Export restrictions on natural resources: policy options and opportunities for Africa

Baris Karapinar

World Trade Institute, University of Bern, Switzerland

1.Introduction

Export restrictions are often in the headlines these days. Russia introduced a ban on exports of wheat and other grains last August, creating a great deal of anxiety in international grain markets. Earlier, during the 'food crisis', dozens of countries had instituted export restrictions in the face of domestic supply constraints, and growing public discontent about rising prices of food. Now China is under spotlight for allegedly restricting its exports of rare earth metals to Japan and to other industrial countries.

It would be rather naïve to treat these developments as by-products of unusual and rather context-specific circumstances, such as Russia's environmental debacle. Or as side-effects of political quarrels between Japan (and the US) and China which create trade frictions. Increasing scale and frequency of export restrictions are a reflection of a more fundamental and systemic trend towards growing competition over essential resources. Natural resources are increasingly scarce and difficult to extract to satisfy the manufacturing sectors of emerging countries such as China and India. As the world economy recovers from its current slowdown, the competition over natural resources will get even tougher. Big players will use all policy tools in their disposal to gain additional advantage.

Restricting exports of natural resources may give downstream producers just the edge they need to stay above the curve in fiercely competitive international markets. In extreme cases, a country in a monopoly supplier position of a commodity with limited substitution may drive out whole industries in a competing import-dependent country. That is why China's restrictions on rare earth metals have attracted so much attention, despite involving relatively low volumes of trade.

While trying to avoid 'trade wars' caused by disputes of currency manipulation, we may experience 'export restriction wars' on natural resources. The US, EU and Mexico have already filed an official WTO dispute case, pending decision, against China. As described in this paper, they complaint that China has violated WTO rules by imposing restrictions on selected raw materials, such as Manganese, Silicon and Bauxite. Yet the WTO regulation in this field is extremely weak and ineffective.

The subject is also relevant in the context of sustainable management of natural resources in Africa. Since the natural resources sector is a major source of income for many African countries, the effectiveness of trade and fiscal policy regimes are of substantial importance. What is the role of export restrictions in moving these countries up the value chain? Similarly what would be the role of export taxes as part of an effective fiscal regime which would allow governments to maximise the wealth from their natural resources while also providing businesses with a good investment environment? Whether or to what extent doresource rich African countries need to re-design their trade and tax regimes which will determine their prospect of achieving sustainable development in the post-crisis?

Beyond the mercantilist nature of the issue, however there are also environmental considerations that need to be taken into account. The fascinating story of the trapped miners in Chile has highlighted some of the adverse impacts of mining on human lives and on the environment. Mining sites in China, India, Peru, Russia and Zambia are often cited as the world's most environmentally polluted areas. To what extent export restriction policies could slow down the depletion of exhaustible resources, such as minerals, forestry products, fisheries and endangered species is a major policy question. Similarly, export taxes are also relevant in the context of the on-going climate change negotiations. There could be significant implications of a new carbon export adjustment tax which may be introduced by low income exporters to counter or pre-empt border adjustment measures (BAMs) which are likely to be imposed by developed countries.

In this context, this paper is organised as the following: Section 2 examines various economic, social and environmental policy objectives associated with export restrictions. Section 3illustrates their potential implications for domestic and global welfare. Section 4 reviews the export restriction policies of nine low income resource-rich developing countries. Section 5 describes the WTO regulation dealing with the issue. Section 6 analyses the China – Raw Materials Case which is currently before the WTO's Dispute Settlement Body. That section attempts to clarify to what extent these measures are related to environmental protection, or are used as a disguised restriction on trade. Section 7 presents some arguments as to how the WTO regulation in this area of apparently large 'policy space' might be reformed and offers policy recommendations for mineral rich countries in Africa.

2. Why do countries impose export restrictions?

Both developing and developed countries resort to export restrictions – imposed in the form of export taxes, quantitative restrictions (through quotas and licences), and outright export bans – for a number of economic, environmental, and social reasons. Since these restrictions constitute a form of market distortion, they affect the distribution of welfare. Hence political-economic objectives could play a part – as export restrictions could be used to offer benefits to certain producer and consumer groups. However, as compared to other policy alternatives such as direct support/subsidies or income taxes, it is often argued that export restrictions are not the most effective policy tools to achieve distributional objectives (WTO, 2010). On the other hand, they could also be used to address market failures especially in the field of environmental protection. Countries may restrict the exports of exhaustible natural resources, such as forestry products, fisheries and minerals, which may help prevent or slow down resource depletion, if these commodities (or products derived from them) are intensively exported (Korinek and Kim, 2009).

Food security

In the agricultural sector, maintaining domestic food supplies and achieving food security, especially in the face of the risks of tight supply conditions in relatively 'thin' international markets, is often the primary objective of export restrictions.[1] In response to the 'food crisis' of 2007–2008, more than 30 countries imposed quantitative export restrictions, export taxes, prohibitions, and price controls (FAO, 2008; Karapinar and Haberli, 2010). This created an additional constraint, among others, on the

[1] Global agricultural markets are 'thin' in the sense that only a small share of global farm production is traded internationally, which increases the risk of price instability in cases of disruption in supplies. See Anderson (2010).

supply side, pushing up prices in global markets. While export restrictions were not a significant cause of the thinness of agricultural markets, which was mainly the result of a widespread and systemic protectionism in the sector, and they were certainly not the trigger for the food crisis, they contributed to the undermining of trust in the global trading system.[2] However, given that there were food riots in many developing countries, such restrictions were considered to be a politically natural reaction to the growing public discontent about rising prices of food.

Moving up the value chain

The role of trade policies in promoting economic diversification into higher value-added sector is highly important. The empirical evidence suggests that the growth trends of extractive economies have been weakly correlated with growth in labour productivity. The GDP contribution of extractive industries has remained high which is a reflection of limited diversification away from the extractive industries.In this context, the importance of the role of governments' policies in providing incentives for diversification (through tax,investment, human capital, infrastructure policiesetc) have been highlighted in the literature. Similarly, the adverse impacts of counterproductive incentives (e.g. distortive subsidies) have beenexamined too. In this context, could export restrictions/taxes be part of the incentive structure in promoting economic diversification and higher value-added activities in natural resource economies?

By restricting the exports of certain inputs, such as raw materials, a country could lower input prices for downstream sectors which would in turn gain price advantage in export markets. This would augment the export of processed and manufactured goods, hence generating higher export and tax revenues, while at the same time creating and/or maintaining jobs in the promoted sectors. As such, in developing countries which are trying to move up in the ladder of manufacturing, export restrictions on raw materials and intermediary products could be an important incentive for domestic and foreign investment in high value downstream manufacturing sectors. However, this objective of attracting 'export-restrictions-jumping-investment' may lead to various inefficiencies in allocation of resources as it may promote sectors which do not have comparative advantage (WTO, 2010). Moreover, the intended benefits of such policy could be offset or dampened if other competitor countries follow suit and impose their own export restrictions (Korinek and Kim, 2009).

Effective fiscal regime

Export taxes are also an important source of government income especially for low income countries which rely on exports of a few commodities. For instance, it is reported that export taxes on cocoa and coffee amounted to more than 10 percent of government revenue in Côte d'Ivoire (Mitra and Josling, 2009). These taxes could be applied ad valorem, based on the value of exports, and in differential tax form, whereby export taxes would be reduced as the raw material is further processed in the value chain (e.g. higher tax for wheat, lower tax for wheat flour). Given the budgetary constraints of poor countries faced with a range of areas requiring public investment, such as poverty relief, education, health and infrastructure – export taxes could be major source of income.

Export taxes could also play an important role as part of a fiscal regime which aims to improve the sustainability of natural resource management. An effective fiscal regime is the one that would allow governments to achieve certain economic, social and environmental objectives while also providing

[2] Some food importing countries which struggled to obtain essential commodities through trade channels, moved back to the policy agenda of aiming to achieve food self-sufficiency. See Von Braun (2008).

businesses with a good investment environment to operate with. The way a tax regime is designed may affect various important variables such as resource output, pace of extraction, the volume and stability of government revenues (Tordo, 2007).

From the government's point of view, a fiscal regime should

1) maximise the wealth from their natural resources
2) promote macro-economic stability (stabile tax revenue)
3) promote administrative efficiency and transparency
4) promote other policy objectives, such as employment creation, protection of the environment, and development of infrastructure etc.

From the investor's point of view, on the other hand, a fiscal regime should

1) minimise non profit-sensitive taxes
2) be sensitive to cost and price fluctuations
3) allow cross border transfer of profits
4) promote transparency, predictability and stability for existing and future investments

Export taxes could serve both governments and the investors by contributing to the stability, efficiency and predictability of a fiscal regime:

An export tax, with an absolute binding and sliding rates based on international prices, could help the fiscal regime to be responsive to market fluctuations. A sliding rate mechanism would ensure that the government's share of the rent increases when the price of a commodity is high in international markets. When the prices are low, the export tax would go down, so that the tax burden on the investors lessens which would enhance the long term feasibility of existing investments. Hence export taxes with sliding rates would bring a built-in mechanism to the fiscal regime which would improve its flexibility to deal with market fluctuations.

This would also improve the predictability of the fiscal regime for the business. If the government is able to commit itself to bind export taxes and define the band within which export taxes would be applied (depending on international prices), investors could take reasonably informed decisions about their investment and production strategies. The ability of the government to channel in a higher share of the profit when the prices are high would also improve the security of existing contracts. Governments oftendemand re-negotiation of initial contractswhen they find themselves in tight contractual arrangements which might put them in unfavourable position when market conditions have changed. As a tax regime improves its responsiveness to market fluctuations, the existing investment contracts become more secure.

Export taxes would also improve the efficiency and the transparency of a fiscal regime. It is often the case that low income countries have better capacity to tax trade than to tax domestic production and

consumption. Hence administering export taxes would be relatively easier and cheaper than administering domestic taxes and production-based sharing contracts which involve higher monitoring and transaction costs. The administration of export taxes would also be more transparent since trade-related data are often reliable, and cross-checks could be undertaken on the side of the importing country too.

Environmental concerns and climate change

Environmental protection could also be a major objective of export restrictions, especially in relation to exhaustible natural resources including fisheries, forestry, minerals and fresh water.[3] Countries may want to prevent or slow down the depletion of their natural resources, or may simply choose to keep them for the benefit of future generations. These measures could also be effective in containing the environmental side effects of certain economic activities. Mining is a case in point – as by-products of extracts, and various inputs used in mining operations could be highly contaminating. Discharged material from mines could cause air, soil and water contamination.[4] Mining operations may also cause large-scale damage to farming and grazing areas. Deforestation and land erosion are common problems around open-pit mines, while underground mines often cause pollution of ground water. Curbing the exports of minerals produced by environmentally damaging operations may help alleviate some of the adverse impacts on the environment.

There are also other environmental concerns arising from the high energy intensity of the production and processing of some commodities. For example, much energy is required to produce steel products, or to convert bauxite into aluminium, as the process is based on the chemical reaction that results from running an electrical current through the alumina recovered from bauxite. In this context, export restrictions might be imposed to limit the demand for production and processing of export-oriented high energy-intensity commodities. This is particularly relevant in the context of climate change. As the energy sector is one of the biggest emitters of greenhouse gases, export restrictions on energy-intensive products could be used to cut emissions and/or as an incentive for more efficient use of energy. There could be significant implications of a new carbon export adjustment tax which may be introduced by low income exporters to counter or pre-empt border adjustment measures (BAMs) which are likely to be imposed by developed countries.

Some may argue that BAMs against developing countries cannot be justified because they are not obliged to share the burden of mitigation under the Kyoto protocol. However, if and when BAMs are applied, developing countries need to have some policy tools to alleviate their impact on their exports. Levying a carbon exports optimization tax could be one tool developing countries could use to counter or pre-empt border adjustment measures imposed by developed countries. It could level the playing field between competing exports subject to no carbon regulation and domestic products subject to a carbon tax or inclusion within an emissions trading scheme. The fundamental difference between BAMs and an exports optimization tax is that the revenue generated through the latter accrues to the exporting country. While addressing competitive distortions, it could also provide incentives for domestic producers to invest in more carbon efficient production and processing methods. The tax revenue raised could also be used to promote that purpose too.

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[3] Water in the form of 'virtual water" – total amount of water used in production of a commodity – could also be seen as exhaustible if it is traded. See Hoekstra (2010).

[4] For instance, mining sites in China, India, Peru, Russia and Zambia have been identified as some of the world's most environmentally polluted areas – as contamination of the air, water and soil in these areas substantially exceeds the safety limits. See Blacksmith Institute (2007).

3. Welfare impacts of export restrictions

From a strictly economic point of view, export restrictions result in welfare losses at the national and global levels. The potential impacts vary depending on the demand and supply elasticity of the commodity and the specific measure in question. In the country imposing export restrictions, the consumers of the restricted product would benefit from lower than pre-export restriction prices. However, aggregate loss of producer welfare would be higher than what consumers would gain from the measure (i.e. deadweight cost of market distortion). Overall welfare losses are particularly high in cases of *quantitative* export restrictions or *bans* on commodities with low price elasticity of demand (since domestic demand may not be strong enough to absorb the excess availability) and of *export taxes* on commodities with high price elasticity of demand (as domestic consumers respond to lower prices by increasing consumption, which displaces larger amounts of exports) (Mitra and Josling, 2009; WTO, 2010).

At the global level, in the short run, supply restrictions push up the prices of the commodity in question, given the inelasticity of supplies. Outside the country imposing the export restriction, consumer welfare will decrease while producer welfare will increase. Hence countries or consumers who are net buyers of that commodity will lose out while countries and producers who are net sellers would benefit from the measure. In the long run, supply and demand curves will adjust and welfare losses will be reduced. The restrictions will dampen the incentive for domestic suppliers to produce and the suppliers in other countries will increase production (depending on, among other factors, the amount of their stocks, their factor mobility, and the length of the production process, etc.) which will lead to a new equilibrium where prices move towards to pre-restriction levels.

Export restrictions unilaterally applied by one country may also lead to some trade diversion. For instance, when India started to impose an export tax on chromite with the objective of making greater supplies of the raw material available to its domestic market, China which had been the biggest importer of Indian chromite, diverted its imports to South Africa. This reportedly created concerns in South Africa – as its downstream sectors using chromite were competing with China's downstream industries. Hence South Africa was reported to have considered imposing its own export restriction on the mineral to offset the additional pressure being put by China on its domestic production (Korinek and Kim, 2009). This shows that export restrictions imposed by a country may not also cause some trade diversion but also trigger a domino effect - as other countries follow suit.

Beyond purely economic calculations, on the other hand, export restrictions may help internalise some negative environmental externalities. Export-oriented sectors could cause substantial environmental damage through disposing of pollutants exceeding the environment's assimilative capacity, and contributing to depletion of exhaustible resources and emissions of greenhouse gases. Since, markets for environmental goods and services are not fully developed, if they exist at all, (especially in developing countries) market prices do not reflect the social value of environmental goods. Hence policy interventions intended to limit or tax the exports of sectors causing environmental damage could contribute to the correction of these market failures.

To what extent such policy interventions justify the welfare losses occurring as a result of the consequent market distortion is a question of the social value of the environmental goods (or marginal social cost of depletion/pollution) as well as the effectiveness of the intervention in question. There could be significant discrepancies between the objectives that are intended to be achieved through export restrictions and the actual impact on the ground. Depending on the

objective and the nature of the environmental externality that is to be addressed, various policy tools could be employed and be equally as effective or more so than export restrictions (and potentially less costly in terms of welfare losses). Setting up a strong regulatory mechanism imposing strict standards of production and pollution control; introducing pollution charges directly applied to producers based on the amount of physical/chemical pollutants they discharge; promoting and subsidising clean and efficient technologies; and introducing liability insurance mechanisms covering potential environmental damage are some of the policy tools which could be used instead of or in conjunction with export restrictions to deal with environmental externalities caused by export-oriented sectors.[5] Hence the effectiveness and the potential social benefits of export restrictions should be carefully weighed against the welfare losses they cause and the alternative tools at the disposal of policy makers.

4. Export restrictions in Africa

Various forms of export restrictions are used across Africa. Based on the information available through the most recent Trade Policy Reviews (TPRs), the objective of promoting value addition, environmental protection and food security are the most frequently stated objectives of export restriction policies. It is beyond the scope of this study to examine the linkage between the impact of these policies on the ground and the intended policy objectives. However, it is safe to argue that the nine low income resource rich countries thatthis study has covered – Cameroon, Chad, Congo, Ghana, Guinea, Mauritania, Nigeria, Sierra Leone andZambia – seem to have fragmented export restriction policies applied at various rates and in various ways across range of products (see Tables 1and 2 below). Further data and research is needed on how export restrictions affect countries' performance in value added creation, and in achieving food security and environment protection.

Table 1. Hydrocarbon and selected mineral rich countries—revenue and export receipts

Income category/Country Low-income	**Resource type**	**Fiscal revenues from hydrocarbons and minerals** % of GDP	 % of total revenues	**Export proceeds from hydrocarbons and minerals** % of total exports of goods
Cameroon	Hydrocarbons	5.1	26.6	47.2
Chad	Hydrocarbons	3.3	27.3	47.3
Congo, Dem. Rep.	Minerals	2.4	18.3 (2007/3)	54.0
Ghana	Minerals	1.1	4.7	34.5
Guinea	Minerals	2.8	19.3 (2008 /3)	85.6
Mauritania*	Minerals	2.7	4.1 (2006 /3)	51.6
Mauritania	Hydrocarbons	5.5	11.4	
Nigeria	Hydrocarbons	28.4	78.2	90.7
Sierra Leone	Minerals	0.4	1.0	64.1
Zambia	Minerals	1.7	8.9 (2007 /3)	66.2

Source. IMF 2010

*Mauritania qualifies as both rich in hydrocarbons and minerals

[5]Imposing limited or no restrictions on production while restricting exports may also lead to the formation of grey markets and encourage smuggling (Korinek and Kim, 2009).

Table 2. Export restriction policies of selected mineral rich countries				
	Taxes	**Quantitative restrictions**	**Other restrictions**	**Stated objective**
Cameroon	• Export duty is levied on all exports • 2 per cent of the f.o.b. value of exported goods, with the exception of logs, which are subject to a higher rate • Logs exports of wood (raw or semi-processed logs) are subject to an export tax of 17.5 per cent • manganese		• Exports of cocoa and coffee are also subject to various fees • Mandatory quality controls	• to encourage industries to process products locally and hence local added value • in order to finance the conversion of mining sites
Chad	• Export duty is levied on certain, mainly agricultural and fish-breeding, products • over 600 tariff lines at the rate of 1 or 2 per cent • Chadian gum: export duties and taxes (export duty, statistical tax and inspection and packaging tax), which altogether amount to 7.5 per cent	• Exports of heifers and calves have been banned since 2003 • The local administrative authorities may also restrict cereal exports, at any time, in the event of a shortage.	• The inspection and packaging tax (TCC) of 0.5 per cent of the c.i.f. export value is applied to gum arabic, cotton, cocoa, citrus fruit, palm oil, some tobacco, soap, rubber, and some hides and skins. • The export "research tax" (TRC), amounting to 0.5 to 1 per cent of the c.i.f. export value of butter, raw tobacco and rough or sawn timber, is also in force • Statistical tax on exports which is levied at the 2 per cent of the export value	• to preserve the livestock population • to finance the export "Rural Intervention Fund" (FRE)
Congo		Under the Forestry Code, only processed wood in the finished or semi-finished state may be exported, but in practice each forestry enterprise is required to limit rough timber exports to 15 per cent of its total production volume. This threshold is often exceeded, triggering payment of the 15 per cent surcharge		

Ghana	• Export taxes are applied on cocoa and hydrocarbons. • The rates on hydrocarbons are US$0.09 per litre on aviation turbine kerosene and US$0.03 per litre on gas oil.	• Exports of round or unprocessed logs, raw rattan cane and bamboo, and parrots are prohibited. • Export permits or certificates are required for a number of products: Cocoa beans , awn lumber, Mineral ore, fresh/processed fish, coffee, shea nuts, and cashew nut, yam, pineapple, plantain, palm oil, rock and rock samples, Wildlife pets, chemicals, pharmaceuticals, antiques, timber and wood products		
Guinea	• 2 per cent fiscal export duty applies to all exports (including transit operations), with the exception of products originating in Guinea and exports of precious metals and precious stones, which are subject to a fiscal export duty of 3 per cent • Gold in ingots is subject to a 5 per cent tax determined on the basis of the London fixing. • Diamonds and other gems pay a tax of 5-10 per cent on the final value of sale in the raw state, lowered to 2 per cent in the case of cut stones.			
Mauritania	Export taxes have been abolished, with the exception of products of the pelagic fishing industry (2 to 11 per cent depending on the species) and the small-scale fishing industry			
Nigeria	Export taxes apply to some agricultural products	• Export bans may cover raw hides and skins, timber (rough or sawn), scrap metals, unprocessed rubber latex and rubber lumps, rice, yams,	• an administrative levy of US$5 per tonne is applied to exports of cocoa, and of US$3 per tonne to exports of other raw materials.	• For purposes of domestic food security • value-added considerations

		maize, beans, and artefacts and antiquities. Furthermore, import bans have been placed on several agricultural goods, for reasons of food security and to encourage value-added exports	• Nigeria's food safety regulations require export licences for unprocessed food products6; in certain cases, the Minister for Agriculture is empowered to prescribe grades and standards of quality for these products.	• preservation of cultural heritage
Sierra Leone	• Artisanal mining is subject to 3% export duty while Kimberlite mining has a 5% royalty fee and 0.5% valuation fee • Export taxes are levied on cocoa and coffee (2.5%), and diamonds (3%). • As from 2004, a flat rate diamond export-licence fee has applied, thus eliminating past discriminatory rates	• Exports of plants and charcoal are restricted through permits	• Exports of perishable goods require phytosanitary/fumigation certificate s	• environmental reasons • minimizing deforestation and preventing the extinction of tree species used for both fuel wood and medicinal production
Zambia	• The 2008 Budget encouraged local value addition by introducing an export levy of 15% on the export of copper concentrates and cotton seed (subsequently raised in the 2009 Budget to 20% for cotton seed) • An export tax also exists on scrap metal, which is considered an important input for manufacturing • The 2005 Budget introduced a 25% export duty on unprocessed timber	• Export prohibitions apply to certain types of logs under international agreements, and occasionally for grains (during drought years). • certain goods, such as fertilizers, live animals, gemstones, and firearms, require special export permits.		• to deter the export of copper concentrate and cotton seeds to encourage local value addition.

[6] Export of Nigerian Produce Act, Cap 119, Export produce (Federal Powers) Act 120, 5 October 1961.

5. WTO regulation on export restrictions

The WTO regulation dealing with export restrictions is relatively limited, offering ample 'policy space' for domestic policy considerations. The most relevant legal text in this context is GATT XI and Article XII of the Agreement on Agriculture (AoA). GATT XI requires Members to eliminate all prohibitions and quantitative restrictions on exports with the exception of those imposed 'temporarily' to prevent and alleviate food shortages and those intended to allow time for the application of regulations such as classification and grading. As for export restrictions aiming at environmental protection, violating GATT XI can also be excused if they qualify for an exception under Article XX. On the other hand, Article XII of the AoA mirrors GATT XI, yet also requires Members to give a written notice to the Committee on Agriculture, and to consult with Members who are likely to be affected by their export restrictions. However, neither GATT XI nor Article XII of the AoA are specific enough to define the circumstances which could justify the measure (i.e. critical food shortage) and indicate the extent, duration and the limit of the restrictive measures that could be applied. More importantly, GATT XI does not restrict Members to imposing duties, taxes or other charges on exports. The positive reading of this implies that Members are allowed to impose export tariffs (Crosby, 2008).

On the other hand, some new WTO Members, such as China, Mongolia, Saudi Arabia, and Ukraine, were required, during their accession negotiations, to commit themselves to stricter rules, so called 'WTO-plus', which restrict their 'policy space' in this field. Although the scope and the scale of their commitment varied, they were obliged to phase out export taxes or to limit them to a designated number of tariff lines with a bound rate (Crosby, 2008). This was one of the additional concessions that they had to make to become a Member of the WTO.

GATT/WTO Disputes on export restrictions

Few cases relating to export restrictions have been brought before the WTO/GATT Dispute Settlement Body. Only in two cases, the defendants were found to be violating GATT XI. In all cases, the disputes involved accusations that the export restrictions had been designed to offer some form of advantage to the downstream producers and processors of the country instituting the measure, at the expense of the downstream sectors in complainant countries. Only in one resolved case did the defendant resort to the environmental exceptions under GATT XX.

There were two major disputes concerning export restrictions within the framework of GATT 1947, namely the 'Japan – Semiconductors' [7] and the 'Canada – Salmon' cases.[8] As for the WTO dispute settlement, the case law on export restrictions is rather limited. In 1999, one component of the 'Argentina – Hides and Leather' dispute investigated the EC's complaint about measures taken by Argentina on the export of bovine hides.[9]

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[7] See GATT Dispute Settlement Report (1988a), *Japan — Trade in Semi-Conductors(Japan – Semiconductors)*, L/6309 - 35S/116, adopted 4 May 1988, <http://www.wto.org/english/tratop_e/dispu_e/87semcdr.pdf> (visited 01 March 2010).

[8] See GATT Dispute Settlement Report (1988b), *Canada – Measures Affecting Exports of Unprocessed Herring and Salmon (Canada – Salmon)*, L/6268 - 35S/98, adopted 22 March 1988,
< http://www.wto.org/english/tratop_e/dispu_e/87hersal.pdf > (visited 01 March 2010).

[9] WTO Panel Report (2001), *Argentina — Measures Affecting the Export of Bovine Hides and the Import of Finished Leather (Argentina — Hides and Leather)*, WT/DS155/R, adopted 16 February 2001,
< http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds155_e.htm> (visited 1 March 2010).

6. China– Raw Materials Case

In this context, the most recent case of export restrictions, namely 'China – Measures Related to the Exportation of Various Raw Materials' (China – Raw Materials) is likely to be the highest profile case in this field.[10] In December 2009, the DSB established a panel to examine complaints by the US, the EU and Mexico concerning China's export restrictions on selected minerals. The commodities in question were bauxite, coke, fluorspar, magnesium, manganese, phosphate (yellow phosphorus), silicon (metal and carbide), and zinc. The complainants alleged that China's policies regarding the exportation of these commodities are inconsistent with its obligations under GATT 1994 and the Protocol on the Accession of the People's Republic of China ('Accession Protocol') (WTO Secretariat, 2001a) and the Working Party Report on the Accession of China ('Working Party Report')(WTO Secretariat, 2001b).

The complainants' case rests upon three pillars (WTO Dispute Settlement, 2009):

- China imposes quantitative restrictions, such as quotas, on the exportation of bauxite, coke, fluorspar, silicon carbide, and zinc, which allegedly violates Article XI:1 of the GATT 1994 and Paragraph 1.2 of Part I of China's Accession Protocol, and Paragraphs 162 and 165 of the Working Party Report
- China imposes export duties on the commodities in question, which allegedly violates Paragraph 1.2 and Paragraph 11.3 of Part I of China's Accession Protocol, and Paragraph 342 of the Working Party Report.
- China resorts to other constraints on the exportation of these commodities, through fees and excessive formalities. Some information regarding requirements, restrictions, or prohibitions on exports is not published by the relevant Chinese authorities. These measures are not applied 'in a manner that is not uniform, impartial, and reasonable'. Hence China allegedly violates Article VIII:1(a) and VIII:4, Article X:1 and X:3(a), and Article XI:1 of the GATT 1994 and Paragraphs 1.2, 2(A)2, 5.1, 5.2 and 8.2 of Part I of the Accession Protocol, and Paragraphs 83, 84, 162, and 165 of the Working Party Report.

China is a major producer and exporter of the majority of these commodities which are often strategically important for a range of manufacturing sectors. For instance, bauxite, which is a main source of aluminium, is widely consumed in electronic and consumer goods; fluorspar is used in steel production; phosphate is an essential component of agricultural fertilisers; and silicon is an input used to produce semiconductors. The Chinese domestic demand and supply structures and international market conditions for each of these commodities vary considerably.

China's export restriction policies

The imposition of export restrictions on a range of commodities has long been part of China's trade policy. The list of items subjected to various forms of export restrictions goes beyond the minerals listed in this case. A number of agricultural products (timber, cattle, chemical fertilisers), and other minerals, such as molybdenum, chromium and rare earths are commodity groups which have been subject to export restrictions. For clarity of the analysis, however, the section below focuses on the minerals mentioned in the case.

Quantitative Restrictions on Exports

Based on the official announcements of China's Ministry of Commerce, the following industrial commodities are subject to export quotas in 2009 and 2010. Five of the commodity groups listed under industrial products are mentioned in the case – namely bauxite, fluor, silicon carbide, magnesium and phosphorite. Both in 2009 and 2010, bauxite was subject to an export quota of 930,000 tons, while the quota for fluor was 550,000 tons. The

[10]WTO Dispute Settlement (2010), *China – Raw Materials*.

quota for magnesium carbonate was slightly reduced from 1,400,000 tons in 2009 to 1,330,000 tons in 2010 (see Table 3 below) (Ministry of Commerce, 2008). However, it is important to note that some of these export quotas, for instance for bauxite, are not fully utilised by exporters – as they are higher than the total volume of annual exports.

Table 3: Total Export Quota for Selected Industrial Products in China, 2009–2010

Commodity Name	Unit	Quota Amount	
		2009	2010
Bauxite	10,000 ton	93	93
Fluor	10,000 ton	55	55
Carborundum (Silicon carbide)	10,000 ton	21.6	21.6
Light (heavy) calcinedmagnesite (Magnesium Carbonate)	10,000 ton	140	133
Phosphorite	10,000 ton		150

Source: Ministry of Commerce, Announcement No.83 (2008), Total Amount of Export Quotas of Agricultural and Industrial Products in 2009

The first component of the case against China challenges the WTO compatibility of these quantitative restrictions. It is clear that, unless justified by exceptions, the mere existence of these measures is inconsistent with GATT XI:1. Moreover, Paragraph 162 of the Working Party Report refers to export restrictions and provides that 'China would abide by WTO rules in respect of non-automatic export licensing and export restrictions… Moreover, export restrictions and licensing would only be applied, after the date of accession, in those cases where this was justified by GATT provisions'. As such, before going into an analysis of the possibility of exceptional conditions which may allow these measures, it is clear that China's quantitative export restrictions violate its commitments under GATT XI and the Accession Protocol.

Export Taxes

China also resorts to export taxes quite extensively. According to the 'Circular of the Customs Tariff Commission of the State Council on the Tariff Execution Plan 2010', a total of 329 tariff lines (8-digit Harmonized System (HS) are subject to export taxes, which are applied in the form of 'export tariffs', and/or 'interim tariffs' and/or 'special export tariffs'. All of the minerals mentioned in this case are listed in the Tariff Execution Plan 2010 (ETCN, 2010). Ranging from 5 percent for magnesium oxide to 40 percent for coke, various degrees of export taxes are imposed (see Table 4 below).

Table 4: Export Taxes Imposed on Selected Minerals by China, 2010

	Product Form	Export Tariff	Interim Tariff	WTO Accession Annex 6
Bauxite	Aluminium unwrought, not alloyed, >99.95% pure	%30	%0	
	Aluminium unwrought, not alloyed, <99.95% pure	%30	%15	
	Unwrought aluminium alloy	%30	%15	%30
	Waste or scrap, aluminium	%30	%15	%30
Fluorspar	Fluorspar, >97% calcium fluoride		%15	
	Fluorspar, <97% calcium fluoride		%15	
Magnesium	Magnesium unwrought > 99.8% pure		%10	
	Magnesium unwrought		%10	
	Magnesium waste or scrap		%10	
	Fused magnesia		%10	
	Dead-burned magnesia		%10	
	Light-burned magnesia		%5	
	Natural magnesium carbonate (magnesite)		%5	
	Magnesium oxide		%5	
	Other mineral products with 70% or more magnesia		%5	
Manganese	Manganese ores, concentrates, iron ores >20% manganese		%15	
	Manganese, articles thereof, waste or scrap		%20	
	Ferro-manganese, >2% carbon	%20		%20
	Ferro-silico-manganese	%20		%20
Phosphate	Natural calcium phosphates, unground		35%	
	Natural calcium phosphates, ground		35%	
	Yellow phosphorus	%20		20%
	Other phosphorus	%20	10%	20%
Silicon	Silicon, <99.99% pure		15%	
	Ferro-silicon, >55% silicon	%25		%25
	Ferro-silicon, <55% silicon	%25		%25
Zinc	Zinc, not alloyed, unwrought, >99.995% pure	%20	0%	
	Zinc, not alloyed, unwrought, >99.99% pure, <99.995% pure	%20	5%	
	Zinc, not alloyed, unwrought, <99.99% pure	%20	15%	20%
	Zinc waste or scrap		%10	
	Zinc ores and concentrates	%30		30%
	Ash or residues containing hard zinc spelter		%10	
	Ash or residues containing mainly zinc (not spelter)		%10	
Coke	Coke, semi-coke of coal, lignite, peat & retort carbon		%40	

Source: Compiled by the Author based on ETCN (2010), and China Accession Protocol. According to a 'Circular of the Customs Tariff Commission of the State Council on the Tariff Execution Plan 2010', Export tariffs in the 'export tariff' column remain the same while the 'Interim tariff' will be applied on part of the exported commodities listed. For the products on which an export tariff was imposed prior to 1 January 2010, the scale of trade mode covered by export tariff will remain the same.

As for the WTO compatibility of its export taxes, which is under dispute, China faces significant constraints arising from its accession commitments rather than its obligations under GATT, which allows Members to impose export taxes. Its Accession Protocol explicitly limits the number of items and the level of export taxes that China is allowed to impose. According to Article 11.3 of the Accession Protocol, 'China shall eliminate all taxes and charges applied to exports unless specifically provided for in Annex 6 of this Protocol or applied in conformity with the provisions of Article VIII of the GATT 1994' (WTO Secretariat, 2001a). Accordingly, Annex 6 lists a total of 84 tariff lines (8-digit HS), with maximum levels of export duties. China also confirmed that it would maintain the applied rates imposed at the time of the agreement and would consult with its trade partners who would potentially be affected, if under 'exceptional circumstances', it had to increase its applied rates (still not to exceed the maximum level indicated in Annex 6).[11]

As such, it is clear that Annex 6 only allows China to impose export taxes that are strictly capped, and does not allow for quantitative restrictions under any circumstances. China's trading rights commitments do not authorize it to add to or change the list of commodities after accession. Therefore, in order to establish whether China complies with its commitments under the Accession Protocol, the question is whether China imposes export duties on commodities which are not listed in Annex 6, and whether it exceeds the maximum levels designated in Annex 6.

As is indicated in the table above, China imposes export taxes on a number of minerals that Annex 6 does not include. Nine forms of magnesium, two forms of fluorspar, and coke are subject to varying degrees of export taxes, although they are not listed in Annex 6.[12] On the other hand, the export taxes on some of the minerals that are listed in Annex 6 exceed the maximum rates indicated. For instance, 'unwrought aluminium alloy' and 'Zinc, not alloyed, unwrought, <99.99% pure' exceed the allowed rate (if the export tariff and temporary tariff are combined).

It should also be noted that China revises its export taxes quite often, apparently following trends in prices and the demand and supply situation related to the commodity in question. Hence, although tax levels of some minerals for 2010 might be in line with Annex 6, the taxes imposed on these minerals exceeded the permitted limit in previous years. For instance, since 2008, export tariffs on yellow phosphorus have been revised several times. At the height of the commodity boom in May 2008, the government imposed an additional 100% export tax. It was then reduced to 75% in December 2008 and 50% in January 2009, as the world prices of phosphorus went down. Finally in July 2009, in order to help the sector to face the decline in its export volumes due to the global economic slowdown, China cancelled all the additional export taxes on yellow phosphorus and lowered the original export duty form 70% to 20% (China Chemical Reporter, 2009).

The fact that China's 'Tariff Commission of the State Council on the Tariff Execution Plan 2010', includes 329 items while Annex 6 of its Accession Protocol includes only 84 items (both 8-digit HS), illustrates that the coverage of China's export taxes goes beyond the list of commodities designated in Annex 6. Moreover, its export tax measures, which sometimes also include special export tariffs on top of existing taxes, often exceed the levels to which China committed itself with its Accession Protocol.

Favouring Downstream Sectors?

The impact of these measures on domestic prices is particularly apparent when considering those minerals of which China is a major exporter. For instance, the domestic prices of minerals such as ferro-silicon, silicon metal

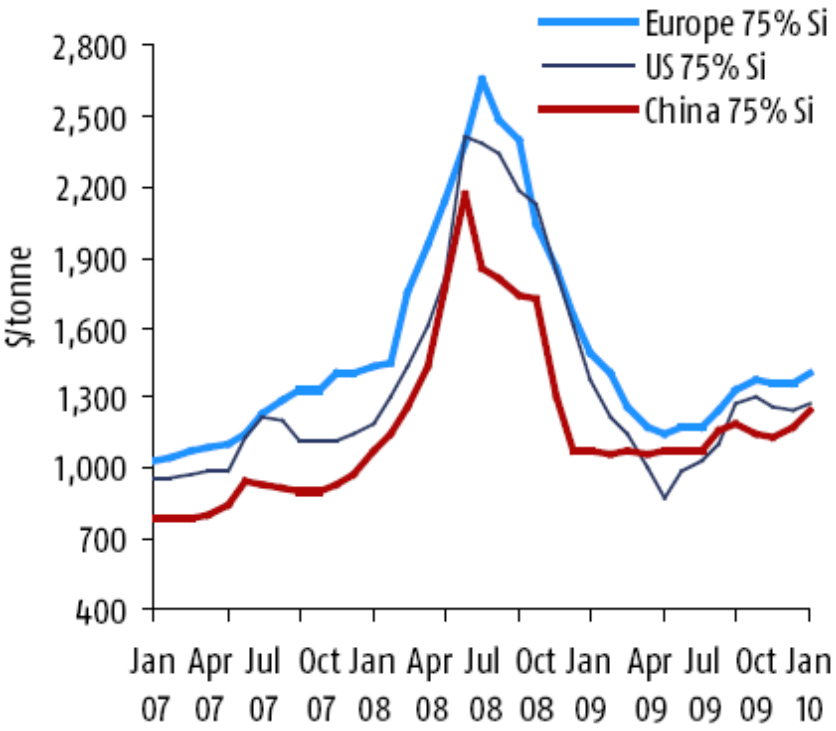
[11] See WTO Secretariat (2001a), Annex 6, at 95.

[12] China also imposes export taxes on some sub-products of minerals which are listed in Annex 6. For instance, although 'not alloyed, unwrought Zinc (<99.99% pure)' and 'Zinc ores and concentrates' are allowed to be subject to export taxes, China imposes taxes on 'Zinc waste or scrap" and 'Ash or residues containing hard zinc spelter' which are not listed in Annex 6.

and ferro-manganese, of which China is one the world's biggest producers and exporters, have been consistently lower than the international prices. As is shown in Figure 1 below, between February 2007 and February 2010, domestic prices of ferro silicon (75% pure) were significantly lower than those in the Western markets, namely Europe and the US. As of March 2010, the domestic price of 75% grade ferro-silicon in China is reported to be around Rmb 6200–6400/tonne (US$ 905–935/tonne), while the export prices were US$ 1270–1290/tonne (Metal Bulleting Research, 2010). This represents a 35–40 percent price differential between the domestic and export prices, which is due at least in part to export taxes up to 25 percent. Other restrictions such as licensing requirements and quotas might also play a role. Similar price differentials between domestic and international prices exist in other minerals such as silicon metal and ferro manganese (see Figures 2 and 3).

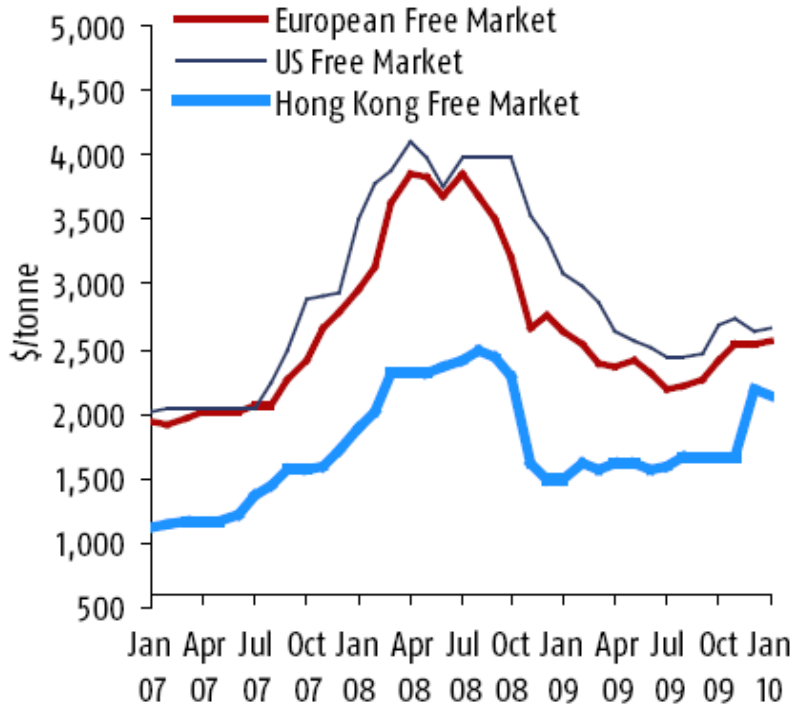
Such price differentials clearly offer significant price advantages to the domestic downstream manufacturing sectors over foreign producers, which is one of the main concerns of the countries which brought the case before the DSB. For instance, given that China is a major producer and exporter in the downstream sectors of silicon metal and manganese - which include semiconductors, steel and dry cell batteries - the export restrictions imposed on these minerals allow the downstream producers to enjoy significant price advantages over their foreign competitors.

Figure 1: Ferro-silicon prices, China, Europe, US, 2007-2010



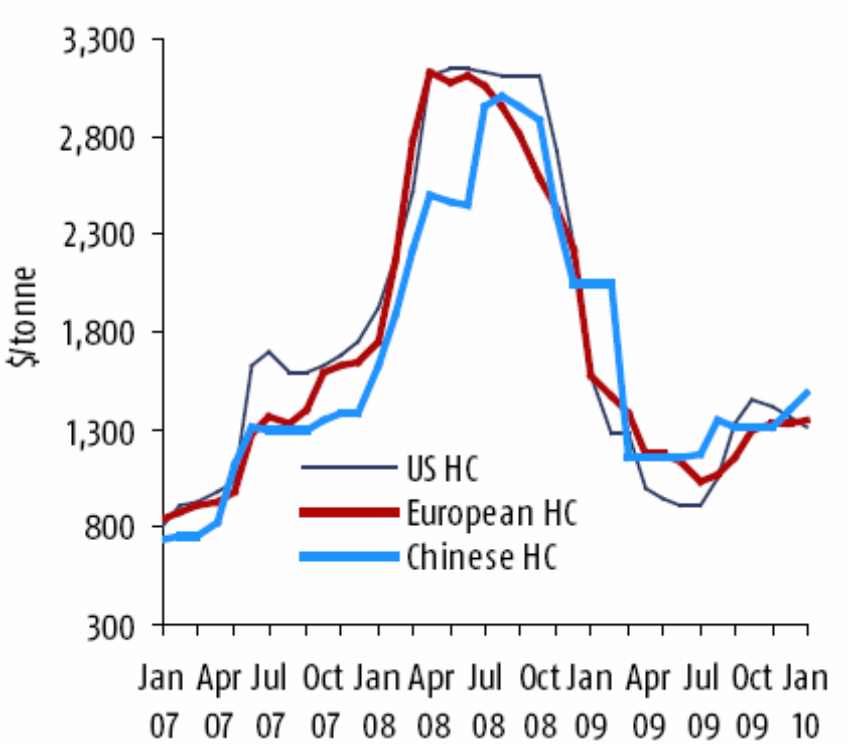
Source: Metal Bulleting Research 2010

Figure 2: Silicon metal prices, Hong Kong, Europe, US, 2007-2010



Source: Metal Bulleting Research 2010

Figure 3: Ferro-Manganese prices, China, Europe, US, 2007-2010



Source: Metal Bulleting Research 2010

Conservation of natural resources?

Given that its export restriction measures appear inconsistent with its commitments under GATT 1994 and the Accession Protocol, China will have to demonstrate that its measures satisfy certain exception(s) under Article XX of GATT 1994. As the Appellate Body explicitly clarified during the recent 'China — Publications and Audiovisual Products' case, there is no doubt that China may invoke GATT Article XX to excuse itself from its commitments under its Accession Protocol.[13] In fact, responding to the panel request by the complaining parties, some Chinese officials have already indicated that the objective of these policies was related to environmental protection.[14] In that case, China will have to demonstrate that its export restriction measures satisfy the requirement of 'relating to' the conservation of natural resources in the meaning of GATT Article XX, paragraph (g), and that its measures operate 'in conjunction with restrictions on domestic production or consumption,' that they are in line with the 'even-handedness requirement'. In addition, China will have to demonstrate that these measures do not constitute 'a disguised restriction on international trade' as mentioned in the 'chapeau' of Article XX.[15]

a) Environmental Regulation of Mineral Production in China

The Environmental Protection Law of China defines the 'environment' as 'the total body of all natural elements and artificially transformed natural elements affecting human existence and development, which includes the atmosphere, water, seas, land, minerals, forests, grasslands, wildlife, natural and human remains, nature reserves, historic sites and scenic spots, and urban and rural areas'. [16] As such, protection of minerals, as part and parcel of the environment, could be classified as environmental protection under domestic law. This is particularly relevant in the context of China's Foreign Trade Law – as it allows for restrictions and bans on the imports and exports of goods in order to protect, among other things, the environment (Article 16(2)).[17]

However China's domestic environmental regulation specifically addressing production of minerals is highly fragmented. There are a number of laws dealing directly or partly with environmental issues related to mining operations:

The Mineral Resources Law requires mining enterprises to have a report on the 'mining area, its mining design or mining plan, production and technological conditions and safety and environmental protection measures' with an examination and approval by relevant State authorities (Article 15).[18] It bans mining near large-scale water conservancy areas (Article 20(2)). In cases of mine closures, the former operators are obliged to prepare reports on, among other things, land reclamation and utilization, and environmental protection of the site in

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[13] The Panel, in this case, did look at, on an *arguendo* basis, whether China's measures in question could be justified under GATT Article XX (b). Since it concluded that the measures did not qualify for an exception satisfying the requirements of GATT Article XX, the Panel decided that it was not necessary for it to determine whether China has the right to invoke GATT Article XX in cases of inconsistency with its Accession Protocol. However the Appellate Body decided to clarify this ambiguity and concluded that China's right to invoke GATT Article XX also covers its commitments under its Accession Protocol. WTO Panel Report (2009), para 7.745; WTO Appellate Body Report (2009), para 415(a).

[14] The Chinese Ministry of Commerce's comment on the establishment of the Panel was 'The goal of export administrative measures on some raw materials is to protect the environment and our limited resources'. 'The regulations conform to the needs of China's own (sustainable) development, while also advancing China's efforts towards the sustainable development of the global economy.' See EUbusiness (2009).

[15] Article XX(g) reads 'Relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption". The full text of the GATT Article XX is available at:<http://www.wto.org/english/docs_e/legal_e/gatt47_02_e.htm.>

[16] See Environmental Protection Law of China Article 2, available at <http://www.mwr.gov.cn/english/laws.html >

[17] See Foreign Trade Law of the People's Republic of China Article 16, available at
< http://wms2.mofcom.gov.cn/aarticle/policyreleasingcenter/200905/20090506257820.html >

[18] See Mineral Resources Law of the People's Republic of China, available at
< http://www.ccchina.gov.cn/en/NewsInfo.asp?NewsId=5381>

question (Article 21). The law also requires mining enterprises to 'economize' on the use of land, including arable land, grassland and forests. It makes the enterprises liable for potential damages and requires them to take measures concerning land reclamation, tree and grass planting.[19]

The Law on Water and Soil Conservation requires mining enterprises to have a water and soil conservation programme which is approved by the Department of Water Administration (Article 19). It also obliges mining operators to dispose of their soil, rock and other waste material in a designated area, banning them from being dumped into rivers, lakes and other water reservoirs (Article 18). The operators are also responsible for taking measures against soil erosion (Article 20), and carrying out land rehabilitation if soil erosion occurs (Article 36).[20] In case of non-compliance, the enterprise may face a suspension of business imposed by the Central Government or People's Government at the provincial level. The Law of the Prevention and Control of Water Pollution, on the other hand, requires those responsible for underground mining operations to take protective measures against groundwater pollution (Article 35).[21]

The main objective of the abovementioned laws is to ensure that mining operations do not cause environmental damage through pollution of land, water and air. Although government authorities may decline to grant permission for production on sites or for operations that may lead to environmental damage, or they may authorize suspension of business in cases of actual environmental damages, these measures cannot be considered as direct restrictions on production intended to protect or to prevent the depletion of minerals as environmental resources.

Moreover, it has been argued that the implementation and enforcement of these regulations have been highly problematic. The fact that many government institutions are involved in various aspects of these laws leads to enforcement difficulties. In addition, the rules are often not specific enough in identifying obligations and liabilities. Such lack of clarity creates additional difficulty in implementing the laws and regulations and arguably encourages corruption and undue discretion (Cao, 2007). For instance, in the coal mining industry, complicated institutional and regulatory structures and inconsistencies of implementation have been reported as major causes of a range of environmental damage, high numbers of casualties among miners and economic inefficiencies in small-scale mining operations (Andrews-Speed, et al. 2007; Wright, 2004).

b) Resource Tax

There is one measure, however, which is directly aimed at production: the Resource Tax. It is a quantifiable measure which acts as a disincentive to production through a 'market mechanism'. It is directly imposed on production of non-metal ores, crude oil, natural gas, coal, and solid salt. In the case of non-metal ores, depending on the type of mineral, its grade (purity), and the location of production, different tax rates apply. Among the listed minerals under dispute, the resource tax is Rmb 20.00/ton (US$ 2.9/ton) for bauxite (grade 3); Rmb 2/tonne (US$ 0.3/ton) for manganese ore; and Rmb 2–4 (US$ 0.3–0.6/ton) for zinc ore (grades1–5) (State Administration of Taxation, 2010). The Rules for the Implementation of the Regulations on Resource Tax allow the People's Governments at the province level, and autonomous regions and municipalities the right to decide to collect or temporarily postpone the collection of resource tax on other non-metal ores and non-ferrous ores other than the ones designated in the original list of materials (Article 4) (State Administration of Taxation, 2010).

[19] See Mineral Resources Law of the People's Republic of China
[20] See Law of the People's Republic of China on Water and Soil Conservation, available at <http://www.mwr.gov.cn/english/laws.html>
[21] See Law of the People's Republic of China on the Prevention and Control of Water Pollution, available at <http://www.mwr.gov.cn/english/laws.html>

However, these market measures are relatively insignificant when compared to the overall volume/value of production. The price of manganese ore (30%min, Fe 10%max) was around Rmb 700/tonne (US$ 102/t) in early March 2010 (Asia Metal, 2010). Although these prices range widely depending on the grade of the mineral, the resource taxes are relatively small compared to the prices. For instance, it amounts to only 0.3% of the current price of manganese ore.

Since the market prices of these commodities have fluctuated substantially, especially in recent years, the relative significance of the tax and its impact on production varies too. It is important to note that when the demand for the mineral in question is high, pushing up the prices, the proportion of the tax relative to the price gets smaller, weakening its impact on production. While the prices are low due to weak demand, on the other hand, the proportion of the tax goes up, and so does its potentially restrictive impact on production.

As for the impact of the resource tax on protection of natural resources, it has serious limitations. First, it only covers a limited number of minerals, and the majority of minerals (including some of those that are subject to export restrictions) are not covered. Secondly, for those minerals to which it applies, the proportion of the resource tax is somewhat insignificant compared to the price of the minerals in question, hence it has a very limited impact on constraining production. Thirdly, since its based on production volume rather than price, its potential impact on the environment through curbing production weakens when the demand for the commodities goes up, which is also when the pressure on the environment intensifies. Hence the current design and implementation of the Resource Tax does not offer an effective mechanism to curb production and conserve minerals, albeit allowing local provinces to raise tax revenues.[22]

c) Mineral-Specific Environmental Measures

On the other hand, the Government takes some other mineral-specific measures, directly or indirectly related to the environment, which affect the mining sector. For example, it imposes limitations on electricity consumption for mineral production and processing which constrains production and hence affects prices. In early 2008, in response to electricity shortages in some areas, the government announced that its preferential pricing of electricity to aluminium smelters and alumina refineries would be eliminated (USGS, 2008). And more recently, a substantial proportion of silicon metal production capacity has been reportedly made redundant due to high electricity prices and shortage of power(Metal Bulleting Research, 2010).

The government has also introduced a set of standards regarding the scale and the potential for pollution of production and processing facilities of some minerals such as lead, magnesium, manganese and zinc (See Table 5 below). Since small-scale producers are often more energy intensive (due to diseconomies of scale), create more pollution and are more difficult to monitor than large-scale mines and smelters, the Government has been closing down small operations. In 2008, according to the China Magnesium Association, 18 magnesium plants with high energy consumption and pollution intensity (as a result of relying on direct coal combustion) were closed down (China Magnesium Industry, 2007). However, according to some estimates, since the total volume of mineral production by such small-scale operators is relatively low, for instance for manganese, such closures were not expected to reduce total production significantly (TEX Report, 2007).

On the other hand, the Government is becoming increasingly responsive to human health-related environmental damage caused by the mining sector. This has become a politically sensitive issue – as such

[22] There have been reports that the policy has been under revision and tonnage-based taxation will be changed to a floating system where the tax rate will be based on the price of the minerals targeted. See Reuters (2010).

damage often triggers public protests. Hence the Government has promised to shut down some highly polluting lead, zinc and manganese plants which have allegedly caused thousands of cases of child poisoning in their vicinity. The Ministry of Environmental Protection has recently announced limitations on the amount of waste materials, such as sulfur dioxide, that mining operations are allowed to discharge (China Mining Association, 2010).

As such, mineral-specific environmental restrictions have a range of objectives. The primary goals are to achieve greater energy efficiency in the context of China's goal of reducing the energy intensity of its economy; to reduce pollution, especially if it poses a threat to human health; to gain greater control over supplies and to eliminate smuggling (by closing down small operations).

Table 5: Selected environmental restrictions specific to minerals under dispute

	Environmental Restrictions	**Resource Tax**
Bauxite	Aluminium smelters are subject to electricity rationing, which constrains production. In February 2008, due to shortage of electricity during a period cold weather, the Government announced the elimination of its preferential pricing of electricity to aluminium smelters and alumina refineries. Aluminium plants were also forced to cut production to reduce air pollution prior to the Beijing Olympics in 2008.[23]	Rmb 20/ton
Magnesium	According to the China Magnesium Association, 18 magnesium plants with high energy consumption and pollution intensity (as a result of relying on direct coal combustion) were closed down in 2008.[24]	
Manganese	In 2007, with the aim of reducing air pollution, Government regulation prohibited small blast furnaces of less than 300 cubic metres to produce ferromanganese.[25]	Rmb 2/ton
Silicon	As of March 2010, more than half of silicon metal production capacity has been made redundant due to the increased cost of electricity and power shortages (in conjunction with declining foreign demand).[26]	
Zinc	According to the of standards issued by the National Development and Reform Commission, all new zinc smelting projects must have a minimum capacity of 100,000 t/yr, and new lead-zinc mines must have a capacity of 30,000 t/yr with at least a 15-year mine life. The main objective of the measures was to eliminate production facilities using outdated technologies and to regulate excess smelter capacity in the country.[27]	Rmb 2-4/ton

[23]U.S. Geological Survey (USGS).
[24]China Magnesium Industry & Market Bulletin.
[25]TEX Report.
[26]Metal Bulleting Research, 2010
[27] U.S. Geological Survey (USGS), 2007 Minerals Yearbook: Zinc, available at < http://minerals.usgs.gov/minerals/pubs/commodity/zinc/index.html#myb> (visited 15 February 2010).

Source: Compiled by the Author. Data on resource tax is based on State Administration of Taxation

In sum, China's environmental regulation concerning the mining sector in general, and its measures dealing with the minerals which are the subject of the WTO case in particular, is fragmented and difficult to assess in terms of its impact on preserving minerals as part of the environment (as defined by the Environmental Protection Law of China) and on reducing the pollutant effects of mining operations on land, water and air. The Resource Tax – which seems to be the only regulation which may qualify as a direct restriction on production – covers only a few minerals and does not have a substantial impact on production. The other mineral-specific measures which have been mentioned above are related to environmental protection, albeit often indirectly, for example, through electricity rationing, a measure which is sometimes an unavoidable necessity to cope with high demand for electricity rather than to achieve environmental protection.

7. How to reform the WTO law: mercantilism vs. sustainable development

The review of the GATT/WTO cases on export restrictions illustrates that the vast majority of the disputes involved alleged 'unfair' advantages that the measures created for the downstream producers and processors of the country instituting them, at the expense of the downstream sectors in complainant countries. For the defendants, economic and political objectives seem to have been the primary motivation. For the complainants the primary motivation was the objective of obtaining greater access to raw materials (e.g. minerals, fisheries, leather etc.) and other intermediary goods (e.g. in the case of Japanese semi-conductors). As such, the latest dispute between China and the US, EU and Mexico could be seen as another example of competition over natural resources. As the world economy recovers from the current slowdown and when the international competition over raw material picks up again, it is highly likely that there will be more disputes over export restrictions coming before the DSB.

Problems of 'unfair' competition and related global welfare losses would be substantial if a country in a monopoly supplier position of a commodity with limited substitution resorts to export-protectionist measures (or 'resource nationalism'). Similarly, as was experienced during the food crisis of 2007-2008, in case of thin market conditions (e.g. agricultural markets), supply constraints in major producers combined with export restrictions could inflate prices rapidly, to the detriment of net importing countries. On the other hand, under competitive market conditions of high supply elasticity at the global level, the negative impacts of export restrictions unilaterally imposed by a country would be limited. On the positive side, they could help mineral rich countries in Africa to promote high added-value sectors (with the risk of promoting sectors lacking comparative advantage) and to raise tax revenues. A differentiated export tax on raw materials may offer an important incentive for investment in high value downstream manufacturing sectors in resource-rich developing countries which aim to move up the value chain.

As for the WTO law, there have been proposals to tighten the disciplines on export restrictions, mainly in relation to agricultural commodities. While being biased towards export-oriented countries/sectors, the WTO law has little to offer to import-dependent countries which are pushing for reform in this area. Japan proposed to 'tariffy' all export prohibitions and restrictions, and to bind all export taxes. It called for export restrictions to be used only in cases of emergency and under strictly defined conditions. Proposals by Switzerland and Jordan were stricter - as they envisaged the elimination of all export restrictions and the binding at zero of all export tariffs.[28] The Cairns Group proposed tighter disciplines combined with the elimination of tariff escalation which would promote the capacity of exporting countries to develop processing industries. A recent proposal by Japan

[28] For proposals that mention export restrictions, see WTO Secretariat, 'Export restrictions and taxes', available at <http://www.wto.org/english/tratop_e/agric_e/negs_bkgrnd09_taxes_e.htm> (visited 24 March 2010).

and Switzerland which was circulated before the WTO Ministerial Conference in July 2008, called for consultations between the country instituting export restrictions and its trading partners which would be affected by the measures. If the consultations fail to produce agreement within a set period, the measure would be referred to a 'standing committee of experts' for binding arbitration. However, it did not receive consensus support. In particular, some developing countries strongly opposed the proposal (WTO Secretariat, 2008).

Looking beyond the pure economics of the matter, however, the relevance of export restrictions in the context of environmental protection is crucial. In the 'Canada- Herring and Salmon' case, environment-related exceptions under GATT Article XX were not found to be applicable. Such an outcome is highly likely for the 'China – Raw Materials' case too. This is mainly because the environmental component/objective of the measures in question was relatively weak compared to their economic component/objective with a restrictive impact on trade. However, this does not refute the fact such measures could have substantially contributed if the genuine objective was environmental protection. A carefully measured export restriction policy in conjunction with other domestic measures limiting production and consumption could well help protect the environment and slow down the depletion of exhaustible resources, such as minerals, forestry products, fisheries and endangered species.

As the market prices do not reflect the social cost of scarcity, simply exposing exhaustible resources to the growing demand of global markets – in the face of increasing population, intensifying demand from advanced developing countries, rising disposable incomes resulting in changes in consumption patterns – might irreversibly damage the sustainable use of these resources and limit the ability of future generations to benefit from them.[29] In this context, the WTO law shows signs of serious disproportionality. It is strongly biased against the late accession Members, the majority being developing countries, which have had to commit themselves to stricter rules. As argued by some analysts, the accession negotiations were not used to improve sustainable development (Charnovitz, 2007); on the contrary, the WTO seems to have used its bargaining leverage to demand 'WTO-plus' commitments.

In this context, the findings of the Panel on the China – Raw Materials case or the potential interpretations of the Appellate Body are likely to have far reaching consequences – as they will define the extent to which Article XX(g) could be invoked to justify restrictions on the exports of natural resources. In particular, their decisions and interpretations will expand the existing case law examining the relationship between the design of the measure and its environmental objective. It would be interesting to note if the Panel or the Appellate Body would consider the efficiency of export restrictions on environmental protection or look at the availability of various other policy tools that might be less trade restrictive.

It is also crucial that the future reform agenda in this field should exempt low income developing countries from stricter regulation - as export taxes are often a major source of government revenue and an important policy tool which may help them move up the value chain. Export taxes could also play an important role as part of a fiscal regime which aims to improve the sustainability of natural resource management.Mineral rich countries in Africa could re-design their fiscal policies by shifting the focus from production sharing contracts (and concession agreements)which they are often in disadvantaged position to negotiate (as investors are often better informed about the profitability and the risks of a given project) and domestic taxation to export taxes which contribute to the stability, efficiency predictability and transparencyof a fiscal regime.

[29] Although China is a defendant in the case described above, it pursues highly offensive trade policies when it comes to importing natural resources from low income developing countries, particularly those in sub-Saharan Africa. These countries could use export restrictions to shield their non-renewable resources from resource-thirsty economies such as China.

Similarly, multilateral rules should also allow low income developing countries to use export taxes to address some of the complications that are likely to arise from potential clashes between the trade and climate change regimes. Carbon exports optimisation tax would be an effective tool which low income exporters could use to counter or pre-empt border adjustment measures (BAMs) which are likely to be imposed by developed countries. It could level the playing field in developed countries, for competing exports subject to no carbon regulation and domestic products subject to carbon tax or cap and trade system, which is often the justification for BAMs.

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