

Globalization and the worldwide trade in resources¹

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グローバリゼーションと資源に関する国際取引

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「グローバルに生きる」に関する本論文は、グローバリゼーションのトレンドを主として強く牽引する資源、土地（資源）、資本についての取引が如何になされているかという視点から、グローバリゼーションのトレンドを説明することを目的としている。また、輸送と通信における発達により、市場への距離の重要性は失われつつある。これらの活動により獲得された効率性は企業や経済の競争力を強化しているのである。

キーワード：グローバリゼーション、リソース、市場の効率性、競争力

1. Introduction

Both the purchase and sale of final goods and services and the sourcing of factors of production from both nearby foreign markets and those further afield are the main factors driving transnational trade. In the field of economics, the phenomenon of globalization can be observed by the expansion of markets for goods and services

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with the culmination in free trade globally. The main driving force behind this phenomenon is the pursuit of profit, efficiency, and the choice-making behavior of consumers. This pursuit of profit and efficiency of production by suppliers in markets can be grouped into 4 main categories whereby increases in efficiency and profit margins can be achieved. The first three categories are traditional factors of production as viewed in the field of economics: land resources, capital resources, and labor resources, while the remaining category is technology. The utilization of these three groups of resources along with technology transfers from foreign markets and firms in foreign markets allows suppliers to achieve cost reductions and efficiencies that may not be possible in their own domestic markets. For example, suppliers might set up a factory in another country to take advantage of a pricing arbitrage, where there is a significant price difference between items sold in different markets, or they might decide to set up a factory close to the market where the firm intends to sell its products or services in order to take advantage of shorter distances to market, thus lowering transportation costs. Access to new markets can also provide firms with higher quality resources that might not be as readily available in their national markets, such as access to highly skilled labor or technically advanced capital resources. The sourcing of these resources outside their own domestic markets can give suppliers a cost or efficiency advantage over their rivals or may become necessary as a result of increased foreign competition in their domestic markets. This paper aims to shed more light by explaining how efficient markets have helped to facilitate trade across national

boundaries. Next, the three major periods marking the expansion of worldwide trade and the features of those periods will be explored. Finally, the role of two key resources in this process will be explained.

2. The Role of Efficient Markets

Efficiency in pricing and allocation of resources can be achieved through the market mechanism as a result of competition among suppliers and consumer purchasing decisions. As explained by Adam Smith in his book “The wealth of nations”, the market mechanism acts as a kind of “invisible hand” guiding the price and quantity to a natural balancing point, or equilibrium. The equilibrium is constantly adjusting in response to perpetual change in situations surrounding any activity that can be observed in the market. The main reason why the market system works is through a coincidence of wants and needs. Competition among suppliers puts a downward pressure on prices as those suppliers who are more efficient in their acquisition or usage of factors of production and technology are able to garner a larger share of the markets that they are operating in. Other suppliers in these markets are forced to adapt to the changes or exit the markets. However, there are some situations that can inhibit the market mechanism from working properly, such as a lack of competition, negative externalities, and government interference. On the other hand, competition on the demand side of a transaction places an upward pressure on prices. As the product or service becomes more dear to those who want to purchase it, either through an increase in the number of consumers or an increase in its popularity

because of a positive change in tastes and preferences, the price the item will increase, *ceteris paraibus*. Equilibrium is reached at the price where both quantity demanded and supplied are the same. This determination of price happens as a result of a coincidence of wants and needs, which is based on utility, or value, for the particular good or service. As the value of the good changes, so do price, quantity demanded, and quantity supplied. As the good becomes more valuable or more scarce, we can expect the price to increase. These same factors work in the opposite direction when those goods become less valuable or more abundant. Through competition, and if allowed to operate freely, the markets mechanism is able to arrive at an efficient equilibrium price and quantity.

3. Growth in world trade and its beneficial effects over the last 500 years

Ortiz-Ospina & Rosa (2017) lay out three distinct phases whereby global trade has advanced over the last 5 centuries. Before the 19th century, the total of exports and imports worldwide never exceeded ten percent of global output. Then the first stage of internal trade expansion occurred from the 1800's to 1913, just before the start of World War 1. The first stage was characterized by expanded trade within Europe. Among European countries at that time, the sum of exports and imports in the region totaled to 37% of intra-regional output. Geographical proximity, development of the local economies, and declining transportation costs made this increased trade possible. These changes helped to lay the foundation of the 2nd stage of development in worldwide trade that occurred in the 2nd half of the

20th century after World Wars 1 and 2.

Later, the 2nd wave of global trade occurred during the time from the middle to the end of the 20th Century. This expansion in cross-border activity largely resulted from decreasing transactional costs, especially for transport and communication. These changes made it possible to trade in countries farther away from one's own domestic market. Compared to the costs borne in 1930, by the year 2000, costs for transportation by sea freight had declined by 79.47 percent. Moreover, costs for passenger air transportation had decreased by 89.71 percent, and costs for international calling had dropped by a whopping 99 percent. These declines in costs made trade in finished goods, intermediate goods, and services across longer distances economically feasible.

This period was also characterized by increasing intra-industry trade, with the largest component of intra-industry trade being intermediary goods at the expense of trade in final goods and primary goods. This increasing importance of trade in intermediate goods reflected a wider prevalence of specialization within those industries and the corresponding reductions in costs and improvements in efficiency of production. The increased trade in intermediary goods reflected the expansion of global supply chains and an ability to benefit from comparative advantage and free trade. These changes are apparent in the production of technically complex final goods such as automobiles or electrical appliances, whose parts are often produced in

a number of different countries.

The third, and current wave, of development started at the beginning of the 21st century. One change observed during this period has been an increase in bilateral trade over unilateral trade, which was more common in earlier times. Moreover, there has been an increase in trade among countries in the Southern Hemisphere. As a result of the improvement in worldwide trade infrastructure, developing countries have increased their participation in worldwide trade. The WTO 2010 trade report shows that 63% of 453 worldwide PTA's, Preferential Trade Agreements, were between developing countries. This increased participation in worldwide trade has helped to stimulate economic development in those countries economies.

The increase in global trade has resulted in two important benefits for those countries who are participating in it. One benefit from global trade is economic growth and another benefit is the transfer of advanced technology and management practices. Ventura (2005) points out that one benefit from this increased global trade has been the strong positive correlation between trade and economic performance. Between 1870 and 1998 per-capita income growth of 400% has been shown to have a strong positive correlation to the increase in global trade. Countries that experience economic growth can benefit through increased job opportunities for their citizens, and an improved standard of living. Kurtishi-Kastrati (2013) explains that transfers of technology and management practices can aid in

improving the country's productive efficiency in making products or enable the manufacture of more technically advanced products. Moreover, through their exposure to modern management practices, local workers can acquire new skills related to their jobs and learn new management approaches from foreign multi-national corporations, which can improve their working efficiency. This knowledge can then be shared locally and spread throughout the country and improve overall operational efficiency of domestic firms, thereby increasing their competitiveness in foreign markets.

4. The effect of increased global trade on the factor markets

On the supply side of any transaction, providers of goods and services require at least one factor of production in order to offer those goods and services to market. In economics, the factors needed to produce goods or services fall under the following 3 categories: land resources, capital resources, and labor resources. Moreover, advances in technology and communication facilitate efficiency in the production and delivery of both goods and services.

5. Land Resources

Land resources are materials taken from nature which are used in the production of goods and services, often referred to as natural resources. Some natural resources require a degree of processing before they can be used. The 2010 WTO report on natural resources explains that in order to be classified as natural resources, the resources must be both scarce and useful economically in production

or consumption in either their raw state or after a minimal amount of processing. For example, crops grown on land are considered natural resources, although they require some processing, such as the clearing of land, the distribution of fertilizer, and watering before the crops can be brought to market for trading. Crops are economically scarce, which means they aren't always easy to obtain, and they are useful in either production or consumption. On the other hand, seawater, which makes up nearly 70 percent of the Earth's surface, according to USGS.org, would not be considered a natural resource because of its abundance. Therefore, it fails to meet the scarcity condition necessary to be considered a resource. Moreover, it is of limited use economically in the production of goods and services.

Historically, Countries that have an abundance of natural resources have had an economic advantage over those countries having fewer natural resources. Natural resources can be harvested for profit or use in production. They can provide countries rich in them a much needed source of foreign currency. In the first stage of globalization, natural resources were the predominately traded resource. However, many of the countries rich in resources, such as Russia, Venezuela, and Iran are among the less developed countries economically, which would seem counter intuitive at first glance. However, upon closer analysis, the reasons for this situation become more apparent. First, countries that are overly dependant on natural resources as a tradable good are more exposed to the risk of commodity price fluctuations. In times of high commodity prices,

these economies reap the benefits, but suffer when prices drop. Those economies that aren't sufficiently diversified in other industries, such as manufacturing or services, are overly exposed to these fluctuations. Another risk for these countries is the role technology plays in reducing the costs and prices of extracting those natural resources. Gains in efficiency help to lower the cost or help to increase the yield of those commodities. Both of these factors place a downward pressure on commodity prices and as a result reduce the revenues of land- resource exporting economies. The dependence on commodities for trade may be hard to break free from for those developing economies. Their over-exploitation of readily available resources can create negative externalities, such as pollution. Also, severe depletion from over harvesting of those important resources could restrict future development and adversely affect the environment and health of the citizens in those countries. Stewart (2012) points out that natural resource wealth, particularly in oil, has encouraged corruption and patronage in government, created an environment where the governments in those countries have become more tyrannical, and adversely affected the quality of life for citizens in those countries.

The most widely traded land resource is crude oil. Oil is needed nearly all economic activities. Worldwide trade in natural resources between 1998 and 2008 increased by more than six times from US\$ 613 billion to US\$ 3.7 trillion. Fuels, including crude oil, accounted for 57% of natural resource trade in 1998 and 77% in 2008. However, total worldwide merchandise exports during that time were US

\$5.3 trillion in 1998 and US \$15.7 trillion in 2008. Which means that natural resources as a percentage of worldwide merchandise exports increased from 11.5% in 1998 to 23.5% in 2008. The price of oil during that time increased by over 760%.

In the drive to increase profits, suppliers have a number of options available to improve their bottom lines: increase sales by entering new markets, find lower cost factors of production outside their domestic markets, improve efficiency in producing goods and services by acquiring higher quality factors of production, or utilizing advanced technology in their business operations in order to increase productivity and lower costs. Suppliers themselves are also consumers of factors of production. According to Yenokyan, Seater, & Arabshahi (2012), a country's growth rate is more dependant on the type and quality of the imported factors of production rather than the final goods it exports. Its effect is similar to a technology transfer from the country that has a comparative advantage in that particular factor of production to the country which is less efficient at it. Access to high quality foreign factors of production can improve the competitiveness of the firm providing products or services to the market by decreasing operational costs and increasing efficiency.

6. Capital Resources

Capital resources refers to the plans and machines used in the production of goods and services. World trade in capital resources can be measured by looking at foreign direct investment (FDI).

According to The UN World investment report 2017, global capital flows have increased over the last 16 years from 1990 to 2016 (See *Table 1.4*). A comparison of some measures of FDI will illustrate how much global trade has increased. FDI inflows increased by more than 750% and FDI outflows increased by just under 500%. The rate of returns on income from outward FDI ranged from 4.4% to 7.3% during these 16 years. Similarly, rate of return on income from inward

Table 1.4. Selected indicators of FDI and international production, 2016 and selected years

Item	Value at current prices (Billions of dollars)				
	1990	2005–2007 (pre-crisis average)	2014	2015	2016
FDI inflows	205	1 426	1 324	1 774	1 746
FDI outflows	244	1 459	1 253	1 594	1 452
FDI inward stock	2 197	14 496	25 108	25 191	26 728
FDI outward stock	2 254	15 184	24 686	24 925	26 160
Income on inward FDI ^a	82	1 025	1 632	1 480	1 511
Rate of return on inward FDI ^a	4.4	7.3	6.9	6.2	6.0
Income on outward FDI ^a	128	1 101	1 533	1 382	1 376
Rate of return on outward FDI ^a	5.9	7.5	6.4	5.7	5.5
Cross-border M&As	98	729	428	735	869
Sales of foreign affiliates	5 097	19 973	33 476	36 069 ^b	37 570 ^b
Value added (product) of foreign affiliates	1 073	4 636	7 355	8 068 ^b	8 355 ^b
Total assets of foreign affiliates	4 595	41 140	104 931	108 621 ^c	112 833 ^c
Exports of foreign affiliates	1 444	4 976	7 854 ^d	6 974 ^d	6 812 ^d
Employment by foreign affiliates (thousands)	21 438	49 478	75 565	79 817 ^e	82 140 ^e
Memorandum					
GDP ^a	23 464	52 331	78 501	74 178	75 259
Gross fixed capital formation ^a	5 797	12 431	19 410	18 533	18 451
Royalties and licence fee receipts	29	172	330	326	328
Exports of goods and services ^a	4 424	14 952	23 563	20 921	20 437

Source: ©UNCTAD.

Note: Not included in this table are the value of worldwide sales by foreign affiliates associated with their parent firms through non-equity relationships and of the sales of the parent firms themselves. Worldwide sales, gross product, total assets, exports and employment of foreign affiliates are estimated by extrapolating the worldwide data of foreign affiliates of MNEs from Australia, Austria, Belgium, Canada, the Czech Republic, Finland, France, Germany, Greece, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Portugal, Slovenia, Sweden and the United States for sales; those from the Czech Republic, France, Israel, Japan, Portugal, Slovenia, Sweden and the United States for value added (product); those from Austria, Germany, Japan and the United States for assets; those from the Czech Republic, Japan, Portugal, Slovenia, Sweden and the United States for exports; and those from Australia, Austria, Belgium, Canada, the Czech Republic, Finland, France, Germany, Italy, Japan, Latvia, Lithuania, Luxembourg, Macao (China), Portugal, Slovenia, Sweden, Switzerland and the United States for employment, on the basis of three-year average shares of those countries in worldwide outward FDI stock.

^a Based on data from 174 countries for income on inward FDI and 143 countries for income on outward FDI in 2014, in both cases representing more than 90 per cent of global inward and outward stocks.

^b Calculated only for countries with both FDI income and stock data.

^c Data for 2015 and 2016 are estimated based on a fixed-effects panel regression of each variable against outward stock and a lagged dependent variable for the period 1990–2014.

^d For 1998–2016, the share of exports of foreign affiliates in world exports in 1998 (33.3 per cent) was applied to obtain values. Data for 1995–1997 are based on a linear regression of exports of foreign affiliates against inward FDI stock for the period 1992–1994.

^e Data from IMF (2017).

Table 1.4. FDI and international production 2016 and selected years

Adapted from “UNCTAD- UN World Investment Report 2017: Investment And The Digital Economy.” *unctad.org*. Retrieved January 12, 2018 from, http://unctad.org/en/PublicationsLibrary/wir2017_en.pdf

FDI ranged from 5.5% to 7.5%. During this time period, GDP, which is the most commonly cited measure of aggregate economic activity, increased by just over 220%. From these data it's clear just how important global capital flows are to total economic growth and how big a role they play in stimulating economies. The global operations of multinational enterprises (MNEs) are responsible for much of this increased transnational investment. The transnationality index (TNI) is one measure that reveals the increasing importance of foreign markets to the operations of MNE's. TNI shows the degree to which the MNE's foreign assets, sales, and employment comprise total assets, sales, and employment for the whole organization (see *Figure 1.23*). TNI increased from 51% to 65% between 1990 and 2015. Inward capital investment helps to reduce unemployment in the host country and aids in its economic expansion. Outward investment by domestic firms in an economy can help to improve the profitability of those firms investing in foreign markets. The increased returns can be repatriated back to the home market and injected into the economy to stimulate further domestic growth. FDI might appear to be a zero-sum game at first glance, where foreign investment benefits the destination country at the expense of investment opportunities in the home country. However, outbound FDI can benefit the source county in the form of repatriated profits and improve access to additional resources for the countries of origin for outbound FDI.

Figure 1.23. Internationalization trends in top 100 MNEs, 1990–2015 (Per cent)

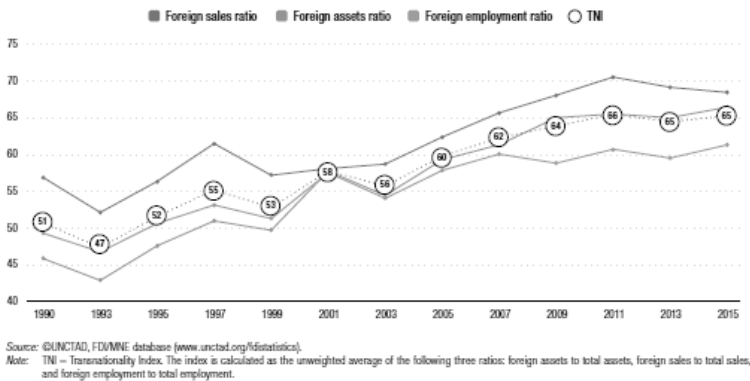


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In summary, the transnational trade in resources, particularly natural resources and capital resources, has helped companies to lower cost and improve their efficiency of operations. Advances in transportation and communication have lessened the importance of distance to market. These developments have allowed domestic firms to compete in distant markets, but at the same time, have exposed those firms to more competition domestically. As the costs of transportation and communication have declined substantially, it is likely that cross-border trade will expand. Moreover, the citizens in those countries that are part of the expanding world wide trade phenomenon will be able to reap the benefits of higher standards of living, increased job opportunities, technology transfers, and access to modern management practices and training.

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