



Financial Constraints, the Distribution of Wealth and International Trade

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1. Introduction

As the Heckscher-Ohlin-Mundell paradigm predicts, in a world where capital markets are perfect and production exhibits constant-returns to scale, while aggregate wealth endowments can be an important source of comparative advantage, their internal distribution does not matter for the patterns of international trade. This is because in the absence of financial frictions the only factor that determines the availability of external finance is a project's net present value. In real life financial markets are far from perfect. Informational asymmetries between lenders and borrowers, corporate governance quality shortcomings and non-negligible intermediation costs are only a sample of the types of problems that beset financial markets. The presence of financial frictions implies that the level of wealth of entrepreneurs is a second factor that lenders need to consider when providing external finance. Now some entrepreneurs with profitable projects but insufficient wealth cannot obtain external funds; i.e. they are financially constrained. A steadily growing literature examines the implications of financial constraints for the patterns and volume of international trade. Not surprisingly, cross-country differences in the quality of financial institutions and wealth distributions matter. These issues become more prominent at times of global financial market upheaval where financial constraints are universally tighter.

Much of the literature focuses on the quality of institutions.¹ In a recent paper Ju and Wei (2008) suggest that only for those countries with poor quality financial systems will financial constraints influence comparative advantage. For those countries with well-functioning financial markets, finance is only secondary to the real sector. Financial constraints are not sufficiently restrictive to prevent those countries from expanding those sectors where they have a comparative advantage. In contrast, for those countries with poor quality institutions finance becomes a primary source of comparative advantage. When capital is not efficiently allocated its aggregate level becomes poor predictor of economic performance.

In this paper, we argue that the same reasoning might also apply to the distribution of wealth especially for economies that are not very wealthy. For a given level of endowments and institutional quality, those with higher inequality are less affected by financial frictions. The intuition is that a transfer of wealth from the poor to the relatively wealthy might alleviate financial constraints sufficiently to allow the economy to specialize in those sectors

¹ See for example, Antras and Caballero (2009), Beck (2002), Bougheas and Falvey (2010), Chaney (2005), Egger and Keuschnigg (2009), Ju and Wei (2008), Kletzer and Bardhan (1987), Manova (2008b), Matsuyama (2005) and Wynne (2005).

where it has a comparative advantage. This prediction is not entirely surprising given that it only extends the implications of the Aghion and Bolton (1997) trickle-down argument to open economies. However, the prediction is derived from a simplified model that allows us to concentrate our analysis on the relationship between the wealth distribution and the patterns of trade. We analyze a two-sector model of trade with heterogeneous agents but we only allow for two levels of wealth endowments.² Nevertheless, even this simplified environment offers useful suggestions to the sensitivity of our results to alternative specifications of the endowment distribution.

We also take a first look at international data from a sample that includes countries from all stages of development. We estimate correlation coefficients between a measure of the financial dependency of exports and: (a) institutional quality, (b) per capita income and (c) income dispersion for the whole sample and for each income group separately. Our preliminary findings on institutional quality and per-capita income confirm earlier results.³ Our findings also provide some (albeit weak) evidence on the predicted relationship between income dispersion and comparative advantage.

2. A Simple Model

Within a population of N risk-neutral agents there are two types distinguished by their level of endowments of assets A . The proportion of poor agents is equal to π and each is endowed with \underline{A} units of assets while the rich are endowed with \bar{A} ($\underline{A} < \bar{A} < 1$) units of assets. Each agent is also endowed with one unit of labor. The total assets in the economy are $\mathcal{A} = N[\pi\underline{A} + (1 - \pi)\bar{A}] = N\bar{A}$. The economy produces two final goods, namely a primary commodity and a manufacturing product. All agents have homothetic preferences allocating equal shares of their income to each good. Without loss of generality we assume that the manufacturing product is the numeraire good and denote by P the price of the primary commodity. Production of one unit of the primary commodity requires the input of one unit of labor. In modeling the manufacturing sector we follow closely the fixed-investment model of Holmström and Tirole (1997). For the production of the manufacturing product there are available two technologies. The safe technology requires one unit of assets as input for the

² See also Bougheas and Falvey (2010), Egger and Keuschnigg (2009) and Wynne (2005) for some other related work on the relationship between the distribution of wealth and international trade.

³ See Beck (2003), Hur, Raj and Riyanto (2006), Manova (2008a), Manova (2008b) and Slaveryd and Vlachos (2006).

production of each unit of final output. The high-risk/high-return technology requires an entrepreneur, who uses her labor endowment to run it and one unit of assets as inputs. This technology yields R units of the manufacturing product with probability p and nothing with probability $1 - p$. The probability of success of the project depends on the effort exerted by the entrepreneur. When the entrepreneur exerts a high level of effort $p = p_H$, while when her level of effort is low $p = p_L$. However, in the latter case she derives an additional benefit B . We assume that $p_H R > 1 > p_L R + B$ which implies that the technology is socially efficient only when the entrepreneur exerts effort.

Since $\underline{A} < \bar{A} < 1$, an entrepreneur with assets A wishing to adopt the risky technology must borrow $1 - A$. We assume that this loan is repaid only if the project is successful. In a competitive financial market, the expected payoffs to entrepreneurs who do and don't exert effort are, respectively

$$p_H[R - r(1 - A)] \quad \text{and} \quad p_L[R - r(1 - A)] + B$$

where r denotes the equilibrium interest rate. The incentive compatibility condition that ensures that the borrower exerts the high level of effort is then given by

$$(p_H - p_L)[R - r(1 - A)] \geq B$$

where the left-hand side is equal to the expected benefit of exerting a high level of effort.

By setting the incentive compatibility condition to equality and solving for A we derive a threshold level of initial endowments $A^* = 1 - \frac{1}{r} \left[R - \frac{B}{p_H - p_L} \right]$ such that only those agents with $A \geq A^*$ can obtain external funds and thus become entrepreneurs. The quality of

financial institutions is captured by $R - \frac{B}{p_H - p_L}$. The smaller this variable, the higher the endowment threshold. From now on we assume that $\underline{A} < A^* < \bar{A}$ for all relevant r ; put differently, we focus on equilibria where only the wealthy agents are financially unconstrained.

Our aim is to understand how changes in inequality can affect the patterns of international trade and welfare. When financial markets are frictionless changes in the distribution of income do not affect the patterns of trade and, as long as the marginal utility of income is constant, also do not affect welfare. In perfect financial markets, which in our case means effort is observable, any agent with a project that has a positive present value can obtain external funds. This last observation implies that what matters for obtaining the

equilibrium is only the level of aggregate wealth and not its distribution. As we will see below this is not necessarily the case when we introduce financial market frictions.

It turns out that when we solve our model we need to consider two general cases that depend on the proportion of poor agents. The total borrowing requirement if all rich agents undertake the risky project is $LD = N[1 - \pi][1 - \bar{A}]$ and the total assets available from poor agents is $LS = N\pi\bar{A}$. Equating these, one obtains the unique value $\hat{\pi}$ at which aggregate wealth is just sufficient to finance the projects of all financially unconstrained agents

$$\hat{\pi} = \frac{1 - \bar{A}}{\bar{A} + 1 - \bar{A}}$$

When $\pi < \hat{\pi}$, $LD > LS$ and there will be some financially unconstrained agents that will be employed in the primary sector and invest their assets in the financial market; while when $\pi > \hat{\pi}$, $LD < LS$ and some assets will be invested in the safe but low-return technology.

2.1. Low π : Inequality and Financial Frictions are Irrelevant

In this case the proportion of agents that qualify for access to external funds is too high. The aggregate wealth in the economy is not sufficient to finance all eligible projects and thus some wealthy agents will enter the primary sector and invest their endowments of assets in the financial market. But as all wealthy agents are identical, in equilibrium, they must be indifferent between finding employment in the primary sector and becoming entrepreneurs implying that $P + p_H r \bar{A} = p_H [R - r[1 - \bar{A}]]$ in equilibrium. The left-hand side is equal to the expected income of a wealthy agent who decides to be employed in the primary sector and invests her wealth in the financial market, while the right-hand side is equal to the expected income of a wealthy agent who decides to become an entrepreneur. This condition can be simplified to

$$(1) \quad P = p_H [R - r]$$

revealing an unambiguously negative relationship between the equilibrium relative price of the primary good and the interest rate (expressed in terms of manufactures).

As long as the financial market and one of the goods markets are in equilibrium the other goods market will also be in equilibrium. We focus on the market for the primary commodity. Let θ denote the fraction of rich agents who enter the primary sector. All agents in that sector produce one unit so that the total supply of the primary commodity is equal to

$N[\pi + \theta(1 - \pi)]$. Every agent in the economy spends half of her income on the primary commodity and thus total demand is equal to

$$\pi N \left[\frac{P + p_H r \underline{A}}{2P} \right] + [1 - \pi] N \left[\frac{P + p_H r \bar{A}}{2P} \right] = \frac{N}{2} \left[1 + \frac{p_H r \bar{A}}{P} \right]$$

Equating demand and supply and solving, we get

$$(2) \quad P = \frac{p_H r \bar{A}}{2(\pi + \theta(1 - \pi)) - 1}$$

The value of θ is determined by financial market clearing. The total supply of funds is equal to $N[\pi \underline{A} + \theta(1 - \pi) \bar{A}]$, which includes the supply of funds by the poor agents and the supply of funds by those rich agents employed in the primary sector. The demand for funds is equal to $N[1 - \theta][1 - \pi][1 - \bar{A}]$. Equating demand and supply and solving for θ we get

$$(3) \quad \theta = 1 - \frac{\bar{A}}{1 - \pi}$$

The equilibrium volume of finance is $N \bar{A} [1 - \bar{A}]$, and the total supply of the primary product in this equilibrium is $N[1 - \bar{A}]$. Substituting (3) into (2) and using (1) we find that

$$(4) \quad r = R \frac{1 - 2\bar{A}}{1 - \bar{A}}$$

and

$$(5) \quad P = p_H R \frac{\bar{A}}{1 - \bar{A}}$$

Note that neither of these solutions depends on the distribution of wealth in the economy. The reason is that financial constraints do not bind as there are agents eligible to obtain external funds but opt not to do so. The equilibrium prices are the same as those that we would have obtained in the absence of financial frictions. The only difference is that under perfect financial markets all agents would have been eligible to obtain funds while here poor agents can only find employment in the primary sector. Any redistribution of wealth that maintains the average and leaves the proportion of poor people below the threshold level has no effect on the economy's equilibrium. But changes in aggregate wealth do. All manufacturing output is produced using the more efficient technology and any extra wealth will be employed using that technology. For any given $\{P, r\}$, an increase in aggregate wealth increases the demand for the primary product and reduces the supply as rich agents are drawn into the manufacturing sector, tending to increase the price of the primary commodity. For given θ , an increase in \bar{A} increases the supply of funds without affecting the demand, while an

increase in \bar{A} increases the supply of funds and reduces the demand. In each case the response is a reduction in θ and a fall in r ⁴. Finally, a higher expected return on the risky technology boosts both the demand for funds and the supply of the manufacturing product causing both prices to increase.

2.2. High π : Inequality and Financial Frictions Matter

When the proportion of unconstrained agents is low the level of aggregate investment in the risky technology is lower than the level of aggregate endowments and some assets are invested in the safe technology. But for this to be the case poor agents must be indifferent between lending their endowments to entrepreneurs and investing them in the safe technology. Since the latter produces 1 unit of manufacturing output, this implies that the equilibrium interest rate must satisfy $p_H r = 1$. The quantity of assets invested in the risky technology is LD , and in the safe technology is $LS - LD = N(\bar{A} - (1 - \pi))$. Given that now only the poor agents produce the primary commodity its total supply is equal to πN . Both types of agents spend half of their income on the primary commodity so that total demand is equal to

$$\frac{N}{2P} \left\{ \pi [P + p_H r \bar{A}] + [1 - \pi] p_H [R - r (1 - \bar{A})] \right\} = \frac{N}{2P} \left\{ \pi P + \bar{A} + [1 - \pi] p_H [R - r] \right\}$$

Equating the two sides of the market and solving for the price yields

$$(6) \quad P = \frac{[1 - \pi] p_H [R - r] + \bar{A}}{\pi}$$

As in the previous case an increase in either aggregate asset endowments or the expected return of the risky technology pushes the price up. Both changes boost the supply of the manufacturing product, the former by increasing the amount invested in the safe technology⁵ the latter by increasing the productivity of the risky technology. But in this case the distribution of endowments also matters. An increase in the proportion of poor agents, which is equivalent to an increase in the mass of financially constrained agents, results in a withdrawal of funds from the risky-technology that are now invested in the less efficient safe technology. In addition, more agents enter the primary sector. All these changes boost the relative supply of the primary commodity and depress its price.

⁴ An increase in \bar{A} will unambiguously increase the equilibrium volume of financial activity. An increase in \bar{A} will also have this outcome as long as $[1 - \bar{A}][1 - \pi] > \bar{A}$ initially.

⁵ Any increase in \bar{A} will be invested in the safe technology leaving the volume of financial activity unchanged. Any increase in \bar{A} will reduce borrowing and hence reduce the volume of financial activity.

The reason that the distribution of income matters is because financial constraints are binding. Under perfect capital markets all funds would have been invested in the high-return risky technology. However, even if all agents have projects with positive present value only those with sufficiently high endowments, $A \geq A^*$, have access to external funds. Changes in the endowment distribution directly affect the mass of financially constrained agents and consequently the equilibrium under autarky.

2.3. International Trade and the Distribution of Endowments

We assume that the economy is a price-taker in the world markets and we denote by P^* the world price of the primary commodity. If the autarky price is below the world price ($P < P^*$) then the economy will have a comparative advantage in, and thus export, the primary commodity. In contrast, if the world price is below the autarky price ($P > P^*$) then the exporting sector will be manufacturing. Consider once more the two cases analyzed above.

We know that when the proportion of poor agents is low changes in the distribution of wealth does not have any effect on the autarky price. Without affecting the autarky price they cannot affect the patterns of trade. As in the case where the financial market is frictionless changes in the distribution of wealth do not have any real effects.

This is no longer the case when the proportion of poor agents is high. As the proportion of financially constrained agents goes up the relative supply of the primary sector increases and the autarky price declines. The implication of this last observation for the patterns of international trade is straightforward. The higher the proportion of financially constrained agents, the more likely is that the country will export the primary commodity.

3. A Preliminary Look at the Data

We have argued that when financial markets are imperfect, the patterns of international trade will depend on both the extent of financial development and the distribution of wealth in the economy. A country is more likely to have a comparative advantage in financially dependent sectors (in our theoretical model manufacturing represents these sectors) (a) if it has high quality financial institutions and thus deeper financial development, and/or (b) if it is either wealthy or if its wealth distribution is uneven. Our first task is to measure to what extent each country in our sample has a comparative advantage in financially dependent sectors. We rank each country's sectors according to their share of total exports. We also obtain a ranking of sectors according to their degree of external financial dependence. Then

we estimate the correlation coefficient between the two rankings. A high correlation coefficient indicates that the country's exports are dominated by goods produced by financially dependent sectors. Next, we obtain measures for each country's degree of financial development, per capita wealth and the dispersion of its wealth distribution. Lastly, we estimate cross-country correlation coefficients between each one of those three measures and the correlation coefficients measuring the degree of financial dependency of exports. It is clear that our results only provide a glimpse of the relationship between the wealth distribution and comparative advantage given that we present only correlations without controlling for other determinants of the patterns of trade.

3.1. Data Description

Our data set covers 91 countries and 27 industries for the period 1980-1997.⁶ For export flows we use the data set in Manova (2008a) which aggregates to 3-digit ISIC industries data collected from the World Trade Tables. The unit of measurement used for the export flows is value of shipment in US dollars representing the value of exports of the reporting country.

The measure of external finance dependence is borrowed from Rajan and Zingales (1998). This variable measures the financing requirements in addition to any internal funds of each US industry. We use these measures as proxies for the financial dependence of the same industries in other countries.⁷ This variable is calculated as the median ratio of capital expenditure minus cash flow from operations to capital expenditure for each industry over the period of 10 years from 1980 to 1989.

We use variables that measure the degree of financial development as proxies for the quality of financial institutions. We also have four variables that provide more direct measures of the quality of financial institutions (degree of contract enforcement, availability of creditors' rights protection, legal origin and availability of credit rating institutions), however, they are only available for a much smaller sample of countries. In any case, the two groups of variables are strongly correlated. One of the variables that we use as a proxy for the degree of financial development is the ratio of the level of credit obtained by the private sector from financial intermediaries to GDP (Private Credit). This is a good measure as it captures the lending capacity of the financial sector and is a variable that captures the use of funds and not just their availability. In order to check the robustness of our results we also use other measures of financial development. We use the ratio of Liquid liabilities to GDP which

⁶ The full list of sectors is available in an Appendix available from the authors upon request.

⁷ This strategy is also followed in Manova (2008b). The ranking of industries is also available in the Appendix.

measures the financial depth of the financial system. However, this variable is a broader measure of funds as it includes currency plus demand and interest bearing liabilities of banks and non-Bank institutions. We also use the ratio of Stock Market Capitalization to GDP to capture the size and activity of the capital market especially in its role to mobilize and allocate resources. The above data is taken from Beck, Demirguc-Kunt and Levine (2009). The correlation coefficient amongst these variables is high enough to justify their use as proxies for financial development.

Unfortunately, measures of wealth distributions are not available. One option is to use the distribution of firm assets that can be obtained from firm level balance sheet data. There are two drawbacks with this choice. Firstly, such data sets are available for few countries, and secondly, they usually exclude the small firms that typically are the most financially constrained. The second option, and the one that we have chosen, is to use the income distribution as a proxy for the wealth distribution. We use Real per Capita GDP, obtained from Penn World Tables (Centre for International Comparison, University of Pennsylvania), as a proxy for the mean of the distribution of wealth. The Income Inequality data is obtained from the newly compiled Standardized World Income Inequality Database (SWIID) by Solt (2009). The dataset overcomes the problems of coverage and comparability affecting earlier datasets by employing a custom missing data algorithm to standardize the UNU-WIDER and the World Bank (Deninger and Squire, 1996) datasets.

3.2. Results

Our first task is to obtain for each country the correlation coefficient between its ranking of industries according to their share in total exports and the corresponding ranking of industries according to financial dependence.⁸ We will refer to this correlation as CF1. Next we derive the cross-country correlation coefficients between CF1 and our measures of financial development, per capita income and income dispersion. We also derive the corresponding coefficients for each income group (high, upper-medium, lower-medium, low) separately.

Table 1 shows the cross-country correlation coefficients between the three measures of financial development and CF1. This table confirms what we know from earlier studies that there is a strong positive correlation between the degree of financial development and the

⁸ For each country we have averaged export flows over their period of availability. The correlation coefficients are also available in the Appendix.

proportion of exports by financially dependent sectors.⁹ Most of these studies suggest that the causation runs from financial development to comparative advantage.¹⁰ However, more recently Do and Levchenko (2007) and Huang and Temple (2007) have suggested that comparative advantage might be a determinant of financial development. Their argument is that only those countries with a comparative advantage in financially dependent sectors have an incentive to develop their financial markets.

Table 1: Correlation coefficients between CF1 and financial development

	All	High Income	Upper Middle Income	Lower Middle Income	Lower Income
pcrd	0.6018*	0.4396*	0.4760*	0.6259*	0.1627*
llgdp	0.6034*	0.4055*	0.3711*	0.5196*	0.1578*
stmktcap	0.3556*	0.3218*	0.5588*	0.4735*	-0.2939*

Notes: **pcrd** is the ratio of private credit by deposit money banks and other financial institutions to GDP, **llgdp** is the ratio of liquid liabilities to GDP, **stmktcap** is stock market capitalization.

Table 2 shows the cross-country correlation coefficients between CF1 and per capita real GDP. Looking at the whole sample we find, not surprisingly, that wealthier countries have a greater share in exports from financially dependent sectors. However, when we examine the within income groups corresponding coefficients we find that the result holds strongly only for the wealthier group. Again, we need to keep in mind that we estimate only correlation coefficients thus ignoring other determinants of comparative advantage.

Table 2: Correlation coefficients between CF1 and per capita GDP

	All	High Income	Upper Middle Income	Lower Middle Income	Lower Income
rgdp	0.3414*	0.2064*	-0.0044	-0.0686*	0.0940*

Notes: **rgdp** is real per capita GDP.

Lastly, Table 3 shows cross-country correlation coefficients between CF1 and income dispersion

⁹ The only exception is the correlation coefficient between CF1 and the degree of stock market capitalization in low income countries. This is not entirely surprising given the low development of capital markets in those countries.

¹⁰ See the references in footnote 3.

Table 3: Correlation coefficients between CF1 and income dispersion

	All	High Income	Upper Middle Income	Lower Middle Income	Lower Income
gini	-0.3443*	-0.0016	-0.0579*	0.0931*	-0.3990*

Notes: **gini** is the Gini coefficient (gross income).

Our simple theoretical model suggests that the relationship between inequality and comparative advantage might differ between income groups. For very wealthy and very poor economies changes in inequality might have no impact on comparative advantage. A boost in inequality redistributes wealth from the poor to the rich thus potentially alleviating financial constraints. Wealthy economies in general have better quality financial institutions in which case the distribution of income might not be a source of comparative advantage. While in principle higher inequality could alleviate financial constraints for very poor economies, aggregate wealth is too low to allow for specialization in activities with high set up costs. Thus it seems more likely that inequality might have a higher impact on the patterns of trade of countries in the middle-income group. Our results provide some weak support for these predictions. Differences in inequality among the high income group countries cannot explain differences in their patterns of trade. The results for the two middle-income groups are mixed. The strong negative coefficient for the low income group drives the corresponding coefficient for the whole sample of countries.

4. Concluding Comments: Looking Ahead

Recent work in international trade has suggested that when capital markets are imperfect both the quality of financial institutions and the distribution of income can be sources of comparative advantage. It is clear that healthier institutions provide better solutions to financial constraints arising as a result of frictions in financial markets. Thus countries with better institutions will have an advantage in goods produced by financially dependent sectors. We know that there is a strong relationship between financial and economic development and thus it is not surprising that wealthier countries should also have a comparative advantage in these sectors. However, as our model suggests, a sufficiently high concentration of wealth might be sufficient for overcoming a lack of liquidity in financial markets.

Our correlation results are only suggestive and thus what we need to do next is to formally test our predictions. Looking at the results of the previous section two suggestions come in mind. Firstly, inequality should only matter for countries with low quality institutions given that it is in these countries where financial markets are failing to allocate resources efficiently.¹¹ Thus, in addition to controlling for the level of income we also need to focus on those countries with malfunctioning institutions. Secondly, our correlations suggest that our model does a poor job in explaining what is going on in low income countries. We also noticed that the first stage coefficients (CF1) for the low income countries had a pattern that was difficult to interpret. There were some countries in that group with a high share of exports from financially dependent sectors. Our estimates suggest that high income inequality, as our model suggests, cannot be the explanation. A potential solution to the puzzle is adding foreign direct investment as a control variable. Multinationals can raise funds in international markets thus avoiding host country constraints imposed by poor quality institutions.¹² If, in addition, countries with very poor quality institutions are countries with higher inequality, and these are the kind of countries that multinationals try to avoid, then the presence of foreign direct investment can also explain the negative correlation between inequality and the magnitude of relative exports by financially dependent sectors.

¹¹ Here, in addition to quality measures of financial institutions we should also control for the quality of legal institutions since they are responsible for enforcing contractual agreements.

¹²See also Gall, Schiffbauer and Kubny (2009) for a similar argument.

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Appendix

Table 1: Measures of Asset tangibility and External Finance Dependence for each Industry

code	Industry	External Finance Dependence	Ranking
356	Plastic products	1.1401	1
385	Professional & scientific equipment	0.961	2
383	Machinery, electric	0.7675	3
362	Glass and products	0.5285	4
390	Other manufactured products	0.4702	5
382	Machinery, except electrical	0.4453	6
321	Textiles	0.4005	7
354	Misc. petroleum and coal products	0.3341	8
384	Transport equipment	0.3069	9
331	Wood products, except furniture	0.284	10
381	Fabricated metal products	0.2371	11
332	Furniture, except metal	0.2357	12
355	Rubber products	0.2265	13
352	Other chemicals	0.2187	14
351	Industrial chemicals	0.205	15
342	Printing and publishing	0.2038	16
341	Paper and products	0.1756	17
311	Food products	0.1368	18
371	Iron and steel	0.0871	19
313	Beverages	0.0772	20
369	Other non-metallic mineral products	0.062	21
353	Petroleum refineries	0.042	22
322	Wearing apparel, except footwear	0.0286	23
372	Non-ferrous metals	0.0055	24
323	Leather products	-0.14	25
361	Pottery, china, earthenware	-0.1459	26
314	Tobacco	-0.4512	27

Source: Rajan and Zingales (1998)

Table 2: Correlation Coefficient between Average Exports and External Financial Dependence

Country	Coefficient
Algeria	0.0403
Argentina	-0.1306*
Australia	0.2448*
Austria	0.5482*
Bangladesh	0.2082*
Barbados	0.2241*
Benin	0.3828*
Brazil	0.1013*
Burkina Faso	0.2314*
Cameroon	0.1203*
Canada	0.2521*
Central African Republic	0.1728*
Chad	0.1135*
Chile	0.0165
Colombia	0.0788*
Congo	0.2106*
Costa Rica	0.2668*
Cote d'Ivoire	0.3144*
Denmark	0.4805*
Dominican Republic	0.0073
Ecuador	0.2930*
Egypt	0.0910*
El Salvador	0.2796*
Fiji	0.1691*
Finland	0.3803*
France	0.3980*
Gabon	0.2821*
Gambia	0.3089*
Germany	0.5098*
Ghana	0.1813*
Greece	-0.0940*
Guatemala	0.2167*
Guyana	0.1642*
Haiti	0.3694*
Honduras	-0.0629
Iceland	0.0043
India	0.0647
Indonesia	0.2668*

Iran (Islamic Republic of)	0.0195
Ireland	0.4945*
Israel	0.6062*
Italy	0.4829*
Jamaica	-0.0256
Japan	0.5940*
Jordan	0.3596*
Kenya	-0.0171
Kuwait	0.3089*
Madagascar	0.2363*
Malawi	0.2070*
Malaysia	0.4261*
Mali	0.3443*
Italy	0.2589*
Mauritius	0.4597*
Mexico	0.4402*
Morocco	-0.0519
Nepal	0.0885*
Netherlands	0.2802*
New Zealand	0.1825*
Nicaragua	0.1990*
Niger	-0.1520*
Nigeria	0.1819*
Norway	0.2295*
Oman	0.0788*
Pakistan	0.3370*
Paraguay	-0.1264*
Peru	0.1935*
Philippines	0.2711*
Portugal	0.2747*
Republic of Korea	0.4737*
Rwanda	0.4192*
Saudi Arabia	0.2088*
Senegal	0.2796*
Sierra Leone	0.1758*
Singapore	0.4133*
South Africa	0.1160*
Spain	0.3236*
Sri Lanka	0.1990*
Sweden	0.4676*
Switzerland	0.6343*

Syrian Arab Republic	0.1868*
Thailand	0.4750*
Togo	0.1911*
Trinidad and Tobago	0.1825*
Tunisia	0.0073
Turkey	0.0849*
United Kingdom	0.3846*
United States	0.4805*
Uruguay	0.0940*
Venezuela	-0.1337*
Zambia	0.022
Zimbabwe	-0.0702