

# Global Shift

## - The European Union, the United States, and the emergence of China

T. Gries, University of Paderborn, Germany

### 1. Introduction

In the 1960s of the 20<sup>th</sup> century the world economy had only one clear center. The US economy was the largest (in absolute terms) and richest (in per capita terms) economy and dominated the world economy. The economic world was mono-centric with a periphery. In the present context an economic center is an economically integrated region of the world that can substantially affect both other regions and the world economy.

With the successful economic and political unification of Europe a second economic center appeared on the world economic map. In the second half of the 20<sup>th</sup> century European integration and the ongoing enlargement of the EU transformed a number of medium sized (but each small compared to the US economy) economies into a second center of the world economy.

While in the last decades of the 20th century the EU started to become almost equally important, a third region began to appear in the Far East of the world map. Starting with Japan in the 70s and 80s, followed by the emergence of China, Asia has become a significant part of the world economy. The emergence of a second (EU) and even a potentially third center of economic activity in Asia has challenged the notion of the US as a clear hub of the world economy.

*Global Shift* stands for a fundamental change in the world map of economic activities. As described by Dicken (2003) there are many dimensions of the Global Shift which might be worth looking at to gain a better understanding of the development of the world economy<sup>1</sup>. The discussion of this contribution focuses on the last 50 years and four major aspects:

- Despite a good performance of the US economy the United States will be of decreasing importance to the world economy. While the US used to be the only economic center, within just a few decades, its economy will become just one of - and not even the largest - of several centers. Even if the US had substantial population growth and over-performed with respect to economic success, there are other even larger fully integrated world regions that are potentially outperforming the US economy.
- Despite the lower performance of individual countries in Europe, the process of European unification and enlargement will make the EU one of the global economic centers, in both real and monetary terms.
- A significant number of medium sized emerging market economies, especially in Asia and Eastern Europe, together make a substantial contribution to world GDP, trade and financial activities. Other less developed countries become less important.

---

<sup>1</sup> Recently Bergsten (2005) collected a number of contributions to discuss the effects of global shift on US foreign and economic policy.

- The emergence of China and India as super-large countries in terms of population will potentially lead to an additional, i.e. at least a third fully integrated economic center of the world economy.

Since a comprehensive discussion of the large number of medium sized economies mentioned above is beyond the scope of this paper, we would like to spotlight some very long term stylized aggregate developments most likely leading from a mono-centric to a poly-centric world with at least three or even more economic centers. Even more this contribution is focusing on the emergence of China because it is the one of the two Giants exhibiting the most rapid development.<sup>2</sup> A fast development of such a giant will change the map substantially and can shift the economic hub of the world. Hence, *Global Shift* is a term that clearly understates one of the most important changes in economic history.

So far a center of the world economy is identified by the pure absolute size of economic activities. Why is it interesting to look at these huge integrated economic regions? Because in some respect size does matter. There are several dimensions where size is relevant to economic activities. Large economies

- can realize scale economies in the domestic market and advantages for large scale production processes,
- can function as a gravity center,<sup>3</sup>
- have bargaining power in trade, currency, exchange rate and environmental policy and can define and enforce legal, technical and economic norms,<sup>4</sup>
- can provide a diversified technical infrastructure for high end research.
- dominate world business cycles,
- can realize seignorage if the currency forms a substantial fraction of international reserves.

Apart from these pure economic advantages, the political advantages are obvious. Absolute economic size will eventually provide the resources for enforcing political concepts and advantages. Looking at the pure absolute economic size is not enough. Per capita income and welfare is a second important dimension for identifying economic centers. High per capita income often correlates closely with technical capabilities and high endowments of human capital. Hence absolute and to a certain extent also per capita values are investigated. However, this paper will not focus on the effects of having these economically dominating centers. Rather the intention of the paper is to demonstrate that these centers are presently shifting rapidly from the western side of the global map to the eastern side.

The discussion of Global Shift and the emergence of additional centers in the world economy will follow in 3 steps. 1. A precondition for becoming a center of the world economy is a sufficiently large population (chapter 2, *Population*). Population size defines the potential economic size. 2. Only if a large population is combined with economic success can population size translate into economic size. However, the combination of population size and increasing economic success can very rapidly turn a rather small economy in an economic giant (chapter 3, *Economic activities*). 3. In order to be relevant to the rest of the world an economic center must be integrated in the world economy. Only sufficient integration in trade

---

<sup>2</sup> For a discussion of the general appearance of large emerging market economies see Boyer and Truman (2005).

<sup>3</sup> For contributions in this context see e.g. Tinbergen (1962), Pöyhönen (1963) Linnemann (1966), Anderson (1979), or more recently Oguledo/MacPhee (1994) and Bayoumi/Eichengreen (1997).

<sup>4</sup> See e.g. Smith (1999) or Glick/Rose (2001).

and financial markets and hence mutual dependences will make a large economy relevant for the rest of the world. (chapter 4, *International trade and economic integration* and chapter 5, *International finance and economic integration*) In this discussion we focus on China, as China is a very likely candidate for the emergence of a third huge world economic center located in Asia<sup>5</sup>. While Japan is a big single economy, its population size is too small to develop the potential of such a global center comparable with the EU, the US, or the potential of China. We will look at the stylized developments and do not focus on analyzing reasons or implications. However, some interpretations of the stylized facts implicitly use long term neoclassical ideas for explanation.

## 2. Population

Population is the driving force for potentials. Population is the fundamental determinant of the potential size of a country or global region. Only a region with a substantial population size has the potential for developing into a global center, high population is a necessary not a sufficient condition for a region to become a center. However, before we discuss economic activity we have a look at the development of the population as the fundamental driving force.

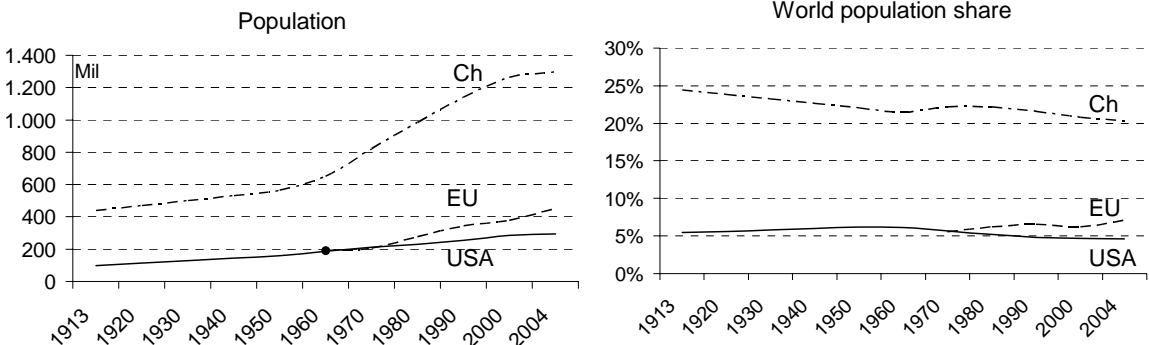


Figure 1a: Population <sup>6</sup>

<sup>5</sup> See Lardy (2005).

<sup>6</sup> Source: Population of the whole world for the period 1950-2004: U.S. Census Bureau; Population of China, India, Japan, US and EU countries for the period 1950-2004; Penn World Table, Population historical statistical data for the years 1870 to 1913: Agnus Maddison (2006), *The World Economy*, Development Centre Studies, OECD Publishing. Data from 1913 to 1950 were generated by extrapolation.

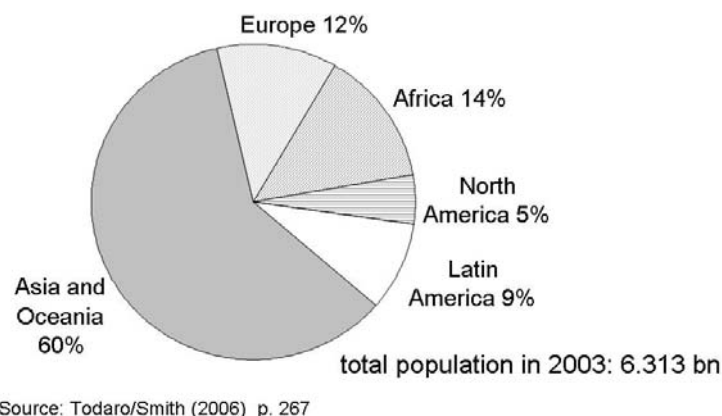


Figure 1b: Population share of the world in 2003.

As we can see from figure 1a and b the development of the population has led to only a minor shift of the world population map. While at the beginning of the 20<sup>th</sup> century Western Europe and North America together were still home to more than 25% of the world population the picture at the end of the century has changed. A hundred years later the population share of Europe and North America stands at around 17%. Moreover, Asia and Oceania with a share of about 60% are clearly home to most of the world population. Moreover, this distribution illustrates the momentum of the driving forces of the economic shift and eventually also the shift of political power.

Pure population size does not necessarily lead to economic success or size. However, once the take off process is successful and the countries start to develop, population size rapidly transforms into economic size.<sup>7</sup> The large (in terms of population), but poor countries now begin to develop successfully and turn their potentials into real economic values of gigantic dimensions.

### 3. Economic activities

Economic success is required to transform potentials into relevant economic activities and finally into a notable center. Looking at the development of per capita income as the most general indicator of economic success, we can still see the traditional picture of the world. The US is the most successful economy followed by Japan and the EU (represented by Germany) (figure 2a). There has been no dramatic shift in terms of per capita income.

---

<sup>7</sup>Whether this process takes place or not is beyond the scope of the paper, the path leading to population traps or to economic miracles seem to lie close together.

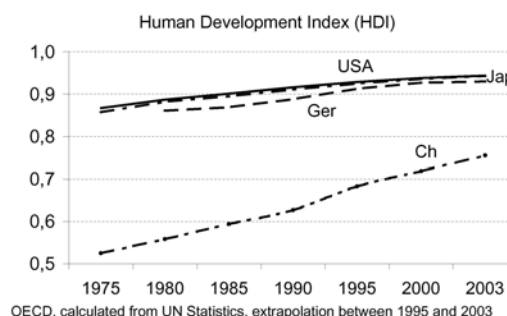
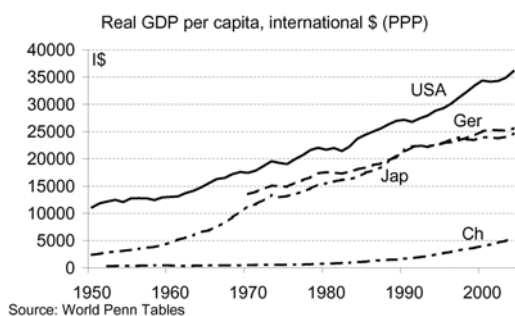


Figure 2a: Per capita GDP and HDI

The development of the Human Development Index (HDI) gives a similar result (see figure 2a). Even if China could catch up quite dramatically, there remains a large gap between China, the US and Europe.

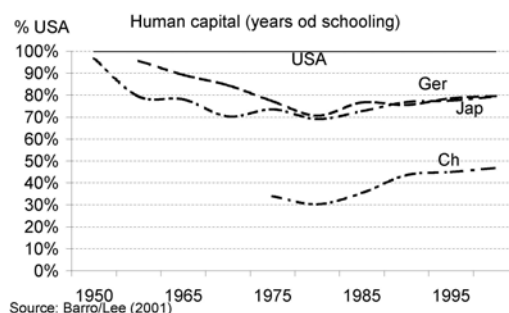
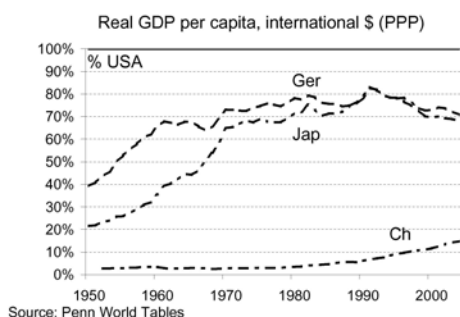


Figure 2b: Per capita GDP and human capital relative to the US

Neither does this picture change if the most important determinants of success are considered. Many theoretical and empirical studies like Barro and Lee (1994), Aghion and Howitt (1998), Temple (1999), Durlauf and Quah (1998), and Grossman and Halpman (1994) or Barro and Sala I Martin (2004) tried to identify the main sources of growth. They have shown that capital accumulation, the level of technology, and openness in terms of trade and FDI often have a positive effect on economic growth. Fujita and Krugman (2004) attach great importance also to geographic factors. However, in most contributions educational attainment proved to be a major source of growth, convergence and catching up (see also Benhabib and Spiegel (1994) and de la Fuente (2002)). Hence, economic success is bound to people and their abilities. If the potentials of countries with large populations can be used (via accumulation of human capital) for economic development, highly populated countries have the potential for a high level of economic activity. While the population in the US or in

Europe historically enjoys a good education, and is hence endowed with high productive human capital, the population in most developing economies does not have a comparable human capital (figure 2b). However, while the endowments in Europe and Japan are stagnating, China is catching up.

Further, by making use of their high human capital endowment, the most successful economies are also the most innovative. Figure 3 illustrates that there are three innovative centers in the world, the US, the EU and Japan. Global technological progress is generated in these technological cores. High productivity and strong innovative power are strong determinants of success at the higher end of the income ladder.

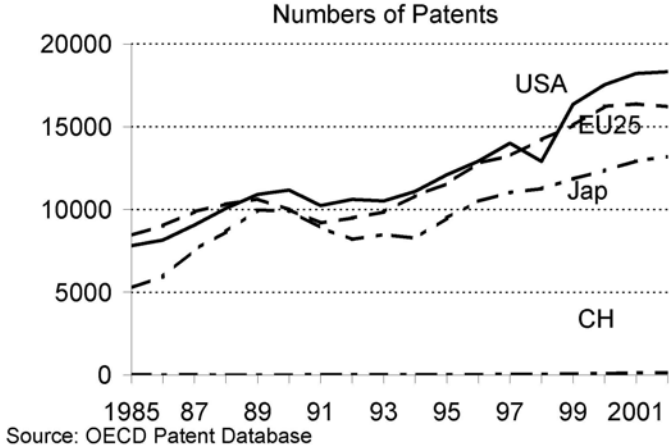


Figure 3: Innovations

In contrast, a lack of productivity leads to economies with large populations living under rather poor conditions. Population size did not translate into economic size or even a global economic center. Until the last decade of the 20<sup>th</sup> century the two countries with the largest populations, China and India were unable to develop their potentials. They were both living under rather poor conditions. At the beginning of the 90s, China could not reach Germany’s level of total economic activity even with a population 20 times its size.

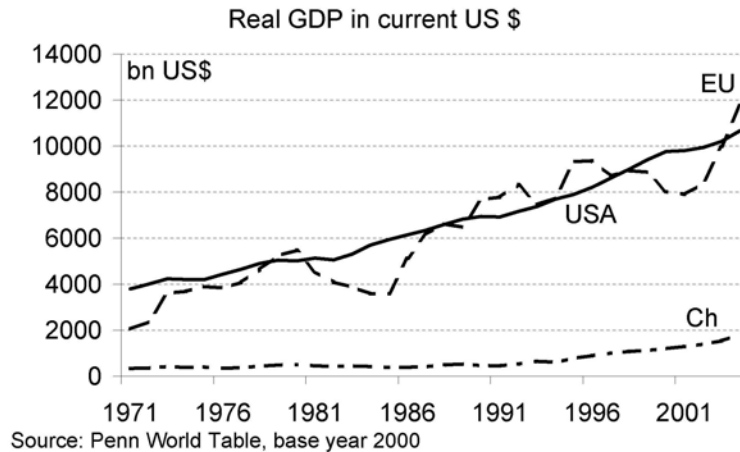


Figure 4a: Absolute real GDP current exchange rates

While the population was huge, absolute GDP in these countries was comparatively small. This picture changes slightly if China's rapid growth process during the 90s is considered. Figure 4a shows the development of real GDP using current exchange rates. According to this figure China is still far away from the two other almost equally large centers.

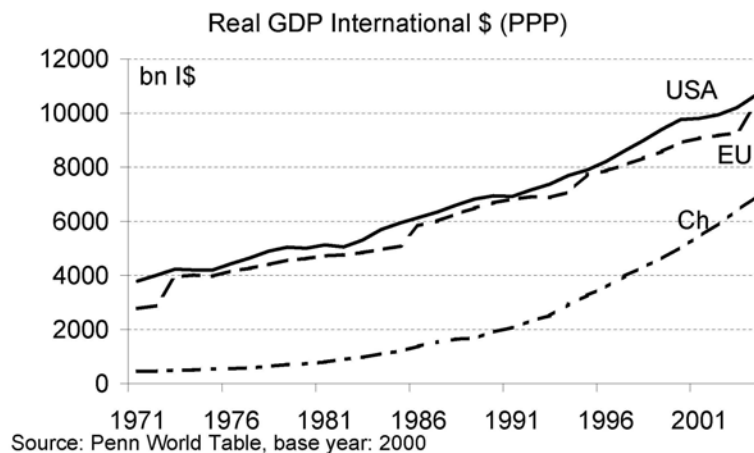


Figure 4b: Absolute GDP PPP (purchasing power parity) exchange rates

However, measured in purchasing power parity (PPP) values, the economic take off of China changes this traditional picture within less than a decade. China has overtaken all G7 countries except the US at the turn of the century. Looking at the absolute level of economic activities, we can now identify three global regions (see figure 4b) - two of almost equal size and one close behind. In terms of total GDP, the EU is presently of almost equal size to the US followed by China. With the emergence of China a third huge center is apparent. Not Japan is the economic global center in Asia. Japan's population size is insufficient. With the rapid growth of China, the potential of China's large population is transforming into a global economic center. This is even more obvious if the fact is taken into account that most of the

development in China has taken place in the coastal belt that is home to a population approximately of the size of the US population. The rapid absolute growth of the Chinese economy is driven by the large population multiplier. A small increase in per capita productivity driven by technological catching up is multiplying into huge absolute growth rates. Even if per capita income will remain low and grow slowly, there is no doubt that China and potentially India will be global economic centers in Asia with an importance far greater than that of Japan over the last two decades. In Europe more than in the US the awareness of this shift process is limited. The awakening of a giant in the east is not sufficiently clearly related to its own situation and position. The apparent far distance of China and its still relatively small per capita income seem to lead to an underestimation of the importance of Asia and China in global economic relations.

#### 4. International Trade and economic integration

Pure economic size does not make a global economic center. Integration in the global economy is another precondition for being a center of importance to the world. If an economic unit is isolated from the rest of the world, such as COMECON, it will exist but remain insignificant to the world economy. A global economic center must be integrated significantly in the economic activities of the rest of the world. There must be a significant contribution to world trade and financial streams in order for it to be relevant to the global economy. Looking at the structure of world trade international transactions traditionally were dominated by the EU countries, the US, and Japan.

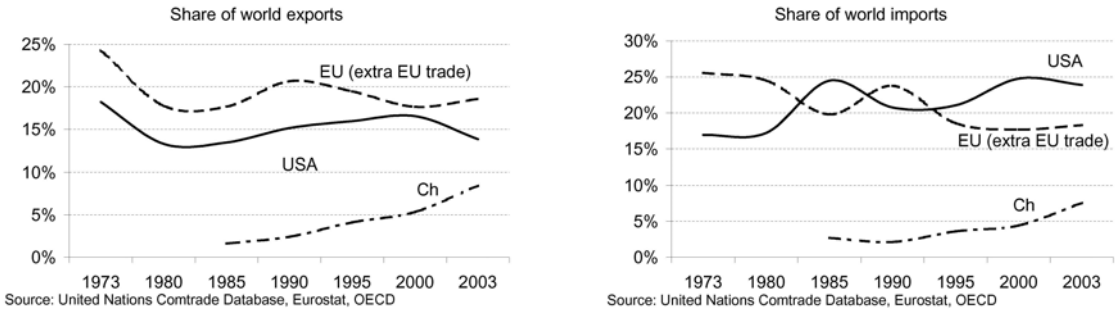


Figure 5: Global trade shares

Recently this picture changed substantially. Apart from a significant number of medium sized catching up countries the emergence of China in international markets has been the most important process during the last two decades.

Since the beginning of the "Open Door Policy" at the end of the 70s three waves of international integration have been introduced to the Chinese economy. Tuan/Ng (2004) identify three waves of integration policy. These waves are characterized by preferential policies that were introduced sequentially in different regions.

The first wave was characterized by the introduction of Special Economic Zones (SEZs), all of which were located in the coastal belt. The geographic advantages of the coast (Bao et al. (2002)) and preferential policy (Demurger et al. (2002)) were used to reduce international transaction costs for exports and international investors (Wei, X. (2000)). Overseas Chinese were attracted as international investors. These inflowing FDI were transformed into a successful growth process in the coastal regions. "Export and FDI have been causing the Chinese economy to grow faster, while at the same time the highly uneven distribution of



trade and FDI has caused regional disparity to increase greatly." (Fujita/Hu (2001), p.31, see also Chen/Fleisher (1996)).

Since 1992 the experiment of international integration facilitating deregulation has been extended to more locations. This second wave of integration was still highly controlled, in terms of both instruments and affected locations. This period of broader but still limited liberalization led to the tremendous success story of the coastal belt in the 90s. FDI and the ability to export seem to be a major determinant of successful development.

With the adjustment to WTO accession the third wave of international integration has begun. Accession to the WTO has required a change in economic rules in a large number of regulatory areas. Preferential policies had to be abolished. Hence, in contrast to the first and second wave, accession to the WTO does not systematically prefer certain locations. WTO accession may push convergence of economic rules across regions. Broad liberalization (via WTO rules), together with the "Go West Policy", is expected to trigger a broad wave of development in the formerly less privileged regions (see e.g. Xiaojuan (2001)). China's fast growth is driven by and is leading to a rapid penetration of world markets.

Hence, within less than a decade China has become one of the major exporting and importing countries, overtaking even Japan. With a share of today almost 10% of world exports China does not yet reach the importance of the EU with about 20% (see figure 5). However, China is not too far from the 14% of US export share. Similarly, absolute GDP (measured in PPP) trade shares indicate the rapid emergence of a third global center. Rapid penetration of world markets by Chinese activities affect other economies in two ways. First, a new huge competitor has emerged on the markets for raw materials, energy and financial resources. Second, Chinese firms are competing in markets for industrial products. Even more significant than smaller countries like Korea, Taiwan or Thailand, in an increasing number of markets China is much more than a marginal supplier.

In figure 6 we can see how fast a potentially large country like China can penetrate markets. In less than five years China doubled its share in EU trade and with almost 13% of EU imports became as important as the US. In the US the development of the Chinese import share is almost identical. In the US only Canada and the EU have a higher import share (figure 6). If this development continues for just a few years, China will clearly be the most important trading partner for both the US and the EU.

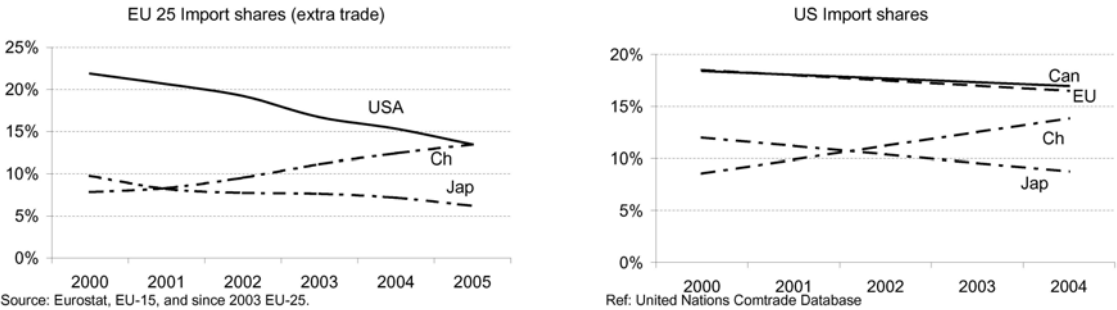


Figure 6: Import share of major trading partners for the US and the EU

These potentials in absolute terms are also indicated by the net trade flows of merchandise trade between the global regions. As we can see in figure 7a gross merchandise trade is already higher between Asia and the US and Asia and the EU than merchandise trade between

the US and the EU. Asia has a huge trade surplus towards both the US and the EU (figure 7b). The emergence of Asia’s large economies has a clear impact on international trade relations.

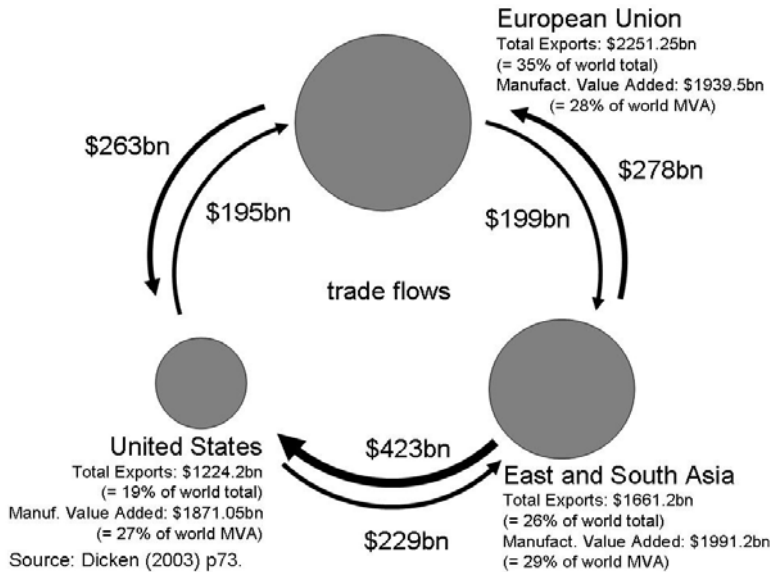


Figure 7a: Global gross trade flows between major regions

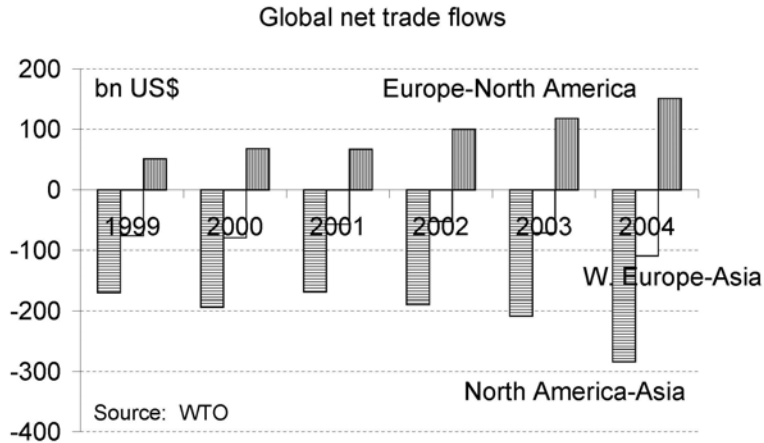


Figure 7b: Global net trade flows between major regions

The internationalization of the value chain has led to a global production process. An important reason for higher growth rates in merchandise trade than in world GDP growth is global sourcing of the value chain. Figuratively speaking the intermediates of a final product have circulated the globe several times before they reach the final consumer. Further, decomposing the value chain has led to a highly specialized allocation of each component of the value chain according to comparative advantages of locations. A substantial part of the development strategy of China was to take advantage of this process. Integration policy and producing according to comparative advantages has led to industrial clustering in several coastal regions (Wen (2003)). Even if this rapid industrialization is still limited to a small number of regions, the successful development of these provinces has now led to a shift in comparative advantages. China has gained competitiveness in industries that were traditionally reserved for high developed economies like the US or the EU.

The importance of China as a major competitor in world goods markets can be analyzed by looking at the development of the Revealed Comparative Advantages (RCA)<sup>8</sup> as indicators for international competitiveness in major industries. RCAs are defined as a country's share of world exports of a certain industry divided by its share of total world exports. Hence a country has comparative advantages if an industry exhibits a higher share in the countries exports than in world exports.

Figure 8a, b and c give the RCA values for major industries and indicate the current pattern of comparative advantages as well as the development of the specialization pattern. In figure 8 industries are classified according to groups of UN Standard International Trade Classification (SITC). The RCA definition used is the relative gross export performance. Values larger than 1 indicate a relative comparative advantage.

The profile of comparative advantages shows that there are still industries where China is not able to compete with high income competitors, that is where China still has no revealed comparative advantages. Going through merchandise trade we start SITC group 5, *Chemicals*. We can see from figure 8a that even if China has advantages in *Pyrotechnical Products* (SITC 57) there are still disadvantages over the whole range of *Chemicals* (SITC 5).

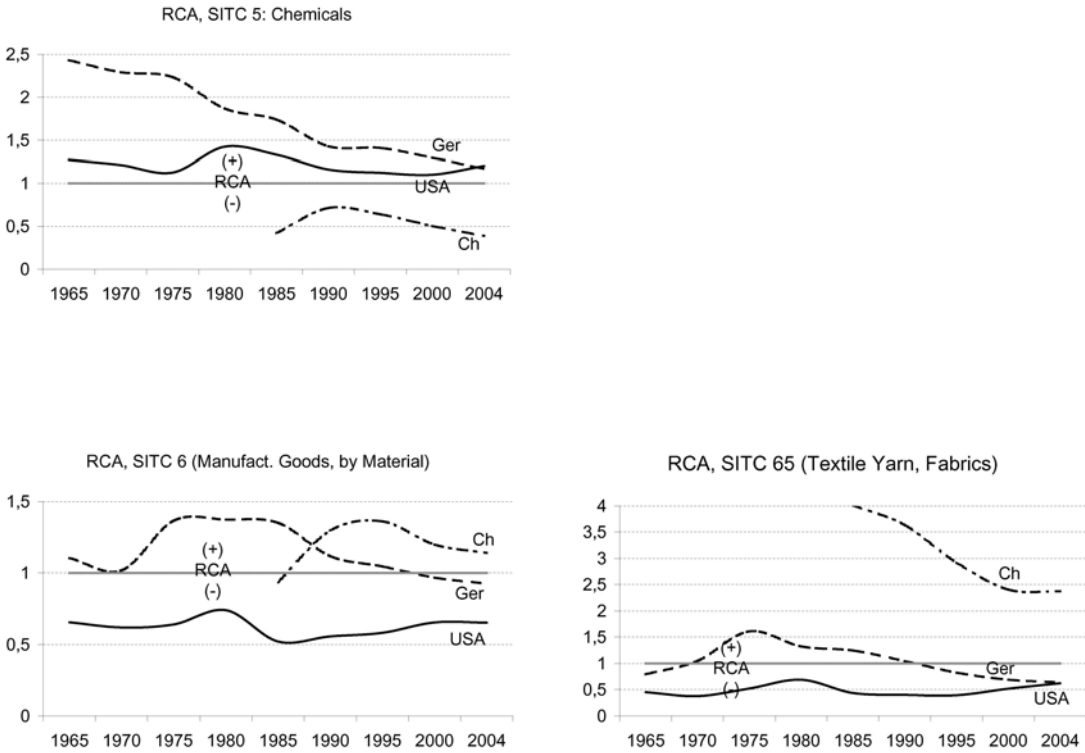


Figure 8a: RCA Values for SITC groups 5 and 6

This picture changes dramatically if we look at SITC group 6, *Manufactured Goods by material*. SITC 65, *Textile Yarn, Fabrics* etc. gives a good example of a typical industry in this product group. For the total group China developed advantages during the 90s, while the

<sup>8</sup> We use the measure of relative export performance by country and industry, defined as a country's share of world exports of a good divided by its share of total world exports (Balassa (1965)). The index for country i good j is  $RCA_{ij} = (X_{ij} / X_{wj}) / (X_{it} / X_{wt})$  where  $X_{ab}$  is exports by country a (w=world) of good b (t=total for all goods).

US and even recently Germany revealed disadvantages. However, group 6 stands for an industry where firms in catching-up countries successfully compete and displace traditional suppliers located in higher income countries. As group 6 on average does not stand for high technology human capital intensive goods, the picture that emerges is not surprising.

A similar pattern of comparative advantages holds for SITC group 8, *Commodities*. On average products in this group are also not characterized as high technology or human capital intensive goods (figure 8b). Typical subgroups are *Travel Good, Handbags* etc. (SITC 83) or *Clothing* (SITC 84). As can be seen from figure 8b China's comparative advantages are extremely high in these industries. For a catching-up economy this pattern is unsurprising. However, China is already moving out of this pattern of specialization. As for SITC 65, RCA values for SITC 83 and SITC 84 are still very high, but already clearly decreasing. Moreover, in the more advanced SITC group 86<sup>9</sup>, *Scientific & Control instruments, Photogr. Goods, Clocks* etc., China is rapidly developing towards a position of comparative advantages.

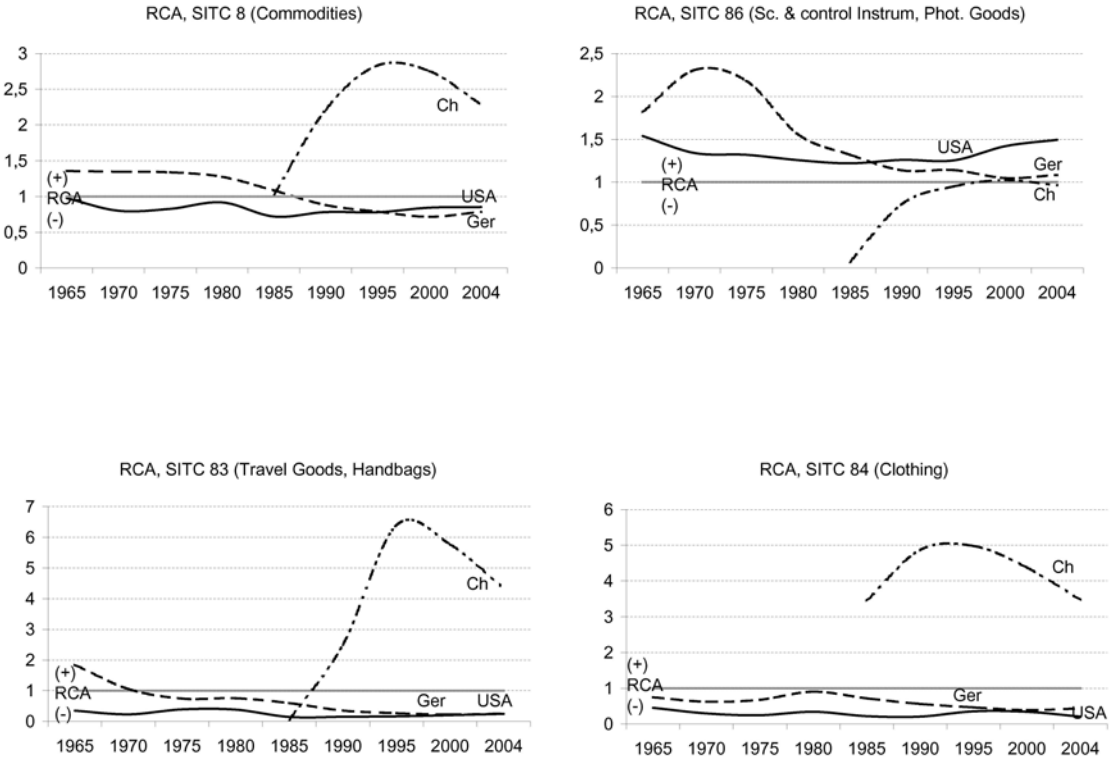


Figure 8b: RCA Values for SITC group 8

The change in specialization becomes even more apparent if SITC group 7, *Machinery and Transport* is taken into account. Unlike SITC groups 6 and 8, SITC 7 is regarded as the major domain of comparative advantages for the high income countries. Even if the original disadvantages of China's less developed machinery industry during the first phase of the open door policy and international market integration is apparent from figure 8c, the catching-up of competitiveness in this industry (SITC 7) is dramatic. While in SITC 72, *Electrical*

<sup>9</sup>This group still includes low technology and labor intensive industry-subgroups

*machinery, apparatus* etc. China overtook Germany in the 90s and the US at the beginning of this decade, China reached Germany and the US just recently in SITC group 71, *machinery other than electrical*. The only Industry on the two digit level where China could not catch up substantially is transport equipment (SITC 73). Although the pictures show an increasing competitiveness in these aggregate industry groups there are a number of subgroups where China is still not competitive.

However, gaining comparative advantages in industries that are less typical of low income economies is an indicator of the rapid technological development. While the major volume of trade is still in the expected industries, the speed of advance is dramatic. This holds even more as China is a potentially large competitor. Today only a part of China - the coastal belt with about 300 million inhabitants, is involved in export activities. If China's development process can be extended to the inland and western regions, China will massively penetrate industry sectors traditionally dominated by high income economies like the US, Japan or the EU.

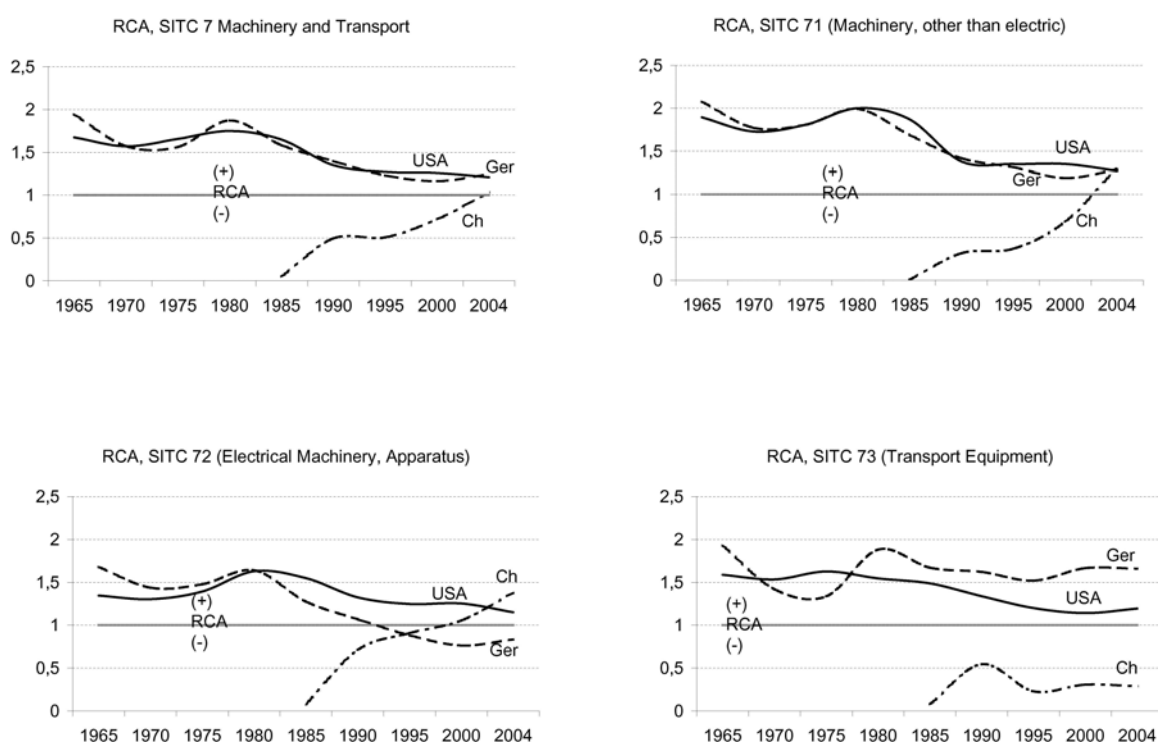


Figure 8c: RCA values for SITC group 7

## 5. International Finance and economic integration

In the previous section we looked at the gross and net trade flows in order to investigate total international trading activities. In this section we would like to look at international financial streams. Both the gross and net streams are considered in order to identify the development of financial interconnection of the large centers. The overall picture for financial streams is similar to the picture for trade.

Looking at the different types of financial streams FDI are of particular interest, as they indicate the direct allocations of real economic firm activities around the globe. Traditionally FDI was executed almost only between the high income countries in Europe and North America. During the last 15 years China became one of the major recipients of FDI (figure 9). Even if the stock of foreign investments has not yet reached the level of the EU or US, China is a major destination for FDI.

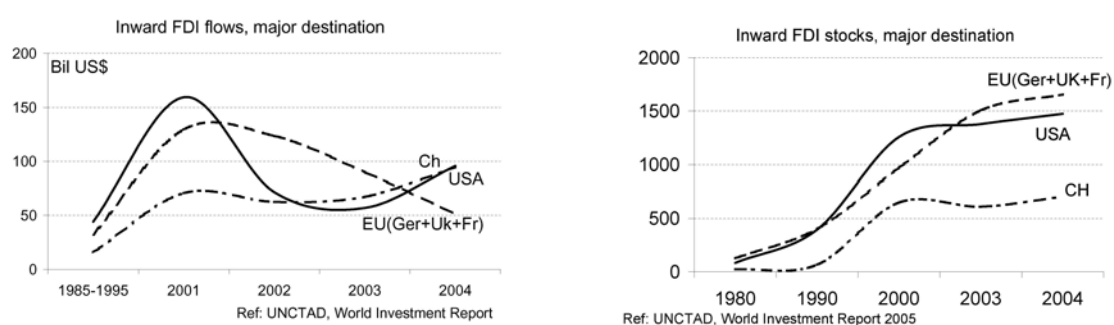


Figure 9: Major destination for FDI

Looking at today's general financial streams the importance of Asia and China becomes even more obvious if the net streams are considered. While the current account of the EU is almost balanced (figure 10), the US current account shows a huge deficit and Asia exhibits a huge surplus. Even more, the huge deficit of the US economy is not a short term phenomenon<sup>10</sup>. For decades and with an increasing speed the US accumulated an international debtor position that was mainly financed by Asian countries, first by Japan and recently by China. There seems to be a global imbalance in which Asia with an increasing share of China is financing the US deficit. With this development, Europe is replaced as major financial resource for the US by Japan and in particular by China. China is becoming one of the major creditors of the US. Hence, Asia is today already the most important source of financial resources.

<sup>10</sup> For a recent discussion see Mussa (2005).

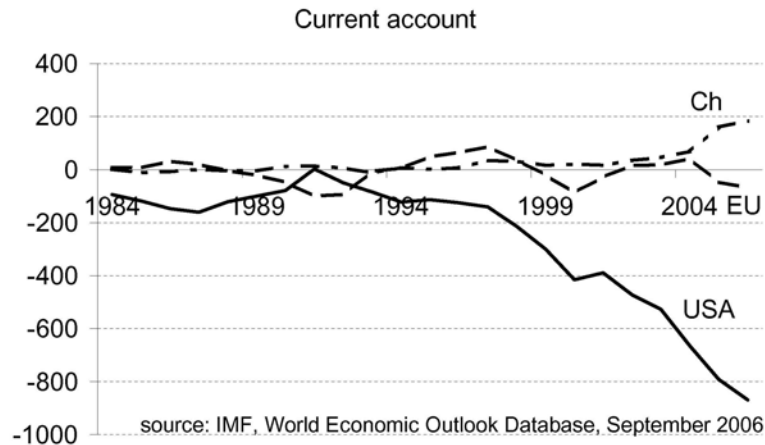


Figure 10: Net financial streams: current account

However, the importance of Asia in international trade and finance is not yet reflected in the use of Asian currencies as international reserve currencies (figure 11). The decomposition of present allocated official foreign reserves shows that the US\$ still accounts for two thirds of international reserves. The Euro has a share of 25% while all other currencies together add up to not even 10%. The only issue in international economic relations where China has not yet appeared as a major center is as supplier of an international reserve currency (figure 11).

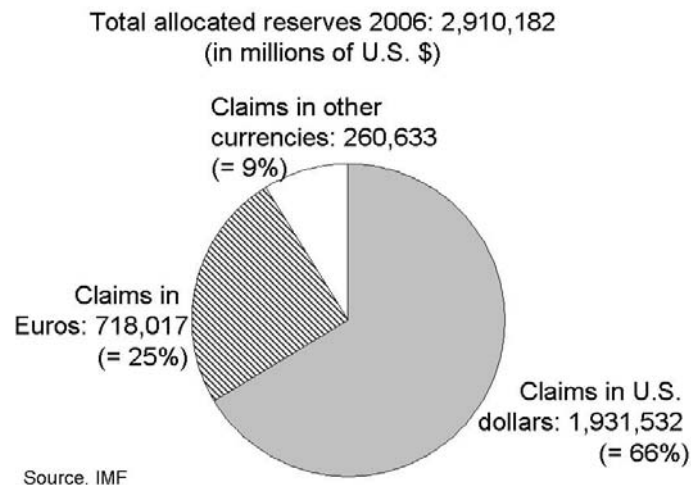


Figure 11: Breakdown of allocated official foreign reserves

## 6 Summary and conclusions

The economic world was mono-centric with a periphery. With the successful economic and political unification of Europe a second economic center appeared on the world economic map. While in the last decades of the 20th century the EU started to become almost equally

important, a third region began to appear in the Far East of the world map. Asia has become a significant part of the world economy. The emergence of a second (EU) and even a potentially third center of economic activities placed in Asia has challenged the notion of a clear hub of the world economy located in US. *Global Shift* stands for this fundamental change in the world map of economic activities.

The discussion of Global Shift is following 3 steps. 1. A sufficiently large population is a precondition for becoming a center of the world economy. Population size defines the potential economic size of a country. During the last 50 years the distribution of the world population with respect to the USA, the EU (growing through enlargement) and China did not change dramatically. 2. Only if a large population is combined with economic success population size can translate into economic size. Once a huge population starts to become economically successful, a rather small economy very rapidly turns into an economic giant. This process is currently happening in China. Even if average per capita income is still small, the significant growth of per capita income multiplies into a large absolute size. Measured in PPP China is already the third largest integrated economic region in the world. 3. In order to be relevant to the rest of the world an economic center must be integrated in the world economy. China's speed of integration in the world economy is even more rapid than GDP growth. Today, China's trade share is the third largest in the world and in the EU and the US China belongs to the three most important trading partners. China's comparative advantages are already moving towards more sophisticated, human capital intensive products. With increasing and already large current account surpluses during the last decade, China has also become one of the major world financial sources financing the huge US deficit.

The described fast development of China has already transformed China into the third potential center of the world economy. An ongoing development of such a giant will change the map substantially. The term *Global Shift* refers to the shift of in the world's economic hub.

## References

Aghion, P.; Howitt, P. (1998), Capital Accumulation and Innovation as Complementary Factors in Long-Run Growth, *Journal of Economic Growth*, 3, pp. 111-130.

Anderson, J.E. (1979), A Theoretical Foundation for the Gravity Equation, *American Economic Review* 69, pp. 106-116.

Balassa, Bela. (1965). Trade Liberalization and 'Revealed' Comparative Advantage, *Manchester School* 33, pp. 99-123.

Bao, S.; Chang, G.H.; Sachs, J.D.; Woo, W.T. (2002), Geographic Factors and China's Regional Development under Market Reforms, *China Economic Review* 13, pp. 89-111.

Bayoumi, T. and B. Eichengreen (1997), Is Regionalism Simply a Diversion? Evidence from the Evolution of the EC and EFTA, in T. Ito and A.O. Krueger, Eds., *Regionalism versus Multilateral Trade Arrangement*, University of Chicago Press.

Barro, R.; Lee, J. (1994), Sources of economic growth, *Carnegie-Rochester Conference Series on Public Policy*, v40, pp. 1-46.



Barro, R.J., Lee, J-W. (2001), International Data on Educational Attainment - Updates and Implications, Oxford Economic Papers, 3, pp. 541-563.

Barro, J., Sala-i-Martin, X. (2004), Economic Growth, 2<sup>nd</sup> ed., MIT Press.

Benhabib J.; Spiegel, M.M. (1994), The Role of Human Capital in Economic Development. Evidence from Aggregate Cross-country Data, Journal of Monetary Economics, vol. 34(2), pp. 143-173.

Bergsten, C.F., (2005), The United States and the World Economy: Foreign Economic Policy for the Next Decade, Institute for International Economics, 28, 2005.

Boyer, J.E., Truman, E.M. (2005), The United States and the Large Emerging-Market Economies: Competitors or Partners?, in: Bergsten, C.F., (2005), The United States and the World Economy: Foreign Economic Policy for the Next Decade, Institute for International Economics, 28, 2005.

Chen, J.; Fleisher, B.M. (1996), Regional Income Inequality and Economic Growth in China, Journal of Comparative Economics, Vol. 22, pp. 141-164.

de la Fuente, A. (2002), On the Sources of Convergence: a Close Look at the Spanish Regions, European Economic Review, 46, pp. 569-599.

Demurger, S. (2001), Infrastructure Development and Economic Growth - An explanation for Regional Disparities in China?, Journal of Comparative Economics 29, pp. 95-117.

Dicken, P (2003), Global Shift: Reshaping the global economic map in the 21st century, The Guilford Press.

Durlauf, S.; Quah, D. (1998) The New Empirics of Economic Growth, NBER Working Papers 6422, National Bureau of Economic Research, Inc.

Fujita, M.; Hu, D. (2001), Regional Disparity in China 1985-1994 - The effects of Globalization and Economic Liberalization, The Annals of Regional Science 35, pp. 3-37.

Fujita, M., Krugman, P. (2004), The New Economic Geography - Past, Present And the Future, Papers in Regional Science, 83, pp.139-164.

Glick, R. and A.K. Rose (2001), Does the Currency Union Affects Trade? The Time Series Evidence. National Bureau of Economic research, NBER Working Paper No. 8396.

Grossmann, G.M.; Helpman, E. (1991), Innovation and Growth in the Global Economy, Cambridge (USA), MIT Press

Lardy N.R. (2005), China The Great New Economic Challenge?, in Bergsten, C.F., (2005), The United States and the World Economy: Foreign Economic Policy for the Next Decade, Institute for International Economics, 28, 2005.

Linnemann, H. (1966), An Econometric Study of International Trade Flows, Amsterdam: North-Holland.

Mussa M. (2005), Sustaining Growth while Reducing External Imbalance, in: Bergsten, C.F., (2005), *The United States and the World Economy: Foreign Economic Policy for the Next Decade*, Institute for International Economics, 28, 2005.

Oguledo, V.I. and C.R. MacPhee ( 1994), Gravity Models: A Reformulation and an Application to Discriminatory Trade Arrangements. *Applied Economics*, 26(2), pp. 107-120.

Penn World Table; Alan Heston, Robert Summers and Bettina Aten, Penn World Table Version 6.2, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, September 2006.

Pöyhönen, P. (1963), A Tentative Model for the Volume of Trade Between Countries, *Weltwirtschaftliches Archiv* 90, pp. 93-100.

Smith, P.J. (1999), Are Weak Patent Rights a Barrier to U.S. Exports?, *Journal of International Economics*, 48(1), pp. 151-177.

Temple, J. (1999), A Positive Effect of Human Capital on Growth, *Economics Letters*, 65, pp. 131-134.

Tinbergen, J. (1962), *Shaping the World Economy – Suggestions for an International Economic Policy*, The Twentieth Century Fund.

Todaro, M.; Smith, C. (2006), *Economic Development*, 9<sup>th</sup> ed, Pearson.

Tuan, C.; Ng, L. F.Y. (2004), Manufacturing agglomeration as incentives to Asian FDI in China after WTO, *Journal of Asian Economics*, Vol. 15, pp. 673-693.

Wen, M. (2003), Relocation and Agglomeration of Chinese Industry, *Journal of Development Economics* 73, pp. 329-347.

Wei, X. (2000), Acquisition of Technological Capability through Special Economic Zones, *Industry and Innovation*, Volume 7, No. 2, pp. 199-221.

Xiaojuan, J. (2001), The New Regional Patterns of FDI Inflow, OECD China Conference, 11-12 October 2001, Xi'an, China, pp. 1-18.