THE IMPACT OF IMMIGRATION ON BI-LATERAL TRADE: OECD RESULTS FROM 1991-2000

Joshua J. Lewer, West Texas A&M University

ABSTRACT

This paper investigates the linkages between the movement of people and the resulting flow of international trade. Immigration from one country to another potentially influences the flow of goods and services between those countries through a variety of economic and social channels. By applying cross-sectional data from 1991 to 2000 for sixteen OECD countries to an extended gravity model of international trade, the results indicate that immigration flows have a significantly positive impact on the flow of bi-lateral trade between the immigrant source country and immigrant destination country.

INTRODUCTION

Immigration has grown rapidly over the latter half of the twentieth century. Nearly 4 percent of the world's people now live in a country they were not born in, a very high percentage by historical standards. Most other aspects of international economic activity have also grown rapidly over the past half century. For example, global international trade has grown from about 6 percent of GDP in 1950 to nearly 20 percent of GDP in 2004. And global international foreign direct investment flows have grown from close to nothing in 1950 to $1.3 trillion U.S. in 2000, see UNCTAD (2001).

The simultaneous growth of international trade, investment, and migration suggests that they are related. Their growth together could be a spurious relationship, however. There is growing evidence supporting the idea that immigration has a positive impact on the flow of trade between an immigrant's source and destination country. Pioneering studies include Gould (1994), Head and Ries (1997), Dunleavy and Hutchinson (1999, 2001), and Girma and Yu (2000). Immigrants establish links between their host and home countries through language, product demand, knowledge of home-country markets and financial institutions, business contacts, and culture. The effect of immigration on international trade must be added to the traditional economic analysis of immigration, which tends to focus almost exclusively on labor market effects. See, for example, Card (1990), Borjas (1994, 1995), and Friedberg and Hunt (1995) for an introduction to this extensive literature.

The purpose of this article is to determine the quantifiable relationship between immigration flows and bi-lateral trade flows. To this end, this paper applies an extended gravity model of international trade that includes immigration to sixteen OECD countries from years 1991 to 2000. Scaled OLS econometric methodology of Wang and Winters (1992) and Eichengreen and Irwin (1995) is applied to the cross-

section data, and indicate that increases in immigration from source to destination country is associated with a small but significant increase in bi-lateral trade flows.

This paper proceeds as follows: section II develops several theoretical channels through which immigration could potentially impact international trade, section III presents the regression model to be tested, section IV reports the cross-section and panel data findings, and section V concludes with implications from the study.

THE LINKAGES BETWEEN IMMIGRATION AND TRADE

Immigration can potentially impact international trade through several channels. Some of these channels may be trade-promoting while others may be trade-diverting. This article examines six channels through which immigration may affect trade. Immigration may have an impact on establishing networks, changing national income levels, increasing foreign direct investment flows, influencing the size of government, changing a country's dependency ratio, and influencing a country's overall openness to foreign transactions.

Saxenian (2002) argues that immigrants build "social networks that span national boundaries and facilitate flows of capital, skill and technology. In so doing, they are creating transnational communities...that allow local producers to participate in an increasing global community" (Saxenian, 2002; pp. 28). Immigrant networks are discussed in a historical setting by Greif (1989, 1994), Rauch (1999, 2001) and Rauch and Trindade (2002). Networks can *divert* trade as well as *create* trade. Mokyr (1990), Holmes and Schmitz (1996), and Parente and Prescott (2000) showed how vested interests often obstruct competition and economic change, which suggests that networks may hinder the expansion of trade by limiting entry to new participants and new products.

The simple labor supply effect of immigration that is presented in all textbooks of international economics suggests that immigration has income effects, and these income effects potentially can affect trade flows. Many recent studies have begun to refute the commonly held belief that immigration reduces wages in the destination country. Some authors have suggested large distributive income effects of immigration, such as Borjas (1994, 1995). On the other hand, Friedberg and Hunt (1995) noted that wages/income are not adversely affected by immigration.

One image of an immigrant community is that of an enclave, isolated from the native community (e.g. Chinatown, Little Italy, etc.). But many recent studies have shown this is not the case. For example, Saxenian (2002) suggests that immigrant communities lead to increased flows of international investment that relate economic interests well beyond the confines of specific immigrant enclaves. In a classic article, Mundell (1957) showed that the factor price equalization theorem from the Heckscher-Ohlin model can be turned on its head to show that: "Commodity movements and factor movements are substitutes" (Mundell, 1957; pp. 321). More recently, however, Clausing (2000) found a strong positive relationship between FDI and international trade.

Wacziarg (2001) found that countries with larger trade share and/or open trade policies had larger governments. Many authors have suggested that immigration increases government fiscal spending and burden in countries that receive immigrants, but the evidence does not support this contention. Kirchner and Baldwin (1997) show that the federal government actually is a net gainer in income tax and social security tax revenue, while the state and local governments experience

the increased fiscal burden. Zaretsky (1997) shows that in the long-run the government in the host country is a net beneficiary of immigration. Razin, Sadka, and Swagel (1998) suggest that government expenditures and taxes are endogenous variables that adjust to the effects of immigration and prevent the fiscal burden from rising; that is, natives simply reduce government benefits that might accrue to immigrants when immigrant flows become large.

Immigrants tend to be, on average, younger than the destination country's population. In most of the high-income host countries, immigrants tend to also have more children per women than the native population. Immigration therefore changes a country's demographics, and a younger labor force will impact many fundamentals of an economy, among them imports and exports. The expected sign of dependency ratio on trade for the host and home country is however ambiguous. Coppel, Dumont, and Visco (2001) link the demographic effects to the overall issue of population ageing that is expected to have onerous effects on the fiscal burden of working-age populations in most developed economies. According to Cooper (2002) and OECD (2002), stagnant economies are not expected to trade as much as vibrant, growing economies; hence, if immigration mitigates the negative growth effects of population ageing, its could be expected to also enhance international trade.

All other things equal, countries with lower trade barriers will trade more than countries whose governments restrict international trade. Are countries with more immigrants more open to trade in goods and services? It seems reasonable to believe that all things equal, countries that are more open to foreigners will also be more open to trade more, but the "legislation effect" whereby xenophobic and opportunistic politicians impose trade restrictions resulting from public backlash may occur, leaving the relationship between immigration and trade uncertain.

SPECIFIYING THE GRAVITY MODEL OF TRADE

To examine the extent in which immigration flows influence trading patterns, one must hold constant all other natural economic determinants. The gravity model has been extensively applied, see for example Frankel, Stein, and Wei (1995), McCallum (1995), Eichengreen and Irwin (1995), Deardorff (1997), Frankel and Romer (1999), Freund (2000), and Frankel and Rose (2002) and widely accepted as the preferred systematic framework for measuring "natural" trade patterns based on economic size (i.e. mass) and geographic distance between economies. In addition to explaining roughly 60-70 percent of the cross section variation in world trade, the basic gravity equation is theoretically interesting because it can be derived from a number of traditional trade models, see Linnemann (1966), Linnemann (1969), Leamer and Stern (1970), Anderson (1979), and Deardorff (1997). The purpose of this study is to determine how much of world trade is determined by gravity factors, and how much is left over to be attributed to immigration, if any at all.

The standard gravity equation, borrowed from physics, specifies trade between a pair of countries to be a negative function of the distance between the countries and a positive function of their combined national products. The underlying "gravitational" relationship is:

$$TRADE_{ij} = f(GDP_i GDP_j / DIST_{ij}), \qquad (1)$$

where TRADE is the total value of bilateral trade between countries i and j, GDP is the respective Gross Domestic Product in millions of U.S. dollars, and DIST is

straight-line distance (in kilometers) between the economic centers of country i and j. For the purposes of this study, country i will represent OECD countries (i.e. immigrant destination countries) and country j will represent OECD trading partners (i.e. immigrant source countries). Taking the logs of both sides yields (natural log variables in lower case):

$$trade_{ij} = a_0 + a_1(gdp_i gdp_j) + a_2 dist_{ij} + u_{ij}. \quad (2)$$

Most studies augment equation (2) with variables to account for geographic, ethnolinguistic, and economic conditions. This article follows numerous authors and specifies the following gravity equation which controls for the basic determinants of international trade:

$$trade_{ij} = a_0 + a_1(gdp_i gdp_j) + a_2(pop_i\, pop_j) + a_3 dist_{ij} + a_4 CONT_{ij} + a_5 LANG_{ij} + a_6 LINK_{ij} + a_7 FTA_{ij} + u_{ij}, \quad (3)$$

where $pop_i\, pop_j$ is the log of the product of the populations in country i and j, CONT, LANG, LINK, and FTA are dummy variables which take the value 1 for pairs of countries which have a contiguous border, common language, common colonial linkage, and common free trade area agreement, respectively. The anticipated sign on all four dummy variables is positive, reflecting the idea that proximity, common language, historical links, and political agreements are trade creating networks.

To estimate the impact of immigration on trade, an additional variable is added to equation (3). This variable, labeled $immigration_{ji}$ for simplicity, measures the stock of foreign born from country j living in country i as a fraction of country i's population. The $immigration_{ji}$ variable provides several valuable characteristics about immigration from source country to OECD countries. First of all it is a measure of how significant each specific immigrant group is within each OECD country. Over the ten-year cross-section, $immigration_{ji}$ also changes as immigration grows/slows relative to the destination country's' population, which of course is made up of other immigrant groups. Adding $immigration_{ji}$ to equation (3) creates the model of interest. The model now becomes:

$$trade_{ij} = a_0 + a_1(gdp_i gdp_j) + a_2(pop_i\, pop_j) + a_3 dist_{ij} + a_4 CONT_{ij} + a_5 LANG_{ij} + a_6 LINK_{ij} + a_7 FTA_{ij} + a_8 immigration_{ji} + u_{ij}. \quad (4)$$

Because immigration may have trade enhancing or diverting effects, from a theoretical perspective, the anticipated coefficient of $immigration_{ji}$ is ambiguous. Table 1 below details the largest source of immigrants into the sixteen OECD countries for years 1991 and 2000. Immigration flows are officially recorded in annually annual totals for the sixteen OECD countries; therefore, this paper applies ten years of data.

TABLE 1
LISTING OF THE LARGEST STOCK OF FOREIGN BORN IMMIGRANTS
BY SOURCE AND DESTINATION COUNTRY, 1991 AND 2000

Destination Country	Source Country of Immigrants 1991	Source Country of Immigrants 2000
Australia	United Kingdom	United Kingdom
Belgium	Turkey	Turkey
Canada	Hong Kong	Hong Kong/China
Denmark	Turkey	Yugoslavia
Finland	Sweden	Russia
France	Algeria	Morocco
Germany	Turkey	Turkey
Hungary	Romania	Romania
Japan	South Korea	South Korea
Netherlands	Turkey	Morocco
Norway	Denmark	Sweden
Portugal	United Kingdom	United Kingdom
Sweden	Finland	Finland
Switzerland	Italy	Yugoslavia
United Kingdom	India	India
United States	Mexico	Mexico

Source: OECD International Migration Database.

ESTIMATION AND FINDINGS

Most studies estimate equations (3) and (4) by using double logarithmic form. One of the main benefits of using logarithms is ease of interpretation. That is, the resulting ordinary least squares coefficient estimates are elasticities. However, one problem with this technique is that country pairs whose bilateral trade is zero are omitted. Roughly five percent of the observations on $TRADE_{ij}$ are zero in the cross-sectional samples, meaning that for any given year, OECD countries have no recorded trade flows with roughly five percent of the selected trading countries in the research sample. These omitted observations contain information about why some countries do not trade at all.

One solution is to specify the dependent variable in levels and use Tobit estimation. Interpretation of Tobit output is complicated by the fact that coefficients and standard errors are normalized during estimation, and the constant elasticity relationship is lost. The approach employed in this study is the scaled OLS (SOLS) technique of Wang and Winters (1992) and Eichengreen and Irwin (1995), which yields results similar to Tobit estimation while maintaining the double log form. Here the dependent variable is expressed as $\log(1 + TRADE_{ij})$. For small values of $TRADE_{ij}$ the logarithm is close to zero, and for large values of $TRADE_{ij}$ the logarithm of the transformed variable is close to the logarithm of $TRADE_{ij}$; therefore approximating a "semi-log Tobit relationship." When an equation is estimated with SOLS, the least squares estimates are multiplied by the reciprocal of the proportion of the observations in which $TRADE_{ij}$ does not equal zero. William Greene (2000) states, "A striking empirical regularity is that the maximum likelihood estimates can often be approximated by dividing the OLS estimates by the proportion of nonlimit observations in the sample" (Greene, 2000; pp. 912). The empirical results from both SOLS and Tobit estimation techniques are reassuringly similar. This article will focus on the SOLS estimates, which according to Deardorff (1997) are preferred to Tobit, and they have a much easier interpretation.

TABLE 2
AUGMENTED GRAVITY MODEL OF TRADE

		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
	Constant	3.362 (2.84)**	4.160 (3.79)**	3.470 (3.11)**	3.469 (3.02)**	1.066 (0.98	0.764 (0.69)	1.322 (1.25)	0.819 (0.80)	1.015 (1.01)	1.268 (1.14)
$gdp_i gdp_j$		0.211 (5.23)**	0.201 (5.37)**	0.237 (5.88)**	0.205 (5.28)**	0.352 (8.33)**	0.356 (8.32)**	0.339 (8.10)**	0.377 (9.49)**	0.369 (9.35)**	0.352 (8.95)**
$pop_i pop_j$		0.359 (5.54)**	0.356 (5.95)**	0.357 (6.03)**	0.413 (7.28)**	0.273 (4.90)**	0.277 (4.97)**	0.301 (5.61)**	0.234 (4.73)**	0.193 (3.92)**	0.245 (4.89)**
$dist_{ij}$		-0.407 (-3.45)**	-0.473 (-4.44)**	-0.507 (-4.92)**	-0.477 (-4.66)**	-0.508 (-5.57)**	-0.481 (-5.32)**	-0.519 (-5.91)**	-0.519 (-6.13)**	-0.474 (-5.58)**	-0.511 (-5.83)**
CONT		0.341 (0.94)	0.168 (0.51)	0.062 (0.19)	0.178 (0.57)	0.225 (0.81)	0.279 (1.01)	0.253 (0.94)	0.287 (1.10)	0.333 (1.27)	0.296 (1.17)
LANG		0.320 (0.88)	0.475 (1.66)*	0.538 (1.66)*	0.575 (1.86)*	0.441 (1.65)*	0.425 (1.53)	0.414 (1.55)	0.397 (1.53)	0.472 (1.82)*	0.481 (1.89)*
LINK		0.793 (2.14)**	0.817 (2.45)**	0.752 (2.34)**	0.699 (2.20)**	0.813 (2.86)**	0.815 (2.88)**	0.854 (3.11)**	0.889 (3.34)**	0.615 (2.29)**	0.728 (3.08)**
FTA		0.716 (3.28)**	0.625 (3.19)**	0.627 (3.34)**	0.734 (3.98)**	0.567 (3.39)**	0.548 (3.31)**	0.584 (3.65)**	0.499 (3.21)**	0.511 (3.26)**	0.558 (3.54)**
Adjusted R^2		0.396	0.437	0.469	0.478	0.561	0.563	0.573	0.589	0.559	0.569

Notes: Figures in parentheses are heteroskedasticity-consistent *t*-statistics. ** indicates significant at the 95% level, and * at the 90% level. There are 271 data points. OECD countries include: Australia, Belgium, Canada, Denmark, Finland, France, Germany, Hungary, Japan, Netherlands, Norway, Portugal, Sweden, Switzerland, United Kingdom, and the United States.

Scaled OLS estimates for equation (3) are summarized in Table 2. All of the arguments of the augmented gravity model have the correct sign and almost all are significantly different than zero. None of the independent variables have a correlation of above 0.5, implying that excessive multicollinearity is not a problem. Geographic distance and economic size matter for bilateral trade across the 74 country sample. For example, the coefficient on distance is -0.511 in 2000, suggesting that for every 10 percent increase in distance; bilateral trade is reduced by 5.11 percent. It is important to note that common membership in a regional free trade area (FTA) enhances trade among member countries. The statistically significant coefficient on FTA is 0.558 for the year 2000, suggesting that, *ceteris paribus*, countries with common membership trade roughly 74 percent ($e^{0.558}$-1 = 0.747) more than they do when there is no common regional trading agreement. This result reinforces Frankel, Stein, and Wei (1995) who argue that free trade areas have contributed to the growth of regionalism, and that the "regionalization" of world trade may reduce world economic welfare relative to a most favored nation norm.

Table 3 reports the results of equation (4). The augmented gravity model results in Table 2 do not change significantly with the addition of $immigration_{ji}$, indicating the importance of geographic and institutional variables on trade. The $immigration_{ji}$ coefficient is significantly positive for all years in which data are available. Notice that the size of the coefficient does not really change greatly for the ten year study, ranging from 0.003 in 1993, 1998, 1999 and 2000 to 0.004 for the other six years. This result seems to indicate that as OECD countries receive immigrants from other/developing countries, the trade effect of immigration remained somewhat constant. A 10 percent increase in the share of foreign born immigrants increased bi-lateral trade from source to destination country (i.e. OECD country) by a marginal 0.03 percent in 2000. Countries that receive immigrants from a particular source country will on average trade slightly more with those source countries than countries in which OECD countries receive no immigrants from. The results reinforce the trade-creating theories of immigration summarized in section two of this paper.

This paper also estimates the immigration-trade relationship with fixed-effects panel data. The panel data methodology in this paper follows the pooling technique described by Kmenta (1986). Estimation procedures allow for heteroskedasticity over cross-sections (i.e. allows for the error terms for each cross section to differ as one might expect from very large to smaller states) and timewise autocorrelation over time within cross-sections. This approach allows for country-specific differences through dummy variables, as it is implicitly assumed that the coefficient estimates for the included variables are identical across all countries.

The OECD panel data results from equation (4) are presented in Table 4 below. Notice that the results are as theoretically expected and similar to the yearly cross-section results presented above. Besides population size, the augmented gravity model factors remain significant at the 95 percent level. The immigration coefficient is much larger with the panel data estimation, indicating its larger influence over a ten-year period than its influence year-to-year. The coefficient on the growth of immigration from source to destination country, $immigration_{ji}$, 0.138, suggesting that a 10 percent increase immigration increases bi-lateral trade from source to destination country by 1.38 percent over the decade.

TABLE 3
IMMIGRATION AND TOTAL TRADE FOR 16 OECD COUNTIRES

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Constant	4.024 (3.58)**	4.812 (4.61)**	3.922 (3.72)**	3.881 (3.56)**	1.254 (1.24)	0.965 (0.95	1.535 (1.55)	1.262 (1.31)	1.472 (1.54)	1.512 (1.60)
$gdp_i gdp_j$	0.229 (6.00)**	0.213 (6.01)**	0.261 (6.83)**	0.227 (6.14)**	0.388 (9.81)**	0.392 (9.83)**	0.370 (9.38)**	0.394 (10.50)**	0.385 (10.28)**	0.389 (10.45)**
$pop_i pop_j$	0.337 (5.51)**	0.341 (6.01)**	0.332 (5.96)**	0.391 (7.24)**	0.236 (4.55)**	0.240 (4.65)**	0.269 (5.33)**	0.226 (4.85)**	0.186 (4.00)**	0.204 (4.35)**
$dist_{ij}$	-0.532 (-4.68)**	-0.583 (-5.67)**	-0.617 (-6.26)**	-0.579 (-5.88)**	-0.616 (-7.16)**	-0.590 (-6.94)**	-0.619 (7.40)**	-0.623 (-7.64)**	-0.577 (-7.00)**	-0.589 (-7.31)**
CONT	0.083 (0.24)	0.057 (0.18)	0.168 (0.56)	0.044 (0.15)	0.006 (0.02)	0.044 (0.17)	0.042 (0.16)	0.084 (0.34)	0.135 (0.54)	0.118 (0.50)
LANG	0.357 (1.05)	0.513 (1.67)*	0.547 (1.96)*	0.609 (2.08)**	0.466 (1.82)*	0.452 (1.78)*	0.438 (1.75)*	0.429 (1.75)*	**0.503 (2.04)**	0.509 (2.06)**
LINK	0.552 (1.47)	0.615 (1.82)*	0.548 (1.56)	0.516 (1.48)	0.632 (2.09)**	0.628 (2.10)**	0.695 (2.39)**	0.651 (2.56)**	0.584 (1.89)*	0.576 (1.66)*
FTA	0.569 (2.74)**	0.502 (2.69)**	0.499 (2.81)**	0.617 (3.52)**	0.428 (2.74)**	0.409 (2.65)**	0.465 (3.08)**	0.395 (2.67)**	0.408 (2.74)**	0.464 (2.93)**
$immigration_{ji}$	0.004 (5.70)**	.004 (5.61)**	0.003 (3.72)**	0.004 (5.61)	0.004 (6.62)**	0.004 (6.80)**	0.004 (6.22)**	0.003 (5.88)**	0.003 (5.66)**	0.003 (5.47)**
Adjusted R^2	0.479	0.483	0.517	0.521	0.613	0.617	0.616	0.625	0.595	0.588

Notes: Figures in parentheses are heteroskedasticity-consistent *t*-statistics. ** indicates significant at the 95% level, and * at the 90% level. There are 271 data points. OECD countries include: Australia, Belgium, Canada, Denmark, Finland, France, Germany, Hungary, Japan, Netherlands, Norway, Portugal, Sweden, Switzerland, United Kingdom, and the United States.

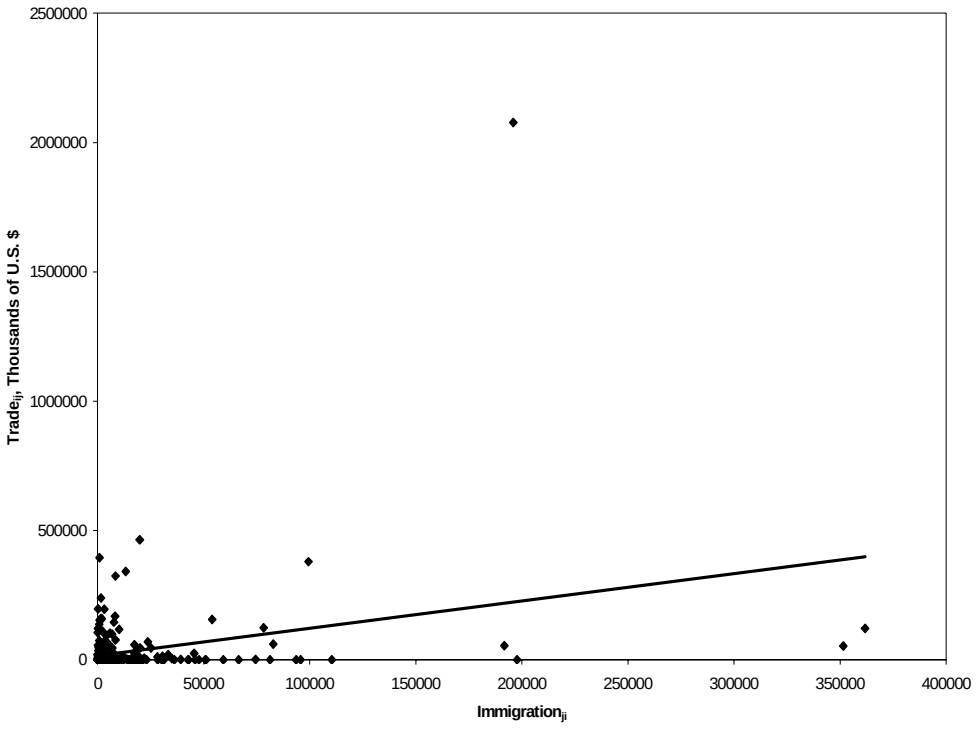
TABLE 4
PANEL DATA ESTIMATATION

TEST	Constant	$gdp_i gdp_j$	$pop_i pop_j$	$dist_{ij}$	CONT	LANG	LINK	FTA	$immigration_{ji}$	BUSE R^2
Fixed Effects	-7.849 (-14.18)**	0.705 (49.18)**	0.011 (0.63)	-0.477 (-11.79)**	0.370 (3.62)**	0.518 (5.12)**	0.374 (3.38)**	0.761 (12.13)**	0.138 (6.26)**	0.731

Notes: There are 2439 data points. Figures in parentheses are *t*-statistics. **Significant at the 95% level. *Significant at 90% level. The joint hypothesis of the cross-section units having a common intercept is rejected (Ho: $\gamma_2 = \gamma_3 = \ldots = \gamma_{16} = 0$, Fcalc = 13.41 > Fcrit = 1.30).

For a visual representation of the immigration-trade relationship, see Figure 1 below. This figure is derived from 2000 immigation and bi-lateral trade data. Notice the trend is positive, but that the slope is relatively flat. This figure reinforces the empirical findings in Tables 3 and 4 above, namely that immigration has a small but significantly positive effect on bi-lateral trade.

FIGURE 1
BI-LATERAL TRADE AND IMMIGRATION FLOWS, 2000



CONCLUSION

While international migration is probably the oldest form of globalization, there still remains strong opposition to immigration in most industrialized countries. This is exemplified by the fact that 60 percent of Americans view immigration as a "bad thing" as reported by Miller (1994). Immigration does seem to have some channel effects on economic activity. As reported above, immigration has been shown to impact labor force outcomes, see Card (1990) and Friedberg and Hunt (1995), economics and social networks, see Greif (1989, 1994), Rauch (1999, 2001) and Holmes and Schmitz (1996), income growth, see Borjas (1994, 1995), international investment, see Saxenian (2002), government size, see Kirchner and

Baldwin (1997) and Zaretsky (1997), demographics, see Coppel, Dumont, and Visco (2001), and trade policies.

The purpose of this article is to estimate the quantifiable relationship between immigration and bi-lateral trade flows. While other studies have examined the relationship between immigration and international trade in a historical context, see Gould (1994), Head and Ries (1997), and Dunleavy and Hutchinson (1999, 2001), this article focuses on sixteen OECD countries and their respective trading partners for a relatively contemporary time period, 1991 to 2000. Using an extended gravity model that controls for geographical factors, support for a significantly positive relationship between the flow of people and international trade is found. The findings suggest that a 10 percent increase in the share of foreign-born immigrants will increase bi-lateral trade from source to destination country by roughly 0.04 percent. From a policy perspective, if it is the intention of policy-makers to improve economic growth, then international immigration should be promoted as it is a source of enhancing international trade.

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DATA APPENDIX

International trade data are taken from the International Monetary Fund's *Direction of Trade Statistics Yearbook, 2000*. Data for Gross Domestic Product in millions of U.S. dollars, population, common members of regional trade blocks [Andean Group, Asia Pacific Economic Cooperation (APEC), Association of Southeast Asian Nations (ASEAN), European Union (EU), Latin American Integration Association (LAIA), Southern Cone Common Market (MERCOSUR), North American Free Trade Area (NAFTA), and Southern Africa Development Community (SADC)] come from the World Bank's *2001 World Development Indicators*. Annual migration statistics and stocks of foreign population by nationality come from OECD's International Migration Database. Distance is the number of kilometers between capital cities, and comes from the U.S. Geological Survey at (ftp://kai.er.usgs.gov/pub/). Data on common border, common language, and common colonial link come from the *CIA World Factbook 2000* at (http://www.cia.gov/cia/publications/factbook/).

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