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# Trade Integration, Restructuring and Global Imbalances

A Tale of Two Countries

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21.06.2011

## Abstract

China is widely seen as one of the sources of global macroeconomic imbalances. Its persistent current account surplus and capital exports to the United States are even cited as one of the causes of the global financial crisis. The most common explanation traces China's current account surplus to a mismatch between saving and investment due to inefficiently low domestic demand. We challenge this explanation. Our argument rests on an analogy that we construct between two countries generally thought to be very different: Russia and China. Russia, a raw materials exporting country, has been running current account surpluses similar to China's in relation to GDP. As for most raw materials exporting countries this is considered normal, reflecting efficient reinvestment of wealth from natural resources in financial assets. We show that a similar efficiency argument can be constructed for China, although the nature of wealth that is reinvested in financial assets is different in the two countries. Our analysis implies that China's current account surpluses can be expected to disappear over the long horizon – although the time when this will happen may still be very far away. Moreover, an appreciation of the Chinese currency may not have the desired effect of mitigating the country's current account surplus as a weakening in competitiveness is counterbalanced by a strengthening of investment motives.

## 1 Introduction

Since the opening of the Berlin wall in 1989 the world has gone through profound and historic changes. Formally socialist economies made the transition to market economies and opened themselves up to world markets. International trade expanded dramatically. Countries hitherto sheltered from the world markets were exposed to international competition. Thus the initial change (socialist-to market transition) begot further changes not only in the formally socialist economies but also in their trading partners. More than two decades after the momentous events of 1989 we would like to take a look back and to investigate the long-run impact of the systemic transition on international trade and on the state of the global economy. In particular, we are guided by two questions:

- What were the changes in international trade that followed the systemic transition of the early 90s? What use did key transition economies make of the new opportunities offered by the market economy and by the growing integration in global trade?
- To what extent can the global imbalances which characterize the world economy today be traced to the systemic transition of the early 90s and their follow-up effects during the past two decades?

In other words, we investigate the changes in trade during two decades of global trade integration and then discuss to what extent they may have contributed to the emergence of the so-called global imbalances, i.e. the deficits and surpluses of current accounts in current accounts of major global trading nations. Indeed, the key contribution of our paper is perhaps just that: to highlight and to explain the role of trade in the emergence of global imbalances. This may sound like an astonishingly banal contribution if it were not for the fact that the reigning macroeconomic discourse treats global imbalances from a very different perspective. The standard approach is to interpret global imbalances as imbalances between saving and investment in the concerned countries. Policy discussions then concentrate on macroeconomic and structural policies in these countries. In contrast, we highlight the role of international trade in the emergence of global imbalances. Instead of saving and investment we focus on exports and imports and on the role of trade imbalances as a major factor behind the emergence of current account imbalances.

Our discussion focuses on two transition economies: Russia and China. Both have gone through a more or less complete transformation of their economic systems. Russia presents the fairly conventional case of a predominantly raw materials exporting country. The collapse of the Soviet Union and the dissolution of the COMECON brought a massive reorientation of trade flows towards the global markets. New exploration and investment activities brought increases in production and export capacity. In combination with the (most likely) secular rise in energy prices this led to a

massive increase Russian export potential. As a result, Russia runs a trade account and current account surplus combined with capital outflows and an improving net international investment position (NIIP). At first glance, China seems to be very different from Russia. Definitely, international economic policy debates treat it very differently. Russia is a raw materials exporting country, China is not. Russia's growth rate has been fair (at least during the past decade), China's has been spectacular. Russia is (comparatively) small, China is the world's most populous country. In sum, China is not only seen as a very different country compared to Russia but also whatever happens there is taken much more seriously because of the country's size and the widely held opinion that it will eventually be the dominant economy worldwide.

Apart from these differences there is at least one similarity between the two countries: Both countries exhibit current account surpluses and these surpluses are trade driven. In both countries, it is trade in goods which is the most important component of, and the major force behind, the evolution of the current account. Thus, current account imbalances that emerge in Russia and in China are essentially trade driven. It is this fact which motivates our second question (above): is there something that can be learned about global imbalances by investigating the structure and the dynamics of international trade flows?

In the remainder of the paper we proceed as follows. In the following section we present the stylized facts of international trade in Russia and in China in section 3. After that we review theories In the next section we briefly review the relevant trade theories and extract a number of hypotheses concerning the composition and direction of world trade. In the following section we then turn to the examination of trade data. We identify major trading nations or areas and investigate the trade links between them. We tried to identify trends in the temporal evolution. A final section presents the conclusions in the summary.

## **2 Two Decades of Trade: Stylized Facts**

In this section we discuss key facts of external trade in Russia and China.

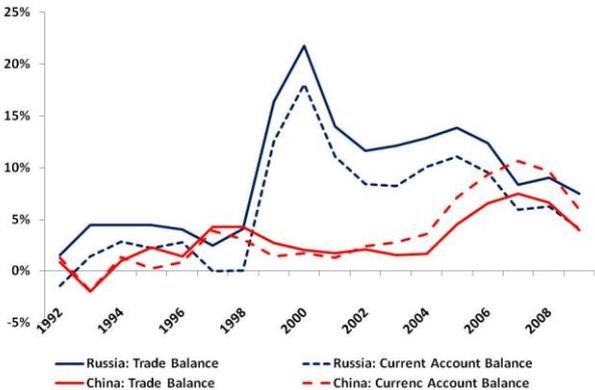
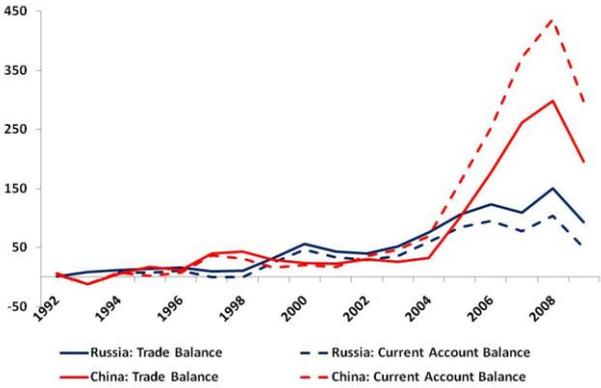
### **2.1 Trade and Current Account Balances**

We begin by looking at two countries' trade and current account balances. Figure 1 show these balances currency units, i.e in billions of US dollars. For more than 10 years both countries trade and current account balances were similar, if not identical. Both exhibited a slowly improving trend. It was not until 2005 that China's trade and current account balance took off and began to grow at a much more rapid pace than Russia's. After peaking in 2008 it fell in 2009 from the impact of the world trade crisis. Russia's surplus during 2005 through 2009 followed China's albeit at a much

slower pace. Figure 2 shows the same balances expressed as percent of GDP. Now the data show a strong increase of the Russian surplus at the beginning of the millennium. This reflects the shrinkage of Russian GDP in the wake of the ruble crisis of 1998. With the ensuing recovery of the Russian economy Russia's surpluses were gradually reduced to the same percentage as China's. Thus, during the two decades that we look at Russia and China have shown remarkably similar trends in their trade and current account surpluses. Moreover, it is worth mentioning that current account balances in both countries are essentially driven by trade balances.

**Figure 1: Trade and Current Account Balances (US\$ bn)**

**Figure 2: Trade and Current Account Balances (% of GDP)**



**2.2 Trade by Product Groups**

Now we look at the evolution of the structure of merchandise trade in the two countries. In Figure 3 we show Russian exports (left) and imports (right) subdivided into three main product categories: agriculture, fuels and mining and manufacturing. The data show the typical pattern of a raw materials exporting country. Leading exports are fuels and mining products (driven, in part, by the increase in raw materials prices), leading imports are manufactured goods. The evolution of China's trade structure during the two decades (Figure 4) can be divided into two parts. China acceded to the WTO in November 2001. Before accession its manufacturing exports and imports grew at a modest pace, since accession the growth rate of both increased strongly. In general, China's trade pattern resembles increasingly the one of an industrial country: Manufactured products occupy by far the biggest share among exports, as they do among imports, reflecting the fact that a growing part of manufactured imports are used as inputs for the production of manufactured exports.

Figure 3: Russia – Trade by Major Product Groups

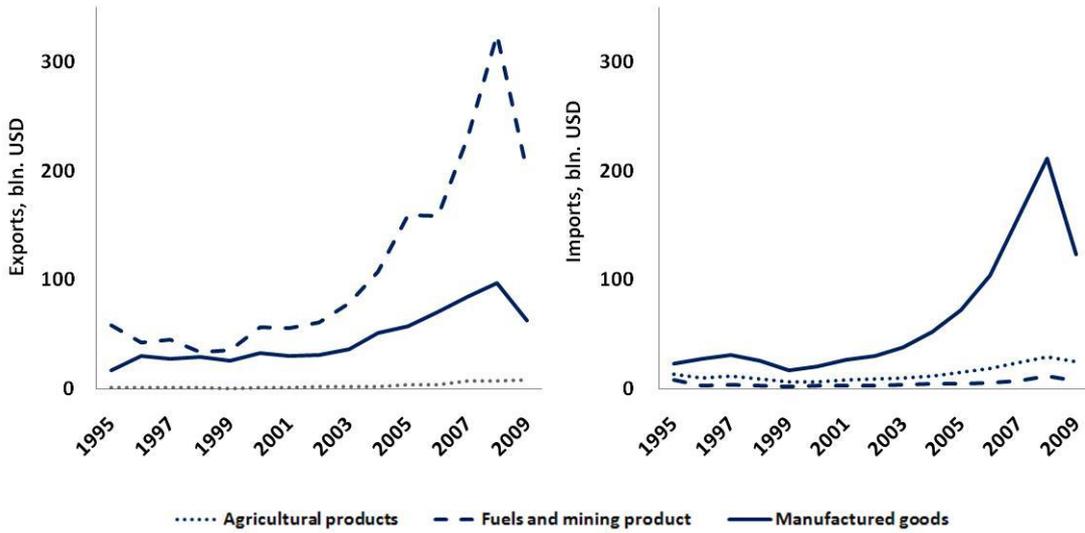
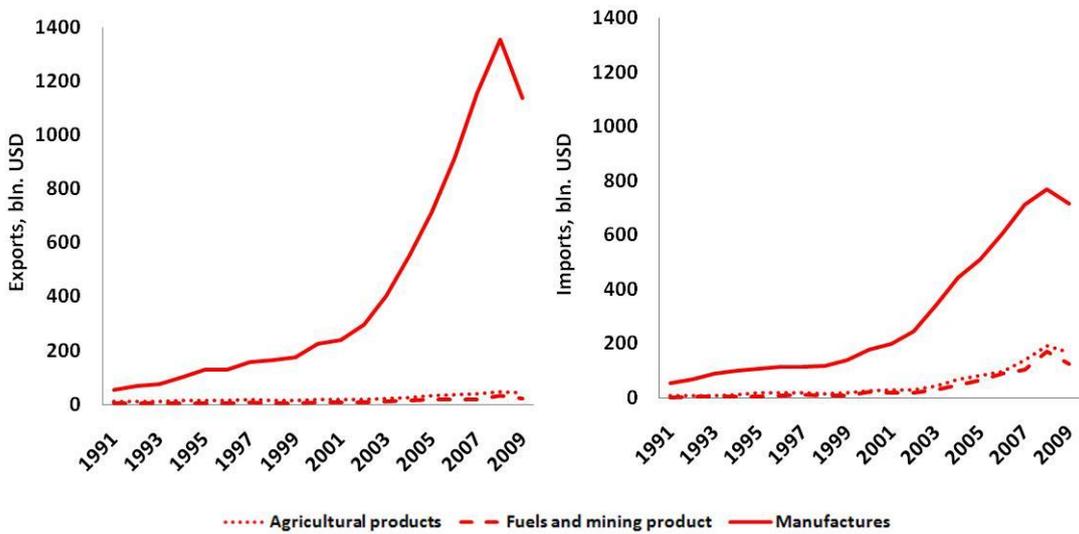


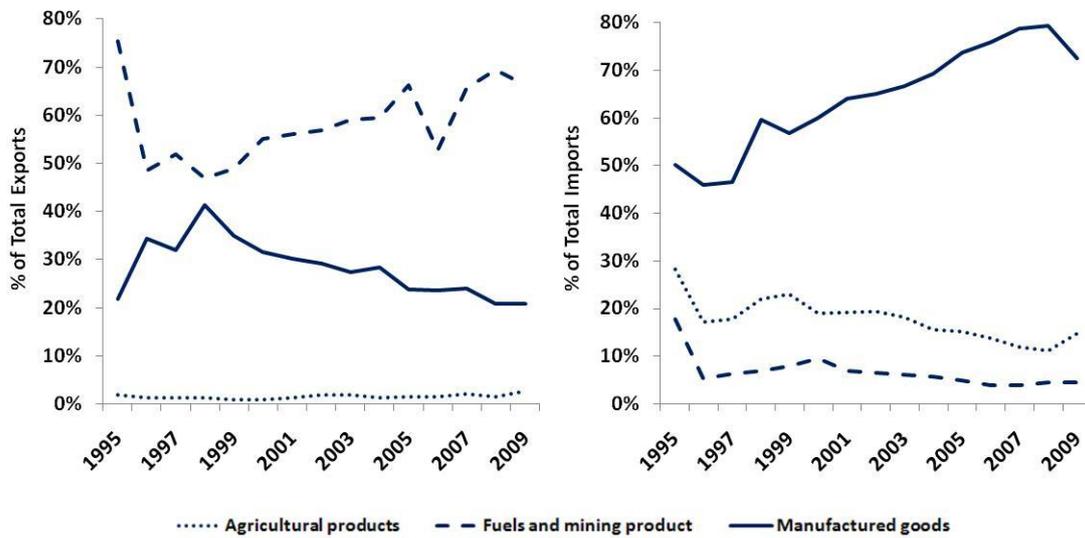
Figure 4: China – Trade by Major Product Groups



Source: China Statistical Yearbook 2010

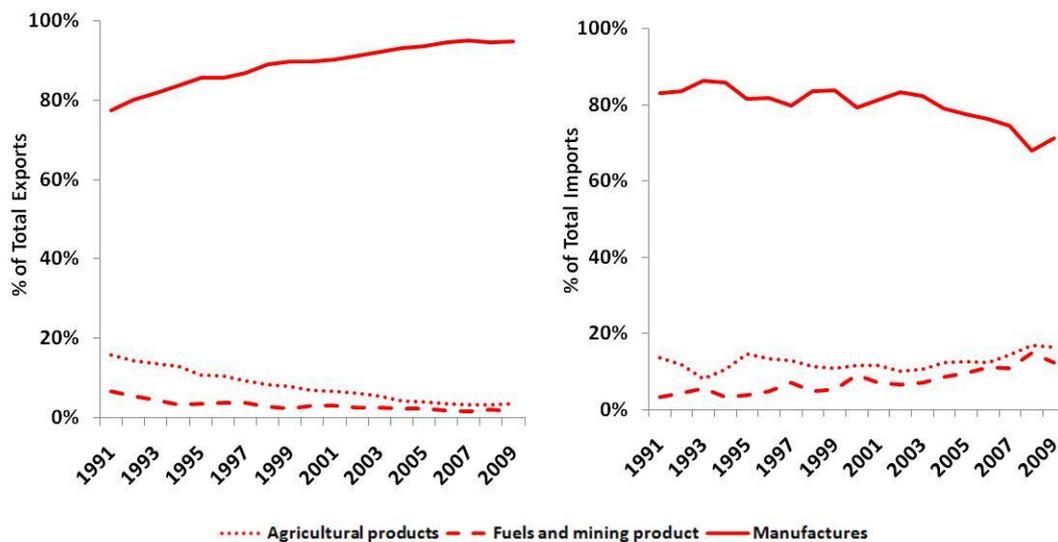
Figures 5 and 6, which present the structure of trade of both countries in percentage shares of the total reveal further differences between them. Where the share manufactured goods in China's exports has grown to around 90 %, the share of manufactured goods in Russia's exports continues to drop from its peak of approximately 40 % in 1998. China is thus clearly in the process of catching up with established industrial countries, while Russia clearly exhibits increasingly the trade structure of a typical raw materials producing country.

Figure 5: Russia - Structure of Exports and Imports



Source: UN Comtrade, Federal State Statistics Service of the Russian Federation

Figure 6: China - Structure of Exports and Imports



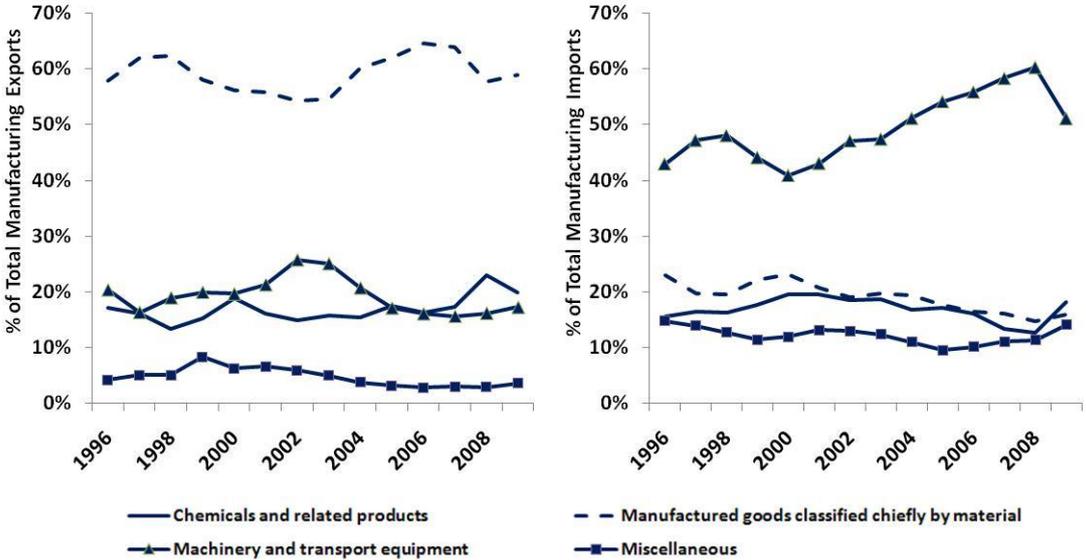
Source: China Statistical Yearbook 2010

### 2.3 Manufacturing Trade

In this section we look at the disaggregated structure of manufacturing trade in Russia and China. We first look at Figures 7 (for Russia) and 8 (for China). A comparison of the two figures reveals that the structure of Russia's manufacturing exports is largely static whereas the structure of China's manufacturing exports is subject to dynamic change. The most striking difference concerns the product group of "Machinery and transport equipment". In China it has grown from just above 10 % at the beginning of the first decade to over 50 % at the end of the second decade. This growth occurs

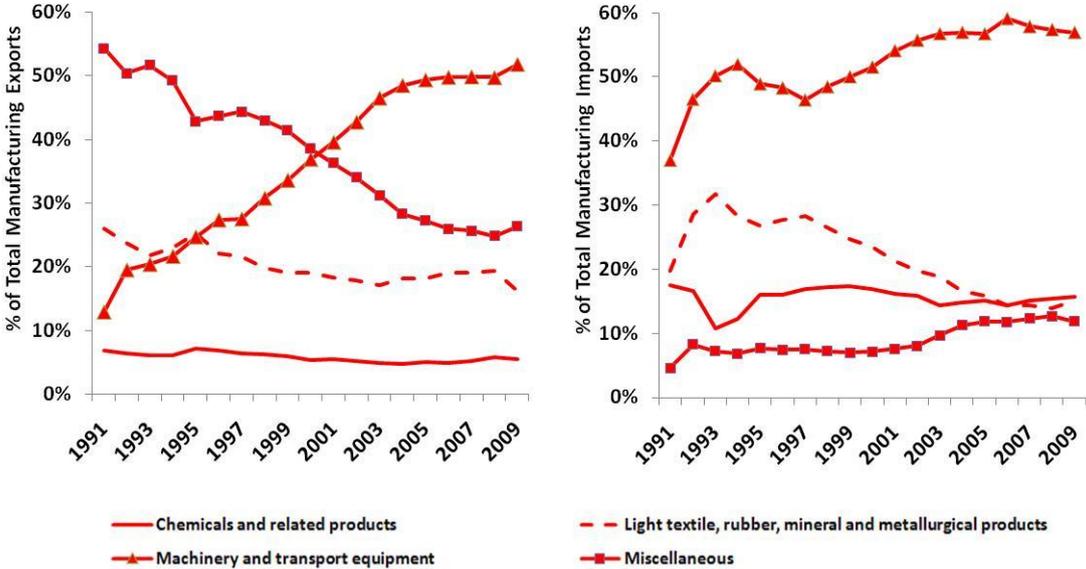
largely at the expense of a shrinkage in miscellaneous exports. In Russia, the export share of machinery and transport equipment stays more or less flat, while the corresponding import share rises from around 40 % to a peak of 60 % in 2008.

Figure 7: Russia – Structure of Manufacturing Trade



Source: UN Comtrade

Figure 8: China – Structure of Manufacturing Trade

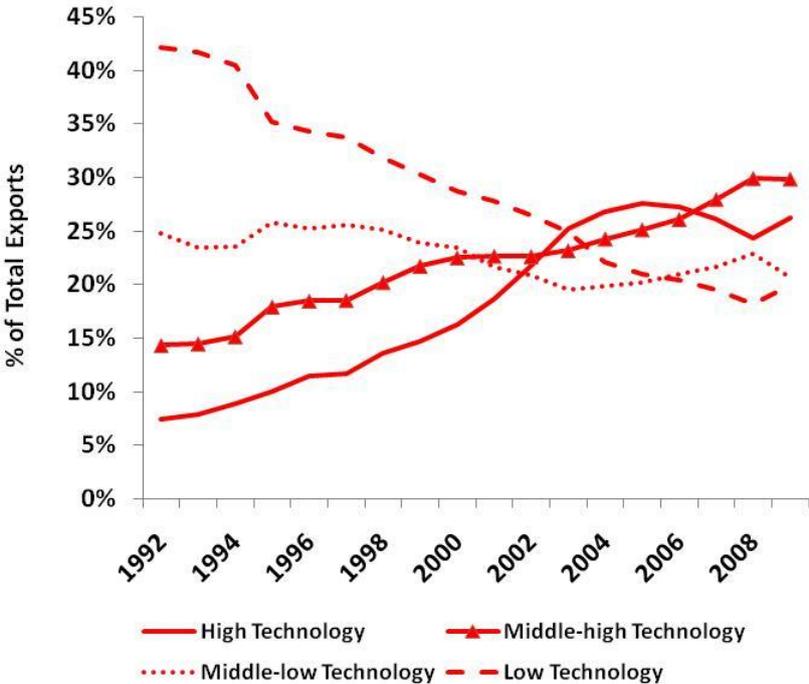


Source: China Statistical Yearbook 2010

The results so far suggest that China's external trade undergoes much more rapid structural change than Russia's. Figure 9 sheds more light on this. It shows the relative shares in total exports of products classified by four technology levels: low, middle-low, middle-high and high technology. The classification was done by the authors, using methodology developed by OECD. The figure shows two

stylized developments. First, exports with high and middle-high technology levels increase in relative terms, exports with low and middle-low technologies drop. This reflects the increasing technological sophistication of Chinese exports, including a continuing advance on the quality ladder. Second, the figure shows that during the second decade the technology structure of exports was more balanced than during the first decade, reflecting increased technological diversification of Chinese exports.

Figure 9: Composition of Chinese Exports by Technology Levels



Source: Authors' calculations with data from UN Comtrade using sector classifications of OECD 1997

### 2.4 Summary

The following stylized facts emerge from our review of the evolution of China's and Russia's international trade during the past two decades.

1. Both countries experienced a substantial increase in the value and volume of the trade with the rest of the world.
2. Simultaneously, both countries' international trade underwent significant structural changes. Both countries focused increasingly on exports reflecting their particular comparative advantages. These are raw materials exports for Russia, manufacturing exports for China.
3. Within manufacturing exports, China exhibits a continuing trend towards technological improvement, i.e. the average technology level of Chinese exports continued on an upward trend during the past two decades.

4. Both countries have surpluses in the trade balance and in the current account. Measured as percent of GDP the surpluses are of similar size. In absolute terms, however, the Chinese current-account surplus far surpasses Russia's.

The stylized facts highlight commonalities as well as differences. Common themes are increasing international trade integration, structural change with increasing focus on comparative advantages and, finally, balance of payments surpluses. Differences reflect the different export structures – raw materials for Russia, manufacturing for China – and, of course, the different population sizes of the two countries. The latter difference, in particular, is most likely the reason why China's trade and current account imbalances have received disproportionately more attention than Russia's during the recent years. From the point of view of global economic policy this is justified by the fact that China, due to its size, is much more important for the global economy than Russia and will most likely be even more important in the future. However, we feel that from the point of view of economic analysis these size differences between the two countries should not be overemphasized. Rather, we should try to understand the systemic, economic and structural transformation they are going through. This will bring into focus the common themes and trends shared by both countries. Insights gained by analyzing one country may help to understand problems occurring in the other country. With this we conclude our review of the stylized facts of trade in Russia and China and move on to the next section where we discuss the deeper economic drivers behind the stylized facts.

### **3 Trade Imbalances and Current Account Imbalances**

Our summary of stylized facts of North-North trade highlights, among other things, some of the current account imbalances which have emerged as a key problem of international economic relations. These "global imbalances" were addressed by a recent G 20 initiative, which led to a number of decisions on how to measure and/or to diagnose such imbalances. The usual approach to current account imbalances is to view them in pure and unadulterated macroeconomic fashion as an imbalance between national saving (S) and national investment (I), using the identity  $CAB = S - I$ . Excessive current account deficits are seen as the result of insufficient saving and/or excessive investment expenditure. Conversely, excessive current account surpluses are said to result from excessive saving (due, perhaps, to repressed consumption) and/or insufficient national investment which in turn is said to be due to "distortions" in the affected economies. This is the approach of Blanchard et al. (2011).

It is hard to argue with identities. But identities never speak for themselves. Their implications arise only if they are combined with empirically meaningful hypotheses or assumptions. In this respect it must be said that the arguments offered as explanations for excessive current account imbalances –

e.g. "distortions" – are exceptionally vague and thus quite weak. Such "distortions" are usually insufficiently specified. Moreover, the term "distortion" is normatively charged, implying that something is not "normal", that things are not how they should be. From an analytical point of view, this is highly unsatisfactory. In order to contribute to a better understanding of global imbalances, we believe that an explanation of the observed imbalances should be attempted with reference to the backdrop of the process of growing trade liberalization and trade integration which began at the beginning of the 90s. If, after 20 years of ever free trade, one of the results is widening global imbalances, then perhaps the economic mechanisms triggered by international trade have something to do with this. Indeed, this is the approach we take.

We begin with a brief review of existing theories on trade and investment, which is followed first of the discussion of Russia's current account surplus, then of China's.

### **3.1 Factor endowments and trade structures**

The breakup of the Soviet Union in the early 90s created a unique opportunity to rearrange global trade. It also created opportunities for countries

- to acquire new trading partners,
- to change their trading patterns,
- to promote economic restructuring in order to better concentrate on their "comparative advantages" and
- to take full advantage of their specific factor endowments.

During the past two decades one should thus be able to observe significant changes in international trading patterns and in countries national trading patterns. Capital-rich countries should export capital-intensive products, human capital-rich countries should be expected to concentrate on exports of know-how-intensive products, labor-rich countries should be exporters of labor-intensive products such as agriculture or products of light industries<sup>1</sup> and finally, resource-rich countries should be expected to export natural resources. Figure X summarizes the simple implications of this model when it is applied to our for northern hemisphere countries. The United States have their competitive edge in the areas of research and technology development and design. A lot of production is outsourced, deindustrialization is far advanced. The EU, on the other hand, is less de-industrialized, which is in direct evidence that physical capital employed in actual industrial production still plays a much greater role there. Russia most obviously is abundant in natural resources. This leaves China as the country whose specific trade-determining profile in this context is

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<sup>1</sup> Agriculture and light industries can also be operated with capital intensive technology but, at least so we assume, they need not be.

its labor abundance. The training pattern that should emerge is this: United States should export technology and designs, Russia should largely export natural resources while Europe and China would both export industrial products of the higher tech (EU) and lower tech (China) kind.

### **3.2 Factor endowments and trade imbalances**

The above considerations are suggested by standard classical trade theory of Heckscher-Ohlin vintage. But there is more. Trade always has a dynamic component. Even classical theories acknowledge this. The dynamic version of Heckscher-Ohlin theory is the Fisher-Hirshleifer model. This model has a long and distinguished history, beginning with the work of the Austrian economist Böhm-Bawerk on capital theory, which was taken up and further elaborated by the American economist Irving Fisher and finally introduced into postwar economics by Jack Hirshleifer. Although originally developed on a microeconomic level it has also been used for macroeconomic analysis. Applied to countries it explains national current account balances as a function of the representative agent's time preference and – more importantly – the country's relative factor abundance. The well-known result is that capital-rich countries should be expected to run current account surpluses while countries that have relatively richly endowed with labor should be expected to run current account deficits. Thus, capital-rich industrial countries should be net exporters of capital, labor-rich developing countries should be net importers of capital. Or even more succinctly: rich countries should run current account surpluses through which they export capital to poor countries. The empirical record of this theory is at best mixed. While it works for some countries, important counterexamples obvious. The most obvious counterexample is provided by Chimerica, i.e. the relationship between the People's Republic of China and United States of America. Between these two countries, the United States (being capital-rich) should be the one with a current account surplus while China should have a current account deficit – if Fisher-Hirshleifer theory were taken as the guide. Reality is the reverse of that. China has exhibited growing current account surpluses in particular with United States (but also with other industrial countries), while the United States has been plagued by persistent deficits.

### **3.3 Investment, Quality Ladders and Growth**

One of the reasons why Fisher-Hirshleifer theory does not adequately capture the realities of international current account imbalances is its failure to take into account the dynamic effects of international trade. It operates in a static technology setting with, at the limit, exogenous technological change. Technology has an impact on trade but trade has no impact on technology. Empirical observations and theoretical considerations suggest otherwise. Practically all respectable trade theories suggest that international trade enables countries to fully utilize their productive capacities and thus to raise their GDP. As a result, national saving and national investment can/will

rise sustainably. This will produce dynamic effects of international trade: further increases in per capita GDP, higher growth, higher investment, faster technological change embodied in newly invested physical capital, and accelerated structural change. Classical trade theory is silent on the dynamic effects of international trade. And indeed, it is such effects that contribute to blurring the clear implications of classical trade theory in a dynamic perspective. Classical trade theory says nothing about how countries will invest the surplus obtained from efficiency-enhancing international trade, how governments will plan and promote structural change, it says nothing about learning and quality improvements connected to, and arising from, international trade and how all this will play out in a dynamically changing international environment, where many countries are in similar positions and are similarly engaged in growth, learning and structural change. In such a world, factor endowments and technology become endogenous. Their evolution is shaped not only by economic forces but also by political decisions and development strategies pursued by governments.

The literature on quality ladders and growth addresses some of these issues. Successive quality improvements enable a country to "trade up", to grow and to upgrade the quality of its exports in parallel. But quality ladders is only a narrow metaphor for what happens to countries who successfully pursue export-oriented growth. In a wide sense, such dynamic growth is driven by asset accumulation, where assets incorporate private investment in machinery and equipment, government investment in infrastructure and education. Moreover, asset accumulation should include human capital growth, learning by doing occurring spontaneously or spurred by investment in new technologies as well as any intangible factors that contribute to the success of doing business in the modern world.

### 3.4 Assets

If we take a look back at the arguments presented so far in this section it becomes obvious that they have all been about *assets*. Tangible assets like factors of production (in particular capital in all shapes and forms) as well as intangible assets like know-how or a certain business culture all have in common that they contribute to adding value in the production process. This is particularly evident in the theories of Heckscher-Ohlin and Fisher-Hirshleifer. There, capital assets used in the production process; they are by themselves marketable economic goods and, in addition, they create economic value through their impact on the productivity of labor.<sup>2</sup> if we look at it from the point of view of the producer can say that anything that creates economic value foreign agent also has economic value for him/her. This brings us to the following **definition** of assets:

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<sup>2</sup> This differs not all that much from David Ricardo's trade theory which models the role of capital in the production process implicitly through its beneficial impact on the productivity of labor.

An **asset** which **enters** an agent's balance sheet is any material or immaterial good the agent has privileged access to while other agents don't and which possesses economic value either because it can be sold at a price or because it can add value in a production process.

Armed with this definition we move on to the next section.

### 3.5 Current Account Imbalances and Outside Assets

How is all this related to the issue of current account imbalances? And how does it connect such diverse countries as Russia and China? We suggest that the link comes from asset accumulation and asset restructuring. Specifically, we would like to pinpoint "outside assets" as the key to the answer. What do we mean by "outside assets"? The term is similar to, and motivated by, the term "outside money", which is that part of a country's money stock that is backed by gold or foreign exchange or any other assets that are claims vis-à-vis agents outside the country. That part of the money stock which is not "outside money" is "inside money". It is backed by assets that are claims between agents within the country. By implication, outside money is part of a country's net worth while inside money is not (because for every claim of an agent there is a liability of another agent). Our term "outside assets" is simply a generalization from "outside money". We use the following **definition**:

**Outside assets** include outside money plus all other non-monetary assets in the country which represent (1) claims vis-à-vis the rest of the world (e.g. foreign direct investment) or (2) claims against nature (e.g. deposits of raw materials<sup>3</sup>) or (3) any other material or immaterial goods the country has privileged access to and which either possess marketable value or are able to add value in a production process.

Current account imbalances represent not only imbalances between the flows of saving and investment but because of stock-flow interactions they are also linked to changes in countries' net international investment positions and, more generally, in national balance sheets. As we will show, *sustained current account surpluses may reflect a country's process of converting one kind of outside assets into another kind of outside assets*. Indeed, there is one important case where this is considered normal and/or efficient: this is the case of raw materials exporting countries.

A few exceptions apart, raw materials exporting countries typically run current account surpluses but they are not normally targeted in the debate on global imbalances. Nobody blames Norway or Saudi Arabia or Russia for running large current account surpluses although e.g. Russia's current account surplus has been (at times) much larger than China's in percent of GDP. Although the reasons are never made explicit, current account surpluses are considered normal for these countries. The implicit assumption seems to be such countries will not be able to generate enough domestic investment opportunities – i.e. investment in physical capital – so as to be able to reinvest the wealth

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<sup>3</sup> According to the new standards of government finance statistics they designated as "Nonfinancial nonproduced assets."

implicit in their raw materials deposits completely in domestic physical capital. As a result, at least part of the proceeds from raw materials exports must be invested in international assets, either international reserves or a portfolio of other assets. The critical debates concerning these countries are not targeting their current account surpluses but rather the way in which they invest their surpluses and issues such as transparency and accountability of their sovereign investment funds.

In essence, what such raw materials exporting countries are doing is converting assets that illiquid and nonrenewable – i.e. raw materials deposits on their territory – into other assets that are liquid and can be reinvested in such a way as to yield sustainable revenues. If countries where corporations, they could simply sell the ownership rights of their petroleum deposits in exchange for cash or other liquid assets which could then be reinvested and diversified. Although this is theoretically possible also for sovereign states, the more normal way to proceed in this case is to sell or to rent out exploitation rights for a limited time and then to collect fees, royalties, taxes or other regular revenues from the business undertaking the exploitation. The end result is the same: the proceeds from exploitation are received in cash or other liquid assets and can then be further reinvested and diversified. Thus, these are two alternative but ultimately equivalent ways to convert illiquid and nonrenewable assets into liquid and potentially sustainable ones. The one crucial difference between them is that the second way of converting illiquid into liquid assets (the sovereign state-way) touches the current account. Raw materials are exported, thus contributing to a current account surplus. In the case of a corporation selling ownership rights for cash the result would be a switch on the asset side of the balance sheet that would not affect the profit and loss statement (which can be considered the equivalent to the current account of a sovereign state). The upshot of this is that a current account surplus need not reflect excessive national saving or depressed investment due to "distortions" in the country, in the case of raw materials exporting countries it usually reflects the quite rational endeavor to convert one kind of national assets – nonrenewable and illiquid deposits of raw materials – into another kind of assets, namely liquid financial assets and/or foreign direct investments etc.

From an accounting point of view a current account surplus necessarily reflects a positive difference between saving and investment. But to jump from his accounting truism to the claim that national saving is "too high" or national investment is "too low" is not warranted – and certainly not implied by accounting itself. As we have shown, the excess of national saving over national investment may reflect the legitimate endeavor to diversify one form of outside assets (raw materials deposits) into another form of outside assets (currency reserves, gold holdings, foreign direct investment, and other foreign property ownership etc.).

We believe that, so far, our elaborations on current account surpluses of raw materials exporting countries are fairly uncontroversial. But we now claim that with due modifications they can be extended to a predominantly manufacturing exporting country like China. The modifications concern not the balance sheet orientation of the argument, i.e. the claim that current account surpluses may reflect the reallocation of illiquid to liquid assets (or nonrenewable to renewable assets). Rather, the modifications concern the types and definitions of assets used in the argument. China's current competitiveness in global markets reflects not just low wages or an undervalued exchange rate (although these factors do play their role) but also the productivity advantages obtained from a wide variety of intangible assets. Such assets have the disadvantage of being highly illiquid. Through the current account surplus they are converted into tangible and liquid assets. One piece of evidence for this is the huge buildup of foreign currency reserves; China currently holds the largest stock of reserves worldwide. But perhaps more important piece of evidence is the active approach taken by the Chinese government and by Chinese enterprises to reinvest liquid reserves in durable assets, and in particular in such assets which serve to secure the country's position in world trade. Examples are rights to the exploitation of raw materials deposits in other countries (notably in Africa), rights to the use of tracts of agricultural land in other countries (also in Africa), ports, such as the one currently being built in Pakistan, as well as a wide array of foreign direct investments. Chinese current account surpluses are not an accident but an integral part of this strategy: a strategy of securing China's position in the world economy for the long run.

**Two crucial questions** have to be addressed to make our argument complete. The **first question** concerns the hypothesized illiquid/nonrenewable assets China possesses and converts (by its current account surplus) into liquid/renewable assets. What kinds of assets are we talking about? Indeed, the assets that China acquires as a result of its current account surplus are much easier to identify than those that drive (according to our argument) this current account surplus. Maybe it is too early at this moment to come up with a definitive answer to this question. And most definitely an answer must be based on a much more comprehensive study of industrial relations and of ways of doing business in China than is possible in this paper. But a hint for a possible answer can be obtained from looking at the example of Japan. When Japan burst into the international arena as an exporting superpower in the 1970s and 1980s its phenomenal success was attributed to a number of economic, political and social factors that were not present in other countries – at least were not present at the time. Among the many economic factors were superior quality management and just-in-time production (sometimes also called lean production). Both fit our wider definition of assets given above. They were not separately marketable, Japanese producers had privileged access to them and used them to add value in the production process. This gave them a competitive advantage in world markets and was one of the factors driving the Japanese current account surplus. It is such implicit

assets that we refer to in the case of China but we leave it to the discussion to determine what they might be for that country.

The **second question** concerns the role of exchange rates and of exchange-rate policy in determining the current account balance. The prevailing opinion is that China's currency is undervalued in the foreign exchange markets and that this is a key factor for its current account surplus. American governments have continued to pressure China to adopt more flexible exchange rate policy and to allow an appreciation of its currency. Despite some progress in this direction, the renminbi is still considered undervalued. Does our theory permit a new view on this old question? We think that it does. The prevailing opinion largely reflects the flow concepts embodied in the absorption approach to the current account. An appreciation of the renminbi would raise China's unit labor cost and thus reduce the competitiveness of its producers and exporters. From the point of view of our asset-oriented approach this competitiveness-reducing effect of a renminbi appreciation would continue to work. It could be reinterpreted as a valuation loss on China's implicit assets as the income stream derived from such assets would be reduced in value (due to reduced export earnings in domestic currency). This can be called a stock-flow effect: since the value of the asset represents the NPV of its future income flows, a drop in the value of these flows will result in a drop in the value of the asset. But there is more. An appreciation of the renminbi would also result in the relative valuation change between different types of assets. Domestic Chinese assets would become relatively more expensive, assets denominated in foreign currency (in particular in US dollars) would become relatively cheaper. This would entail a wealth effect and the substitution effect. The wealth effect would be negative for China, i.e. Chinese asset holders would lose net worth. The effect of this on the current account is not clear, but if the Chinese current account surplus reflects something like "target saving" then the current account surplus would rise, reflecting Chinese asset holders' intention to rebuild their net worth. The substitution effect would work towards the acquisition of more foreign assets as these would be now relatively cheaper to acquire. This, too, would work towards a higher Chinese current account surplus. In sum: our asset-oriented argument on Chinese current account surpluses to shed new light on the link between exchange rates and the current account. It implies that an appreciation of the Chinese exchange rate would be largely ineffective in reducing the country's current account surplus. It might even have the opposite effect. This should not come as surprise. Experiences of other surplus countries such as Japan and Germany demonstrate that exchange-rate appreciations do not help much in reducing current account surpluses.

## 4 Summary and conclusion

Our results can briefly be summarized as follows. Russia and China have gone through important changes in their external trade during the past two decades. Both countries are moving in opposite directions, they are almost like mirror images of each other. While Russia has increasingly focused on raw materials exports, China has continuously expanded the share of its manufacturing exports. For both countries the most recent decade was particularly successful. As a result, the key challenge for them is to convert their recent successes into sustainable gains – gains income, wealth, market shares and improvements in productivity and product quality.

Both Russia and China have exhibited considerable current account surpluses and have accumulated large holdings of international reserves during the two decades under investigation. Although the trade structures driving these current account surpluses are very different in the two countries, we interpret both as an attempt to convert illiquid and exhaustible resources/assets into liquid and renewable/sustainable ones. We've referred to this as a restructuring of the asset side of the national balance sheet. For both countries this is the chosen approach to convert short-term successes into sustainable gains. Our asset-oriented analogy between Russia and China has a number of implications. One of them is the prediction that a Chinese exchange rate appreciation will not be effective in reducing the country's current account surplus.

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