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Globalisation and the 'Newer' International Division of Labour

Francis Hutchinson

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Francis Hutchinson is a PhD candidate at the Asia Pacific School of Economics and Government, The Australian National University. His thesis looks at the growth of 'high-tech' regions in developing countries and the international division of labour.

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Abbreviations

FDI	foreign direct investment
GATT	General Agreement on Tariffs and Trade
GDP	gross domestic product
IMF	International Monetary Fund
IDL	International Division of Labour
IZA	Forschungsinstitut zur Zukunft der Arbeit
NIDL	New International Division of Labour
OECD	Organisation for Economic Cooperation and Development
TNC	transnational corporation
UNCTAD	United Nations Commission on Trade and Development
WTO	World Trade Organisation

The present time is characterised by the large-scale movement of skilled workers and jobs across countries and continents. On one hand, growing numbers of skill-intensive jobs are being outsourced from developed to developing countries. It is estimated that, by 2015, over three million white-collar jobs in the United States will be transferred to developing countries (Forrester Research 2002). Yet, on the other hand, large numbers of skilled workers are moving from developing to developed countries, often from élite institutions of higher learning. For example, over half of the graduating class from India's premier medical institution emigrate each year (Khadria 2002).

This article will argue that these two phenomena are profoundly linked and reflect deeper-lying developments in the way economic activity is allocated between countries. The deepening of globalisation processes is resulting in the reconfiguration of the international division of labour, and consequently the geographic allocation of jobs and workers. The article brings together work on flows of goods and services, investment, and skilled workers to see what form this reconfiguration is taking.

For many, the current international division of labour—taken here to mean the geographic concentration of economic functions—is predicated on capital and skill-intensive tasks being performed in developed (or core) countries and labour-intensive work being carried out in developing countries (the periphery). This article argues that economic globalisation,[1] is reconfiguring this allocation of productive tasks. Changes associated with globalisation, such as greater numbers of transnational corporations, technological progress, liberalisation of trade and investment regimes, and changes in the factor endowments of many developing countries, are laying the foundations for a geographic reconfiguration of production processes.

Because of these developments, the core–periphery dichotomy has been transcended, and the global economy is now based on a number of high-performing regions in both developed and developing countries carrying out tasks of varying skill and technological intensity. This division of labour is qualitatively different from its predecessor and has alternative potential outcomes for those countries or regions that manage to be incorporated into it.

The International Division of Labour

From its beginning in sixteenth century Europe, the international economy has had three, or arguably four, international divisions of labour. The First International Division of Labour, spanning the early period of European colonisation, was predicated on rudimentary exchange between core countries and extraction from the economic periphery. Core countries, in Europe, were the loci of military and trade control. These nations were engaged in agricultural, mineral, and basic commodity production, which was traded with nearby countries. The economic periphery, comprised of colonies in the New World, served as a source of unprocessed agricultural commodities and mineral wealth (Walton 1985).

The Second International Division of Labour lasted from the early nineteenth century to the middle of the twentieth century. This was characterised by the emergence of industrial production in core countries (now including New World industrialised countries). Economic links deepened between core nations, and trade, as opposed to extraction, began to develop between core and peripheral areas. This consisted of the export of primary commodities from the periphery to the core and the export of manufactures in the opposite direction (Coffey 1996).

The Third International Division of Labour emerged in the 1960s. It was characterised by the internationalisation of production—as opposed to trade—among core and peripheral countries. While production processes had been internationalising among core countries prior to this period, they now deepened considerably. Levels of foreign direct investment (FDI) increased and, for the first time, were directed to countries in the economic periphery.

Academics began attempting to explain the development of this new division of labour in the 1970s. Perhaps the best-known research on this topic is Frobel et al. (1980), *The New International Division of Labour*. This work was among the first to point out the new internationalisation of production and the incorporation of developing countries into it. As they state elsewhere:

> The old or classical international division of labour, where the underdeveloped countries were on the whole, only incorporated into the capitalist world economy as raw-material suppliers, no longer exists today. At present, it is the underdeveloped countries which are increasingly becoming the location sites of manufacturing industries for competitive production in the world market (Frobel et al. 1978:125).

The theory behind the New International Division of Labour (NIDL) had two parts. First, a global division of labour had arisen, separating the global labour force into a core and a periphery. However, rather than the previous separation into industrialised centres and non-industrialised peripheries, this division of labour was comprised of highly sophisticated production tasks (design, marketing, research) in one set of locations, and industrial production based on standard technology and processes in other sites. Production in the latter centres was characterised by its 'footloose' and transient nature, locating and re-locating at will—seeking out sources of cheap and docile labour. Second, jobs were lost in core countries as production was relocated to the periphery. Cost considerations were paramount, but political factors such as greater labour militancy also contributed.

The New International Division of Labour was made possible in the 1960s by the confluence of three factors:

- the reduced importance of distance and geographical location for production due to technological progress.
- technological and organisational developments that enabled complex production tasks to be broken down into basic steps, permitting even unskilled labourers to learn the steps quickly.

- an essentially limitless supply of cheap labour in developing countries.

The authors stated that the driving force behind this new organisation of labour was global capitalism, embodied by transnational corporations. This new division of labour was really a fundamental reorganisation of the capitalist world economy that embraced all countries, including those in the core.

The consequences foreseen included

- the 'dependent development' of manufacturing centres for export in developing countries, relying on inputs such as equipment, technology, and organisational techniques from the core.
- relative de-industrialisation of industrial countries.
- decentralisation of the production process to different parts of the world.
- creation of reserve armies of labour around the world, with a downward pressure on wages.
- strengthening of transnational corporations' economic power.

Frobel et al. (1978) argued that while there would be mitigating counter-tendencies—such as cost-cutting measures by transnational corporations, incentives made by governments and organised labour in industrialised countries, and political instability in certain developing countries—they would not stop relocation.

The New International Division of Labour thesis had considerable merit. Among other things, it pinpointed the importance of technology and low-wage labour in the trend towards outsourcing production. A significant proportion of world manufacturing is now carried out by developing countries. Transnational production networks are now a reality—as a significant percentage of world trade consists of product components—and transnational corporations have grown in power and reach.

Recent history has, however, seriously challenged aspects of this work. Perhaps the biggest indictment of the New International Division of Labour thesis is the successful and independent development of the Asian Tigers.[2] This directly contradicts the assertions that Frobel et al. (1978) made regarding permanent relegation of developing countries to the periphery.

In part, this has to do with oversights that Frobel et al. (1978) made in their analysis. These can be placed in two groups. The first comprises those oversights based on theoretical or empirical simplifications. These include: overestimating the importance of cheap labour, generalising the low-skill nature of outsourcing, and assuming that all manufacturing would be large-scale, mass production.[3]

The second type of oversight includes assertions made on the basis of what was an early stage of development of the New International Division of Labour—as opposed to a more fully-fledged manifestation. The most important of these oversights is an incomplete comprehension of the implications of technological progress. According to the Frobelians, technological developments enabled the division of the production process into high and low-skill components that were then

located strategically to take advantage of cost differentials between countries. This resulted in the concentration of skill-intensive tasks in core countries and labour-intensive tasks in peripheral countries.

Yet, this reasoning also lays the grounds for the obsolescence of the New International Division of Labour. Following this logic, if developing countries upgrade their human resources, and technology continues to develop, is it not then possible for skill-intensive tasks to be outsourced to the periphery? Should this be the case, the 'periphery' can no longer be characterised as a low-skill hinterland, but rather comprised of regions specialising in a series of tasks of varying technical complexity.

The 'Newer' International Division of Labour and its causes

This section will put forth the argument that the New International Division of Labour, or core–periphery structure, is being superseded. It will analyse the nature of its successor, termed the 'Newer' International Division of Labour,[4] looking at what this means for the configuration of productive tasks and its spatial manifestation.

The Newer International Division of Labour has four main causes. As in its predecessor, transnational corporations, and technology, play an important role in the geographic allocation of production. However, it will be argued that technology has both dispersing and agglomerating tendencies for the location of economic activity, depending on the type of economic activity in question. Furthermore, regulatory and policy developments have played an important role in the nature and direction of resource flows. Last, many developing countries have significantly altered their factor endowments, changing the economic landscape upon which transnational corporations structure their production processes.

The growing importance of transnational economic actors

One of the effects of globalisation on the world economy is the increasing importance of transnational corporations.[5] There are currently some 65,000 transnational corporations, with 850,000 affiliates abroad. These corporations accounted for a global stock of foreign direct investment worth over US$7 trillion,[6] and their foreign affiliates produced some 11 per cent of world GDP in 2001—up from 7 per cent in 1990 (UNCTAD 2002:12–15). According to UNCTAD,

> [t]rade within TNCs and arm's-length trade associated with TNCs are estimated to account, together, for about two-thirds of world trade, and intra-firm trade, alone, for one-third (1999:14).

Because of their size and economic weight, the decisions that these corporations make can significantly alter flows of goods, services, financial capital, and skilled workers. In part, these decisions have to do with the availability of factors of production and a given firm's decision on how to structure production (for example, whether control is delegated to affiliates, whether tasks are duplicated in each country or centralised at headquarters). These decisions are also

linked to each firm's specific history, national management practices, as well as the industry in question.

The increasing importance of trasnational corporations and the extension (and integration) of their operations, permitted by technological developments, are key factors in the constitution of a globalised world economy. These two factors make the crucial distinction between an internationalised economy (characterised by economic operations that are international in scope) and a globalised one (characterised by international economic operations that are integrated).

Technological progress

According to Dicken (2003), the convergence of two previously separate types of technology has had far-reaching implications for the spatial organisation of economic activity. These are communications (for the transmission of information) and computer technology (for the processing of information). The twin impact of these technologies has drastically reduced the barriers of space and time, permitting the reconfiguration of economic activity. Yet, it cannot be stated categorically that distance is now meaningless. Using gravity modelling, Crafts and Venables (2001) show that, controlling for a given country's mass, flows of trade, equity, investment, and technology all decrease drastically with distance. Rather, what technology has done is alter the importance of distance for different types of economic activity. Storper and Leamer (2001) state that progress in transport and telecommunications has resulted in the geographic fragmentation of production. In some cases, production activities are dispersed, yet in others, economic activity agglomerates or clusters.

Storper and Leamer (2001) assert that the geographic organisation of economic activity is affected by two opposing forces. The first is the perpetual transformation of intricate coordination functions into simple, routine activities that can be carried out at cheaper, but more distant locations. This promotes dispersion. The second is the tendency towards bursts of innovation in established centres of production, creating new products and processes that require complex and detailed coordination. A great deal of economic activity involves complex concepts and interactions that cannot be codified and simplified. These interactions require understanding, familiarity, and trust between interlocutors. This, then, promotes the agglomeration of economic activity. They state that

> these transactional relations are not amenable to complete contracting, and they depend on human relations, involving combinations of social networks, trust, interpretative communities, and reputation effects (2001:18).

This explains why, for instance, the financial industry is concentrated in a handful of cities, as are innovation-based industries (Route 128, Silicon Valley). These clusters, in turn, communicate with other clusters. Communication may thus be easier, but the organisation of production is far from indifferent to distance.

According to Storper and Leamer (2001), the Internet, and

telecommunications in general, are encouraging greater product variety, an increasingly specialised division of labour, and the automation of coordination tasks. Whether these changes will encourage agglomeration or de-agglomeration will depend on the nature of the economic activity and the nature of the production task. On one hand, product variety can be increased by the combination of more and different inputs from a greater variety of locations. Industries that mass-produce goods (or services) and are composed of standardised parts or procedures will disperse. However, for other sectors, characterised by creativity and changing demand, it is more important to be close to the source of demand.

With regard to the increasing specialisation of the division of labour, again, this will depend on the activity. Greater specialisation may enable even more routinised tasks to be outsourced while necessitating that more complex ones be concentrated. This may result in 'coordination clusters' and 'production clusters'. With regard to coordination tasks, this too may be variable. Physical separation could increase with transactions such as online medical consulting, online banking, stockbroking, and general retail. Yet, again, with more complex interactions, tasks will tend to be localised or clustered.

What then does this imply for developing countries? It is likely that urban areas in industrialised countries will lose some manufacturing and service activities and be in greater competition with developing countries for jobs. Storper and Leamer state that the

> decades-long tendency for them to shed routine but mobile production activity in the manufactures will now be extended to much routine intellectual labour in other industries—notably service industries… those developing countries that invest heavily in education and research are likely to become sites for the routine intellectual labour that can now be moved offshore from developed areas (2001:22).

As with routinised manual work, these activities do offer economic rewards and a means of being incorporated into, and competing in, the global economy.

With regard to the increasing fragmentation of production, skill upgrading in developing countries, and the outsourcing of high value-added activities, available information supports these assertions to a considerable extent. Yeats calculates that some 30 per cent of global trade in manufactures consists of product components as opposed to finished goods (1998:1). This is borne out by Hummels et al. (2001) who find that vertical specialisation[7] accounts for an increasing share of international trade. Using a 14-country sample, which accounted for 63 per cent of world exports in 1990, they trace the growth of vertical specialisation over the period 1970–90. They find that this form of trade grew by 30 per cent, and represented 21 per cent of the countries' exports by 1990. The extent of vertical specialisation also depends on the industry in question. It is usually higher for more complex manufactures, such as chemical products and machinery, where economies of scale and differentiation come into play (OECD 2002). Lall (2000) analyses

manufactured exports from developing countries and their technological complexity, finding that certain developing countries are fast becoming significant exporters of medium and high-technology goods. This includes commodities such as vehicles, telecommunications equipment, computer parts, pharmaceutical goods, and high-precision optical equipment.

There is also evidence that increased segmentation of the production process has been accompanied by skill upgrading. Berman and Machin (2000) look at manufacturing sectors in 37 low, middle, and high-income countries over the period 1970–90. They state that there has been an increase in the demand for skilled labour in both high and middle-income countries due to technological change. Interestingly, the major part of the skill upgrading in both groups of countries has occurred in established industries as opposed to new ones. With regard to middle-income countries, it appears that this is due to the adoption of the same type of skill-biased technologies used in developed countries (Berman and Machin 2000). This supports the assertion that increasingly complicated tasks are being outsourced to developing countries. Berman and Machin (2000) did not see this same upgrading in low-income developing countries. Therefore, this is not a trend witnessed across the board, but rather in a select group of countries.

Changing legal and regulatory framework

The volume and direction of the flows of goods and services, financial capital, and people are strongly affected by policy regimes. There have been important and far-reaching changes in these frameworks over the last decades.

Of the three types of flows, trade is the only one that takes place within a worldwide institutional framework—the General Agreement on Tariffs and Trade (GATT) until 1995, and the World Trade Organisation (WTO) thereafter. From GATT's creation in 1947, the number of member countries has increased steadily and the average level of tariffs has decreased. In 2001, the WTO had 139 members (with over 30 waiting to join) and now over 90 per cent of world trade takes place within the WTO framework (Dicken 2003).

Tariff rates have declined consistently over the last 60 years. Rates fell from a post-war high of 40 per cent to approximately 15 per cent in the 1970s, before reaching the present rate of approximately 4–5 per cent (Clemens and Williamson 2001). The effects of this have been far-reaching. The ratio of world trade (measured by merchandise exports) to world GDP has grown from 5.5 per cent in 1950, to 10.5 per cent in 1973, and 17.2 per cent in 1998 (Crafts and Venables 2001). For trade in goods as well as services, this reached 29 per cent of world GDP, up from 19 per cent in 1990 (World Trade Organization 2001).

The importance of tariff reductions for the international distribution of economic activity is considerable. As has been seen, a considerable percentage of world trade consists of product components. In a situation where the parts of a given good may cross a barrier several times, even small reductions in tariffs may entail higher profits and the increased attractiveness of

offshore production (Hummels et al. 1998). That said, the momentum for trade liberalisation also has counter-forces. While overall tariff levels are being substantially reduced, non-tariff barriers (import quotas and licenses, rules of product origin, customs, health and safety regulations) have proliferated, dampening the effects of liberalisation somewhat.

Financial capital circulates to developing countries through a variety of mechanisms. These include official development assistance, portfolio flows, and foreign direct investment (FDI). An analysis of development assistance and portfolio flows can be interesting, but may reflect political and short-term economic considerations more than anything else.

Foreign direct investment (FDI) is more closely related to export performance and a country's participation in the international division of labour. It is also important as a vital source of technology, quality standards, and organisational practices. Foreign affiliates of transnational corporations can invest in research and development, tend to be more productive, and can generate positive 'spillovers' to domestic firms (UNCTAD 2002). In addition, FDI is growing in importance, and in 2000 accounted for over 60 per cent of total resource flows to developing countries—up from 25 per cent in 1990 and 6 per cent in 1980.

A growing number of countries have enacted important changes to their investment regulatory regimes. The overwhelming majority of these changes have been to liberalise access to domestic markets from overseas. According to UNCTAD, in the period 1991–2001, over 94 per cent of more than 1,400 pieces of investment legislation passed around the world favoured greater access to domestic markets (2002). This expands the scope of action and possibilities of profit for transnational economic actors.

As with trade and finance, the flow of people is also affected by the policy environment. There have, in recent years, been important policy shifts with regard to the migration of skilled and unskilled workers. The movement of unskilled workers has been restricted (although much occurs without government sanction), and migration policies are becoming more tailored to attracting specific types of skilled workers.

Chiswick and Hatton state that

> [o]ver the last few decades, the immigrant-receiving countries have been giving greater preference to high-skilled immigrants and made the legal immigration of low-skilled workers that much more difficult…Through the issues of permanent visas or temporary visas, allocated on the basis of the worker's skill or occupation-specific employer petitions, high-skilled immigration can be expected to grow (2002: 47).

Others such Salt (1997) and Carrington and Detragiache (1998) come to the same conclusion. These policy changes stem in part from skill shortages—often brought about by technological changes that outpace existing educational capacities. On the other hand, developed countries, facing aging populations, are competing to attract young, well-educated migrants.

There is an immigration market for some professions, as countries such as the United States, Australia, and Canada compete with each other to attract migrants with especially prized skills (Cobb-Clark and Connolly 1997). This competition is increasingly being joined by developing countries, who are also implementing policies to attract workers with prized qualifications (Lowell 2001).

The 'pull' factor on the part of developed countries is made more powerful by the internationalisation of education and certain professions. Developed countries are hosting increasing numbers of international students, many of whom then stay permanently. This is complemented by growing international recognition of certain professional qualifications in areas such as accountancy, information technology, and nursing (OECD 1996).

Thus, both developed and developing countries are increasingly tailoring immigration policies to suit their labour-market needs. Countries will have differing levels of ability to stop and shape their migration flows, depending on their relative attractiveness to migrants, the porousness of their borders, and domestic perceptions of immigration, among other things.

Transnational corporations are also becoming significant determinants of migration flows. These corporations have large internal labour markets and move personnel across countries and regions. As these corporations grow, they account for ever-greater numbers of international transfers of skilled workers. Over the last decade, transfers of staff within transnational corporations in the United States have doubled (OECD 2001), a trend mirrored across OECD countries.[8]

Changing factor endowments in developing countries

Over the past 25 years, the availability of skilled labour in developing countries has increased dramatically. In many areas of expertise, developing countries, while having low overall enrolment rates, nevertheless produce a very large number of workers due to their size. Much available analysis deals with nations' relative skill level and the links to economic development. Yet, it can be argued that it is the absolute size of the human resource base—and more specifically the availability of technical personnel—that can act as a catalyst for knowledge-intensive activity (Riddell 1996).

Table One compares aggregate numbers of university students, as well as those in technical and scientific areas in developing and developed countries.

Asia has the greatest number of tertiary level students, over 21.5 million, followed by Latin America with 7.7 million, the Middle East and North Africa with 4.6 million, and Sub-Saharan Africa with 1.5 million. With regard to students in technical areas, the hierarchy is the same, with Asia having the most and Sub-Saharan Africa the least. It is interesting to note that Asia has 4.6 million students in technical fields, which represents about 80 per cent of the developed country total. To put this in perspective, Europe has 2.7 million technically trained students, and North America two million.

Table 1 Tertiary enrolments, 1995

Country	Tertiary enrolments (million)	Technical subjects (million)
Developed countries	33.7	5.8
Developing countries	35.4	7.0
Europe	12.3	2.7
France	2.0	0.4
Germany	2.1	0.6
Asia	21.5	4.6
Four Tigers*	3.0	1.0
Four Little Tigers*	5.5	1.0
China	5.8	1.2
India	5.6	1.0
Latin America	7.7	1.4
Mexico	1.4	0.4
Brazil	1.7	0.3
Argentina	1.0	0.2
Mid. East & N. Africa	4.6	0.8
Sub-Saharan Africa	1.5	0.2

Notes: * Hong Kong, Korea, Singapore, Taiwan; ** Indonesia, Malaysia, Philippines, Thailand
Source: UNESCO, 2003. Educational Statistical Table, UNESCO Institute for Statistics, Paris; Lall, S., 1999. *Competing with Labour: skills and competitiveness in developing countries*, Issues in Development Discussion Paper 31, International Labour Orgnization, Geneva.

Turning now to specific countries, it is clear that China and India, with 5.8 and 5.6 million students respectively, have the largest absolute endowments of human capital. Just one of these countries rivals France, Germany, and the United Kingdom together for sheer labour power. The Four Little Tigers have 5.6 million students between them, followed by the Four Tigers (3 million) and the Latin American countries with stocks of 1–1.7 million each. Again, to place this in perspective, Canada has some two million students and Italy 1.8 million.

With regard to technically-trained students, developing countries actually have larger stocks than developed countries. The Asian countries seem particularly well stocked, with China having 1.2 million and the Tigers, Little Tigers, and India having around one million each. With perhaps the exception of Mexico, the Latin American countries do not have particularly large stocks of technical personnel.

Thus, it would appear that a number of developing countries, primarily in Asia, now have the capacity to provide large amounts of skilled labour. Changing factor endowments have reconfigured the economic landscape upon which transnational economic actors plan and outsource production tasks, and technological progress has made this possible. That said, these stocks of human capital also need to be accompanied by social processes that permit productive

labour in a context with changing technological requirements.

Thus, a series of mechanisms have profoundly altered the spatial organisation of the world economy. Technological progress has enabled transnational corporations to take full advantage of differences in labour costs and different locational mixes of factors of production. This outsourcing now takes place on top of a different economic landscape, as developing countries have bigger stocks of skilled labour and can host higher-skilled tasks. The movement of financial capital is facilitated by a more liberal regulatory environment, where capital can be invested and repatriated more freely. In addition, through trade liberalisation, transnational production networks can develop more effectively as they are less hindered by tariffs.

That said, rather than the uniform dispersion of economic activity in the search for low-wage labour, one sees the clustering of certain types of processes and the scattering of others. Where production tasks de-agglomerate, one sees the growing outsourcing of certain production tasks to a specific number of locations in the economic 'periphery'.

This is succinctly phrased by Campbell, who states:

> with integrated international production, locations typically compete to attract individual value-adding activities rather than the whole range of functions in a value chain; the individual value-adding activities themselves depend to a far greater extent than in the past on labour or human resource quality as the 'strategic asset' or the particular factor of production being sought; and the rising quality of labour in the developing world, when matched with an appropriate regulatory regime and physical and telecommunications infrastructure, expands the location choices available for niche or specialized participation in the global labour market. (1994:194)

It is also possible that this mechanism may feed back into itself. As transnational corporations increase their economic power through greater profit margins (made possible by greater outsourcing), they will promote greater liberalisation of trade, financial and, possibly, migration policy.[9]

The Newer International Division of Labour: its manifestation

The series of changes listed above are reconfiguring the international division of labour. Rather than the core–periphery model used by the New International Division of Labour theorists, it is argued that the international division of labour is now comprised of a range of locations specialising in tasks of varying technological sophistication. In this new division of labour, some countries will ascend and others descend, depending on their factor endowments and ability to negotiate an advantageous entry into the Newer International Division of Labour.

This article will attempt to analyse how this new international division of labour is structured and what countries are able to participate most effectively in the

reconfiguration of economic activity. The approach that will be used is direct, if somewhat crude. Basic indicators, such as the export of goods and services (outputs), the destination and nature of foreign direct investment and the movement of highly-skilled workers (inputs) will be traced. This will be done to see which countries are the emerging winners in the newer international division of labour.

Goods

Profitable economic activity is increasingly based on value-added portions of the production process, and the structure of the world economy is changing to reflect this. Primary commodities and resource-based manufactures have witnessed a long-term decline in their share of world trade, falling from about 50 per cent of merchandise trade in 1984 to 28 per cent in 2000. Conversely, non-resource-based manufactures increased from 50 per cent in 1984 to 68 per cent in 2000 (UNCTAD 2002).

Gereffi (1994) argues that whether or not a country produces manufactures no longer matters. At present, developing countries have become major exporters of manufactures, but this does not necessarily signal economic or developmental success. Rather, it is important to analyse what type of manufactures a given country produces, and how much value is added domestically.

Lall (2000) undertakes a comprehensive analysis of manufactured exports from developed and developing countries during the 1980s and 1990s. The data is interesting in terms of the absolute levels of production between and within the two groups of countries, as well as the composition. He divides manufactures into four broad groups, according to their level of technological sophistication (2000).[10] They are

- Resource-based. Simple, labour-intensive production, the competitiveness of which hinges on access to prime material.
- Low technology. More complex production, but with relatively low barriers to entry and reliant on generally available technology.
- Medium technology. Skill and scale-intensive production of most industrial goods and products, with high barriers to entry, complex technology requirements, long learning periods, and high skill and moderate research and development levels.
- High technology. Complex, 'fast-changing' technologies, high levels of research and development, and strongly influenced by design processes. Many products require elaborate types of infrastructure, high skill levels, and 'cluster' interactions (among firms, and with universities).

Lall's conclusions regarding trade data for the period 1980–98 can be summarised as follows.

- Developing countries now account for 34.5 per cent of low-tech, 15.3 per cent of medium-tech, and 27 per cent of high-tech manufactures. These market shares represent significant quantities of capital—with developing countries producing US$1 trillion worth of goods in 1998.
- While exports of all types of manufactures are growing, the more technologically intense products have

grown the most. Resource-based products grew at 7 per cent per annum, low and medium technology products grew at between 9.3–9.7 per cent per annum, and high technology products grew at 13.1 per cent per annum. This pattern is also observed in both developed countries and developing countries. Developing countries have higher growth rates than developed countries and this, surprisingly, increases with the technological complexity of the manufactures.

- Interestingly, the only area where developing countries lost market-share was in resource-based products. This runs counter to conventional wisdom, where developing countries should be more adept at primary exports.

He also states that growing participation of developing countries in the export of manufactures is confined to a small group of countries, largely found in Asia and Latin America. Table Two shows the leading developing country exporters of manufactures by their technological intensity.

A quick examination of Table 2 reveals three things.

- The greater part of developing country manufactures come from a reduced number of countries. In 1998, just 13 countries accounted for 88 per cent of total manufactures from this group of countries. Nine of them are in East Asia (the Four Tigers, the Four Little Tigers, and China), with two in Latin America (Mexico, Brazil), one in South Asia (India), and one in the Middle East (Turkey).
- With the exception of four countries (Saudi Arabia, Argentina, South Africa, and Pakistan) that appear once or twice in specific categories, the leading countries in each category are the same.
- The market share of the top performers increases with the technological complexity of the products.

To summarise: developing countries are increasing their market share with regard to manufactures, and manufacturing activity is increasingly the preserve of a select group of countries. Contrary to what would be expected, their production of resource-based manufactures has fallen in relative terms. Conversely, their market share has increased in line with the technological complexity of the product.

Manufacturing production for export is by and large carried out in East Asia and, to a lesser extent, Latin America. With the exception of resource-based manufactures, which are location-specific and produced in East Asia, Latin America, and the Middle East and North Africa, as well as some medium technology goods—the bulk of manufactures are produced in East Asia.

Services

Services have traditionally been under-reported. Cross-border delivery is hard to measure and track,[11] and a good deal of service delivery is domestic. That said, the importance of services for the global economy is growing, and it is becoming more international in nature.

In 2000, the value of the international trade in services reached US$1.4 trillion and represented 20 per cent of world exports. Service exports have grown at a similar rate to merchandise exports (6 per cent per annum) for the past 10 years. In 1999, for

Table 2 Leading 13 exporters of manufactured products in the developing world, 1998 (US$ Million)

Total manufactures		Resource-based		Low Tech		Medium Tech		High Tech	
Country	Exports	Country	Exports	Country	Exports	Country	Exports	Country	Exports
China	167,681	China	16,551	China	83,803	Korea	46,443	Singapore	62,319
Korea	120,700	Brazil	15,424	Taiwan	32,100	Mexico	45,598	Taiwan	38,597
Taiwan	105,554	Singapore	14,558	Korea	25,325	China	33,853	Korea	36,016
Mexico	103,861	Korea	12,914	Mexico	19,848	Taiwan	29,044	Malaysia	34,329
Singapore	103,489	Malaysia	11,004	Turkey	13,236	Singapore	19,326	China	33,472
Malaysia	65,491	Saudi A.	10,598	Hong Kong	13,034	Brazil	14,363	Mexico	31,257
Thailand	44,760	Indonesia	10,447	India	12,583	Malaysia	13,360	Philippines	18,963
Brazil	38,882	Thailand	8,657	Thailand	11,345	Thailand	9,165	Thailand	15,591
Philippines	28,119	India	7,801	Indonesia	8,868	Argentina	5,265	Hong Kong	6,015
Indonesia	26,895	Mexico	6,977	Singapore	7,254	Indonesia	4,972	Brazil	3,192
India	25,855	Argentina	6,169	Malaysia	7,245	Turkey	4,870	Indonesia	2,606
Hong Kong	23,137	South Africa	5,866	Pakistan	6,276	South Africa	4,144	India	1,706
Turkey	22,885	Taiwan	5,811	Brazil	5,900	India	3,763	Turkey	1,437
Developing country total	88.0%	Developing country total	75.8%	Developing country total	89.0%	Developing country total	92.1%	Developing country total	98.4%

Source: Lall, S., 2000. *The Technological Structure and Performance of Developing Country Manufactured Exports, 1985–98*, University of Oxford, Oxford: Annex 2

the first time, services as a share of GDP in developing countries surpassed 50 per cent (World Trade Organization 2001). In addition, in 2000, more than half of total inward FDI to developing countries was in the services sector (UNCTAD 2002). In part, this is due to ancillary services that accompany FDI in primary and secondary sectors. But it is also due to the growing dynamism of the service sector itself. As will be seen, certain sub-sectors are very dynamic—due to the greater reach of service delivery afforded by information and communications technology. Developed countries (Western Europe and North America) still account for the greater part of international services trade. But, certain developing countries are making important headway and their market share, while small in relative terms, still represents an important source of capital.

Table 3 shows the top 20 developing country service exporters, their market share, and growth rates. Several observations can be made. First, the front-runners are predominantly East Asian. India is the only South Asian country. There are four Middle Eastern (Turkey, Israel, Saudi Arabia, Egypt), three Central and Eastern European (Russian Federation, Poland, Czech Republic) and two Latin American countries (Mexico, Brazil). Second, the majority of these countries are experiencing very high growth rates, albeit from a low base. Fourteen of the 20 countries' exports are growing at more than

Table 3 Leading developing country exporters of commercial services

Country	Value (US$ bn)	Share (%)	Growth (%)	Rank
Hong Kong	42.1	2.9	13	9
China	30.1	2.1	15	12
Korea	29.2	2	13	14
Singapore	26.6	1.9	13	15
Taiwan	20.2	1.4	18	18
Turkey	19.2	1.3	19	20
India	17.6	1.2	26	22
Israel	14.3	1	32	25
Malaysia	13.6	0.9	15	26
Mexico	13.6	0.9	17	27
Thailand	12.8	0.9	–12	28
Egypt	9.7	0.7	4	30
Russian Fed.	9.6	0.7	6	31
Poland	9.5	0.7	13	32
Brazil	8.8	0.6	29	33
Czech Rep.	7.1	0.5	5	35
Hungary	6.2	0.4	11	36
South Africa	4.9	0.3	1	38
Indonesia	4.8	0.3	0	39
Saudi Arabia	4.8	0.3	–11	40

Source: World Trade Organization, 2001. *International Trade Statistics*, WTO, Geneva:23, Table 1.7

10 per cent a year, and three countries have annual growth rates of approximately 30 per cent (India, Israel, and Brazil).

In terms of the relative importance of different service categories, developing countries have significant market share in many categories, including transportation, communication, personal, government, as well as professional and technical services. In addition, exports in every category are growing more rapidly than developed country exports, at rates above 20 per cent in five categories. Not all sectors represent large amounts of capital, but travel, transportation, 'other', and personal services have the potential to be sources of significant amounts of income.

While this profile is somewhat basic, it points to several conclusions relevant to the international division of labour. First, developing countries are increasing their market share in global trade. This, contrary to what a standard analysis of 'comparative advantage' would lead us to conclude, is in areas of high value-added activity, namely medium and high-technology manufactures, as well as commercial services such as communication, insurance, and business, professional, and technical services.

It would appear that the Asian Tigers are key players in the Newer International Division of Labour, and they are joined by the Four Little Tigers, China, India and Turkey. In Latin America, the main exporters are Brazil and Mexico. Other countries, such as South Africa, Saudi Arabia, Argentina, and Eastern European countries are important players in certain segments and seem on the border of incorporation into Newer International Division of Labour.

Movements of financial capital

Flows of foreign direct investment have increased rapidly, climbing from US$636 billion in 1980 to US$6.8 trillion in 2001. The composition of FDI is also changing. Up until the 1980s, the bulk of investment was in manufacturing. Now it is in technically more advanced sectors. In services, it is concentrated in certain key sectors. They are financial, trade-related, telecommunications, business, and consumer services (UNCTAD 1999). As with exports, the bulk of investment in services is restricted to a few countries. In 2001, 62 per cent of services investment was concentrated in five countries, 75 per cent in ten countries, and some 95 per cent of all investment in developing countries was concentrated in only 30 countries (UNCTAD 2002).

With regard to the direction of FDI by region and country (relative to the world and relative to developing countries) over the period 1980–2000, two observations can be made. First, developed countries absorb the bulk of FDI flows. As a group, however, developing countries receive sizeable amounts of investment. Their share declined from 39 per cent of the total in 1980 to 26 per cent in 1990, before climbing back up to 32 per cent in 2000. Second, investment is concentrated in a reduced number of countries—broadly corresponding to the leading developing country manufacturers. In Africa, Egypt, Nigeria and South Africa receive the greater part of foreign investment. In Latin

America, Brazil and Mexico received the bulk of investment. In the Asia Pacific, Hong Kong and China are by far the biggest recipients. The other major recipients are, in descending order, Singapore, Indonesia, Malaysia, Korea, Taiwan, Thailand, and India (UNCTAD 2002).

The movement of human capital

Is there a relationship between export success and the international movement of human and financial capital? To answer this question, this section will analyse the movement of highly skilled workers. Central to this is whether there is a relationship between the successful incorporation of a country into the Newer International Division of Labour and the loss or retention of its skilled workers.

Data are scarce, so accurate estimates of the number of skilled workers migrating are very difficult to make. This section is based on Carrington and Detragiache's (1998) article, which carried out the most extensive cross-country comparison to date of the migration of skilled workers to OECD countries.[12] They looked at data from 61 developing countries, which account for 70 per cent of the total population in developing countries. The study compared the stock of educated migrants (divided into primary, secondary, and tertiary educated) in different countries with the stock of educated people in source countries. This allowed a rough estimate of the percentage of educated workers overseas.[13]

With regard to the movement of skilled workers, the study concludes the following: migration rates are higher for people with higher levels of education, especially those with tertiary education; and the loss of educated people reaches grave proportions for a small number of countries. Looking at the data in more depth, two further conclusions can be advanced.

The first is that a small number of countries are the providers of very large numbers of workers to OECD countries. Fourteen countries each provided more than 50,000 skilled workers.[14] In Asia, the largest provider is the Philippines (689,000), followed by South Korea (560,000), India (517,000), China (320,000), Iran (206,000), Taiwan (118,000), and Pakistan (103,000). In Africa, the largest providers are Egypt (78,000) and South Africa (54,000). In North America and the Caribbean, Mexico (347,000) and Jamaica (110,000) are the biggest sources. And, in South America, Brazil (67,000), Colombia (66,000), and Peru (50,000) are the largest providers.[15]

What is most striking about this is that, by and large, these are the countries that receive the most foreign direct investment and produce the greatest part of the developing world's manufactures. This is counter-intuitive—one would predict that the regions with the greatest number of high-end jobs would retain the highest number of workers.

This contradiction can be read several ways. First, those countries that experience sustained investment, and higher levels of income, may also be more likely to lose greater numbers of skilled workers. Or, these figures may actually state that these countries, in spite of greater numbers of skill-intensive jobs, still have sizeable numbers of unemployed educated people that are all too ready to leave.

Table 4 Relative loss of skilled workers

High relative loss (more than 15 per cent lost) Anglophone Caribbean & Africa—Jamaica, Trinidad, Guyana, Gambia, Ghana, Sierra Leone, Uganda, Central America and Caribbean—Guatemala, El Salvador, Honduras, Nicaragua, Dominican Republic, Asia- Pacific - Iran, Fiji
Moderate relative loss (less than 15 per cent) but large numbers (50,000+ lost) Asia—South Korea, Taiwan, China, India, Philippines, Pakistan; Latin America—Mexico, Brazil, Argentina, Peru, Colombia; Africa—Egypt, South Africa.
Low relative loss (less than 15 per cent) and moderate numbers (5000–49,999) Asia—Bangladesh, Indonesia, Syria, Thailand; Africa—Kenya; Central America—Costa Rica; South America—Bolivia, Chile, Ecuador, Venezuela, Uruguay
Low relative loss (less than 15 per cent) and low numbers (under 5000) Africa—Benin, Cameroon, Central African Republic, Congo, Lesotho, Malawi, Mali, Mauritius, Rwanda, Sudan, Togo, Zambia, Zimbabwe; Asia Pacific—Papua New Guinea; South America—Paraguay.

Source: Based on Carrington, W. and Detragiache, E., 1998. *How Big is the Brain Drain?*, International Monetary Fund, Washington, DC.

There could be another explanation—in spite of the large numbers of people involved, these countries actually lost only a small proportion of their skill stock. It is logical that China and India figure so prominently on this list, due to the sheer size of their education systems. Despite the colossal numbers of workers involved, China and India have lost a mere 3 per cent and 2.6 per cent of their stock of skilled workers. The Philippines, Mexico, and Korea have lost 9, 10, and 15 per cent respectively.

While these countries are the largest absolute providers of educated people, other countries that have lost more skilled workers in relative terms. When viewed in relative terms, as in Table 4, countries can be placed in four groups.

The first group is comprised of anglophone Caribbean and African, as well as Central American, countries. The Caribbean and African countries are small and Anglophone, which may point to the higher marketability of skills combined with fluent English. The Central American countries, most likely due to their proximity to the United States, also lose large relative numbers of skilled workers. With Fiji, a similar mechanism to other anglophone countries may be at work (skills combined with English language). Iran's loss of labour power may be due to political considerations.

The second group is comprised of the major providers of skilled labour discussed above, who have lost large absolute, but moderate relative numbers, of skilled workers.

The third group includes medium-sized and large Asian (Indonesia, Syria, Thailand) and South American countries (Bolivia, Chile, Ecuador, Paraguay, Uruguay,

and Venezuela). It is interesting to note that these countries, while not having alarming levels of skilled migration, still have lost sizeable numbers of skilled workers. In addition, they may also export significant numbers of workers to non-OECD countries that were not picked up by this study.

The fourth group is comprised of small African countries (and Papua New Guinea) that have low absolute numbers of skilled migrants. These are essentially poor and small countries that have been largely left out of the world economy.

Thus, it would appear that those countries that participate in the global economy face the attrition or loss of part of their skill base. It is the small, poor countries at the margin of international economic activity that have not lost their skilled workers. Conversely, those countries with the largest number of skilled emigrants are those that have the largest stocks of skilled labour and are increasingly participating in the international division of labour.

Conclusion

This article has argued that a 'Newer' International Division of Labour is emerging. The Newer International Division of Labour has arisen due to technological progress that has altered the importance of distance for economic activity. Far from eliminating it, as many have stated, these advances have caused certain production tasks to be retained and others to be outsourced.

The power of transnational corporations has increased in recent years. These firms now account for two-thirds of international trade, and their staffing, investment, and locational decisions have far-reaching implications for countries and industries. This, in combination with a more liberal policy environment that makes investment and production networks more feasible, heralds a new reconfiguration of production that transcends the core–periphery dichotomy.

The economic 'map' of factor endowments has changed, in turn changing the way transnational corporations outsource their activities. Developing countries, far from having uniquely low-skilled workforces, now offer considerable stocks of human capital that can perform high value-added activities at substantially lower cost. Therefore, rather than developing countries being relegated to routine assembly tasks as the Frobelians predicted, the new economic landscape can be characterised as containing regions that specialise in production tasks of varying complexity.

Looking at the exports of manufactures and services, it is clear that only a small number of primarily Asian countries (and a few Latin American countries) are significant players in Newer International Division of Labour. These countries are, on the whole, also receiving the greater part of foreign direct investment, which entails access to technological and organisational best practices as well as capital.

Many developing countries seem likely to lose substantial proportions of their educated populace. But the emerging players in the Newer International Division of Labour probably have the size and human capital stocks to weather this. Other

smaller countries are facing serious erosion of their skill base, or have been left out of the Newer International Division of Labour altogether—lending credence to assertions about the exclusionary nature of globalisation.

Notes

[1] Dicken (2003) defines economic globalisation as the functional integration—as opposed to mere extension—of internationally dispersed economic activities. Mere cross-country growth in trade and production is *internatialisation*.

[2] Singapore, Hong Kong, South Korea, and Taiwan.

[3] See Mittelman (1995), Henderson (1989), and Piore and Sabel (1984) for analyses of the New International Division of Labour thesis.

[4] This termed was coined by Coffey (1996), although the division of labour that he puts forth differs in significant ways from what is argued here.

[5] Defined as firms that control assets overseas. Thus, this can also include small and medium enterprises (SMEs).

[6] The economic importance of transnational corporations goes far beyond this because they also source considerable amounts of resources locally.

[7] Countries using imported intermediate components in the production of a good for export.

[8] Koser and Salt (1997) found that the movement of personnel within a company is dependent on its home country culture. They found very high levels of international movement in British and Dutch companies, and less in French and German companies.

[9] This article does not argue for the existence of a 'transnational capitalist class' a la Sklair (1994), but simply that transnational corporations are increasingly important economic actors with increasing political power.

[10] It is worth stating that these categories must be treated with caution. All products contain high and low segments of value-added activity, and the technological sophistication of any product can change over time.

[11] Data on international trade in services faces a series of measurement problems, in part due to the intangible nature of services. UNCTAD and WTO use the IMF Balance of Payment Statistics. Some measurement issues are: misclassification, omission of electronically transmitted services, and reporting errors.

[12] It must be remembered that the Gulf States, as well as other middle-income countries, are an important destination for unskilled and skilled migrants.

[13] Given the serious data limitations, the study is forced to make several important assumptions. One is that the education composition of flows from given countries to OECD countries and the United States are the same. This may compromise estimates, especially for smaller countries. The data also include only people age 25 and over and do not distinguish whether these people were educated in OECD countries or their own. Lastly, given that the original census that the data is based on dates from 1990, it can be expected that these figures have increased significantly.

[14] Calculated from Tables 1 and 3.

[15] Argentina, the other major source, exported 49,000 people.

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