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# **Trade paradigms for developing countries: some old, some new, some borrowed, some out of the blue**

by

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# **TRADE PARADIGMS FOR DEVELOPING COUNTRIES: SOME OLD, SOME NEW, SOME BORROWED, SOME OUT OF THE BLUE**

*By Hildegunn Kyvik Nordås*

## **Introduction**

One of the most striking features of global economic development over the past few decades has been the rise to prominence of Asia in international trade. Between 1975 and 2005, the ratio of world trade to world gross domestic product (GDP) increased from 0.33 to 0.54, while for East Asia in the same period the figures climbed from 0.21 to as much as 0.86.<sup>1</sup> The figures reflect the fact that an increasing share of what is produced in a country is exported, while at the same time a rising share of what is being processed or consumed is imported. Furthermore, a rising share of what is being consumed everywhere in the world has been produced in East Asia.

However, being produced in East Asia – or anywhere else for that matter – does not necessarily mean that all value added originates there. On the contrary, the deepening international division of labour reflected in the trade to GDP ratio is driven by the fragmentation of production, where parts, components and tasks are produced in a number of countries before being assembled and sold to the final consumer. The iPod, for example, is imported by the United States of America from China; yet, according to a much cited supply chain analysis, of the US\$ 299 price of iPods sold in the United States, US\$ 75 went to distribution and retail margins in that country while Apple's profits accounted for US\$ 80. Most of the remainder went to contractors or subcontractors in Japan, the Republic of Korea, Taiwan Province of China and Singapore while only “a few dollars” went to China (Linden and others, 2007).

A Google search for “global supply chain” yielded 13.9 million hits in August 2008. In the popular debate, global supply chains are frequently mentioned as a fact of life and part of a new trade paradigm that is about to change the old insights on gains and losses from trade, and therefore requires new policy responses. A recent influential study, for example, argues that international trade is not about cloth and wine anymore, but in fact signifies a new paradigm (Grossman and Rossi-Hansberg, 2006). However, empirical evidence suggests that, with the possible exception of the electronics industry, international supply chains are more regional than global and, if anything, the relevance of distance has increased over time for both goods and services (Egger, 2008; Nordås, 2008b).

This chapter takes a closer look at the extent to which recent developments in international trade amount to a new paradigm. Three recent trends are discussed: (a) fragmentation of production; (b) the role of retailers in international trade; and (c) geographical trade diversification. The first theme lies at the heart of recent debate about the gains from trade and to what extent they can be assessed by means of the familiar trade-policy analysis toolkit. The second theme, the role of retailers, has not until now attracted as much attention. However, in order for the exports of consumer goods to reach the final consumer, the exporters increasingly need to enter a contract with a major retailer. That can often be more of a challenge than getting the goods through customs. On the other hand, major retailers can provide the necessary scale for modernizing production, and they are a source of technology transfer and market information for the successful supplier. The third theme relates to export diversification, which is often a policy objective in developing countries. The chapter concludes with some reflections on the extent to which the fundamentals, as we know them, still apply to international trade.

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<sup>1</sup> World Development Indicators, World Bank, Washington, D.C.

## **A. Fragmentation has reached a high level, but is it levelling off?**

### **1. Trends**

The fragmentation of production has been one of the major driving forces behind deepening international specialization. Yi (2003) suggested that about half of the increase of world trade since the Second World War can be attributed to it. Studies differ somewhat in terminology; vertical specialization and fragmentation are used interchangeably, which is also the case in this chapter. The concept refers to the manufacturers of final goods slicing up the production process into parts, components and tasks, and distributing the slices geographically to specialized suppliers rather than producing them in-house.

It is not possible to measure cross-border vertical specialization directly from available trade statistics, since that would require information on the use of traded goods. One frequently used proxy is trade in intermediate products. This measure overestimates the extent of vertical specialization, since many products are used both for final consumption and intermediate inputs. Furthermore, many imported intermediate inputs are used in a different industry (for example, carpets imported by car manufacturers) and cannot be seen as fragmentation, at least not in the narrow sense of the term.<sup>2</sup> Nevertheless, it is worth exploring developments in trade in intermediate inputs. The United Nations COMTRADE database is used for this purpose. It provides data through Classification by Broad Economic Categories (BEC), distinguishing between capital goods, the industrial supply of parts and accessories, and consumption goods.

Our measure of intermediate goods includes industrial supply (category 22), parts and accessories of capital goods (category 42), and parts and accessories of transport equipment (category 53). These categories accounted for about 48 per cent of total world merchandise non-fuel exports, both in 2004 and in 1996. Although the trend share of total intermediate trade has been flat, countries not belonging to the Organisation for Economic Co-operation and Development (OECD) have increased their market share significantly. This was particularly notable from 1996 to 2004 in parts and components of capital goods other than motor vehicles (category 42), when non-OECD countries increased their market share from 40 per cent to 46 per cent of exports and from 25 to 36 per cent of imports (Hill, Leshner and Nordås, 2007). The data thus suggest that non-OECD countries increasingly produce both parts and components for assembly in OECD countries, and assemble parts and components imported from OECD countries.

A more detailed analysis of Asia's role in trade in parts and components reveals that the share of intermediate inputs is larger than it is for the world average or the OECD average. Furthermore, the share of intermediate inputs is significantly higher in intra-Asian trade than it is for Asia's trade with the rest of the world.<sup>3</sup> Tables 1 and 2 show developments during the past decade in Asia's trade in intermediate inputs.

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<sup>2</sup> Fragmentation is usually defined as sourcing from other companies within the same industry (for example, cars and parts).

<sup>3</sup> In the case of these data, Asia refers to Bangladesh, China, India, Indonesia, Japan, the Republic of Korea, Malaysia, Mongolia, Myanmar, Pakistan, the Philippines, Singapore, Sri Lanka, Taiwan Province of China, Thailand, Viet Nam and Hong Kong, China.

**Table 1. The share of intermediate goods in Asia's total trade by trading partner**

(percentage)

Year	Exports			Imports		
	Asia	OECD	World	Asia	OECD	World
1996	56.5	37.1	45.9	47.8	48.7	43.0
1997	56.3	37.4	46.0	52.3	53.7	47.4
1998	58.6	37.8	46.3	53.9	55.4	49.2
1999	59.9	37.7	47.0	55.8	56.4	49.9
2000	61.1	39.9	49.5	56.8	57.0	49.9
2001	58.7	37.4	47.3	55.9	55.4	48.7
2002	59.5	36.5	47.3	56.7	56.1	49.9
2003	59.6	36.6	47.6	57.2	56.6	50.2
2004	60.8	37.9	48.6	58.3	56.5	50.3
2005	60.1	37.3	48.1	58.5	57.0	49.2
2006	60.1	38.6	48.4	58.9	57.3	48.6

Source: Calculated by the author from the United Nations COMTRADE database.

It is clear from table 1 that the share of intermediate goods in Asia's exports and imports has increased over the past decade, and that the increase is particularly large for imports. It is notable that as much as 60 per cent of intra-Asian exports are in intermediate inputs, and that the share has remained stable since 1999. However, it is also notable that the bulk of the increase in the intermediate goods share came in the 1990s and has remained fairly stable or has slightly declined in the 2000s.

Turning to the relative importance of intra-Asian trade (table 2), developments in category 42, parts and components of capital goods (other than motor vehicles) are particularly notable. These shares increased markedly during the past decade to reach as much as 70 per cent of Asian exports and almost 80 per cent of Asian imports in this category. Category 42 contains electronic machinery, which is a product that lends itself easily to vertical fragmentation. Intra-Asian trade not only dominates Asian trade in this sector, Asia also dominates world trade. In 2006, the region's share of world exports of BEC 42 was 31 per cent, while the share of world imports was 41 per cent. This compares significantly with the 30 per cent share of total world merchandise exports and 24 per cent share of total world merchandise imports by the region in the same year.

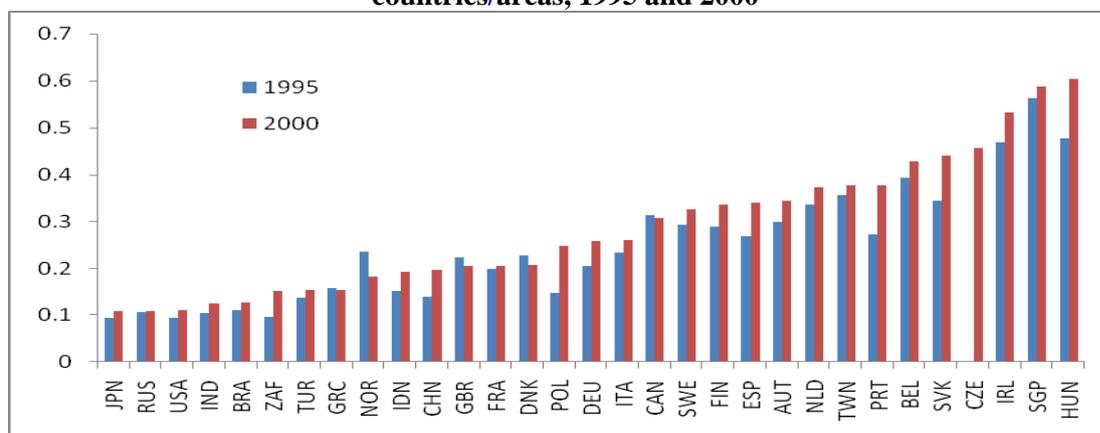
**Table 2. Intra-Asia share of Asia's trade in intermediate goods by BEC category**

BEC category	Exports			Imports		
	22	42	53	22	42	53
1996	68.2	56.8	32.2	52.0	59.9	41.8
1997	67.4	59.0	33.8	52.9	61.5	40.4
1998	59.8	56.1	24.9	54.7	60.9	35.8
1999	61.8	58.4	27.3	56.2	64.3	40.2
2000	64.3	59.8	30.2	58.0	67.1	47.3
2001	63.3	62.7	29.7	58.4	67.7	43.8
2002	64.2	67.1	32.7	60.1	71.1	43.8
2003	64.5	69.8	36.1	59.8	73.7	47.5
2004	65.1	70.0	37.7	60.1	75.4	51.2
2005	64.1	70.4	37.8	60.5	77.2	52.3
2006	62.0	70.5	36.7	61.6	77.7	50.1

Source: Calculated by the author from the United Nations COMTRADE database.

Trade in intermediate goods can be seen as an upper boundary of measures of vertical specialization. A lower boundary measure is provided by Hummels and others (2001) who defined vertical specialization as the use of imported intermediate goods in products that were subsequently exported. They found that the share of vertical specialization in exports was about 20 per cent in 1990, and that it had increased from about 15 per cent in 1970, using data for 13 OECD countries plus Taiwan Province of China – a sample that covered 60 per cent of world trade. Henceforth we denote this measure as the HIY index. Chen, Kondratowicz and Yi (2005) used the same methodology for 1968-1998 and found that the import content of exports increased somewhat during the 1990s in Australia, France, Germany, the Netherlands, the United Kingdom of Great Britain and Northern Ireland and the United States, but declined in Denmark and remained flat in Japan. Nordås (2008a) calculated the HYI index to 22 per cent in 2001, using the GTAP database for the same sample as Hummels, Ishii and Yi (2001), which suggests that the HIY index had risen by 2 percentage points in the decade since 1990. The index was, however, somewhat higher at 25.5 per cent in the total sample of 75 countries in the GTAP database. Asian countries such as Malaysia, the Philippines and Singapore exceeded by far the average. Finally, Hill, Leshner and Nordås (2007) calculated the HIY index using the newly released OECD input-output tables for 2000, and compared it with 1995. The results are given in figure 1.

**Figure 1. Imports embodied in exports and share of export value for selected countries/areas, 1995 and 2000**



Source: Hill and Leshner and Nordås others, 2007.

Note: For the full country/area names, see the annex to this chapter.

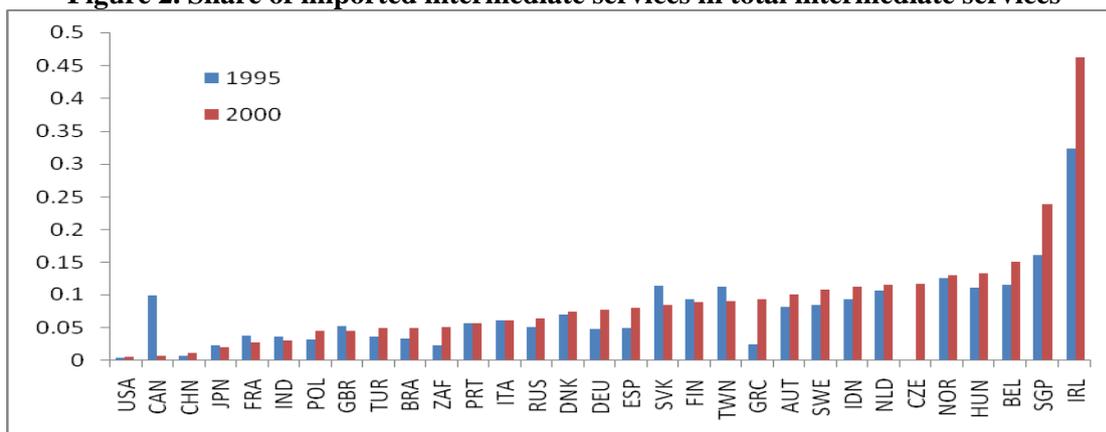
During this short period a relatively large increase was seen in the index for the acceding European Union members (Hungary, Poland and Slovakia). The highest levels are found in small countries close to major markets (for example, Singapore and Ireland), while the smallest shares are found in large, diversified economies (Japan and the United States), large economies with relatively high trade barriers (Brazil, India and the Russian Federation), as well as South Africa, which is relatively remote. The HIY index declined in Canada, Denmark, Greece, Norway and the United Kingdom during this period.

The impact of the offshoring of services on labour markets and wages in OECD countries has been hotly debated. Hard evidence of a surge in offshoring services and the resulting downward pressure on skilled wages is, however, difficult to find. First, it appears that the extent of offshoring services is modest. Figure 2 presents the import shares of intermediate services calculated from the OECD input-output database for 1995 and 2000. For most countries, the share was less than 10 per cent, while for major Asian countries such as China, India and Japan, the import share was less than 5 per cent. Ireland and Singapore were at the other end of the spectrum. A closer look at the data, however, reveals that royalties and licence fees constituted a large part of services trade, particularly in Ireland. Although correctly classified as services, royalties and licence fees often represent services provided between or within multinational manufacturing

firms. In most, but not all, countries included in the database, the import share of intermediate service increased between 1995 and 2000. Notable exceptions are France, India, Japan, the United Kingdom and Slovakia. The database indicates that Indonesia is among the most open economies as far as services imports are concerned.

It could be argued that 2000 is already history and the major surge in the offshoring of services occurred in more recent years. More recent data on imports of intermediate services are not available. However, business services are mainly used as intermediate inputs and, according to the United Nations services trade database, world exports of other business services (EBOPS category 268) increased by as much as 73 per cent between 2000 and 2006 in nominal United States dollar terms.<sup>4</sup>

**Figure 2. Share of imported intermediate services in total intermediate services**



*Source:* Calculated by the author from the Organisation for Economic Co-operation and Development input-output database.

*Note:* For the full country/area names, see the annex to this chapter.

To summarize the data analysis, it appears that vertical fragmentation has been an important driving force for deepening international specialization since the 1970s. Regional integration in Asia and strong trade (and investment) links between Asia and OECD countries have played a major role in this development. However, it appears that vertical fragmentation is levelling off and consolidating at its present level. This was first observed among the major OECD countries, but since 2000, vertical specialization appears to have been reaching a plateau also in Asia. Nevertheless, the offshoring of services still appears to be on the rise, albeit from a low base compared with total trade or total demand for business services.

## 2. Driving forces

Having described the trends in vertical fragmentation, it is also interesting to assess the driving forces. According to Lall, Albaladejo and Zhang (2004), four major factors affect vertical specialization. First, the production process must be technically divisible. Second, there must be differences in relative factor intensities across the different stages of production. Third and closely related, technological complexity is important. This refers to the range of activities from routine tasks and standard low-technology, labour intensive processes to skills-intensive, high-technology

<sup>4</sup> Calculated by the author by adding the exports of all individual countries reported in each year. Since data for some countries are missing for some years, the figure may not be exactly right; however, at least it gives an approximate idea of the situation. The total world exports of other business services were calculated to have been US\$ 313.6 billion for 2000 compared with US\$ 542 billion for 2006.

tasks contained in the production of the good in question. The fourth and final factor is the value-to-weight ratio of the products being outsourced. The higher this ratio, the smaller the transport costs relative to total revenue, and the more easily the component can be sourced from a distance. The sectors that most easily lend themselves to fragmentation according to these factors are electronics and clothing. These are also the sectors where vertical specialization is the most prominent.

In addition to technology-related factors, political factors and geography play important roles. Thus, while technical separability and comparative advantage for different stages in the production process make vertical fragmentation feasible, the gains from it depend on a trade-off between the prices of the outsourced parts, components and tasks, and the additional transaction costs arising from dealing with a supplier at a distance and across an international border. Since parts and components cross international borders several times in an international production network, firms located in countries with high tariffs and time-consuming border procedures are at a disadvantage when it comes to participating in international supply networks.

Transaction costs comprise transport costs; communication costs; costs of entering, monitoring and enforcing contracts; and costs of complying with regulations. Before the recent surge in oil prices, transport costs (particularly for air transport) declined substantially while information and communications technology (ICT) reduced the cost of communications, and organizational innovations – often ICT-enabled – facilitated major leaps in supply chain management. As transaction costs have come down, production has become more transaction-intensive. Just-in-time production has, for example, been extended from the manufacturing plant to a network of suppliers located close to the plant and subsequently to international production networks.

Just-in-time production shows scant tolerance for slackness. Combining it with international outsourcing therefore renders manufacturers vulnerable to increases in transport costs, delays at the border, and long and variable lead times, for example, due to poor infrastructure and weak logistics services. Nordås (2006) estimated the impact of time on exports and imports, as reported in the doing business indicators of the World Bank, found that the exports of intermediate inputs to Japan decline 1.4 per cent for every per cent increase in the time for exports. Furthermore, the exports of intermediate goods are much more sensitive to time than the average for all exports. The study also found that exports fall off more sharply with distance for intermediate products than for goods in general, suggesting that trade in intermediate inputs exhibits agglomeration forces and possibly regionalization of international trade. However, for electronics, distance matters less if the country has a good telecommunications infrastructure and a well-developed airport infrastructure.

The relations between the HYI index of vertical specialization and various indicators assumed to be associated with transaction costs were analysed for total trade and for the clothing and electronics sectors in particular by Nordås (2008a). Good infrastructure in general and telecommunications in particular were found to be positively associated with the index. Small countries located close to major markets tend to have the highest indices, as shown in figure 1. The study identified port efficiency as the most economically and statistically significant variable associated with a high HYI index. Finally, the study introduced a governance indicator that combined good governance with open markets.<sup>5</sup> A good score on this index was strongly associated with the HIY index for both clothing and electronics.

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<sup>5</sup> Governance indicators (Kaufman, Kray and Zoido-Lobaton, 2002) and the trade restrictiveness index (Kee, Nicita and Olarreaga, 2005) were combined by normalizing the average to one for both indicators and then taking the average of the two.

Thus, the driving forces for vertical specialization appear to be specialization according to comparative advantage within sectors, facilitated by declining trade and transaction costs. Fragmented production distributed over an extensive geographical area is, however, very transaction-intensive and time sensitive, and therefore likely to be highly responsive to increases in transaction costs, be they in terms of time or money.

### **3. Can vertical specialization be understood within traditional trade policy analysis?**

Finally, does vertical specialization, including the offshoring of services, constitute a new paradigm? One important difference between trade in final goods and trade in intermediate inputs is that the latter affects not only the relative price of final outputs and factors of production but also production costs and productivity.<sup>6</sup> Thus, trade in final goods driven by comparative advantage causes a change in relative prices and the reallocation of resources from import-competing to exporting sectors, but it does not by itself affect productivity in these sectors.<sup>7</sup> Trade in intermediate goods and services, on the other hand, provides cheaper, better or a broader variety of intermediate inputs, and thereby reduces costs and improves productivity in downstream industries. One possible impact of this is that the offshoring of routine tasks helps to sustain manufacturing competitiveness in high-income countries. Conversely, restricting trade in tasks may encourage the relocation of the entire manufacturing supply chain to low-cost countries (Robert-Nicoud, 2008).

Few, if any, empirical studies have been undertaken that measure the impact of trade in intermediate inputs on productivity in downstream industries directly. However, Amiti and Konings (2007) offered an indirect approach by analysing the impact on productivity among downstream firms of tariff cuts on intermediate goods in Indonesia. They found that a 10 percentage point fall in input tariffs improved the productivity of importing firms by 12 per cent.

The debate on whether vertical specialization and offshoring constitute a new paradigm has largely focused on the labour market. A conclusion on this issue has yet to be reached. It has been shown that, if parts, components and tasks vary in skills intensity, offshoring through foreign direct investment will raise demand for skilled workers in both the host and the home country of the investor. The home country will presumably have abundant human capital and will outsource the least skills-intensive tasks, while the host will have abundant unskilled labour. From the point of view of the latter, the foreign investor will produce relatively skills-intensive products and raise demand for skills in that country too. The skills premium will consequently increase in both countries (Feenstra and Hanson, 1997).

The fear that vertical specialization in general and services in particular would undermine the wages of skilled labour in countries that are relatively rich in human capital does, however, seem exaggerated.<sup>8</sup> A comprehensive study (Liu and Trefler, 2008) of the effects of offshoring

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<sup>6</sup> The relationship between goods prices and factor prices was established by the well-known Stolper-Samuelson theorem.

<sup>7</sup> In practice, it is often argued that trade liberalization increases competition and therefore induces firms to cut costs and raise productivity. It is not clear, however, why firms do not minimize costs in a protected market.

<sup>8</sup> The possibility that poor countries with relatively scarce human capital should still have a relatively low skills premium builds on the assumption that skills are complementary to other factors that are missing in those countries. Consequently, skilled people cannot find employment for their skills and their wages are low due to muted demand. This notion begs the question of what incentives exist for acquiring skills in the first place in such countries. In addition, the rapid rise in wages of skilled workers employed in services industries in countries such as India appears to indicate that skills are indeed in high demand.

services on a number of labour market indicators in the United States found the effect to be either slightly positive or zero. They dismissed the debate as “much ado about nothing”.<sup>9</sup>

The productivity gains from deepening specialization are well known and well documented. However, the gain from splitting a process into two separate operations is probably much larger than splitting off, say, the hundredth task. At one point, the degree of fragmentation is likely to reach a plateau at which the gains from an additional component or task being outsourced or located offshore equal the additional trade cost of doing so. The altitude of this plateau depends on trade costs, broadly speaking, including transport and communication costs, search costs for a supplier or customer, and the cost of establishing, monitoring and enforcing a contract with that supplier. The geographical reach of a supply chain depends on the trade-off between the cost of production and the cost of transactions with a distant supplier. In the case of intra-Asian trade, it appears that the plateau is relatively high because of proximity and relatively low trade costs, complementarity in production, and a large and fast-growing market.

The driving forces and the impact of vertical specialization are more complex than in the neoclassical models of trade in final goods driven by comparative advantage. In particular, further research is needed on the interaction between trade, technology, trade costs and geography in order to better inform trade policy decisions. Nevertheless, trade in intermediate inputs has been analysed within standard trade models at least since the publication of the seminal paper on trade in producer services by Markusen (1989). Furthermore, multisector Ricardian models of comparative advantage appear to predict rather well the broad trends in observed trade patterns.

## **B. Trade in consumer goods: role of retailers becoming increasingly important**

Most consumer goods pass through the retail sector. In the past, retailers were merely seen as conveyors/distributors of merchandise, but in recent years they have played a more active role in sourcing directly from manufacturers and farmers, setting product standards, promoting products as well as in obtaining and sharing information on consumer tastes and behaviour. Given the enhanced role of the retail sector, it would naturally be expected also to play an important role in the volume and direction of international trade in consumer goods. For example, in the early 1990s, the United States argued that the Large Store Law in Japan constituted an impediment to the sale of United States-made goods in Japan (Flath, 2003). Yet, despite the growing role of retailers as intermediaries in international trade, trade economists and trade policy analysts have largely ignored the sector. Nevertheless, the few studies that do exist have found that the market structure in the retail sector is not only important with regard to the volume and direction of trade in consumer goods, but also to the trade response to trade liberalization (Francois and Wooton, 2007).

Retailers have become more international in recent years and some of the largest companies in the world are found in the sector. Among the world's 250 largest retailers in 2005, foreign sales accounted for 14.4 per cent of total sales and the average number of countries of operation was 5.9 (Deloitte Touche Tohmatsu, 2007).<sup>10</sup> Among the retailers that have made intercontinental investments, European retailers have so far been the most prominent with Carrefour (France) leading the way. The world's largest retailer by far is Wal-Mart (United States), which alone accounted for 10 per cent of the sales by the top 250 retailers in 2005. Furthermore, Wal-Mart accounted for as much as 15 per cent of United States imports of consumer goods from China in 2004 (Basker, 2007). Finally, non-food retailers were among the most global international retailers in 2005; Spanish clothing retailer Inditex ranked top, with stores in 62 countries. The

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<sup>9</sup> The study analyses the net effect of offshoring and inshoring, with the latter defined as sales of services produced in the United States, to unaffiliated parties in low-wage countries.

<sup>10</sup> Dell, Alticor, Avon and AAFES have global coverage and are not included in the average. Among the 250 largest retailers, 107 of them had no foreign operations.

clothing retailers, in particular, are lead firms in international supply chains. They have close contractual relationships with their suppliers and their sourcing strategies are important determinants of international trade patterns in that sector.

Retailers that establish operations in developing countries appear to follow a common pattern (Coe and Hess, 2005; Reardon, Henson and Berdegué, 2007). During the first phase, after opening operations in a country, a retailer brings in products from its existing supplier base and the import content of its sales is relatively high. However, local content increases rapidly as the retailer develops linkages with local suppliers, who over time may also become suppliers to retail outlets in other countries. For example, Tesco's investment in Thailand was found to have increased exports from Thailand to the United Kingdom. During the third phase, import content again increases somewhat, due to the development of regional supply chains. Reardon, Henson and Berdegué (2007) reported that retailers helped to ease supplier credit constraints when investing in product and process upgrading in poor countries, through incentives and other forms of assistance. Nordås, Pinali and Geloso-Grosso (2007) explored the extent to which foreign direct investment in the retail sector enhanced trade between the host and home country of the retailer in question. They found that the commercial presence of a retailer was associated with about 20 per cent higher imports of food and 18 per cent higher imports of non-food consumer goods from the host country to the home country.

Larger retailers are associated with higher market concentration in the sector, which could affect the pass-through to consumer prices of lower tariffs. For example, Francois and others (2007) found that the pass-through to consumer prices following the dismantling of textiles and clothing quotas in 2005 depended on the structure of the retail sector in each European Union country. In other words, the extent to which Asian textiles and clothing exporters, for example, gained from the implementation of the World Trade Organization (WTO) Agreement on Textiles and Clothing depended partly on the competitiveness of the retail sector in the liberalizing countries.<sup>11</sup>

The findings from the textiles and clothing sector also apply to trade in consumer goods in general. Nordås (2008c) distinguished between food and non-food imports, and investigated how market concentration in the retail sector affected imports. Market concentration was measured by the market share of the five largest retailers. It was found that a 1 percentage point increase in the market share of the five largest retailers reduced imports by between 2 and 3.3 per cent for non-food consumer goods, and between 1.2 and 2.65 per cent for food. However, it was also found that the more concentrated the retail sector, the more geographically diversified was the sourcing of food imports. This result is compatible with the observation that there are substantial fixed costs related to international sourcing and that only relatively large firms can afford to import directly, and only very large firms can afford to import from many countries.<sup>12</sup>

Another interesting development in the retail sector with potential trade impacts is the proliferation of private labels or store brands. Private labels are defined as a brand that is sold exclusively by a specific retailer or chain. They first appeared as a cheaper, lower-quality alternative to branded goods, but retailers with strong brand names have also introduced premium own-label products such as organic food, healthy food and fair trade food to mention but a few. Nevertheless, the budget items still dominate. On average, the price of private labels was 31 per cent lower than comparable branded goods, ranking between 48 per cent (Greece) and 10 per cent (Thailand) in a sample of 38 countries in 2005 (ACNielsen, 2005). The largest price differences are found in personal care products where the price is typically about 50 per cent less for private labels compared with branded products.

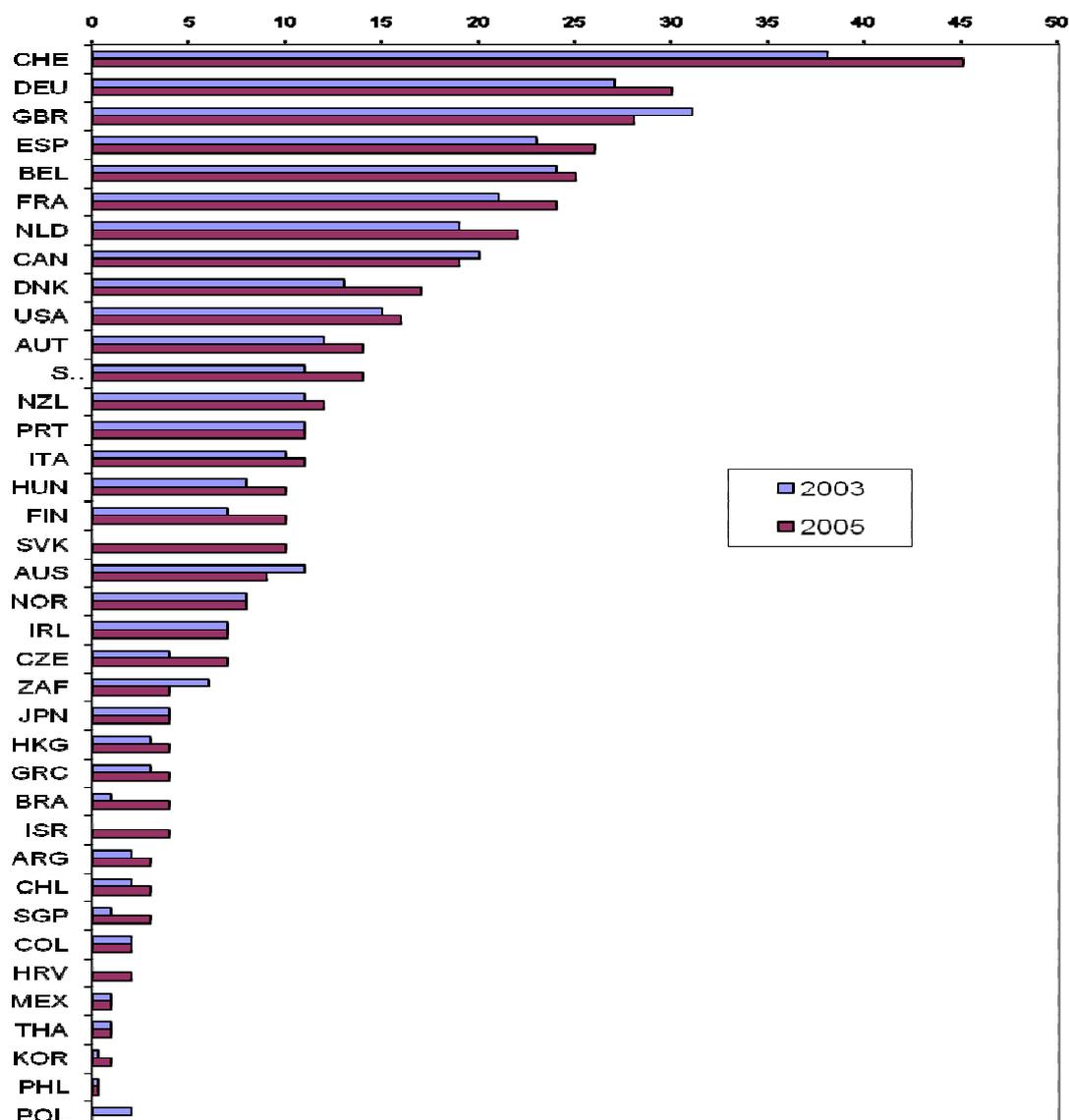
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<sup>11</sup> The Agreement on Textiles and Clothing mandated the dismantling of import quotas over a 10-year period ending 1 January 2005.

<sup>12</sup> See, for example, Bernard and others, 2007.

ACNielsen, a market research and consultancy firm, provides data on private label sales for the supermarket sector. The aggregate value of private label sales for the 36 countries included in the data accounted for 15 per cent of total sales in 2003, growing to 17 per cent in 2005 (ACNielsen, 2003 and 2005).<sup>13</sup> The share varied greatly among countries and was higher in Europe than in other regions. Figure 3 shows the shares for 2003 and 2005. The differences among countries reflect variation both in the share of private labels in each product category and in the number of product categories where private labels are found. For example, in 2005, almost all product categories had private labels in Switzerland, while only 26 per cent of the categories had private labels in the Philippines.

**Figure 3. Share of private labels in total retail sales in selected countries/areas, 2003 and 2005**



Source: ACNielsen, 2003 and 2005.

Note: For the full country/area names, see the annex to this chapter.

<sup>13</sup> The 2005 data covers 38 countries and 80 product categories. The United States data do not cover Wal-Mart. A separate study of this retailer found that private labels accounted for 17 per cent of this company's sales – not too far from the United States average.

The rising market share of private labels could benefit potential exporters in developing countries that have low production costs in labour-intensive consumer goods industries, but a relatively weak supportive services industry. Such countries are often at a disadvantage when product innovation, time to market and marketing are important for competitiveness. When the retailer does the innovation and marketing, however, it may open the way to foreign markets for developing country manufacturers. Private labels could therefore lower entry barriers for suppliers in developing countries with sufficient scale, reliability and capability to comply with retailers' standards. In addition, private labels may stimulate investment in quality in developing countries where retailers' private labels represent better than average quality in that market.

Interestingly, Nordås, Pinali and Geloso-Grosso (2007) found that private labels were positively associated with the imports of non-food consumer goods and negatively associated with imports of food. A 1 percentage point increase in the private label share is associated with 0.65 per cent higher imports of non-food consumer goods and 2 per cent lower food imports. As noted above, private labels fetch lower prices than branded goods, and a possible way of keeping prices low and quality up is to source from a limited number of closely monitored suppliers from low-cost countries. The growing importance of private labels was indeed found to shift sourcing to poor countries, defined as countries with GDP per capita less than US\$ 1000 (in 2000 prices). For both food and non-food items, a 1 percentage point increase in the private label share would reduce imports by 2 per cent from non-poor countries but increase imports by 1.3 per cent for food and 0.3 per cent for non-food consumer goods.

To conclude, the retail sector is an increasingly important link in the supply chain and its role in international trade should not be ignored when analysing the impact of trade liberalization in consumer goods. These are usually labour-intensive goods for which developing countries in Asia have a comparative advantage. Retailers' sourcing strategies related to private labels has already been discussed. However, a host of other issues including private product standards and social issues such as "short-travelled food", carbon miles and "ethical sourcing" are likely to become increasingly important for retailers' sourcing strategies as they respond to consumer concerns and consumer activism.

With the ebbing of tariffs and other explicit barriers to trade, the role of the distribution sector in international trade will probably become more prominent in trade policy analysis. This aspect can, however, be incorporated into the framework of existing trade models by introducing an imperfectly competitive distribution sector into applied models such as the gravity model or CGEs. For policy purposes, it is important to distinguish between trade barriers that are imposed by Government regulation and that fall under international trade laws such as sanitary and phytosanitary measures, non-tariff barriers and non-tariff measures, on the one hand, and trade costs that arise from consumer choices and preferences, on the other hand. While developing countries can address the former through negotiations and dispute settlement under WTO, potential exporters are well advised to adjust to the latter.

### **C. Trade diversification: the new frontier of trade research**

The diversification of the export base has been a major policy objective in developing countries. Trade liberalization as well as establishing export processing zones, investing in infrastructure and export promotion have, at least partly, aimed at diversifying exports. Yet, most trade policy analysis tools used until recently were unable to capture the creation of new trade flows (the extensive margin). The "old" neoclassical trade models abstracted from the extensive margin altogether, while applied multi-country multisector extensions, for example, embedded in computable general equilibrium models do not usually create new trade flows.<sup>14</sup> The more

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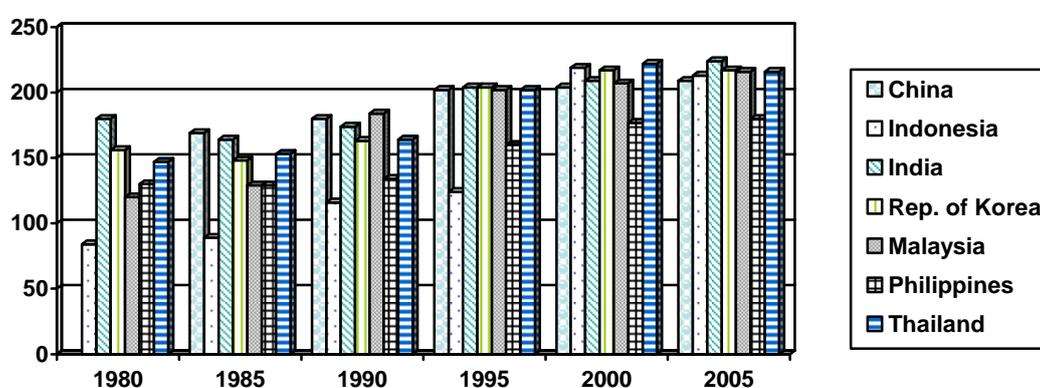
<sup>14</sup> A recent attempt to address this problem was made by Zhai, 2008.

disaggregated the model, the bigger the problem; this is simply because the more disaggregated the data are, the more the zero trade flows.

Trade diversification can be observed at several levels: (a) a country may start trading with new trading partners; (b) industries that do not engage in international trade may enter foreign markets; and (c) firms selling only on the domestic market may start exporting. Understanding the relative importance of the extensive and intensive margins is at the frontier of international economics research today and is arguably the most promising area of research that has policy relevance for developing countries.

Among the world's 200-plus countries and territories listed in the United Nations COMTRADE database, about half of all country pairs do not trade with each other. Figure 4 illustrates this dimension for selected Asian countries. For all of them, the number of trading partners has increased over time. Furthermore, by 2005, the selected Asian countries depicted in figure 4 exported to almost all countries of the world. Thus, at the aggregate level, the major Asian exporters are as diversified as they possibly can get.

**Figure 4. Number of trading partners of selected countries**



Source: United Nations COMTRADE database.

At the product level, the proportion of zero trade flows is much higher. Baldwin and Harrigan (2007) found that, at the HS10 level, 82 per cent of potential United States export flows were zero in 2005. They defined potential exports as “exports to all countries of goods that were exported to at least one country”. This definition probably inflates the potential since a number of countries do not import the product in question at all. For example, landlocked countries would not import ships, city States would not import large-scale harvesting machines for grain, and tropical countries would not import skis. It is therefore argued that potential exports from country  $i$  to  $j$  should be defined as goods that are both exported from  $i$  to at least one country and imported by  $j$  from at least one country. Even if the potential flows are likely to be exaggerated in the 82 per cent estimate, it remains that a surprisingly large share of potential trade flows is not utilized. Besedeš and Prusa (2007) calculated the actual versus potential trade flows using the same definition at the 4-digit ISIC level, and they found that, for East Asia, the realized potential was only 5 per cent in 1975, but that it had risen to 22 per cent in 2003.<sup>15</sup>

At the firm level evidence of the extent of trade performance by industry and number of markets is even scarcer. Bernard and others (2007) reported that only 4 per cent of all United States firms and 18 per cent of manufacturing firms exported in 2000. Muûls and Pisu (2007) found that 21 per cent of all firms in Belgium exported in 1996, but that only 15 per cent exported

<sup>15</sup> In this study, East Asia includes Indonesia, Malaysia, the Philippines, Singapore, the Republic of Korea and Thailand.

in 2004. They explained that the decline in the share of exporting firms was the result of market concentration in manufacturing, where most exporting firms were found, in combination with a sharp increase in the denominator due to the entry of new, small firms in the services sectors.

Despite the majority of all possible trade relationships being zero, there is still a great deal of activity at the extensive margin. Besedeš and Prusa (2007) found that, on average, more than a quarter of all observed bilateral trade flows in manufacturing (at the 4-digit ISIC level) was new each year in East Asia during 1975-2003. However, new trade relationships accounted for only 3 per cent of trade value and most new trade relationships failed after a few years. In fact, as many as 7 out of 10 new export relationships failed within two years on average for the 46 countries included in the study, and only a quarter of all relationships lasted more than five years. This finding has very important policy implications. If it is the case that firms can enter a foreign market relatively easily but that most are unable to stay, the binding barriers to trade are probably not border measures, such as tariffs and quotas. The lack of staying power in foreign markets can stem from weaknesses in the exporting country or behind the border regulatory measures in the destination country. In addition, a plethora of product and process standards that differ between markets, plus a lack of information about new markets on the part of the exporter, can be substantial obstacles. However, it should be noted that, in domestic markets also, the failure rate of new firms is quite high.

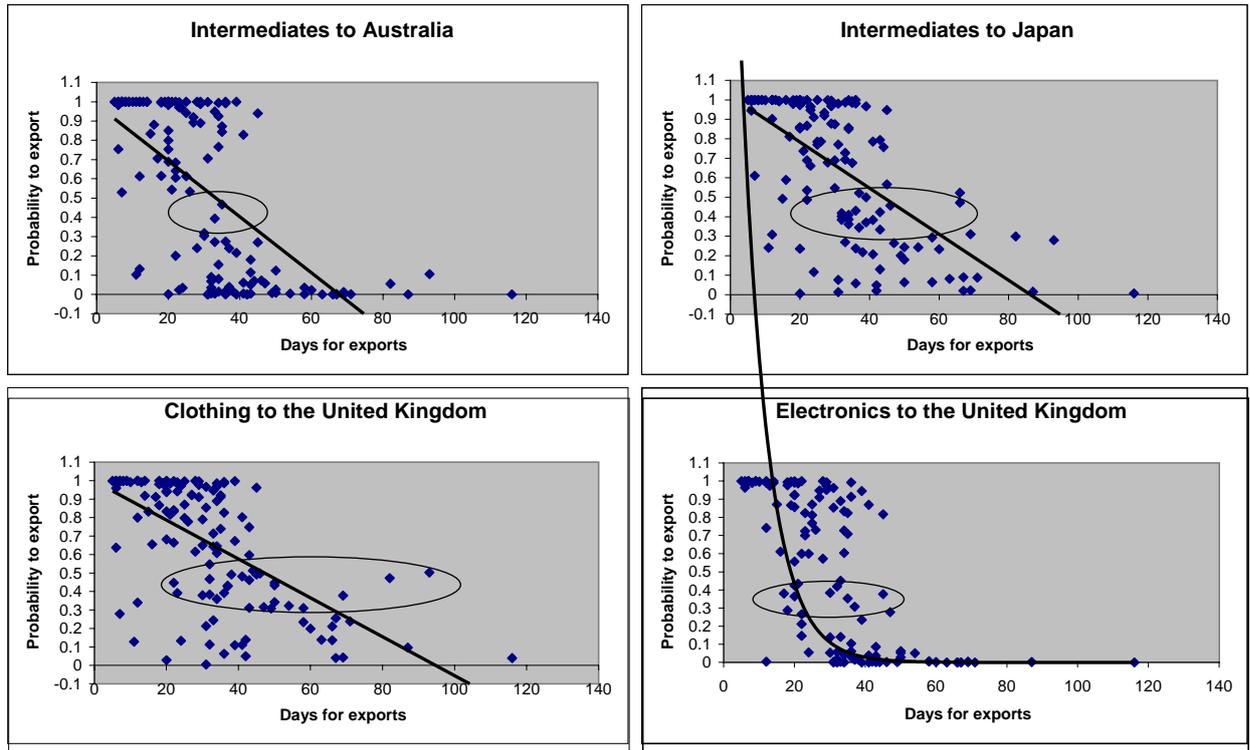
The gravity model has been used extensively for explaining the relationship between bilateral trade flows and trade costs. Recently, the model has also been used to analyse the determinants of the extensive margin. For example, Nordås (2006) estimated the determinants of the extensive margin in exports of intermediate goods, electronics and clothing to Australia, Japan and the United Kingdom, respectively. These are sectors that, as discussed in the previous section, are thought to be particularly sensitive to trade costs, including time costs. Based on anecdotal evidence that low-volume, short spells of exports are common, export values below US\$ 1 million per country per year were considered one-off and not reflecting an established trade relationship.<sup>16</sup>

The incidence of bilateral trade flows above US\$ 1 million was regressed on the usual gravity variables plus time for exports, and the probabilities for exports for each country were estimated. Figure 5 shows some of the results. It is first noted that predicted probabilities are either close to zero or close to unity. In the former case, and as pointed out by Besedeš and Prusa (2007), export promotion of new goods to new markets is unlikely to succeed. It is, however argued that in countries with a predicted probability in the area of 0.35-0.5 (marked by a circle) could benefit from non-distorting supporting policies in general, and removal of unnecessary time-consuming border procedures, both for imports and exports, in particular. Among the countries encircled are Cambodia and Viet Nam.

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<sup>16</sup> Different cut-off rates were introduced for robustness checks. The qualitative results were unaffected. Besedeš and Prusa (2007) confirmed that exports below a certain level were typically short-lived.

**Figure 5. Predicted relations between probability of entering selected foreign markets and time for exports**



In summarizing this section, it can be inferred from the fact that so many potential trade flows are zero that exporters face bridgehead trade costs when entering new markets. Further, the fact that firms in the same industry differ as to whether, and to what extent, they engage in international trade suggests that firms are different in terms of scale and productivity. It can also be inferred which of the “new” trade theories are compatible with the data and which are not. For example, trade models of monopolistic competition driven by love of variety in its simplest form predict that all firms producing exportable goods or services will export to all countries in the world that import these goods or services. This is clearly not the case. Baldwin and Harrigan (2007) argued that a model that was compatible with the data had to feature heterogeneous firms that competed on the basis of both price and quality. Such a model is compatible with the observations that most products are exported only to a few destinations, the incidence of export zeros is positively related to distance and negatively related to the market size of the (potential) export destination, and that the average unit value of exports is positively related to distance – “shipping the good apples out”.

## D. Conclusion

It has been argued in this chapter that the old Ricardian theories of comparative advantage can explain the broad trends in international trade over the past few decades. Thus, Ricardian models with many goods and differences in technology among countries can capture the driving forces and impact of vertical specialization or fragmentation of production, although many details remain unexplained.

Trade economists do, of course, know that firms are different and that they compete on the basis of both price and quality. However, until now, trade research and policy analyses have largely abstracted from these observations in order to focus on the broad picture including welfare implications. Thus, as tariffs and other border measures come down, trade policy analyses need to shift focus towards behind-the-border constraints, both at home and abroad, and from the macro level towards the micro level.

Insights from industrial organization and geography have been embedded in standard trade models since at least the 1980s. In the author's view, what is needed is continued improvement of the micro-economic foundation of international trade theory and its empirical applications, by asking questions such as: What does it take to enter and stay in a foreign market? To what extent do market dynamics observed within a country apply across borders? How do various types of trade costs accumulate and how do they interact with geography and institutional factors in determining trade patterns? These questions can be addressed by borrowing from other fields of economics such as industrial organization, economic geography, multinational firms and business administration. At this stage, the need is to get the nuts and bolts of international trade right. New paradigms can wait.

## Annex

### ISO country/area codes in figures 1-3

ARG	Argentina	GBR	United Kingdom of	NOR	Norway
AUS	Austria		Great Britain and	NZL	New Zealand
AUT	Australia		Northern Ireland	PHL	Philippines
BEL	Belgium	GRC	Greece	POL	Poland
BRA	Brazil	HKG	Hong Kong, China	PRT	Portugal
CAN	Canada	HRV	Croatia	RUS	Russian Federation
CHE	Switzerland	HUN	Hungary	AUS	Australia
CHL	Chile	IDN	Indonesia	SGP	Singapore
CHN	China	IND	India	SVK	Slovakia
COL	Columbia	IRL	Ireland	SWE	Sweden
CZE	Czech Republic	ISR	Israel	THA	Thailand
DEU	Germany	ITA	Italy	TUR	Turkey
DNK	Denmark	JPN	Japan	TWN	Taiwan Province of
ESP	Spain	KOR	Republic of Korea		China
FIN	Finland	MEX	Mexico	USA	United States of America
FRA	France	NLD	Netherlands	ZAF	South Africa

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