TRADE, LEGAL AND ILLEGAL IMMIGRATION

by

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1. Introduction

The issue of trade and migration has been at the top of policy-makers' agenda in most countries all over the world during the last fifteen years. In this period many more-developed countries signed free trade agreements with their less-developed neighbouring countries in an attempt to boost trade and alleviate migratory pressure. This has led to an upsurge of studies aimed at evaluating the impact of these agreements on the flow of immigrants.

This paper analyses the interrelationship between trade and legal and illegal immigration. This is a rather ambitious goal as, to the best of our knowledge, this issue has not been covered by previous works. Despite the fact that the relationship between trade and migration and the distinctive characteristics of legal and illegal immigration have been separately the subjects of a large number of studies in the economic literature, none of the existing works has brought these issues together.

The remainder of the study comprises two sections. In the first one we review studies on both the trade and migration linkage and the different features of legal and illegal immigration. Attention is paid to theoretical developments as well as to empirical findings. In the second section we bring together the main findings arising from the first one and tentatively advance some ideas about the relationship between trade and illegal migration, on the one hand, and the relationship between trade and legal migration, on the other hand. Some policy recommendations are also included in this section.

2. Trade and Migration: are they complements or substitutes?

A large number of theoretical and empirical studies have investigated whether, and to what extent, trade and migration are substitutes or complements.

A) Substitution type relationship between trade and migration

Theoretical Perspectives

Under a set of fairly stringent assumptions[1], application of the Heckscher-Ohlin model led to the strong inference that international trade and international migration are substitutes. Specifically, to the extent that migration is primarily driven by economic incentives, differences in real wages will generate incentives to migrate. But since international trade operates to equalise returns to factors of productions on a global basis, increased international trade should lead to reduced international migration, other things being equal.

EU and US policy-makers seem to have a rather strong belief in the substitution type relationship between trade and migration[2]. Trade integration is thought to be a particularly desirable strategy to alleviate migration pressure on the ground of two reasons. First, if one assumes that trading goods represents a way to exchange the service of the factors embodied in those goods, then the elimination of trade barriers is likely to reduce the incentive for factors to move to the extent that increased trade facilitates the exchange of factor services. Second and more important, deeper trade integration may lead to faster convergence among countries with different income levels[3]. Hence free trade agreements among developed and developing countries are designed not only to encourage greater regional economic integration but also to reduce uncontrolled migration. More specifically, trade liberalization is thought to reduce migratory pressures by having an impact in both receiving and sending countries. In the latter higher rates of economic growth should decrease the outflow of individuals, especially among the unskilled ones as labour-intensive industries are likely to be the main beneficiaries of economic integration. In receiving countries, trade

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[1] The hypotheses are: 1) perfect competition in good and factor markets, 2) constant return to scale in production, 3) identical production technologies, 4) factor homogeneity, 5) full employment, 6) complete markets, 7) instantaneous adjustment

[2] There is, however, a difference between the US and the EU approach to migration and economic integration. The approach underlying the NAFTA agreement is to free up trade and investment while increasing the efforts to prevent illegal migration. The EU approach is slightly different as it rests on providing aid first, and later freeing up trade and migration in the expectation that the convergence that has occurred will ensure minimal migration (Martin, 2002).

[3] The experience of the EU, where poorer regions have been rapidly catching up with relatively better off regions, is often quoted as evidence supporting this view.

liberalisation should reduce the demand for unskilled, thereby reducing the demand-pull effect on migrants.

Empirical evidence

Straubhaar (1988) finds no evidence supporting the view of a positive relationship between trade and migration in Europe. He compares changes in intra-EC-6[4] region migration flows relative to in-migration from outside the EC-region into that region between 1960 and 1984. The rationale being that if economic integration mattered, then within-region migration should have exceeded immigration from outside the region. As this hypothesis was rejected on the basis of the available data, Straubhaar concludes that trade and migration were substitutes.

Using data on the US Abowd and Freeman (1991) show that, across sectors, the share of immigrant labour is negatively correlated with the export/output ratio and positively correlated with the inporrt penetration ratio.

In the same vein Zimmermann (1992) and Faini and Venturini (1993) find that the share of foreign workers in total employment is negatively correlated with the measure of revealed comparative advantage[5] in Germany, France and Spain.

B) Complementarity type relationship between trade and migration

Theoretical Perspectives

The substitution type relationship between trade and migration, resulting from the application of the Heckscher-Ohlin theorem, may be criticised on the basis of three different reasons.

First, several studies based on developments of the Heckscher-Ohlin theorem conclude that if some assumptions underlying the model do not hold, trade and migration can be complements.

- Markusen (1983) shows that complementarity between migration and trade can be achieved if one imposes identical technology in both countries but relaxes one of the following

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[4] The EC-6 refers to the six original member countries of the European Community.
[5] The measure of revealed comparative advantage is defined as the sectoral trade balance divided by either total trade or production.

assumptions of the Heckscher-Ohlin model such as constant return to scale, or perfect competition.

- Martin (2002) argues that if the basis for trade is differences in technology[6], trade and migration may be complements. He uses the Mexican corn example to illustrate this. Using intensive-labour production methods corn farmers in Mexico are significantly less productive than their counterparts in the US that employ herbicides and other capital inputs. Thus the US may export corn to Mexico and undercut the Mexican farmers. The migration of Mexican farmers to the US is likely to strengthen the specialisation of the US in corn production and this, in turn, may lead to more trade.

- It is possible to demonstrate that rising economies of scale leads to a complementary type relationship between trade and migration. If costs of production fall as output expand, especially within industries employing migrant workers, economic integration may increase output, thereby augmenting the demand-pull for migrants.

- If the adjustment process following economic integration is not instantaneous, then more trade may be accompanied by more migration. With economic integration, many workers are likely to be displaced and it may take some time for them to find a new job. Additionally, it is quite possible that new jobs created by economic integration require different skills than the one possessed by the workers that were displaced. Thus, if the displaced workers have good network connection abroad (e.g. relatives, friends), then there may be more migration with trade.

- One may also conclude that in imperfect capital markets trade and migration can be complements. Suppose some migrants are financially constrained and thereby unable to migrate to the desired destination. Trade liberalisation may relax the financial constraint on potential migrants as it tends to raise wages in the labour-abundant sending country. Therefore, economic integration may lead to more migration.

Second, two models have called the results of the Heckscher-Ohlin theorem into question as they support the view that free trade is unlikely to yield wage convergence at least in the short-medium run. Suppose that less-skilled-labour-intensive goods are produced in the south while more-skilled-

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[6] Faini et al. (1999) refer to this situation as 'Ricardian models'.

labour-intensive goods are produced in the north. According to the first model, which is due to Feenstra and Hanson (1995) and involves a continuum of goods ranked by their intensity in skilled labour, the effect of trade and investment liberalization is to move to the south production of goods that are skilled-labour intensive from the south point of view, but unskilled-labour intensive from the north's point of view. Therefore, the result would be an increase in the relative demand for skilled labour in both the south and the north. The second model is put forward by Markusen and Venables (1995) and it comes to the same conclusion of the first one. The argument is, however, different as they identify the 'unbundling' of activities permitted by investment and trade liberalisation as the main cause for the increase in the relative demand for skilled in the north and in the south.

Third, migration may be primarily influenced by non-economic considerations, such as the desire to reunite with family members or to escape political persecution (Lam, 2002; Gani and Ward, 1995). This implies that the international equilibration of factors return might have little or no impact on incentives to migrate, although at the margin, economic considerations might predispose an essentially non-economic immigrant to choose one country rather than another.

Two different strands of literature find that there could be a complementarity relationship between trade and migration.

Trade can lead to migration. Empirical models of foreign direct investment (FDI) highlight the complementarity between foreign direct investment flows and intangible assets such as technical and marketing know-how, managerial expertise and knowledge about the parent's company corporate culture. The transfer of such assets between affiliates of multinational companies usually involves transferring skilled employees and managers for a shorter and a longer period of time. Hence, to the extent that lowering tariff and non-tariff barriers lead to increased net foreign direct investment (Svennson, 1996), trade liberalisation may cause increased short-run and (possibly) long-run migration of labour across countries.

On the other hand, immigration can also increase trade in a complementary fashion. Specific human capital embodied in immigrants may be exploited to reduce transactional costs associated with international trade. This is likely to occur when immigrants take advantage of their knowledge about both potential exporting and importing opportunities in their home country and uncodified and idiosyncratic political and social obligations required to do business in their home countries, as well as language skills. Two effects can be distinguished. First, immigration may boost imports as

migrant workers create a demand for travel, food products and other trade links to their countries of origin. Second, immigration may increase exports as immigrants connections to their home country are crucial to identify potential markets and to obtain access to distribution channels in an unfamiliar environment.

The search for efficient infrastructure may also lead to the possibility that migration can complement trade. An example is given by the relocation of the Mexican shoe industry to Los Angeles in the 1980s. The underlying reason for this strategy being that Mexican workers found themselves more productive in the US relative to Mexico as a result of better private and public infrastructure. The paradoxical result is that shoes produced by Mexican workers in Los Angeles were exported to Mexico.

Empirical evidence

Head and Ries (1999) find that immigration has a significant positive relationship with Canada bilateral trade. They estimate that a ten per cent increase in immigrants leads to 1 per cent increase in export and 3 per cent increase in imports. The results that immigrants import substantially more than export suggest preferences for home country play a role.

Investigating the impact of nonresident workers on the Swiss economy, Kohli (2002) concludes that an increase in the number of immigrants would lead to a rise in demand for imports. On the other hand, as nonresident workers are mainly employed in production of goods and services intended for domestic sales (partly due to fact they are unskilled), the presence of immigrants is likely to have a negative effect on exports.

Collins et al. (1999) argue that trade and capital flows were rarely substitutes and often complements. This conclusion is supported by two main empirical findings. First, using numerous datasets on various countries over a long period of time (i.e. 1870-1939) they observe that complementarity is far more common than substitutability. Second, using time-series data and panel data on the Atlantic economy between 1870 and 1940, they find virtually no support for the substitutability hypothesis and little support for complementarity between trade and migration. Additionally, based on the immigration policy in the New World in the aforementioned period, they conclude that policy-markers never acted as if they views trade and migration as substitutes.

Helliwell (1997) shows that the effect of migration on trade is larger between Canadian provinces and US states than among Canadian provinces. This finding supports the view that trade densities are higher within countries relative to between countries as result of common national institutions and norms. Thus, if such institutions are mainly national-specific rather than province specific, then interprovincial migration would not be influenced by trade patterns, while international migration might.

C) Trade-migration linkage: more factors to be considered

Recent theoretical and empirical evidence demonstrates that the outcome of the relationship between trade and migration is likely to depend on the characteristics of the economies that are integrating.

• *Income gaps*

Faini and De Melo (1999) show that the magnitude of income gaps between the economies being integrated by freer trade can have an impact on the effect of trade on migration. Free trade agreements among high-income countries and middle-income countries are likely to promote convergence and reduce migration pressure. On the other hand, integration between countries with significantly different income levels could yield the opposite outcome: the reduction in trade cost could lead to more polarisation of production[7] and thereby more migration. An explanation for these findings is that the propensity to migrate as a function of income may follow an inverse-U pattern (Faini and Venturini, 1993). If there is a significant income gap between the economies being integrated by freer trade, then trade liberalization may lead to more migration as it may relax the financial constraints which were impeding out-migration. On the other hand, if the difference in terms of development levels, as measured by GDP per capita, is not too marked, then income growth in the poorer country may alleviate migration pressure. The reason being that not migrating is a normal good and hence the consumption of such good will increase with income.

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[7] Trade integration may lead to regional concentration of industrial activities as a result of economies of scale. Krugman (1991) argues that the production of several industrial sectors is much more regionally concentrated in the US relative to the EU because the US market is more highly integrated relative to the EU market.

In the same vein Martin and Straubhaar (2002) argue that the size and the duration of the migration flow is likely to be very large if the economies being integrated have income gaps of five or more, that is, average per capita income in one country is five times higher than the other.

• Type of provisions included in trade liberalisation agreements

Nassar and Ghoneim (2002) argue that there might be another reason why trade agreements between high-income countries and low-income countries may not lead to the substitution type relationship between trade and migration. They observe that a large number of trade agreements comprise special clauses that allow the former group of countries to restrict access to their markets for many goods (including labour-intensive products, fruits and vegetables, garment and footwear) for which the latter have a comparative advantage. This is particularly evident in the Euro-Mediterranean Partnership where bilateral trade liberalization of agricultural and textile products is gradual and limited (Gomez y Paloma and Zappacosta, 2000). Freeing up trade in such labour intensive commodities is likely to have two important effects that may reduce migration pressure. First, it would increase the demand of labour in migrants' area of origin. Second, it would reduce the demand for labour in immigration destinations.

The policy message is therefore clear. The migration hump can be relatively small and short-lived if immigration and emigration countries cooperate to accelerate the pace of job creation in emigration countries.

Furthermore, one may note that the protectionist policy adopted by high-income countries towards the products for which low-income countries enjoy a comparative advantage may destroy the mechanism of factor price equalisation – through decreasing the wedge of wage differentials. This, in turn, may again call the substitution type relationship between trade and migration into question.

• Short-term and long-term effects

It is important to distinguish between short-term and long-term effects. Following the enter into force of a free trade agreement between two countries that have not significantly different income levels, the substitution type relationship between trade and migration is likely to materialise only in the long-term (Martin, 2002). The presumption being that only long-run economic growth in the poorer country will generate sufficient job growth to keep rising proportions of immigrants at home. In the short run capital and human resources reallocation and consequent enterprises closure will

affect the poorer country's job market leading to higher unemployment rates. Inefficient state-owned enterprises are likely to be the hardest hit. Thus transitional unemployment is expected to lead to more migration. The migration hump reflects that economic restructuring often displaces workers and may promote rural-urban migration but some migrants may also spill over the country's borders if there is already an established migration pattern. Martin and Straubhaar (2002) argue that one of the reasons for the increased flow of migration from Mexico to the US observed in the 1990s lies in the strengthening of the Mexico-US migration network. This, in turn, is due to the introduction of US immigration regularisation programs in the 1980s and to the evolution of migrant smuggling infrastructure. A network of friends and relatives lowers the barriers of migrating.

Several studies examine the effect of NAFTA on the flow of migration from Mexico to the US. The signing of NAFTA forced small Mexican business to compete with larger multinational corporations who have a competitive advantage due to their size and their access to capital. As local producer go out of business, both owners and employees lose their livelihood and are forced to migrate in search of employment. This impact has been particularly relevant in the agricultural sector. Because of its liberalisation of regulations governing trade in agricultural products, Seyemour (2001) estimates that the NAFTA has led to the displacement of over a million of small and medium enterprises who were unable to compete with US imports. Martin (2002) argues that in Mexico during the 1990s economic integration generated new jobs especially for new labour force entrants, not for those displaced by trade. At the same time, a boom in the US economy provided an incentive for Mexican workers with US contacts to cross the border.

The above-mentioned considerations have some policy implications. Trade liberalization and migration controls are not alternative strategy controls as suggested by a straightforward application of the factor endowment trade theory. They work with different effectiveness over different time-horizon. Migration controls are likely to be successful in the short run while trade liberalization may reduce migration pressure in the long term via their impact on economic growth.

Although reducing emigration pressure depends on policies adopted in emigration and immigration countries, the most important actor is likely to the former. Its policies largely determine how fast the country grows, and thus how quickly economic and job growth reduce migration pressures. Trade and investment promotion policies (e.g. FDI attraction) are likely to play a critical role in this context.

• Inter-industry trade and intra-industry trade

Determinants of the relationship between foreign direct investment and trade may have indirectly an impact on the relationship between trade and migration. This is because, as noted above, the complementarity that might arise between trade and migration heavily depends on the complementarity between FDI and trade.

Several studies (see, for instance, Di Mauro, 2002) find that there is a significant correlation between intra-industry trade and FDI. Hoekman and Djankov (1996) find that inflows of FDI in Eastern European countries correlate highly with levels of intra-industry trade with the EU. These findings suggest that inter-industry and intra-industry trades can be used to predict whether trade and migration are likely to be substitutes or complements. For instance, if trade between two countries is to a large degree inter-industry trade, this reduces the possibility of any complementarity that might take place between trade and migration. On the other hand, the existence of intra-industry trade between two countries may indicate that there might be a complementarity type relationship between trade and migration.

Since intra-industry trade is likely to occur between countries with similar factor endowment, one may interpret the result outlined above as supporting the view that trade integration between countries with similar income level may make it possible for trade and migration to become complements.

• Degree of openness to trade

Characteristics of the different economies can have a role in determining the type of relationship between trade and migration. Rodrik (1997) states that in more open economies trade and migration tend be substitutes rather than complements. He argues that trade, by increasing the elasticity of the demand for goods, will also increase the elasticity of the demand for labour, as the latter is a derived demand which varies proportionately with the elasticity of demand for goods. This may reflect the fact that employers may substitute foreign workers for domestic workers more easily. Nevertheless, this proposition is not supported by Greenway et al. (1999) who find scarce empirical evidence of an increase in the elasticity of demand for labour in the UK.

• *The over-supply of workers*

As mentioned above, application of the Heckscher-Ohlin model yields the conclusion that international trade and international migration are substitutes. Economically motivated migration should decrease in a free trade world because of factor price equalisation, the tendency of wage to equalize as workers move from poorer to riche countries. Nevertheless, there is evidence that in many developing countries the wage of workers employed in labour-intensive sectors have not risen, even though trade has significantly increased (2002 study by Werner International[8]). For instance, in the 1990s in Pakistan the wage of textile workers remained steady at $0.24 an hour, which means workers' wage declined in inflation-adjusted terms. Real wage also declined for apparel workers in Turkey, the Philippines and Egypt. A possible explanation for it lies in the over-supply of workers. The supply of unskilled workers made available to global business in many developing countries has outgrown the demand for labour-intensive products and, this, in turn, has put downward pressure on wages. One solution could be opening even more industrial country markets to the exports of developing nations.

3. Legal versus Illegal

In this section we review the main findings of those studies comparing the socio-economic characteristics of illegal immigrants with those of legal ones. Before doing so we briefly describe the data used by previous works on illegal immigration.

The main challenge that studies on illegal migration have to face regards data collection. It is particularly troublesome to perform research on the socio-economic characteristics of a group of people that has an incentive to avoid being detected, not only by the enforcement authorities but also by survey researchers. A large number of empirical works on illegal migration have focused their attention on the US. These studies can be broadly divided into two groups according to the type of empirical analysis carried out.

The first group includes studies that perform an empirical analysis using aggregate data on illegal migration. Table 1 summaries these studies providing information on the year of data collection, the proxy used for illegal immigrants and the data source. From Table 1 it emerges that basically two

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[8] This study is quoted in *Migration News*, Volume 9, Number 11, November 2002, University of California, Davis.

different types of proxies have been used for illegal immigrants. The first one is the number of individuals apprehended by the US Border Patrol while attempting to cross the US borders illegally. The other proxy is the number of amnesty applications resulting from the Immigration Reform Control Act of 1986.

The second group comprises works that examine the individual characteristics of illegal aliens. In Table 2 some features of several microeconomic empirical studies on illegal migration are depicted. One may observe that recent studies use data from the Legalized Population Survey (LPS) while less up-to-date works are often based on ad hoc constructed sample characterised by a relatively small number of observations.

Insert Tables 1 and 2 near here

A) Migration costs

Migrant costs may play a more important role for illegal than for legal migration. Migration costs borne by illegal aliens can be quite high as several attempts may be needed to penetrate the border successfully and there is also the possibility of being apprehended and deported once established in the country of destination. Additionally, the risk of detention is positively correlated with the number of family members who join the illegal immigrant.

Chiswick (1988a) observes that the low US-Mexico border enforcement has contributed to surges in illegal immigration in the US. In the first half of the 1980s it was relatively inexpensive for Mexican illegal immigrants to cross the border with the US and if apprehended, they could even try the next day. Furthermore, he argues that it was far more difficult for the immigration authorities to apprehend illegal aliens already in the US relative to those seeking to penetrate the border.

Bratsberg (1995) finds empirical evidence supporting the proposition that illegal migration is more responsive to change in migration costs relative to legal migration. This relationship is tested using a cross-section sample of immigrants to the US from a number of foreign countries. He concludes that illegal migration flows are more elastic with respect to the distance between the source country and the US (here used as a proxy for migration costs) than is the legal migration flow. More precisely, according to his estimates one percent increase in the distance reduces legal migration by

1.47 percent, and illegal migration by approximately 2.08 per cent. The specification for the volume of migration adopted by Bratsberg includes also distance square among the explanatory factors. The coefficient on this variable is found positive implying that distance reduces migration flow at a decreasing rate.

B) Economic conditions

The volume of immigration is likely to be influenced by differences in economic conditions between countries. There could be, however, important differences in the sensitivity of legal and legal migration to changes in economic conditions.

• *Per capita GNP gap*

Increases in the economic gap between countries tend to be positively correlated with the size of immigration flow. Nevertheless, the sensibility to changes in economic conditions may vary between legal and illegal migration. Bratsberg (1995) finds that legal migration is rather insensitive to changes in source country per capita GNP. Evaluated at sample mean, a one per cent increase in source country per capita GNP reduces legal migration by approximately one-twentieth of a percent. On the other hand, illegal migration is found to be very responsive to changes in source country per capita GNP as one percent increase in the latter is likely to reduce the former by between 0.60[9] percent and 1.02[10] percent.

• *Wage gap*

The difference between the expected wage in the "receiving" country and the one in the "sending" country is found to be a crucial determinant of the immigration flow. According to the neoclassical model, if the difference between incomes expected in one country relative to another one exceeds the cost of movement between them, people will emigrate to reap higher lifetime earnings. Fogel (1980) shows that illegal migration is positively correlated to the earnings gap.

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[9] This result comes from a model where the total number of amnesty applications is used as a proxy for illegal aliens.

Borjas and Fisher (2001) examine how Mexican emigration to the US responds to changes in bilateral economic conditions. They observe that illegal migration is more responsive to changes in the wage gap relative to legal migration. More specifically, they find that a reduction in the Mexican real wage will lead to a large increase in the volume of illegal migration (here proxied by the number of apprehensions) while the link between the flow of legal immigrants and the Mexican real wage rate is little. As regards the impact of the changes in US real earnings on migration to Mexico, the empirical findings show that, as expected, an increase in the US real wage is likely to yield an increase in number of apprehensions. Perhaps surprisingly the results suggest that there is an inverse relationship between legal Mexican immigration and the US wage. This implies that fewer Mexican immigrants come to the US legally when the US wage is high. Borjas and Fisher suggest that an important explanation why legal immigration to the US does not seem to respond to changes in economic conditions is because it could be largely determined by the rigidities related to the immigration policy.

• *Exchange rate regime*

Borjas and Fisher (2001) find that the exchange rate regime adopted by the Mexican monetary authorities has had a significant impact on the illegal immigration flow to the US. According to their empirical results, under a fixed exchange rate a decline in the Mexican real wage yields a larger flow of illegal migration, relative to under a flexible exchange rate. In particular, a 20 per cent in real wages generates a 10 per cent increase in apprehensions when Mexico adopts a flexible rate, and 20 per cent increase when Mexico adopts a fixed rate. An explanation for this result is that the adoption of a fixed exchange rate may create a higher correlation between real wages and shocks to domestic income. As a consequence a downturn in the Mexican economy is likely to cause a greater outflow of illegal migration when Mexico adopts a fixed rate vis-à-vis a flexible rate.

Some policy lessons can be drawn from the US-Mexico experience about the impact of the exchange rate regime on migration. If adopting a fixed exchange rate does not yield a very rapid convergence between two countries (through the attraction of foreign capital and the stabilization of the economy in the poorer country), then there is the possibility that it may lead to more volatility in the flow of illegal immigrants.

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[10] This result stems from a regression model based on agricultural seasonal workers only.

• *Informal sector*

Tapinos (1999) observers that countries with a relatively large underground economy tend to attract a large number of illegal immigrants. Not only the existence of an underground economy increases the opportunity for employment of unauthorised migrants, but it also helps immigrants to skip institutional rigidities in the formal sector, such as heavy taxes and work hours restrictions. Garson (1999) argues that illegal immigrants are very much involved in the service sector where their presence has coincided with a rise in employment.

Available statistics show that the size of the underground economy is quite significant in Italy. More precisely, irregular work occurrence is far higher in Italy than in EU on average. Data from the IMF (Schneider and Enste, 2000) indicate that irregular economy made up 27 per cent of the Italian GDP in 1997, compared with a EU average of 15 per cent. Additionally, the shadow labour force is estimated to rage from 30 to 48 per cent of the total Italian labour force.

C) Skill levels

Several studies (see, for instance, Massey 1987) show that illegal immigrants have a lower level of education, fewer skills acquired on-the-job, and a lower occupational status than have legal immigrants from the same country. Individuals with occupational characteristics that would reveal their illegal status, such as the need to acquire a license or to show other credentials, are less likely to migrate illegally. Sometimes the skill difference between legal and illegal immigrants is so large that one can say that the former tend to be at the top of the skill spectrum while the latter are at the bottom of it.

Not only the there is a strong difference in skills levels between legal and illegal immigrants as they arrive in the host country, but this gap is likely to increase over time. Illegal aliens have lower incentives to acquire firm-specific and country-specific skills in the host country relative to legal immigrants as family separation makes their situation to be often temporary. By immigrating illegally, a large proportion of skilled immigrants do not have the opportunity to practice the skills they have acquired in the country of origin as they tend to occupy unskilled jobs. Illegal immigrants working in the informal sector also do not improve their skills. Nevertheless, a recent study (Díaz-Emparanza and Espinosa, 2002) reports that overall in Spain legal immigrants do not acquire additional skills. This holds also for well-educated immigrants who, not only work in jobs for which

a low education is required, but they have no options to improve their skills as short duration permits prevent them from attending a school or undertaking on-the-job training.

Another reason why legal and illegal immigrants have different levels of skills may lie in the immigration policy set out by the governments of host countries. Some developed countries accept only those skilled workers whose abilities they need. For the less qualified and unskilled workers, the possibility of legal entry appears to be more limited[11]. The rationale behind this policy is to minimize the negative externalities (e.g. reduction in the wage of low-skilled workers) associated with a large inflow of immigrants. Led by Canada and Australia, many government are redesigning their migration policy not just to admit, but to attract highly skilled workers (The Economist. 2002)

Chiswick (1988) argues that differences in skill levels may also explain why the wage gap is a greater incentive to migrate to the US among Mexican illegal aliens relative to legal aliens. As the wage gap between the US and Mexico is larger for those workers with lower level of skills, this may generate a greater outflow of illegal immigrants relative to the legal ones.

D) Attitude toward risk

Kondoh (2000) argues that while it is reasonable to assume legal immigrants to be risk-neutral, illegal immigrants are not always risk-adverse. Individuals who are unhappy in their impoverished home country, who are keen to escape, may sometimes to emigrate even in a high-risk situation, if there is the possibility of an income gain.

E) Legal and Illegal immigrants

Krikorian (1997) suggests that there might be a relatively strong link between legal and illegal immigration in the US. The volume of legal migration has risen together with illegal migration. Legal migration increased from 3.3 million in the 1960s to 7.3 million in the 1980s. At the same time, apprehensions of illegal immigrants by the Border Patrol increased from 1.6 millions in the 1960s to 11.9 million in the 1980s. The community of legal immigrants formed since the mid-60s simulated and facilitated the migration of illegal aliens. Legal immigrants had a crucial role in developing strategies for assisting illegal immigrants in the process of adjustment, providing a place

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[11] Canada and Australia admit a few thousand immigrants each year on the basis of the points awarded for a variety of characteristics. These reward skills, education, language and youth.

where newcomers can find support, helping them to find a job. A strong immigrant community and institution reduce the cost of immigration.

4. Conclusions and policy recommendations

<u>Free trade agreements between neighbouring countries with significantly different income levels are likely to lead to more illegal migration at least in the short run.</u>

This statement is the result of three different sets of considerations.

First, since cost is a stronger barrier to migration amongst illegal immigrants relative to legal immigrants, a relatively short distance between the source country and the receiving country is likely to especially foster illegal migration. This geographical proximity acts as a strong incentive for individuals to emigrate illegally as it would not imply serious consequence on their budget if they are apprehended or deported once established in the country of destination.

Second, a significant economic gap between the countries being integrated by free trade is likely to yield more illegal migration relative to legal migration as the former is found to be more responsive to changes in economic conditions relative to the latter.

Third, in the short-term trade liberalization is likely to increase unemployment rate in the poorer country especially among unskilled workers who may decide to immigrate. The spell of unemployment for these individuals can be quite long as there is evidence that economic integration tends to create new jobs particularly for highly skilled workers or new labour force entrants. The unskilled workers are more likely to immigrate illegally than legally as for them a lot of job opportunities are in the informal sector.

In order to reduce the flow of illegal immigrants several policy measures can be taken by the source country as well as by the receiving country. A regards the latter, the following provisions could be adopted.

A) The receiving country should agree to not include in the free trade agreement special clauses that restrict access to its market for those goods for which the source country has a comparative advantage.

B) The receiving country should provide aid to the source country. Aid can enable emigration countries to undertake economic and investment reforms that would otherwise be unattainable. In turn, these reforms may play a crucial role in enabling the source country to achieve sufficient job growth to keep rising proportions of immigrants at home.

C) The receiving country should strengthen migration controls as these can be rather effective in reducing unwanted emigration especially in the short term.

D) The receiving country should take several measures to reduce the size of the informal sector as job opportunities in the shadow economy may attract a large number of illegal workers. For instance, firms who are caught employing an illegal worker should pay a considerably high fine.

On the other hand, the source country may adopt the following provisions in order to alleviate the migration pressure.

A) The source country should implement policies aimed at attracting FDI. These comprise prudent macroeconomic policies (e.g. brining down interest rates) and technology diffusion policies (e.g. strengthening intellectual property protection). FDI can provide the funds, technology and management expertise to increase the number of jobs in emigration countries.

B) Sound capital and human resources allocation polices may play a crucial role in cushioning the effects of trade liberalization measures in the source country. In particular, programmes aimed at facilitating vocational training and retraining may prevent many unskilled individuals, who have lost their job due to the entry into force of the free trade agreement, to emigrate illegally.

Free trade agreements are likely to have positive impact on the export performance of the more developed /receiving country. This effect, however, in the medium-long run may be partially offset by the inflow of illegal migrants. Two sets of reasons suggest that illegal immigrants are likely to yield a decrease in exports. First, illegal immigrants tend to be employed in the informal sector, which, in turn seems to be bias towards the production of non-traded goods (Djajic, 1997). Second, illegal aliens have a low level of educational attainment and skills and hence they are likely to be employed in the production of goods and services intended for domestic sales.

<u>Free trade agreements between countries with similar income levels are likely to lead to more legal migration relative to illegal migration.</u>

This statement is the result of two different sets of considerations.

First, trade between countries with similar income levels may promote legal migration. One may come up with this conclusion by linking together three different empirical findings. First, trade between countries with similar income levels tends to be to a large extent intra-industry trade. Second, several studies suggest that there is a strong complementarity between intra-industry trade and FDI. Third, FDI are likely to yield legal migration as the transfer of technical and marketing know how as well as managerial expertise between affiliates of multinational firms usually involve transferring skilled workers for a shorter or longer period of time.

Second, previous work shows that the size of illegal migration is relatively small between countries if their income gap (often measured in terms of GDP per capita) is quite narrow. Additionally, legal migration is found to be less sensible to changes in economic conditions relative to illegal migration.

If the countries with similar income levels that are being integrated are both high-income countries, then there might be another reason why free trade may lead to less illegal migration. The argument is that economic integration between high-income countries is unlikely to lead to a significant polarisation of economic activities and hence it may reduce migratory pressure. This is because economies of scales matter less within the service sector (which makes up a significant proportion of the GDP in high-income countries) relative to the industrial one. Additionally, one may note that regional concentration of industrial activities (e.g. the automobile industry in Michigan in the US[12]) would have led to the creation of new jobs especially for relatively unskilled people. This, in turn, would have particularly attracted illegal immigrants.

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[12] This example is quoted in De Grauwe (2000)

Bibliography

Abowd, J. and Freeman, R. (1991) "Introduction and Summary", *Immigration, trade and the labour market* ed. Abowd, J. and Freeman, R. (NBER, distributed by University of Chicago Press, Chicago, IL)

Borjas, G and Fisher, E. (2001) "Dollarization and the Mexican labour Market", in *Journal of Money, Credit and Banking*, 33(2), pp. 626-647.

Bratsberg, B. (1995) "Legal versus illegal U.S. immigration and source country characteristics", in *Southern Economic Journal*, 61(3), pp. 715-727

Chiswick, B.R. (1988a) Illegal Immigration and Immigration control, in *Journal of Economic Perspectives*, 2(3), pp. 101-115.

Chiswick, B.R. (1988b) Illegal Aliens: *Their Employment and Employers. Upjohn Institute for Employment Research*, Kalamazoo, Michigan.

Chiswick, B.R. and Miller, P.W. (1999) "Language skills and earnings among legalized aliens", in *Journal of Population Economics*, Vol. 12 (1), pp. 63-89.

Collins, W., O' Rourke, K. and Williamson, J.G. (1999) "Were trade and factor mobility substitutes in the history", *Migration: The Controversies and the Evidence*, ed. Faini, R., De Melo, J-M. G... and Zimmermann, K. Cambridge University Press.

De Grauwe, P. (2000) *Economics of Monetary Union*, Oxford University Press.

Di Mauro, F. (2002) *Intra-industry investment: evidence, determinants and links to intra-industry trade*, ULB and CEPS, Brussels, mimeo.

Díaz-Emparanza, I. and Espinosa, A.M. (2002) *Immigrants in Spian: skills acquisition and development. A regional study*, paper presented at the WIDER conference in Helsinki, September 27-28, 2002.

Djajic, S. (1997) "Illegal immigration and resource allocation", in *International Economic Review*, Vol. 38, 97-117.

The Economist (2002) *The longest journey*, Vol. 365, Issue 8297, p. 3, 2/11/2002

Etheier, W. (1986) "Illegal immigration: The Host-Country Problem", in *American Economic Review*, 76(1) , pp. 56-71.

Faini, R. and De Melo, J-M. G.. (1999) "Globalisation and migratory pressure from developing countries: a simulation analysis ", *Migration: The Controversies and the Evidence*, ed. Faini, R., De Melo, J-M. G... and Zimmermann, K. Cambridge University Press.

Faini, R. and Venturini, A. (1993) "Trade, aid and migration. Some basic policy issues", in *European Economic Review*, 37(2-3), pp. 435-442.

Feenstra, R.C. and Hanson, G.H. (1995) *Foreign Direct Investment and Relative Wages: Evidence from Mexico's Maquiladoras'*, NBER Working Paper, No. 5122,

Fogel, W. (1980) "United States Immigration Policy and Unsanctioned Migrants", in *Industrial and Labor Relations Review*, April, pp. 295-311.

Gani, A. and Ward, B.D. "Migration of professionals from Fiji to New Zealand: a reduced-form supply-demand model", in *World Development*, 23(9) pp. 1633-1637.

Garson, J.P. (1999) "Where do illegal migrants work", in The OECD *Observer*, No. 219, December

Globerman, S. (2000) "Trade liberalisation and the migration of skilled professionals and managers: the North American experience", in *World Economy*, 23(7), pp. 901-922.

Gomez y Paloma, S and Zappacosta, M. (2000), "Economic Impacts of the Euro-Mediterranean Association Agreements", in *The IPTS Report*, European Commission, Joint Research Centre, n.43, April, pp.18-25.

Greenaway, D., Hine, R. and Wright, P.(1999) "An empirical assessment of the impact of trade on employment in the United Kingdom", in *European Journal of Political Economy*, Vol. 15, pp. 485-500.

Hanson, H.G., Robertson, R. and Spilimbergo, A. (2002) Does border enforcement protect US workers from illegal immigration?, in *Review of Economics and Statistics*, 84(1), pp. 73-92.

Head, K. and Ries, J. (1998) "Immigration and trade creation: Econometric evidence from Canada", in *Canadian Journal of Economics*, 31(1), pp. 47-62.

Helliwell, J.F.(1997) "National Borders, Trade and Migration", in *Pacific Economic Review*, 2(3), pp. 165-185.

Kohli, U. (2002) "Migration and foreign trade: Further results", in *Journal of Population Economics*, Vol. 15, pp. 381-387.

Kondoh , K. (2000) "Legal migration and illegal migration: the effectiveness of qualitative and quantitative restriction policies", in *Journal of International Trade and Economic Development*, 9(3), pp. 223-241.

Krikorian (1997) "The Link: Legal and Illegal Immigration", New York Post, February, 16, 1997.

Krugman, P. (1991) *Geography and Trade*, Cambridge , Mass.: MIT Press.

Lam, Kit-Chun (2002) "Interaction between economic and political factors in the migration decision", in *Journal of Comparative Economics*, Vol. 30, pp. 488-504.

Martin, P. and Straubhaar, T. (2002) "Best practices to reduce migration pressure", in *International Migration*, 4(3), pp.5-21.

Martin, P.(2002) *Economic Integration and Migration: The Mexico-US Case*, paper presented at the WIDER conference in Helsinki, September 27-28, 2002.

Massey, D.S. (1987) "Do Undocumented migrants earn lower wages than legal immigrants? New evidence from Mexico", in *International Migration Review*, Vol. 20, pp. 236-274.

Massey, S. D. (1999) "International Migration at the Dawn of the Twenty-First Century: the role of the Sate", in *Population and Development Review,* 25(2), pp. 303-322.

Massey, D. (1987) "Do Undocumented Immigrants Earn Lower Wages that Legal Immigrants: New Evidence from Mexico", in *International Migration Review*, Vo. 21, pp. 236-274.

Markusen, J.R. (1983) "Free movements and commodity trade as complements", in *Journal of International Economics*, Vol. 14, pp. 341-356.

Markusen, J.R. and Venables, T. (1995) *Multinational Firms and the New Trade Theory*, NBER Working Paper, No. 5036

Nassar, H. and Ghoneim, H. (2002) *Trade and Migration, Are they complements or substitutes: a review of four MENA countries*, Discussion paper, Center for Economic & Financial Research and Studies, Cairo University.

North, D.S. and Houston, M (1976) *The Characteristics and Role of Illegal Aliens in the United States Labor Market: An Exploratory Study*. Mimeo, Linton and Co., Washington, D.C.

Rivera-Batiz, F. L. (1999) "Undocumented workers in the labor market: an analysis of the earnings of legal and illegal Mexican immigrants in the United States", in *Journal of Population Economics*, Vol. 12 (1), pp. 91-116.

Rodrik, D. (1997) *Has Globalization gone too far?*, Institute for International Economics, Washington D.C.

Schiff, M. (2002) "Love thy neighbor: trade, migration, and social capital", in *European Journal of Political Economy*, Vol. 18, pp. 87-107.

Schneider, F. and Enste, D. (2000) *Shadow Economies around the World: Size, Causes, and Consequences*, IMF Working Paper, WP/00/26.

Seymour A. (2001) "Free trade agreements and their effect on migration", in *LMTBusiness Journal*, 4 June, p.7

Straubhaar, T. (1988) "International labour migration within a common market: some aspects of EC experience", in *Journal of Common Market Studies*, XXVII(1), pp. 45-61.

Svennson, R. (1996) "Effect of overseas production on home country exports: evidence based on Swedish multinationals", in *Weltwirtschaftliches Archiv*, 132(2), pp. 304-329.

Tapinos, G. (1999) "Illegal immigrants and the labour market", in The OECD *Observer*, No. 219, December

Zimmermann, K. (1992) *Industrial restructuring, unemployment and migration*, Paper 92-11, Munich- Department of Economics.

Table 1: Empirical macro-studies on illegal migration

Study	*Years covered by the study*	*Area covered by the study*	*Proxy for illegal immigrants*	*Data source*
Hanson and Spilimbergo (1999)	1968-1996	US-Mexico	Illegal immigrants were proxied by the number of individuals apprehended by the US Border Patrol while attempting to cross the US borders illegally	US Immigration and Naturalization Service (INS)
Hanson, Robertson and Spilimbergo (2002)	1980-1996	US-Mexico	Illegal immigrants were proxied by the number of individuals apprehended by the US Border Patrol while attempting to cross the US borders illegally	US Immigration and Naturalization Service (INS)
Bratsberg (1995)	-1986-1989	US-several foreign countries	Amnesty applications resulting from the Immigration Reform Control Act of 1986 are used as measures of illegal migration flow to the US	US Immigration and Naturalization Service (INS)
Borjas and Fisher (2001)	1968-1996	US-Mexico	Illegal immigrants were proxied by the number of individuals apprehended by the US Border Patrol while attempting to cross the US borders illegally	US Immigration and Naturalization Service (INS)

Table 2: Empirical micro-studies on illegal migration

Study	Years covered by the study	Area covered by the study	Data on illegal immigrants	Data source
Rivera-Batiz (1999)	1989-1992	US-Mexico	National sample of illegal immigrants granted amnesty under the 1986 Immigration Reform and Control Act (n=6,193).	Legalized Population Survey (LPS). This study exploits the longitudinal component of this data set
North and Houston (1976)	1975	US-several foreign countries	Sample of illegal immigrants apprehended by the INS (n=793)	US Immigration and Naturalization Service (INS)
Massey (1987)	1987	US-Mexico	Sample of illegal immigrants interviewed in their region of origin in Mexico (n=232).	Massey's own data set
Chiswick (1988b)	1975	US-several foreign countries	Sample of illegal immigrants (n=292)	
Chiswick and Miller (1999)	1989	US-Mexico	National sample of illegal immigrants granted amnesty under the 1986 Immigration Reform and Control Act (n=6,193).	Legalized Population Survey (LPS).