EUROPEAN PARLIAMENT

DIRECTORATE-GENERAL FOR EXTERNAL POLICIES

POLICY DEPARTMENT

THE EUROPEAN UNION'S RAW MATERIALS STRATEGY

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EUROPEAN PARLIAMENT

DIRECTORATE-GENERAL FOR EXTERNAL POLICIES OF THE UNION

DIRECTORATE B

POLICY DEPARTMENT

STUDY

THE EUROPEAN UNION'S RAW MATERIALS STRATEGY

Abstract

Discussions about the security of raw material supply have become more and more intense in 2010. Prices for several resources have risen significantly. As many mass resources like iron ore were affected, price developments have been a critical and visible factor for several industries. Furthermore, international trade restrictions on rare earths markets attracted public attention. The European Commission has defined a resource strategy that takes the different responsibilities of private and public sector into account. Additionally, it has taken important first steps to implement the resource strategy. The recent communication of the European Commission documents the progress made in the last years and lists several relevant measures for the future. However, larger steps towards a more detailed strategy remain necessary. The policy mix must be tailored to each raw material, at least to the most critical ones. This has not been elaborated yet. Instead, the communication is overloaded with discussions on energy, agriculture and financial markets, which do not bear a solution for resource supply problems of the manufacturing sector.

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EXECUTIVE SUMMARY

Iron ore is the most important mass raw material. 2010 was the year of skyrocketing prices for many commodities. Prices for iron ore doubled within half a year. This was the highest absolute and relative price increase in the last decades. Several other metals like copper and tin are close to their record high as well. Prices for lead and copper quadrupled since January 2000. Tin is three and a half times as expensive, nickel almost two and a half times.

An increasing number of trade restrictions and political risks endanger the supply chain of rare earth elements. The conflict between Japan and China and the suspension of rare earths exports from China to Japan highlight the growing supply risks. Compared to the risk of a failing supply chain, an increase of prices seems to be rather easy to cope with – especially if resources are only used in small quantities with moderate total costs. However, a 300 per cent price increase for certain rare earth elements within a year is an economic problem with growing significance for industrialized economies like the European Union.

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). However, the WTO law is not specific enough to define the circumstances which could justify the measure and indicate the extent, duration and the limit of the restrictive measures that could be applied. More importantly, it does not restrict its members from imposing export taxes, even at levels which are de facto prohibitive.

The European Commission has defined a resource strategy that takes the different responsibilities of private and public sector into account. Additionally, it has taken important first steps to implement the resource strategy. The recent communication of the European Commission documents the progress made in the last years and lists several relevant measures for the future. However, larger steps towards a more detailed strategy remain necessary. The policy mix must be tailored to each raw material, at least to the most critical ones. This has not been elaborated yet. Instead, the communication is overloaded with discussions on energy, agriculture and financial markets, which do not bear a solution for resource supply problems of the manufacturing sector.

1 INTRODUCTION

Discussions about the security of raw material supply have become more and more intense in 2010. The debate has gained further momentum for two reasons: Prices for several resources have risen significantly. This was the most critical development earlier last year. As many mass resources like iron ore were affected, price developments have been a critical and visible factor for several industries. Later in 2010, international trade restrictions on rare earths markets attracted public attention. These elements are important for a wide range of high tech products like information and communication technology, medical applications, and environmental friendly products like electrified cars, energy saving light bulbs, solar panels, and wind energy generators.[1]

Today, there is a de facto monopoly of these elements in China, which gives the Chinese administration the opportunity to exploit this position in order to promote local industrial production. In fact, a significant increase of trade restrictions has been observed in the last months. Exports have been reduced in the last years. Political threats for the security of raw earths supply became obvious in autumn 2010, when China suspended its exports to Japan, which is the main consumer of these resources. The reason for this interruption of an important supply chain was not an economic, but a political one. As short term political risks can hardly be calculated by private companies, this kind of dependence has to be assessed as very critical for the industries concerned.

Options to minimize the growing risks depend on the specific character of the negative developments. As far as dependency of rare earths from China is concerned, new mining projects may bring some relief through additional supply on free markets. In contrast, price increases of mass resources can hardly be mitigated. Additional costs may be passed through to consumers, which may be some relief for some industries. However, higher prices can become burdensome for private consumption and can endanger sales for all companies of the value chains.

As many governments and business companies try to develop a better understanding of the risk situation, first steps towards an adequate risk management have been made. However, the overall awareness is still limited. This is especially true when critical resources are used at any point of the value chain and the producer of the end product is unaware about the risks involved.

2 RAW MATERIAL MARKETS: IRON ORE, NON-FERROUS METALS, AND RARE EARTHS

It is very common to discuss raw materials as a more or less homogenous good with very similar characteristics and problems.[2] This perspective is inadequate with respect to the chemical elements themselves, but also with respect to the geological, economic and political problems of the supply chain. Therefore, a differentiated view on the respective markets is essential.[3]

Iron ore

Iron ore is the most important mass raw material. All kinds of iron and steel are based on this ore, although steel scrap partly substitutes the primary resource. The importance of iron ore results from

[1] International Telecommunication Union (ITU), 2008, World telecommunication/ICT database, Geneva; International Telecommunication Union (ITU), 2009, Key global telecom indicators for the world, Geneva

[2] Grafton, Q.; Adamowicz, W.; Dupont, D.; Nelson, H.; Hill, R. J.; Renzetti, S., 2004, The Economics of the Environment and Natural Resources, Blackwell Publishing, Cornwall

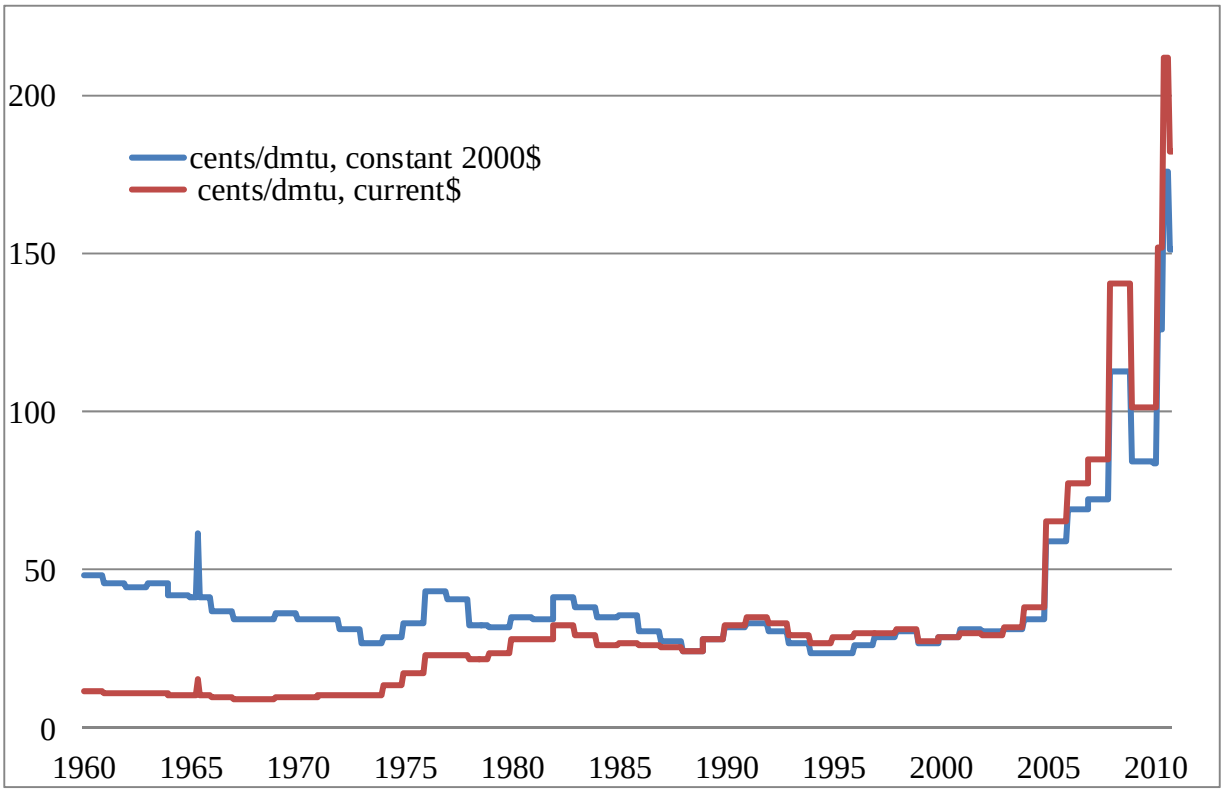
[3] Weber, L.; Zsak, G.; Reichl, C.; Schatz, M., 2009, World Mining Data, Volume 24, Vienna

the huge quantities of steel that are used in all kinds of manufactured goods: machinery, automotive, buildings are just prominent examples. Because of the large portion of steel in these products, the price for steel is an important driver for product prices and profitability of the producers. Therefore, price development of coking coal and iron ore are very relevant for the manufacturing sector in Europe.

The market for iron ore is characterized by a variety of sources, but relatively small quantities of free products which can be traded and shipped on short notice. This important market segment is dominated by very few suppliers. Further mergers would lead to even higher concentration on the supply side with potentially negative effects to the demand side.

Traditionally, prices for iron ore are settled once a year between main producers and main consumers. This contract price gives an orientation for the following twelve months. These established rules changed dramatically in 2010, when main suppliers agreed on fixed prices for a shorter period of time only. Removing annual price settlements and introducing quarterly price negotiation brings contract prices closer to spot market prices, which have been significantly higher in times of rising price levels. In 2007 and 2008, spot market prices were up to three times as high as contract prices. In consequence, it became very attractive for iron ore suppliers to shorten the standard contract periods.

Contract prices for iron ore
1960 - 2010
Source: World Bank Commodity Price Data



Iron ore prices had been very stable for the last decades. In fact, real prices declined between 1960 and 1995 and remained on the same level for another decade. Between 1976 and 2003, current prices moved within a band between 22 and 35 dollars. This situation changed when prices increased from 38 US dollars in 2004 to 65 dollars in 2005. A maximum was reached in 2008 with an annual contract price of 141 dollars – about five times higher than the long-term average. This price shock was hardly

balanced in the following years. Because of the global economic crises, iron ore prices dropped to 101 dollars in 2009. However, this price level was the second highest for the last half century, still three and a half times higher than the average 1976/2003.

2010 was the year of new market rules and skyrocketing prices. From 101 dollars in the first quarter, contract prices have risen to 152 dollars in the second and a record price of 212 dollars in the third quarter. In other words: Prices doubled within half a year. This was the highest absolute and relative price increase in the observation period. In the fourth quarter 2010, prices declined to 182 dollars, which is still 80 per cent more than in the beginning of the year and six and a half times the long-term average 1976/2003.

The main driver for these upwards price trend is growing international demand. Recently industrialized countries like China and India, but also industrialized regions like Europe or North America need more steel and therefore more iron ore. As supply cannot be extended at will, at least not in short or medium terms, high and rising prices can be expected for the next years.

Non-ferrous metals

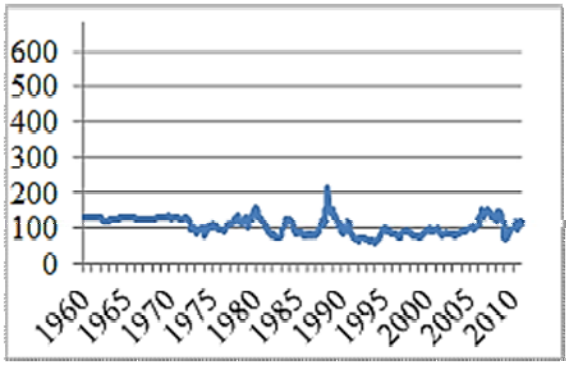
Among the non-ferrous metals, most attention is focused on gold which is sometimes considered as a safe haven in times of inflation. In the aftermath of the global financial crisis, prices for gold – and for silver as well – reached new record levels. However, a number of other non-ferrous metals are of much greater significance for the manufacturing sector in Europe.

In the last decades, price development for non-ferrous metals like aluminium, copper, lead, nickel, tin and zinc have been very unsteady. Between 1990 and 2003, metal prices remained rather moderate, while the previous decades had shown strong upward and downward price developments. The last years showed enormous price increases for most metals. Only aluminium remained almost stable. By the end of 2010, its price was only 15 per cent higher than in January 2000. Even in the booming year 2008, aluminium remained rather moderate and much cheaper than in its record year 1988. In 2010, prices of aluminium rose by 4 per cent only.

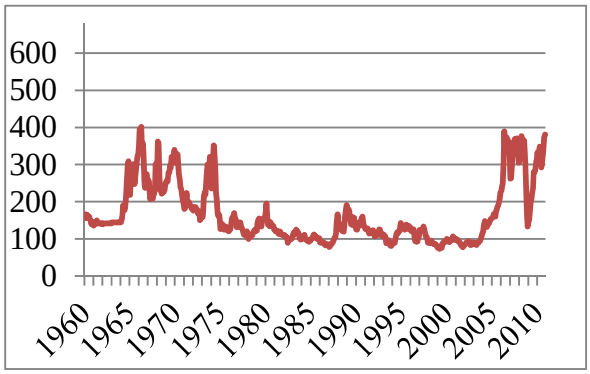
Real Prices for selected non-ferrous metals

1960 – 2010, index based on constant 2000 US dollars, January 2000 = 100

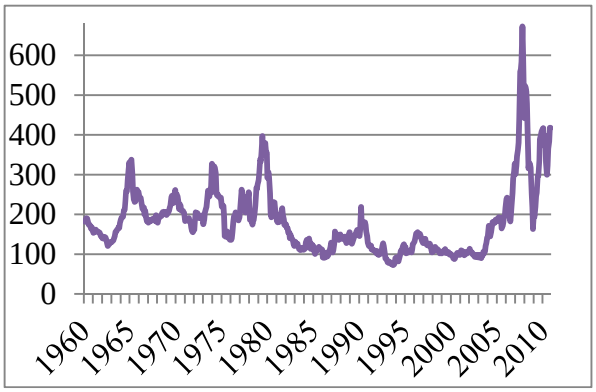
Aluminium



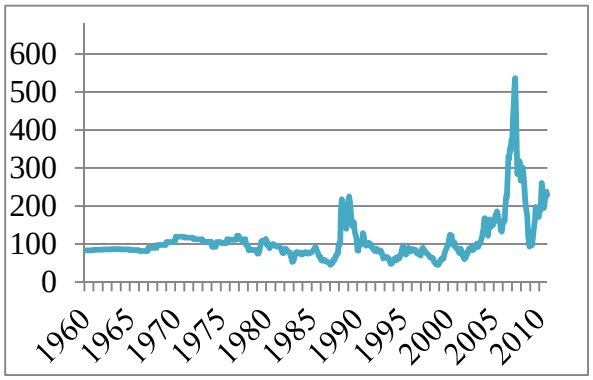
Copper



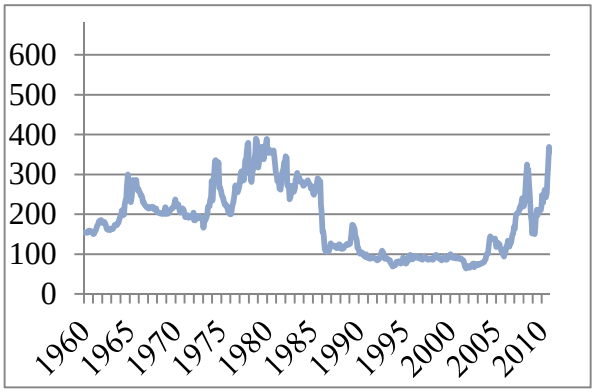
Lead



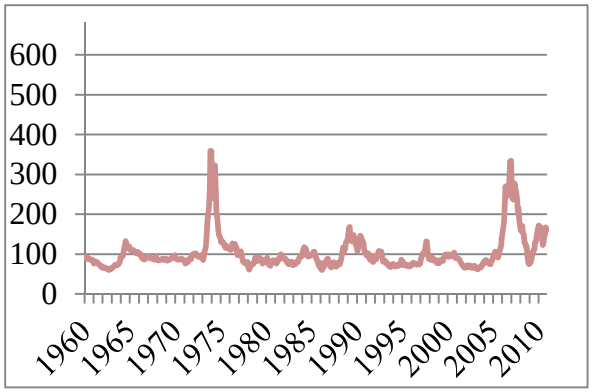
Nickel



Tin



Zinc



Source: World Bank Commodity Price Data, Cologne Institute for Economic Research

Much stronger price increases have been observed in the cases of other metals. Although lead was stable in 2010 and zinc was almost 6 per cent cheaper at the end of the year, several metals like copper and tin are close to their record high. Prices for lead and copper quadrupled since January 2000. Tin is three and a half times as expensive, nickel almost two and a half times. Although most non-ferrous metals are cheaper today than in 2008, price levels for these raw materials are still very high.

Growing demand in industrializing countries will feed the trend towards higher cost for steel and non-ferrous metals. This will have several economic effects like shrinking profits in the industries affected, weaker positions in global competition, reduced private consumption, and a higher price level. Although these effects will not be critical for the economy as a whole, certain industries may be seriously concerned.

Rare earths

The core problem of the rare earth markets is not the price, but the quantity of supply. As there is a de facto monopoly of rare earths with more than 95 per cent production in China, there is hardly a free market for these resources. An increasing number of trade restrictions and political risks endanger the supply chain. The conflict between Japan and China and the suspension of rare earths exports from China to Japan highlight the growing supply risks. Compared to the risk of a failing supply chain, an increase of prices seems to be rather easy to cope with – especially if resources are only used in small quantities with moderate total costs. However, a 300 per cent price increase for certain rare earth elements within a year is an economic problem with growing significance for industrialized economies like the European Union.

The market tension could be reduced by additional supply on free international markets for rare earths elements. Growing international demand can only be satisfied if production can be raised. Huge quantities of rare earths elements are not only in Chinese soil, but also in Russia, North America and Australia. New mining projects are under development in Australia, Canada and the United States of America, where Mountain Pass, the largest rare earths mine until the 1980ies, will be reopened. But additional mining bears enormous risks including environmental risks and costs and cannot replace fair international trade on free markets. Liberalization of trade with rare earths and a reduction of trade barriers, mainly but not only in China, are of vital interest for the manufacturing sector and especially for the electronics, communication and environmental technologies industries in the European Union.

An unrestricted monopoly of rare earths could be used to pull parts of the value chain of the manufacturing sector to China. Short term supply disruptions could be a first step in order to force production out of Europe. This is a realistic threat as long as the revenues of rare earth exports do not provide adequate incentive for China to trade with the resources. However, drastically higher prices would mean significant disadvantages for European producers in international competition and cannot be the desired solution. Challenging the Chinese monopoly on rare earths seriously would secure industrial production in Europe. Additional efforts towards free trade, research on substitution and efficiency, additional recycling and new mining projects in solid market oriented countries should be core elements to do so.

In recent months, several new mining projects on rare earth elements have been announced. Mountain Pass, the most important mine in the United States is supposed to be re-opened in 2012. More projects are under development in Canada, Australia and Greenland. Additional production from these sources can reduce Europe's dependence of Chinese exports. However, as demand is likely to rise significantly, China will remain the world's dominant supplier of rare earths.

3 TRADE RESTRICTIONS ON RESOURCE MARKETS

Export restrictions imposed on various raw materials play a significant role in creating global supply constraints and short-term price volatility. Most recently China's restrictions of its exports of certain minerals and rare earths have created much anxiety in international markets. The issue was also discussed as part of the agenda of the G20 meeting in South Korea and attracted substantial

international media attention.[4] The United States (US), European Union (EU) and Mexico have already filed a WTO dispute case against China on this matter. The commodities in dispute are bauxite, coke, fluorspar, magnesium, manganese, phosphate (yellow phosphorus), silicon (metal and carbide), and zinc (the list of disputed commodities does not include rare earths). The outcome of the case is likely to have far reaching consequences in this area.

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. On the other hand, some countries impose them to address market failures, especially in the field of environmental protection. They restrict the exports of exhaustible natural resources, such as forestry products, fisheries outputs and minerals, which may help prevent or slow down resource depletion, if these commodities (or products derived from them) are intensively exported.[5]

In the industrial sectors, export restrictions often serve the objective of promoting downstream processors and manufacturers. 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, at least in the short run, 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.

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).

At the global level, in the short run, supply restrictions push up the prices of the commodity in question, given the inelasticity of supplies. 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) which will lead to a new equilibrium where prices move towards to pre-restriction levels. Nevertheless, export restrictions may also undermine traders' confidence in the world trading system – which may have long term consequences.

Beyond purely economic calculations, on the other hand, export restrictions may help internalise some negative environmental externalities. 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 such as fisheries, forestry, minerals and fresh water. 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.[6] Hence in an export-oriented sector, export restrictions, in conjunction with other domestic measures

[4] See, Keith Bradsher, 'China said to widen its embargo of minerals', New York Times, 19 October, 2010; Leslie Hook and Mure Dickie, 'China defends policy on rare earths', Financial Times, 20 October 2010;
Theo Leggett, 'Concerns over shortage of rare metals', BBC News, 27 October 2010.

[5] Korinek, J. and J. Kim (2009), 'Export Restrictions on Strategic Raw Materials and Their Impact on Trade and Global Supply ', Workshop on Raw Materials (OECD, Paris 2009)

[6] 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).

limiting production and consumption, could correct market failures that lead to environmental degradation and unsustainable resource depletion (and potentially lower growth in the future).

To what extent market interventions through export restrictions 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 or pollution) as well as the effectiveness of the intervention in question. Depending on the objective and the nature of the environmental externality they aim to address, 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).

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 per cent of government revenue in Côte d'Ivoire.[7] In resource-rich export-oriented developing countries, export taxes might also contribute to the stability and efficiency of a fiscal regime. An export tax, with an absolute binding and sliding rate based on international prices, could help the fiscal regime to be responsive to market fluctuations.

3.1 WTO regulation on export restrictions

The WTO regulation dealing with export restrictions is relatively limited, offering ample 'policy space' for domestic policy considerations.[8] 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 aimed at environmental protection, violating GATT XI can also be excused if they qualify for an exception under Article XX. However, the WTO law is not specific enough to define the circumstances which could justify the measure and indicate the extent, duration and the limit of the restrictive measures that could be applied. More importantly, it does not restrict its members from imposing export taxes, even at levels which are de facto prohibitive.

This does not mean, however, that unilateral action against export restrictions is justified under the WTO law. Policy makers on both sides of the Atlantic argue that the EU or the US should introduce countervailing duties on products manufactured by the downstream sectors benefiting from the restrictions of raw materials. These calls are largely unfounded, as it is hard to justify treating export restrictions as subsidies. The WTO's specific definition of the term 'subsidy' contains, among other things, a financial contribution with a charge on the public account of the subsidising country. It would be difficult to attribute a direct fiscal cost to export restrictions, although lower income from exports might lead to identifiable losses of corporate tax revenue. Countries that might take countervailing measures against them might, therefore, find themselves in an offender position.

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

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[7] Mitra, S. and T. Josling (2009), 'Agricultural Export Restrictions: Welfare Implications and Trade Disciplines', Agricultural and Rural Development Policy Series (International Food & Agricultural Trade Policy Council), IPC Position Paper.

[8] Karapinar, B. (2010). 'Export Restrictions and the WTO Law: 'Regulatory Deficiency' or 'Unintended Policy Space'', NCCR-Trade Working Paper, World Trade Institute, University of Bern, Switzerland.

China, as a result, faces significant constraints arising from its accession commitments, which explicitly limit the number of items and the level of export restrictions that it is allowed to impose. It also confirmed that it would maintain the applied rates imposed at the time of its accession agreement. Therefore, China will have difficulty in demonstrating before the Dispute Settlement Body that its export restrictions of the above mentioned raw materials are legal under the WTO law. As for its environmental concerns, it is unlikely that its measures will fulfil the requirements of environment-related exception provisions of the law (i.e. Article XX of the GATT). As such China is likely to face growing resistance in the near future, if it resorts to using export restrictions for political objectives or to promote its processing and manufacturing sectors.

The need for stronger regulation

In this context, the EU should use its political leverage to reform the multilateral rules in this field. Yet it may face resistance from developing countries.

The reform agenda should define clearly any exceptional circumstances that would allow WTO member countries to institute export restrictions. It should also define the trigger mechanisms, the duration and the extent of such measures. It is crucial that low income developing countries should be exempt from stricter regulation as long as they do not damage other low income countries and as long as they do not abuse a de facto monopoly of a specific resource.

Reform efforts should not only seek to level the playing field for competing industries but also take into account countries' environmental considerations. The story of the trapped miners in Chile last year 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. Multilateral rules should allow room for carefully crafted export restriction policiesThese, in conjunction with other domestic measures limiting production and consumption, could correct market failures that lead to environmental degradation and unsustainable resource depletion (and potentially lower growth in the future) In low income countries, which often have better capacity to control trade than to control domestic production and consumption, administering export restrictions is a second best, yet more feasible policy option to target environmental externalities.

Similarly, multilateral rules should also allow 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. Developing countries might decide to use carbon exports optimisation taxes to counter or pre-empt border adjustment measures (BAMs) (which may contradict with the international recognition of 'common but differentiated responsibility' for climate change) imposed by developed importing countries.

There have been some efforts to reform this area of large 'policy space' in the WTO law. In 2006, the EC submitted a proposal, which was revised in 2008, on export taxes in the non-agricultural market access negotiations. It limited the proposed GATT disciplines for export taxes to non-agricultural products. It incorporated some flexibility for small developing country Members and least-developed country Members which would allow them to maintain or introduce export taxes in certain 'legitimate' situations, such as financial crises, infant industry, environment (preservation of natural resources) and local short supply. It also suggested further revisions of the proposal which would include provisions requiring WTO Members to notify the introduction or modification of export taxes and to schedule export taxes on non-agricultural products in their Schedules of Concessions and bind the export taxes at a level to be negotiated.

Similarly, 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.

All of these proposals received cold response from developing countries and hence did not merit particular attention to be included in text-based negotiations. The resistance of developing countries against stricter regulation of export restrictions is likely to continue during the Doha Round negotiations.

4 EU POLICIES ON RAW MATERIALS

4.1 The European Strategy

The European Commission has adopted its communication "The Raw Materials Initiative – meeting our critical needs for growth and jobs in Europe" on 4 November 2008. Core element of the communication is an integrated strategy to ensure the necessary supply of non-energy fossil resources.

One of the core challenges regarding resource risks is to raise awareness and to establish a sound knowledge base. Many business companies do hardly know about the resources that are used earlier in the value chain and tend to underestimate their exposure to resource risks. The European Commission has based its raw materials strategy on broad research on current resource supply risks. This approach is very appropriate, as specific risk of the raw materials differ significantly. The list of critical resources identified corresponds to a large extend with similar analyses of supply risks.[9] While resource specific risks are understood quite well, economic relevance of these elements for value chains of the European economy is known to a much lesser extent. This is especially true for many critical elements which are used in small quantities, but which are essential for whole and large value chains.

The Commission's strategy is based on three pillars:

1. Access to raw materials on world markets at undistorted conditions
2. Foster sustainable supply of raw materials from European sources
3. Reduce the EU's consumption of primary raw materials

This structure represents demand side measures as well as supply side activities within Europe and regarding international resource markets. The general orientation is to secure supply of resources on free markets and not to organize a governmental provision. This is an appropriate approach in a market economy. However, this strategy cannot avoid all risks linked to natural resources. Negative price developments that result from growing international demand cannot be controlled by governmental or supranational agencies. It is reasonable that the European Commission does not initiate steps in order to promise cheap resources.

First pillar: undistorted world markets

International trade policy is one of the core competences of the European Union. According to its tradition and competences, the main focus of a European resource policy is on international trade. Member states cannot successfully re-open global resource markets on their own. The European Union is an irreplaceable player in international trade policies.

According to its strategy, the European Commission is working on various levels towards open markets. Bilateral trade negotiations include the reduction of export restrictions as well as of non-

[9] For example_ IW Consult / vbw, 2009: Rohstoffsituation Bayern: Keine Zukunft ohne Rohstoffe - Strategien und Handlungsoptionen, Munich; Bardt, Hubertus, 2008: Sichere Energie- und Rohstoffversorgung – Herausforderung für Politik und Wirtschaft?, IW Positionen 36, Cologne

tariff trade barriers. Trade with resources has also become a topic in ongoing negotiations on multilateral trade agreements as well. Furthermore, the Commission is using the existing trade rules in an attempt to re-open resource markets. Referring to the export restrictions imposed by China, the European Commission together with Mexico and the United States of America initiated the establishment of a dispute settlement panel at the World Trade Organization (see Section 2). The European Commission also proposes stricter trade disciplines on export restrictions in bilateral and multilateral negotiations. The bilateral Free Trade Agreement with South Korea and Russia's WTO accession negotiations are a case in point.

So far, the most pressing export restrictions imposed by China on rare earths and other resources have not be cut. However, implementing its resource strategy, the European Commission addresses these topics wherever possible and uses the instruments available. These efforts should be continued and strengthened as only long term solutions towards a free market development seem to be feasible.

Competition among suppliers of raw materials is essential to enable moderate prices and security of supply. A competitive market structure is endangered not only by geologically founded monopolies, but also by a lack of competition between private resource companies. Many raw material markets are characterized by critical concentration rates. The merger planned by two of the largest private mining companies was cancelled after the European Commission and other competition agencies raised their concerns. This was a beneficial decision for resource consumers. Further mergers among resource companies must be carefully investigated.

Resource security is of vital interest for the European economy, not only for certain industries. Therefore, all foreign policy institutions on EU level should accompany all efforts to open markets, to establish trade relations, and to support the development of robust institutions based on the rule of law. Development policy can assist others to secure supply of resources without neglecting democratic values. The European diplomatic service has not developed significant impact, as the creation of the European External Action Service has not been completed yet. However, some member states of the European Union with strong interests in resources supply conduct bilateral commissions on resource supply to discuss issues of mutual interest, for example Germany and India have established this form of cooperation.

The European Commission has chosen the right options to implement the first pillar of its resource strategy. However, impact has been small so far and additional options to achieve open markets more quickly are limited. The Commission should continue its efforts on all levels and should not follow alternative strategies like installing strategic stocks of selected resources.

Second pillar: European supply

For many fossil resources, domestic supply is very limited. Nevertheless, the quantities available in Europe should be used. Especially minerals are not scarce. The main obstacle is limited access to the deposits because many of the areas needed are protected within the framework of Natura 2000. The European Union has to adapt the legal framework in order to allow digging for domestic resources. However, significant progress has not been made yet.

Additional effort on geological information infrastructure and on technological research as promoted by the European Commission is a valuable contribution towards an effective use of domestic potential as well.

Third pillar: reduced primary consumption

Security of supply depends on the supply side, but on the demand on raw materials as well. Consequently, the European Commission also addresses demand of primary resources in its strategy. Secondary raw materials, substitution of resources and higher degrees of efficiency can reduce the amount of resources which needs to be purchased on world markets.

The Commission has identified three core elements to implement this pillar of its strategy. Most important for long term solutions is more intense research. Intensified research will bring new options to substitute resources, to recycle valuable elements, and to enhance resource efficiency. So far the Commission seems to concentrate on research in mining and processing technology as well as on resource efficiency. Research on substitution and recycling technologies is not less important. The new Eighth Framework Programme must provide the necessary funding.

Recycling is a very valuable option to use imported resources several times. Secondary raw material can substitute imports of primary resources. European legislation is the main framework for recycling in the member states. However, certain resources are sufficiently valuable so that private recycling can be implemented without governmental directives. The new recycling legislation with its more ambitious recycling quota is a valuable initiative to improve recycling in all member states, although most critical resources will hardly be affected. Illegal export of electronics scrap with its valuable elements remains an unsolved problem.

Using resources more efficiently is an important element to balance supply and demand. However, detailed regulation of material use in industrial production is not a feasible way. Utilisation of specific materials is too complex for regulation as each product, each function, and each innovation is different and cannot be regulated by government authorities. The European Commission should not follow this way. Nor should additional resource taxes be implemented as price increases are already part of the negative effects the manufacturing sector faces due to the resource market developments. Higher prices can be the result of various supply problems, but artificially risen prices do not solve these problems. Additional information on resource risks, awareness building, and research in more material efficiency is the more promising way to help the industries to cope with resource risks.

4.2 The Commission's new communication

The latest communication "Tackling the Challenges in Commodity Markets and on Raw Materials" has been adopted by the European Commission on 2 February 2011. This communication covers a variety of topics: It refers to the raw materials strategy and mentions several steps taken by the Commission in order to secure raw materials supply. Furthermore, it describes the future orientation of the raw materials initiative and points out which future steps the Commission is planning to take.

Unfortunately, large parts of the document cover other issues which are far less relevant regarding supply of raw materials on international markets in order to meet the domestic demand of the manufacturing sector in Europe. The examination of energy supply and developments of markets for agricultural product is important, but these are different topics than metals and other minerals for the manufacturing sector. Mixing these problems draws of the attention of the most critical problems for Europe's industries.

Furthermore, regulation of financial markets is another focus of the communication. In this context, the approach needs to make a distinction between speculators and manipulators. The relevant academic literature often suggests that there is no robust evidence showing that speculator activities causing additional market volatility. Speculators are legitimate actors who bring in vital liquidity to markets and smooth out transactions. Although they may create short term spikes, their operations are risk-based. On the other hand, manipulators violate rules and create unlawful distortions (through insider trading for example). As for regulation, the Commission should focus on procedures and processes of market transactions rather than market outcomes. Imposing regulation which aims at achieving certain market outcomes (e.g. reduced market volatility) would lead to price manipulation which may be counterproductive. As such, missing regulation or excessive speculation

with raw materials is not the core problem of future supply. Instead of searching for speculators responsible for rising resource prices, the Commission should concentrate on the more fundamental causes of market distortions and supply risks.

Most elements of the initiative described in the latest communication are well known and have been mentioned in further documents. As the communication has been published shortly after the flagship initiative "A resource-efficient Europe", there seems to be a shift of emphasis towards resource efficiency. It is important that this shift does not lead to a stricter focus on regulation of resource demand and consumption. In fact, all three pillars of the Commission's strategy remain important.

As far as policy measures are concerned, the levels of detail vary significantly. A huge number of measures deal with waste, recycling and urban mining. Although this is very important and promising way to reduce supply risks, its potential should not be overestimated. Many elements like rare earths can hardly be recycled, and growing demand cannot be reduced with urban mining. Other instrument should be developed in detail as well.

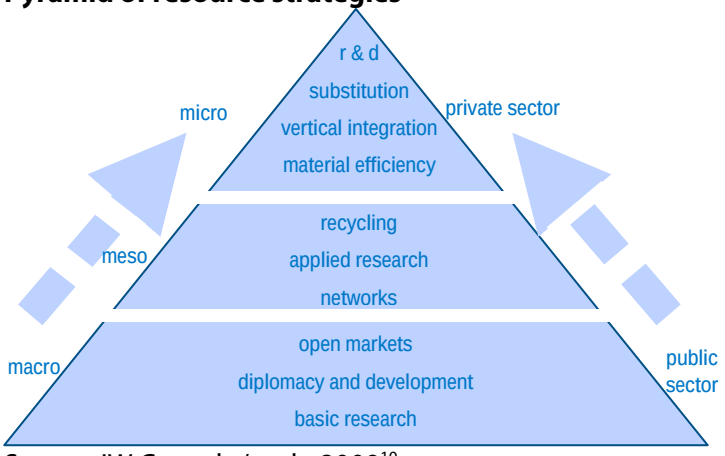
The communication documents the progress made in the last years and lists several relevant measures for the future. However, larger steps towards a more detailed strategy remain necessary. Each resource has its own problems. There is no standard solution. The policy mix must be tailored to each raw material, at least to the most critical ones. This has not been elaborated yet. Instead, the communication is overloaded with discussions on energy, agriculture and financial markets, which do not bear a solution for resource supply problems of the manufacturing sector.

5 RECOMMENDATIONS AND CONCLUSIONS

There is no sole solution for complex and differentiated problems related to rare materials supply. A whole set of measures has to be implemented by different actors – private companies as well as governmental agencies and international institutions. Although the first responsibility to secure supply of resources is the industries', there are important public tasks as well in order to establish a market orientated framework and to strengthen the private sector.

The European Commission has defined a resource strategy that takes the different responsibilities of private and public sector into account. Two years after publishing the strategy, the European Union should focus on four main fields of action:

Pyramid of resource strategies



Source: IW Consult / vwb, 2009[10]

[10] IW Consult / vbw, 2009: Rohstoffsituation Bayern: Keine Zukunft ohne Rohstoffe - Strategien und Handlungsoptionen, Munich

Free trade negotiations

The European Commission is the main institution in Europe that can promote free trade of resources. It should therefore be the main responsibility of the Commission to work on trade liberalisation on all levels including bilateral and multilateral trade agreements as well as legal steps within the WTO framework. It should be the objective to come closer to free resource markets without governmental intervention.

In particular, it should use its political leverage to reform the multilateral rules in export restrictions. The reform agenda should define clearly any exceptional circumstances that would allow WTO member countries to institute export restrictions. It should also define the trigger mechanisms, the duration and the extent of such measures. However it is important that the Commission's efforts in this field should be consistent with the EU's other policy priorities promoting economic development and environmental sustainability in low income developing countries – or vice-versa, which implies that the other EU policies should be consistent with its raw materials strategy.

International relations and development

The European Commission should use its international networks including the diplomatic service to improve relations to resources suppliers. This will make trade much easier. Furthermore, support of development in resource rich countries could help building solid and democratic institutions. This will improve opportunities to enlarge and secure supply of raw materials.

Research on substitution, recycling, and efficiency

Research is the key to develop new options on the demand side of the resource markets. Substitution, recycling technologies, and resource efficiency must be the main focus of additional research efforts. The European Commission should provide sufficient funding in the next Framework Programme.

Domestic resources

Additional mining within Europe cannot solve the problems of many critical resources. Nevertheless, domestic resources are essential for the building and manufacturing sector in Europe. The European Commission should increase its efforts to minimise the existing obstacles.

The European Commission has taken important first steps to implement the resource strategy. The combination of instruments proposed should help to focus the Commission's efforts in order to define an appropriate co-operation with national governments and the private sector on resource supply security.

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