

## Predrag Bjelić

Економски факултет,  
Универзитет у Београду,  
Србија

✉ bjelic@ekof.bg.ac.rs

### NEW APPROACH IN INTERNATIONAL TRADE ANALYSIS DUE TO INTERNATIONAL FACTOR MOVEMENTS

### НОВИ ПРИСТИП У АНАЛИЗИ МЕЂУНАРОДНЕ ТРГОВИНЕ УСЛЕД МЕЂУНАРОДНЕ РАЗМЕНЕ ФАКТОРА ПРОИЗВОДЊЕ

**Summary:** Nowadays not only goods and services move across national borders but factors of production also. Firms deliver goods and services to foreign markets more through their foreign direct investment operations (foreign affiliates) than through traditional forms of international trade, like export. Labour is also moving from one country to another and that replaces the need for trade in services. The activities of transnational enterprises caused the main distortions in the gathering and analysing of statistical data on international trade, so traditional foreign trade statistics are not longer a good framework for the analysis of international trade flows. New approach in international trade analysis must include new forms of indirect export of goods and services on international markets – sales through foreign affiliates and the movement of labour across national borders. New statistical tools are Foreign Affiliates Trade Statistics (FATS) and Value-Added trade recording that represent a solid base for facilitating economic policy decisions.

**Key words:** International Trade, Foreign Direct Investments, International Production, Transnational Corporations, Foreign Affiliates Trade Statistics.

**JEL Classification:** F10, F23, F22.

**Резиме:** Данас се осим робе и услуга све више размењују и фактори производње између земаља. Фирме испоручују робу и услуге на страним тржиштима више преко својих филијала у иностранству, основаних страним директним инвестицијама, него кроз традиционалне облике међународне трговине. Такође, и радна снага се креће између земаља и то замењује потребу за трговином одређеним услугама. Активности транснационалних предузећа изазивају главне поремећаје у прикупљању и анализи статистичких података о међународној трговини, па традиционална статистика спољне трговине није више добар оквир за анализу међународних трговинских токова. Нови приступ у анализи међународне трговине мора укључити нове облике индиректног извоза роба и услуга на међународним тржиштима – продаја преко страних филијала и кретање радне снаге преко националних граница. Нови статистички алати, као статистика трговине страних филијала и на пражење спољне трговине по новододатој вредности, представљају поздану основу за вођење економске политике.

**Кључне ријечи:** међународна трговина, стране директне инвестиције, међународна производња, транснационалне компаније, статистика трговине страних филијала.

**JEL Класификација:** F10, F23, F22.

## 1. INTRODUCTION

International trade is the most important activity in the world economy and a dominant substance of international economic cooperation between national economies in the world. Since the 1950's international trade had recorded a huge growth that was more dynamical than the growth of world output. Therefore the international trade has significantly augmented its share in the total international economic activity.

Table 1. Differences between growth rates of international trade and world output (GDP)

| <b>Growth rates (%)</b>      | <b>1950–1960</b> | <b>1960–1970</b> | <b>1970–1980</b> | <b>1980–1990</b> | <b>1990–1999</b> | <b>2000</b> | <b>2003</b> | <b>2009</b> |
|------------------------------|------------------|------------------|------------------|------------------|------------------|-------------|-------------|-------------|
| <b>World trade</b>           | 6.5              | 8.3              | 5.2              | 3.7              | 6.5              | 11.0        | 4.5         | 14.0        |
| <b>World GDP</b>             | 4.2              | 5.3              | 3.6              | 2.8              | 2.0              | 5.0         | 3.0         | 3.5         |
| <b>Difference (% points)</b> | 2.3              | 3.0              | 1.6              | 0.9              | 4.5              | 6.0         | 1.0         | 10.5        |

Source: Bjelić et. al. 2002; WTO, International Trade Statistics 2011

Trade in goods was considered as most important part of international trade exchange. Goods are still the dominant objects that are exchanged internationally and they account for about 75% of total world exports according to 2006 IMF data. In the last century international goods trade has also undergone true significant structural changes. In the past most dominant products in international trade were commodities, primary products obtained from nature with a minimal value added, that usually serve as inputs for industrial production. This was the result of the policies of developed countries that stimulated the development of their home industries. Commodities were imported from abroad if there was not sufficient quantity at home and undergone the process of industrial transformation into final products. These final products were sold at home market and the excess was sold abroad.

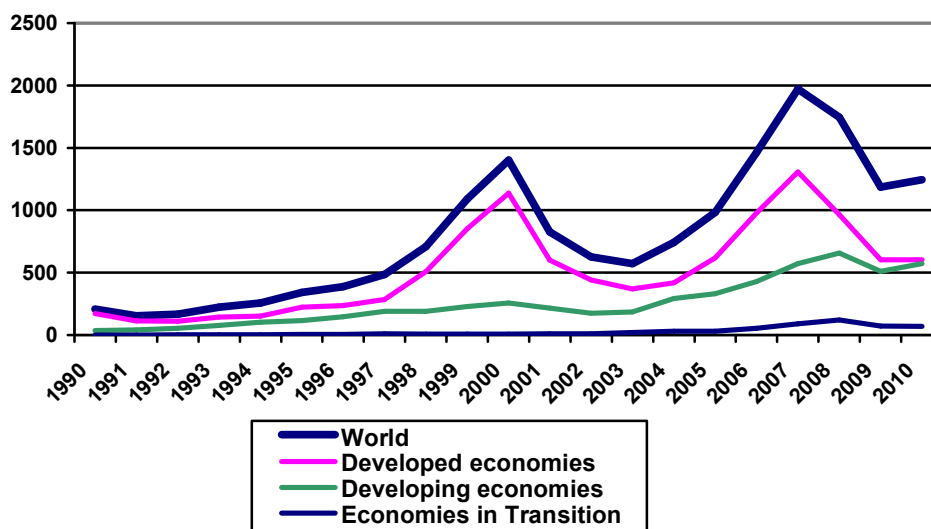
But after the Second World War the regulation of international trade in industrial products started at multilateral level with the adoption of General Agreement on Tariffs and Trade (GATT) in 1947. The liberalisation of international trade regime for industrial goods as a result of rounds of multilateral trade negotiations under auspices of GATT 1947 was achieved true significant tariffs cuts, especially by developed countries. The average tariffs on industrial goods in developed countries before GATT were around 40% but after the final eighth Uruguay round of multilateral trade negotiations they were reduced to less than 4%. This was the greatest stimulus for the impressive growth of international trade in industrial products in the second half of 20th century. The finished industrial goods had surpassed commodities as dominant products in international trade starting from the 1960s.

The liberalisation of international trade regime was followed by the liberalisation of international investment regime and this enabled the flow of private capital between economies in the form of foreign direct investments (FDI). The FDI are most important flows of private capital today and they usually represent the operations of transnational companies (TNC). Some large companies during the 19<sup>th</sup> century started to outsource their operations abroad and their business became transnational<sup>1</sup>. TNC were conducting their international business through FDI taking economic control over the foreign enterprise where they made an investment. FDI represent a part on international transfer of private capital and usually are defined as "an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (investor or parent enterprise) in an enterprise resident in an economy other than that of the investor (FDI enterprise or affiliate enterprise or foreign affiliate)"(UNCTAD 2007, 245). In order for a parent enterprise to control a company in another country, its affiliate, it needs to have a share in affiliate capital of 10% or more.

Due to the liberalisation of the investment regimes after the Second World War, primarily in the developed countries, the transnational corporations were able to increase their activities across western hemisphere. But many of the developing countries and all of the socialist countries in those times were sceptic about foreign private capital. But with the dissolution of eastern block and with the transition of socialist countries to market economy system the possibilities to invest in the East have risen significantly. After 1990 the possibilities to invest in all corners of the globe for transnational companies grew and they started to do business globally, so the flow of FDI significantly increased after 1990s due to the collapse of the socialist system in Eastern Europe and Former Soviet Union. In just 15 years in the period 1990–2006 the global flows of FDI have increased more than 10 times.

<sup>1</sup> Across national borders.

Figure 1: FDI inflows – global and by groups of economies, 1990–2010 (billion USD)



Source: UNCTAD, FDI/TNC database 2012

TNCs have business activities in several economies through their foreign affiliates established by the incoming FDI. Most important motive for the expansion of international activities of transnational companies is search for cheaper resources that will lead to a rise in profits. This production in foreign affiliates is referred to as international production and has resulted in reduction in international trade in primary products that was consumed more locally, and increase in international trade in industrial products that were exported from foreign affiliates.

One of the trends of international trade in the 20<sup>th</sup> century is trade between foreign affiliates of one parent enterprise referred to as intrafirm trade. UNCTAD estimates that 1/3 of international merchandise trade represent intrafirm trade. The business philosophy of transnational companies today is the optimisation of resources on a global market so they exploit raw materials where they are the cheapest, transform them into intermediary goods and ship them to other affiliates to be finalised and sold on a developed propulsive markets. In literature this type of activities is referred to as vertical integration. But sometimes TNC tend to buy some goods and services that serve as inputs for their production from other companies abroad and these operations are referred to as offshoring. All these activities lead to the creation of global production chains and the production of one product is divided into several phases and every phase is carried out at a different location. The result of this is that the most significant products in international trade are no longer finalised industrial products but rather intermediary products.

Intermediary goods are defined as "input to the production process that has itself been produced and, unlike capital, is used up in production" (Deardorff 2006). These goods are different than commodities that also serve as inputs since intermediary products have been more significantly transformed in the process of production and contain larger value added. Usually intermediary goods can serve also as final products but increasingly more they need to be finalised. When they are used in the production of the final industrial products they are completely incorporated into the substance of the new goods, unlike capital goods that are only partly exploited and can be used in the production of large number of goods. "Disintegration of production itself leads to more trade, as intermediate inputs cross borders several times during the manufacturing process" (Feenstra 1998, 34).

Starting from the beginning of the new century the dominant products in international trade are intermediary products that have a share of around 56% in international trade in goods and even around 70% in total international trade in services (Miroudot 2009, 17). Usually, developed countries record high share of intermediary products in their trade, but there are some emerging countries also with large shares of these products in their trade as the result of activities of TNCs in these countries. From developed economies, the largest share of intermediaries in goods trade is recorded in Republic of Korea, around 75%, while some emerging economies have the same share or even above this level, like China and India (Miroudot 2009, 48).

The international trade in services is becoming more significant every year but its share in world trade is still only around 20%. The services are principal creators of GDP in majority of

countries in the world and have a share of above 50% in GDP creation, with this percentage going even above 70% in most developed countries. The problem of low share of services in international trade is primarily result of nature of services and their execution. Services cannot be separated from its providers and can be only consumed on the place of their execution. Also many of the services represent supporting services provided to the export of goods, like forwarding, transport, insurance and others, so they are statistically included in international goods trade. Services do not have a material form so it is hard to observe when they cross the national borders and their export is referred as “invisible exports”.

Classical theories of international trade have tried to explain the flow of goods between countries and in recent years the flows of other objects of international trade, like services and technology. But these theories have the assumption that factors of production, capital and labour are not mobile between nations. This assumption was maybe a reality in the past but certainly not today.

## 2. EXPORT THROUGH FOREIGN AFFILIATES

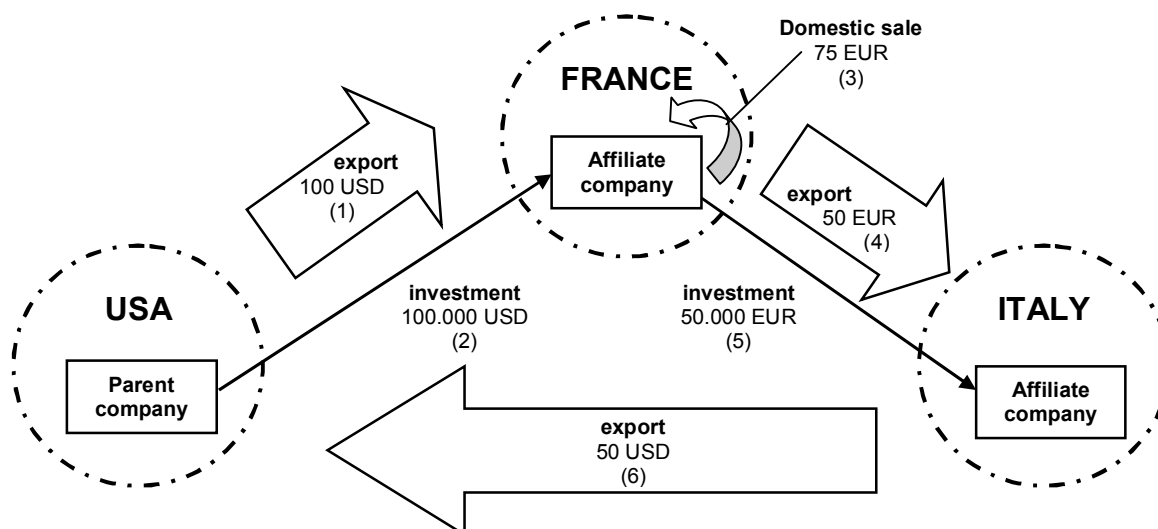
In international trade not just products and services are exported but in contemporary international trade national factors of production, capital, labour and technology are exported abroad as well. The process of the “export” of private capital started in 19th century but has reached important volumes in 20<sup>th</sup> century. Most important “export” of private capital today is achieved through foreign direct investment (FDI). The main investors that use this channel of exportation are transnational companies. Instead to export industrial products from a developed country, the economy of a parent enterprise of transnational corporation, this company uses the foreign direct investment to set up a foreign affiliate. This affiliate is a company established in another country, operating under the law of that host country, but under direct economic control of a parent enterprise. In this way transnational company is moving a part of its production abroad, to a foreign affiliate (international production). This results usually in the reduction of exports from the home country to the host country of foreign direct investment, but transnational corporation is still selling its products through the domestic sales of its affiliates on the host market.

One of the first economists who suggested that internalization of some industries requires modification to classical trade theories was Williams in 1929 (Williams 1929, 195–209). As most prominent researcher of transnational corporations’ activities Dunning points out classical trade theories that deal with trade in final products but that these trade flows today are marginal part of international trade. It is very difficult to construct a single trade theory that can explain all flows in international trade. Heckscher-Ohlin factor endowment models can explain trade in natural-resource intensive products while new trade theories, like those focusing on technology advancement or monopolistic competition can explain intra-industry trade in high-technology products. In one of the first theoretical works that suggested some degree of factor mobility, Robert Mundell states that an increase in trade impediments stimulates factor mobility and vice versa. In the situations where a market distortion is present, like a presence of tariff, this will result in factor price equalization failure so trade and capital flows are substitutes in the sense that capital inflow eliminates trade flows (Mundell 1957, 321–35).

The reason why trade economists did not include FDI associated trade, that represent around 2/3 of global trade today, and especially its most important segment intra-firm trade, is lack of knowledge and interest. Dunning suggests that theories of organization and theories of location of economic activity must be incorporated in trade theory (Dunning 1995, 163–202). Helpman developed a simple general equilibrium model of international trade in which the location of plants in a differentiated product industry is a decision variable, and used the model for predictions of trade flows. The model explains the simultaneous existence of intersectoral trade, intra-industry trade, and intrafirm trade. It also had noted that international market penetration of transnational corporations is a result of impediments to trade, such as transport costs or tariffs (Helpman 1984, 451–71). In further works by Dunning the theory of foreign owned production is concerned with location of value added activities and the ownership and organization of these activities. But he points out that it is not possible to construct single operationally testable theory which can explain all forms of international production any more than it is possible to construct a generalised theory of trade (Dunning 1988, 21–66).

In order to show the link between the FDI and trade and their interdependence let us observe a hypothetical situation shown in the Picture 1, as an example. We can see that the export of a parent enterprise from the USA to France of USD 100 (flow 1) has been substituted by a domestic sale of a foreign affiliate of that company in France in the amount of EUR 75 (flow 3) which is equivalent to USD 100 since exchange rate is USD 1 = EUR 0,75. This substitution effect was made possible by foreign direct investment that parent enterprise from the USA invested in France (flow 2).

Figure 2. International Activities of Transnational Companies



From the position of a transnational company nothing changed since it is selling its product on the French market for USD 100. But in the official statistics of foreign trade of USA export decreased in the amount of USD 100 and in the foreign trade statistics of France imports from USA decreased also by 100 USD.

But let us suppose that game does not end here. We can make a proposition that this foreign affiliate has a production capacity to produce more products which can be exported to a third country, Italy, using the trade benefits of single European market in the amount of EUR 50 (flow 4). It means that American transnational company (parent enterprise) has foreign sales of EUR 125 (EUR 75 on the French market and EUR 50 on the Italian market), which is registered in the books of that company, but these foreign sales of the American company are not registered as American export in the official foreign trade statistics for the USA. Official foreign trade statistics define foreign trade as a sale of goods *across* national borders and do not report domestic sales of foreign affiliate on host market as a sale of parent enterprise. Only the trade flow to Italy is registered but as French export (Bjelić 2008, 3).

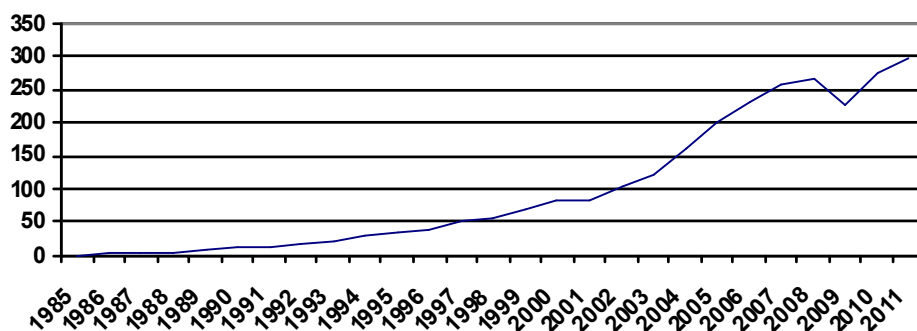
If we go a bit further with our example and suppose that the foreign affiliate of the American company in France invests in Italy EUR 50.000 (flow 5) and build its own foreign affiliate there, if this affiliate is producing only for a purpose of selling its products on the US market, because of the favourable trade contract between Italy and USA let's say, we can see that due to this investment flows of American company (to France and indirectly to Italy), USA export is 100 USD less to France and imports is 50 USD more from Italy, according to the official statistics of USA foreign trade, in comparison to the starting position in our example. In this way USA is achieving a trade deficit even if the trade exchange was in equilibrium in the starting position.

But as we know all these trade flows are generated by US companies, but we can find data on this only in companies' business books and not in the official trade statistics. The official US trade statistics shows that US has large trade deficits in trade with China. This deficit is not only huge but also permanent and rising. When China established its special economic zones back in 1980 the trade between two countries was more or less balanced. But due to the important reforms in the economy of communist China and the attractiveness of cheap labour and large market American transnational companies started to invest largely in the Chinese economy. Affiliates of American transnational companies were mostly located in special economic zones in China and directed mostly to exports

while using cheap labour in China. In 2005 total stock of US inward foreign direct investments were recorded at nearly USD 50 billion and this is significant value comparing to the level of stock of US foreign direct investments in China recorded in 1995 to be USD 18 billions (UNCTAD 2007). Investment that originated from the US in some years reached over 10% of total foreign direct investments made in China in observed years.<sup>2</sup>

We have to bear in mind that many of the foreign affiliates of US companies from another developed countries invest in China but these investments are recorded as investments of these other countries. With the rise in foreign direct investments of American companies to Chinese market the trade deficit of US with China started to rise dramatically. In 2007 this deficit was just over USD 250 billions. This trade deficit is an indicator that American companies are exporting foreign direct investments to China, they use the resources there to make finished products and then export these finished products mainly to US market. In official foreign trade statistics only these flows of finished products from China to US are recorded as Chinese exports and US imports. That is why in the calculation we have the rise in trade deficit. Trade deficit is very harmful to the stability of one national economy, especially if it is permanent and rising, but in the case of the US it has no significant effect on the stability of US internal market. US customers are benefiting from cheaper products made in China and US companies are collecting significant profits from these deals with China. But how this booming trade affect US workers in those industries that move their production to China will be discussed afterwards when we consider international movement of labour and "export" of jobs.

Figure 3. Dynamics of US Trade Deficit with China, USD bill.



Source: Authors graphical presentation of the data obtained from U. S. Census Bureau 2011

Even if US are the country with large trade deficits, and not just in its trade with China, they remain for years the most competitive nation in the world. Trade deficit is contradictory to good competitiveness according to World Economic Forum research but US has been ranked first for several years as one of most competitive nations in the world (WEF 2007). By our opinion one of the main factors of their global competitiveness is international production of their transnational companies.

But if we want to take into account the effects of all the factors of production, of host country of foreign affiliates and home country of TNC, we need detailed data on value added in production in foreign affiliates. How much are products produced in US foreign affiliates a result of Chinese and how much US factors of production? The OECD and WTO have developed a new framework of international trade statistics that observe the trade flows between countries by value added and not by gross value as official foreign trade statistics. The preliminary results show that substantial share of Chinese exports are the result of domestic factors but with time the foreign content of Chinese export has a rising share. In 2005 the foreign content of China higher technology product was already 25% while in 1995 this share was only 11% (OECD 2012).

If we observe the *activities of transnational companies at macroeconomic level* the most important variables for our research are flows and stock of foreign direct investments of parent enterprises, sales of foreign affiliates and export of foreign affiliates. All these indicators are presented in Table 2. First we can observe that flows of foreign direct investments have risen dramatically since 1990 due to the liberalisation of trade around the globe and especially in former socialist block of

<sup>2</sup> Source: US-China Business Council (USCBC).

countries. The activities of transnational companies have changed not just the structure of international trade as an economic activity but also the whole concept of how we perceive this scientific discipline. International trade for a long time included only trade in goods and services but today under the influence of transfer of foreign direct investment trade includes indirect exporting through foreign affiliates and the export of intellectual property products.

In 1982 when the flows of foreign direct investment were around USD 60 billions the total world exports of goods and non-factor services were above USD trillion and were almost equal to sales of foreign affiliates of transnational companies. In 2005 when flows of foreign direct investment reached USD 1,3 trillion the sales of foreign affiliates are fantastic USD 25 trillion while world exports of goods and services are only 56% of those sales. The fact is that from 1990 due to the large amounts of foreign direct investments the indirect exports of goods and services through foreign affiliates of transnational companies became most important channel of conducting international trade and direct exports of goods and services, which are only registered in official trade statistics, and the secondary channel of international trade activity.

*Table 2: Selected Indicators of Global Transnationalisation*

|                                                | <i>Value<br/>(billions USD)</i> |             |             |             | <i>Annual Growth<br/>Rate 2010 (%)</i> |
|------------------------------------------------|---------------------------------|-------------|-------------|-------------|----------------------------------------|
|                                                | <i>1982</i>                     | <i>1990</i> | <i>2006</i> | <i>2010</i> |                                        |
| <b>FDI Inflows</b>                             | 59                              | 202         | 1,306       | 1,244       | 4.9                                    |
| <b>Inward FDI Stock</b>                        | 637                             | 1,779       | 11,999      | 19,141      | 6.6                                    |
| <b>Sales of Foreign Affiliates</b>             | 2,741                           | 6,126       | 25,177      | 32,960      | 9.1                                    |
| <b>Export of Foreign Affiliates</b>            | 688                             | 1,523       | 4,707       | 6,239       | 18.6                                   |
| <b>Income on Inward FDI</b>                    | 46                              | 120         | 972         | 1,137       | 20.3                                   |
| <i>Memorandum items</i>                        |                                 |             |             |             |                                        |
| <b>Gross Domestic Product</b>                  | 12,002                          | 22,060      | 48,293      | 62,909      | 8.6                                    |
| <b>Export of Goods and Non-factor Services</b> | 2,124                           | 4,329       | 14,120      | 18,713      | 18.6                                   |
| <b>Royalties and Licence Fee Receipts</b>      | 9                               | 29          | 132         | 191         | 1.7                                    |

Source: UNCTAD 2007: 9 and UNCTAD 2011: 24

The new concept of international trade analysis assumes that countries export goods and services not just directly but also indirectly, through foreign affiliate sales on host country market and through export to third markets. Total volume of international trade in 2010 is not only equivalent to data on exports of goods and services, USD 18.713 billions, but it also should include sales of foreign affiliates in the host countries, USD 26,721 billions, which represent the total sales of foreign affiliates minus export of those affiliates in 2010. We can observe that indirect channel of export is now more dominant than classical modes of export of goods and services.

In some countries which have large inflow of foreign direct investments foreign affiliates dominate the export sector of these countries. Foreign-owned sector accounted for 87.6% of Irish exports in 2004 (Forfas 2006, 12). If we apply the FATS calculations to this country we can see that the indigenous Irish export is very small. The question that is essential is what the benefits from this rise in exports are for Ireland as a host country of foreign direct investment. The answer is in connection with the value added to the export products in this country or what part of the profits remains in Ireland.

Many researchers (Lecraw 1984) and specially those from developing countries are of the opinion that the developed countries which are the home countries of parents enterprises are where all the profits go from the activities of their transnational companies. Transnational companies are separate entities from their home countries that are only motivated by increasing profits. Sometimes this means that the profits from affiliates are not repatriated to home country but to economies that function as offshore zones. In this way transnational companies are minimising the taxes paid on their activities and especially tax on corporate profits.

Transnational companies in race for lower costs of producing are closing down production facilities in its home countries and “exporting” jobs abroad. Their interest in global optimisation of production leads them to the divergence of interests with home country. When transnational companies relocate their production facilities abroad, usually in developing economies, they reduce

the potential jobs in their home country. This practice is also referred to as "export" of jobs (Krugman 2008). Movement of capital across borders leads to the industrialisation of developing because production facilities are closed in developed countries and shipped to developing countries. For developed countries that means less industrial production since most of production is done in foreign affiliates in developing countries and this process is referred to as deindustrialisation of developed countries, where services now completely dominate the economy. This has a significant effect on a changing structure of international trade.

## 2. EXPORT OF OTHER FACTORS: LABOUR AND TECHNOLOGY

The processes of globalisation of world economy have made not just capital mobile across national borders but labour too. Many workers from developing nations do not wait for foreign capital to enter their home country but relocate to developed countries. The main motive of migration is economical since they go abroad in the search for better wages and working conditions. United Nations estimates that are around 200 millions of foreign workers in the world. In some developed countries foreign workers have a share of 10% in total labour force of the country.

Each country exports what it has in excess, even the factors of production. Developed countries export capital and developing countries are the ones that export labour most. The international trade between high-wage countries and low-wage countries is beneficial for both groups. The low-wage countries use the surplus of labour where they can be more productive and lower its unemployment rates and developed countries receive the factor of production which is scarce for them and that is important in generation of their GDP.

Most of the money which the foreign workers receive as wages is sent home as remittances. Remittances in the world accounted for USD 440 billions in 2010. Most of the remittances went to developing economies, some 68% of total remittances in the world. For some least developed countries (LDC) remittances are important for the survival of their population since they represent around 30% of their GDP.

*Table 3: Workers Remittances, USD bill.*

|                                | 1990 | 1995  | 2000  | 2005  | 2010  |
|--------------------------------|------|-------|-------|-------|-------|
| <b>WORLD</b>                   | 68,6 | 101,6 | 131,5 | 232,3 | 440,0 |
| <b>Developing countries</b>    | 31,2 | 57,8  | 85,6  | 166,9 | 299,0 |
| <b>East Asia &amp; Pacific</b> | 3,3  | 9,7   | 16,7  | 43,1  | 68,0  |
| <b>South Asia</b>              | 5,6  | 10,0  | 17,2  | 32,0  | 65,0  |
| <b>Latin America</b>           | 5,8  | 13,4  | 20,1  | 42,4  | 62,0  |
| <b>Arab Countries</b>          | 11,4 | 13,4  | 13,2  | 21,3  | 34,0  |
| <b>Sub-Saharan Africa</b>      | 1,9  | 3,2   | 4,9   | 8,1   | 20,0  |
| <b>Countries in Transition</b> | 3,2  | 8,1   | 13,4  | 19,9  | 50,0  |

Source: World Bank 2006, 88; 2009, 55–56

The greatest impediment to international movement of labour is immigration policy of developed countries. All developed countries strictly regulate the movement of people from developing nations regardless of the nature of their travel. But many developed countries are faced with problems of ageing population and shortage of labour force. In order to balance its labour force market developed countries apply annual quotas for the receipt of foreign labourers from selected developing countries.

The movement of labour between developed and developing economies leads to the equalisation of wages in these countries. Before this movement was so small that was unnoticeable but today in the age of globalisation the wage reductions in the high-income economies are felt. Workers in the high-wage country are the losers in this new form of trade exchange of labour. The workers in the developed countries represent a powerful group that can influence country politics so the pressure against free trade is rising in developed countries. In these countries workers unions have a considerable power in negotiation with management of the companies. It is very difficult to converge all these different influences and their opinion about international trade.

Technology has become very important factor of production in 20th century and especially at the beginning of 21st century. The economic development of some countries that do not have much of traditional resources, like Japan or Switzerland, can be explained only if we consider a technology as the leading factor of production. The most important subjects in international technology transfer are transnational corporations. These companies invest a lot of resources in research and development of products, few times more than countries invest in these activities today. These research and development activities are very risky, costly and time-consuming and some of them do not have commercially viable results. But those researches that have good result can be very profitable for a company. In order to capitalise from these research results companies protect most of these new products as intellectual property through patents. Patents enable these companies to trade with new products as monopolists during the period of patent protection, usually 20-year period.

Due to large investments of transnational companies in research and investments, the 20th century has witnessed the appearance of new objects in international trade, product that contain in their substance intellectual property. These intellectual property products have a share of around 1% in world trade and constantly are increasing this share. But similarly as services these products usually do not have a material substance so it is very hard to observe their exports. Because of this fact the statistics of export of services and exports of intellectual property products are estimated on the bases of payments for these products abroad, which is registered in country's balance of payments.

The export of intellectual property products is estimated according to royalties and licence fees that companies receive when they export these products abroad. In Table 2 we can observe that these receipts rose from the level of USD 9 billions in 1982 to nearly USD 30 billions in 1990 and rocketed to USD 191 billions in 2010 (UNCTAD 2011). The rise in export of intellectual property products after 1990 is in connection with rise of international activities of large transnational companies around the globe.

But companies do not export technology through transfer of intellectual property rights just using licences but also by means of more advanced forms of export operations like franchising. In this way they export not only several types of intellectual property, like production know-how, trade marks and image of the company, but they also export capital, goods and services. New forms of export operations go in the direction of combining several traditional object of international trade. This makes observing structure of international trade at present even more complicated. But until new statistical tools and indicators have not been developed according to FATS calculations it would not be possible to make more detailed research in this area.

### **3. INTERNATIONAL TRADE ANALYSIS TAKING INTO ACCOUNT FACTOR MOVEMENTS**

International Trade is classically perceived as an exchange of goods and services across national borders. But this definition was adequate in the past when it included most of the trade flows between nations. Nowadays international trade flows became so diverse and complex that made simply defining international trade impossible.

The geographical structure of traditional concept of international trade suggests that developed countries are the ones which primarily export industrial goods, in general, and technology-intensive products, in particular, and that developing countries primarily export commodities. But new statistical data show some other evidence, that developing countries are becoming more important exporters of industrial goods. Paul Krugman has observed that important watershed has been crossed since USA now imports more industrial products from developed economies than from developing economies. Once again structure of international trade changed (Krugman 2008).

The activity of transnational companies in contemporary global trade is significant and rising since the middle of 20th century, and we witnessed that large part of international trade is carried out as intra-firm trade. Usually these affiliates trade in intermediary products and in every location some value is added to the product in this global production chain. Since traditional foreign trade statistics observes trade from the standpoint of countries it records all this trade flows but usually it exaggerates the exports since exports of products are recorded by total value of the products exported and not just by the value added to the product in that country. The new framework of international trade analysis must be able to follow flow of value added in each country.

The flow of private capital in a form of foreign direct investment means that a large transnational company undertakes an investment in a company abroad (foreign affiliate), taking control over the foreign company business policy. If this affiliate has been involved in international trading this investment can have a huge impact on the international trade. Usually, parent company replaces its direct export to a country by investing in a company operating in that country. In this way, parent company does not export more to that country, it rather supplies the country by producing goods locally in its affiliate and selling those goods on a host country market. As we have already mentioned, this mode of operation in international trade is referred to as international production looking from a standpoint of a parent enterprise. So conclusion will be that foreign direct investment usually has a substitutive effect on trade flows since FDI has replaced direct export.

But this is not completely accurate. Let us suppose that this foreign affiliate is a greenfield investment with an installed capacity several times over the local demand of host country. Usually parent companies set up a foreign affiliate in order to supply goods in several neighbouring countries especially if these countries are all members of a same trade block. New plant needs new machines so greenfield FDI usually creates new import flows for a host country of a foreign affiliate. If we suppose that machines are imported from a country where parent company is located, this investment creates export flows for a home country also. But due to a large production capacity of a new plant and a strategy of parent enterprise of serving a regional market from one centre, products from new affiliates are exported from host country all over its regional neighbours. In this way, greenfield FDI also creates export flows for a host country (Bjelić and Stojadinović-Jovanović 2009). So the second conclusion will be that FDI creates new trade flows for a host country.

Fact is that activities of transnational companies have a significant effect on country trade, on its volume but also on the structure of trade. The changes in structure of international trade with the dominance of trade in intermediary products came as a result of global production chains and intrafirm trade and offshoring. The countries get more integrated into world economy and dependency on its role in global production chains since they do not export finalised products in a greater extent.

According to the discussion elaborated above, we can conclude that due to the unprecedented role of transnational companies in international trade, traditional official foreign trade statistics can not provide us with a needed data for a quality analysis of international trade flows. The traditional foreign trade statistics cannot capture all these flows connected to activities of transnational companies. It observes only selling abroad as export and buying from abroad as import and that is in total or gross value of the products. That is why new statistical framework must be set up having in focus the activities of foreign affiliates in international trade.

On the country level the new concept of international trade calls for a reform of foreign trade statistics. In order to get a full picture on exports of a country we have to add to its recorded exports all sales of foreign affiliates of its transnational companies in other countries of the world. If we go back to the example connected to the figure 2 in our text, total official US exports in that example, due to the flow of foreign direct investment from US to France, will under new statistical concept include domestic sales of foreign affiliate of US company at French market and its exports to Italy too (EUR 125 in total).

Some international organisations and countries are already working on a reform of official trade statistics so that they can include sales of foreign affiliates. This new statistical concept is called Foreign Affiliates Trade Statistics (FATS) and it is most advanced in the field of services since World Trade Organisation recognised foreign commercial presence (so-called Mode 3) as export of services<sup>3</sup>. The entities that are most advanced in this reform of trade statistics and development of FATS statistics are United Nations (UN), Organization of Economic Co-operation and Development (OECD) and some of the developed economies, like European Union, Canada, etc. This FATS concept uses several criteria to determine the origin of a foreign affiliate but the most important criteria include ownership, control and affiliation. It is assumed that if capital from one country has a stake of more than 50% in one foreign affiliate that this affiliate can be considered as a business subject of that originating country nevertheless what country is a host country. This means that we can determine the origin only for subsidiaries and branches, as forms of affiliates by UNCTAD classification. For associates, where originating country has a stake of less than 50% countries who compile FATS statistics can assess the origin through other criteria like control etc.

<sup>3</sup> In that way sometimes FATS also stand for Foreign Affiliates Trade in Services Statistics.

The main statistical tool of the new framework of international trade analysis is foreign affiliate trade statistics (FATS). This methodology can capture all the flows in the global economy that are the result of the activities of transnational companies. We will discuss this methodology in detail in the next section of this paper. Now we will focus how to estimate the export of a country which is highly dependent on operation of foreign companies using FATS methodology. Traditional foreign trade statistics observes export as all sales made abroad from one country (customs territory) but FATS methodology tends to link the export to the origins of the capital involved in sales of these products.

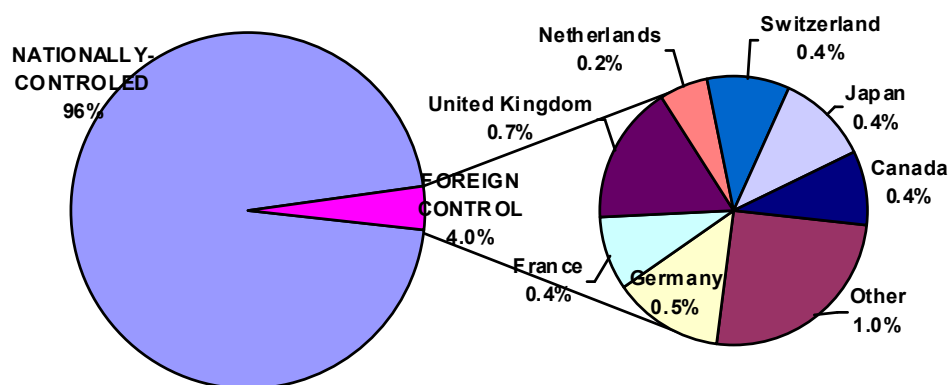
In order to estimate the exports according to FATS we need to start from traditional export data and to deduct the exports and other activities of foreign affiliates in observed countries, like exports from foreign affiliates from observed country and sales on the market of the observed country done by foreign affiliates. To this new figure of export, where we eliminated the impact of activities of foreign controlled enterprise, we need add data on activities of affiliates of companies from observed country done abroad, like export and domestic sales, so the procedure will be:

*Traditional export figures*

- export of foreign affiliates in the observed economy
- domestic sales of foreign affiliates in the observed economy
- + exports of affiliates of companies from observed country made abroad
- + domestic sales of affiliates of companies from observed country made abroad
- = *Export data according to FATS methodology.*

The USA have developed and applied FATS methodology since 1950s and have detailed data on inward FATS, activities of foreign controlled enterprises in the USA, and outward FATS, activities of US companies abroad. These data include figures on value added, employment, profits etc. Most of these data are not available in official trade statistics but rather in business reports of the companies. But data obtained using FATS methodology are valuable source for sound economic policy making.

*Figure 4: Share in USA total value added generated by nationally controlled and foreign-controlled enterprises in 2009 (breakdown by country of origin), percentage*

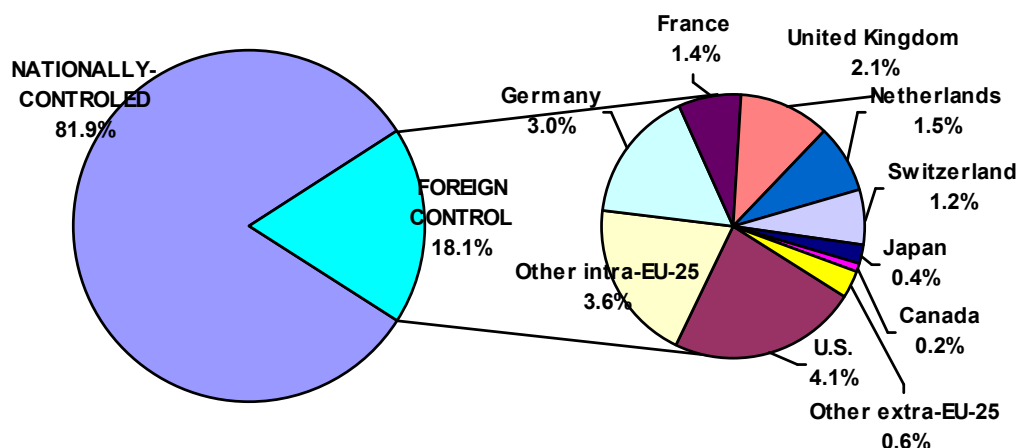


Source: World Bank 2011, 200 and Anderson 2011, 13

The US companies have the most important impact in the global economy. On the other side, only 4.2% of USA GDP in 2009 was produced by foreign controlled enterprises that operate in the US economy. This represented only 5.3% value added in the private business sector in the USA in 2009. The foreign investors with the largest impact in USA economy were from United Kingdom (17% of total foreign ownership effect on value added or just 0.7% of total value-added in the US), Germany (13% or 0.5%) and Switzerland (10% or 0.4%).

The European Union has observed trade using FATS methodology starting from the 1990s. Important step was made with EU Regulation No 716/2007 on Community statistics on the structure and activity of foreign affiliates that is the legal framework according to which member states are required to provide inward and outward FATS to Eurostat starting from 2008 onwards, which was until then carried out on voluntary basis.

Figure 5: Share in EU total value added generated by nationally controlled and foreign-controlled enterprises in 2005 (breakdown by country of origin - average for all reporting countries), percentage



Source: Eurostat 2008, 5

Around 18% of value added generated in the European Union in 2005 was under control of foreign-controlled enterprises. US companies have the most important impact in this area (4.2% of value added generated in the EU in 2005) followed by the investor EU member states – intra EU investors, while the impact of Switzerland is also significant (1.2%).

The international organisations have started developing FATS methodology on the multilateral level from the end of the 20th century. The World Trade Organization (WTO) has been publishing FATS data on trade from 2003 and just for developed economies. Even some smaller developed economies publish these data every third year and use samples rather than complete data gathered for FATS methodology. But the operation of transnational companies, like international production and global production chains, also lead to the introduction of a new framework of analysis of international trade based on recording value added in production in different countries. Organization for Economic Co-operation and Development (OECD) in collaboration with the WTO will start publishing data on value added trade flows in July 2012 (OECD and WTO 2012).

#### 4. CONCLUSION

International trade has always been considered to be sale of goods and services across national borders. This definition of international trade activity implied the link to geographical principles of recording trade transactions and was a result of country trade sovereignty. But international business activities of large companies, transnational corporations, have changed structure and forms of international trade. Nowadays most of the export is executed true international production and sales of foreign affiliates. These modes of export are enabled by foreign direct investments that transnational companies use to penetrate foreign markets. Also many of the services exported are substituted by the “export” of labour abroad. Export through foreign direct investment is linked to developed countries, while the developing countries are starting to export labour as a factor that they have in excess. The large investments of transnational companies in research and development activities have caused an appearance of new export products which we call intellectual property products and which represent international transfer of technology as one of the factors of productions. In this way international trade is not more about export of products and services it is about trade in factors of productions.

In order to fully observe all the flows in international trade nowadays we need to apply new approach in our analysis. We have to take into account the total export of a country that will also include indirect exporting channels through foreign affiliates and service provided abroad as a result of free movement of labour across national borders. The new approach will calculate the export taking into account the origin of invested private capital. But in order to fully estimate the use of domestic and foreign factors of production we will have to adopt also the export calculation by value added in a country and not in gross terms as official trade statistics usually does. But in order to apply the new approach we need not just data on export but also data on sales from company business books. This new approach will be a solid base for trade policy creation in a globalised and economically

interconnected world. Some of developed countries have already started to apply this approach and developing countries are lagging behind as always.

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