SERIE DOCUMENTOS DE TRABAJO

FACULTAD
ECONOMÍA Y NEGOCIOS
UNIVERSIDAD DE CHILE

DEPARTAMENTO DE ECONOMÍA

SDT 309

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Determinants of Export Diversification around the World: 1962-2000*

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Abstract

Using a large dataset of countries during the last forty years, this paper analyzes the main determinants of export diversification. We explore the role of several factors and we use three different indicators of export diversification. We find robust evidence across specifications and indicators that trade openness induces higher specialization and does not favor export diversification. In contrast, financial development helps countries to diversify their exports. Looking at the effects of exchange rates, our results suggest a negative effect of real exchange rate overvaluation, but not significant effects of exchange rate volatility. We also find evidence that capital accumulation contributes positively to diversity exports and that increasing remoteness tend to reduce export diversification. We explore also the role of terms of trade shocks. Some of our results suggest that there is an interesting interaction between this variable and human capital. We find that improvements in terms of trade tend to concentrate exports, but this effect is lower for those countries with higher levels of human capital. This evidence suggests that countries with higher education can take advantage of positive terms of trade shocks to increase export diversification.

Key words: export diversification, reforms, exchange rate

JEL Classification: F10, O10, O24

- October 7, 2009 -

* We thank FONDECYT for support through grant 1085014. We also thank Felipe Avilés and Waldo Riveras for excellent research assistance.

1. Introduction

Export diversification has been at the center of the debate about how developing countries can improve economic performance and to achieve higher income. The anecdotal evidence suggests that almost there are not current developed countries with extremely high levels of export concentration. Of course this simple observation does not say anything about the causality relationship between per-capita income and export diversification. It may be argued that higher diversification affects economic growth positively[1], but it may be also the case that richer countries are more able to diversify their production structures. The empirical evidence on this regard shows a non-linear relationship between income and product diversification (Imbs and Wacziarg, 2003). This has been also extended to measures of export diversifications by Klinger and Lederman (2004) and Cadot et al. (2007).

This debate, however, has most of the times lacked of a better understanding about what are the main drivers of export diversification. The literature is not too abundant on this regard. In fact, there are a few papers exploring which factors are important for understanding changes in export diversification around the world. This is an issue particularly relevant given that several developing economies have undertaken structural reforms in recent decades aimed to improve economic performance, in general, and export diversification, in particular.

This paper aims to give empirical evidence on this relevant issue. We are particularly interested in analyzing the effect of several reforms, such as financial and trade liberalization, on export diversification.

We also explore several hypotheses that have been discussed in the policy debate but they have not been tested using a large sample of countries over time. Some of them are related to structural country characteristics, such as distance to main trading partners and factor endowments. Others are associated with macroeconomic policies, such as exchange rate volatility and overvaluation, which can affect export diversification negatively by increasing uncertainty or directly reducing the profitability of the exportable sector.

[1] Cross-section evidence of this positive effect of diversification on growth has been found by Agosin (2009), and Lederman and Maloney (2007) and Hesse (2008) using panel data.

Traditional trade theory, as the Hecksher-Ohlin model, highlights the benefits of openness to those sectors in which a country has comparative advantage by increasing its production and the reward to the factor used intensively in that sector. Nonetheless, traditional trade theory is silent on the emergence of new exporting sectors. More recently the "new trade theory"[2] has changed the focus into the emergence and trade of new varieties of goods –approach that was adopted simultaneously in part of the endogenous growth theory literature (Romer, 1990; Grossman and Helpman, 1991). These new growth and trade models allow us to derive some predictions regarding the role of openness, human capital and terms of trade shocks. We present and test non-structurally some of these predictions in our empirical section by linking increasing good varieties to export diversification.

To analyze the determinants of export diversification, we use a very long dataset for several countries around the world covering the period 1962-2000. This allows us to use standard dynamic panel data techniques to deal with two important econometric problems. First, panel information helps to isolate the effect of unobserved time-invariant country specific characteristics that may explain differences across countries. In this paper, we exploit within-country changes over time. Second, we use the GMM estimators to deal with the endogeneity of most of our explanatory variables. As we do not have a specific theoretical model for explaining export diversification, we rely on econometric specifications to identify which are the most plausible explanations for reduction in export concentration. This could be useful both for building theoretical models for explaining export diversification and for policy makers trying to identify which may be appropriate policies to diversify exports.

There are some previous empirical works exploring similar issues. Most of them, however, focuses on country-specific cases. For example, Gutierrez de Pineres and Ferrantino (1997) analyze the successful Chilean experience since the mid-1970s and find a positive effect of real exchange depreciation and trade reforms on export diversification. There are also some works showing the long-run trends of export diversification across low-income countries (Bonaglia and Fukasaku, 2003) and Latin American countries (Gutierrez de Pineres and Ferrantino,

[2] See Krugman (1995) and Grossman and Helpman (1991).

2007). Other authors have investigated the differences in export diversification patterns between developed and developing countries (Amurgo-Pacheco and Pierola, 2007). However, with the exception of Bebczuk and Berrettoni (2006), we are not aware of previous works on determinants of export diversification using a large sample of countries during a long period of time. We differentiate of this work on two main aspects. First, we look at several hypotheses that have not been tested previously. Second, we use an econometric methodology to deal with endogeneity of most of the explanatory variables.

Our results reveal robust evidence across specifications and indicators that trade openness induces higher specialization and does not favor export diversification. In contrast, financial development helps countries to diversify their exports. Looking at the effects of exchange rates, our results suggest a negative effect of real exchange rate overvaluation, but not significant effects of exchange rate volatility. We also find evidence that capital accumulation contributes positively to diversity exports and that increasing remoteness tend to reduce export diversification. We explore also the role of terms of trade shocks. Some of our results suggest that there is an interesting interaction between this variable and human capital. We find that improvements in terms of trade tend to concentrate exports, but this effect is lower for those countries with higher levels of human capital. This evidence suggests that countries with higher education can take advantage of positive terms of trade shocks to increase export diversification.

The rest of the paper is structured as follows. In the second section we describe the dataset and present some stylized facts on export diversification. The third section discusses the methodology and how we deal with the main econometric challenges. In the fourth section, we present our results. In the fifth section we conclude.

2. Data Description

In this section, we first describe the data set used to calculate the indicators of export diversification. Secondly, we describe the coverage and the main features of the data. Export data (in nominal US dollars) comes from the World Trade Flows compiled by Feenstra et al. (2004). This data set contains information of bilateral trade disaggregated by industries at 4-

digit SITC (rev. 2). We proceed to aggregate a country industry exports by summing up across importers.

The most commonly used statistic for measuring concentration is the Hirschman-Herfindahl Index, which sums the squared shares of each commodity in total exports. This index takes values from 0 to 1, the higher representing greater concentration. We also use the Gini coefficient as a measure of export concentration. Both indicators are computed using industry exports at 3-digit SITC and are close to 1 when exports are more concentrated, or less diversified[3].

In Table 1 we present basic information of our data, with the number of countries for each initial year of the corresponding decade. We also present the simple average of the Herfindahl and Gini coefficient and the standard deviation of both indicators. The number of countries increases steadily from 133 in 1962 to 161 in 2000. In general, both indicators show an increase in export concentration up to the 1980´s and a reduction later. Between 1962 and 2000, the average Herfindahl index reduced form 0.31 to 0.22, and the Gini coefficient fall slightly from 0.88 to 0.84. Both indicators also show a reduction in their standard deviations.

Main Facts on Export Diversification

Figure 1 shows more in detail how export diversification has evolved in the last four decades. In addition to the simple average, the evolution of world average weighted by GDP and the median are presented. The trends illustrated for the average and the median tend to be similar. There is a reduction in export concentration, but this more abrupt for the Gini coefficient in the middle of the 1980´s. In the case of the GDP-weighted average, the Herfindahl index tends to be constant, but the Gini coefficient shows a reduction in export diversification.

Figure 2 shows the evolution of export diversification for different regions of the world. Given that the median isolates better the effect of outliers, we focus our analysis in the evolution of this indicator. The evidence reveals not only significant differences across regions, but also within regions depending of the indicator analyzed. In the case of Industrial countries,

[3] In our empirical work we also the Theil index for measuring export concentration.

the Herfindahl shows a flat pattern but the Gini shows evidence of reduction in export concentration. As expected, these countries are those with more diversified exports among all groups. For Asia and Latin America both indicators show that exports have tended to be more diversified over time, but for African countries the Herfindahl index shows an increase in export concentration and the Gini coefficient tends to be unchanged. For countries form Eastern Europe, the Herfindahl index does not show a significant change, but the Gini coefficient reveals large movements but some overall trend towards export diversification. The Middle East countries show a more volatile performance compared to the other groups. Both indicators present a similar evolution revealing an increase in export diversification.

In Figure 3 we explore how export diversification evolved according to the country income. To do that, we split the sample of countries among four quartiles according to the initial per capita GDP. The rich countries (Income Quartile 1 in the Figure) present the lowest degree of concentration and some reduction over time, especially at the beginning of the period. The middle-high income countries (Income Quartile 2) being the decade of the 1960´s with high levels of concentration, but they evolve towards a higher degree of export diversifications. This is valid for both indicators. For initially poorer countries (Quartiles 3 and 4), the Herfindahl index show a slightly declining trend, but the Gini index tend to be constant. This evidence suggests that increasing export diversification would be more prevalent in middle-income economies (Quartile 2)

To give some preliminary evidence on the role of economic polices, we analyze how export diversification evolves around episodes of structural reforms. Following Hausmann, et al. (2005) we use indicators of trade and financial liberalization. The trade reforms index was originally developed by Sachs and Warner (1995) and it has been subsequently revised and updated by Wacziarg and Welch (2003). The indicator of financial liberalization is a dummy for the first five years of a financial liberalization episode. The timing of financial liberalization is taken from Bekaert, et al. (2005). For both indicators, we present their evolution 10 years before and 10 years after the year of the corresponding reform.

These both event studies, shown in Figures 4 and 5, reveal a similar pattern. There is a

reduction in export concentration in years following the reforms, with some reversal after 5 years in the case of trade reforms. In any case, the trend is not reversed completely. Average values for both indicators are lower in the post-reform years compared to the pre-reform period. However, it can be appreciated that both indicators experienced a reduction before the year of the reforms. This last observation casts some doubts on the causal effects of reforms on export diversification.

3. Estimation Methodology.

In our empirical exercise, we estimate the following equation:

$$I_{it} = \alpha_o I_{it-1} + \alpha_1 X_{it} + \eta_i + d_t + \nu_{it} \qquad (1)$$

where I_{it} is the index of export concentration for country i at time t, which is explained as a function of its lagged value at time (t-1), a matrix X_{it} of explanatory variables, a country fixed effect, η_i, and a time dummy d_t. The term ν_{it} corresponds to the error term.

For estimation purposes, the period 1962 to 2000 is divided into 8 sub-periods of 5 years each (the exception is the first period which is four years: 1962-1965). For each period t, we compute the average of all variables included in the estimation.

The discussion on our estimation methodology follows that of Bravo-Ortega and Garcia (2008) on the estimation of models of lagged dependent variables with fixed effects. The existence of the so-called dynamic-panel bias problem makes the econometric estimation of (1) an arduous task. In fact, when these equations are estimated by Ordinary Least Squares (OLS), the parameters are inconsistent and positively biased given that the lagged dependent variable is correlated positively with the error term. Although the fixed effects estimator (FE) eliminates the source of inconsistency by expressing the equation in terms of deviations from their time averages, the result is also inconsistent.[4] Summarizing, OLS and the FE estimators will be biased, but these biases will be in opposite direction.[5] This fact will be useful later to prove the robustness of alternative estimators. If the estimated coefficient for the lagged dependent

[4] Expanding terms for average deviation reveals the presence of terms with other than zero expectations. For more details, see Bond (2002).

[5] In fact, the OLS estimator is positively biased because the lagged dependent variable correlates positively with the error term. In contrast, the FE estimator is negatively biased since the correlation has the opposite sign. The interested reader in more details is referred to Arellano (2003).

variable were consistent, its value would be found in the middle of the values provided by the OLS and FE estimators.

One common alternative for solving the inconsistency problem is to apply the Arellano and Bond (1991) method. This involves eliminating the source of the inconsistency, the fixed effects, by applying the first difference operator to the equation under consideration. The resulting equation is then estimated using the Generalized Method of Moments (GMM), using lags of the explanatory variables as instruments.[6] However, if the dependent variable is highly persistent, so that instruments correlate weakly with the endogenous variables, first-difference model estimations may present substantial bias.[7] The high estimated persistence for our measures of export concentration described below suggests the possibility of weak instruments in the context of our study.

Blundell and Bond (1998) note that it is possible to substantially improve estimation efficiency by combining moment conditions. They suggest applying the Generalized Method of Moments (GMM), using as instruments the variable lags in the difference equation and the variable differences in the level equation. Estimations for (1) are performed using this estimator, known in the literature as the "GMM system estimator".

One critical assumption for the validity of GMM estimations is that the instruments must be exogenous in order to meet orthogonality conditions. To test the validity of the instrument set used, we applied the Hansen (1982) test. However, increasing number of instruments makes the test increasingly weak[8]. Considering that the validity of the instrument set depends on the error structure, we also report the Arellano Bond (1991) M2 test, which allow us to detect second order autocorrelation of the error in the first-differences equation. We use only second and third lags in our set of instruments to avoid over-fitting of the instrumented variables, avoiding in this manner to face weak Hansen's tests in our estimations

[6] The need to use instruments arises from the fact that, unless the idiosyncratic error follows a random walk process, it will correlate with the lagged dependent variable.
[7] See work by Blundell and Bond (1998) and Blundell, Bond and Windmeijer (2000).
[8] In fact, Bowsher (2002) shows that the use of too many moment conditions causes the Sargan / Hansen test to be undersized and to have extremely low power.

Our set of explanatory variables can be divided roughly in three main groups[9]. The first group is related to economic reforms and it is composed by trade openness and financial development. Trade openness is measured by ratio of the sum of exports and imports over GDP and financial development as the share of domestic credit to the private sector on the GDP. The effects of both variables are ambiguous. In most of the theoretical model, openness to trade induces specialization and not necessarily a higher export diversification. However, a reduction in trade costs may facilitate the introduction of new export activities. A similar argument could be given for financial development. In the case that new and, for his nature, risky exporting activities are not financed for capital markets, financial development may increase export concentration whenever traditional activities are mostly benefited.

One second group of variables consider the effect of structural determinants of export diversification, such as factor endowments and economic distance. We include a proxy for human capital defined as the average of schooling years in the population over 15 years from Barro and Lee (2000) and updated by Bosworth and Collins (2003). For economic distance we use the GDP weighted average distance of each country taken from Rose (2004). We expect a positive effect of human capital on export diversification if human capital accumulation allows countries change their specialization patterns from commodities to manufacturing goods. This prediction has been highlighted in the endogenous growth theory and new trade theories (Krugman, 1995; Romer, 1990; Grossman and Helpman 1991). The greater availability of specialized human capital and the consequent lower relative cost allow firms to employ a larger amount of human capital for the development of R&D tasks, which implies a larger number of varieties of goods produced. In the case of economic distance, we expect a negative effect on diversification. The justification is that more distant countries face higher trade costs reducing the profitability of exporting new products[10].

The third group of variables is composed by macroeconomic factors that may reduce export

[9] In Table 2 we present the descriptive statistics for dependent and explanatory variables.
[10] The microeconomic foundation for the relationship has been provided by Melitz (2003). For recent evidence of the negative effect of trade costs on entry and export diversification, see Dennis and Shepherd (2007).

profitability directly, as it is the case of an overvalued exchange rate, or indirectly through an increase in uncertainty as it would the case of exchange rate volatility. We also look at the effect of terms of trade variations and its interaction with human capital. In the case of real exchange rate overvaluation and volatility, we expect a negative effect on export diversification. Real exchange rate overvaluation is taken from the Global Development Network Growth Database, and it is computed using the procedure described in Dollar (1992). Exchange rate volatility is computed using the standard deviation of monthly changes in nominal exchange rates.

The effect of changes in terms of trade is expected to be, in general, negative[11]. The idea is that an increase in the price of the main exported product induces factor reallocation towards this sector, reducing the availability (or increasing the cost) of using inputs in new export activities. This sort of "Dutch Disease" may increase export concentration. This negative effect of positive terms of trade shock on diversification, however, may be lower in countries with high levels of human capital. To test this hypothesis we include an interaction terms between terms of trade change and human capital.

There is some historical evidence that supports this view. In nineteenth century Scandinavia experienced several negative terms of trade shocks that would have been beneficial for export diversification. This situation would have been possible given the high levels of human capital that these countries had at this time. Magnusson (2000) describes how Sweden moved from producing iron to steel and the development of new production techniques, as well as the transition from wood to pulp, situation that has been also documented by Jorberg ((1970) in the case of Finland.

Again we can also recall part of the endogenous growth models to analyze this historical evidence and derive some testable prediction. Grossman and Helpman (1991) study the impact of openness to trade into the rate of growth of a small open economy. The openness process introduces changes in the relative prices of the goods produced in a small economy. In particular the price of the exported good will increase and the price of the imported will decrease. The important part is to distinguish which factor is used intensively in the exporting sector, either

[11] Data for terms of trade was taken from the World Development Indicators.

human capital or labor, and how this affects the allocation of human capital to R&D activities. Thus –the model predicts- if a country exports a homogeneous good that used intensively labor, the relative price of human capital will fall given the increase in reward to labor that follows the increase in the price of the homogenous good. The lower relative cost of human capital will move this factor towards R&D activities increasing the number of varieties at a faster pace. This rate of growth will be also affected positively by the total human capital in the economy. On the other hand when the exported goods are different varieties of a non-homogeneous good, the reward to human capital will increase and also the cost of developing R&D reallocating human capital away from it and decreasing the rate of growth of the economy and the number of varieties in the economy. Thus theory is ambiguous with respect to the impact that terms of trade shocks have on diversification, however is precise with respect to the positive impact of human capital on export diversification.

4. Results

We present two step GMM system estimations for three indicators of export concentration: Herfindahl, Gini and Theil indexes[12]. This allows us to check the robustness of our findings to alternative definitions of export concentration. For all of these estimations, based on the evidence of a non-linear relationship between diversification and income provided by Imbs and Wacziarg (2003) and Klinger and Lederman (2004), we also analyze how robust our results are to control for per capita income and its squared term.

Table 3 shows the results for the Gini export concentration index. Most of the explanatory variables are significant and with the expected signs. The exception is the effect of an increment in terms of trade in column (1) which it appears to reduce export concentration. In terms of reforms related variables, trade openness seems to favor specialization and financial development facilitates diversification. Regarding factor endowments, we find that human capital accumulation affects positively export diversification. As expected, our results show that economic distance increases export concentration.

[12] Our estimations, in general, pass the standard statistical tests for this type of regressions. The Hansen's test does not reject the null of valid instruments and the AR(2) test shows no evidence of second order residuals autocorrelation. Both tests are presented in the last rows of Tables 3, 4, and 5.

In terms of variable related to exchange rate, we find that real overvaluation increase export concentration. This is consistent with the idea that overvaluation reduces export profitability and the entry of new export products. We do not find any robust negative effect of exchange rate volatility. In fact, in only one regression this variable turns to be significant, though it is only at 10 percent. Finally, income and squared income in column (5) are not statistically significant.

Our results suggest that positive terms of trade shocks are associated with a reduction in export concentration (Column 1). However, including the interaction with human capital we find that the effect is positive for low levels of schooling and negative for high levels of human capital. This is consistent with the idea that countries with higher education can take advantage of positive terms of trade shock to develop new exporter sectors.

Table 4 shows our estimates for the Herfindahl export concentration index. The results tend to be similar to the previous one, with some minor exceptions. The negative effect of trade openness and the positive effect of human capital on export diversification hold across the different specifications. We also find a negative effect of real exchange rate overvaluation on diversifications. In the case of other variables, for example economic distance and the interaction between change in terms of trade and human capital, some of them lose significance when additional explanatory variables are included, an others such as financial development change of sign when income and squared income are included in the estimation. In comparison with results for the Gini index, in these estimations we find a positive and significant effect of exchange rate volatility on export concentration.

Table 5 reports our estimations for the Theil index of export concentration. These results are very similar to those found when using the Gini index. In all of our specifications, trade openness and economic distance reduce export diversification and financial development and human capital is associated with more diversified exports. In contrast, the effect of changes in terms of trade and its interaction is less robust to this alternative definition of export diversification.

5. Conclusions

Using a large dataset of countries during the last forty years, this paper analyzes the role of several potential determinants of export diversification. This empirical work has been particularly motivated by the fact that few works have used a long panel of countries to shed light on what are the main factors driving changes in export diversification around the world.

We have explored the role of several factors and we use three different indicators of export diversification. First, we look at the effect of trade openness and financial development. We find robust evidence across specifications and indicator that trade openness induces specialization and not export diversification. In contrast, we find that financial development helps countries to diversify their exports.

Second, we also analyze the effect of real exchange volatility and overvaluation. In general, our results suggest a more significant role for real exchange rate overvaluation than volatility. In only one of diversification indexes volatility seems to effect negatively diversification, but the negative effect of exchange rate overvaluation tend to be robust across the indexes.

Third, we shed light on the effects of factor endowments looking at how human capital accumulation is associated with diversification. We find robust evidence that higher schooling helps to diversity exports. This could be consistent with the idea that factor accumulation moves countries across diversification cones going from primary exports to manufactured goods. In these last goods, the scope for diversification would be higher.

We also look at how economic distance also affects the specialization patterns. Our results show that more remote countries tend to have more concentrated exports. Finally, we explore the role of terms of trade shocks. Some of our results suggest that there is an interesting interaction between this variable and human capital. We find that improvements in terms of trade tend to concentrate exports, but this effect is lower for those countries with higher levels of human capital. This evidence suggests that idea that countries with higher education can take advantage of positive terms of trade shock to develop new exporter sectors.

This evidence has relevant implications for export diversification in developing countries. This work suggests that some policies are better than others for reducing dependency in few

export sectors. We find that financial development seems to help diversification, but trade openness work in the opposite direction. This implies that policies aimed to deep financial intermediation are needed to improve export performance and not too much may be expected of opening the economy to international trade. In addition, to avoid overvalued exchange rates and to increase human capital accumulation are also good polices to increase export diversification.

Finally, although economic distance is exogenous to the economy, there are policies that can reduce its negative effects on export diversification. Indeed, the negative impact of trade costs mean that the countries furthest from the main centers of global trade have a natural disadvantage that needs to be offset by improvements to the relevant physical and information infrastructure. The challenge here is even greater for distant economies than for those more favorably located.

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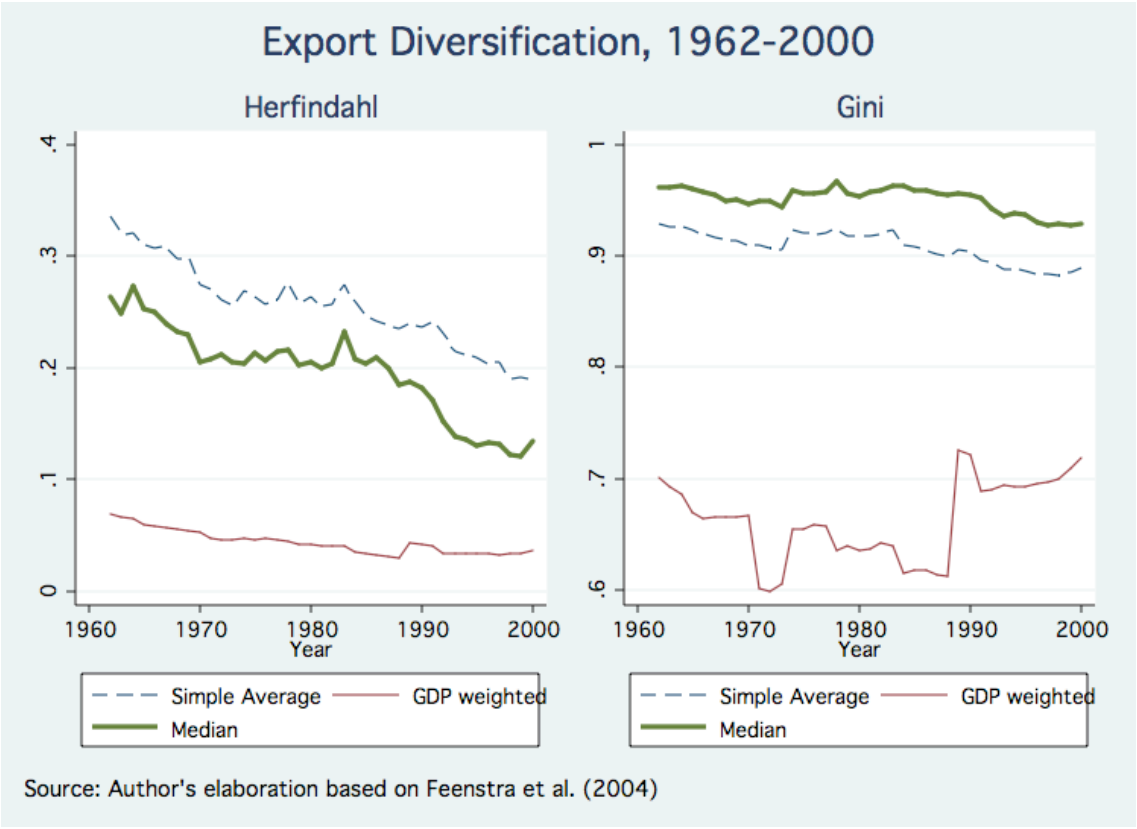
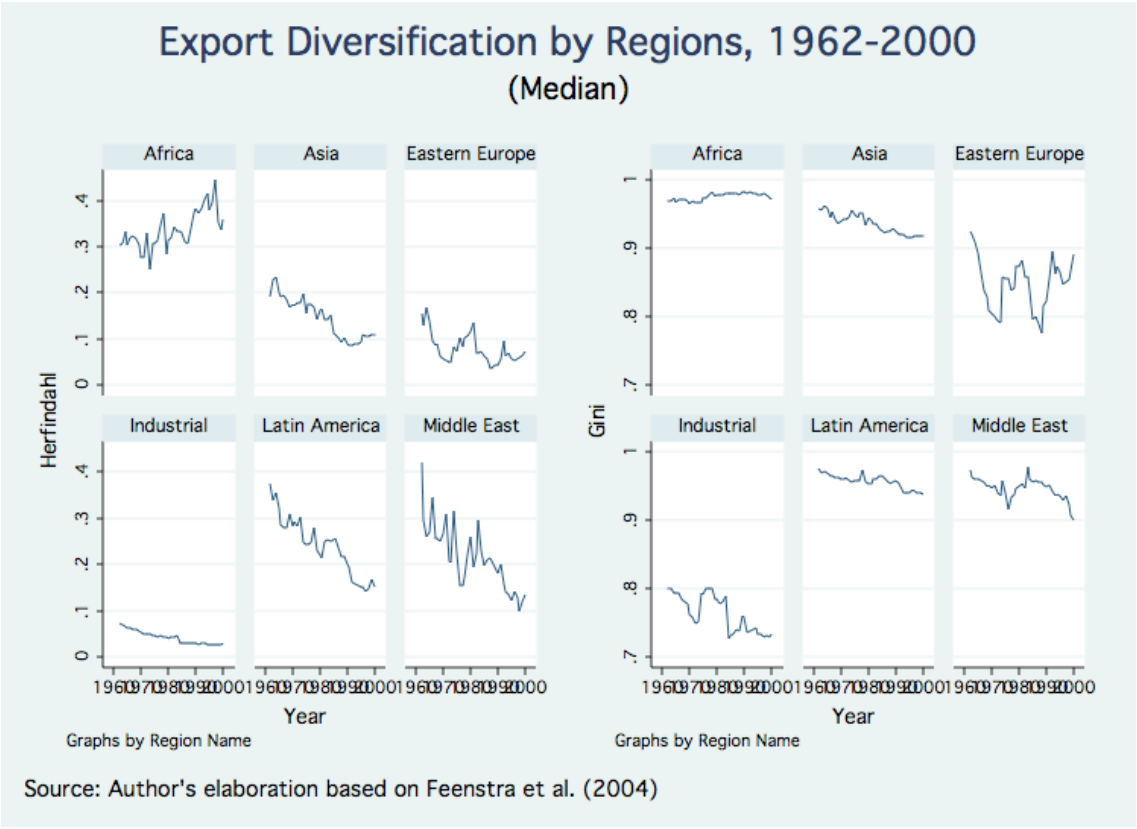
Figure 1



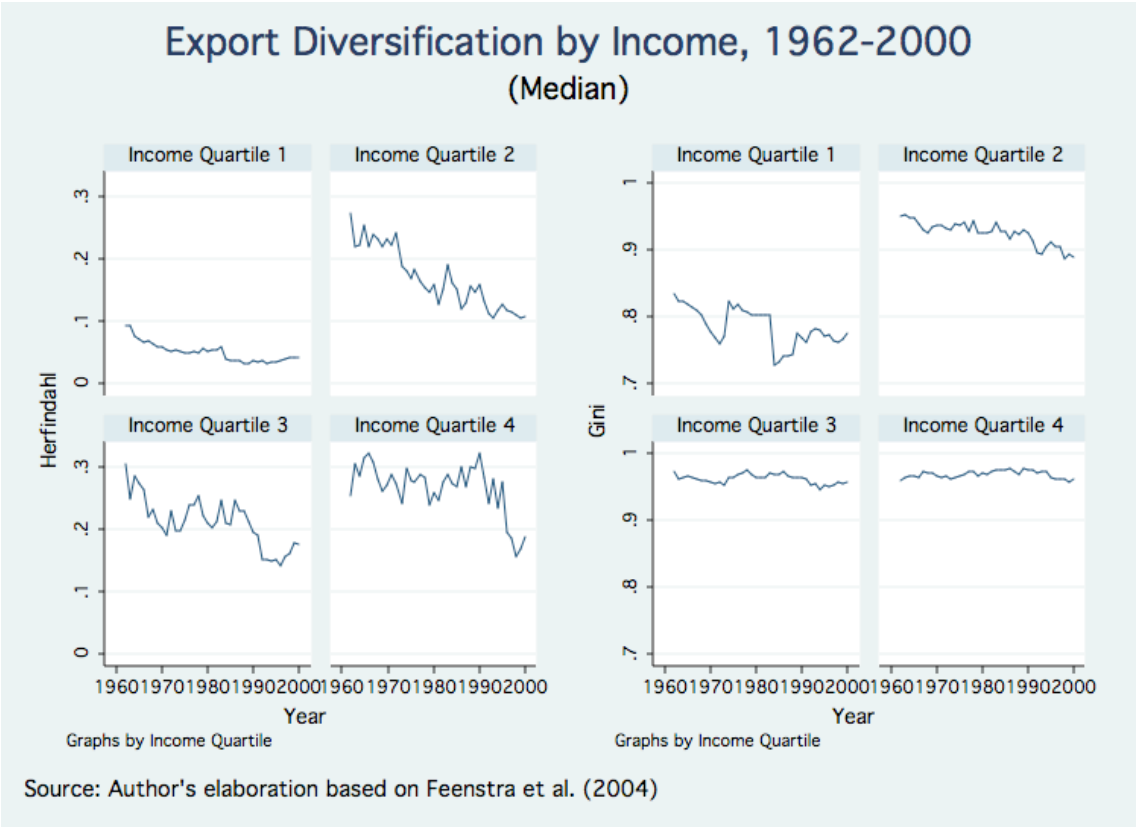
Source: Author's elaboration based on Feenstra et al. (2004)

Figure 2



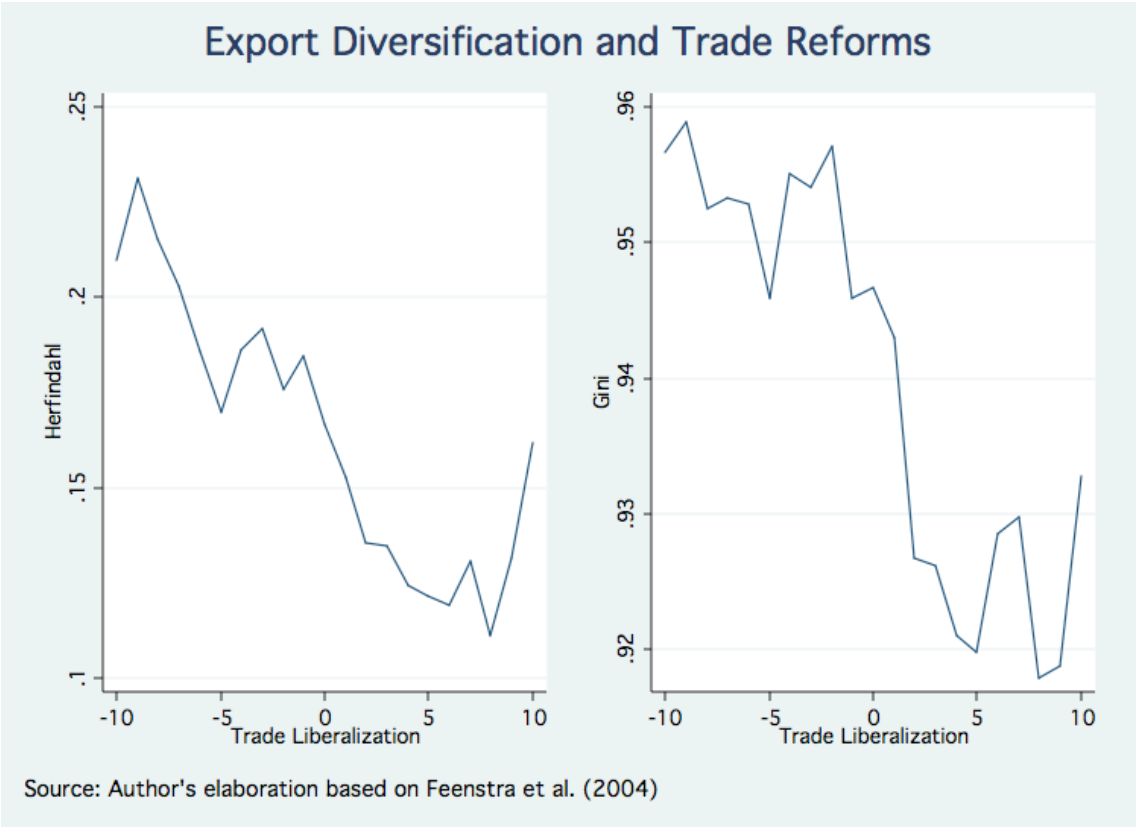
Source: Author's elaboration based on Feenstra et al. (2004)

Figure 3



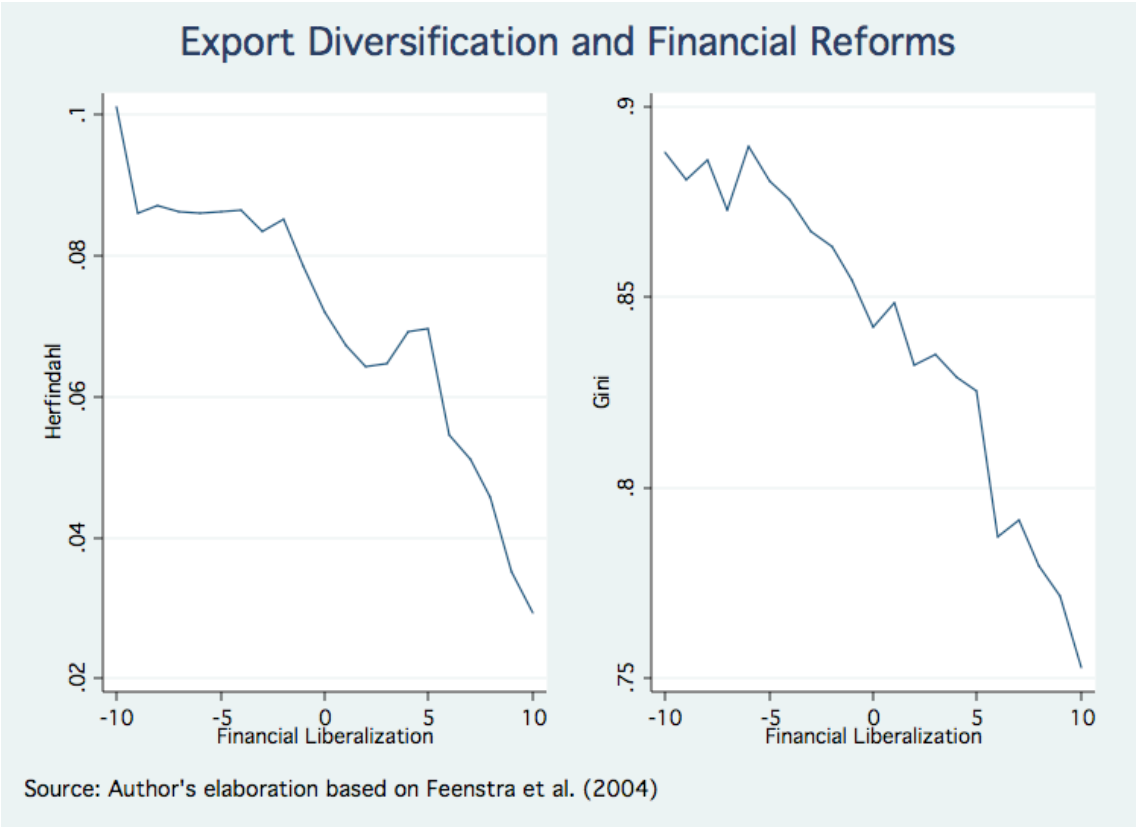
Source: Author's elaboration based on Feenstra et al. (2004)

Figure 4



Source: Author's elaboration based on Feenstra et al. (2004)

Figure 5



Source: Author's elaboration based on Feenstra et al. (2004)

Table 1

Countries and Summary Statistics

	Herfindahl		Gini		Countries
	Average	St. Dev.	Average	St. Dev.	
1962	0,31	0,25	0,88	0,14	133
1970	0,26	0,23	0,89	0,09	138
1980	0,27	0,25	0,90	0,09	139
1990	0,25	0,24	0,82	0,12	142
2000	0,22	0,22	0,84	0,08	161

Source: Author's elaboration based on Feenstra et al. (2004)

Table 2
Summary Statistics. Overall, Within and Between Statistics.

Variable		Mean	Std. Dev.	Min	Max	Observations
Gini	overall	0,8434846	0,096	0,430	0,984	N = 1089
	between		0,084	0,581	0,967	n = 165
	within		0,050	0,460	1,024	T-bar = 6.6
Theil	overall	1,946354	0,737	0,375	4,249	N = 1089
	between		0,627	0,605	3,767	n = 165
	within		0,403	0,412	3,421	T-bar = 6.6
Herfindahl	overall	0,2429515	0,207	0,013	0,955	N = 1089
	between		0,182	0,014	0,785	n = 165
	within		0,101	-0,154	0,786	T-bar = 6.6
Trade Opennes	overall	65,11523	44,480	3,462	326,179	N = 929
	between		40,082	10,912	246,168	n = 150
	within		22,518	-19,917	272,627	T-bar = 6.19333
Log(Schooling)	overall	1,485382	0,718	-1,854	2,491	N = 659
	between		0,663	-0,627	2,395	n = 84
	within		0,282	0,234	2,625	T-bar = 7.84524
Change Terms of Trade	overall	4,849222	9,085	-72,972	55,938	N = 811
	between		7,343	-33,330	42,433	n = 149
	within		7,489	-40,185	44,492	T-bar = 5.44295
Financial Development	overall	34,96435	31,767	0,000	218,189	N = 928
	between		27,625	0,000	156,276	n = 157
	within		15,590	-29,953	120,168	T-bar = 5.91083
Exch. Rate Volatility	overall	0,027347	0,071	0,000	1,601	N = 1009
	between		0,041	0,000	0,291	n = 156
	within		0,063	-0,195	1,406	T-bar = 6.46795
Log(Ec. Distance)	overall	-10,74353	0,539	-12,226	-9,231	N = 1017
	between		0,462	-11,987	-9,894	n = 149
	within		0,350	-11,425	-9,958	T-bar = 6.8255
Log(Overvaluation)	overall	4,661939	0,391	3,406	7,210	N = 732
	between		0,282	4,021	5,475	n = 100
	within		0,283	3,615	6,619	T-bar = 7.32
Per Capita GDP	overall	6987,509	7341,375	289,462	43896,930	N = 1102
	between		6738,743	506,940	31340,070	n = 165
	within		2644,296	-9812,177	24226,420	T-bar = 6.67879

Table 3
GINI INDEX

	(1)	(2)	(3)	(4)	(5)
L.gini	0.8379**	0.8464**	0.8705**	0.8872**	0.8709**
	(0,014)	(0,013)	(0,012)	(0,013)	(0,013)
Trade Openness	0.0002**	0.0003**	0.0003**	0.0003**	0.0003**
	0,000	0,000	0,000	0,000	0,000
Log(Schooling)	-0.0120**	-0.0071**	-0.0066**	-0.0043**	(0,003)
	(0,001)	(0,001)	(0,001)	(0,002)	(0,002)
Log(Ec. Distance)	0.0135**	0.0153**	0.0119**	0.0114**	0.0131**
	(0,002)	(0,002)	(0,002)	(0,002)	(0,005)
Change Terms of Trade	-0.0001+	0.0010**	0.0009**	0.0007**	0.0015**
	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)
Log(Schooling)		-0.0005**	-0.0003**	(0,000)	-0.0012**
		(0,000)	(0,000)	(0,000)	(0,000)
Financial Development		-0.0000+	-0.0000*	-0.0000*	-0.0001**
		0,000	0,000	0,000	0,000
ER Volatility			0,009	(0,008)	-0.0359+
			(0,014)	(0,014)	(0,021)
Log(Overvaluation)				0.0056**	0.0052**
				(0,002)	(0,002)
Log(p.c. Income)					(0,003)
					(0,024)
Log(p.c. Income)2					0,000
					(0,002)
Constant	0.2960**	0.2983**	0.2382**	0.1886**	0.2308**
	(0,033)	(0,026)	(0,031)	(0,033)	(0,078)
Observations	490	488	476	454	454
Number of wbcoden	79	79	79	77	77
Hansen p-value	0,41	0,77	0,90	0,91	1,00
AR(1) p-value	0,00	0,00	0,00	0,01	0,02
AR(2) p-value	0,08	0,06	0,09	0,06	0,06

Standard errors in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%
Period fixed-effects are included but not reported

Table 4
HERFINDAHL INDEX

	(1)	(2)	(3)	(4)	(5)
L.hh	0.8728**	0.8715**	0.8727**	0.8508**	0.8125**
	(0,004)	(0,002)	(0,003)	(0,004)	(0,008)
Trade Openness	0.0002**	0.0002**	0.0003**	0.0002**	0.0002**
	0,000	0,000	0,000	0,000	0,000
Log(Schooling)	-0.0234**	-0.0264**	-0.0284**	-0.0305**	-0.0215**
	(0,001)	(0,001)	(0,001)	(0,002)	(0,001)
Log(Ec. Distance)	-0.0079**	-0.0056**	(0,002)	0,003	0,005
	(0,001)	(0,002)	(0,002)	(0,004)	(0,005)
Change Terms of Trade	-0.0005**	-0.0005**	0,000	-0.0022**	(0,000)
	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)
Log(Schooling)		0.0002*	0.0004**	0.0019**	0,000
		(0,000)	(0,000)	(0,000)	(0,000)
Financial Development		0.0001**	0.0001**	0.0000*	-0.0001**
		0,000	0,000	0,000	0,000
ER Volatility			0.1713**	0.1503**	0.1264**
			(0,011)	(0,020)	(0,015)
Log(Overvaluation)				0.0117**	0.0119**
				(0,001)	(0,001)
Log(p.c. Income)					-0.1274**
					(0,012)
Log(p.c. Income)2					0.0076**
					(0,001)
Constant	-0.0423**	(0,017)	0,012	0,024	0.5659**
	(0,010)	(0,020)	(0,025)	(0,039)	(0,065)
Observations	490	488	476	454	454
Number of wbcoden	79	79	79	77	77
Hansen p-value	0,82	1,00	1,00	1,00	1,00
AR(1) p-value	0,00	0,00	0,00	0,00	0,01
AR(2) p-value	0,37	0,37	0,34	0,44	0,44

Standard errors in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%
Period fixed-effects are included but not reported

Table 5
THEIL INDEX

	(1)	(2)	(3)	(4)	(5)
L.theil	0.7424**	0.7359**	0.7472**	0.7424**	0.7414**
	(0,015)	(0,011)	(0,013)	(0,014)	(0,015)
Trade Openness	0.0026**	0.0025**	0.0026**	0.0027**	0.0034**
	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)
Log(Schooling)	-0.0911**	-0.0715**	-0.0759**	-0.0647**	-0.0469**
	(0,006)	(0,008)	(0,010)	(0,014)	(0,018)
Log(Ec. Distance)	0.1265**	0.1392**	0.1478**	0.1320**	0.2312**
	(0,024)	(0,012)	(0,017)	(0,020)	(0,037)
Change Terms of Trade	0,001	0.0061**	0.0047**	0.0052**	0.0158**
	(0,001)	(0,002)	(0,002)	(0,002)	(0,002)
Log(Schooling)		(0,001)	0,001	0,001	-0.0128**
		(0,002)	(0,002)	(0,002)	(0,002)
Financial Development		-0.0007**	-0.0006**	-0.0006**	-0.0009**
		(0,000)	(0,000)	(0,000)	(0,000)
ER Volatility			(0,046)	(0,036)	-0.5333**
			(0,074)	(0,102)	(0,175)
Log(Overvaluation)				0.0493**	0,007
				(0,011)	(0,012)
Log(p.c. Income)					0.4446**
					(0,163)
Log(p.c. Income)2					-0.0233*
					(0,010)
Constant	1.8458**	1.9849**	2.0599**	1.6312**	0,887
	(0,286)	(0,148)	(0,208)	(0,261)	(0,656)
Observations	490,000	488,000	476,000	454,000	454,000
Number of wbcoden	79,000	79,000	79,000	77,000	77,000
Hansen p-value	0,28	0,61	0,62	0,76	1,00
AR(1) p-value	0,00	0,00	0,00	0,00	0,00
AR(2) p-value	0,01	0,00	0,00	0,00	0,01

Standard errors in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%
Period fixed-effects are included but not reported