

**Natural Resource Abundance and its Impact on Regional  
Integration.  
Curse or Blessing?**

**A Discussion Note for Session II**

by

Michel Fouquin, Rolf J. Langhammer and Rainer Schweickert

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## **I. Introduction**

The spatial allocation of natural resources over countries is unequal and at best correlates with the geographic size of countries. As an immobile factor of production, a spatially uneven allocation of resources over a group of countries may defy the tendency toward the law of one price and aggravate both the introduction of common policies and the digestion of exogenous shocks in integration schemes.

While physical capital, skilled people and increasingly unskilled people become cross-border mobile and support price convergence beyond countries, the immobility of natural resources and the exposure to their prices to high volatility can easily drive a wedge into such a process of integration of economies. Reasons for that are rooted on the supply as well as on the demand side: as concerns supply, the larger the spatial disparity of resource availability, the less synchronised are price movements between countries. As concerns the demand side, the larger disparities in growth patterns are between countries, the more demand patterns and demand elasticities will differ between countries. Levels of income might also trigger differences in demand for natural resources: poor countries will exhibit less demand for natural resources than richer countries. Furthermore, social time preference rates are likely to be systematically different between resource-rich and resource-poor economies with those of the former being higher than of the latter when resource rents are used to accelerate the financing of capital formation outside the resource sector.

Politically, natural resources may shape the perception of policy-makers. They are often looked upon as a natural and strategic capital stock which should be at the exclusive disposal for national purposes and not be opened to access for member countries in an integration scheme. Such conduct could be a curse for deep integration which requires some asymmetric burden-sharing between rich and poor countries and perhaps even an inter-country redistribution of income. Yet, it could be also a blessing if resource revenues enable the resource-abundant country to generously offer and finance such redistribution and take more risks in implementing long-term integration time tables.

Resource abundance and regional integration is not a new issue. Many integration schemes in the developing world were founded in the sixties when resource prices were still on their flat long-term path. These schemes disintegrated and even collapsed in the seventies when the two oil price shocks and the subsequent increase of all major commodity prices accentuated the dichotomy between those which were commodity net importers and had to shoulder a rapidly rising import bill and those who were net exporters. The opening of the terms of trade wedge

within an integration scheme led many governments from net resource importing countries in South-South integration schemes to decide against the further liberalisation of intra-regional trade and instead to concentrate on earning revenues in trading extra-regionally. On the other hand, net resource exporters have often abruptly abandoned domestic policy reforms after enjoying resource windfall gains and thus injected some further erratic volatility into an integration scheme.

Today, the issue is back on the agenda due to strong Asian growth-rooted demand and some supply constraints. For Latin America, resource abundance seems a very relevant issue as Latin American suppliers of commodities see their terms of trade shifting against the manufacturing sector (also because of fierce competition from labour-abundant Asian suppliers) and in favour of resource extraction.

In this discussion note we first summarize the results from two papers which have been presented at the Kiel conference analysing the impact of globalisation and regional integration on structural adjustment and poverty alleviation (Section II). While these papers remain rather specific, we add four observations - one of these observations is particularly concerned with Latin American experiences - on the role which resource-rich countries play in regional integration schemes. These observations are supposed to open a broader view on the topic (Section III). Both the papers presented in Kiel and our four observations point to the importance of distinguishing between different types of resource abundance. Hence, Section IV which elaborates on the general nexus between resource endowment, export structure and economic development draws on the distinction of groups of countries characterized by different types of resource abundance. Section V tries to pose a number of open questions which could be integrated into a policy-oriented research agenda. Finally, we propose to develop a policy memorandum which delineates the various channels through which an integration scheme can be affected due to the fact that resource abundance is unevenly allocated among member states (Section VI). We think that such insights may help to rationalize the perspectives for regional integration schemes in Latin America.

## **II. Resource abundance, globalisation, and regional integration – results from the Kiel Conference**

The paper by Álvarez and Fuentes (2005) addresses the question how a country specialized in primary goods can become an exporter of manufacturing goods. As outlined by the authors, many scholars and policy makers have argued that developing economies should change their specialization patterns toward manufacturing goods to achieve higher economic growth and a more equitable income distribution. Edwards (1997), for example, has argued that a key

challenge for Latin American policy makers is to increase net exports of higher-value-added manufactures. In the same vein, Gylfason (2004) claims that “an important challenge to policy makers in many developing countries with abundant natural resources is to find ways to reduce their dependence on these resources, through successful diversification of economic activity”. However, the World Bank (2001) presents a more optimistic view arguing that what matters is not what goods countries produce, but how they produce. Scandinavian countries that have been able to grow based on their natural resource abundance, however, have motivated most of this view. Bravo-Ortega and De Gregorio (2005) present both a theoretical model and empirical evidence on how economic growth and factor abundance is possible for economies with high levels of human capital.

Based on factor-endowment-driven specialization, Álvarez and Fuentes study the trade patterns along the paths of development for a large sample of countries in the last four decades. Consistently with the idea that countries are located in different cones of diversification, they found that net exports are a non-linear function of the capital/labour ratio of the economy. The pattern of gaining comparative advantages in manufacturing goods as a country develops depends not only on whether it is natural resource abundant or not, but also on its type of natural resources abundance. The equation estimated by Álvarez and Fuentes assumes that the relationship between net exports and capital per worker depends on the relative abundance of natural resources in each country. Based on the regression results it is possible to draw the evolution of net exports as a function of capital per worker, for the four aggregates which shows how the comparative advantages evolve as the country accumulates capital depending on countries factor abundance.

The group of mineral-abundant countries is characterized by a low capital/labour ratio. Given this combination of capital scarcity and mineral abundance, manufacturing goods are decreasing. This is consistent with the idea that the mining sector is capital intensive and it takes the extra capital accumulated by the country. On the other hand, if the relative price of the mining good in each country is very high (Dutch disease hypothesis), this good is always produced. Thus when a country accumulates capital, it reduces net exports of all goods and increases the production of the primary mineral commodities. This result has important implications for the trade structure of mineral-abundant countries. It is theoretically possible and, according to the empirical results likely as well, that they never could reach the minimum threshold to become net exporters of more capital-intensive goods, and they get trapped in a long-term equilibrium of low capital/labour ratio.

Hence, in contrast to countries with comparative advantages in forestry and agricultural products, mining countries are the least likely group to change their specialization pattern towards manufacturing goods. On the other hand when human capital is used instead of physical capital, mineral abundant countries move to a cone where they produce and export capital intensive manufactures. The forest abundant countries will attain comparative advantages in machinery as they accumulate human capital.

Nina and Andersen (2005) analyse the impact of regional integration on the export pattern of Bolivia, a country belonging to the mineral-abundant group. As a first result, they demonstrate that regional integration has actually stimulated a diversion of trade away from traditional US and EU markets towards countries of MERCOSUR and the Andean Community (CAN).

The paper presents econometric analyses of the impact of exports (by sector, and trade block) on individual labour incomes and household poverty status. The results show that higher exports generally tend to benefit the workers who work in the exporting sectors. However, this result only holds for export sectors that exploit some natural resource rents (mining, hydrocarbons, modern agriculture), and not for those which rely purely on low wages in order to be competitive (most manufacturing sectors). Imports typically have a negative effect on worker salaries, except for imports of capital goods, which do not compete with local production. This implies that the change towards more regional trade of goods with a smaller natural resource rent component is unlikely to contribute to a reduction in poverty. For exports to be helpful for reducing poverty, they would have to focus on sectors, which are labour intensive and at the same time exploit some natural resource rents. Sectors that might fulfil these criteria are modern agriculture and tourism.

A gravity model estimated for Bolivia and its 66 trade partners revealed in quite different effects of Bolivia's preferential trade agreements:

- Both regional integration schemes in which Bolivia is involved, CAN and MERCOSUR, showed highly significant and large positive effect on trade. Bilateral trade increased by twelve times in the case of CAN and by three times in the case of MERCOSUR.
- The partial integration agreement with Mexico signed in 1995 also had a statistically significant positive effect on trade between Bolivia and Mexico according to which trade between the two countries would increased by 82 percent.
- The Andean Generalized System of Preferences granted by the European Union did not have a positive effect on trade either. The estimated coefficient is positive, but not

statistically significant. The same holds for the partial integration agreement signed with Chile in 1993.

- In contrast, the Andean Trade Preference Act (ATPA) granted by the United States appear to have had a negative effect on trade between Bolivia and the US the coefficient suggesting that trade fell by 50 percent after the agreement was signed in 1991.

As a caveat one has to keep in mind that the estimated gravity model of trade is silent about causality but the results seem to be consistent with the hypothesis of diversion of trade away from US and EU markets towards CAN and MERCOSUR markets. The regional diversification has not gone hand in hand with equally large changes in the composition of trade. Before signing the series of integration agreements in 1992, Bolivian exports were dominated by primary goods, mainly destined to the European Union, while MERCOSUR was relatively unimportant. By 2002, primary goods are still the most important export category, but now the destination is almost exclusively MERCOSUR. Food, beverages and tobacco have also become very important, and the destination is CAN. With respect to the poverty impact, one would expect labour-intensive export products (Food, beverages and tobacco, Labour Intensive Industries) to have the most beneficial effects. Thus, it is likely that exports to CAN and the US will reduce poverty more than exports to other blocs.

Trade integration not only promotes exports, however. Increased exports go hand in hand with increased imports. In 1992, these comprised 68 percent of all imports, and came mostly from the EU and the US. By 2002, the import share of capital goods had decreased to 58 percent and, more importantly, these imports came primarily from MERCOSUR. Capital goods are essential for the Bolivian industry and do not compete with local production, as Bolivia has virtually no capital goods industry. In contrast, natural resource based products compete directly with Bolivian production, and the increase observed between 1992 and 2002 may thus have a detrimental effect on poverty. This is the backside of increased integration, and this problem is particularly relevant for Bolivia's links with MERCOSUR.

While both distant (US, EU) and nearby (MERCOSUR, CAN) trading partners have provided free access for thousands of Bolivian products, the effect on trade has been most favourable for nearby markets. Indeed, it appears that regional integration processes have caused a diversion of trade away from US and EU markets towards MERCOSUR and CAN markets. In addition, exports became only moderately more diversified, although a different structure of demand in neighbouring countries compared to EU and US markets could be assumed and overall trade, as a percentage of GDP, has not increased at all in Bolivia. Hence, the impact on

poverty, a major concern in the case of Bolivia, is also not very strong. Even to the extent that manufacturing products now account for a larger share of exports, and primary goods for less, this change has an ambiguous effect on workers. The traditional export goods to Europe (minerals) had a high content of natural resource rents, which benefited workers. On the other hand, the manufacturing sector tends to use the low wage levels in Bolivia as a competitive advantage, which does not benefit the workers that much.

As pointed out by Nina and Andersen, regional integration also did not make a difference with respect to foreign direct investment (FDI). It has been concentrated mainly in hydrocarbons to exploit the rapidly growing regional markets and utilities, to exploit natural monopolies. Very little FDI has gone into manufacturing and agriculture, where most poor workers are concentrated. Very few people benefited from the rapidly growing salaries in the hydrocarbon sector and in the utilities, implying that FDI had no impact on neither salaries nor poverty at the aggregate level. For trade and FDI to have a beneficial effect on household incomes in Bolivia, it would have to concentrate on intensive-intensive sectors that also exploit some natural resource rents. The Nina/Andersen paper suggests that natural resource rents that are extracted by very capital-intensive technologies do not improve the income position of the mass poor, while labour-intensive activities without any rents will keep workers at minimum salaries. Examples of sectors that exploit both would be modern agriculture and tourism.

Overall, the results from the two papers presented in Kiel point to the fact that there seem to be no definite answers with respect to the impact of integration either international or regional on structural change in emerging market economies. It is therefore necessary to sort out the stylised observations on which we can rely and the research questions which we still have to ask.

### **III. Stylised Observations from Post-War Evidence**

*Observation 1: Post-war evidence suggests that resource-rich countries have neither been driving forces for establishing regional integration schemes nor – once they were members of such schemes - push factors for deeper integration.*

This is probably due to the fact that the integration schemes themselves did not appear as major export markets for natural resources. Evidence for such benign neglect of regional integration by resource-rich countries exists especially for schemes between developing countries (South-South integration). Indonesia in ASEAN, Gabon in the Central African Economic Community, Nigeria in ECOWAS and Bolivia in the Andean Pact are examples for

passive roles<sup>1</sup>. A notable exception seems South Africa in SACU but in this scheme South Africa's dominance was basically determined by its economic size and income level relative to the other members and not by its resource abundance which was shared by the other members too. In specific cases, however, resource abundance supported intra-regional trade links when neighbouring countries participated as hosts in the processing of resources. Indonesian oil exports to Singapore where oil is refined bear witness to this point. Furthermore, occasionally members states participated in joint large scale projects such as oil refineries when processed goods should satisfy the demand of the entire regional market. In the seventies, for instance, an oil refinery in Gabon was partly financed from state budgets of the members of the Central African integration scheme (UDEAC). Yet, such projects were very vulnerable to inter-country disputes on location, shareholder ship, profit allocation and management sourcing. The ill-fated example of so-called ASEAN industrial projects shows that ideas of allocating few big resource-based plants among the member states granting them a quasi-regional monopoly never materialised.

In integration schemes between industrialised countries (Norway in the European Economic Area, Canada in the US-Canada FTA) as well as in South-North integration (Mexico in NAFTA), experiences with resource-rich countries are confined to shallow schemes without common policies. Here, resource-rich countries have hesitated to deepen integration from simple free trade areas to schemes with common policies or even refused membership such as Norway in relations to the EU. Such reluctance seems to have been driven by the fear that part of their resource revenues would be channelled to other partner countries or that they would have been required to be net donors in inter-country redistribution schemes and thus be deprived from exclusive disposal over their resources. In some cases, resource-abundant countries in integration schemes even caused trade policy disputes with their partners countries when they restricted their resource exports, officially to protect the natural capital stock and the environment but in fact in order to implicitly subsidise their domestic processing industries. Here, the example is the temporary restriction of Indonesian timber and

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<sup>1</sup> The Latin American experience deserves a special discussion (see observation 4) as all Latin American countries may be classified as resource-rich in absolute terms. Yet, the relative terms, resource abundance differs between the countries as some countries (.e.g. Brazil) are both resource-rich ( relative to the world market) and industrialising (relative to the regional market) while others (e.g. Bolivia) are resource-rich relative to both the world and the regional market. Differences in relative resource abundance should be reflected in differences in the sectoral composition of intra-regional and extra-regional exports. The "Bolivia type" is expected to show larger sectoral overlaps in intra-regional and extra-regional exports than the "Brazil type".

rattan exports which gave an impulse for the emergence of sawmill and other downstream activities in Indonesia and triggered adverse reactions in partner countries with competing industries.

*Observation 2: Resource-rich poor countries in South-South integration schemes seem to have been prime victims of the income-diverging trends predicted in the Heckscher-Ohlin framework.*

Resource-rich poor countries often suffer from trade diversion in manufacturing not only because their production structure traditionally lags behind that of the industrial centres in the schemes and is characterised by dualism. The main reason is that fluctuating world market prices often expose them to temporary Dutch disease shocks. Such shocks insert additional uncertainty into investment decisions, fuel currency overvaluation and resource rent appropriation, impede diversification efforts and bias the production structure of the countries concerned towards the primary sector. To compensate for such biases, in the past the small industrial sector has often been strongly protected by tariff escalation between tariffs on finished goods and inputs, by fiscal incentives, and the whole set of protective tools including multiple exchange rates. Vested interests against being exposed to competition from more advanced partner countries in integration schemes are strong once such tariff escalation structures have been established. Examples that such interests can be broken and that a neutral tariff structure can be enforced are rare and refer to politically exceptional episodes as the Pinochet era in Chile after 1973.

*Observation 3: In general, resource-rich countries are world market oriented. This is why integration schemes with basically only resource-rich economies such as the Gulf Cooperation Council are often ineffective.*

Under such conditions, trade creation effects to the benefit of resource-rich countries on the export side are very small because intra-area tariffs imposed upon primary commodities usually do not constitute a major barrier to intra-area trade. Rising demand for resource products due to integration is thus determined by indirect income effects rather than direct price effects. This might change, once processing activities would require access to sourcing markets some of them might be in partner countries. With rising stages of processing, resources can be integrated into cross-border vertical value added chains. Evidence for such developments exists in Southeast Asia but does not seem to have been triggered by common ASEAN integration policies rather than by national policy reforms of individual countries. While being useful channels of market integration, such chains also transmit shocks cross-border and can threaten macroeconomic stability by contagion effects.

*Observation 4: The role of resource abundance in Latin American integration varies between the inward-looking (old) type of regionalism in the 70s and 80s and the more outward-oriented (new) type of regionalism in the 90s.*

The Latin American experience of integration breaks into the early stage of a regional import substitution strategy and the later stage of a more neutral scheme between world market orientation and regional preferences. The two periods have also been distinctly different with respect to macroeconomic policy reforms and conditions on commodity markets. While the first stage did not submit Latin America to deep reforms in virtually all policy fields, the second stage showed the most penetrating reforms in Latin American economic history. As concerns the commodity sector, the first stage was characterised by price volatility around a flat or even declining price trend (except for oil) while the second stage is accompanied still by price volatility but by increasingly positive terms of trade trends for commodity producers due to buoyant world demand.

It is interesting to note that side conditions for Latin American integration from the commodity frontier have not found much interest in the policy-oriented literature on Latin American integration, even not in the authoritative 2002 report of the IADB “Beyond Borders” (IADB 2002). There is little else than reference to unstable commodity prices (ibid:32). It seems that the sophisticated relationship between resource abundance and neighbourhood relations (a somewhat broader term than integration) should also include socio-economic aspects such as the allocation and enforcement of property rights on natural resources under given ownership conditions in Latin American countries and the division of labour between the state sector and the private sector in collecting and spending revenues from resource extraction. These conditions seem to differ between agricultural (private sector) and mineral commodities (state sector), for instance, and between strategic large-scale resources (state sector) and the non-strategic small-scale commodities (private sector).

In the first stage of integration in Latin America, the commodity dominance of the entire region relative to the outside world seems to have been a driving force to diversify the production structure towards manufacturing. Yet, because of widespread export pessimism and structuralist dependency fears, such diversification occurred behind high tariff walls against the rest of the world. This strategy plainly failed not at least because of distributional conflicts between the very poor pure resource-abundant countries suffering from trade diversion on the one hand and partner countries on the other hand whose industries benefited

from access privileges inside Latin America while remaining commodity exporters on world markets.

The second new stage of regional integration seems to draw a much more differentiated picture and the jury is still out concerning the stumbling block or stepping stone role of resource abundance for regional integration. Side conditions have changed since the first stage. Commodities are well demanded inside and outside Latin America. Ownership structures have changed in favour of foreign participation through FDI. North-South integration in Latin America including North America is no longer anathema while still controversial. Non-Latin America-originating influence in regional integration may expose the commodity sector to a brighter light of attractiveness as this influence tries to gain access to ownership over Latin American commodities or at least secure access to them. More general, it is the division of labour between state control and private sector involvement in the commodity sector which is at stake.

#### **IV. To what extent does the kind of endowment in natural resources have an impact on growth and Regional Trade Integration (RTI)?**

##### **a. Resource endowment impact on growth and RTI**

Intra-regional trade growth is first explained by the dynamism of trade partners. If GDP growth is high then trade growth is high as well. Therefore if within one region growth is higher than in the rest of the world then *ceteris paribus* trade will grow faster within the region than with the rest of the world.

Considering now the relation between resource abundance and growth. We distinguish between three types of resources: minerals, energy and agriculture as opposed to manufacturing. We then calculate a simple index of specialisation as the share of each group of products in total exports of each country. For poor countries these exports are of major importance as they earn foreign exchange to finance necessary imports.

The following analysis has been made for the 1993-2003 period. We exclude from our sample European transition economies as during that period they went through a deep recession after the fall of the Berlin wall and were catching up very rapidly since 1993 (on average). We also make the usual distinction between developing countries and developed countries based on their GDP per head levels: Korea (8,200 \$US in 1993) has been considered as a developing country while Taiwan (10,700 \$US) was classified as a developed country at the beginning of the period.

Data analysis shows that there is a strong correlation between the kind of international specialisation and growth. For each type of specialisation we select the first sixteenth countries with the highest index among a total of 96 countries or regions for the whole world. A simple comparison between specialisation structure and growth per head, as a proxy of productivity improvement, yields (see Table 1 and Appendix 1 for detailed information) that the group of countries which show the strongest specialisation in manufacturing reach the highest unweighted average annual GDP per head growth over the 1993-2003 period with 2.9%, followed by countries specialised in agriculture with 1.50%, then by those specialised in minerals with 1.47% and finally by oil-rich countries with the lowest average growth of 0.76%.

**Table 1: Unweighted average annual growth of GDP per head according to their export specialisation**

<b>Dominant Specialisation</b>	<b>Average Annual Growth of real GDP per head 1993-2005</b>	<b>Range of export specialisation</b>
<b>Energy</b>	<b>0.76 %</b>	<b>From 98% of total export in Algeria to 32% Rest of Africa</b>
<b>Minerals</b>	<b>1.47 %</b>	<b>From 21% Papua New Guinea to 2% Argentina</b>
<b>Agriculture</b>	<b>1.65%</b>	<b>From 54% Paraguay to 12% Egypt</b>
<b>Manufacturing</b>	<b>2.9%</b>	<b>From 93% Korea to 57% Israel</b>

**Source: CHELEM CEPII**

As a partial conclusion we can infer from these data that countries specialised in manufacturing tend to have a higher growth than resource-abundant countries and therefore have a higher growth in their external trade, as we will see below.

**b. In which ways might resource-oriented specialisation impact on growth and RTI?**

Considering that trade in manufacturing products at constant prices has grown on average almost two times (1.87 times for the 1950-2004 period) as fast as growth in GDP while trade in other products tended to grow somewhat less (1.55 for minerals and energy) and considerably less for agricultural products (0.6), it can be concluded that integration into international markets has been achieved faster for countries specialised in manufactures than for those exporting commodities.

Dependency on resource exports varies according to the kind of commodity considered. It is very high for energy exporters: it ranges from more than 93% of total exports are made of energy in the case of Algeria to 32% for the sixteenth country of the sample called here the rest of sub-Saharan Africa, compare to a maximum of 21% for Papua New Guinea to 2% in Argentina for minerals and 54% to 12% for agricultural products specialisation.

There are also large differences in growth volatility as shown by the standard deviation on GDP growth applied to the different categories of countries (Table 2).

**Table 2 Measure of growth volatility**

<b>Dominant Specialisation</b>	<b>GDP Growth Rates Standard Deviation</b>
<b>Energy</b>	<b>6.6</b>
<b>Minerals</b>	<b>5.2</b>
<b>Agriculture</b>	<b>4.2</b>
<b>Manufacturing</b>	<b>3.6</b>
<b>: Memo: Developed Countries</b>	<b>2.5</b>

**Source: CHELEM CEPII**

Manufacturing specialisation coincides with the high diversity of products, which reduces volatility, the high number of producers and intensive competition that puts a break on price hikes.

Another important factor inherent in commodity specialisation refers to the concentration of resource rent in the hands of a limited number of people which translates the control of the rent into both a source of political power and of corruption.

Leite and Weidman (1999:page 1) tend to support the view that „natural resource abundance creates opportunity for rent-seeking behaviour and is an important factor in determining a country’s level of corruption...The extent of corruption depends on natural resource abundance, government policies, and the concentration of bureaucratic power“. Corruption contributes to raise the opportunity costs of investment thereby reducing the propensity to invest. These effects are considerably larger for the poorest economies, notably African countries.

**c. Does resource-oriented specialisation impede the development of manufacturing industries?**

During the 1993-2003 period, emerging countries have increased their share of manufacturing trade by more than 12% (1% represents 53 billions US\$ in 2003). That has happened more or less at the expense of developed countries, first of all Japan and the USA. Gains and losses within Asia were basically compensated between developing exporters and developed exporters of manufactured products: losses for developed countries (-6.54%) match almost exactly the gains by manufactures-oriented developing countries (6.66%). To be more precise China gains of 4.72% match Japanese losses of 5%. This balance on the export side does not exist on the import side where Chinese imports increased much more slowly (200 US\$ billions increase in imports compare to the 328 billions exports increase). Besides, almost all developing countries of Asia are classified as manufacturing exporters except Indonesia which is the only Asian country to register a loss in its manufacturing exports world share.

In each region the richer countries generally lose while poorer countries generally win. In the case of America the decline in US and Canada share of world trade export are only partially compensated by an increase in Latin America shares. If we exclude Mexico from the winners group then the Latin American gains in world trade shares are only 0.09%, almost negligible. What is worse is the fact that Brazil as the largest Latin American economy has been losing ground in world markets in manufacturing trade by 0.13%. We will see below some details on Brazil specialisation dynamic.

**Table 3 Major Changes in Manufacturing Trade Shares 1993-2003, (in percentage points)**

	Eurafrica		Asia		America	Total
Winners	4.21		6.66		1.15	12.02
Losers	-2.71		-6.54		-3.74	-12.99
Total	1.50		0.12		-2.59	-0.97
of which:						
Ireland	0.74	China	4.72	Mexico	1.06	6.52
Italy	-0.76	Japan	-5.00	USA	-3.15	-8.91
Source: CHELEM-CEPII						
Note: data by region do not take into account unknown destinations						

The Europe-Africa region calls for a differentiated interpretation (Table 4). Diversity within the continent is a very important factor. There are no real dominant countries as there are in Asia and in America. At least, there are two winners among the developed countries such as Ireland and Spain, both countries attracted large amounts of FDI. Transition economies have also been a major cause for changes within the region, the prospect of their integration within EU has attracted investment by west European companies, first of all by German companies. Another interesting and somewhat unexpected evolution is that given strong world demand for natural resources, African countries have been making progress in manufacturing exports and that such progress has been largely shared among several countries.

**Table 4: Major Changes in European and African Trade Shares  
(In percentage points, 1993-2003)**

	European market shares			
	Developed	Transition	Africa	Total
Winners	1.37	2.37	0.46	4.20
Losers	-2.61	-0.06	-0.03	-2.70
	-1.24	2.31	0.43	1.50
Source: CHELEM-CEPII				

The story we would like to draw from that development of trade patterns is that progress enjoyed by developing countries in manufacturing trade have been substantial and widely shared among many countries during that 1993-2003 period.

So why is it that, during that same period, Latin American countries seemed to have lagged behind all other regions of the world?

A few data on the **Brazilian trade specialisation** patterns might allow for some explanations. We use an index to measure revealed comparative advantage (see appendix 2) and analyse the results starting from the most aggregated level to the group of product level.

The most important transformation of Brazilian Comparative advantage affects agricultural goods and food products, which has increased a lot since 1993: from 0.9 per cent of GDP to 2.5 per cent of GDP in 2003. On the other hand, the comparative advantage in manufacturing products has decreased from about -0.1 per cent of GDP to less than -2 per cent of GDP.

-Among agricultural and food products, the major increase is for animal food (+0.6<sup>th</sup> per cent). Then the other major increases are for meat and fish products, followed by sugar.

-Among manufacturing products, the decline in comparative advantages has been most distinct for chemical products (-1.6) and for electrical machinery.

-By group of chemical products fertilisers, drugs, basic organic products and paints registered the highest decreases.

-Among mechanical products, we find a decline in computers, in electronic components, electrical apparatus, but we find progress in the automotive industry except for automotive components.

-For other industries, Brazil show permanent strength in steel, leather, paper and wood products.

The present trend in Brazilian specialisation is going in opposite direction to that of China and other Asian countries and it may be a consequence of Asia competitiveness. It logically explains Brazilian interest in the multilateral negotiation agenda on agriculture as well as to Mercosur negotiation with EU rather than for the FTAA.

#### **d. Does resource-oriented specialisation play against regionalisation of trade patterns?**

Regional integration through trade may be more or less easy depending on the specialisation type of regional partners:

Specialisation in manufacturing industries, even in the same industry, offers opportunities for more varieties and therefore for further trade developments;

On the other hand if regional partners are specialised in similar primary industries then they will have few opportunities for two-way trade developments: oil producers have few, if any, opportunities to exchange products.

In fact product specialisation bears different partnerships. Looking at Latin American data between 1993 and 2003 (Mexico has been excluded as it is in a rapid progress of integration within NAFTA) we can use our usual distinction between Mineral, Energy, Agribusiness and Manufacturing products (see appendix 4).

- **Minerals trade patterns:**

-Asia is by the main destination for mineral export, its share increase from 32% in 1993 to 43% in 2003;

-Second is Europe-Africa, it has declined from 31% to 25%;

-Intra-regional trade is only 2%.

- **Energy trade patterns:**

-Nafta is the dominant but declining destination from 59% to 48%;

-Intra regional is increasing from 28% to 34%;

-EU comes third from 9% to 11%.

- **Agribusiness trade patterns**

-Europe-Africa is by far the first destination and remained between 51% and 48% (but EU decline from 40% to 33%);

-Asia is the second partner and its share increases from 11 to 18%.

- **Manufacturing trade patterns**

-Nafta is the first destination increasing from 32% to 40%;

-Intra regional trade accounts for 33% in 1993 and declines towards 27%;

-Europe-Africa comes third with 20% and remains at that level;

-Asia is a small and declining destination from 14% to 11%.

As a conclusion we see that interest of Latin American countries varies largely according to their sectoral specialisation. Nafta is important for energy and manufactures exports; Europe is a major issue for the agribusiness, Asia rely on mineral resource from LA.

## **V. Towards a Policy-Oriented Research Agenda: Major Open Questions**

1. Natural resources are not homogenous. As shown in Section IV and in paper by Álvarez and Fuentes, a distinction has probably to be drawn between oil-exporting countries, mineral ore producers and agro resource-based economies. The criteria of distinction are the processing potential, the degree of dualism, the spread between intra-regional and extra-regional demand, and the degree of exposure to exogenous shocks. The empirical treatise related to regional integration could consist of mapping major resource price booms and busts in Latin America (and other regions) and of measuring the strength of contagion that resource-rich economies caused in partner countries. Once such volatilities triggered policy responses such the introduction of trade barriers or changes in exchange rate policies in order to decouple from adverse price shocks, the treatise should be extended to such policy measures.

2. It is known that regional integration schemes are vulnerable to inefficiencies and conflict if the sectoral structure of intra-area and extra-area trade differs widely from each other. Such differences are often proxies for excessive segmentation between regional and world markets. Given the similarity of intra- area and extra-area trade patterns of resource-rich countries, witness the case of Bolivia presented in the paper by Nina and Andersen, is there evidence that in the past these countries helped to blur such differences and mitigated discrimination against non-member countries? If so how could that be achieved?
3. Due to Asian strong demand for commodities, terms of trade signals tend to shift supply patterns of commodity-rich but industrialising economies into the commodity “corner” of the Leamer triangle. While the demand-driven origin of price booms is a new phenomenon, terms of trade signals for economies to become more resource-based are not new (see the seventies). Could a recourse to the periods of resource price booms enlighten us on their aftermath effects on regional integration? Do we have policy messages such as that regional integration should respond to such world price signals by deepening integration in order to achieve a critical mass for incentives toward structural change toward non-traditional goods (manufacturing) which a single country could not achieve on its own?
4. In some schemes, resource-rich economies with limited options to industrialise are on the high-income scale while for different reasons being dependent on absorbing resources from partner countries (including good neighbourhood) . Such reasons can be of geographic origin (for instance, landlockedness and access to transit routes) or of general policy origin (border conflicts, or minimising cross border negative externalities from jointly absorbing mobile environmental resources). In these cases, the coherence of integration schemes could be strengthened if resource rents would be used to finance internal fiscal redistribution schemes in favour of poorer member states. Experiences for such policies are confined to early stages of African regional integration schemes (solidarity funds in West and Central Africa, internal taxes in East Africa, customs revenue sharing in the Southern Africa customs union). Should such cross border externalities also exist in Latin America, policy research could identify them as past stumbling blocks and perhaps propose compensation mechanisms based on sharing resource rents.
5. Resource-rich economies are often characterised by strong income disparities between regions within the economy if regions have uneven access to natural resources. Such

disparities may also prevent regional integration from exploiting its full potential if the government has to compromise on regional integration because of domestic disparities. This gives rise to the question whether this has been a relevant issue in Latin American integration schemes. Does the spatial scope of these disparities constrain both the volume and the structure of cross-border trade and factor flows and can strategies of pro-poor growth be extended from the national to the regional level ? Can spill over effects in an integrated region be identified which an isolated resource-abundant country would miss?

6. Resource-abundant countries may face idiosyncratic business cycles which are decoupled from those of their more industrialised partner countries. Thus, cycle synchronisation as a prerequisite for deepening integration may be impeded. Likewise, exchange rate regimes may be different with perhaps higher preference for exchange rate targeting in the resource-rich economies. Such discrepancies may negatively impact upon the design and the implementation of common trade policies as has been witnessed in Latin American integration schemes too. Which buffer mechanisms are available in order to contain and reduce such discrepancies?
7. Resource extraction often absorbs environmental capacities from partner countries or demands inputs such as energy which can only be supplied by joint projects (for instance, water dams in border areas) which themselves are resource-absorbing. Does the history of Latin American integration schemes suggest agreements on joint resource management of partner countries to be effective? If not, why not?

## **VI. Aiming for a Policy Memorandum**

Resource abundance today is a major asset in forming regional coalitions and may encourage specific countries to claim a driver seat of regional integration once they are prepared to co-shoulder some burden of partner countries. Recent endeavours by Venezuela underline the relevance of this assumption. This is why the link between regional integration and resource abundance is critical, in particular for a resource-rich region like Latin America. Given that importance, the analysis under section II should preferably be condensed into a memorandum of best practice recommendations which summarises lessons from answering the different questions.

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## Appendice 1

	minerals	energy	agriculture	manufactures	growth 1993-2005
Autres Asie/Océanie	20.76	7.12	5.42	48.67	- 1.27
Chili	15.50	2.15	14.32	45.74	3.17
Pérou	14.71	7.78	7.51	31.55	1.99
Bolivie	12.18	34.34	7.75	15.34	1.31
Brésil	6.37	4.90	12.74	55.94	1.05
Maroc	5.84	2.68	7.84	68.85	1.38
PMA en Afrique	5.34	56.76	13.42	13.87	1.60
Union sud-africaine	5.08	8.39	5.35	59.04	1.85
Autres Afrique	4.73	31.81	24.19	23.53	0.92
Autres en Amérique	4.36	18.10	10.05	51.01	2.01
Inde	3.63	5.57	6.49	59.94	4.29
Indonésie	3.52	25.19	5.63	55.34	1.90
Moyen Orient non C	2.58	66.50	7.19	18.34	0.73
Egypte	2.09	38.92	12.15	35.35	2.35
Gabon	1.90	85.14	7.66	4.79	0.20
Argentine	1.71	18.00	19.20	28.87	-
Average growth					1.47

Source: CHELEM-CEPII

	minerals	energy	agriculture	manufactures	growth 1993-2005
Algérie	0.30	97.90	0.10	1.57	1.59
Nigéria	0.19	97.32	0.21	2.19	0.80
Libye	0.05	95.59	0.08	4.15	0.60
Brunéi Darussalam	0.07	93.98	0.03	5.89	- 0.63
Arabie saoudite	0.23	86.93	0.14	11.99	- 0.99
Gabon	1.90	85.14	7.66	4.79	0.20
Venezuela	1.29	81.80	0.24	15.56	- 1.81
Autres du Golfe	0.64	79.62	0.85	14.12	2.49
Moyen Orient non C	2.58	66.50	7.19	18.34	0.73
PMA en Afrique	5.34	56.76	13.42	13.87	1.60
Cameroun	0.11	49.23	34.55	10.73	1.74
Equateur	0.07	42.49	29.85	9.74	-
Egypte	2.09	38.92	12.15	35.35	2.35
Colombie	0.42	37.18	15.41	34.27	1.30
Bolivie	12.18	34.34	7.75	15.34	1.31
Autres Afrique	4.73	31.81	24.19	23.53	0.92
Average growth					0.76

Source: CHELEM-CEPII

	minerals	energy	agriculture	manufactures	growth 1993-2005
Paraguay	0.35	8.91	54.42	11.57	- 1.33
Côte d'Ivoire	0.15	10.97	47.38	20.75	- 0.40
Kenya	1.56	19.26	40.83	25.88	0.60
Cameroun	0.11	49.23	34.55	10.73	1.74
Equateur	0.07	42.49	29.85	9.74	-
Lettonie	1.00	2.45	27.36	61.10	5.52
PMA en Asie/Océan	0.78	21.22	26.90	38.79	4.88
Uruguay	0.24	1.62	25.39	34.70	1.60
Autres Afrique	4.73	31.81	24.19	23.53	0.92
Argentine	1.71	18.00	19.20	28.87	-
Colombie	0.42	37.18	15.41	34.27	1.30
Chili	15.50	2.15	14.32	45.74	3.17
PMA en Afrique	5.34	56.76	13.42	13.87	1.60
Sri Lanka	0.36	0.05	12.94	72.49	3.39
Brésil	6.37	4.90	12.74	55.94	1.05
Egypte	2.09	38.92	12.15	35.35	2.35
Average growth					1.65

Source: CHELEM-CEPII

	minerals	energy	agriculture	manufactures	growth 1993-2005
Corée du Sud	0.18	3.56	0.26	93.10	4.20
Bangladesh	0.04	0.48	1.62	92.02	3.18
Philippines	0.67	1.31	1.91	91.68	1.84
Chine	0.38	2.51	2.05	91.24	7.88
Cambodge, Laos	0.27	0.08	7.76	86.47	3.86
Pakistan	0.28	2.48	8.26	85.76	1.21
Turquie	1.04	2.07	5.60	83.15	1.92
Mexique	0.55	10.93	3.00	82.34	1.55
Tunisie	1.50	8.51	1.94	81.87	3.36
Malaisie	0.15	9.00	2.74	80.10	2.89
Thaïlande	0.50	2.65	6.85	74.13	2.03
Sri Lanka	0.36	0.05	12.94	72.49	3.39
Maroc	5.84	2.68	7.84	68.85	1.38
Inde	3.63	5.57	6.49	59.94	4.29
Union sud-africaine	5.08	8.39	5.35	59.04	1.85
Israël	0.83	0.43	2.41	57.12	1.50
Average growth					2.90

Source: CHELEM-CEPII

## Appendix 2 Revealed Comparative Advantage

The comparative advantage indicator answers the question: “What are the strong points and the weak points of an economy?”.

Instead of relative export structures, as in the classic Balassa (1965) method, the analytical indicator used here is based on the share of the total trade balance and takes into account the size of each country's market. For country  $i$  and product  $k$ , the balance is first calculated in relation to Gross Domestic Product at current exchange rate  $Y$ , giving (in thousandths):

$$y_{ik} = 1000 * \frac{X_{ik} - M_{ik}}{Y_i}$$

The contribution of product  $k$  to the trade balance, in relation to GDP, is defined by:

$$f_{ik} = y_{ik} - g_{ik} * y_i$$

where:

$$g_{ik} = \frac{X_{ik} + M_{ik}}{X_i + M_i} \text{ and } y_i = 1000 * \frac{X_i - M_i}{Y_i}$$

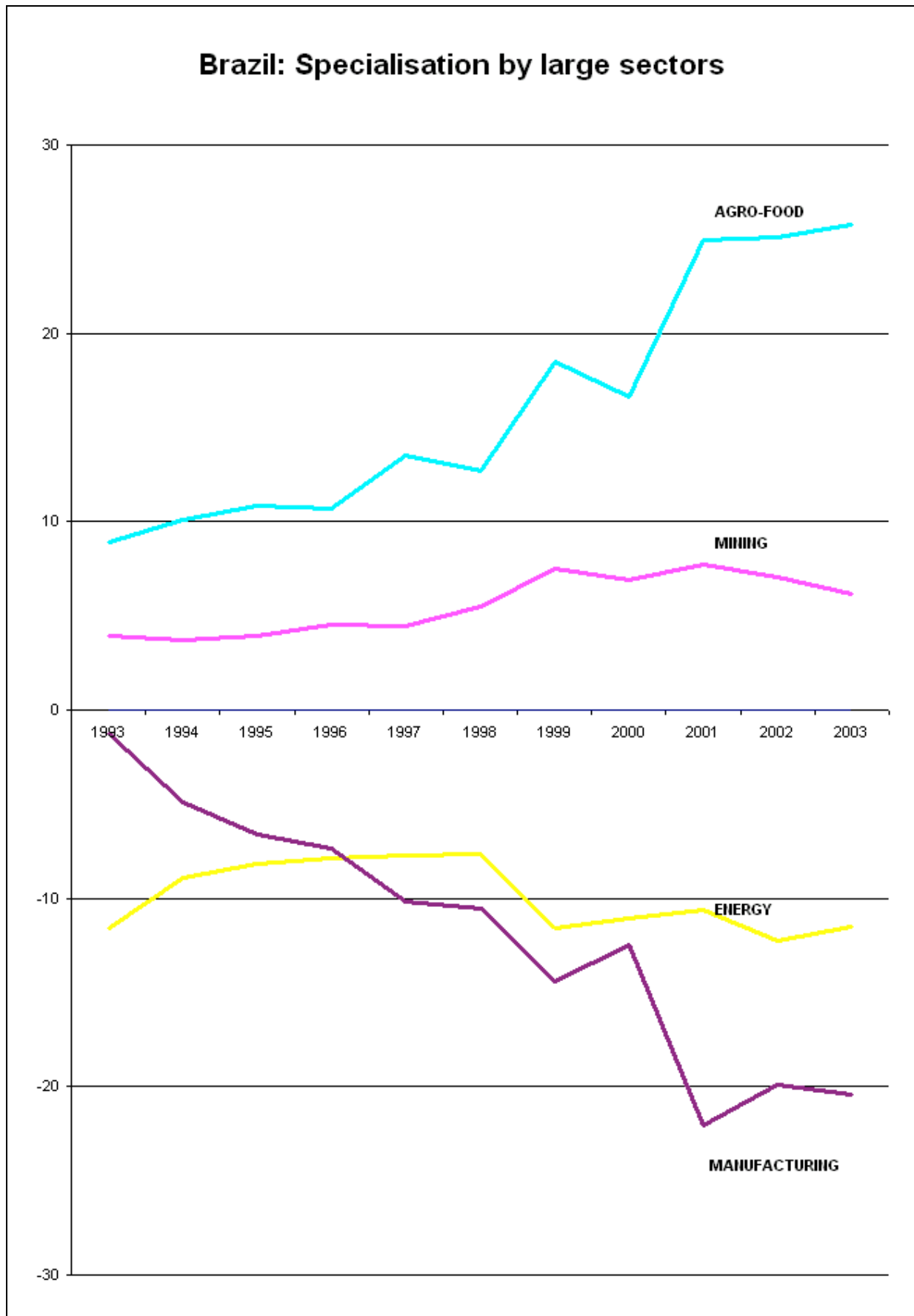
In addition, it is necessary to eliminate the influence of changes which are not specific to the country in question but result from the evolution of the importance of the product in world trade. In relation to a base year ( $r$ ) the flows  $X$  and  $M$  in the other years ( $n$ ) are adjusted by multiplying them all by:

$$e_k^n = \frac{W_k^r}{W_k^n} : \frac{W_k^r}{W_k^n}$$

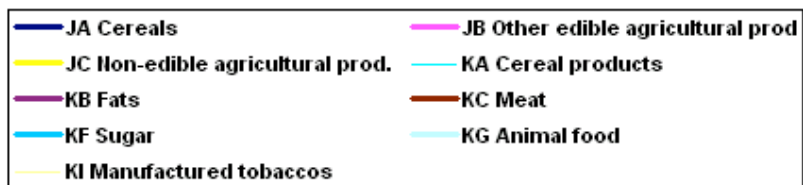
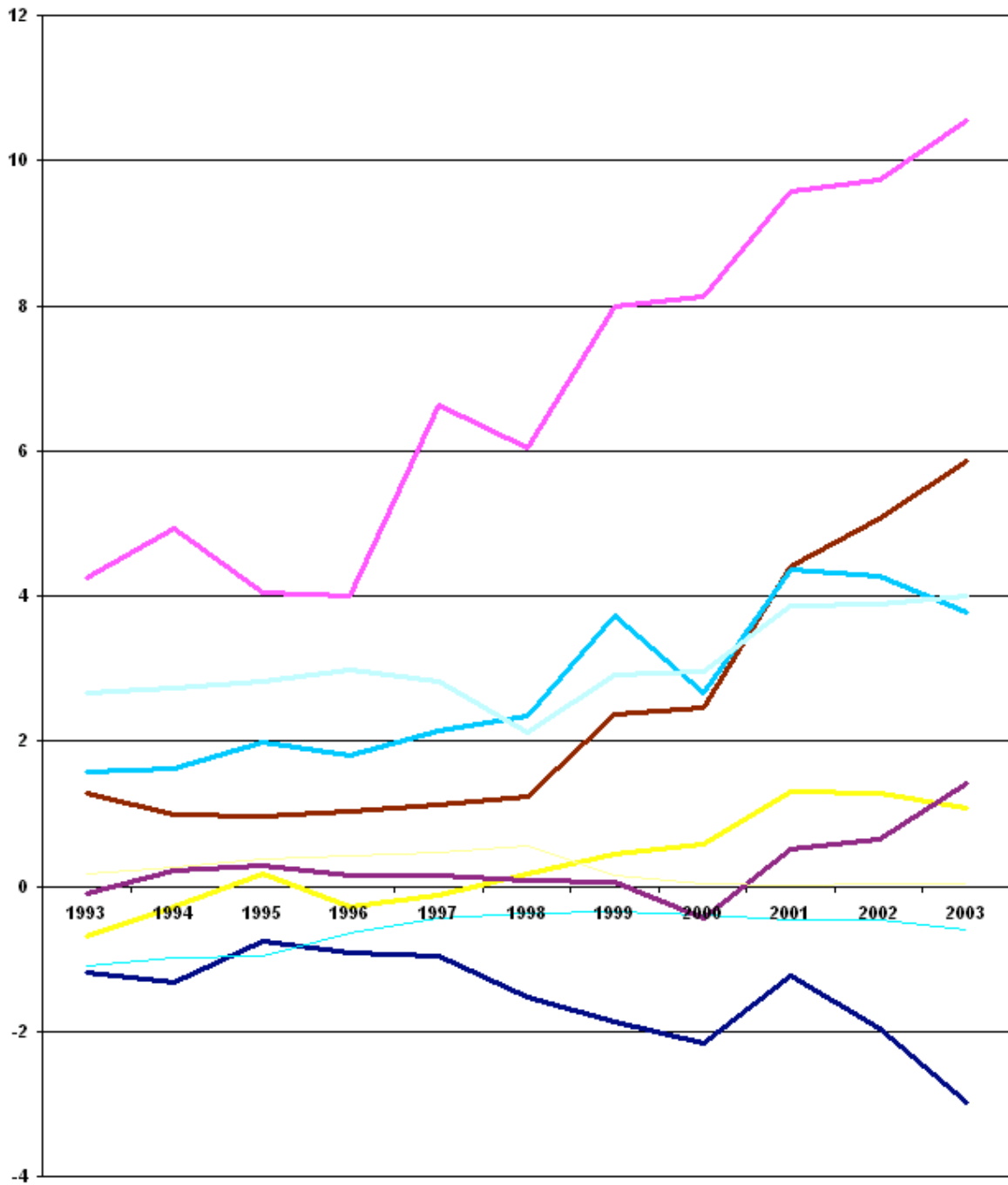
The comparative advantage indicator  $f'$  is therefore calculated using world weights for the base year ( $r$ ). For this year it is identical to the relative contribution  $f$ . For the other years ( $n$ ) the difference is all the greater, the more world trade in product  $k$  diverges from the average tendency for all merchandise.

Comparative advantages are calculated for individual products at the most detailed level of the CHELEM sectoral classification. The advantage by chain or by stage or production is then calculated by summing.

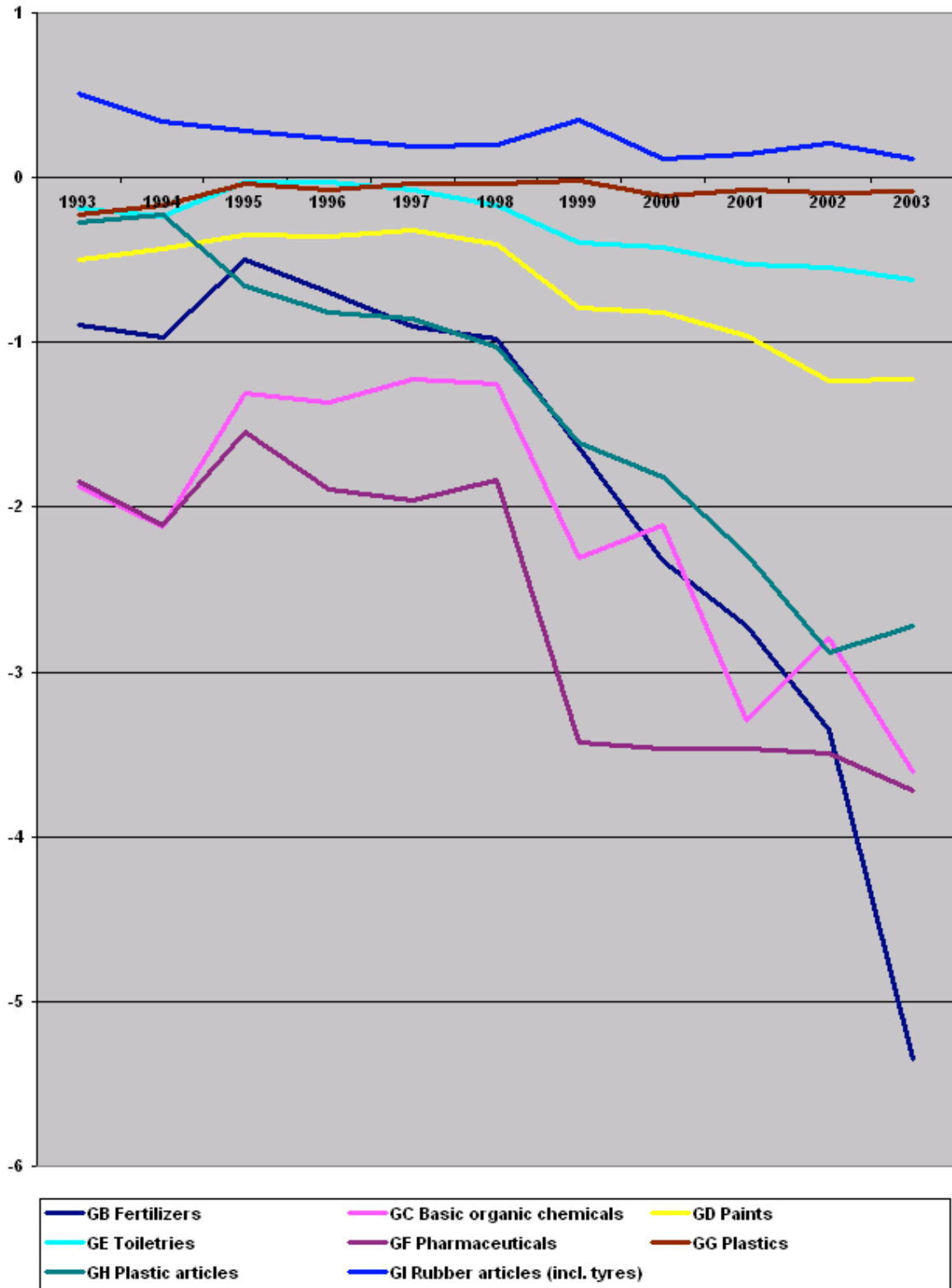
## Appendix 3



## BRAZIL: AGRO FOOD SPECIALISATION



### Brazil: RCA on Chemicals products



## Appendix 4 Export Patterns of Latin America by large sectors

Minerais de 1993 à 2003 [nomenclature Chelem]

Exportateur: AmLatsaufMexico [CIN] X

Importateur	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Monde	100	100	100	100	100	100	100	100	100	100	100
ALENA	15.8	15.7	14.7	17.1	16.0	17.5	17.3	17.1	16.9	15.8	13.8
Asie Océanie	31.1	30.8	31.4	32.3	30.8	29.1	33.6	35.2	38.1	38.7	43.2
Union Européenne	31.1	31.5	30.8	28.7	31.8	31.5	29.6	26.7	25.8	26.8	24.8
Eurafrique	42.1	42.4	41.0	38.7	42.7	43.3	41.0	39.7	36.9	37.5	35.0
AmLatsaufMexico	10.1	10.9	10.7	9.9	8.6	7.7	7.9	7.9	8.1	8.0	7.9

Energie de 1993 à 2003 [nomenclature Chelem]

Exportateur: AmLatsaufMexico [CIN] X

Importateur	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Monde	100	100	100	100	100	100	100	100	100	100	100
ALENA	59.4	56.7	55.3	59.7	57.9	56.2	58.5	59.0	55.5	54.8	47.6
Asie Océanie	2.9	2.3	1.8	1.5	1.6	1.3	1.4	1.8	2.7	3.4	3.2
Union Européenne	7.8	7.5	8.6	7.5	6.0	7.3	5.3	5.1	6.2	6.8	9.2
Eurafrique	8.7	8.1	9.3	8.3	6.9	8.5	5.9	5.5	7.2	8.8	10.6
AmLatsaufMexico	27.8	31.4	32.5	29.3	31.3	33.4	29.7	30.4	31.5	30.3	34.3

Agroalimentaire de 1993 à 2003 [nomenclature Chelem]

Exportateur: AmLatsaufMexico [CIN] X

Importateur	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Monde	100	100	100	100	100	100	100	100	100	100	100
ALENA	21.4	20.0	17.5	18.8	19.5	19.4	21.1	21.3	19.4	20.1	19.4
Asie Océanie	11.4	14.1	15.4	15.3	15.3	12.6	14.0	15.0	15.8	15.7	17.7
Union Européenne	40.2	40.4	37.2	36.0	35.2	34.4	35.7	33.2	32.3	33.0	33.2
Eurafrique	50.6	49.5	48.6	47.2	46.6	46.3	46.9	44.2	46.3	47.7	47.5
AmLatsaufMexico	15.5	16.1	18.2	18.4	18.0	21.2	17.7	18.7	18.1	15.9	14.7

Manufacturier minimum de 1993 à 2003 [nomenclature Chelem]

Exportateur: AmLatsaufMexico [CIN] X

Importateur	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Monde	100	100	100	100	100	100	100	100	100	100	100
ALENA	32.3	32.1	28.5	30.1	30.4	33.2	39.1	39.2	40.1	43.0	40.2
Asie Océanie	14.8	14.5	15.3	14.5	12.3	7.7	8.7	8.6	7.5	9.2	11.4
Union Européenne	16.9	15.8	18.5	16.8	15.3	16.7	17.1	17.2	16.2	16.1	17.0
Eurafrique	20.1	19.3	21.9	20.2	18.3	19.7	19.7	20.1	19.2	19.5	20.8
AmLatsaufMexico	32.7	34.0	34.3	35.0	38.9	39.2	32.3	31.9	33.0	28.0	27.3