International Economic Integration and Human Development: Informing the Debate in Favour or Against Formal Integration and Migration

Eduardo Ivan Palavicini-Corona, (PhD)
Mexican Economy Ministry / CEIDIR.ORG, Mexico

Abstract

Recently, some leaders in different countries have promoted positions towards immigration and formal international economic integration that contest policy recommendations resting on predominant microeconomic and international economics theories. The cases of Brexit, the new presidency in the United States of America, and election processes in countries such as Germany and France have put forward topics showing distrust or, at least, great disappointment in free markets and open economies. Inequality in income distribution and social exclusion in developing and developed countries have triggered a protectionist discourse of some political or independent leaders seeking to gain political power. All this might represent a significant challenge for higher education institutions offering courses and doing research based on the principles of mainstream economics.

Considering the previous context, using panel data for the period from 1985 to 2014, this paper analyses the impact of the degree of formal integration and migration on human development in 26 countries located in three continents and that are part of international integration instruments such as the World Trade Organisation, the North American Free Trade Agreement (NAFTA) and the European Union. The analysis sheds light on what makes a difference in terms of human development and to what extent, contributing to inform the debate on the impact of countries' openness to international flows of goods, services and labour.

Keywords: Economics, migration, globalisation, protectionism, higher education, human development

Introduction

Microeconomics and international economics courses offered at the main universities around the globe are based on the fundamental concepts and theories of mainstream economics.[1]

For example, microeconomic courses go through the prevailing ideas behind markets' functioning such as the basic building blocks of markets, demand and supply, explaining how demand and supply interact to determine the quantity of goods or services traded and the price paid for them. They also study markets considering the idea of perfect competition as a benchmark to analyse efficiency and economic agents' gains in other market conditions. This includes the exploration of real markets and how or to what extent they differ from perfect competition.

In the case of international economics or international trade courses, their foundation is the mainstream theories around the functioning of markets learnt in microeconomics courses, macroeconomics postulates, and the classical fundamental concept of comparative advantage which consider openness to trade as key for reaching economic efficiency and maximum gains.

Recent political vicissitudes have put in perspective a strong view that questions the benefits of aspiring to perfect competition through free international markets of goods and services and, even the labour market openness as in the case of the European Union or the migration, legal or illegal, of working age population from different countries to the United States of America (USA).

However, the debate in favour or against protectionism dates back at least from the XVI century according to Krugman and Obstfeld (1999). The mission of international economics as a branch of economics, as stated by the cited authors, has been to analyse the effects of protectionist policies,

[1] Contents or recommended texts of courses offered at Massachusetts Institute of Technology *(https://ocw.mit.edu/courses/economics/14-01sc-principles-of-microeconomics-fall-2011/Syllabus/ and https://ocw.mit.edu/courses/economics/14-581-international-economics-i-spring-2013/index.htm)*, Harvard *(http://www.summer.harvard.edu/courses/principles-economics/30057 and http://www.hbs.edu/faculty/Pages/item.aspx?num=132)*, the London School of Economics and Political Science *(http://www.lse.ac.uk/resources/calendar/courseGuides/EC/2016_EC315.htm, http://www.lse.ac.uk/study/summerSchools/summerSchool/courses/economics/EC351.aspx and http://www.lse.ac.uk/resources/calendar/courseGuides/EC/2016_EC411.htm)*, Toronto University *(http://calendar.artsci.utoronto.ca/crs_eco.htm#courses)*, and Princeton University *(https://www.princeton.edu/~grossman/Eco551%20Fall%202016%20ReadList.pdf)* were reviewed (Web pages accessed on March 1st , 2017).

criticise them and objectively show the advantages of free international trade.

Considering the support of the general public in different countries to politicians with views against globalisation and international flows of labour, capital, goods and services, it seems that international economics is losing the debate. As a result, this paper presents a simple but rigorous analysis without the characteristic complexities of highly structured models based on strong assumptions to explore quantitatively the impact of international economic integration and migration on human development.

Formal economic integration, migration and human development

Since the last century, formal international economic integration has taken many specific forms from the General Agreement on Tariffs and Trade (GATT) to the World Trade Organisation (WTO), and from it to bilateral or multilateral agreements or other kind of associations. However, one of the main characteristics is that many countries have been participating and competing in international markets by regional blocks. That is the case, for example, of the North American Free Trade Agreement (NAFTA), the European Union (EU) and Mercosur in South America. The case of China is particularly interesting because its participation in international markets has experimented an overwhelming growth through the years even before it became part of the WTO in 2001.

Without doubt greater participation has had an important positive impact on Chinese economic performance and its citizens' material well-being. For a country like Mexico, participating in NAFTA since 1994 with two developed countries, the economic benefits have been evident although openness to trade caused economic structural changes as predicted by international economics, implying that economic agents in less competitive economic activities lost with the agreement. That would be the same in any other country and any particular regional economic integration instrument. In David Ricardo's conceptualisation, the production of a good without comparative advantage would tend to suffer from integration in favour of more efficiently produced imports of that good.

In other words and taking into account other elements of mainstream international economics, international trade can cause strong distributional effects within countries by means of distributional effects between economic sectors or industries as well as between the owners of different factors of production, and even within the same factor of production. An example of the latter is labour depending on the characteristics of the skills needed in the resulting competitive economic activities in comparison with the losing ones.

Overall, international economics experts argue that the economic benefits or gains of international trade are greater than the losses and,

therefore, compensation to losers could happen by means of public policy (Krugman, Obstfeld and Melitz, 2012). In this sense, in terms of the analysis presented in this paper, it is expected that the higher the degree of formal international economic integration in a country, the higher the level of human development. The benefits of such integration generate a positive effect on people's quality of life by means of the market forces and, even more, if public policies manage to tackle the negative income distribution effects for some economic agents.

The relationship between migration and human development can be understood by looking at the main economic reason behind labour mobility between regions within a country and between countries. In general, people look for better present and future income opportunities. If wages or salaries are higher in other places, there is a strong incentive to move residence in a context of free movement of people between boundaries. Even in a context of strong restrictions of many kinds, if the economic incentive is strong enough, people are willing to migrate as the illegal migration of Latin American people to the United States has shown for decades.

Migrants put pressure on the labour markets of the recipient economy as greater supply, other things being equal, would cause salaries to decrease. If this continues happening, microeconomic theory predicts that at some point salaries would converge and migration would reach an end. However, if the recipient economies continue growing and offering opportunities to skilled and unskilled labour, migration would continue. Therefore, migrants would contribute to the economic performance of the recipient economies by fulfilling an excess demand or shortage of labour that cannot be profitably satisfied - considering the market of the good where labour is needed- by the interaction of the local supply and demand (due to a labour supply elasticity close to zero). Considering this simplistic explanation of the phenomenon, a positive net migration would have a positive impact on the economy of the receiving country allowing for better conditions for human development.

Other considerations as migration for other causes such as humanitarian, social or political are left out of this analysis but, if considered, could have different impacts than the one expected here.

Studies within the realm of economic geography could be more powerful to understand the economic impact of labour mobility and its interaction with other elements than considering only the fundamentals of international economics and microeconomic theory.

Model, data, and analysis results

Model and data

Using panel data covering the period from 1985 to 2014, this paper analyses the impact of the degree of formal integration and net migration on human development in 26 countries.

A multiple linear regression of an empirical model that takes the following general form is proposed to assess whether greater net migration and international economic integration have an influence in human development, in what direction and to what extent:

$$HDI_{it} = \alpha + \beta_1 IntInt_{it} + \beta_2 NetM_{it} + \gamma_k X_{kit} + \varepsilon_{it}$$

where HDI_{it} is the dependent or response variable and refers to the human development index in country i in time t. IntInt is one of the independent variables of interest representing the level of economic integration to the world economy, while NetM refers to net migration. X is a vector of control variables, including a number of factors which may affect the human development of the analysed countries, while ε is the error term.

HDI data from 1985, 1990, 1995, 2000, 2005, 2010 and 2014, calculated and published by the United Nations Development Programme[2], was considered for building the dataset. The index is calculated on a scale of 0 to 1, and countries are ranked and classified according to how close their HDI is to one (UNDP, 2000). Originally, medium level human development countries were the ones with a HDI between 0.500 and 0.799. The countries considered with a high level of human development had figures higher than 0.799; and the ones with a low level, figures lower than 0.500. More recently, the UNDP uses a slightly different classification, including the 'very high human development countries' that are the ones with HDI above 0.899 (UNDP, 2009).

The main countries of interest were members of the European Union (EU), NAFTA and Mercosur, plus China and Japan. However, in the end, not all the member countries of the mentioned integration instruments were taken into account because of a lack of information on the dependent or the explanatory variables.[3] In fact, the most complete calculation of the model in terms of incorporated explanatory variables considers 25 countries as reliable information on net migration could not be found for one of the 26 countries.

As far as the degree of international integration is concerned, a number 1 is assigned to a country that, at a particular year, was not even part of the GATT or the WTO, while a 5 denotes that a country was fully

[2] http://hdr.undp.org/en/indicators/137506 (Accessed on January 2nd 2017)

[3] EU countries: Austria, Belgium, Bulgaria, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Netherlands, Portugal, Spain, Sweden and the United Kingdom. NAFTA countries: Canada, Mexico and the United States of America. Mercosur: Argentina, Brazil, Uruguay and Venezuela.

participating in the most ambitious of the integration instruments, the European Union. For example, a 4 is assigned to the United Kingdom in 2014 in comparison to a 5 for Germany as the former does not participate in the monetary union and, therefore, is considered to be less integrated to this international economic block.

Net migration refers to the net total of migrants, that is, the total number of immigrants less the annual number of emigrants, including both citizens and noncitizens of a particular country. The source of information for this and the rest of the independent variables included in the model is the World Bank databank.[4] Table 1 shows a list of control variables and their expected effect on human development.

Table 1. Control variables

Variable	Rationale	Expected impact
Trade (% GDP)	Refers to the sum of exports and imports of goods and services measured as a share of gross domestic product. It represents a measure of countries' openness to trade even if they are not part of formal regional integration instruments.	Positive, indicating that those countries with higher international trade through time, as a proportion of their GDP, experience greater human development.
Urban population (% of total)	Urban population refers to people living in urban areas as defined by national statistical offices. For centuries, the urban-rural landscape has been changing in favour of urban areas, which are seen for many, as engines of economic development.	Positive, meaning that countries with a higher proportion of urban population through time experience higher human development.
Gross fixed capital formation (% of GDP)	In general, gross fixed capital formation includes land improvements; machinery, and equipment purchases; the construction of roads, railways, ports and other infrastructure such as education facilities, hospitals, private residential dwellings, and commercial and industrial buildings, among others. Investment in fixed capital increases the productive	Positive, meaning that the higher the gross fixed capital formation through time, the higher the HDI through its impact on economic performance.

[4] http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators (Accessed from the 4th to the 10th of January 2017)

	capacity of a country.	
Mean years of schooling (years)	Average number of years of education received by people ages 25 and older. It is considered as an indication of the situation of each country in terms of education and a reflection of public policies on the matter through time.	Positive, meaning that the higher the average number of years of education through time, effective policies were applied, and, therefore, the higher the HDI.
Self-employed (% of total employed)	Self-employed workers are people who, working on their own account or with one or a few partners or in cooperative, hold a job which remuneration is directly dependent upon the profits derived from the services and goods produced. Here, it is an indication or approximation to entrepreneurial attitudes. It is expected that the more entrepreneurial a society is, the better the development prospects and results.	Positive, meaning that the higher the percentage of self-employed through time, the higher the HDI.

Results of model computations

According to Agresti and Finlay (2009), correlations between explanatory variables are not a problem if they are not highly associated as multiple linear regression models are designed to allow and adjust for them. In the case of high linear association confirmed by significant correlation factors higher than 0.79 (i.e. multicollinearity), the estimated model presents large standard errors and low precision for the correlated variables coefficients. According to Wooldridge (2008), it can be fixed by removing one of them. All the results are presented after checking and discarding for multicollinearity and leaving out non-significant control variables. The latter implies that aiming for a correctly specified model, and taking into account data availability, significance tests were used for models' selection.

Table 2 shows the results of the model computations including the 26 countries and one of the variables of interest as there was not information for Brazil on net migration.

Table 2. Computation 1

n=182	*df*	R^2
Model	5	0.9202
Residual	176	
Total	181	

	Coefficient	*Standard error*	*t*	*P-value*	*Confidence interval 95%*	
International integration	0.02963	0.00190	15.595	< 0.001	0.02588	0.03338
Trade *(% of GDP)*	-0.00016	0.00004	-4.131	< 0.001	-0.00023	-0.00008
Urban population *(% of total)*	0.00136	0.00018	7.755	< 0.001	0.00102	0.00171
Gross fixed capital formation *(% of GDP)*	0.00159	0.00045	3.519	< 0.001	0.00070	0.00249
Mean years of schooling	0.02814	0.00100	28.197	< 0.001	0.02617	0.03011

The results highlight that there is a positive and significant association between formal international integration and development across the 26 countries through time, once other factors which may affect human development are controlled for. The simple fact of participating in a greater degree of integration along time makes a favourable difference in terms of human development. This could represent a clear indication that participating in higher levels of formal integration with other countries undergird the development potential of a country.

Table 3. Computation 2

n=175	*df*	R^2
Model	6	0.9132
Residual	168	
Total	174	

	Coefficient	*Standard error*	*t*	*P-value*	*Confidence interval 95%*	
International integration	0.02989	0.00193	15.514	< 0.001	0.02609	0.03369
Net migration	3.765E-09	1.8849E-09	1.998	0.047	4.396E-11	7.4863E-09
Trade *(% of GDP)*	-0.00013	4.06211E-05	-3.229	0.001	-0.00021	-5.0984E-05
Urban population *(% of total)*	0.00138	0.00018	7.703	< 0.001	0.00103	0.00174
Gross fixed capital formation	0.00167	0.00046	3.610	< 0.001	0.00076	0.00258
Mean years of schooling	0.02683	0.00125	21.473	< 0.001	0.02437	0.02930

Table 3 shows the results of the model including the two explanatory variables of interest. It confirms that countries which during the period of analysis did get involved in further levels of formal integration with other countries tended to have statistically significant increases in their human development. As far as net migration is concerned, the results present a positive and significant association between net migration and human development through time, once other factors which may affect human development are controlled for. However, the latter association is statistically less significant than the former and its positive impact much smaller.

All the control variables in the results of the two model computations have the expected signs and are statistically significant at one percent level except for *Trade*. The association is negative, indicating that those countries with higher international trade, exports and imports, through time, as a proportion of their GDP, experience lower human development, controlling for the rest of variables.

As this variable represents a measure of countries' openness to trade keeping without change their level of formal regional integration, it is interesting to think about possible causes of this result. It might be the case for some countries included in the analysis that their exports do not generate or are supported by a national configuration or fabric of firms supplying inputs. This could be because their exports are based on primary sector goods, as in agriculture, which basically go to final consumers in other countries. More importantly, this could be due to a high amount of imports of goods and services for the production of final goods for satisfying their national and international demands. Therefore, importing all sorts of inputs does not stimulate value chains within their territory. Adding to this, noted by some economists such as Joseph Stiglitz (2015), the volume and value of international trade, as well as the concentration of income within and across countries, are the matter, in a high proportion, of a relatively small number of firms or even individuals.

The rest of the models' computations sacrifice the size of their samples in order to include another interesting control variable. Net migration is left out of the computations because it would represent a further sample reduction. As a result, I concentrate now on formal international integration as the main variable of interest to analyse its effects on human development in the presence of self-employment as an indicator of entrepreneurial attitudes.

Table 4. Computation 3

n=140	*df*	R^2
Model	6	0.9341
Residual	133	
Total	139	

	Coefficient	*Standard error*	*t*	*P-value*	*Confidence interval 95%*	
International integration	0.02240	0.00188	11.887	< 0.001	0.018669	0.026123
Trade *(% of GDP)*	-0.00012	3.1674E-05	-3.899	< 0.001	-0.00019	-6.0855E-05
Urban population *(% of total)*	0.00047	0.00018	2.615	0.010	0.00011	0.00083
Gross fixed capital formation *(% of GDP)*	0.00205	0.00053	3.852	< 0.001	0.00100	0.00311
Mean years of schooling	0.02621	0.00105	24.840	< 0.001	0.02412	0.02829
Self-employed, total *(% of total employed)*	-0.00071	0.00023	-3.119	0.002	-0.00117	-0.00026

Table 4 presents the results of a third computation of the model. It adds self-employment to the analysis, showing similar results for all the explanatory variables introduced in previous calculations. Contrary to expectations, the association is negative and statistically significant, indicating that the higher percentage of self-employed from the total employed through time, the lower the human development of the countries, controlling for the rest of independent variables.

This could be a glimmer of the quality or the particular characteristics of self-employment and the degree of success or competitiveness of start-ups in the examined countries. Let us remember that self-employment here is only an approximation to entrepreneurial attitudes and it would be interesting to include, in future studies of the phenomenon assessed here, variables such as patent applications as an indication of the environment favouring innovation, as well as granted trademarks as an economic formalisation of the entrepreneurial and innovative spirit of countries' residents.

Computation 4 includes an interaction between international integration and self-employment to capture their complementarity. For example, one way of understanding this interaction is that the magnitude of the partial effect of international integration on human development depends on the value at which the percentage of self-employed is fixed.

Table 5. Computation 4

n=140	*df*	R^2
Model	7	0.9384
Residual	132	
Total	139	

	Coefficient	*Standard error*	*t*	*P-value*	*Confidence interval 95%*	
International integration	0.01274	0.00365	3.487	< 0.001	0.00551	0.01997
Trade *(% of GDP)*	-0.00010	0.00003	-3.227	0.002	-0.00016	-3.9404E-05
Urban population *(% of total)*	0.00056	0.00018	3.144	0.002	0.00021	0.00091
Gross fixed capital formation *(% of GDP)*	0.00179	0.00052	3.420	< 0.001	0.00076	0.00283
Mean years of schooling	0.02520	0.00108	23.439	< 0.001	0.02307	0.02733
Self-employed, total *(% of total employed)*	-0.00211	0.00051	-4.145	< 0.001	-0.00312	-0.00111
SE*II	0.00050	0.00017	3.051	0.003	0.00018	0.00083

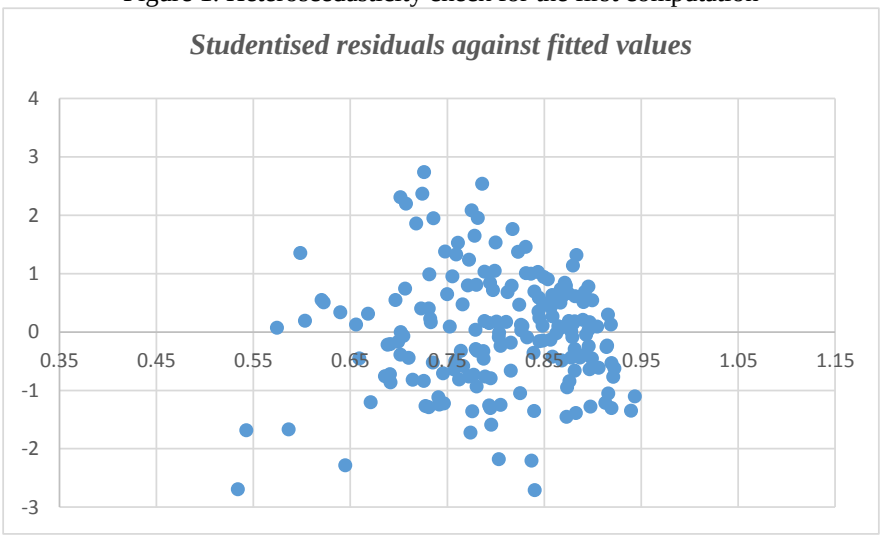
Table 5 shows that the negative effect of a higher percentage of self-employed on human development decreases the higher the degree of international integration. This might suggest that the latter opens development opportunities for the self-employed. All coefficients in the regression, including the interaction coefficient, are statistically significant at 1 percent level.

All the previous computations were also performed including a further control variable indicating if countries were considered developed or developing (i.e. a dummy variable was incorporated). The effects of the explanatory variables on human development and the statistical significance of their coefficients in all cases were very similar except for net migration which experienced a change in sign but statistically non-significant. As noted before, the reasons for migrating are not only economic and being able to separate them would be useful for future analyses.

Model diagnostics were performed in all computations inspecting for the presence of heteroscedasticity (i.e. non-constant variance) that could affect the efficiency of their results. Therefore, to be sure that the results were valid for statistical inference, following Agresti and Finlay (2009), I tested for heteroscedasticity by plotting studentised residuals and fitted values of the computed models. If homoscedasticity is found, the multiple regression model is valid. In terms of the mentioned plot, its points must form a band of even width instead of an evident pattern (Wooldridge, 2008).

No problems were found in the four model calculations. Figure 1 shows the plot for the first model computation as an example.

Figure 1. Heteroscedasticity check for the first computation



Conclusions

Using panel data from 1985 to 2014, this paper analysed the impact of the degree of formal economic integration, as well as migration on human development in countries that are part of NAFTA, Mercosur, the European Union or, at least, the WTO. The results show strong evidence of a positive influence through time of international economic integration on human development and, to a lesser extent, of the other main variable of interest, net migration. This contributes to inform the debate on the impact of countries' openness to international flows of goods, services and labour in favour of formal integration mechanisms. This represents clear disproof of the protectionist discourse of some political or independent leaders in recent political campaigns in countries such as Germany, France, the United States and the United Kingdom.

The small negative but statistically significant effect of the sum of exports and imports of goods and services measured as a share of gross domestic product on human development is a reminder of the need and importance of effective public policies to make the best of the benefits of international trade by stimulating competitive value chains within and across countries, creating new opportunities for the losers and, therefore, better distributing those benefits among countries' economic agents. Policies considering the concepts of acquired comparative advantage and dynamic gains of trade according to places' specificities could be of special relevance (Meier, 1998; Sandilands 2015).

The discipline of economic geography can help to identify suitable policies for particular territories by looking at the centrifugal and centripetal forces in place caused by a combination of elements such as trade or transaction costs, labour mobility, imperfect competition, the local availability of inputs and knowledge, as well as firms' and territories' increasing or decreasing returns of participating in international trade (Ascani, Crescenzi and Iammarino, 2012). Other considerations such as the presence of particular formal and informal institutions, the promotion of social entrepreneurship, smart specialisation and the local innovation climate, among others, are fundamental for the competitiveness of countries and their regions in a context of a globalised economy (Audretsch, Link and Walshok, 2015), understood as the international functional integration of economic activity across national territories (Dicken, 1998).

References:

Agresti, Alan, and Barbara Finlay. Statistical Methods for the Social Sciences. New Jersey: Prentice Hall, 2009.

Ascani, Andrea, Riccardo Crescenzi, and Simona Iammarino. New Economic Geography and Economic Integration: A Review. Barcelona: SEARCH Working Paper WP1/02, January 2012.

Audretsch, B. David, Albert N. Link, and Mary L. Walshok (Eds.). The Oxford Handbook of Local Competitiveness. New York: Oxford University Press, 2015.

Dicken, Peter. Global Shift: Transforming the World Economy. London: SAGE Publications, 1998.

Krugman, Paul and Maurice Obstfeld. Economía Internacional: Teoría y Política. Madrid: McGraw-Hill, Interamericana de España, 1999.

Krugman, Paul, Maurice Obstfeld, Marc J. Melitz. International Economics: Theory & Policy. Boston: Pearson Addison-Wesley, 2012.

Meier, M. Gerald. Comparative Costs Revisited. Zagreb International Review of Economics & Business, Vol.1, No.1, May 1998.

Sandilands, J. Roger. Globalisation and the ladder of comparative advantage. In Hirai T. (Ed.) Capitalism and the world economy: The light and shadow of globalisation. London: Routledge, 2015.

Stiglitz, E. Joseph. The Great Divide: Unequal societies and what we can do about them. London: Penguin Random House, 2015.

United Nations Development Programme. Human Development Report. New York: Human Development Report Office, 2000 and 2009.

Wooldridge, M. Jeffrey. Introductory Econometrics, a Modern Approach. Ohio: South-Western College Publishing, 2008.