OUTLOOK FOR WORLD TRADE, ECONOMIC GROWTH,
GLOBALISATION, AND THE RESULTING FREIGHT FLOWS, ESPECIALLY
BETWEEN THE EUROPEAN UNION AND RUSSIA

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ABSTRACT

This work examines the development of economic growth in the main economic agglomerations of the world; their current and future import and export volumes and the resulting new distribution of freight flows between the economic regions. A more detailed analysis is made for international trade of the EU and Russia. The study also focuses on the special role of Finland as a transit country for international transports of Russia.

Due to globalisation, production will move to the growing economic areas of Asia. The simultaneous growth of population and production in the area will create an economic agglomeration, which will surpass the growth of Europe and the United States. This phenomenon will have a dramatic impact on the directions and volumes of freight flows of world trade.

Trade and economic dependency between the EU and Russia will also grow and these areas will constitute a nearly integrated economic area.

The above-mentioned developments are reflected in freight transport as follows:

Export of the EU 25 (excluding energy products) to rapidly developing economic areas (the CIS, China, India and the Dynamic Asian Economies) and Russia will triple by the year 2030.

Import to the EU 25 (excluding energy products) from rapidly developing economic areas will grow by a factor of 2–3 by the year 2030. Import from Russia will triple in the base scenario.

Finally, the estimated trade flows are assigned and illustrated on the main transport corridors between the EU and Russia. These flows use many different routes (sea, rail, road and pipes), whose roles have been assessed using the forecasted new distribution and volumes of trade between the main economic agglomerations in the world. Finland will, according to these estimates maintain its role as the most important country for transit traffic, especially for Russian import.

The forecasts are based on statistical data (The World Bank, OECD, Eurostat etc.) on current and past development of GNP, international trade, export shares etc. of the main economic agglomerations of the world. Based on this data economic growth scenarios and the distribution of freight flows between different countries have been made for the year 2030. In most cases the results for EU 15 and EU 25 are disaggregated and energy products treated separately from other products. The development of Russian economy and the resulting effects on freight flows is based on three alternative political/economic scenarios. STAN model was used in freight flow assignments.

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1. THE WORLD ECONOMY AND COMPETING ECONOMIC AREAS

1.1 Past and current economic growth

Economic growth is currently the key to the success of nations. Transport volumes follow roughly long-term economic development. As the gross national product (GNP) reaches a certain level, foreign transport will especially increase. The production of a high gross national product demands increasing procurement of foreign raw materials and components.

North America, Europe and the Far East constitute three of the most significant competing economic areas. The development of the gross national products in these areas is presented in Figure 1.

![GNP 1950-2004](image.png)


Economic growth in Europe has been slower than in competing economic agglomerations (Figure 2.). The growth of the gross national product of Europe is experiencing almost a linear decrease or the growth is decelerating. After the Second World War, Japan has experienced the most rapid growth but it has slowed down to about one percent/year. In the United States the growth has stabilised to about three percent and in Europe to about two percent. China has taken the role of Japan as the growth engine of the Far East. The rate of economic growth in China is now almost 10% or at the same level as in Japan in the 1950s and 1960s.
1.2 Current trade flows of the EU

With regard to foreign trade, the new EU-countries are more open economies than the old EU-countries. About half of the production of the new EU-countries is exported. The share of foreign trade of production is only about one-third in the old EU-countries. This difference can partly be explained by the fact that the old EU-countries have larger population and the domestic demand is significant. The production export rate is 39% in Finland. This share could, however, be clearly higher, since the share of foreign trade is higher in the old EU-countries of similar size.

Three of the most important and equally strong trade partners of the old EU countries include NAFTA (primarily the United States), other European countries (primarily the new EU-countries) and the Far East (Figure 3). The balance of trade in the old EU-countries shows a surplus with NAFTA, other European countries and the Near East. The balance of trade shows significant deficit with the Far East. Imports from the Far East exceed exports by 60%. Imports from Russia to the EU-15 exceed exports by 71%. It is estimated that the Far East and Russia will act as engines of the world economy in the future. Even today trade from the EU shows significant deficit with both of them, which is not a very good signal for the future.
2. OUTLOOK FOR ECONOMIC DEVELOPMENT AND TRADE FLOWS

Estimates of future economic growth of the main economies of the world have been made, among others, by the World Bank, Figure 4.

By the year 2030, China (including Hong Kong) will experience the most significant growth of all economic areas in the world. Another significant growth area is Southeast Asia. North America, the EU-25 and Japan will experience more moderate growth.
Below the growth rates of China, the EU, Russia and Finland are discussed and estimated in more detail using alternative development scenarios.

The growth rates of economy will clearly slow down both in the EU and Russia due to an ageing population (Figure 5). Another reason for this is the fact that the growth rate’s strong compounding effect cannot continue endlessly due to e.g. limited amount of non-renewable natural resources. Raw materials will not run out during the 30-year study period, but growth in demand will increase their cost. Thirdly, an even higher share of labour input will be in the service sector, especially in developed countries, in which the growth possibilities of profitability are more limited than in industry. The share of employment in primary production and industry is decreasing. In developing countries, strong rates of growth are gradually returning to a normal level of slower growth, when salary levels and other costs increase. Thus, these countries will not be so advantageous investment areas as they were previously.

China has the strongest outlook for growth. It is presumed in the forecast presented above, that China will reach a period of independent growth and not remain an economy of subsidiary companies. China acknowledges this risk and aims at attracting know-how through all available means. Furthermore, it is presumed in the forecast that the growing tension and difference in standard of living between the declining western and central parts or the so-called rural/chimney China and strongly export-oriented Eastern China can be solved peacefully. The minimum scenario for economic development in China includes the fact that these differences cannot be balanced enough which will lead to significantly slower growth than now during the 2020s and especially 2030s.

![Figure 5 Estimated future growth rates of the gross national product (% / year) in the old and new EU-countries, Finland, Russia and China.](image-url)

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The maximum scenario of Russia is close to the above-mentioned probable scenario of China. In the maximum scenario, Russia will open up markets for competition and join the WTO, which will lead to a growth peak in the 2010s. The structure of export will become more versatile. Profitability along with the GNP per capita will grow throughout the national economy, which will lead close to the goal presented by president Putin, namely doubling of the GNP in 10 years.

In the probable scenario of Russia, reforms will not proceed as fast as in the maximum scenario. The membership of the WTO will, however, be reached in the 2020s. This will lead to a growth peak. The production and export of Russia will be renewed and become more versatile similar to the maximum scenario, but at a considerably slower rate.

In the minimum scenario, Russia will not reach an independent growth phase. Russia will remain as a typical oil exporting country. Pressure groups guarding their own short-term interests will succeed in preventing the WTO agreement – the existing situation with protectionism will continue. Devaluations will be common in this scenario and trade will fluctuate. Foreign companies will not practically be allowed, for example, in many services.

In the old EU-countries (EU-15), growth will continue in the future following the same or slightly more modest phase (about 2 % / year), which it has already followed for the past 25 years. Most of the old European countries will be forced to endure structural reforms in the 2010s. Pressure will come from two directions: developing countries and multinational companies, which select a country that will provide the greatest benefits as a location for production.

In the new EU-countries price competitiveness will be better, salaries lower and the flexibility in economy and labor markets greater than in the old EU-countries. Correspondingly, their growth may be about 2 % faster than in the old EU-countries, which is also partly explained by a lower starting level of economy. The difference in the standard of living between the new and old countries will narrow. This will also occur between the new EU-countries themselves. Capital will flow as direct investments to countries with the lowest salary levels, where economic growth will accelerate. This model based on the capital movements and economies of subsidiary companies will, however, stop the development of a country when the standard of living of other countries is approached. Only those countries, which have entrepreneurship committed to their own country supported by domestic development input, will be capable of economic take-off.
The focus of the world economy is shifting to the Far East. According to presented growth rates, the GNP of China will surpass the level of the GNP in the United States in the early 2020s. In the year 2030, the GNP of China will be 25% higher than the GNP of the United States and 1.5-times higher than the GNP of the EU-25. In practice, the change will be even more dramatic, as there are many other countries in the Far East, in addition to China, which have reached the rapid growth phase or will reach it during the forecast period.

For the purpose of determining the value of export transport (and later export volume) the rate of export should also be determined. The existing rates of export and forecast for the year 2030 are presented in the following table.

**Table 1 Rates of export (%) in the year 2004 and forecast for the year 2030**

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old EU-countries</td>
<td>35</td>
<td>40</td>
</tr>
<tr>
<td>New EU-countries</td>
<td>53</td>
<td>57</td>
</tr>
<tr>
<td>Finland</td>
<td>37</td>
<td>49</td>
</tr>
<tr>
<td>Russia min/max/probable scenario</td>
<td>35</td>
<td>50/30/40</td>
</tr>
</tbody>
</table>

Rates of export will increase with globalization. It is presumed that foreign trade will be balanced in the long run and so the rates of import will grow similarly. The minimum scenario for Russia includes the greatest growth in the rate of export, according to which Russia will become a typical oil exporting country, which cannot reach the phase of independent growth. In the
maximum scenario, Russia will become a typical superpower, which has a relatively low rate of export due to enormous domestic markets, although absolute export volumes are greater than in the minimum scenario (Figure 7). The growth of the rate of export will be high also in Finland, which was considered to have growth potential in relation to the size of the country. In the year 2030, the rate of export will be lower only in the maximum scenario of Russia as compared to the year 2004.

![Graph showing export index during 2004–2030, when 2004 = 100.](image)

**FIGURE 7 Export index during 2004–2030, when 2004 = 100.**

In the minimum scenario of Russia, export will mainly consist of raw materials and energy similar to the development so far. In the probable and especially in the maximum scenarios, the structure of export will be very different. Refined products will have a considerable share. As the value of export in the maximum scenario is only 15 % higher than in the minimum scenario, this indicates that raw materials and energy will be exported far less in the maximum scenario. They will even be saved for future generations, whereas this will not happen in the minimum scenario. In the maximum scenario, more valuable goods will be transported to a greater extent in containers as compared to bulk cargo in the minimum scenario.

The China-phenomenon also means that capital movements will replace the traditional movements of goods. European companies go to China and manufacture products for selling a portion of them there and maybe importing a smaller portion to Europe. Planning, know-how and some valuable components are exported from Europe. This also applies to the investments of the old EU-countries in the new EU-countries. When a developing country advances to the phase of growth, it will start to export more products and more developed products. Trade flows and freight transport from China and other countries of the Far East, and on the other hand from the new EU-countries, to the old EU-countries will thus significantly increase later.
3. DEVELOPMENT OUTLOOK FOR INTERNATIONAL FREIGHT TRANSPORT OF THE EU-25

3.1 Current trade

The export of goods from the current EU-25 increased to almost 2 000 million tonnes and the import of goods to almost 3 000 million tonnes during the past five years (Figure 8.). The reason for the deficit in the balance of trade is mainly the dependence of the EU-25 on the energy production of countries outside of this area. The terms of foreign trade will show deficit also in the future.

![EU-25 trade of goods](image)

**FIGURE 8 Development of export and import of the EU-25 during 1999–2003 (million tonnes / year). Source: Eurostat ESDS.**

3.2 Outlook

Freight flows (excluding energy) between the EU-25 and the CIS will double from the existing level by the year 2030 (Figures 9 and 10). The majority of the flows will still consist of the transport of raw materials, since the CIS is permanently the only net exporter of the primary raw materials of the economic areas shown in the figures, even though the domestic consumption of the CIS also grows significantly.

Freight flows between the countries in the Far East (excluding Japan) and the EU-25 will be doubled or tripled and become more versatile. Trade flows will normalise in quality or also include products other than “cheap imports” in the future. The domestic consumption of the countries in the Far East will increase with GNP growth, which will reduce the share of exports in total production.
Trade flows between North America and the EU will decrease, as the Asian economies take over a more significant share of international trade due to stronger growth in the Far East.

Figure 9 Export of the EU-25 by region in the year 2003 and forecast for the year 2030 (million tonnes / year). Source: Eurostat ESDS, World Bank, Goldman&Sachs, own calculations

FIGURE 10 Import of the EU-25 by region in the year 2003 and forecast for the year 2030 (million tonnes / year). Source: Eurostat ESDS, World bank, Goldman&Sachs, own calculations
4. DEVELOPMENT OUTLOOK FOR INTERNATIONAL FREIGHT TRANSPORT OF RUSSIA

4.1 Current Trade

The total import volume of Russia was 120 million tonnes and export volume was 530 million tonnes in the year 2003. A share of 70% of the Russian export is directed to Europe and mainly consists of liquid bulk (oil and oil products) and dry bulk (Figure 11). The most important areas of import for Russia include the CIS and South-eastern Asia, where mainly dry bulk is imported from. Import from Europe mainly consists of unitized cargo.

![Figure 11: Import and export of Russia in 2003 (million tonnes/year). Source: Mahlin, 2004.](image)

4.2 Outlook for Freight Transport and Transport Routes

The examination is based on the growth scenarios of Russia and other countries as presented above. The export index indicates the growth of export ability and the GNP index indicates the willingness to import. It is estimated that the growth of trade between countries is described by the geometric average of the export index of an exporting country and the GNP index of an importing country. The estimate of freight transport volumes is presented in Figure 14, in which oil and oil products are included from energy products. The transport routes of energy products are difficult to predict. The annual capacity of one crude oil pipe is about 55 million tonnes. If the pipe is international, the construction of it is even more difficult than an oil port of similar volume. However, there is significant pressure on transport investments for energy products.
The most significant transport flows between Russia and the EU are directed through the central ports of the Baltic Sea (the Gulf of Finland and the Baltic countries). The ground transport route through Belorussia, Poland and Germany has a very modest role.

Transport flows between Russia and the west are presented in the Figures 12–15. The significance of the route through Finland is emphasized when the flows of valuable goods are examined. The most significant growth in freight transport other than energy transport will occur in the Russian ports of the Gulf of Finland and on the Germany–Poland-route in which transport volumes will more than triple during the study period. The route through the Baltic ports will maintain its position.

Ground transport flows to Finland across the eastern border were over 25 million tonnes in the year 2003 including transit traffic. In addition, over 10 million tonnes of energy products came from Russia directly by sea. Part of the growth of total volumes of import and export will be directed to existing countries with transit traffic.

**FIGURE 12** Russia’s main transport routes to the west; import, export and transit traffic in 2003, million tonnes/year. Source: Mahlin, 2004.
FIGURE 13 The share of the examined Russian domestic ports and routes of transit traffic in the year 2003.

FIGURE 14 Scenario of Russia’s main transport route to the west; import, export and transit traffic in the year 2030, million tonnes/year

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FIGURE 15 The development of the share of the examined Russian domestic ports and routes of transit traffic by the year 2030

5. CONCLUSIONS

International trade and the resulting freight flows can be estimated using forecasts for economic growth and gross national product, by estimating export rates and the distribution of export between different countries.

Globalization and the fast growth in China, India and the Developing Asian Economies (DAE) will radically change the transport flows in the world. Trade and the resulting transport flows with the above countries increase and simultaneously the share of the traditional flows for example between Europe and the United States will decrease.

Also the trade and the resulting transport flows between the European Union and Russia are estimated to significantly grow. These flows use many different routes (sea, rail, road and pipes), whose roles have been assessed using the forecasted new distribution and volumes of trade between the main economic agglomerations in the world. Finland will, according to these estimates maintain its role as the most important country for transit traffic, especially for Russian import.

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