NTMs in Services

Restrictions on Movement of Skilled Personnel[1]

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1. Introduction

The breathtaking pace of global economic integration owes in large part to the globalization of economic thought embodied in general free market principles. Cautionary tales of the perils of free trade are often just that, cautionary. Most such authors are not against free trade per se; instead they attempt to draw attention to the need for the creation of institutions that can support such trade[3].

Rapidly integrating goods market, both final and intermediate, capital markets, together with technological advances and vastly diminished transportation costs, have connected international economies as never before. Multilateral institutions most notably the WTO, as well as trade associations such as the host for this workshop APEC, have been relentless in their efforts to convince member states to bring down existing barriers even faster. While there remains visible diversity among nations in their institutions and their approach to common goals, there are very few corners in the world today that would deny the benefits from exchange based on notions of comparative advantage. The continuous decline in barriers to trade have led tradable good prices across nations with price differentials of traded goods rarely exceeding a ratio of 2.

This fast integration of world economies, via international capital markets, international trade in merchandise goods, sharply reduced costs of telecommunications and travel have one common intellectual driver, i.e.free trade based on comparative advantage increases welfare. Yet the paradox remains that one of the greatest and most direct boosts to welfare arises from the liberalization of cross border labor services and yet it remains tucked away in the agenda of most trade liberalization talks. And this despite economic logic that point to gains from cross border labor services to the service

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[3] A number of recent empirical research has pointed out to the need for high quality institutions for development.

providers, the exporting country as well as to the host nations. There is no trickle down welfare effects for the development economist to worry about. The gains go directly to the cross-border migrant worker. Through increased remittances and financial investments, the exporting country gains from such labor exports. Besides other dynamic effects on the return of the workers, there is an increase in the stock of human capital, often entrepreneurial. Likewise the host countries gain from lower factor costs that reduce production costs helping maintain the competitiveness of the economy.

The irony remains however that while barriers to trade in goods and many services have come down over the last decades, the temporary movement of natural persons (TMNP) or mode 4 trade in services gets very little attention despite. Indeed today the movement of people (excluding tourism) is well below levels experienced in the late nineteenth century, and migration rates are well below cross border flow of goods and investment. About 3% of the world's population is living outside their country of birth whereas global exports of goods are almost a fifth of GDP[4] and financial flows well above 10%. For instance in the United States the number of permanent legal immigrants in 2002 at around 1 million is less than it was in 1914 when it stood at 1.2 million[5]. A post September 11 world with the added spectrum of terrorism raises the prospects of even higher barriers to cross border movement of people.

Trade in goods has seen the gradual convergence of prices of the tradable goods[6], but the labor factor embodied in them continues to have a divergence of as much as 25 to 1[7] between the developed and developing nations. While the aim of this presentation is not to point out the social and institutional causes that maintain this divergence, it acknowledges nevertheless, myriad reasons that would continue to support barriers to the movement of natural persons and consequent divergence in factor prices. These would likely exist as long as nation states based exist.

[4] Calculated from the Appendix to World Bank´s: Global Economic Prospects 2004.
[5] From Immigration and Naturalization Services (USA): "2002 Yearbook of Immigration Statistics" Table 1.
[6] Although wedges still remain the price ratio between countries has been reported to be no higher than 2. For a discussion on this, see Dani Rodrick (2002) "Feasible Globalizations", NBER Working Paper, No. W9129, August 2002.
[7] Even higher if you take the compare the average hourly wage rate of $30 in Germany to the 30 cent hourly wage rate in India or China.

Data from the worker remittances to developing countries is persuasive. In 2002, worker's remittances to developing countries stood at $80 billion, accounting for 1.3% of their GDP. For countries of southern Asia, the remittance inflow for 2002 stood at $16 billion, accounting for 2.5% of GDP[8]. This capital flow is considerably higher than official development assistance, and second only to FDI inflows as a source of external funding.

The paper doesn't aim to explore the causes of temporary migration nor to suggest policy instruments. Its purpose is two fold. First to use this APEC capacity building workshop as a forum to draw further attention and promote some debate on this seeming paradox. Second to use some back of the envelope calculations to estimate welfare gains of the reduction of quotas on the temporary immigration in one sector where developed countries needs have been often highlighted, that for highly skilled information and communications technology (ICT) skilled workers.

We find that if an experimental visa scheme is launched in the US of issuing 140000 visas for ICT workers (equal to the number of approved H1 B petitions in the `computer systems design and related service´ category in 2001), then net welfare increases substantially. Assuming that the rest of the developed world combined issues a similar number of visas, then for the 12 year period of this simulation, the average annual net gains would be around $38 billion. Assuming that around 40% of the wage earnings are remitted, then the additional average annual remittance would be about $15 billion almost doubling the current remittance inflows to Asia. Furthermore the mode 4 workers under this scheme would at its maximum represent about 0.4% of current US labor force.

2.1 Growth of International Trade

For many countries trade has been the engine of growth (with an enormous reliance of the American appetitive for imports which show up in its trade deficit of around $800 billion, roughly 7% of GDP.). The share of world exports to GDP in 2002 was almost

[8] World Bank: Global Economic Prospects 2004, pages 148-149.

20%, while in some countries this ratio is much higher. In East Asia for instance, the trade-GDP ratio is approximately 62%.

The growth rate of world trade has been more that twice the growth rate of world GDP. Thus in the decade of 1991-2000 while world GDP growth rate was 2.6%, the growth rate of world exports was more than double at 6.3%. For certain countries the growth rate of exports is even more impressive. As a block, East Asian exports for instance grew at an annual average of 12.0% during the period 1993-2002 (World Bank data).

2.2 And the Increasing Importance of Trade in Service

Services are the fastest growing sector of the global economy, accounting for more than 50% of the GDP of developing countries and significantly more for the developed economies. As table 1 illustrates world service trade grew at a faster rate (7%) in the period 1990-2000 that the growth rate of merchandise trade. The value of merchandise trade however remains almost 4 times of service trade. It is interesting to note as well that in the global downturn of 2001, service trade[9] shrunk by much less than goods trade, as shown in table 1.

Table 1 World Exports of Merchandise and Commercial Services: 1990-2002

	Value		Annual % Change			
	2002	1990-2000	1999	2000	2001	2002
Merchandise Exports	6240	6	4	13	-4	4
Commercial Services	1540	7	3	6	-1	5

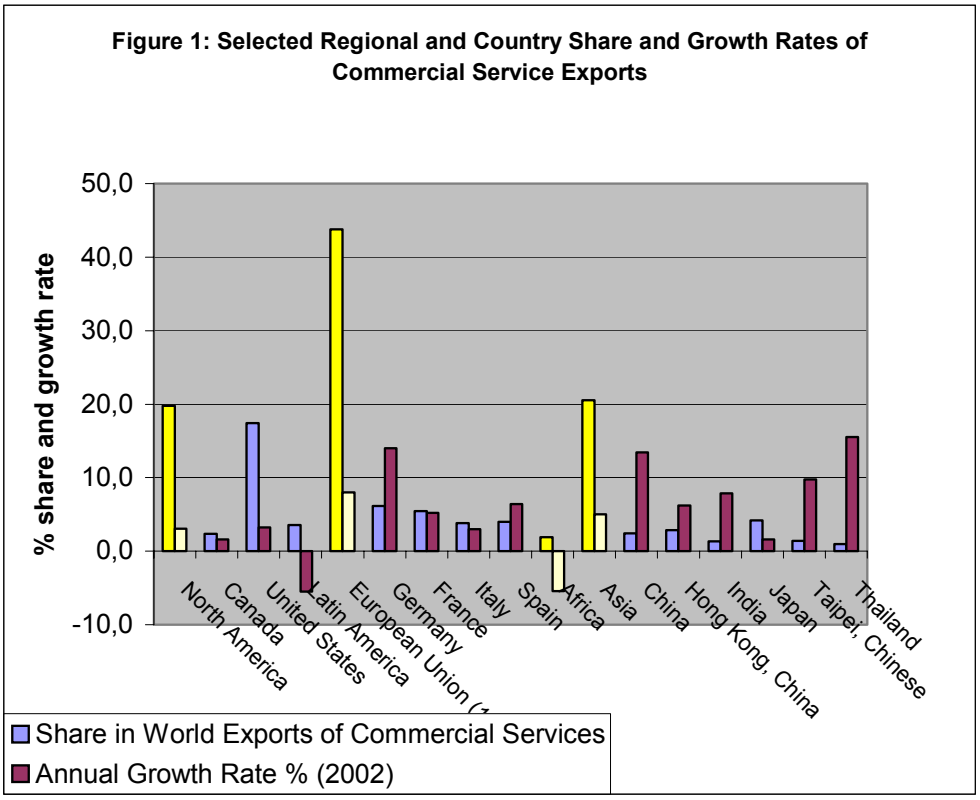
Source: World Bank

While world trade in services have grown at an annual average rate of 7% over the decade of 1990, the share of developing countries in trade in commercial services and their growth rate has been even faster. The share of developing countries in service trade rose from 18.2% in 1990 to 22.5% in 2002. The growth rate of service trade of developing countries was an annual average of 9% in the decade of 1990 compared with an average of 7% for developed countries. The story is even more impressive for certain countries like China which more than tripled its share of global trade in services in a bit over a decade. In 1990 its share stood at 0.7% while in 2002 it rose to an impressive

[9] All data in this section is derived from the World Bank

2.4%. The corresponding figures for India were 0.6% and 1.3%, driven to a great extent by a boom in the exports of IT related services. The annual average growth rate of service exports of these two countries in the decade of 1990s were 18% and 14% more, than thrice and more than twice the world growth rate for these two countries respectively. Figure 1 gives a perspective on the relative size of major trading nations and groups in commercial service trade as well as the latest available data on growth rate.

Figure 1: Selected Regional and Country Share and Growth Rates of Commercial Service Exports



While trade in merchandise has been considered an engine of growth for many countries[10], the service sector exports of commercial services is no less important for development. Among the fastest growing sectors of many economies are services such as telecommunications, software and finance. Efficiency in financial services implies better allocation of resources, while efficiency in telecommunications generates

[10] See for instance the World Bank´s "The East Asian Miracle: Economic Growth and Public Policy" Oxford University Press , World Bank 1993.

economy wide benefits because is a vital intermediate input. Software development is the foundation of modern knowledge based economy[11].

2.3 Coverage and "modes of supply"

The General Agreement on Trade and Services (GATS) of the WTO that covers all internationally-traded services,[12] has defined four ways in which a service can be traded. These are known as "modes of supply"[13]. Mode 1 covers services supplied from one country to another officially known as "cross-border supply". Consumers remain in home country while the supplier is located in a different country. The delivery of the service can be effected by telephone, fax, internet, courier etc. International telephone calls, freight transport services are examples of Mode 1 trade. It is in many ways similar to the traditional notion of trade where both the consumer and producer remain in their countries while the service is exchanged.

Mode 2 trade in services takes the form of consumers moves from one country making use of a service in another country and is officially known as "consumption abroad". Some illustrations of Mode 2 trade in services are tourism, medical treatment of non-residents, ship-repair abroad etc. Mode 3 trade, officially known as "commercial presence" includes for instance a company from one country setting up subsidiaries or branches to provide services in another country. Banking, Insurance (and in general trade in diverse financial services), commercial presence abroad etc. are all part of Mode 3 trade.

Finally, mode 4 trade covers individuals traveling from their own country to supply services in another, officially known as "temporary movement of natural persons" (TMNP). Thus migrant construction workers in the Middle East, short term employment of foreign doctors, nurses software professionals etc are all part of Mode 4 trade. Intra-corporate staff (in general short term employment of foreign staff in overseas operations) is particularly relevant in the GATS context since many countries refer to this sub category in their schedules of commitments.

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[11] For more, see Chapter 3 of the World Bank´s Global Economic Prospects, 2002.
[12] The only two exceptions are services provided to the public in the exercise of governmental authority, and, in the air transport sector, traffic rights and all services directly related to the exercise of traffic rights
[13] For a full definition and statistical treatment of the modes of supply, see the UN´s Manual of Statistics of International Trade in Services, 2003.

Table 2 below gives a break down of world exports (in percentage terms) of commercial services in 1990, 1995 and 2001, according to the three major categories of trade in services: transportation, travel and `other commercial services´.

Table 2

World exports of commercial services by category, 1990, 1995 and 2001

	1990 (%)	1995 (%)	2001 (%)
Transportation	28,5	25,2	23,4
Travel	33.8	33.6	31.8
Other commercial services	37.6	41.1	44.8

Source: WTO

As seen from the data, the `other´ category is predominant in commercial service trade. This category includes items like communication and insurance (approximately 5% each), financial trade (10%), construction (7%), royalties and license fees (12%).

3. Barriers to TMNP: An Analysis of the Economic Impact of Mode 4

3.1 Trade and Factor Price Equalization

Ohlin (1933) argued that with trade would factor prices of the trading nations tend to converge. Samuelson (1948, 1949) showed the circumstances under which factor prices would actually become equal[14]. A classic result by Mundell (1957) demonstrates that international factor mobility can actually act as a substitute for international trade in goods and services. That is to say the presentation of this paper by the researcher is in an analytical sense similar to the paper being sent as hard-copy or by e-mail or even a video presentation.

However standard trade models for goods is different from trade in services through capital or labor movements. For one thing trade in services through factor movements change given factor endowments (a standard assumption in the classical trade literature

[14] One of the major theoretical results of the Heckscher-Ohlin model is the Factor Price Equalization theorem. This Theorem states that under certain conditions free trade leads to complete equalization of production factor rewards independently of factor mobility.

is that the gains are based on given factor endowments). Also, trade is not a substitute for factor mobility but is rather represented by the movement of factors[15]. As further noted by Chanda, when speaking of labor movements, it is important to disaggregate labor into skill levels. Thus a labor abundant country such as India is both an exporter of unskilled labor (to many parts of the middle east) as well as skilled labor in the ICT services.

The differences aside, the same motivation that drives trade in goods is also behind trade in services, i.e., comparative advantage. Thus a relative abundance of skilled or highly skilled labor would give rise to a comparative advantage in the production (and consequent export of) goods intensive in such factors, as well as trade, i.e. temporary movement of natural persons in this labor category.

3.2 Size and the Barriers to Mode 4 Trade

Being the interface between migration and international trade, the study of Mode 4 in its various aspects have been a rather neglected field of research. As one recent OECD study complains (OECD 2003), there has been no intellectual or statistical approach developed that accurately gauges the impact of workers under Mode 4. The problem is compounded by the difficult in even estimating the extent of mode 4 trade. Trade in services is normally measured from data from the balance of payment statistics. For Mode 4, BOP statistics break labor flows into three categories: labor income (foreign workers), worker remittances and finally migrant transfers (flow of goods and changes in financial assets associated with international migration). None of these categories correspond well with Mode 4 definition. One estimate (Kartsenty, 2000) has put Mode 4 trade in 1997 at $30 billion, or approximately 1.4% of service trade that year. Recent estimates by the WTO[16] figures Mode 4 trade to be a little over 1% of world services trade.

While we can argue with the statistical methodology employed for the veracity of these figures, Mode 4 trade still remains one of the smallest component of service trade, and

[15] See Chanda (1999) page 11.
[16] WTO (2002): "GATS, Mode 4 and the Pattern of Commitments: Background Information-WTO Secretariat , April 2002.

arguably one of the most difficult to study. These small figures hide the dynamic impact to both the host and the exporting country through various externalities such as labor market prices, corporate incomes, skill and knowledge transfers etc.

The major barriers to market access conditions and constraints on the MNP can be briefly summarized under the following categories:
Economic Needs Test (ENTs) and labor certification tests. This implies that potential host country nations can deny market access to foreign nationals at their discretion. The most common justification for denial is that similarly qualified nationals are available. The onus lies on the prospective employer to demonstrate that no equally qualified nation is available. The administration of such tests cause significant delays and add to the costs of the prospective employer.

The second barrier arises from issues relating to granting of visas and work permits. The administrative processes are cumbersome, expensive, stringent and generally lack transparency. A third barrier arises from recognition of qualifications. This especially hurts developing countries since professional standards are considered low by developed country standards. The last category of barriers arise from a differential treatment of domestic and foreign natural persons. This most typically arises from temporary foreign nationals having to contribute to social security systems of the host country and yet not having the payments refundable on their departure.

While barriers to trade in goods continue to decline as measured by DATA, the barriers to service trade and especially Mode 4 trade remain high. A look at the member countries GATS schedule shows that the levels of commitments vary strongly across the modes of supply. Almost 43% of the entries of Mode 4 commitments have been for intracorporate transfers followed by executives (28%) and business visitors (23%). Only 4% of all horizontal entries cover low skilled persons. It is further interesting to note that the commitments scheduled by developing and developed countries is similar. Both groups seem reluctant to undertaking liberal commitments for Mode 4.

3.3 Gains from Liberalization of Restrictions on Mode 4 Trade

While progress is being made in the statistical information gathering of Mode 4 trade, measuring the economic impact of a liberalization of mode 4 trade remains a relatively unexplored field of research. This is unlike quantification of gains from liberalization of service trade overall where there is a considerable body of research, especially in telecommunications and finance service sectors.[17]

One estimate of gains from liberalization of Mode 4 trade was made by Winters, 2001, which showed that an increased international labor mobility could generate gains of over $300 billion per year. Among others, the estimate was based on an assumption that 50 million developing country workers worked abroad in any given year. A later Winters study in 2002 and companion pieces, concluded that an increase in developed country quotas on inward movement of both unskilled and skilled temporary workers equivalent to 3% of the host country workforce would generate an aggregate annual gain of $156 billion.

Admittedly difficult to quantify (recalling that even the extent of Mode 4 trade is difficult to estimate), the work by Winters and companion pieces are based on assumptions perhaps unrealistic. To take the instance of the back of the envelope calculation of Winters which suggested gains of $300 billion, assuming an annual permanent presence of 50 million foreign workers. For a labor size of around 300 million in Europe and North America (to where presumably most of the developing country labor force would migrate), it implies that around 15% of the labor force would be immigrant on a permanent scale, which would surely be politically and socially unacceptable. Further studies by Winters using GTAP simulations which point out to welfare gains of around $150 billion, seem (beside coming up with numbers significantly different), suffers from the general defects of general equilibrium model simulations. Where immigration is a temporary phenomenon the long term effects of the general equilibrium models fail to capture this.

Another study on welfare gains from Mode 4 liberalization was undertaken by Rodrick, which rests on a temporary work visa scheme with a quota set at 3% of developed

[17] For one literature survey see OECD (2002).

countries work force. Under the scheme, both skilled and unskilled workers from developing countries would be allowed employment in the developed countries for 3-5 years to be replaced by a new group upon their return. Rodrick estimates a gain of $200 billion annually under this scheme, much more than the expected gain from the Doha agenda.

Comment:

3.4 Gains from increase in Mode 4 trade: A Preliminary Case Study for the ICT Sector

In this presentation, I eschew general equilibrium analyses, preferring back of the envelope calculations to estimate gains from an increase in the visa cap for highly skilled information and communication technology (ICT) workers. In what follows I first simulate the net gains from an the issuance of an additional 140000 visas for ICT workers in the United States, not taking into account all the dynamic (namely the positive economies to the exporting nation) gains. The rest of the developed economies, most notably the European Union and Japan are then assumed to take a further 140000 skilled workers in the ICT sector, not a wholly unrealistic assumption given the published shortages of workers in this sector. The simulation results that I arrive are merely indicative of welfare gains from mode 4 trade in a highly critical sector of the gobal economy.

The ICT sector has been highlighted by various studies as suffering from domestic workforce shortages. I choose this sector for my initial analyses for three simple reasons[18]. First, the data I use in terms of the temporary migration numbers is fairly realistic. Second, there is an elastic supply of labor (in the stock of ICT workers in countries such as India and China). This further implies that the temporary withdrawl of these skilled people from the developing country economy would have arguably less negative impact to the domestic economy than say the departure of other highly skilled personnel that is in shortage[19]. Finally, at a policy level, if liberalization of movements of natural persons in such a critical sector to the economy is difficult, then it is doubtful

[18] Indeed most initial offers of market access of mode 4 has been for ICT sector workers
[19] The departure of a few doctors from a developing country hospital is likely to have a very negative impact on its functioning, perhaps even leading to the temporary closure of some departments.

that within the short term at least we shall see any Mode 4 liberalizations, especially of non-skilled labor of which developing countries have a very large pool.

The information technology sector[20] has been widely reported to be suffering from a shortage of skilled workers both in the United States and in Europe. In fact one study by IDC predicted a shortfall of over 1.7 million jobs in Europe alone for the year 2003. In the United States, it was largely to this skills shortage that H1 B visas (workers with "speciality occupations") had been increased from 65000 in October 2000 to 195000. This cap is now expected to be reduced to 65000 from the 1st of November of 2003.

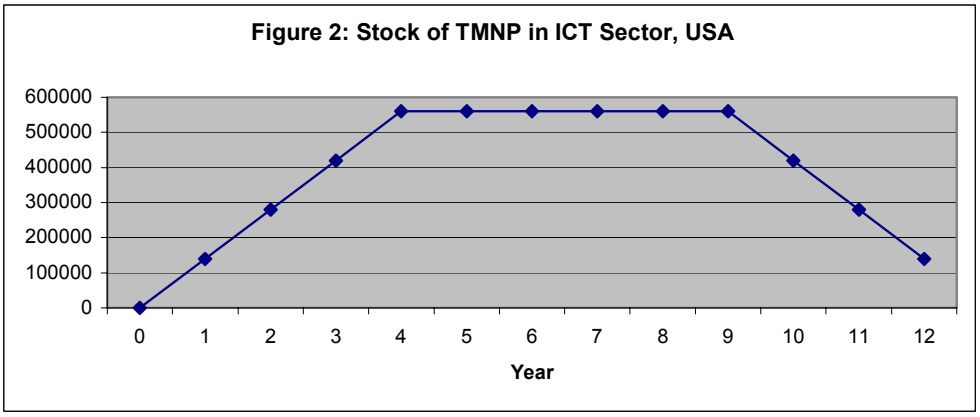
The actual or expected shortage of ICT workers in the United States is however still a matter of debate. For instance IEEE-USA, a professional society representing more than 235000 electrical, electronics, computer and software engineers, deny any shortage claims. A recent estimate shows that currently in the United States, there are about 10.3 million IT workers[21]. It is illustrative of the need for IT specialists, that according to the INS, for the year Oct. 1999-Sept. 2000, the top ten H1-B petitions were all filed by technology companies[22]. Cyclical downturns notwithstanding, there seem little doubt that the rapid expansion of IT, both as an intermediate as well as a final product to the US economy, that the shortage for ICT workers would be increasingly felt. The trend towards outsourcing, is a search for lower labor cost, especially in the highly labor intensive side of the ICT industry. While this trend cannot be controlled, liberalizing labor movement in this sector could indeed help to reduce chances of relocation of US firms.

Let us assume that we implement a ICT Mode 4 trade scheme where short term visa allocations are made for ICT jobs for a further 140000 annually. This number corresponds to the number of approved H1 B petitions in the `computer systems design and related service´ category in 2001. These additional 140000 visas would be valid for a short term, say 3-5 year, after which the temporary worker returns to his country of

[20] Note that besides there being no one single `IT job´ there is also a varying degree of labor intensity associated with different tasks. This implies that within this ICT sector, developing countries could have a comparative advantage in data processing or even computer programming, but at a comparative disadvantage in systems analysis.
[21] ITAA: 2003 Workforce Survey, May 2003
[22] Reported in OECD Study: "Current Regimes for Temporary Movement of Service Providers Case Study: The United States of America", Feb. 2003. TD/TC/WP(2002)23/FINAL

origin, to be replaced by another 140000 workers. Let us put this system in place for a total of 12 years, which would enable a cycle of nine generations of workers to stay on an average of 4 years each. Thus the number of the temporary foreign ICT workers under this scheme would go to 0 at the end of the 12th year (beginning of the 13th).

Figure 2 below illustrates the simulation of the visa scheme. The number (stock) of skilled foreign workers under the ICT visa scheme (without renewal) who would be working in the United States at any given year describes a concave function. For 6 years under this scheme, the number of workers would be the maximum at 58000. For a total labor force population of around 140 million and a population of 280 million, at a maximum this scheme would have around 0,4% of the labor force consisting of temporary Mode 4 ICT workers.

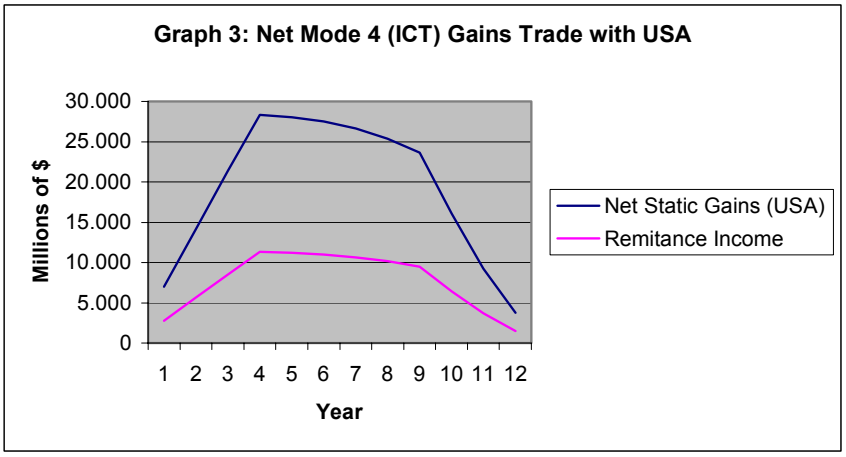


We begin with an assumed income differential of $50000 in the ICT sector[23]. Let us further assume that the wage rate for ICT workers in the labor exporting nation increase s at an annual rate of 15% compared to an annual increase for ICT workers in the US of 5% (thus the annual differential decreases due to the increased demand as well as the tightening of labor markets of the exporting country). The income differential between workers in the two nations, at the end of this period of 12 years at these rates would be is significantly reduced at around $27000. If we were to persist further with the simulation, then with the assumed rates of wage rise, there would no cost advantage

[23] From author´s own research. Based on an average figure across various ICT jobs which are competitive given current market and technology conditions.

after 15 years[24]. Thus the competitiveness of high skilled labour from developing countries would be greatly diminished over the period of this experimental visa scheme.

The net static gain to the trading countries in any given year would be the increase in productivity associated with the movement of labor from the low wage to the high wage country. I assume that there are no productivity losses as workers move from the developing country to the developed[25]. In which case, the gain would be given by the stock of workers times the income differential. The cumulative net gains from such a visa experiment would result in gains of around $227 billion in the 12 years of the scheme. If one was to include the European Union (some of whose individual countries have implemented special visas schemes for skilled IT workers) and some other developed nations, then the gains to the world economy could well be over $450 billion over the twelve year period. In annual terms, this translates into net gains of $38 billion. These gains are fairly conservative in that we ignore the multiple dynamic effects principally to the exporting country[26]. Figure 3 illustrates the simulated net gain function.



[24] These differentials are roughly consistent with industry analysts. The Economist (July 19, 2003), quoted an Indian industry figure predicting an erosion of the wage differential between IT workers in India and the USA in 15 years.

[25] Indeed under the present US immigration scheme whereby foreign workers have to be similar existing wages, it would be economically nonsense for a firm to pay a temporary immigrant worker the same pay of the productivity was less. Winters (2001), in his simulation assumed that for various reasons, three quarters of the wage gap persisted even after the cross border migration.

[26] Many of the Indian IT software companies with an international presence were started by Indians who had earlier worked in the US. The same is true for many internet startups in China.

The benefits of this Mode 4 trade are obvious for the labor exporting country. The average annual exports of $38 billion represents about 1.5% of Asian GDP from whose economies most of the ICT workers would be expected to come, or about 5.7% of its exports. To take one specific country example, if even 50% of the IT workers were to come from India then this would imply gains representing approximately 3,6% of her GDP or about 41% of her current exports.

Further assuming that around 40% of the wage earnings are remitted, then the average additional annual remittance income would be about $15 billion, more than the remittance received in 2002 by East Asia ($11 billion) and almost equal that of South Asia ($16 billion).

4. Conclusions

The core `tenet´ of gains from trade lies in exploiting, for mutual benefits, the differences between nations. These differences could be in terms of factor abundance (relative), consumer preferences etc., and giving rise to comparative advantage. With high wage differentials one would expect these wages to converge given that trade in labor is embodied in the trade of goods. However this hasn't happened, and particularly in view of the shortage of skilled labor in certain sectors economic logic dictates that trade (Mode 4) would be beneficial for the trading partners.

This paper simulates the advantages of such a trade in one specific area, ICT. We simulate the advantages of issuing a limited number of visas (which at the most wouldn't account for more that 0.4% of the labor force say in the US (and a similar figure for the European Union). Yet the gains are enormous as shown in our simulations. While the exact are merely indicative of the potential net gains, it is suggestive of enormous welfare gains from Mode 4 trade in this sector at least. Since our figures exclude the dynamic potential effects of cross border trade in services, we are possibly underestimating the true long run benefits.

Research in the area of mode 4 remains in its infancy for various reasons. Poor availability of valid data, being the interface of two areas of research: international trade and immigration being two important ones. Yet this is one area where potential gains

are enormous, but yet have not made its way in any serious manner in the agenda of trade meetings. It is time perhaps to do so.

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