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Abstract

This article aims to investigate the effects of the relation between better sectorial microeconomic performance and the financial development, focusing on one of its main consequences, the specialization pattern of countries. In order to make it possible, the analysis was carried out in two stages. In the first one, more aggregated, we focus on capital market development - mainly on its credit supply volume - and its effects on the specialization pattern in manufactured goods of Latin America countries. The second stage focuses on the effects in the intersetorial specialization pattern of trade of Brazilian industries derived from its access to credit.

1 Introduction

The financial market is one of the most important resource allocation mechanisms in a capitalist economy, and its correct functioning results in significant effects on both micro and macroeconomic development. This article focuses on its microeconomic aspects, investigating the relationship between sectoral performance of the economy and its financial market development. The emphasis of the investigation would be the pattern of trade.

In order to achieve this aim, we are conducting an analysis in two stages. The first one is directly related with the degree of financial market development and the export specialization pattern in manufactured goods in Latin American Countries[1].

The next step is to examine if this relation holds in a more disaggregated level. Thus, an database for the need of external resources was built for 104 industry sectors following the CNAE-IBGE industry classification system, in order to examine the effects of external financing needs over the Brazilian industry specialization pattern.

The previous literature concerning international trade and finance is relatively small. There are two main papers on the subject written by Beck (2001) and Svaleryd and Vlachos (2001). This research line may be understood as related with another field of research, concerning the relationship between financial development and economic growth.

[1]The reason for this selection was to consider countries with similar instutional and legal structures, according to La Porta et al.(1996).

On the effects about financial market development and economic growth, the literature is vast and is growing quickly. Levine (1997), on its survey on the subject, tries to establish the relations between economic growth and financial development. The essence of his argument is that financial intermediaries, as well as financial markets, do exist in order to reduce transaction costs, as well as to mitigate the effects of asymmetrical information. As a result, a higher financial market development degree could lead to a further reduction of these costs, increasing the allocative efficiency of the economy.

Rajan e Zingales (1998), using accounting data from the American market, established the existence of a strong positive relation between needs of external funds for firms and its growth. Furthermore, it is also shown that this effect is bigger in countries with a higher degree of financial development. According to these authors, one of the main consequences from an unequal financial market development one must expect would be an intersectoral difference in the export pattern of manufactured goods.

The present article has some characteristics that makes it different from the previous literature. The first one is that, unlike Beck (2001), this article focuses on both specialization patterns of the economies and of its constituent industrial sectors. And, in a different treatment from the one used by Svaleryd and Vlachos (2001), we used a financial dependency measure that was calculated sectorially in Brazil. This measure has some advantages, and the main one is that it reflects not only the intersectoral difference pattern in credit demand, but also the intersectorial difference in credit supply.

This paper is structured in five sections, this introduction being the first one. The second section focuses on theoretical aspects related with the subject, while the third and fourth sections cover empirical development. The fifth section concludes.

2 Financial System and International Trade - Theoretical Aspects

The literature concerning the analysis of the relationship between the financial market development and economic performance usually emphasizes the role played by the financial system. This is called the functional approach[2].

This approach is based on the following reasoning. The financial system exert three main functions in a market economy[3]. The first one is the chanelling of savings from savers to investors in economies. The second one is to monitor the behavior of borrowers' behavior, and the third one is to make easier the reallocations of goods either between people or between states of nature[4]. These functions are better accomplished by different types of players in the financial market. For example, the facilitation of changes between different states of

[2]These approaches are the same ones used in the literature relating economic growth and finance (Levine (1997)).

[3]Other than the management of the payment system, one of its macroeconomic aspects.

[4]By its ability in risk sharing.

nature is better accomplished by the insurance system, while the monitoring function is better accomplished by the banking system.

These functions might be determinant in the pattern of specialization of a capitalist economy in several ways. For instance, a well-developed function of chanelling of funds between savers and borrowers may enable firms to exploit more fully the scale economies in different industries. Thus, countries with a well developed financial system tend to show comparative advantages in industries with economies of scale[5].

On the other hand, a more efficient financial sector in terms of risk diversification could enable firms to easily bear R&D costs. As a consequence, this countries would show comparative advantages in goods intensive in R&D. King and Levine (1993) also emphasize the relationship between technological development and risk diversification.

According to the monitoring and control functions performed by the financial market, a sophisticated financial system allows a better resource allocation due to lower monitoring costs. The monitoring action would have a positive effect on economic productivity, increasing corporate control and mitigating agency problems, as shown by Diamond (1984).

And finally, the financial system function of gathering private savings and allocating them to the private sector also affects the pattern of comparative advantage of the countries. In this function, an efficient financial system could alleviate financial constraints faced by private inverstors[6]. Thus we could have a bigger rate of capital accumulation, and a greater comparative advantage on goods intensive on capital, as suggested by the Heckscher-Ohlin model[7].

To sum up, the main role played by the financial system as a source of comparative advantage would not be as an additional factor endowment, as suggested by the Heckscher-Ohlin model, but as an element increasing the productivity - and rate of accumulation - of the other factors in the economy. The next step is to evaluate empirically this statement, which is done in the following section.

3 Financial Market Development - Latin America

After the exposition of the theoretical relationships shown above, we are now intending to perform an analysis of how the degree of development of the financial market would affect a country's specialization pattern. On this analysis we are implicitly considering that a country's competitiveness - and its pattern of comparative advantage - would depend not only on its endowment of productive

[5] Beck (2001) builds a model in which countries endowed with a developed financial system tend to specialize in sectors with increasing returns to scale.

[6] This can be understood as an easing of the problem of financial repression, as exposed by Fry (1995).

[7] A good exposition of the Heckscher-Ohlin model reference can be found at Gandolfo (1998).

factors, but also on the efficiency in which financial resources are canalized by the financial system.

In order to measure the country's specialization degree of Latin American countries, an indicator created by Balassa (1986) was used. It is expressed as follows:

$$EXP_{it} = \frac{(X_{it} - M_{it})}{(X_{it} + M_{it})} \tag{1}$$

In which X_{it} denotes exports of manucatures and M_{it} imports os manufactures. This variable may take values between $[-1; 1]$. This characteristic of the dependent variable causes an additional concern might be necessary in econometric analysis that follows[8]. Two variables groups were used as controls.

The first group of controls reflcets the endowment of factors of each economy trough time. This group is formed by a measure of per capita physical capital and a measure of labor force qualification.

Referring to the per capita physical capital measure - denoted K_{it} - the Easterly and Levine (1995) indicator was used. The construction of a labor force qualification indicator creates an additional problem for the analysis. This problem is the lack of statistics for a significant number of countries for the whole time span of the sample. The best variable that fulfills this need is the illiteracy rate - denoted ILL_{it}. The data were obtained in the World Development Indicators database.

The second group of variables refers to the aggregate development degree of the financial market. These variables intend to capture the development degrees of different features of the financial system as a whole[9], as:

- Domestic credit provided by banking sector as a percentage of GDP - $CRED_{it}$
- Quasi liquid liabilities as a GDP proportion - LLY_{it}
- Total value of stock market traded stocks as a GDP proportion - $STRAD_{it}$
- Stock Turnover - $STURN_{it}$

These variables were also obtained in the World Development Indicators database. The time span of our sample was limited to the years between 1980 and 1990, due to the lack of more recent data for the per capita capital stock. The country used in our sample, as well as some descriptive statistics for the variables used,

[8] Another variable that can be used in order to evaluate a country´s specialization pattern may be constructed as follows: $r_{it} = \frac{Q_{it}}{C_{it}}$, where Q_{it} refers to production volume and C_{it} to consumption volume. This variable has some advantages vis a vis the indicator used on the text. The main advantage would be the possibility of adjustment to external trade imbalances. However, as we would need internal production data - and these are very difficult to get - we will not use this measure at this study. The literature also indicates these measures show a very similar behavior.

[9] It is important to note that different countries may have differing financial system structures - not only structured around financial intermediaries, but also around financial markets. A thorough discussion can be found in Allen and Gale (2001).

can be viewed at Appendix A.1. After the construction of this database, we can now proceed to the estimation phase.

3.1 Estimation and Results

The econometric model to be utilized to the test the hypothesis referred to on section 2 is based on the following specification:

$$EXP_{it} = \beta_0 + \beta_1 ln(k_{it}) + \beta_2 ILL_{it} + \acute{\beta_3} CRED_{it} + \varepsilon_{it} \tag{2}$$

In which the variables shown in equation 2 above are the ones defined in the last section. In reference to the variable associated with $\acute{\beta_3}$, several alternative specifications will be tried, using each one of the six variables representing the financial development level described above in the specification[10]. It is important to highlight that each variable mentioned above captures only a part of the financial system characteristics mentioned before, since there is no single measure of financial market development[11].

As already mentioned, some special caution is needed on estimation of specification 2. The estimation by OLS of the model shown above, would generate a biased estimates for the parameters, since the variable EXP_{it} is bounded in the $[-1; 1]$ range.

To circumvent this problem, the process of testing of the hypothesis shown above section is based on a TOBIT approach with individual random effects[12] for each country. The estimation results are shown in the following table:

[10] The variables were not used together, for it could cause problems of multicollinearity.

[11] Allen and Gale (2001), suggest that with different financial systems characteristics an evaluation based on a sigle criterion would not be appropriate.

[12] A thorugh discussion of this method can be found at Baltagi (1995).

Table 1: Financial Market Development and Specialization in Manufactured Products

	Models			
	1	**2**	**3**	**4**
Constant	-2,283	-1,159	-1,585	2,248
	(-6,970)	(-3,820)	(-0,390)	(4,720)
ln(k)	0,212	0,104	0,098	-0,204
	(6,450)	(3,450)	(0,250)	(-4,490)
ILL	-0,034	-0,033	0,017	-0,055
	(-12,630)	(-12,740)	(0,810)	(-10,570)
CRED	0,003			
	(3,120)			
LLY		0,007		
		(6,370)		
STRAD			0,045	
			(1,240)	
STURN				0,002
				(2,480)
/sigma_u	0,379	0,253	0,260	0,460
/sigma_e	0,141	0,133	0,199	0,124
Wald Test	155,34	170,28	15,03	88,28
N° Obs	119	121	21	65

OBS: Asymptotic t statistics in parentheses. Wald Test: Test with H_0 non-existence of individual effects.

After inspection of the results depicted at the table above, we can observe some important characteristics. First of all, except for specification 3, we can observe that variable ILL_{it} appears with an expected negative signal in all specification in which it is significant. Thus, we can infer that a better qualified labor force - measured by this noisy proxy variable - tend to increase the degree of specialization in exports of manufactured products. We can also note that variable $ln(k_{it})$, has a positive expected sign in specification 1 and 2. In other words, a bigger capital-labor ratio tends to increase the degree of specialization in manufactured products.

On the variables indicating the degree of credit market development, the results are in line with the expected: countries with a bigger bank domestic credit as a proportion of assets tend to show a greater degree of financial market development. Thus, and also according to the results shown above, tend to exhibit a greater degree of specialization in exporting manufactured products. The same holds for variable LLY_{it}.

On the variables accounting for the degree of stock market development, the results are relatively unclear. The variable $STRAD_{it}$ appears to be poorly significant, which can be explained in part by the small number of degrees of freedom associated with a estimation algorithm based on numerical methods.

On the other hand, the estimation with the variable $STURN_{it}$ showed a positive coefficient associated with this variable; nevertheless, the signal of the variable $ln(k_{it})$ appears not significant.

To sum up, we can say that these estimations do indicate a positive relationship between a country's financial market development degree and its pattern of specialization in manufactured products. However, in order to reach some definite conclusions about this hypothesis, a more sophisticated analysis must be considered. The next section analyzes the Brazilian case more deeply. We will analyze the effects on the export specialization pattern among the Brazilian industries resulting from the degree of financial dependence in each sector.

4 Sectoral Specialization and Needs of External Funds - The Brazilian Case

In this section, we will analyze the effects of different financing needs of firms from the financial market on the comparative advantage pattern of Brazilian industry. The pure international trade theory in its classical version[13], suggests that a country's comparative advantage pattern depends mainly on its endowments of productive factors and technologies.

In the 80´s with advances on the mathematical tools used by economists, a new line of models appeared, emphasizing the role played by product segmentation and economies of scale as a source of comparative advantage. Examples of this sort of literature are shown in Helpman and Krugman (1985). One of the most important contributions of these new models is that, due to economies of scale and product segmentation, there are strong incentives the concentration of production of each variety in a single country[14]. As a consequence, these models end up emphasizing technological advance and product innovation as a determinant issue on international trade, specially at the sector of manufactures.

Empirically, Arbache e Negri (2002), using a database comprising more than 31,000 Brazilian firms, showed that technology and scale of production are determinant factors in the likelihood of a industrial firm to export. These authors also conclude that export firms end up offering a wage permium for its workers vis a vis other firms, which could be related to a productivity differential between export firms and the other ones.

As seen at section 2, the financial system performs functions which have effects on both capital accumulation and innovative process in a capitalist economy, which can explain some of the empirical findings mentioned above. Considering these factors, an investigation on external funding needs becomes essential to a better understanding of the comparative advantage pattern in the Brazilian industry. In other words, given that the degree of scale economies and the technological level of firms are fundamental for the comparative advantage pattern, the way that scale and technology are being financed becomes specially impor-

[13] A description of this theory can be found at Gandolfo (1998).

[14] Hence, here we have an explanation for intra-industry trade.

tant. Consequently, this section aims to analyze the external funding needs as a determinant of comparative advantage pattern in the Brazilian industry segment.

4.1 The Data

In order to perform the empirial analysis, a database from 1996 to 2000 comprising 104 industrial sectors following the CNAE/IBGE classification was built. This feature of our database give us a greater flexibility to evaluate the temporal evolution of the relationship under analysis.

As above, two groups of variables were used. The first one comprises the variables describing the sectoral features of the Brazilian industry. The following variables have been used:

- Gross Value Added - Based on PIA/IBGE information. It is important to stress that this measure is calculated in gross terms, without subtracting net taxes and subsidies on production. Denoted VAB_{it}.
- Gross Operational Excedent - Obtained as the proportion of Gross Value Added that is appropriated as returns to capital. Coded as EOB_{it}.
- Gross Value of Inputs used on Production - Coded as CI_{it}.
- Gross Capital Formation - Expenses to Increase Production Capacity. Named $FBKF_{it}$.
- Gross Expenses in Wages - Total wage bill plus social security contributions. Computed as the participation of wages in gross value added. Defined as WT_{it}.
- Gross Capital Stock - Variable calculated from an estimate of capital stock for the initial year of the sample - 1996 - and then compounded by each year's net investment. Named K_{it}.
- Labor Force - Calculated from the number of worked hours in each sector. Coded as L_{it}.
- Average Number of Years of Schooling of the Labor Force - Calculated from data obtained in the RAIS[15] inquiry. Coded as $SCHOOL_{it}$.

These data were obtained from Garcia´s study (2003) on the Brazilian industry productivity after the Real Plan. Based on this sample, three more variables were built, reflecting the external funding needs per sector, all of them calculated in a similar way - although not identical, due to lack of comparable data for Brazil - to the the external dependence index computed by Rajan and Zingales

[15]RAIS means "Relatório Anual de Informações Sociais" (Yearly Report of Social Informations). It is an inquiry on the characteristics of the labor force of Brazilian companies.

(1998). The first measures the external dependence degree for a increases in firm's capital stock, and is calculated as follows:

$$DEPEX1_{it} = \frac{(FBKF_{it} - EOB_{it})}{FBKF_{it}}$$

This measure is the closest in meaning to the one used in Rajan and Zingales (1998) study. These authors use the following measure:

$$DEPEX = \frac{CAPEX - OCF}{CAPEX}$$

In which $CAPEX$ refers to capital expenditures, while OCF refers to firm´s operating cash flow - also known as EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortization). The variable named $DEPEX1_{it}$ above, uses a similar concept to $CAPEX$ for a production capacity increase - $FBKF_{it}$, calculated in a more aggregated form by sector, and not based on accounting data of firms. In the same fashion EOB_{it} reflects a similar concept as Operating Cash Flow. Both our measure and Rajan and Zingales' (1998) aim to measure the amount firms have to find in the financial market, of total needs of financial resources.

The second measure tries to evaluate the role played not only by fixed capital needs but also for working capital needs. This variable differs from the one above as it includes the total amount of wage bill as capital demand, and the variable is calculated as follows:

$$DEPEX2_{it} = \frac{(FBKF_{it} + WT_{it} - EOB_{it})}{FBKF_{it} + WT_{it}}$$

The third measure is the broader one and also includes the gross value of inputs used in production as demand for funds:

$$DEPEX3_{it} = \frac{(FBKF_{it} + WT_{it} + CI_{it} - EOB_{it})}{FBKF_{it} + WT_{it} + CI_{it}}$$

At this point, it is important to take notice that these three variables are the results of intersectorial structure chacacteristics of both supply and demand sides of financial markets. Thus, the construction of this indicator considers some aspects that were not considered in previous analyses[16].

The second group of variables is concerned with the international trade of different sectors of the economy. These variables were built as follows:

[16]Other analyses focused in differences in the pattern of demand for funds. Our measure, on the other hand, also considers explicitly the evolution on the supply side of funding. In Svaleryd and Vlachos (2001) analysis some credit market development measures were used as credit supply indicators. As a consequence, the relationship between the $DEPEX$ variable and the other variables was used as an observing fund needs measure. However, as these authors were provided with a single supply element measure by country, the credit supply characteristics that could be sectorially explained were ignored. Our measure does not have this problem.

- Exports of Manufactures - It is calculated based on a per product desegregated exports data following the NCM[17] classification translated into aggregated data according to the CNAE/IBGE industry classification system using PRODLIST codes, and named X_{it}.
- Imports of Manufactures - Calculated in a similar way and named M_{it}.

These two variables were combined in order to obtain the specialization indicator that was used in the following analysis, and it was built as it follows:

$$EXP_{it} = \frac{(X_{it} - M_{it})}{(X_{it} + M_{it})}$$

This indicator is similar to the one used above to analyze the pattern of Latin American exports of manufactures. This indicator is also bounded in the $[-1; 1]$ range, and we must take additional care in this analysis. Concerning to the characteristics of the sample and its variables, the Annex shows some descriptive statistics about the variables described above.

4.2 Estimation and Results

Given the sample above, we can now move on to the estimation phase. In order to evaluate the role played by needs of funding over the specialization of the Brazilian sector industry, a set of specifications was used:

$$EXP_{it} = \beta_0 + \beta_1 ln(k_{it}) + \beta_2 DEPEX1_{it} + \beta_3 SCHOOL_{it} + \varepsilon_{it} \quad (3)$$

$$EXP_{it} = \beta_0 + \beta_1 ln(k_{it}) + \beta_2 DEPEX2_{it} + \beta_3 SCHOOL_{it} + \varepsilon_{it} \quad (4)$$

$$EXP_{it} = \beta_0 + \beta_1 ln(k_{it}) + \beta_2 DEPEX3_{it} + \beta_3 SCHOOL_{it} + \varepsilon_{it} \quad (5)$$

In which $ln(k_{it})$ means the logarithm of the capital-labor ratio. At this point of the analysis, it is important to underline that although some results can be explain using the Hekscher-Ohlin approach, this analysis can not be considered as a formal test of this model. Leamer and Levinsohn (1994) pointed several critics about the interpretation of similar equations, like the ones above, as a formal test of the Hekscher-Ohlin theorem[18].

However, for considering the effects of factors endowment for the specialization pattern, Bowen e Swenikaukas (as in Leamer e Levinsohn (1994), page 31) state that this problem is not very serious.

Concerning the expected signals for the regression coefficients, the Hekscher-Ohlin model give us some important directions. For example, following Machado´s analysis (1997), Brazil appears as revealed by its exported as relatively scarce in

[17] NCM means "Nomenclatura Comum do Mercosul" (Common Classification of Goods in Mercosul). It is the standard classification system used by Mercosul countries.

[18] The main objection refers to the unclear relationship between the specifications test hypothesis and the theoretical conclusions of the model. And parameters estimatives of the regression cannot be accepted to reflect what was intended in the tests.

human capital. Thus, we can expect a negative signal for the coefficient of the $SCHOOL_{it}$ variable. The coefficient associated with the $ln(k_{it})$ variable needs further analysis, since no factor content analysis have been made concerning the physical capital in Brazil. However, with Easterly and Levine (1999) data, we can infer some points. As suggested by Leamer (1980), we can infer that a country is relatively abundant in physical capital if the following ratio is verified:

$$\frac{K}{L} > \frac{K_W}{L_W}$$

In which K_W and L_W indicate the world's capital and work endowments. Using Easterly and Levine data (1999), we have that Brazilian capital - labor ratio, in 1990, was US$ 19.783. Using the same dataset, we found for a sample composed of 115 countries a capital-labor ratio of US$ 19.658. Thus, we could expect a positive signal to coefficient β_1[19].

And finally, considering the exposition in section 2, we could also expect a positive value for coefficient β_2. Sectors with greater external funding needs would be the ones that have greater investments in excess of internal resources generation. In other words, these are the ones that use intensively the serivces of the financial system. Since these functions tend to raise the economic productivity a bigger external dependence would indicate a higher comparative advantage degree in manufactures.

The three specifications above were estimated with a random effect TOBIT model; the results are depicted in the following table:

[19]Even with such a small difference, it is important to note that for many poor countries data was lacking. Hence, the world's aggregated capital-labor ratio is probably smaller than the one presented. Even so, the fact these values are so close that we can not infer that the rejection of the hypothesis on β_1 implies an inconsistency with the Heckscher-Ohlin model.

Table 2: Estimation Results - TOBIT Model with Random Effects

	Models		
	3	**4**	**5**
Constant	-0,333	-1,257	-1,092
	(-1,490)	(-3,750)	(-2,850)
Ln(k)	0,059	0,116	0,125
	(2,330)	(3,860)	(4,510)
SCHOOL	-0,028	-0,016	-0,074
	(-1,820)	(-1,090)	(-5,720)
DEPEX1	0,020		
	(2,820)		
DEPEX2		0,141	
		(4,190)	
DEPEX3			0,349
			(1,660)
/sigma_u	0,579	0,586	0,526
/sigma_e	0,265	0,238	0,233
Wald Test	675,940	729,850	729,800
Log Likelihood	-188,592	-162,928	-164,497
Obs	503	503	503

OBS: Asymptotic t statistics in parentheses. Wald Test: Test with H_0 non-existence of individual effects.

We can note that the signs to variables β_1 and β_2 are the expected ones. It means that as a relatively poorly endowed human capital country, Brazil has comparative advantages in products that this factor is intensively used. In the same way, we can infer that Brazil also enjoys a comparative advantage in capital intensive manufactures.

Considering the sign of β_2 coefficient, one can infer that a 1% increase on firm's financing needs would led to a 2% increase on manufactured products net trade flow in the sectoras a ratio to total trade flow [20] - considering the $DEPEX1_{it}$ variable. This positive sign indicates that the Brazilian financial system tends to act as a determinant factor on the pattern of industry comparative advantage.

Even if these results are in accord to what we should expect, some additional tests are still needed. The first one address to the appropriateness of aggregating variables K_{it} and L_{it} into a single variable k_{it}. Thus, a further set of estimates was carried out, with the following specifications:

$$EXP_{it} = \beta_0 + \beta_1 ln(K_{it}) + \beta_2 ln(L_{it}) + \beta_3 DEPEX1_{it} + \beta_4 SCHOOL_{it} + \varepsilon_{it} \quad (6)$$

$$EXP_{it} = \beta_0 + \beta_1 ln(K_{it}) + \beta_2 ln(L_{it}) + \beta_3 DEPEX2_{it} + \beta_4 SCHOOL_{it} + \varepsilon_{it} \quad (7)$$

[20] The EXP_{it} variable is built as per product trade surplus - $(X_{it} - M_{it})$ - divided by trade current $(X_{it} + M_{it})$.

$$EXP_{it} = \beta_0 + \beta_1 ln(K_{it}) + \beta_2 ln(L_{it}) + \beta_3 DEPEX3_{it} + \beta_4 SCHOOL_{it} + \varepsilon_{it} \quad (8)$$

Additionally, a Wald hypothesis test $H_0 : \beta_1 = -\beta_2$ was carried out. This test evaluates the restriction that these three specifications can be reduced to the ones above without loss of generality. The results are depicted in the table below:

Table 3: Estimation Results - Unconstrained TOBIT with Random Effects

	Models		
	6	**7**	**8**
Constant	-2,081	-1,136	-2,567
	(-8,540)	(-4,270)	(-6,900)
Ln(K)	0,213	0,138	0,233
	(8,750)	(5,530)	(7,970)
Ln(L)	-0,124	-0,092	-0,155
	(-3,750)	(-2,730)	(-4,620)
SCHOOL	-0,100	-0,077	-0,103
	(-9,000)	(-6,960)	(-9,110)
DEPEX1	0,014		
	(2,440)		
DEPEX2		0,094	
		(3,050)	
DEPEX3			0,366
			(1,890)
/sigma_u	0,658	0,527	0,644
/sigma_e	0,220	0,231	0,221
Wald Test	745,570	730,490	750,300
Log Likelihood	-151,292	-160,472	-152,867
Obs	503	503	503
Teste Constraint (df)	22,28 (1)	4,84 (1)	10,15(1)

OBS: Asymptotic t statistics in parentheses. Wald Test: Test with H_0 non-existence of individual effects. Test Constraint: Wald test on the constraint $H_0 : \beta_1 = -\beta_2$, with degrees of freedom in parentheses.

The table results indicate the tests of the $H_0 : \beta_1 = -\beta_2$ restriction indicates that it is rejected in all specifications, at a 5% significance level. Additionally, we also can see that the $SCHOOL_{it}$ variable coefficient continues significant and negative in sign, as expected. The positive β_1 coefficient sign combined with the negative β_2 coefficient sign indicates that capital intensity is a source of comparative advantage for the Brazilian industries.

Finally, firms' external resource needs still represent a source of comparative advantage. An increase of 1% in the external resource needs to capital formation - calculated as DEPEX1 - leads to a 1.4% manufactured product trade surplus increase, as a proportion of trade flow.

The results for these six specifications can give us some important conclusions. First, and in line with the previous literature, we can conclude that Brazil is a net importer of human capital intensive products. We also can conclude, the per worker physical capital endowment is a comparative advantage source for Brazilian manufactured products exports.

We have that funding needs is an important factor on the Brazilian specialization pattern. As mentioned at section 2, the financial sector would act as an element increasing productivity of other economy productive factors. In this case, we can say that Brazilian financial sector, by raising sectoral productivity, contributes to a higher degree of specialization in the economy. Thus, increasing the welfare of the economy.

5 Conclusions

This article tried to investigate the relationship between economic performance and financial development, focusing one of its consequences - the pattern of comparative advantage of countries.

In this sense, an analysis in two stages was carried out. The first one, more aggregated, was aimed on capital market development and its effects on Latin America's degree of specialization on manufactured products. The main conclusion is the financial market development degree plays an important role in order to understand the trading pattern of a sample of 11 countries of this region.

The second phase focused on Brazilian degree of intersectorial specialization in international trade resulting from the access of financial markets and intermediaries. In order to carry out this analysis, a sample comprising 104 industries sample was built, following the CNAE/IBGE industry classification. At this point, we concluded that external funding needs also plays an essential role when explaining the comparative advantages of different sectors. This is due the relations between productivity increase and financial market functions.

The main conclusion of this studying is that Latin America financial system is, in general, and specially in Brazil, determinant to the pattern of comparative advantage. In this sense, policies aiming the financial market development tend to benefit not only the development of these economies, but also its international trade pattern.

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A Appendix

A.1 Latin American Countries Used on Estimates

Países	
Argentina	Mexico
Bolivia	Paraguay
Brazil	Peru
Chile	Uruguay
Colombia	Venezuela, RB
Ecuador	

A.2 Descriptive Statistics - Latin American Sample

	Exp	k	ILL	CRED	LLY	STRAD	STURN
Mean	-0,5522	20.581	11,4977	40,0236	21,6573	4,4278	22,1261
Median	-0,6283	19.429	10,8750	35,6150	20,8600	2,2800	12,4550
Std. Dev.	0,3172	9.325	6,1332	26,5720	13,0802	5,4117	23,5183
Asymmetry	0,8386	0,9618	0,6715	1,3456	0,5706	1,5260	2,5292
Kurtosis	2,9621	3,7469	3,1798	6,3995	3,4709	4,7640	14,5416
Obs.	231	121	242	236	237	128	128

A.3 Descriptive Statistics - Brazilian Industry Sample

	EXP	DEPEX1	DEPEX2	DEPEX3	Ln(K/L)	Ln(K)	Ln(L)	SCHOOL
Mean	-0,0506	-0,7582	0,3067	0,8296	11,7278	15,7871	3,9191	8,2069
Median	-0,1264	-0,3208	0,4204	0,8450	11,6795	15,6719	3,8567	8,0856
Std. Dev.	0,6510	1,9430	0,4321	0,0741	0,7873	1,5519	0,8796	1,6430
Asymmetry	0,2038	-6,4781	-2,3305	-2,0284	0,1813	0,9130	0,6264	0,2005
Kurtosis	1,6629	65,3933	12,6625	10,4896	3,7603	4,2280	2,9832	2,9962
Obs.	495	519	519	519	504	520	504	530