International Trade in Historical Perspective

Onassis Prize Lecture

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I have studied international trade and investment all my adult life. The source of this fascination is not entirely clear to me, except for the fact that this field combines many diverse parts of economics and is rich in themes and methods. Although I have ventured from time to time into other fields, such as macroeconomics, public economics, growth, and political economy, the challenge of understanding the structure of international specialization never left my mind.

It goes without saying that long-distance trade plays an important role in modern economies. But it was already a salient feature of economic development after the Neolithic Revolution, as hunter-gatherers evolved into sedentary societies that specialized in food crops, and even more so with the emergence of cities and early civilizations. Caravans traveled along the Fertile Crescent trading between Mesopotamia and the Levant three millennia ago. Over time, trading routes expanded to distant parts of Asia and Europe. The Roman Empire managed an extensive network of trade, which bound together Europe, western Asia, and Northern Africa.

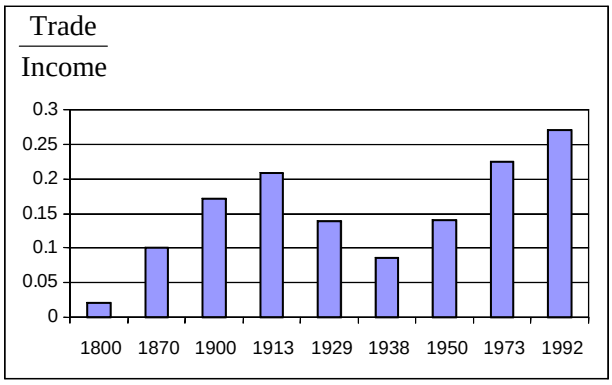
The collapse of the western part of the Roman Empire in the fifth century C.E. brought many of these developments to a halt. Nevertheless, long-distance trade continued, although to a lesser extent. Historians have doc-

umented in great detail the evolution of communications and the mobility of people across distant regions during that period, developments that were particularly pronounced during the Carolingian Empire in the 8th century. European imports of spices were replaced then by imports of exotic medicines and new drugs developed by Arab pharmacology, while silk continued to flow into northwest Europe. To pay for these imports, Europe produced a rather narrow range of high-value, low-bulk goods: textiles, tin, Frankish swords, but primarily European slaves.

The Middle Ages saw an expansion of trade with the rise of city-states such as Venice and Genoa, and the advent of the commercial revolution. The discovery of America by Christopher Columbus in 1492 and the discovery of the passage to the East Indies via the Cape of Good Hope by Vasco da Gama in 1498 had monumental effects on world history and on long-distance trade. Historians dispute the immediate impact of these discoveries but no one doubts that the Iberian states of Portugal, Castile and Aragon were soon affected, and the rest of the world was influenced in the following centuries. Particularly important were these developments for European countries with access to the Atlantic Ocean, in which the new commercial opportunities shook up the social and political order and led to a new balance of power between the nobility, the merchants, and the crown.

But how important were these discoveries for the global integration of markets? Some historians argue that world markets were integrated before the age of discovery; others argue that integration started in earnest only afterwards, with the advent of the Industrial Revolution. In particular, while the discovery of the new world and the passage to the Indies played a prominent role in the evolution of the European economies in the centuries to come, the volume of world trade relative to income remained very small until the 19th century.

Figure 1 shows the evolution of world trade from the early 19th century to the early 1990s. It clearly identifies two waves of globalization; one that started in the second half of the 19th century and lasted until World War I,



Source: Estevadeordal, Frantz and Taylor (2003)

Figure 1: Trade-Income Ratio in the World Economy

and the second that stared after World War II and proceeds until this very day. Initially the share of trade in income was 2% and it exceeded 25% in 1992.

While long-distance trade was related to economic development, the interdependence between them was complex. In particular, long-distance trade affected economic development and economic development affected trade. Moreover, the influence of trade on development operated through multiple channels, including the institutional and political. Long-distance trade in the aftermath of the discovery of the Americas is often cited as a major event that contributed to the divergence in economic conditions between Europe and China. Although Europe and China were similarly advanced in the mid-18th century, the industrial revolution took place in Europe, as a result of which Europe grew faster than China, eventually leading to large gaps in income per capita that have been closing only in recent years. Naturally, the industrial revolution was not driven by trade per se, but trade was an indispensable contributing factor.

Some studies point out that European growth in the post-1500 period was concentrated in countries with access to the Atlantic Ocean: Britain, France, the Netherlands, Portugal and Spain, countries that engaged in trade with the New World and acquired overseas colonies. These commercial opportunities

strengthened the political power of merchant groups and entrepreneurs and weakened the power of monarchs. As a result, constraints on the executive were broadened and property rights became more secure for a larger segment of society. These unintended consequences of trade with the New World enabled the Atlantic traders to forge ahead of other European countries.

Yet trade with the new world also had negative effects in Spain, where Castilian institutions proved to be inadequate in limiting the power of Philip II. The flow of silver from the Americas encouraged Philip II to engage in wars that eventually became too expensive and required domestic taxes and large loans from foreign bankers. The ensuing struggles between the Crown and the Cortes weakened domestic institutions, and this had unfortunate consequences for Spanish economic growth.

Evidently, the historical record shows that long-distance trade interacted in complex ways with economic development, and that it played an important role in the evolution of the world's economy. It is therefore important to understand what drives such trade and how it impacts economic outcomes.

Unlike the natural sciences, in which important research objects do not change over time, in the social sciences generally and in economics particularly, the objects of research reshape over time. In this respect, international trade is no exception. When countries and regions transform as a result of economic, technological, political, or institutional change, the nature of foreign trade and its causes and consequences change too. Moreover, such changes are not rare in historical perspective, but rather frequent. As a result, the thinking on this subject has been repeatedly adapted to varying circumstances. And this motif has been central to my thinking about this subject.

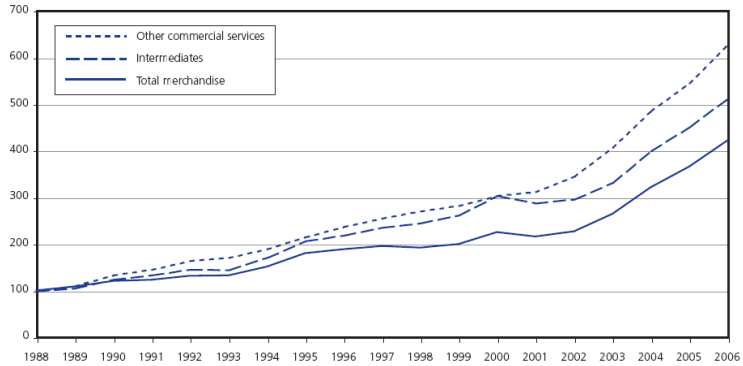
The history of thought on international trade, with its interplay between theory and evidence, is fascinating. The chain of theorizing, empirical investigation that confirms parts of the theory and contradicts others, and updating of the theory in view of new evidence, has propelled advances in this research for two centuries. Moreover, this pattern has been unavoidable

in view of the changing nature of international economic interactions. In other words, theories that had been suitable at one point in time became less appropriate as national economies—and with them patterns of international specialization—changed.

Two major paradigms of foreign trade that were developed in the early parts of the 19th and 20th centuries, respectively—the former by David Ricardo in England, the latter by Eli Heckscher and Bertil Ohlin in Sweden—dominated the field for many years. Each one was cultivated in the context of its time; the former explained trade flows by differences in labor productivity across countries, while the latter explained foreign trade by differences in factor endowments. In each case the hypothesized causes of trade served their purpose, and they were applied to a host of issues, such as gains from international trade, the conflict of interest between different groups in society concerning the desirability of open markets, the impact of trade policies—including free trade agreements and multilateral trade negotiations—and the relationship between international trade and economic growth.

While these approaches have many merits, they proved inadequate in addressing a number of phenomena that became particularly salient in the post-World War II period. This led to the first major revolution in trade theory during my professional life, and to the development of what was then dubbed the 'new' trade theory. The motivation for this revolution was empirical, and the new trade models—which emphasize economies of scale and monopolistic competition—triggered new empirical work. Yet as the nature of world trade kept changing and new data sets became available in the 1990s, the inadequacy of the theoretical models from the 1980s became visible. As a result, a second revolution took place in the early 2000s, this time focusing on characteristics of individual firms and how they engage in international transactions. This approach enabled researchers to explain new patterns of international specialization that have emerged since the 1980s, including the central roles played by multinational corporations in the shaping of international specialization, and patterns of outsourcing and offshoring in the world economy.

Chart 13
Trends in world trade of total merchandise, intermediate goods and other commercial services, 1988-2006



Note: Data are normalized at 100 in 1988. Intermediates are classified as in Yeats (2001).
Source: WTO calculations based on UN COMTRADE and WTO statistics database.

Figure 2: Evolution of Trade in Intermediate Goods and Commercial Services

Table 11
Goods and service offshoring by country, 2000
(Imported inputs as per cent of total inputs)

Goods		Services	
Top five offshoring countries			
Ireland	70.6	Ireland	33.4
Hungary	63.2	Belgium	14.9
Belgium	57.0	Hungary	14.4
Slovak Republic	54.4	Norway	13.4
Austria	52.7	Czech Republic	13.3
Bottom five offshoring countries			
United States	17.8	Australia	3.9
India	12.7	France	2.8
China	12.6	Japan	2.1
Brazil	10.5	China	1.3
Japan	9.2	United States	0.5

Note: For some countries Input-Output data are not available for the year 2000. These are: Australia (1999), India (1999), Ireland (1998), Norway (2001); where brackets denote the year of the Input-Output table used.
Source: WTO calculations based on OECD Input-Output tables.

Figure 3: Offshoring of Goods and Services

Figure 2 shows the evolution of trade in intermediate goods and commercial services relative to total merchandise trade. It shows clearly that trade in intermediates and commercial services has grown much faster than merchandise trade since the 1980s. This is a reflection of the growth in international vertical specialization, as companies source more and more intermediate inputs and business services in foreign lands.

Figure 3 shows data on the offshoring of goods and services. Among the top offshoring countries Ireland offshores 71% of its intermediate inputs and 33% of services. On the other side, Japan offshores little: 9% of intermediate inputs and 2% of services. This variation across countries reflects a complex

Table 5
Share of exporting firms in total number of manufacturing firms

	Year	Share of exporters in total number of manufacturing firms
United States	2002	18
Norway	2003	39.2
France	1986	17.4
Japan	2000	20
Chile	1999	20.9
Colombia	1990	18.2

Note: US: U.S. Census of Manufacturers. Norway: all non-financial joint-stock firms in the manufacturing sector (approximately 90 per cent of the manufacturing industry totals). A firm is an exporter if its exports are over NOK 1000. France: comprehensive data set of French manufacturing firms; 113 countries and 16 industries are included; data fail to account for 20 per cent of total export data. Japan: Survey database of the Ministry of Economy, Trade and Industry which includes all manufacturing and non-manufacturing firms with more than 50 employees and a turnover exceeding 30 million Yen; firms that re-entered and started exporting after 1994 are excluded; unbalanced panel with 22000 observations a year. Chile: Encuesta Nacional de Industria Annual and National Customs Department data; 1991-1999; importers returning goods are recorded as exporters, might lead to overestimation. Colombia: Columbian Manufacturing Census; panel data; plants with 10 or more employees.
Source: United States: (Bernard et al. 2007a); Norway: (Mayer and Ottaviano, 2007); France: (Eaton et al. 2004); Japan: (Kimura and Kiyota, 2006) Chile: (Alvarez, 2004); Colombia: (Brooks, 2006) .

Figure 4: Share of Exporting Firms in Total Number of Manufacturing Firms

Table 6
Per cent of exports accounted for by largest exporters

	Year	Top 1%	Top 5%	Top 10%
United States	2002	80.9	93	96.3
Belgium	2003	48	73	84
France	2003	44	73	84
Germany	2003	59	81	90
Hungary	2003	77	91	96
Italy	2003	32	59	72
Norway	2003	53	81	91
UK	2003	42	69	80
Chile	1999	49.12	82.25	96.45

Note: Data description (for some countries see Note in Table 3): Belgium: Data taken from Balance Sheet Trade Transactions Dataset; for intra EU trade firms with >250 000 euros trade flows are considered; for extra EU trade firms with >1000 Euro (or one tonne) are considered. Exports reported at the eight-digit level. France: Data are taken from the French Customs. Exports are reported at the eight-digit level. Intra EU trade is reported only for >250 000 Euros; Extra EU trade is reported for >1000 Euros. Germany: Data taken from Federal Statistical Office; Establishment Level Panel Data; manufacturing sector only; covers firms with >20 employees only. Hungary: Data set contains 2043 firms, with exports >100 million HUF; this represents 60-70 percent of total exports. Exports reported at the six-digit level. Italy: Data taken from Capitalia database; survey on Italian manufacturing firms; for firms <500 employees and more than 11 the survey is selective; for firms >500 employees all are included. UK: Data taken from FAME database.
Source: United States: (Bernard et al. 2007a); Belgium, France, Germany, Hungary, Italy, Norway, UK: (Mayer and Ottaviano, 2007); Chile: (Alvarez, 2004).

Figure 5: Per Cent of Exports Accounted for by Largest Exporters

web of international supply chains and the location of different countries in this chain. In addition, the variation in the share of exporters across manufacturing sectors is also very large.

Figure 4 shows the fraction of exporting firms in manufacturing in various countries. The first thing to note is that this fraction is small in most countries, between 17 and 21 percent. This means that most firms do not export. Moreover, exporters sell most of their output in the domestic market and their size distribution is very skewed, as shown in Figure 5. In the UK, for example, the top 1% of exporters export 42% of the value of exports in manufacturing while the top 10% export 80% of the value. And in the US

the top 1% export 81% of the value while the top 10% export 96%.

We now better understand why only a small fractions of firms export and an even smaller fraction of companies engages in foreign direct investment, why exporters are bigger and more productive than nonexporters and why they pay higher wages, why multinationals are bigger and more productive than exporters, how foreign trade affects wage inequality and the distribution of income, what makes some countries attractive hosts of foreign direct investment, and what is driving global supply chains. All these issues have important implications for standards of living around the globe and for the degree to which a country's standard of living depends on economic developments in other countries.

I have been most lucky in choosing to study international trade and investment during a time when the world economy has been rapidly changing and research progressed in leaps and bounds, chasing world events. And even more lucky to receive the Onassis Prize for participating in this journey.