id.*, at 117-8), has progressively gained centrality in the interpretation of the former as to make it a cornerstone of sustainable development law. *Id.*, at 392 et seq.; Schrijver, N., *The Evolution of Sustainable Development in International Law: Inception, Meaning and Status*, in *RdC*, 2008, at 217 et seq.

Moreover, the “permanent” qualification of sovereignty over natural resources also seems, to a certain extent, to leave States with at least some margin of manoeuvre with respect to the limitations to the right to freely dispose of national natural resources arising from the duty to respect the international obligations voluntarily agreed upon. The permanent character of the sovereignty over natural resources has in fact been acknowledged to imply that it “can always be regained, notwithstanding contractual obligations to the contrary”<sup>983</sup>, in that

“sovereignty is the rule and can be exercised at any time [while] limitations are the exceptions and cannot be permanent, but limited in scope and time”<sup>984</sup>.

Within this framework, it is not surprisingly that, in *China – Raw Materials*, China argued that Article XX (g) exception on the conservation of exhaustible resources had to be interpreted in the light of the principle of permanent sovereignty over natural resources<sup>985</sup>. Interestingly, the Panel did recognize for the first time that Article XX (g) can be interpreted harmoniously with the principle of sovereignty over natural resources, but it also specified that

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<sup>983</sup> Ya Qin, *supra* n. 622, at 1165.

<sup>984</sup> Schrijver, *supra* n. 976, at 263, quoting *Abi-Saab, G., Progressive Development of the Principles and Norms of International Law Relating to the New International Economic order*, UN Doc. A/39/504/Add.1, 23 October 1984.

<sup>985</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.382.

“Members must exercise their sovereignty over natural resources consistently with their WTO obligations”<sup>986</sup>.

In this respect, China’s sovereign rights over its natural resources, as well as those of the other newly acceding Members undertaking WTO-plus obligations on export duties, find a limit in the international obligations on the use of export duties agreed upon in the respective accession protocols. Accordingly, they cannot invoke the principle of sovereignty over natural resources to violate the commitments that they voluntarily undertook in that they exercised their sovereignty to accept, on various degrees “a derogation of their sovereign right to the free disposal of their natural resources”<sup>987</sup>.

Within such framework of reference, the development-oriented approach does not question the fact that the country-specific obligations on export duties are binding on selected new Members and therefore pre-empt them from using export restrictions for development purposes, but points to the ultra-rigidity of such commitments which, in light of the legal technique adopted to incorporate them into the accession protocols and the uncertainty surrounding the amendment for accession protocols<sup>988</sup>, turns them into *de facto* permanent obligations, leaving Members with no

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<sup>986</sup> *Id.*, para. 7.381.

<sup>987</sup> Ya Qin, *supra* n. 622, at 1169.

<sup>988</sup> See *supra*, Chapter Three, paragraph II, section B.

readily available means to modify and/or withdraw their respective export concessions (except for Russia)<sup>989</sup>. It is in this perspective that, according to the development-oriented approach, the WTO regime on export duties proves inconsistent with the principle of permanent sovereignty over natural resources: the virtual immutableness of WTO-plus obligations would, in fact, amount to

“a permanent alienation of a Member’s ownership right to claim a larger share of its natural resources for domestic use [...] arguably inconsistent with the concept of permanent sovereignty over natural resources”<sup>990</sup>.

### **C. The call for the incorporation of WTO-plus obligations into the GATT: the creation of a new Part on Export Concessions in the Schedules of Concessions**

For the above-mentioned reasons, the solution proposed by the promoters of a development-oriented approach is to reform WTO disciplines on export duties so as to regulate them in the same way as import duties and thus acknowledge at a systemic level the development function of export duties for developing countries. In this perspective, all WTO-plus obligations on export taxes would

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<sup>989</sup> *Id.*

<sup>990</sup> Ya Qin, *supra* n. 622, at 1186.

have to be brought into the GATT framework, by means of the creation of an additional Part to the Schedule of Concessions and Commitments annexed to the GATT<sup>991</sup>, in a similar way to the technique adopted within the context of the accession of Russia<sup>992</sup>. According to such framework, each acceding member undertaking additional obligations on export duties should request that its export duty commitments be incorporated into its GATT schedule by creating a Part V on export concessions<sup>993</sup>. Part V would then record all the WTO-plus commitments undertaken by terms of the respective accession protocols, be they obligations to bind the rates applied to specific products, such as those agreed upon by Vietnam, Ukraine, Latvia, and China (for the eighty-four products listed in Annex 6 of the Accession Protocol), or general obligations to elimination of export duties, which would have to be converted into a 0% binding commitment<sup>994</sup>.

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<sup>991</sup> As known, each WTO member has a Schedule which consists of four parts: Part I is dedicated to MFN concessions, Part II lists preferential concessions, Part III is devoted to concessions on non-tariff measures (see *supra*, Chapter Three, paragraph II), and Part IV contains the specific commitments undertaken during the Uruguay Round on domestic support and export subsidies on agricultural products. As known, the Schedules of concessions are incorporated into the Agreement by terms of Article II (*Id.*).

<sup>992</sup> See *supra*, Chapter Three, paragraph II, section B.

<sup>993</sup> Ya Qin, *supra* n. 622, at 1181-5.

<sup>994</sup> As known, the commitment to eliminate export duties has been agreed upon by Mongolia, Saudi Arabia and Latvia for only certain categories of goods, and by case of China and Montenegro with regards to, respectively, a majority and the totality of products. With respect to these latter countries, it is therefore suggested that Part V of the Schedule would not necessarily have to list all products on a 0% binding, but to simply refer to the relevant provisions of the accession protocols. *Id.*, at 1182.

According to the development-oriented approach, the incorporation into the GATT Schedules of acceding Members of a fifth Part dedicated to export duties would not configure the need to amend the respective accession protocols of the acceding Members but only the GATT schedule<sup>995</sup>, and would not pose either any relevant procedural issue in that, the export duty commitments constituting “new” concessions (that is, an implicit “reduction” compared to a previous situation of “unbound” rate), they could be considered to fall within the scope of the simplified internal GATT procedures used to record unilateral, bilateral and multilateral trade-liberalizing concessions<sup>996</sup>. The request to integrate WTO-plus obligations into a new Part on export concessions could then be accommodated by the recording of the respective commitments into each acceding Members’ Schedule as new concessions that

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<sup>995</sup> According to Julia Ya Qin, the “separate legal existence of GATT Schedules” would consent to realize the integration of the export duty commitments without the need to correspondingly amend the accession protocol (*Id.*, at 1188). However, it has to be noted that the WTO-obligations arise out of such protocols only and that the incorporation of the WTO-plus commitments into the GATT Schedules is not provided for in the accession protocols.

<sup>996</sup> Technically, according to Article XXX:1 GATT, the amendment of a GATT schedule would require a unanimous consent since it is incorporated into the GATT Agreement by terms of Article II. However, following an early GATT decision which clarified that the unanimous consent would not apply for concessions, i.e. for reduction in the rate of duty on a product below the rate set forth in the GATT Schedule (see GATT decision 9 August 1949, BISD Vol. II/11, cited in GATT Analytical Index Article II, at 101), Members have in practice relied on simplified procedures consisting on notification and subsequent recording of the new commitments into the GATT schedule (see the GATT decision on Procedures for Modification and Rectification of Schedules of Tariff Concessions, GATT Doc. L/4962) when the new commitments constituted trade-liberalizing concessions. *Id.*, at 1183.

modify the existing schedule. However, in consideration of the fact that the incorporation would have practical implications for the terms of accession, it is suggested that a decision of the General Council, adopted with the same procedures for approving the terms of accession, approve the incorporation prior to the integration of the export duty concessions<sup>997</sup>.

The incorporation of the WTO-plus obligations on export duties into the GATT framework, importantly, would not change the scope and coverage of the export duty commitments agreed upon with WTO incumbent Membership within the context of accession, in that it would merely imply a recording of those obligations into the GATT Schedule, along the lines of the Russian precedent. Conversely, it would permit to eliminate the ultra-rigidity of WTO-plus commitments: the incorporation into the GATT Schedules would in fact formalize the “assimilation” of export duty commitments to import duties and provide acceding Members with the right to modify and/or withdraw them in accordance with Article XXVIII GATT<sup>998</sup>, thereby recomposing the contrast with

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<sup>997</sup> *Id.*, at 1184. Such decision would have to be adopted by consensus or, failing the reach of consensus, by a majority of two thirds according to the Decision-Making Procedures under Article IX and XII of the WTO Agreement, WTO Doc. WT/L/93, 24 November 1995.

<sup>998</sup> See *supra*, Chapter Three, paragraph II, section B, nn. 685 and 686 and corresponding text. In order to provide with the most clear-cut formalization of the applicability of Article XXVIII to Part V of the Schedule of Concessions instead of relying on the mere analogy with the discipline on import duties, Julia Ya Qin suggests that “it would be desirable for the General Council to confirm that GATT Article XXVIII (Modification of Schedules) can be applied to Part V



the principle of permanent sovereignty. Moreover, by bringing export duty commitments under the GATT, this solution would provide the acceding Members with the policy space and flexibilities available under GATT and thus collaterally “fix” the incoherence brought by the “schizophrenic” unavailability of Article XX<sup>999</sup>. Finally, by mitigating the “ironclade” character of WTO-obligations and assimilating WTO disciplines on export duties to import duties by bringing them into the GATT framework, the development-oriented solution would ensure recognizance of the legitimate function of export duties and thus encourage other developing Members to be more inclined to negotiate binding of export tariffs on a system-wide basis. Hence, a development-oriented reform of WTO accession regime could be the first step in the direction of a systemic reform of WTO rules on export restraints<sup>1000</sup>.

In conclusion, it is interesting to note that the development-oriented “proposal” is more appreciable for the contribution it

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of the GATT schedules” (Ya Qin, *supra* n. 622, at 1184) by exercising its exclusive authority to adopt interpretations of the WTO Agreements under Article IX:2 of the WTO Agreement. Such clarification could be provided, according to Julia Ya Qin, within the context of a General Council decision of approval of the incorporated of the export duty commitments as a matter related to the accession. See *supra*, n. 997 and corresponding text. In this respect, it is particularly interesting to note that the Agreement on Export Taxes proposed within the NAMA Negotiations explicitly mentioned, at Article 9, that GATT Article XXVIII would apply *mutatis mutandis* to the modification of schedules on export concessions. See *supra*, paragraph II, section B.

<sup>999</sup> Ya Qin, *supra* n. 622, at 1183.

<sup>1000</sup> *Id.*, at 1186-8.

brings to the more general debate on the need to achieve a system-wide reform of WTO disciplines on export duties than for the legal grounds from which it originates. Indeed, as seen *supra*, the legal foundation for such proposal is the need to “cure” the violation of the principle of the sovereignty over natural resources inherent in the ultra-rigidity of WTO-plus obligations on export duties as obligations arising out of accession protocols only. In the vision of the promoters, in other terms, albeit “the exercise of such right is without prejudice to the treaty obligations a nation undertakes of its own will, the WTO should take care to respect this fundamental principle of international law in the design of its trade discipline”<sup>1001</sup>. However, as known, WTO does not regulate ownership of natural resources and does not expressly recognize the principle of sovereignty over natural resources<sup>1002</sup>. Hence, in light of the acknowledged fact that, on the one hand, “WTO norms are not hierarchically superior or inferior to any other norms (except *jus cogens*)”<sup>1003</sup> and, on the other hand, there is still significant divergence of opinion as to nature (and the implications) of the relationship between WTO Agreements and other rules of international law<sup>1004</sup>, it is questionable whether the claimed

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<sup>1001</sup> *Id.*, at 1186.

<sup>1002</sup> WTO World Trade Report 2010, *supra* n. 32, at 177.

<sup>1003</sup> Lamy, P., The place of the WTO and its law in the international legal order, *The European Journal of International Law*, 17 (5), at 969 et seq.

<sup>1004</sup> For an excellent and extensive treatment of the issue arising out of the interplay between WTO law and other rules of international law see Pauwelyn, J., *Conflict of Norms in Public International Law: How WTO law related to*

violation of the principle of sovereignty over natural resources arising out of the current configuration of WTO disciplines on export duties may be of some relevance on the legal side within the WTO system; accordingly, it is not clear what role could the principle of sovereignty over natural resources play by itself in the context of a systemic reform of WTO rules on export duties<sup>1005</sup>.

Conversely, the development-oriented solution is important in that it shows that a general system-wide discipline on export duties would not necessarily deprive WTO Members of the policy space to promote economic development and that a new framework for a systemic reform under the GATT can be formulated in a way as to recognize the legitimate function of export duties in this respect. Accordingly, the merit of the development-approach is to have construed a model of reform which is capable of encountering the interest of those developing countries traditionally resisting the call for a systemic discipline within the NAMA negotiations by reason of the strong bias against export duties for trade or industrial purposes. In this respect, it is also particularly interesting to note that the line of reform espoused by the development-oriented

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other rules of international law, Cambridge University Press, 2003; for a quite restrictive yet compelling view on the matter see Marceau, G., A Call for Coherence in International Law: Praises for the Prohibition Against “Clinical Isolation” in WTO Dispute Settlement, *Journal of World Trade* 33 (5), 1999, at 87-152.

<sup>1005</sup> For a synthetic yet complete overview of the controversy over whether any scope exists in WTO dispute settlement system to apply other rules of international law see WTO World Trade Report 2010, *supra* n. 32, at 176-178.

approach are not poles apart from the main elements indicated in the textual proposals within the Doha negotiations but rather seem a “combination” of the NAMA proposals. On the one hand, in fact, the idea of incorporating the WTO-plus commitments of acceding Members into the GATT schedules is implicitly endorsed and generally extended by means of the revised proposals on export taxes when it provides that WTO Members

“should undertake to schedule export taxes on non-agricultural products in their Schedules of Concessions and bind the export taxes at a level to be negotiated”<sup>1006</sup>.

On the other hand, the integration of the export duty commitments into the GATT framework aims at providing acceding Members with the availability of all relevant GATT provisions, in line with the approach towards the applicability of GATT provisions and exceptions to export taxes adopted in the first proposal for a WTO Agreement on Export Taxes<sup>1007</sup> and generally evoked in the revised proposal of the EC<sup>1008</sup>.

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<sup>1006</sup> WTO Doc. TN/MA/W/101, para. 9.

<sup>1007</sup> In this respect, it has to be noted that the proposed Agreement even extended the applicability of the import-specific GATT provisions related to economic development and, in particular, infant industry, thereby responding to the greatest extent to the rationale at the basis of the development-oriented approach. However, such “enlargement” of possibilities was perhaps due to the particular rigidity of the approach undertaken under the proposed Agreement, based on a general elimination requirement mitigated with only limited flexibilities for developing countries. See *supra*, paragraph II, section B.

<sup>1008</sup> *Id.*, section C.

**IV. Alternative scenarios for *interim* solutions: reversing *China Raw Materials* decision on non-availability of Article XX as a means to provisionally remove the irrationality of WTO export duties regime<sup>1009</sup>**

The proposals put forward to reform WTO disciplines on the export side have largely – when not entirely, in the case of the development-oriented approach – focused on the need to “correct” the WTO accession regime on export taxes. A common intent of the solutions tabled so far has been the research for both effective and feasible ways to design a system-wide reform of WTO rules on export duties in order to preserve and possibly expand the reach of a general framework limiting recourse to export taxes, currently the most extensively used form of export restrictions<sup>1010</sup>, while at the same time remove the current element of “irrationality” of the regime ascribable to the existence of stand-alone ultra-rigid commitment giving rise to multiple tiers of Members with unequal rights and obligations. As seen *supra*<sup>1011</sup>, in particular, the current configuration of WTO-plus obligations on export duties, matched with the network of export taxes applied to critical minerals and metals, reveals that, at least at present, the main distortions and

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<sup>1009</sup> This paragraph heavily draws from Espa, I., The Appellate Body Approach to the Applicability of Article XX GATT In the Light of *China – Raw Materials: A Missed Opportunity?*, *Journal of World Trade* 46 (6), 2012, pp. 1399–1423.

<sup>1010</sup> See *supra*, Chapter Two, paragraph II.

<sup>1011</sup> See *supra* Chapter Three, paragraph V.

potential threats to the integrity of the multilateral trading system are arising out of the great asymmetry which characterizes China's unique commitments on export duties, ultimately as a result of the powerful effects linked to the combination of multiple factors: Chinese strong-endowment and exploitation of critical mineral resources, unprecedented economic growth and development and recourse to export duties<sup>1012</sup>.

Within such framework, it is perhaps not surprisingly that China is among the main opponents of a system-wide approach to export duties that, such as the DDA proposals, would not recognize the legitimate development function of export duties and sufficiently improve the policy space and flexibility available to acceding Members in this respect. Neither it is surprisingly that the development-oriented approach has been construed having China in mind<sup>1013</sup>, and the “irrational” outcome produced by the approach developed in *China – Raw Materials* with regards to the availability of Article XX exceptions in particular<sup>1014</sup>. As known, in fact, China has been consistently evoking the environment-related nature of the rationale behind its export restrictive measures, and has strenuously invoked Article XX environmental exceptions in *China – Raw Materials*, as well as in the pending case *China – Rare Earths*, insisting on the fact that such measures are an integral

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<sup>1012</sup> See *supra*, Chapter One, paragraph II, sections C and D; Chapter Two, paragraph II, section C; and Chapter Three, paragraph II, section B and C.

<sup>1013</sup> Ya Qin, *supra* n. 622, at 1147 et seq.

<sup>1014</sup> *Id.*, at 1170-1178 in particular.

part of comprehensive mineral conservation and environment-related policies. In this respect, the *automatic* unavailability of Article XX exceptions resulting from the approach developed in *China – Raw Materials* pre-empts China and other “four-tiered” acceding Members from resorting to the only venue left within the WTO Agreement to apply export duties in their function of indispensable tool for development<sup>1015</sup>.

In the light of the above, it has become progressively evident that, in the view of the new dispute *China - Rare Earths*, a “judicial option”<sup>1016</sup> could provide with an *interim* solution apt to correct at least provisionally the most dangerous drifts of the current regime by reversing the decision on the non-availability of Article XX exceptions for China. This solution would in fact provide China and, by means of analogy, other four-tiered developing countries undertaking WTO-plus obligations on export duties not incorporating Article XX flexibilities with the possibility to invoke, at least in principle, the environmental exceptions provided for in Article XX GATT as the only means available within the WTO system to legitimize development-related goals<sup>1017</sup>. Such a

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<sup>1015</sup> *Id.*; Gu, *supra* n. 369, at 781-783.

<sup>1016</sup> The expression “judicial option”, as opposed to the “negotiating option”, for the reform of the WTO-disciplines on export duties is borrowed from Gu, *supra* n. 369.

<sup>1017</sup> As known, Article XX case law has significantly evolved towards a more environment-friendly position, also in light of the reference to sustainable development contained in the first recital of the Preamble of the WTO Agreement. Sacerdoti, G., *La disciplina del commercio internazionale e la*

perspective would, in turn, “annul” the incentive towards a *traslatio* to quantitative export restrictions instead of export tariffs which four-tiered Members could be tempted to recur to in the attempt to maintain the right to invoke the environmental exceptions provided for in Article XX; at the same time, it would reinforce the overall permeability of the WTO Agreement to legitimate public goals and, in particular, environmental values while remaining the closest venue to a “development” alternative for the application of mineral-related export duties.

The present section will then examine the alternative scenarios for redressing the decision on the non-availability of Article XX GATT for China’s violation of WTO-obligations on export duties. The need to explore whether and under which basis there could be legal scope to conclude in favour of the applicability of Article XX exceptions for violations of WTO-plus obligations on export duties and, more generally, non-GATT obligations, is in fact all the more urgent considering that the “judicial option” would provide with an immediately available solution for correcting the most evident

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*protezione dell’ambiente*, in FOIS P. (eds.), *Il principio dello sviluppo sostenibile nel diritto internazionale ed europeo dell’ambiente*, Naples, Editoriale Scientifica, 2007, at 63 et seq.; Low, P., Marceau, G., and Reinaud, J., *The Interface between the Trade and the Climate Change Regimes: Scoping the Issue*, *Journal of World Trade*, 46 (3), 2012, at 485-544. Moreover, as seen *supra* (Chapter Three, paragraph IV), the Panel significantly extended the scope of Article XX (b) and (g) in the recent case *China – Raw Materials* by recognizing that a measure’s compliance with the requirement therein provided can be evaluated by analysing the measure within the context of its comprehensive policy framework and, in case of Article XX (g) in particular, in the light of the principle of sovereignty over natural resources.



defects of the WTO accession regime on export duties, failing at the moment the consensus towards the concrete modalities of implementation of a more comprehensive “negotiating option” for a system-wide reform.

**A. A critique to the dispute settlement bodies’ “textualism” and the call for a restrictive interpretation of WTO-plus obligations**

As known, the decision on the non-availability of Article XX defences for violations of Paragraph 11.3 of China’s Accession Protocol was rooted on the specific wording of the provision at issue read in its context<sup>1018</sup>. The appropriateness of such “textualistic” methodology has been subject to increased controversy with regards to disputes related to the specific nature and scope of member-specific obligations<sup>1019</sup>, and with particular

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<sup>1018</sup> See *supra*, Chapter Three, paragraph II, section C.

<sup>1019</sup> See, e.g., Xiaohui, W., Case Note: China—Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products (WT/ DS363/AB/R), 9 Chinese Journal of International Law 423 (2010), 423–432; De Medeiros, J.F., Global Trade Law - China's Export Restraints Found To Be Inconsistent With Its Obligations As A Member Of The World Trade Organization - China - Measures Related To The Exportation Of Various Raw Materials, 35 Suffolk Transnational Law Review, 203 (2012), 203-219.

regards to China's unique WTO-plus obligations<sup>1020</sup>. Such approach has been criticized to “read China-specific obligations in clinical isolation with generally applicable rules”<sup>1021</sup>, relying solely on the text and context of the provisions at issue while leaving aside any consideration in the light of the object and purpose of the provisions at issue or the covered agreements as a whole. This “void” in the interpretation would ultimately risk jeopardizing the underlying object and purpose of the WTO Agreement as a whole<sup>1022</sup>.

Some commentators have thus called for a mitigation of the “textualistic” approach and the adoption of a more openly purposive interpretative methodology that would consent not to consider WTO-plus obligations as stand-alone provisions provided

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<sup>1020</sup> Xiaohui, *supra* n. 637, at 239; Ya Qin, *supra* n. 622, at 1154-1157. The dispute settlement bodies' textualism has been subject to criticism on a more general level also. See, e.g., Horn, H. and Weiler, J., European Communities – Trade Description of Sardines: Textualism and its Discontent, in Horn, H. and Mavroidis, P. (eds.), *The WTO Case Law of 2002*, Cambridge University Press, 2005, at 248 et seq.; Dimond, R., Privatization and the Definition of Subsidy: A Critical Study of Appellate Body Textualism”, 11 (3) *Journal of International Economic Law*, 2008, at 649-78.

<sup>1021</sup> Xiaohui, *supra* n. 637, at 260.

<sup>1022</sup> *Id.* It has been suggested that the reluctance of the Appellate Body to embrace any forms of more openly purposive interpretation “may have to do with the attitude of a young institution which must establish its authority and with the reciprocal nature of the undertakings”. Nolte, G., Subsequent practice as a Means of Interpretation in the Jurisprudence of the Appellate Body, in Cannizzaro, E., (ed.), *The Law beyond the Vienna Convention*, Oxford University Press, 2011, at 143.

for in “self-contained agreements”<sup>1023</sup>. A suggested approach in this respect is that the dispute settlement bodies adopt a restrictive interpretation of China-specific obligations according to the so-called *in dubio mitius* principle of interpretation<sup>1024</sup>. Following this principle, the WTO dispute settlement bodies would have to interpret narrowly China’s limitations of sovereignty in case of doubt<sup>1025</sup>, taking due regard of the overall object and purpose of the WTO Agreement in order to preserve “the coherence and the integrity of the WTO legal system and its fundamental principles”<sup>1026</sup>. Hence, China’s WTO obligations could not be

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<sup>1023</sup> The expression is borrowed from Julia Ya Qin (*supra* n. 622, at 1156). For the author, the approach designed in *China – Raw Materials*, according to which “the relationship between a specific accession commitment and another WTO Agreement can only be established through an express reference in the text of that specific accession commitment”, reveals that the Appellate Body considered accession protocols “independent from the rest of the WTO Agreement”, whereas instead “the special commitments of the acceding country cannot be understood independently of the general disciplines set out in the multilateral WTO agreements”.

<sup>1024</sup> The principle of restrictive interpretation (*in dubio mitius*) is a generally recognized supplementary means of interpretation in international law which applies in deference to the sovereignty of States in the sense that “[i]f the meaning of a term is ambiguous, that meaning is to be preferred which is less onerous to the party assuming an obligation, or which interferes less with the territorial and personal supremacy of a party, or involves less general restrictions upon the parties”. Jennings, R. and Watts, A., *Oppenheim’s International Law* (Pearson Higher Education, 1992), vol. I, at 1278.

<sup>1025</sup> According to this reasoning, the object and purpose of the WTO-plus provisions, at least in the case of China, are unknown or questionable. Indeed, it has been noted that “[t]hroughout the hundreds of pages of the Protocol and the Working Party Report there is not a single passage setting forth the rationale or the object and purpose of such differential treatment of China”. See Ya Qin, *supra* n. 432, at 510.

<sup>1026</sup> Xiaohui, n. 637, at 260.

interpreted to prevent China from resorting to defences which, as those provided for in GATT Article XX, respond to the need to address legitimate non-trade values at the core of the multilateral trading system.

Although the Appellate Body has adopted this approach at least once in the *EC – Hormones* case<sup>1027</sup>, a major limit is that the principle of *in dubio mitius* is a supplementary means of interpretation to which, according to customary rules of interpretation as reflected in Article 32 of the Vienna Convention, the dispute settlement bodies should refer to only on a subordinate basis, i.e. in cases when the application of the general rule established in Article 31 leaves the meaning “ambiguous or obscure” or “manifestly absurd or unreasonable”<sup>1028</sup>. However, the DSB bodies did not find the language of Paragraph 11.3 equivocal

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<sup>1027</sup> In *EC – Hormones*, the Appellate Body stated: “We cannot lightly assume that sovereign states intended to impose upon themselves the more onerous, rather than the less burdensome, obligation by mandating conformity or compliance with such standards, guidelines and recommendations. To sustain such an assumption and to warrant such a far-reaching interpretation ... language far more specific and compelling ... would be necessary”. See Appellate Body Report, *European Communities - Measures Concerning Meat and Meat Products*, WT/DS26/AB/R, WT/DS48/AB/R, adopted on 16 January 1998, available at [http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds26\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds26_e.htm), at 165. Recourse to restrictive interpretation has not, however, been applied consistently by the Appellate Body. See Xiaohui, n. 637, at 148.

<sup>1028</sup> For a thorough discussion on the hierarchical relationship between Article 31 and 32 of the Vienna Convention and its character of general international law see Sbolci, L., *Supplementary Means of Interpretation*, in Cannizzaro, *supra* n. 1022, at 145 et seq.

or inconclusive<sup>1029</sup>. They neither found this interpretation unreasonable, provided that it proved consistent with their interpretation of the relationship between Article XX of the GATT 1994 and the other components of the WTO Agreement, according to which Members would be entitled to resort to the defences provided for in Article XX only for violations of the GATT 1994 provisions or when Article XX justification is incorporated by way of reference into the relevant part of another WTO agreement<sup>1030</sup>. Furthermore, they found support for this interpretation in the language of other WTO Agreements (e.g. the TRIMs Agreement)<sup>1031</sup>. Within such a framework, little scope was left to

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<sup>1029</sup> Indeed, in *China – Raw Materials* the Panel pointed out that the language of Paragraph 11.3 “can *only* be understood to reflect agreement at the time of China’s accession that since China’s export duties commitments arose exclusively from China’s Accession Protocol, Article XX would not apply to such commitment”. Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.138 (emphasis added). See also Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 306.

<sup>1030</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, paras. 7.153-4 and Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 306. However, it has to be noted that some commentators have interestingly suggested that the Appellate Body would have to recognize a manifestly absurd outcome, in that its reasoning would create the “paradox” of justifying under Article XX quantitative restrictions on exports, while prohibiting export duties. See, in this sense, Baroncini, E., *Obblighi WTO-Plus, tutela dell’ambiente, della salute e preservazione delle risorse naturali: il Report del Panel nel caso China – Raw Materials, Diritto Comunitario e degli Scambi Internazionali*, 2011, 50, 627-678, at 644. Indeed, as noted *supra*, this state of affairs creates the incentive for China to recur to quantitative restrictions on exports, running counter of the underlying choice in favour of “tariff” measures inspiring the overall GATT architecture. See Chapter Three, paragraph V.

<sup>1031</sup> See *supra*, Chapter Three, paragraph II, section C. In this respect, the fact that the express reference requirement for the applicability of Article XX GATT applies to accession protocols as much as for other WTO agreements seems to

the dispute settlement bodies to apply the restrictive principle in favour of China's sovereignty<sup>1032</sup>.

### **B. The inherent and sovereign right to regulate trade to achieve public policy goals under Article XX GATT**

A suggestive theory advanced by China itself within the context of *China – Raw Materials* appeals to the “inherent right to regulate trade” as affirmed in the WTO Agreement “read as a whole”<sup>1033</sup> as a means to ensure the availability of Article XX defences for violations of non-GATT obligations, even if not incorporating any GATT 1994 flexibilities such as Paragraph 11.3 of China's Accession Protocol. In the vision promoted by China, in fact, the specific obligations accepted with regards to export duties could not pre-empt it to exercise its right to regulate trade at least with respect to the circumstances provided for in Article XX of GATT

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indicate that, contrary to what affirmed by some commentators, accession protocols are not considered as self-contained agreements in contrast to other covered agreements, but are rather treated as integral parts of the WTO Agreement to which generally applicable rules similarly apply.

<sup>1032</sup> It should also be noted that the Appellate Body did enrich its interpretative exercise to inform its conclusion in the light of the underlying purpose of the WTO Agreement as a whole, by reference to the legitimate goals proclaimed in the preamble. See *infra*, section C.

<sup>1033</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.155 (original emphasis).

1994<sup>1034</sup>. In claiming so, China referred to *China – Audiovisuals*, where the Appellate Body admitted that such right has an inherent character rather than being “bestowed by international treaties such as the WTO Agreement”<sup>1035</sup>.

Such argument, however, was dismissed by the Panel, which clarified that the inherent right to regulate trade cannot prevail over WTO rules intended to constrain the exercise of that right, for China deliberately agreed upon those rules as an “ultimate expression of ...sovereignty”<sup>1036</sup>. The Appellate Body further reiterated that in *China – Audiovisuals* the availability of the defences under Article XX did not arise out of the recognizance that China’s inherent right to regulate trade was to prevail over the commitments agreed upon in the Accession Protocol, but was instead a direct consequence of the specific wording of Paragraph

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<sup>1034</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.155. In the concluding statement given at the first substantive meeting, China asserted: “China finds repugnant the argument that it has not only assumed uniquely onerous obligations, but also that it is denied its 'inherent power' to take measures in relation to these uniquely onerous obligations to promote other fundamental interests, such as conservation and public health. If this argument were accepted, China would be subject to uniquely onerous obligations and would be deprived, again uniquely, of its 'inherent power' to regulate trade”. Executive Summary of the Opening Oral Statement by China at the First Substantive Meeting, *China – Raw Materials*, WT/DS398/R/Add.1 (July 5, 2011), Annex D-2, para. 24.

<sup>1035</sup> Appellate Body Report, *China – Audiovisuals*, *supra* n. 697, para. 222.

<sup>1036</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.157. Moreover, the Panel considered that “[t]his view is reinforced by the fact that China and the WTO Members did make explicit reference to exceptions when they intended to incorporate them”. *Id.*, para. 7.147.

<sup>1036</sup> *Id.*, para. 7.160 (emphasis added).

5.1, which expressly incorporates reference to the WTO Agreement<sup>1037</sup>. Hence, the AB confirmed that the legal basis for applying Article XX of the GATT 1994 to non-GATT obligations such as WTO-plus commitments is the text incorporation by cross-reference and clarified that the inherent right to regulate trade plays a role in *this* respect.

In rejecting China's sovereignty arguments with respect to the availability of Article XX defences, the Panel recognized that

“the situation created by [Paragraph 11.3] *taken in isolation* may be perceived as imbalanced”<sup>1038</sup>.

However, the Panel recalled that, in accordance with Article XII of the Marrakesh Agreement<sup>1039</sup>,

“the negotiated agreement between the WTO Membership and the acceding Member results in a delicate balance of rights and obligations, which are reflected in the specific wording of each commitment set out in these documents.”<sup>1040</sup>.

Accordingly, it concluded that

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<sup>1037</sup> Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 300.

<sup>1038</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.160 (emphasis added).

<sup>1039</sup> According to Article XII of the Marrakesh Agreement, “[a]ny State may accede to this Agreement, *on terms to be agreed between it and the WTO*” (emphasis added).

<sup>1040</sup> Panel Report, *China – Raw Materials*, *supra* n. 435, para. 7.112 (emphasis added). The Panel further underlined that “[u]ltimately, the acceding Member and the WTO Membership recognize that the intensively negotiated content of an accession package in an ‘*entry fee*’ to the WTO system”. *Id.* (emphasis added).



“[t]o allow such exceptions to justify a violation when no exception was apparently envisaged or provided for would change the content and alter the careful balance achieved in the negotiation, ultimately undermining the *predictability and legal security* of the international trading system”<sup>1041</sup>.

The vision promoted by the Panel is, on a general basis, appreciable in that it reconciles the disproportionality of China’s unique commitments on the use of export duties with the multilateral nature of China’s accession package. In this perspective, the Panel’s reasoning leaves little scope to justify a recourse to a restrictive interpretation of China’s specific obligations on the elimination of export duties: according to this general framework, in fact, China exercised its inherent and sovereign right to regulate trade in negotiating the language of Paragraph 11.3 in a way which prevents it from resorting to Article XX as part of a mutually advantageous comprehensive package which globally satisfied both China and the WTO Membership<sup>1042</sup>. Such conclusion, moreover, seems to find support in a comparison of the language of Paragraph 11.3 of China’s Accession Protocol with the terms of accession agreed upon by the other new Members that undertook additional specific obligations on the use of export

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<sup>1041</sup> *Id.*, para. 7.159 (emphasis added).

<sup>1042</sup> *Id.*, para. 7.129.

duties<sup>1043</sup>. However, as I will argue below, this solution configures a “rigid” approach that fails to take into adequate consideration the particular relevance of the fundamental interests recognized in Article XX (b) and (g) of the GATT 1994.

**C. *Cont.*: The right to regulate trade to address fundamental environmental concerns as an alternative “development” venue for the application of mineral-related export duties**

The right to regulate trade argument can have significant implications for the applicability of Article XX to WTO-plus obligations on export duties applied to critical mineral and metals. Such measures are in fact traditionally justified by specifically invoking public health and conservation goals, i.e. values which are granted a particular strength within the WTO system as a whole. As known, indeed, the environmental exceptions protected under Article XX b) and g) enjoy a “reinforced” protection within the multilateral trading system since, in addition to being incorporated into other covered agreements containing an article that reproduces the disciplines set out in Article XX GATT or refers to it, such goals are also recognized in the first recital of the preamble of the

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<sup>1043</sup> See *supra*, Chapter Three, paragraph II, section B.

WTO Agreement as well as in the preamble of many covered agreements<sup>1044</sup>.

It is in this perspective that, during the appeal phase, China strengthened the inherent and sovereign right to regulate argument by making specific reference to the fundamental nature of the non-trade interests protected under Article XX (b) and (g), and argued that its entitlement to recur to Article XX (b) and (g) for violations of Paragraph 11.3 of its Accession Protocol, although not inferable from its specific language, was founded on its right to regulate trade “in a manner that promotes conservation and public health”<sup>1045</sup>. Interestingly, the Appellate Body did recognize that the proclaimed rationales were legitimate non-trade goals falling within the scope of the underlying objectives of WTO as stated in the preamble of the WTO Agreement<sup>1046</sup>, but denied that the

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<sup>1044</sup> See the texts of the first recital of the preamble of the Agreement on the Application of Sanitary and Phytosanitary Measures, the sixth recital of the preamble of the Agreement on Technical Barriers to Trade, the preamble of the Agreement on Import Licensing Procedures, the fourth recital of the preamble of the General Agreement on Trade in Services, and the preamble and Article 8.1 of the Agreement on Trade-Related Aspects of Intellectual Property Rights.

<sup>1045</sup> Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 300. According to China, in particular, “the Panel distorted the balance of rights and obligations established in China’s Accession Protocol by assuming that China had ‘abandoned’ its right to impose export duties ‘to promote fundamental non-trade-related interests, such as conservation and public health’”. *Id.*, para. 305.

<sup>1046</sup> The first recital of the preamble of the Agreement establishing the WTO recognizes that trade relations between Members “should be conducted with a view to raising standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services, *while allowing for the optimal use of the world’s resources in accordance with the objective of sustainable*

preamble could be interpreted as to provide a legal basis for invoking Article XX defences for violations of a non-GATT provision, such as Paragraph 11.3, that does not incorporate any reference to Article XX flexibilities. In the Appellate Body's view, in fact, the language of the preamble does not "provid[e] specific guidance on the question of whether Article XX of the GATT 1994 is applicable to Paragraph 11.3 of China's Protocol of Accession"<sup>1047</sup> but rather indicates that

"the *WTO Agreement*, as a whole, ...reflect[s] the balance struck by WTO Members between trade and non-trade concerns"<sup>1048</sup>.

Although internally coherent with the general approach adopted with regards to the prerequisites for the availability of Article XX GATT, the Appellate Body regrettably lost the occasion to fully explore whether any different solutions, in terms of the applicability of Article XX GATT, could derive from the particular type of exceptions invoked in the light of the underlying purpose of the WTO Agreement as a whole. The AB avoided the issue by stating that the *language* of the preamble could not be interpreted to provide for a legal basis to apply (*generally*) Article XX to non-

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*development, seeking both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development"* (emphasis added).

<sup>1047</sup> Appellate Body Report, *China – Raw Materials*, *supra* n. 435, para. 306.

<sup>1048</sup> *Id.* (original emphasis).

GATT obligations. However, it failed to consider that the preamble of the WTO Agreement is not a provision of a material agreement to be interpreted literally as including or not including language apt to allow recourse to Article XX to justify the violation of the specific obligation contained therein, but rather defines the general principles upon which the WTO was edified. Hence, the Appellate Body reached a conclusion that fails to attach sufficient significance to the fact that the *specific* environmental exceptions under Article XX (b) and (g) refer to values the WTO Members have agreed to reaffirm in the first recital of the preamble of the WTO Agreement, as fundamental values inspiring the “mission” of the Organization itself as well as the global architecture of the covered agreements and which are ultimately enshrined in the principle of sustainable development explicitly recognized as one of the cornerstones of the WTO system<sup>1049</sup>.

In this perspective, the *vulnus* in the protection of the fundamental values protected under Article XX (b) and (g) arising out of a “blanket” rejection of the sovereign right to regulate trade could hardly be considered “remedied” by looking at the overall balance of economic concessions that an acceding Member would benefit from as a result of its participation to the system, as the Appellate Body seemed to suggest in *China – Raw Materials*. It

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<sup>1049</sup> For an overview of the progressive openings of the multilateral trading system to “environmental” concerns through the reference to the principle of sustainable development as stated in the preamble of the WTO Agreement in the relevant WTO case law, see Sacerdoti, S., *supra* n. 1017, at 63 et seq.

seems in fact that, in deciding to preserve the general applicability of the approach over the access to the environmental defences under Article XX (b) and (g), the Appellate Body designed a “rigid” approach and missed the opportunity to reaffirm the crucial importance of the values of conservation and public health protected therein within the WTO system as a whole. Such values, in fact, indisputably lay at the very foundation of the multilateral trading system, and the participation to it should never imply that a Member has to give up a policy – in our case, an export duty – that is primarily and genuinely aimed at addressing them.

For all these reasons, the Appellate Body should engage in a more “courageous” interpretation in the upcoming *China – Rare Earth* so as to identify a limit to the general approach adopted in *China – Raw Materials* when the fundamental interests provided for in Article XX (b) and (g) are at stake. It is our view that the Appellate Body would in fact strengthen, and not undermine, the overall coherence of such approach by ruling in favour of the availability of Article XX (b) and (g) defences for violations of WTO-plus obligations – and, more generally, non-GATT obligations – even when language to that effect has not been incorporated therein.

This solution will not run counter to the view adopted by the dispute settlement bodies on the right of every WTO Member to regulate trade, in that both original Members and new Members

assuming additional obligations on export duties in their accession protocols have voluntarily agreed to become Members of WTO, thereby committing to respect the general principles inspiring the mission of the Organization. Moreover, this solution would be “neutral” in that it would integrate with the more general approach adopted in *China – Raw Materials* by providing for a *general* exception to such approach with respect to the applicability of Article XX (b) and (g) to all non-GATT obligations, while at the same time increasing the mutual supportiveness between trade and environment and offering a judicial solution to the integrity challenges posed by the incoherence of the WTO-plus regime on export duties incumbent on China as well as on other four-tiered acceding Members. Finally, but not less importantly, this solution would also meet the progressively more structured “development” claims on the part of major developing countries: in the absence of the recognizance of the developmental function of export duties within the WTO system, the applicability of Article XX (b) and (g) for all countries undertaking additional obligations on their use would in fact represent a potentially important venue in light of the interpretation given of the scope of these exceptions in *China – Raw Materials*. As seen *supra*<sup>1050</sup>, indeed, the Panel did agree that a measure’s compliance with the requirements set out in Article XX (b) or (g) of the GATT 1994 may be evaluated by analysing the

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<sup>1050</sup> See Chapter Three, paragraph IV.

measure within the context of its comprehensive policy framework, and recognized that the fact that such framework comprises different multi-faceted measures, pursuing a plurality of social, economic and/or environmental objectives is not per se a circumstance which pre-empts the successful invocation of Article XX (b) and (g). The suggested approach is all the more desirable with respect to Article XX (g) in particular, in light of the explicit recognizance of the principle of sovereignty over natural resources as a guiding principle in the interpretation of the conservation exception in *China – Raw Materials*. In consideration of the ensuing reinforcement of the synergy between the conservation goal protected under Article XX (g) and the sustainable development objective declared in the preamble of the WTO Agreement<sup>1051</sup>, Article XX (g) seems in fact at the moment what is closest to a “development venue” within the WTO system.

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<sup>1051</sup> As explained *supra*, in fact, the evolution of the interpretation of the principle of sovereignty over natural resources has gone into the direction of considering it the cornerstone of sustainable development law. See *supra*, paragraph III, section B and, in particular, n. 982.



## **CONCLUSIONS**

### **What way forward?**

The present work began with the intent to qualify the relationship between the proliferation of export restrictions applied to critical minerals and metals and the stated insufficiency of WTO disciplines in this area. The idea was to investigate whether – and, if so, to what extent – sufficient evidence could be unambiguously established between the distinctive features of the recent recrudescence of export restrictions in minerals and metals and the existence of apparent loopholes or “grey areas” within the WTO disciplines on the export side the appeal to which would consent WTO Members to surreptitiously pursue protectionist goals while still remaining under the purview of WTO rules.

Although such a work may, at a first glance, appear redundant if not unnecessary in light of an emerging body of literature appealing on a presumed (yet unspecified) “under-regulation” of WTO disciplines on the export side, and the correspondingly urgent need

for strengthened rules in this domain, the present work has shown that such “conventional wisdom” has been at least in part alimeted by the emergence of a certain degree of “rhetoric” over the proliferation of export restraints as a reflection of a re-acutization of the North/South conflict over development, further fuelled by the “Chinese case”. Indeed, the analysis undertaken in the present work – aimed, on the one hand, at “mapping” the panorama of export restrictions applied to critical minerals and metals in order to qualify the phenomenon of “proliferation” of such measures, and, on the other hand, at “matching” the ensuing findings with the relevant WTO disciplines on export restrictions – has permitted to shed light on the nature and the intensity of the relationship between the two and, in particular, has revealed that the alleged insufficiency of WTO disciplines on the export side which the conventional wisdom has progressively been referring to needs to be qualified. In this respect, the present survey has shown that, in contrast to a general stated meaningless of WTO rules, the main elements of weakness of WTO regulations on export restrictions are: 1) the lack of adequate and sufficiently stringent notification requirements on export restrictions, mostly attributable to the fact that the issue of transparency of export restraints has until now mainly be treated under GATT within the action on non-tariff measures in general; 2) the current configuration of the WTO accession regime on export duties. In the latter respect, the main

problems have to do with the imbalances produced by a four-tiered membership, with particular respect to the entitlement to public policy exceptions, and the ultra-rigidity of WTO-plus commitments arising out of their inclusion into “self-contained” accession protocols.

Within such context, the proposals put forward within the context of the DDA negotiations are significantly addressed to the improvement and reinforcement of both elements of criticality. With regards to the transparency side, the revised EC proposals on export taxes envisages a significant strengthening of the notification procedures along the lines of the Understanding on the Interpretation of Article XVII of GATT 1994 on the notification requirements for state trading enterprises, in order to ensure that existing obligations are made operational and enforced in a satisfactory manner. Moreover, the Protocol on Transparency in Export Licensing provides with a set of sophisticated procedural rules, inspired by the Agreement on Import Licensing Procedures, in order to achieve enhanced transparency in the running export licensing regimes by Members. The two initiatives are very appreciable in that, while being neutral as to the permitted or not permitted export taxes or export licensing system, they address the most commonly utilized forms of export restrictions<sup>1052</sup> and go in

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<sup>1052</sup> See *supra*, Chapter Two.

the direction of filling the informational gap which characterizes the world of export restrictions<sup>1053</sup>.

As to the “correction” of the irrationality of the WTO-plus regime on export duties, ultimately susceptible to pose dangerous threats to the integrity of the system through the incentive towards a *traslatio* to quantitative forms of export restriction, the NAMA proposals have importantly pointed to the need to realize a system-wide reform. The first EC proposal endorsed a more “radical” path by suggesting the adoption of a new Agreement on Export taxes providing for, on the one hand, a general elimination requirement of export duties and only limited flexibilities for developing countries and, on the other hand, the applicability of the whole range of GATT exceptions relevant to export duties, including those originally intended to be import specific such as Article XVIII. The revised EC proposal indicated instead a “negotiating option”, according to which WTO Members negotiate binding levels of export rates to be incorporated into their respective GATT Schedules of Concessions in a similar way to import duties. Special flexibilities are again envisaged for developing countries; the question of the applicability of GATT rules is also addressed, albeit the language adopted to specify the applicability of GATT exceptions seems to exclude the import-specific flexibilities.

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<sup>1053</sup> *Id.* and, in particular, paragraph I.

Both proposals correctly go in the direction of a greater comparability between WTO rules on export restrictions and import restrictions and, by bringing current WTO disciplines respectively into a new Agreement providing Members with the same flexibilities available under GATT and the GATT framework, they “cure” the ultra-rigidity of WTO-plus provisions as contained in accession protocols. However, they have been consistently opposed by major developing countries by reason of their strong bias against export duties used for trade and/or industrial purposes. Accordingly, a development-oriented approach towards the reform of the WTO accession regime on export duties pointed to the recognizance of the legitimate developmental function of export duties as the necessary pre-requisite for the participation of developing countries to the effort to curb export taxes and has indicated flexibility, both in terms of adjustability of export duty commitments and in terms of availability of GATT exceptions, as the only way to achieve a system-wide reform on export duties. Interestingly, the technique suggested to fulfil this flexibility goal is the “assimilation” of export duties to import duties through the integration of existing WTO-plus commitments of acceding Members into a Part V on Export Concessions of their respective schedules and the consequent applicability of all GATT provisions and flexibilities to such commitments in a similar way to import tariffs. This incorporation is considered as the necessary first step

to garner support of other developing countries towards the establishment of new negotiations on the binding of export tariffs on a system-wide basis.

The merit of the development-approach is to have construed a model of system-reform capable of encountering the interest of those developing countries traditionally resisting the idea of a systemic reform within the DDA negotiations while still espousing the “negotiating option” for the reform of WTO regime on export duties. In this perspective, the “good news” is that, despite the tensions as to the direction to give to a system-wide reform on export duties within the Doha Round, the tabled proposals significantly endorse some of the “ideal” elements identified by the development-oriented proposal for reform. On the one hand, in fact, the idea of incorporating the WTO-plus commitments of acceding Members into the GATT schedules is generally extended to all Members in the revised EC proposals on export taxes. On the other hand, the integration of the export duty commitments into the GATT framework with a view provide acceding Members with all relevant GATT provisions is in line with the approach towards the applicability of GATT provisions and exceptions to export taxes adopted in the first proposal for a WTO Agreement on Export

Taxes<sup>1054</sup> and generally evoked in the revised proposal of the EC<sup>1055</sup>.

In this perspective, the negotiating option can authentically represent the first-best solution for a reform of the WTO regime on export duties insofar as it would not deprive WTO Members of the policy space to promote economic development. In order to fulfil this objective and garner support of developing countries, a reform would then have to provide for the incorporation of existing WTO-plus commitments on export duties into the respective acceding members' schedules of concessions, as well as for the contextual negotiation of export duty concessions on the part of other WTO members; moreover, clarity as the applicability of GATT flexibilities and exceptions would have to be ensured by means of a specific reference to relevant GATT provisions, in a way similar to import duties. In the view of ensuring the greatest degree of predictability, the lines of such a reform could be contained in a new Agreement on Export Taxes combining the major elements of strength of all the proposals tabled so far, thereby ensuring the greatest level of comparability between import and export rules. In this perspective, such Agreement could opt for a negotiating solution, both to acceding Members undertaking WTO-plus obligations and other WTO Members, and provide for the applicability to export duties of GATT Article XXVIII, as well as

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<sup>1054</sup> See *supra*, paragraph II, section B.

<sup>1055</sup> *Id.*, section C.

GATT exceptions relevant to (import and)<sup>1056</sup> export restrictions (e.g. Article XX). Such a solution, as the development-oriented approach has indeed implicitly acknowledged, would be a win-win solution for both import-dependent developed countries and richly-endowed developing countries for it would ensure due recognizance of the legitimate developmental function of export duties while at the same time correcting the non adjustability of current WTO-plus obligations on export duties of several acceding members.

Finally, the present work has also suggested that, in light of the inherent delays in the realization of a system-wide reform as well as of the uncertainty of the destiny of the Doha Round, the dispute settlement bodies are provided with a chance to correct rather quickly, at least in part, the irrationality of the WTO regime of additional obligations on export duties by reversing in *China - Rare Earths* the decision adopted in *China – Raw Materials* on the non-availability of Article XX (b) and (g) GATT for violations of

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<sup>1056</sup> As noted *supra*, the proposed Agreement on Export Taxes tabled by the EC extended the applicability to export duties of the import-specific GATT provisions related to economic development and, in particular, infant industry, thereby responding to the greatest extent to the rationale at the basis of the development-oriented approach. However, such openness was perhaps due to the particular rigidity of the approach undertaken under the proposed Agreement, based on a general elimination requirement mitigated with only limited flexibilities for developing countries. Hence, the applicability of provisions such as GATT Article XVIII to export duties would certainly go in the direction of a greater openness towards the development aspirations of less developed countries, it should be noted that an Agreement on Export Taxes as the one envisaged here would anyways adequately take into account the development side of the issue.



WTO-plus obligations not incorporating language to that effect. We have argued that such decision could be based on the “right to regulate trade to address environmental concerns” and would collaterally contribute to strengthen the overall “permeability” of the WTO system to the core values of sustainable development and conservation of natural resources while at the same “neutralizing” the most dangerous risks inherent in the current configuration of the WTO accession regime on export duties, i.e. the incentive towards a *traslatio* to quantitative forms of export restrictions. Although on paper chances that the dispute settlement bodies would reverse this conclusion are quite modest<sup>1057</sup>, and despite the fact that such judicial option constitutes a second-best solution<sup>1058</sup>, the desirability of a judicial option as an *interim* solution remains in that it would be an important signal on the part of the WTO that the irrationalities arising out of the current configuration of WTO accession regime on export duties have been effectively

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<sup>1057</sup> As a matter of fact, although the Appellate Body has indicated that panel reports do not constitute subsequent practice for the purposes of Art. 31(3)(b) of the Vienna Convention, the WTO panels are often referred to in successive cases as if they were case law. As the Appellate Body stated in *Japan – Alcoholic Beverages*: ‘Adopted panel reports are an important part of the GATT *acquis* ... . They create legitimate expectations among WTO members and, therefore, should be taken into account where they are relevant to any dispute’. See *Japan – Taxes on Alcoholic Beverages*, AB-1996-2, Report of Oct. 4, 1996, WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R, at 14.

<sup>1058</sup> As clarified *supra*, in fact, the judicial option would not consent to correct the non-adjustability character of WTO-plus obligations on export duties, which could be achieved only through the incorporation of WTO-plus obligations on export duties into the GATT framework within the context of a system-wide reform based on the negotiating option. See paragraph IV.

acknowledged and there is the will to correct the defects of the system. In this respect, the judicial option could become the driving force towards the gathering of sufficiently widespread support for a system-wide reform based on the negotiating option. A system-wide reform is in fact ultimately indispensable for a complete rationalization of the current regime.

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