Migration and Economic Globalisation: Is the Labor Market Globalising?

L. Alan Winters

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Social Science Research Council

One Pierrepont Plaza, 15th Floor
Brooklyn, NY 11201
P: +1 212 377 2700
F: +1 212 377 2727
migration@ssrc.org

SSRC

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L. Alan Winters | University of Sussex

Introduction

This paper seeks to offer an accessible discussion of the ways in which economists think about the question of globalisation and the labour market and the conclusions they reach. Globalisation is a grand term and can clearly include many aspects of the increased interconnection that we now observe between different parts of the world economy. Here, however, I restrict myself largely to how international trade and migration affect wages, how they are mutually related, and a small digression into capital flows.

The current resurgence of interest in globalisation dates from the early 1990s when people started to observe that, as barriers in international commerce had come down, openness to trade had increased sufficiently to exceed the levels seen in the late nineteenth and early twentieth centuries and that its consequences were not necessarily uniformly benign. Concern started to arise as to whether the boom in imports of manufactures from developing countries was displacing unskilled workers as well as boosting the real incomes of consumers in OECD countries. And these concerns became magnified as out-sourcing and off-shoring became more common and as capital flows increased. In this phase migration hardly figured at all, except to note a little defensively that if trade seemed more open than a century previously migration was certainly not so. This relative ranking has not changed, but partly from autonomous developments such as the decline in communication costs and partly as a result of conscious policy decisions, migration has accelerated over last decade and a half and, considering its consequences, has become part of the globalisation discourse.

The huge expansion of international trade generated a number of concerns or reservations, such as that it harmed the environment, eroded national and regional cultures, and rendered expensive investments obsolete, but the most consistently voiced objections hinged around labour markets – see Hoekman and Winters (2007) for a survey. Changes in trade were said to disrupt job patterns, making the traditional ideal of doing the same job for life infeasible and obliging people to move and retrain more frequently. Imports were held to be destroying jobs and, if not that, to be increasing work hours and reducing wages. In particular, imports from developing countries were seen as a potentially major cause of the decline in real wages and/or employment of unskilled workers in developed countries and the consequent increase in

inequality. One famous article was entitled 'Are your wages being set in Beijing?' (Freeman 1995) with the implication that labour markets were globalising and that the national dimensions, which were often implicitly held to be so desirable, were under threat.

In fact the economic science suggested a much less apocalyptic situation than did popular opinion, reminding us also of the huge increases in wages permitted by exporting and by importing cheap consumer goods from abroad. The debate was vigorous and involved serious disagreements about exactly how to characterise and model the economies in question – for example, whether wages were highly sensitive to goods prices (and hence to trade) and whether technical progress explained the decline in demand for unskilled labour. Eventually, however, the economics profession did largely accept that international trade was constraining unskilled wages in the rich countries to some extent (and possibly reducing them absolutely in the USA) and it also observed that the expected quid pro quo – an increase in relative unskilled wages in developing countries - did not seem to be coming about. Indeed over the 1990s, skills premia seemed to be increasing and inequality widening in the majority of both rich and poor countries.

Adding migration into this mix – as both the real world and the economics profession did over this period – gave the debate renewed urgency. Any view of the world in which trade influences wages significantly is likely to forecast even stronger effects from migration: much stronger downward pressure on wages in developed countries – on the unskilled if migration was biased this way – and increasing wages in developing countries, especially for the groups that provide the most emigrants. Moreover, once we considered migration as well as trade there was a wider menu of possible ways in which economies interacted and so a wider possible range of outcomes.

This paper offers an account of the debate and a summary of the current state of thinking. I shall argue that trade and migration do affect wages materially, although by offering significant improvements in economic efficiency they permit outcomes in which more or less everyone could be made better off, even if by differing amounts. I shall show, however, that the simple equivalence (substitutability) between trade and migration does not hold, and that migration can stimulate trade and investment in several circumstances.

Are Migration and Trade Substitutes or Complements?

Economists use abstraction and simplification as routes to comprehension – the process of stripping a process down to its simplest form in order to lay bare its operation and open it up to formal modelling. We seek the minimal conditions under which a particular outcome might or must be observed and

then ask whether these conditions offer us insight into the real world. The positivist tradition asks not whether the assumptions are realistic but whether they are useful in *predicting* the world, and if they are not we, eventually, change them. Wise economists (of which I hope I am one) do not claim that simplification and refutation are the only way of creating knowledge, but we certainly see them as very powerful tools. Hence this is where I start.

The fundamental premise of the neo-classical theory of international trade is that the incentive to trade arises from differences in countries' relative costs of producing different goods, which, in turn, arise from differences in the countries' endowments of various factors of production, such as labour, natural resources and capital. These endowments are assumed to be given exogenously (i.e. not influenced by anything in the theory) and immobile between countries, but mobile between sectors within any country. In its purest form, the theory generates the remarkable prediction that free (and costless) trade in goods between countries whose endowments are 'not too different' is sufficient to ensure that their factor prices are equalised – the so-called Factor Price Equalisation (FPE) Theorem of Paul Samuelson (1949). If FPE were true, trade in goods and the movement of factors of production would be perfect substitutes in the sense that as trade was freed, the incentives for factor movements, including, labour migration, would evaporate.

Intuitively, one can see this by thinking of goods as bundles of their constituent factors: trade in goods and the migration of factors of production are then two means to the same end. They both allow people in one country to consume the fruits of factors located (initially) in another, the former indirectly by importing the goods they produce and the latter directly. More technically, the result arises because under suitable assumptions factor prices (wages, returns to capital etc.) are uniquely determined by goods prices; free costless trade equalises goods prices across countries and, through that mechanism, factor prices.[1]

The formal statement of the equivalence of factor mobility and trade is due to another Nobel Laureate, Robert Mundell, who observed (1957) that restrictions on one of the pair would stimulate the other.[2] In fact, a tariff would eliminate trade if perfect factor mobility were an option: for so long as trade continued the tariff would cause goods prices to differ between the two countries, which would in turn cause factor prices to vary, which would

[1] Winters (1991), for example, gives an elementary text-book treatment of FPE and Bowen, Hollander and Viaene (1998) a more advanced one.
[2] Mundell used capital mobility as his example of factor mobility, by the way, not migration.

generate factor movement. The process would stop only when factor prices were equalised, at which point the costs of goods production would be equalised in the two countries and trade would cease.

Factor price equalisation is not a characteristic of the real world and nor, in fact, are any of the other extreme predictions of the pure neo-classical model. But the theory is not wholly discredited: clearly much more is going on than the theory supposes but the tendencies that it identifies seem fairly evident to one degree or another. Thus, for example, with some relaxation of the assumptions, especially those on technology, economists now think that the theory offers reasonable insight into trade patterns – e.g. Trefler (1995), Davis and Weinstein (2002) - and have more or less agreed that trade goes some way towards explaining the evolution of wages around the world (e.g., Wood 1995 – see below).

Moreover, the migration/trade link is a powerful motivator of trade policies in the real world. The NAFTA, the EU-Mediterranean and the EU-Central Europe Agreements were all promoted partly as solutions to migration pressures. President Salinas of Mexico promised the US Congress that NAFTA would help Mexico to export goods not people, and German Foreign Minister Kinkel urged the opening of EU goods markets to Eastern Europe as a substitute for migratory flows [both cited by Schiff, 2006]. While the basic idea may be correct, such hopes seem unrealistic over most politicians' time-horizons. First, suppose that a trade agreement raised the developing country partner's growth rate by 1% p.a. (well above what most people would expect over the long run). The income per head differential between, say, Mexico and the USA is over 600%, so it will be a very long time before the additional growth reduces it far enough to have significant effect on migration. Second, if migration is costly and capital market imperfections prevent potential migrants from borrowing to finance it (as they certainly do), an increase in income is likely to increase migration initially as people start to be able to afford it; Lopez and Schiff (1998) offer some evidence.

The essential logic of the equivalence between migration and trade is that it makes no difference where factors of production are combined to create the goods that are demanded. Thus sectors' efficiency and techniques of production must be independent of location – hence scale, local conditions, agglomeration, etc. must all be irrelevant – and likewise for factors – e.g. no productivity differences according to climate, the extent of team working (agglomeration), social circumstances or networks and political conditions. Assuming this to be true requires a great deal of faith, and once one ceases to do so, it matters where activities are located and simple substitutability is eroded or even reversed. Wage differences can now persist indefinitely in the absence of factor movements and thus trade and migration can co-exist. An

early formal exploration of this relaxation is by Markusen (1983).

Markusen assumed two identical countries linked by free trade but no migration, and asked if relaxing five of the assumptions made by Mundell (see below) changed trade and migration in the same direction (complementarity) or in opposite directions (substitutability). Mundell had shown substitutability in the case where the only thing that differed was factor endowments. Markusen restored identical factor endowments and in turn relaxed Mundell's assumptions to allow:

- Differences in technology
- Increasing returns to scale
- Imperfect competition in goods markets
- The presence of domestic distortions (e.g. production externalities)
- Non-homothetic preferences (preferences in which the demand for some goods goes up more than proportionally with income while demand for others goes up less than proportionally.)

He found that each relaxation was sufficient to permit complementarity. To illustrate the first case, recall that identical countries would have identical prices and hence no cause for migration or trade. Now suppose country A gets a technological advantage in industry X, which we assume without loss of generality is labour-intensive. A will now be competitive in X (have excess supply) and hence international trade will occur. But A will also have higher wages than B and so labour will flow from B to A, and this, in turn, will further increase supplies of X and boost A's exports of them. Thus trade and migration have increased together - complementarity.

Schiff (2006) has shown, however, that complementarity does not rule everywhere in this world. If country B raised its tariff on X, it would raise its own wages. Allowing the tariff to increase gradually from zero, trade would decline and, because wages were rising, so would emmigration. This would continue as the tariff rose until eventually wages were equal across countries and migration was zero. Trade, however, would still exist. If the tariff were then raised further, trade would fall, but migration would resume, this time flowing from A to B, and as B's labour force increased it would produce more X and thus cut trade further. We hence have substitutability over this range.

The moral of this elementary theorising is that it takes very little to upset simple categorical results: the search for a general result on substitutability/complementarity is fruitless: all we can hope to do is to define the forces which push in different directions, to identify when one or other may be dominant, and to derive predictions for particular sets of circumstances in which the substitute/complements issue may be pertinent

for policy.

Migration and outputs

Embedded in the discussion above is the assertion that as factor mobility changes factor supplies, it is not factor prices that will change but the composition of output – i.e. the mix of goods that is produced. This depends on the assumptions that markets are competitive, that both countries produce all tradable goods, that there are at least as many tradable goods as factors and that the only interference with trade is via tariffs and similar cost-changing policies[3]. The chain of reasoning is that trade determines goods prices (equalises them if trade is unimpeded) and that N goods prices will determine N factor prices uniquely – i.e. only one set of factor prices will exist that generates costs equal to the given goods prices, and with competition costs and prices are immutably locked together. Factor endowments do not enter this chain, so that provided they do not result in violations of the assumptions, migratory flows can not affect factor prices. Hence if suddenly a country gets more labour and can not change the price of labour to increase its employment to the new level, it must increase the output of the labour intensive goods and reduce that of (some) other goods if it is to maintain full employment. Box 1 gives a simple numerical example. This analysis may seem rather unrealistic, but reflection might persuade the reader that agriculture in the US South or in the UK's East Anglia depends so heavily on migrant labour that it would contract severely or even shut down without it; similarly for clothing production in Los Angeles.

[3] Specifically, there should be no quantitative restrictions on trade.

Box 1 How migration might affect outputs but not wages: The Rybzcynski Theorem

Consider the following example. Country A has 20 units of capital (K) and 30 of labour (L). It produces X using 1K and 1L per unit and Y using 1K and 2L, and it exhausts its supply of factors by producing 10X and 10Y. Now let it receive an additional 6 units of labour. With fixed factor prices, each country continues to use factor inputs in the same ratio, so to absorb the labour it needs to raise Y output to 16 and cut X to 4. Numerically, 10X requires 10L and 10K while 10Y requires 20L and 10K; together they just exhaust the supply of labour (30) and capital (20). As the labour supply rises to 36, output switches to 4X (which requires 4L and 4K) and 16Y (which requires 32L and 16K). A little experimentation will convince you that there is no other equilibrium.*

If A received 10 units of labour, it would need to switch entirely into Y production (20 units) and beyond this point, since it produced no X it would no longer matter if its production cost of X at local factor prices exceeded world prices. Thus the unique link between goods and factor prices would be broken and wages would be driven down by immigration.

* Suppose we opted for 3X and 17Y, demand for L would be 37 (=3+34) and demand for K 20 (=3+17); there would not be enough labour; shifting the production mix further towards Y would just make things worse. If, instead, we opted for 5X and 15Y, demand for L would be 35 (=5+30) and there would be surplus labour and further switching towards X would make this worse. Thus with fixed factors prices (the result of fixed goods prices and producing both goods) the only bundle that exhausts factor supplies is 4X+16Y.

The Effect of Migration on Wages

In fact the story of the previous paragraph *is* pretty unrealistic for a variety of reasons. Prominent among them is the argument that goods are not perfectly homogeneous, so that domestic X and imported X are slightly different. If this is the case, their prices are not rigidly tied together, so goods prices can respond to supply shocks even in the presence of international trade, and consequently migration can change goods and factor prices. [For example, an inflow of labour increases A's supply of X and so drives down the price of its variety relative to those of other varieties as A's suppliers seek additional buyers for their increased supply.] This is the assumption that underlies the various Computable General Equilibrium (CGE) simulation exercises in the literature – e.g Walmsley and Winters (2005) and World Bank (2006) – and is frequently resorted to. Once one has made some such assumption, it makes sense to ask whether migration affects wages in the economies, either receiving or sending, that it affects, and the answer is generally 'yes'.

Two powerful examples help to illustrate the power of migration to equilibrate wages between economies. Both show far larger effects than we can imagine from international migration today. Table 1, extracted from

O'Rourke and Williamson (1999), estimates the effects of the late nineteenth century migration to the New World on wages and incomes per head in origin and destination countries.

Table 1 Percentage Changes in Labour Force, Real Wages and Gross Domestic Product (output) per capita, 1870-1910

	Lab Force	Real wage	GDP pc
Argentina	86	-22	-21
USA	24	-8	-8
Italy	-39	28	29
New Wld.	40	-12	-12
Old Wld.	-13	9	5

Source: O'Rourke and Williamson (1999) Table 8.1

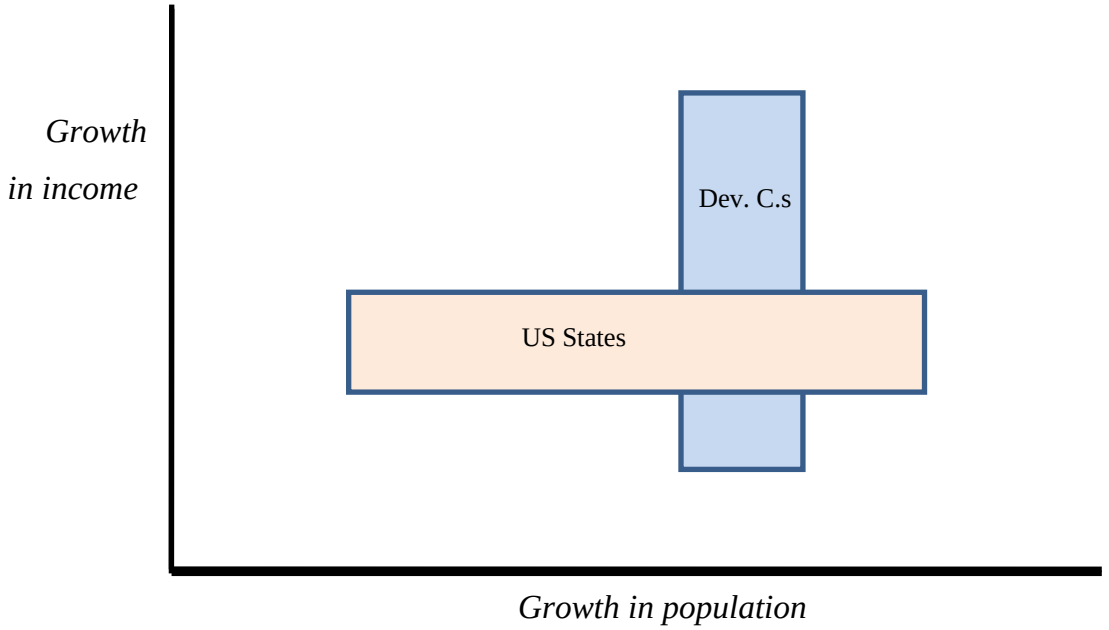
In the cases shown we see dramatic changes in labour force (and population), with Argentina nearly doubling its work force over the period and Italy losing nearly 40% of its workers. But the changes in rewards are equally dramatic, with wages falling by 22% in Argentina and rising by 28% in Italy. [Argentina's wage decline was mitigated, but not reversed, by large capital inflows.] Even for the Old and New Worlds as a whole the results are notable, with migration relieving labour market pressure in the Old and significantly increasing gross output in the New.

O'Rourke and Williamson (1999) estimate that even though trade between the New and Old Worlds grew strongly over this period, it accounted for only about 30% of the convergence in real wages, with 70% due to migration.

The second example is based on Pritchett (2004, 2006). It is schematically illustrated in Figure 1. For each of the 50 states of the USA – between which there is quite unrestricted migration (I hesitate to say free migration, for there are always costs) – and a sample of nearly one hundred developing countries, which are very roughly of the same sort of physical size as the states, Pritchett calculates the rates of population growth and the rates of growth in income per head. Eliminating some outliers at both ends of each of the variables, he plots the ranges between the highest and lowest values. For

the states of the USA, we find a small range of growth rates in incomes per head and a wide range of growth rates of population. This is consistent with population movements in response to economic incentives: as a state suffers a set-back, say because the price of its principal output falls, people move out (or at least immigrants cease to move in) and real rewards per head revert towards the average. For the sample of developing countries, on the other hand, migration is next to impossible, and the story is exactly the opposite. Population growth rates are fairly similar – basically, natural rates of increase related to income per head and other circumstances – while growth rates in income per head show great dispersion. Here if a country hits hard times, again say because the price its principal export declines, there is nowhere for people to go. They stay and the declining gross product is reflected in declining incomes per head.[4]

Figure 1 Growth of income vs growth of population, US States and Developing Countries



Based on Pritchett (2004, 2006)

Among countries of destination there has been considerable debate among economists as to whether recent migration has actually affected wages significantly, albeit by less than the magnitudes in the two examples just given. A series of studies – of which Card (1990) is perhaps the leading

[4] Pritchett shows that the 'flat' US box is replicated by other large rich countries and that the difference across samples is even more extreme if one plots 'population increase less natural increase' on the horizontal axis.

example – suggested very little effect. Card initially found that despite the strong inflow of Cuban workers into Miami in the Mariel boatlift Miami's wages appeared to behave exactly as predicted without the inflow. Others, however, of whom George Borjas is the leading light, have argued the opposite. Borjas has argued that studies that correlate the level of wages with the share of immigrants across cities, states or districts under-estimate the wage effect for three reasons. First, for technical reasons, errors in observing the proportion of migrants in a city bias the estimates downwards. Second, as migrants move into a city, natives move out, offsetting the downward effect of immigration in those cities and driving down wages in the places they go to. The result is that all cities look pretty similar in their wage evolution. Third, migrants will tend to go to cities where labour demand – and hence wages – is relatively high, giving a positive correlation between wages and migrant numbers which offsets the downward pressure that the inflow causes.

Borjas' (2003) estimates allowing for some or all of these problems identify the downward pressure on wages due to migration quite convincingly. For example, using data drawn from the 1960-2000 U.S. Censuses, Borjas and colleagues suggest that migration cut the wages of the least skilled by 7% over the period and that the burden fell disproportionately on black natives (Borjas, Grogger and Hanson 2006). Borjas (2003) also suggests that the second hardest hit skills group is the top one, as the USA admits increasing numbers of tertiary educated immigrants. One aspect of these exercises is the assertion that the group hit hardest by new immigration is previous immigrants, especially the relatively recently arrived. That is, the person with whom a migrant competes most vigorously is a previous migrant in the same skills class.

One novel argument which has a ring of plausibility in metropolitan areas but as yet no convincing supporting empirical evidence is that unskilled immigration into the USA reduces the relative wages of skilled, not unskilled, workers! Kremer and Watt (2006) argue that the inflow of workers willing to provide domestic help – especially women offering housekeeping and child care – releases skilled female natives onto the labour market. This increase in the supply of skills reduces skilled wages relative to unskilled wages and increases total output. The key observation is that although the immigrants are unskilled relative to the US workforce, their arrival does not increase the supply of unskilled workers because previously the unskilled jobs they do were being done by skilled women

In principle one can carry out analysis corresponding to Borjas' for developing country labour exporters. For most such countries, unfortunately, data are too few or too weak for analysis and the proportionate outflow so small that its effects are easily lost in the general noise of development and change. For

Mexico, however, this is not true, as Mishra (2007) demonstrates. The proportionate outflows of High-School Graduates and 'Some College' workers between 1970 and 2000 are huge – 47% and 52% of the numbers remaining in Mexico by 2000, compared with 16% for High-School Dropouts and even less for College Graduates. Mishra calculates that emigration between 1970 and 2000 raised real wages for dropouts by 5%, High-School Graduates by 15%, 'Some College' by 13% and Graduates by 2%. With around 80% of the workforce being dropouts, the result is a widening of wage inequality in Mexico[5].

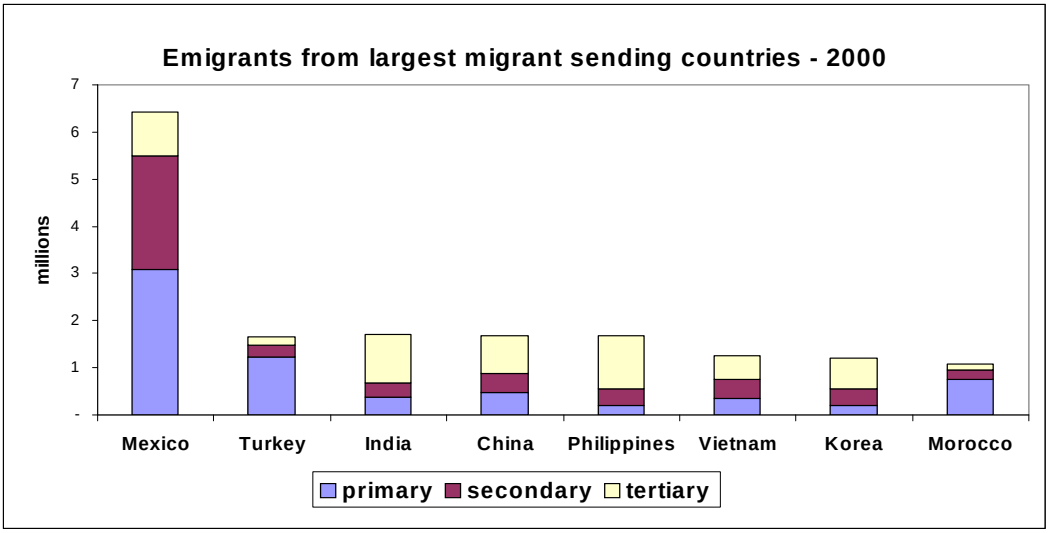
There are undoubtedly many people in developing countries who would like to move to the developed world. One should not, however, believe that a tidal wave of people is about to overtake the OECD. Most of the poor in low income countries are so poor, isolated and ill-educated that they can barely move within their own regions or countries, let alone join the international migration game. For developing countries bordering OECD the flows of less-educated people are relatively stronger – e.g. most notably, Mexico and Morocco – but even here, as Mishra (2007) shows, it is not among the least skilled of Mexico that migration has its largest effects. Distance and immigration restrictions serve to keep them at home, and together these two sets of barriers make the skills patterns of emigration very different between countries – see figure 2. Taken from Docquier and Marfouk (2005) these data show the very highly skilled nature of Indian and Chinese emigration to OECD countries and the lower skills for Mexico and Morocco. The Asians are hindered by the high costs of the distance and the skills requirements for getting work visas, with the result that it is feasible or profitable to move mainly only for the highly skilled. For Mexico, on the other hand, undocumented migration into the US unskilled labour market imposes relatively few costs and so is open to the less skilled. It is certainly true that developing country migrants from rural backgrounds turn up in rich countries, but many move in several steps, starting with an internal rural-to-urban step first.

Even at higher skill levels the majority of people in the developing world would probably not be able to move. McKinsey (2005) suggests that just 10% of Chinese and 25% if Indian engineers are suitable for employment by multinational companies seeking to outsource their activities. The

[5] One interesting wrinkle is that, because Mexico and the USA have different endowments of skilled and unskilled labour, the same flow can decrease relative supplies of skilled workers in each! Suppose 50% of US workers and 10% of Mexican workers are 'skilled'. Suppose that migration is split 30:70 skilled to unskilled. For Mexico, the proportion of skilled exits exceeds the base level, so skilled workers become relatively scarcer; for the USA the proportion of skilled immigrants is below the base level, so here too skills become relatively scarcer.

proportions suitable for physical mobility from Asia to OECD are probably much smaller, although to be fair, a small proportion of India's and China's engineers is still a large number.

Figure 2: Emigrants by education level



Source: Docquier and Marfouk (2005)

The Effect of International Trade on Wages

Debates on the effects of migration on wages have parallels in the trade world, especially the question of whether trade is constraining the wages of the less skilled in developed countries. AdrianWood (1994) postulated a world of labour immobility, free capital mobility and productivity differences between countries in which every sector in country A was more efficient than the corresponding sector in country B by the same percentage. Wood's critical difference between Northern (rich) and Southern (poor) countries is their relative endowments of skilled and unskilled labor. Declining barriers to the South's exports of unskilled labor-intensive goods, particularly manufactures, were, he argued, a major explanatory factor in the widening differential between skilled and unskilled wages in the North. He showed that the unskilled labor embodied in a dollar's worth of Southern exports far exceeded that in a dollar's worth of Northern exports. Thus (given that exports and imports eventually have to balance), every dollar of trade resulted in a larger inflow of labour services via imports than outflow via exports: the North was essentially importing the services of labor. Wood then postulated that the effective inflow of labour drove down its price because countries produced different varieties of the many goods that existed, so that there was effectively specialization and the factor price equalization theorem failed to apply.

No one denied the increasing skills wage gap and the weakness of unskilled wages and employment in the North, but there were several challenges to Wood's explanation. Ignoring the unsung impact of migration itself – see above - some argued that non-resource-based imports from developing countries were too small—perhaps 3–4 percent of Northern countries' GDP—to have such profound effects, especially given that the increase in labor supply embodied in net imports (i.e., imports less exports) was small. Others argued that in order to influence wages in the North, Southern exports would also have to drive down the relative prices of unskilled labor–intensive goods in the North, and that this had not happened. In fact, however, this turned out to be only because technical progress was driving down the prices of skill-intensive electronic equipment, especially for information technology–related uses. Among "traditional" goods, the relative price decline was evident.

The principal counter to Wood's thesis was that technical progress had a strong skill bias. Two pieces of evidence were called on to support this view: first, the ratio of unskilled to skilled workers fell in virtually every sector and every Northern country. Under a pure factor abundance theory this ratio should have risen as unskilled labor became cheaper (the declining aggregate demand for unskilled labor arising from the switch in the production bundle away from unskilled-intensive goods). Second, the skills wage gap widened in the South as well as in the North, whereas the factor abundance approach predicted a narrowing.

In fact, however, each piece of evidence admits other explanations and so does not necessarily overturn Wood's conclusions. The definitions of sectors in empirical work are very broad and almost always include tasks with widely different skilled/unskilled labor ratios. Thus off-shoring the unskilled-intensive activities within a sector would be consistent with both competition from Southern imports and falling relative unskilled labor use in the North. On the other hand, it is possible that by making components cheaper, North-South trade sufficiently increases demand for products that require some unskilled labor in the North (e.g., for delivery services) that demand for Northern unskilled workers increases overall, as Grossman and Rossi-Hansburg (2006) have pointed out.

Several explanations have been advanced for the growing skills wage gap in the South. Feenstra and Hanson (1997) observe that the South houses activities or sectors that have low skilled labor intensity, while the North has high-skill-intensity ones. If Southern costs fell, firms in the North would seek to outsource some activities to take advantage of this, and it is highly plausible (inevitable under Feenstra and Hanson's assumptions) that the first to go would be its least skill-intensive activity. But given the initial split of activities between North and South, this sector would become the *most*

skilled activity in the South. Thus in *both* countries, the relative demand for skills would increase! The cost decline driving this could be autonomous or, as in Feenstra and Hanson, driven by flows of capital from North to South, which in turn may be responding to declining trade barriers.

A second group of explanations is that engagement in international trade raises the returns to skilled labour directly – e.g the high quality capital equipment and intermediates that developing countries buy from world markets require high proportions of skilled labour to operate, or that to achieve the quality levels required to sell on world markets requires skilled labour.

By now, most economists accept that both autonomous skill-biased technical progress and North-South trade have played significant roles in the skills gap and most accept that the latter effect is likely to get stronger in the future as trade and communications costs fall, allowing production processes to be even further divided.

This discussion meshes with the ongoing debate among migration theorists about skilled labour mobility – i.e. the brain drain. It suggests a further reason why a brain drain may be harmful – it reduces developing countries' ability to trade effectively on world markets. Equally, however, it suggests that, if wages can find their own level, the returns to skills may be increasing in the developing world, hence reducing the pressure for emigration. In fact, I suspect that the interaction with trade applies more to mid-level skills than to the high levels that usually motivate brain drain discussions. As such it squares with Borjas' observation that migration into the USA is greatest at the two ends of the skill spectrum, although I do not believe it could be the only explanation of that phenomenon.

The Diaspora

The modern economy relies very heavily on information – both technical information about how to do things and how good products are and 'social' information about how reliable and qualified people are. For fairly natural reasons, information flows more freely between people who know each other or share certain characteristics such as language, culture and nationality. By moving people about, migration increases information flows in several important ways.

The role of networks in migration flows is well known and well documented, first by anthropologists and sociologists and subsequently by economists. Indeed, it is perhaps the least contentious of all assertions in the field of migration. It means that migratory flows tend to be self-reinforcing – as one

individual moves from A to B she makes it easier for another to move and so the whole process accelerates. Often the flow has been started for more or less extraneous reasons – as, for example, the shadow of the railways in Mexican emigration is still evident even though no-one now migrates by train – McKenzie and Gibson (2007).

Starting from 1994, economists have explored formally whether international trade flows are stimulated by migratory patterns[6]. This is no easy task given the degree of official intervention in both migration and trade, and it is sometimes difficult to say whether migration causes trade or vice versa. Causation does not matter for description – the two variables go up together – but it certainly matters for policy. The general conclusion of this literature is that trade and migration are positively related. The earliest studies – e.g. Gould (1994) - focused on migrants' demand for goods from home, but subsequently questions were asked about creating markets for exports (migrants know what will sell in their home countries) and exploring the routes through which such international influences operated. The most elegant study is by Rauch and Trindade (2002) from whose results table 2 is derived.

Table 2 Increases in International Trade attributable to the presence of Chinese

	Type of good	
% change due to:	Homo-geneous	Differentiated
Overseas Chinese, both >1%	32.0	59.2
Overseas Chinese, other	1.7	5.5
Colonial ties between partners	5.2	13.8

Rauch and Trindade used a standard model of bilateral international trade flows – the so-called gravity model, which explains trade between partners in terms of their economic sizes and distance from each other - and added a variable describing the size of the partners' Chinese ethnic groups. Thus it is not just recent migration that matters, but broad generalised links. This has advantages for identifying the direction of causation because we can reasonably assume the foundation of Chinese communities mostly preceded

[6] See Parsons (2006) for a survey of the field.

the recent growth in trade volumes. One powerful way of presenting the results is to separate out flows for which both importer and exporter have Chinese minorities exceeding 1% of their populations (row 1) from the others and also to present the trade enhancing effects of (mostly ex-) colonial ties. Rauch and Trindade experiment with three types of goods: those with recognised international exchanges, those with well-established systems of reference prices and the rest, which are too differentiated for these efficient market forms[7]. I have combined the first two into a single 'homogeneous' goods category in table 2.

The results are stark. Small Chinese communities have on average rather little effect on trade. Colonial ties are 3 to 4 times stronger. But where Chinese communities are of significant size their effect on trade volumes is dramatic (row 1). More significant is the difference between homogeneous and differentiated goods. The former can be traded on an anonymous market because their simple formal descriptions tell you all you need to know about them, but social ties still encourage trade by offering information about traders and offering social enforcement mechanisms in the case of contract failure. For differentiated goods there is an additional benefit: if traders know and trust each other information that can not be formalised in simple terms, such as that about quality and design, can be more easily transmitted; the result is that for these goods trade volumes are virtually 60% higher than if there is no social link.

Reinforcement of the diaspora's role in information transmission comes from Javorcik et al (2006) who find that USA outflows of foreign direct investment to a country are positively related to the presence of its nationals in the US workforce. Correcting for the possibility of reverse causation, a 1% increase in the workforce induces a roughly 0.3% increase in the stock of American FDI in a country. Moreover, the effect is stronger for workers with tertiary education, which one might expect of information-based explanations. The now classic case of the beneficial diaspora is the Indian software sector, in which the connections between Silicon Valley and Bangalore are well documented – e.g. Saxenian (1999). Both people and capital - financial, knowledge and social - flowed between these sites, as a result of which a strong export industry was established in India. Detailed research has suggested that the net benefits of the migration of skilled workers were positive and that the potential for migration encouraged the acquisition of skills in India, especially at the lower end of the skills spectrum – Commander et al (2008). Software is quite special, however, so it is unlikely that such strong and beneficial interconnections will be found in many other

[7] Reference prices are prices quoted without mentioning a specific brand name or other producer identification.

cases.

Conclusion

Migration is a significant part of the current round of globalisation. Although it is sometimes argued that it is a substitute for international trade – usually in the context that rich countries should accept more goods from developing countries and thus attenuate the pressure from them to accept labor – there really is no such presumption. The theoretical discussion of Markusen and the empirics provided by, *inter alia*, Lopez and Schiff (on liquidity constraints) and Rauch and Trindade (on the diaspora's effect on trade) all suggest that migration frequently increases with, rather than instead of, international trade. An implication of the very pure substitutability view is that, at least within a defined range, changes in neither international trade nor migration should affect wages or other factor prices. The evidence refutes this, which suggests at least that the limited domain referred to has little relevance and more likely that that the strict substitutability view is inappropriate. In fact, I reported studies that suggest that over the long run migration is associated with strong convergence in wage levels and that recent studies which find no relation between them in the short run may well be flawed methodologically.

Lest the connection between migration and wages that I have argued for appear to change the nature of globalisation fundamentally, I also discuss international trade and wages. Here, too, I argue that effects are detectable. My interpretation of the evidence is that in OECD (rich) countries, imports of labour intensive goods from developing countries have reduced the growth in the wages or the employment of the unskilled, possibly below zero. In other words, the connections between labour markets around the world have always been there and, although they may now be stronger than previously, they are not qualitatively different.

Since developing countries are relatively well endowed with unskilled labour, it is unskilled labour in developed countries that has relatively more to fear from globalisation. However, because globalisation raises aggregate incomes – see, for example, Winters (2004) for a discussion of the evidence – it is quite likely that less skilled incomes do not actually fall with globalisation. On the other hand, the increasing inequalities between the skilled and unskilled in rich countries do not seem to me surprising. Concomitantly, international intercourse represents one of the ways that developing countries can hope to raise the (dreadfully low) wages of their unskilled and semi-skilled populations.

While few economists would maintain that migration and trade have *no*

effect on wages, plenty have argued that the effects are minor. Thus one priority for future policy research is to try to resolve this issue, or at least determine when effects are large and when small. This is important for migration policy in several directions: in rich countries the wages of the unskilled are a major consideration in determining policy and in poor ones it is useful to know the extent to which emigration is likely to benefit those left behind by raising their wages. A second policy dimension that springs from this paper is the extent to which the returns to migration include increased trade and vice versa. This could be important in countries' attitudes towards signing regional trading agreements or indeed to entering migration agreements. The effective use of diasporas as stimulants to development includes much more than just trade – e.g. calling on them to provide medical or teaching expertise[8] – but the trade and investment links they establish are likely to be one of the most effective.

The labour market is the key location of disagreements about globalisation. While I do believe in the rather revisionist view that trade and migration tend to boost the relative wages of skilled workers in the rich countries and unskilled workers in the poor ones, there is still much to be done to confirm this. In addition, not only are there (many) exceptions to understand and explain, and different channels of causation to disentangle, but these distributional issues have to be melded with the absolute increase in average incomes that globalisation generally engenders. Thus the area seems likely to remain one of critical importance for research and policy into the foreseeable future.

[8] Remittances are also useful to development, but I do not – and nor do most economists or institutions – subscribe to the view that remittances have a major role or that there is a 'remittance-school' of development theory.

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