FINANCIAL MARKETS, INDUSTRIAL SPECIALIZATION AND COMPARATIVE ADVANTAGE. EVIDENCE FROM OECD COUNTRIES.[a]

Mars 2002

Helena Svaleryd[*] and Jonas Vlachos[**]

Abstract

Due to underlying technological and organizational differences, industries differ in their need for external finance. Since services provided by the financial sector are largely immobile across countries, the pattern of industrial specialization should be influenced by the degree of financial development. We find this effect to be strong. In fact, the financial sector has greater impact on industrial specialization among OECD countries than differences in human and physical capital. We also show that the causality indeed run from the financial sector to specialization. Further, financial sectors are a source of comparative advantage in a way consistent with the Hecksher-Ohlin-Vanek model. Results on which aspects of financial systems that are of importance for specialization and comparative advantage are also presented.

JEL classification: F14; G20; O16

Keywords: Financial intermediation; Financial systems; Specialization patterns; Comparative advantage

---

[a] We thank Thorsten Beck, Karolina Ekholm, Tore Ellingsen, Rickard Forslid, Patrik Gustavsson, Torsten Persson, Daniel Waldenström and seminar participants at the European Economic Association Conference in Lausanne, Nordic International Trade Seminars in Copenhagen, Stockholm University and the Stockholm School of Economics for helpful suggestions. Financial support from the Ahlström and Terserus Foundation (Svaleryd) and the Swedish Institute for Banking Research (Vlachos) is gratefully acknowledged. All remaining errors are our own.

[*] Department of Economics, Stockholm University. Email: hs@ne.su.se.

[**] *Corresponding author*. Department of Economics, Stockholm School of Economics, P.O. Box 6501, 11383 Stockholm, Sweden. Fax: +46-8-313207. Email: jonas.vlachos@hhs.se.

1. Introduction

In a modern economy, financial markets and financial intermediaries play an important role by mobilizing savings, allocating credit, and facilitating the hedging, pooling and pricing of risks.[1] That a well-functioning financial sector has strong, positive effects on a country's aggregate growth opportunities has been shown by, for example, Levine et al. (2000). Since the need for financing depends on the type of activity firms engage in, it would be surprising if the growth effect was completely symmetric across sectors and firms. Recent research (Rajan and Zingales, 1998; Demirgüc-Kunt and Maksimovic, 1998) has indeed found that industries and firms heavily dependent on external financing grow faster in countries with well-developed financial systems. Given these empirical results, it is only natural to expect trading and specialization patterns to be influenced by the financial sector.

This paper adds to earlier research, first by reporting that differences in financial development among OECD countries have an even greater impact on the pattern of specialization than differences in human or physical capital and verifying that this is not due to reversed causality. Second, we find that well-developed financial intermediaries and markets have a positive effect on the content of external financing in net trade. In other words, the financial sector is a source of comparative advantage in a way consistent with the Heckscher-Ohlin-Vanek (HOV) model.

An obvious prediction of the standard HOV-model is that a country well endowed with institutions of relatively high quality should tend to specialize in the production of goods relatively intense in the use of services provided by these institutions. Kletzer and Bardhan (1987) model such a case and find that differences between countries in their domestic institutions of credit contract enforcement may give rise to comparative advantage. This study treats financial markets and intermediaries as factors in the production of goods and services. A necessary condition for a production factor to give rise to comparative advantage is that it is immobile across countries. Although it is not obvious that this condition is fulfilled, we would not expect strong growth effects of domestic financial development, like those found in the empirical growth literature, if financial services were internationally mobile. More

directly, Jayrathne and Strahan (1996) show that the services provided by the financial sector are indeed highly immobile geographically, even within the USA.

This paper belongs to the small empirical literature investigating the effects of institutions on trade. In Svaleryd and Vlachos (2001), we find an economically significant relation between the degree of financial development and aggregate openness to trade. Anderson and Marcouiller (1999) find corruption and imperfect contract enforcement to be important negative determinants of aggregate bilateral trading volumes. To our knowledge, the present paper is the first to analyze empirically how financial markets shape industry specialization patterns and international competitiveness.[2] More generally speaking, ours is also the first paper empirically documenting that the institutional features of a society can give rise to comparative advantage. It contributes to the literature on financial markets and growth by focusing on absolute levels of production rather than growth rates. Finally, we provide new, indirect evidence on the relative merits of different financial systems.

The paper is organized as follows. In Section 2, we start by discussing different aspects of the financial sector. Section 3 describes the measure of industry specialization, the data and results on the determinants of industry specialization. This section also includes results on causality. Section 4 studies the effect of the financial endowment on factor content of net trade, and Section 5 concludes.

2. The financial sector

In this study the financial sector is viewed as a factor of production. A country relatively well endowed with well-functioning financial institutions should thus tend to specialize in sectors relatively intensive in the use of the services provided by these institutions. Our main approach in order to investigate this hypothesis will be to consider the pattern of industrial specialization. Specifically, industry-specific measure of financial intensity is interacted with country-specific measures of financial endowment (or development). A second method is to consider the content of external

[1] The contribution of the financial sector to GDP is large. Demirgüc-Kunt and Levine (1996) present estimates varying from around 5% of GDP in the US to 9% in Japan during the years around 1990.
[2] After the completion of this paper, Ross Levine brought the independent work by Beck (2001) to our attention. Beck addresses the same questions, using basically the same methods as we do. He does not,

finance in net trade. Basically, this approach amounts to investigate if the financial system can be a source of comparative advantage. The prediction is that a country endowed with well-developed financial markets will be a net exporter of external finance.

2.1. The financial sector as an endowment

What do we mean by our claim that the financial sector effectively works as an internationally immobile factor endowment? The question is important since Wood (1994) has shown that the inclusion of internationally mobile production factors in studies of the factor content of trade can yield incorrect predictions. Specifically, he argues that capital cannot be a source of comparative advantage because capital mobility has (more or less) equalized real interest rates across countries. This line of reasoning abstracts, however, from the well-known imperfections of financial markets arising from informational asymmetries and conflicting interests between creditors and debtors however.

Informational problems give rise to financial intermediaries specializing in project evaluation, monitoring and information dissemination, which mitigate the negative effects of market imperfections. Two countries with the same real interest rate, but with financial sectors of differing quality, are thus, in practice, differently endowed with financial capital. There is a huge literature on the underlying causes of, and possible remedies to, these problems. The degree of project uncertainty (Huang and Xu, 1999) and the share of investments in intangible assets (Myers and Majuf, 1984) are just two of the factors that make financial intermediation more important. Financial intermediaries thus do not just raise money for financing investments in physical capital. In fact, it is difficult to have a clear prior on the factor content of the investments made with financial capital; in our view the financial sector is best seen as a type of human or organizational capital, specialized in overcoming market distortions in financing.

But are not the services provided by the financial sector internationally tradable, thereby erasing this source of comparative advantage? Basically, the finding that the

---

however, control for a wider range of production factors. Hence, he cannot relate the size of the effect of financial markets on the pattern of specialization to the effect of other factors.

domestic level of financial development is an important determinant of firm (Demirgüc-Kunt and Maksimovic, 1998), industry (Rajan and Zingales, 1998) and country level economic growth (eg. Levine et al., 2000) suggest otherwise. If capital markets were indeed well integrated, the level of domestic financial development would be of little importance for local growth opportunities. More direct evidence is found in Jayaratne and Strahan (1996), who show that financial services are difficult to trade geographically even within a country. Finally, by investigating companies' cross-listing decisions, Pagano et al. (2001) conclude that geography is still of importance for financing.

All these studies demonstrate that how internationally mobile financial capital is put to use to a large extent depends on the immobile institutional features of a society, summarized in measures of financial development. The problems pointed out by Wood (1994) of including measures of internationally traded physical capital in HOV-studies hence do not apply to the endowment of financial intermediaries. It is therefore reasonable to expect countries with well-functioning financial markets to have a comparative advantage in the production of financial services, and to specialize in industries highly dependent on external financing.

A potential problem that plagues this type of studies of the financial sector is the question of causality. A well-developed financial sector may be a result of high demand for financial services, suggesting that causality run in the opposite direction. In our case this would mean that the industry structure affects the demand for financial services and hence the level of financial development. This legitimate concern will be addressed in the empirical part of the paper.

2.2. Views of the financial system

Although the above discussion is quite straightforward, it is also abstract. In reality, the financial system is not an entity that develops linearly along a single dimension, rather, there are intrinsic differences between different systems and there is a huge literature discusses their pros and cons. Traditionally, the debate has focused on bank-based versus market-based financial systems (see Allen and Gale, 2000 for a modern treatment of these issues).

A bank-based system may be superior to a market-based system because of the long-term relationships between banks and firms. The long-term relationships may increase investors' incentives to acquire information about the firm and exercise corporate control (see e.g. Stiglitz, 1985 and Shleifer and Vishny,1986). A well-developed stock market, however, may aggregate information about both firms and markets in a way not possible for an individual bank. Moreover, corporate control may be facilitated by stock markets through compensation schemes that are linked to stock market performance. It is also likely that banks that issue debt have an incentive to be biased against high-risk projects, which can explain why riskier industries attract more external funding in market-based economies. Another explanation might be that a well functioning stock market also expands the possibilities for risk diversification, thereby making high-risk projects more attractive for the individual investor.

Recently, new perspectives based on the overall efficiency of the financial sector, and its legal environment, have widened the debate on the relative merits of different systems. A possibility expressed by, for example, Huybens and Smith (1999) is that markets and banks are complements rather than substitutes and it is the efficiency of the financial sector as a whole that is of importance. Finally, as La Porta et al. (2000) have stressed, the legal system is key to the working of the financial system. Especially, the legal system protects creditors and minority shareholders against expropriation by majority shareholders and managers. Legal investor protection is therefore associated with effective corporate governance and constitutes a better staring point for cross-country comparisons of financial systems than the bank versus market framework.

Thus, there are four main views of the financial sector: the market based and the bank based views, the view that it is the overall size and efficiency that is of importance, and the view that it is the legal protection of creditors and shareholders that matters.

3. The pattern of specialization

We first approach the question how a country's endowment of financial services affects international trade by considering the pattern of industrial specialization. The hypothesis is that the international competitiveness of an industry in a certain country

depends on the resource endowments of that country and the input requirements of the industry. Balassa (1979, 1986) pioneered this approach.

One obvious candidate as an indicator of international competitiveness and industrial specialization is the ratio between production and consumption, as suggested by Gustavsson et al (1999),

$$(3.1) \qquad r_{ij} = \frac{Q_{ij}}{C_{ij}} = \frac{C_{ij} + X_{ij} - M_{ij}}{C_{ij}} = 1 + \frac{X_{ij} - M_{ij}}{C_{ij}},$$

where Q_{ij} is production, C_{ij} is consumption, M_{ij} is imports, and X_{ij} exports of good i in country j. It should be clear that when r_{ij} is greater than one, country j is a net exporter of good i, whereas a value lower than one indicates that the country is a net importer. In the analysis, r_{ij} is regressed on a set of variables constructed by interacting the input requirements of each industry i with the country characteristics of each country j. The larger the value of r_{ij}, the more specialized is country j in industry i.

In order to pick up fixed industry and country effects, a set of industry and country dummies is added to the regression. We take the logarithm of r_{ij} to ensure that the trade imbalances end up in the country fixed effects. To see this, consider the case of balanced trade. It must then be true that

$$(3.2) \qquad \sum_i Q_{ij}^B = \sum_i C_{ij}^B.$$

For each country j there exists a parameter β_j such that

$$(3.3) \qquad (1+\beta_j)\sum_i Q_{ij} = \sum_i C_{ij} \ .$$

By scaling each element in the production vector by $(1+\beta_j)$, a hypothetical value of production under balanced trade is derived. The relationship between the measure of specialization under balanced and unbalanced trade can then be expressed as

(3.4) $r_{ij}^{B} = (1+\beta_j)Q_{ij} / C_{ij} = (1+\beta_j)r_{ij}$.

By taking the logarithms of (3.4), it should be clear that the country-fixed effects capture the trade imbalance parameter $(1+\beta_j)$.

An alternative measure of industry specialization would be the one used by Balassa (1986), namely

(3.5) $(X_{ij} - M_{ij})/(X_{ij} + M_{ij})$.

The main difference between this measure and r_{ij} is that it can take on a negative value. Thus, it cannot be adjusted for trade imbalances by taking on logarithms.

Although the approach behind (3.1) and (3.5) is inspired by the HOV-theory, it should not be considered as a formal test of the HOV-theory. Leamer and Levinsohn (1995) raise theoretical objections to this type of study when the number of goods is larger than the number of production factors. Bowen and Sveikauskas (1992) demonstrate, however, that these theoretical objections are of little practical importance in actual empirical analysis. The patterns of industry specialization are shown to be consistent with the net exports of factor services, especially for broad aggregates of production factors. What is important, though, is to adjust the dependent variable for trade imbalances. For this reason, we will mainly focus on r_{ij}, and keep the Balassa-measure for testing the robustness of the results.[3]

3.1. Estimation

In order to estimate the impact of financial development on the pattern of industry specialization, we use data on industry factor input requirements and country-factor endowments. The expected sign of the interaction variables is usually positive, which means that a country well endowed with a certain factor will specialize in the industries with large input requirements of that factor.

This means that we estimate the following relationship:

$$(3.6) \quad \ln r_{ij} = \sum_{i=1}^{c} \beta_{1i} D_i + \sum_{j=1}^{n} \beta_{2j} D_j + \sum_{k=1}^{m} \beta_{3k} (\alpha_{ik} \times END_{jk}) + \varepsilon_{ij},$$

where i is the industry index, j is the country index, k is the factor index, D_i is a dummy for industry i, D_j is a dummy for country j, α_{ik} is the input requirement of factor k in sector i, END_{jk} is the endowment of factor k in country j, and ε_{ij} is the error term.

3.2. Financial intensity

The basic premise of this paper is that there are intrinsic reasons, for example technological and organizational, why industries differ in their dependence on external financing and that these differences persist across countries.[4] In the empirical trade literature, such assumptions are quite standard regarding production factors such as human and physical capital. It is even standard procedure to assume the inter-industry ranking of factor intensities are stable over time. Making this assumption for financial dependence might therefore be more difficult empirically than conceptually.

As an indicator of financial intensity, we will use the measure of financial dependence developed by Rajan and Zingales (1998). Their paper tackles the problem of how to measure industry differences in the dependence on external financing.[5] They note that when financial markets work without friction, the supply of external financing will be very elastic. Differences in the actual use of external financing in such an economy will hence mainly reflect differences in demand for this type of funding. By arguing that the U.S. financial markets are the most advanced in the world, Rajan and Zingales use data on the actual external financing pattern of U.S. firms to calculate their measure of financial dependence. More precisely, their measure is capital expenditures minus cash flow from operations divided by capital expenditures. To smooth fluctuations, they use data on the firm's external financing and capital expenditure over a 10-year period. To prevent that excessive weight is given to large

[3] The correlation between the two indicators of specialization is 0.69.
[4] Kletzer and Bardhan (1987) assumes in their theoretical model that some industries require more credit to cover selling and distribution costs.
[5] Beck and Levine (2001) basically employ the same methodology as Rajan and Zingales, when asking if a bank-based or a market-based financial system is most conductive to the growth of financially dependent industries.

firms, industry values are calculated as medians rather than means. According to this measure, drug and medicines (ISIC 3522) is the most dependent, while the tobacco industry (ISIC 314) is least dependent on external finance.

3.3 Financial endowment

Ideally, a measure of financial sector endowment should gauge how effectively financial intermediaries and markets manage to mobilize and allocate capital. Thus, the ideal measure of financial development should be related to the variety of intermediaries and markets available, the efficiency with which they evaluate and monitor firms, and the legal and regulatory framework assuring performance. Although no perfect measures are available, the indicators developed by Beck et al. (1999) proxy for the different aspects of the financial system outlined in Section 2.2.

The first proxies are related to the size and activity of the stock market, and are hence related to the market-based view of the financial system. We use the stock market capitalization to GDP ratio (MCAP), the value of listed shares to GDP, as an indicator of the size of the stock market. Second, the total value of stock market trade to GDP (STRADE) is used to proxy for stock market activity. Both these indicators suffer from the potential problem of capturing the forward-looking expectations by economic agents. If, for example, high growth and hence high profits are anticipated, both MCAP and STRADE will increase. Although this could result in severe problems when considering the effect of these variables on growth as in Levine and Zervos (1998), it is not so much of a problem since we here study within country and across industry differences. Another potential problem is that none of these measures reflect the amount of financing actually obtained by firms.

A commonly used proxy for the degree of overall financial development is the liquid liabilities to GDP ratio (LLY). This proxy is usually employed as an indicator of financial depth and has the advantage of being available for a wide range of countries. It is not, however, a direct measure of the financial sector's capacity to generate funds and may be most appropriate when other indicators are unavailable.

A more direct aggregate indicator of the activity of financial intermediaries is the amount of credit given in an economy. More precisely, we use the ratio of private

credit by deposit money banks and other financial institutions (DC) to GDP to proxy for this. One virtue of this measure is that it isolates credit issued to the private sector from the private sector. This measure has been used to proxy the activity of financial intermediaries. However, perhaps it is really a proxy for the activity in the bank-sector. Next, we include indicators of the efficiency and market structure of commercial banks. A potential measure of how efficient commercial banks channel funds from savers to investors is the net interest margin, i.e. the accounting value of a bank's net interest revenue as share of its total assets (MARGIN). This indicator serves as a proxy for the wedge between the prices faced by the parties on either side of a loan transaction. We define (CONC) as the ratio of the three largest banks' assets to total banking sector assets, as an indicator of market structure. A highly concentrated banking sector might be less competitive and hence less efficient than a competitive one.[6]

The next set of proxies is more related to regulatory efficiency and hence to the potential of raising funds, rather than the actual outcome. For this purpose, we (again) follow Rajan and Zingales and use the accounting standards for each country in 1990 (ACSTAN). International comparisons of accounting standards are made by the Center for International Financial Analysis and Research. This proxy is supposed to reflect the potential for obtaining financing by low information costs. Hence, it can be considered as an overall indicator of the quality of information available to investors. As a check for the consistency of this index, we also make use of the 1983 accounting standards (ACSTAN83).[7] Finally, we turn to indicators of the legal rights of creditors and minority shareholders. MINORITY is an index from zero to six of how well protected minority shareholders are. The higher is the value of this index, the better the legal protection against expropriation. CREDITOR is an index between zero and four, increasing in the legal rights of creditors relative to management and other stakeholders.

[6] As will be discussed later, competition in the banking sector can have both positive and negative effects for the generation of external financing to firms.
[7] The correlation between ACSTAN and ACSTAN83 is 0.70. ACSTAN83 is not available for Mexico.

3.4. Data on other endowments and intensities

In order to measure the input requirements of human capital, we use the share of workers with post-secondary education in each industry, weighted by the relative size of the respective industry. The average years of secondary schooling in the population above 25 is used as a proxy for the national endowments of human capital.

Whether or not to include physical capital in the analysis is an open question. The answer is contingent on the mobility of physical capital; if it is a mobile factor, it should not be included. We choose to follow the convention and include physical capital, especially as we want to ensure that the indicators of financial dependence and endowments do not proxy for any other production factor. Physical capital intensities are calculated as the OECD-averaged capital formation to value added ratio, while physical capital per worker measure capital endowments.[8] To capture the effect of natural resource endowments, the stock of agricultural- and forestland per worker is also employed. The intensity of the former is just a dummy for food production, whereas the latter is calculated using Swedish input-output data. For further details on all variables and sources, see the appendix.

3.5. Trade data

Production and trade data by three and four-digit ISIC industry codes for the OECD countries are obtained from the OECD/STAN database. Since we are forced to combine different data sources, our final data set includes data on 32 manufacturing industries in 20 countries. In other words, it must be kept in mind that trade in services and raw materials is not included in this study.

3.6. Results

Table 1 shows the results from the estimation of (3.6). Seven of the ten interactions between financial dependence and financial development are statistically significant and all have the expected signs. Further, all other interaction variables are positive as expected, but the interaction of agricultural inputs is not significant. Given the highly

[8] There are alternative ways of measuring both human- and physical capital intensities and endowments. We have employed several ways (see appendix) as a check on the robustness of the results.

regulated agricultural sector in most OECD-countries, it might not be surprising that natural advantage is not a key determinant of the pattern of agricultural production.

Establishing statistical significance is a first step, but is the effect of financial markets on the pattern of specialization of economic significance? In column one, we see that the coefficient on the interaction term between financial dependence and the market capitalization ratio takes the value of 0.194. In order to interpret the economic magnitude of this coefficient, the following experiment is helpful. Suppose that shipbuilding (the industry at the 75th percentile of financial intensity) was located in Canada (the country at the 75th percentile of financial endowment), rather than in Italy (the country at the 25th percentile of financial endowment). Further, consider the same switch of locations for beverages (the industry at the 25th percentile of financial intensity). How much larger would the shipbuilding sector be if reallocated from Italy to Canada, compared to the same change in locations for beverages, given that all other variables take on their average values?[9] In specification (1), this exercise leads to a change in $\ln(r_{ij})$ by 0.103. For all industries, the average value of $\ln(r_{ij})$ is –0.164. Hence, the switch of countries would lead to a 10.8 percent increase in r_{ij}, compared to the average value. For the other (statistically significant) proxies of financial endowment, the same number is 12.2, 5.4, 7.0, 6.1, 8.7, and 8.5 percent. In comparison, the same thought experiment with respect to human and physical capital gives an increase in r_{ij} by around 5 and 6 percent, respectively. The impact of the financial system on the pattern of specialization must thus be considered as very large.

Turning to the specific indicators of financial development, we see that both stock market indicators (MCAP, STRADE) are statistically significant. This shows that a well-developed stock market is an important source of competitive advantage among financially dependent industries. The liquid liabilities ratio (LLY) seems to be of no importance for industrial specialization and is not even close to statistical significance. The impact of the activity of financial intermediaries (DC) statistically significant but the size is among the smallest (although still large compared to the effect of human- and physical capital).

[9] This thought experiment is from Rajan and Zingales (1998). Mathematically, this means the following calculation:
$\text{COEFF} \times \{\text{FINDEP}_{75} \times (\text{FINDEV}_{75} - \text{FINDEV}_{25}) - \text{FINDEP}_{25} \times (\text{FINDEV}_{75} - \text{FINDEV}_{25})\}$

[Table 1]

Turning to the efficiency of the banking sector, the net interest margin (MARGIN) does not affect the pattern of specialization. The concentration index (CONC), which proxies for the degree of competition in the banking sector is, however, of importance. The result for banking concentration is interesting since it indirectly suggests that financially dependent industries have better access to credit when the banking industry is competitive. This contradicts Petersen and Rajan (1995) who show that competition in the credit market can be detrimental to the formation of firm-creditor relationships. The reason is that when creditors cannot hold equity claims, and the market is competitive, the creditor is forced to break even every period. For high-risk projects, this implies a very high interest rate that can distort the firms' incentives. In a monopolistic market, on the other hand, the creditor can cross-subsidy the firm over time – to the mutual benefit of both creditor and lender.[10] Rather, the result in column 5 constitutes indirect support of the view put forward by Rajan (1992), namely that banks with market power extract rents and reduce the firms' incentives to invest.

Accounting standards (ACSTAN, ACSTAN83), the indicators of the aggregate quality of information available to investors, are also significant – both statistically and economically. Given the severe informational problems in the financial markets, it should not come as a surprise that good information has a positive effect on the generation of external financing.

Finally, the results are mixed concerning the view that the legal protection of outsiders against expropriation attempts by insiders. Minority shareholder protection (MINORITY) does not seem to affect the pattern of specialization, while the protection of creditors (CREDITOR) does.

[10] Petersen and Rajan (1995) also provide empirical evidence from the US, supporting this view. Using the same methodology as Rajan and Zingales (1998), Cetorelli and Gambera (2001) find that a concentrated banking sector supports the growth of financially dependent industries.

To determine which aspects of financial development are of most importance for industrial specialization, we include different interactions between financial dependence and financial development simultaneously. The high correlation between several indicators prevents us from using all of them in the same regression. Rather, they are entered two by two, based on the aspects they are intended to measure.

[Table 2 here]

The first four columns of Table 2 indicate that the stock market indicator STRADE dominate the other variables (results when using MCAP rather than STRADE are essentially the same). The level of domestic credit DC is dominated by the other indicators, while bank sector concentration remains important when entered together with accounting standards and creditor rights. Accounting standards remain significant in all specifications. Hence, stock market development and accounting standards seem to be the most important determinants of the pattern of specialization.

3.7. Sensitivity analysis

There are many different ways of measuring most of the variables that enter regression 3.6. Since we want to ensure that the results are not due to our choice of indicators, we perform a number of sensitivity tests. Each cell of Table 3 refers to an individual regression, and shows the estimates of the interaction terms between financial dependence and financial development.

In row 1, we replace Ln(r_{ij}) with the Balassa (1986) measure of industry specialization: $(X_{ij} - M_{ij})/(X_{ij} + M_{ij})$. The results are remarkably consistent with the ones in Table 1. Accounting standards for 1990 lose their significance, as does the index of creditor rights. The indicators of financial depth and domestic credit, on the other hand, now gain statistical significance. Making the same analysis for the size of the effect as for ln(r_{ij}) in section 3.6, we obtain an increase in the dependent variable by 0.075, 0.090, 0.031, 0.062, 0.063, 0.052, and 0.044 for each of the significant interaction terms. For human capital, the size-effect is around 0.06 and for physical capital 0.025. Thus, the large effect on the pattern of specialization is not due to the choice of dependent variable.

In row 2, the human capital indicator is replaced by an interaction term where the number of scientists per worker in each country is used as country endowment of human capital.[11] In this specification, all interactions between financial dependence and financial development except the one based on financial depth (LLY) are statistically significant. The point estimates are very similar to the ones in Table 1. If we calculate the size-effect for this indicator of human capital, we get a value of around 6 percent, roughly the same as when secondary schooling is used.[12]

In row 3, physical capital intensities are replaced by the British industry level capital stock to value added ratio, which is done to verify that the results are not contingent upon the flow-measure previously used. [13] The size-effect for this indicator is around 2 percent and we can once again verify the results from Table 1.

In row 4, we exclude the US from the regression since the indicator of financial dependence is based on calculations on US firms.[14] This exclusion leaves the results unchanged.

Finally, we include interaction terms between industry intensity and country abundance of electricity and steel. Although these inputs are tradable, and hence should arguably be excluded from the regression, we include them to verify that the results for financial development are not spurious (similar production factors are also included by e.g. Ellison and Glaeser 1999, and Gustavsson et al. 1999). Both the new variables are positive and significant but the basic results are, if anything, strengthened by their inclusion.

[11] The correlation between SECSCH and SCIENW is 0.53.
[12] Hanushek and Kimko (2000) measure labor force quality by using international mathematics and science test scores. They can thereby avoid the unrealistic assumption that schooling is of equal quality in different countries. Moreover, the use of test scores reduces the likelihood of proxying for general development effects rather than human capital. Using their indicator (HCQ1) rather than quantity based indicators such as SECSCH and SCIENW does not alter the results in this paper. The size effect of HCQ1 is 4.8 percent (results available upon request).
[13] The correlation between CVAI and CAPVA is –0.07 (not significant). That the two measures are not correlated is of course naturally a matter of concern. CVAI, however, is highly correlated with electric intensity, sometimes used as a proxy for capital intensity. This leads us to put more trust in the measure.

[Table 3 here]

3.8. Causality

A potentially very important problem is the possibility of reverse causality: the demand for a well-developed financial sector may be higher in countries with industrial structures that are intensive in the use of external financing. Hence, the industrial structure could determine the development of the financial system rather than the other way around. Although this might be the case also for other factors of production, the problem is perhaps more severe for financial endowment since changes in for example market capitalization and the amount of credit can occur faster than changes in, say, the stock of human capital. This problem could strike with greater force against some of our proxies. Stock market turnover and the concentration of the banking sector are less likely to be affected by reverse causality than market capitalization and the amount of credit, since the latter two are direct indicators of the level of equity and debt in the economy. Accounting standards and the legal variables are quite persistent over time, but are on the other hand direct policy variables that can be adjusted according to industry demands. Here, we approach the problem by instrumenting for financial development in two different ways.

A study by Guiso et al. (2001) demonstrates that social capital is an important determinant of financial development. The reason is that trust between the agents is an intrinsic feature of financial relationships. Since it is hard to imagine that the level of social cooperation in a society is determined by the industry structure, we follow this idea by instrumenting for financial development with an index of the strength of norms in civic cooperation (CIVIC) from Knack and Keefer (1997).[15] It is important that the instruments are correlated with the endogenous explanatory variable since even a small correlation between the instruments and the error can seriously bias the results (see e.g. Bound et al (1995)). However, as indicated by the F statistic of the instrument in the first-stage estimation there is a strong and significant effect of this

[14] It is by no means obvious why this should force us to exclude the US from the analysis. Rajan and Zingales do that in their paper, however, so we follow their example.

[15] The index is constructed using the World Values Surveys which contains survey data from several thousand households in 29 market economies. See the paper by Knack and Keefer (1997) for a closer description of this variable.

instrument on almost all proxies of financial endowment. There is also no correlation between the residuals of the second-stage regressions and the instrument. Hence, CIVIC seems to be a good instrument.

The results from this exercise are presented in the upper panel of Table 4. In general, the point estimates are larger than from the corresponding regressions in Table 1, even though the significance levels are somewhat lower. The main changes are that the interaction terms using liquid liabilities and minority shareholder protection are now statistically significant, while the ones using bank sector concentration and accounting standards from 1983 are not. Since CIVIC show little correlation with bank sector concentration it is not surprising that there is no significant effect.

[Table 3 here]

La Porta et al. (1998) find that a country's protection of corporate shareholders and creditors is determined by its legal origin. In the lower panel of Table 4, we instrument for financial development using each country's legal origin as an instrument for financial endowment. These instruments are a set of dummy variables taking a value of one if a country is of British, Scandinavian, German, and French legal origin, respectively. To these dummies, we add the "rule of law" index produced by Business International Corporation. This instrument should be correlated with the financial endowment since the enforcement of contracts is essential for the working of financial sector. Although these instruments have successfully been used in other studies (e.g. Rajan and Zingales, 1998), we have some worries that there is too little variation in these variables given that our own analysis is limited to the OECD. However, the F statistics of the instruments in the first-stage regression indicate that they work well. Further, the tests of overidentifying restrictions show that the instruments are valid. These tests are performed by regressing the residual from the second stage regression on the instruments. See Table 4 for details.

The results from Table 1 are quite robust to the instrumentation, although the significance levels of the variables are generally somewhat lower. One exception is that CREDITOR gains both in statistical significance and size: the point estimate

increases from 0.07 to 0.25. If we were to take this estimate seriously, an increase in the creditor rights' index from 1 to 3 would imply an increase in r_{ij} by 23 percent.

4. The factor content of trade

Our second approach to study how financial development affects the trade pattern is to consider the factor content of net trade. Thus, we are analyzing if the financial system is a source of comparative advantage. In our case the prediction of the HOV-model is that a country with a well-developed financial sector will be a net exporter of external finance.

4.1. Estimation and data

Leamer and Levinsohn (1995) have shown how to derive an empirical measure of the factor content of net trade, somewhat consistent with the HOV-theory though relaxing the assumption of balanced trade. In the present paper, we modify the Leamer-Levinsohn measure in the same way as Lundberg and Wikner (1997). More precisely, we calculate the following measure

$$(4.1) \qquad Z_{jk} = \sum_i x_{ij} f_{ik} / \sum_i m_{ij} f_{ik} ,$$

where x_{ij} is the share of exports of sector *i* in country *j*, m_{ij} is the share of imports of sector *i* in country *j*, and f_{ik} is the input-requirement of factor *k* in sector *i*. Regardless of the trade balance, the ratio carries information about the relative factor content of exports to imports. Specifically, if $Z_{jk} > 1$ exports are more concentrated to k-intensive goods than imports.[16]

We again use the Rajan and Zingales (1998) indicator of financial dependence as a proxy for the industry-requirements of external financing, as discussed previously (FINDEP). Likewise, we use the same indicators of financial development as before to proxy for the country endowment of financial services. In this section, as well as before, we hope to discriminate between what aspects of the financial system that are of importance for comparative advantage.

The reason why we do not use exactly the same measure of factor content of net trade as the one suggested by Leamer and Levinsohn (1995) is that this would require data on world factor endowment of financial services. The meaning of this is somewhat difficult to grasp. Rather than tackling these conceptual difficulties, we use the Z_{jk} of equation (4.1), which is very much in the spirit of the Leamer and Levinsohn measure.[17]

When constructing Z_{jk}, we have not taken into account the services of production factors in input goods. Thus, the net trade of external financing is calculated using only the direct and not the indirect input of services of financial markets.

4.2. Results

Japan has the largest net export of external financing according to definition (4.1). Other countries with high values of Z_{ik} for the financial sector are Germany, Denmark and the U.K. At the bottom of the list, we find countries such as New Zealand, Australia and Greece.

A common procedure when studying the empirical support for the HOV-model is to conduct rank and sign tests. According to the HOV-model, a country's ranking in net trade of a specific factor should correspond to its ranking in terms of endowment. We use the measure of net trade in factors as defined in equation (4.1). The Kendall's rank test for financial endowment is presented in Table 5. The two measures of the stock market are positively correlated with the net factor trade of external financing, although only STRADE is statistically significant. The measures of financial debt (LLY) and the measure of activity in financial intermediaries (DC), carry the expected sign and are significant. Also the proxies for the effectiveness of the bank sector are, as expected, negatively correlated with the financial dependence of net trade. Finally,

[16]Equation (5.1) can thus be read as the factor content ratio under the restriction that balanced trade is achieved without a change in the composition of trade. The export (import) expansion needed to get rid of a trade deficit (surplus) is, in other words, assumed to be proportional across goods.

[17] The Leamer and Levinsohn measure, under the balanced trade restriction, would take the form: $\sigma_{jk} = \sum_i X_{ij}(\sum_i e_{ij} f_{ik} - \sum_i m_{ij} f_{ik})/V_{jk} = 1 - s_j / a_{jk}$, where X_{ij} is the export of good i from country j, V_{jk} is country j's endowment of factor k and a_{jk} is country j's share of world endowments of factor k.

the correlations with the proxies related to regulatory efficiency are weaker and only CREDITOR carry the expected sign.[18]

[Table 5 here]

The correlation between the content of external finance in net trade and financial development might be spurious for two main reasons. First, an industry's dependence on external financing may be a proxy for its human or physical capital intensity while a country's endowment of financial services may be a proxy for its endowment in these production factors. Second, the exchange of external financing embodied in trade in services and raw material is not included, since the data covers manufacturing only. This may give a distorted picture of the factor content of trade for countries where raw material or services account for a large proportion of trade. Suppose that the external financing requirement in a sector not included in the data is very high (low). Then, the endowment figures will overstate (understate) the supply of external financing available for the manufacturing industry in countries where this particular sector is large. For this reason, it is necessary to control for the endowment of other production factors, such as human and physical capital or natural resources.

Table 6 presents results where the factor content of net trade is regressed on country endowment variables. There is definitely support for the hypothesis that the financial sector is a source of comparative advantage. The measures of stock market size (MCAP) and activity (STRADE) both positively enter the regression. The same is true for the proxy for the liquidity, or financial depth measure, of the financial sector (LLY), and the competition indicator of the banking sector (CONC). However, DC and the other proxy regarding the functioning of the bank sector (MARGIN) are not statistically significant. Moreover, there is no positive effect of a country's accounting standards or its legal framework.

Thus, the effects of the endowment of financial intermediaries on a country's pattern of specialization and comparative advantage in trade are roughly the same. Notably,

[18] In order to make us more comfortable with our measure of net factor trade, we derive an equivalent measure of comparative advantage for human capital. All correlations between the human capital

the size and activity of the stock market and the concentration of the banking system have a significant effect on both variables.

Admittedly, it is not easy to judge the economic effects of being endowed with well-developed financial intermediaries, since we deal with proxies of the concept we want to measure. To investigate the effect in the different proxies for financial development, imagine an increase of, for example, STRADE by one standard deviation. This induces an increase in the net trade of external finance by 23 percent from the mean. The impact of the other significant proxies is around 20 percent, or around 60 percent of one standard deviation. Another way of assessing the effect of the financial service endowment is to see what happens if it is excluded. Column 1 reveals that removing the proxy for financial development reduces the adjusted R^2 of the regression from about 0.46 to 0.13. Thus, the statistically significant proxies have a remarkable effect on the statistical fit of the regression.

[Table 6 here]

Since the different proxies represent different aspects of the financial system it is interesting to investigate their relative importance. In Table 7 presents the results when they are included in the regressions simultaneously. According to the results both the stock-market and the effectiveness of the bank-sector are of importance for the net factor trade of external financing. [19] Also it seems like LLY and the proxies for the stock-market may measure the same thing.

[Table 7]

4.3. Sensitivity

As checks for robustness, we replace SECSCH with test-based labor force quality indicator (HCQ1) and the number of scientists per worker (SCIENW) but this has no effect on the results presented in Table 3 (results are not presented). We also include other control variables in the regressions. First, GDP per capita is entered since the

content of net trade and human capital endowment carry the expected sign and SCIENW and HCQ1 are statistically significant.

[19] MCAP give the same result as STRADE.

indicators of financial development may capture some general aspect of economic development not accounted for by the other endowment variables. Second, the public sector is likely to be financed in other ways than through the private financial markets. Thus, for a country with a large public sector, the true endowment of financial services available for private manufacturing may be larger than in a country with smaller public employment. Including these variables does not, however, affect the results.

Finally, we run all specifications in Table 6 on an alternative measure of factor content of net trade. This measure is constructed as the ratio of factor content in net trade, corrected for trade imbalance, to factor content in consumption. Specifically,

$$(4.2) \quad W_{jk} = \frac{\sum_i f_{ik}(X_{ij} - M_{ij} - B_j \frac{Q_{iw}}{GDP_w})}{\sum_i f_{ik} C_{ij}},$$

where f_{ik} is the input-requirement of factor k in sector i, X_{ij} the exports of sector i in country j, M_{ij} the imports of sector i in country j, B_j country j's the trade imbalance and C_{ij} country j's consumption of good i. Q_{iw}/GDP_w is the share of world output of good i in world GDP. Once more this has little effect on the results presented in Table 6. All results remain qualitatively the same, except in the specification including MCAP, where MCAP is no longer statistically significant at conventional levels.

As discussed earlier, causality may be a problem in this study. As before, we try to address the problem using an instrumental variable approach. Only the proxy for financial debt, LLY, is significant when instrumenting with CIVIC. The coefficients of the other variables carry the expected signs but they are not statistically significant on conventional levels. One reason is that the limited number of observations in this section (only 20). Nor do we find any effects when using the legal origin and the rule of law index as instruments for financial endowment.

5. Conclusions

The main finding of this paper is that countries with well-functioning financial systems tend to specialize in industries highly dependent on external financing. Although this result may not be very surprising, the size of the effect is. In fact, differences in financial systems are more important determinants of the pattern of specialization between OECD-countries than differences in human or physical capital. One plausible explanation for this phenomenon is that the differences in human- and physical capital within the OECD are fairly small. Hence, the relative size of the effect might be smaller in a wider selection of countries. Whether this is true is a question left for future research. We also show that the financial system gives rise to comparative advantage in way consistent with the Heckscher-Ohlin-Vanek model.

One may also view this paper is as a robustness test of Rajan and Zingales' (1998) result that financially dependent industries grow faster in countries with well-developed financial markets. However, we approach this question by studying levels rather than growth rates. Given that Rajan and Zingales find strong signs of conditional convergence among industries (initially large industries tend to grow slower than initially small industries), it is by no means obvious that their result should carry over from growth rates to levels.

We find especially strong results for indicators of stock-market size and activity, as well as for competition in the banking sector. They both affect industrial specialization patterns and give rise to comparative advantage. The result that competition in the banking-sector matters supports theories suggesting that banking concentration limit the amount of capital raised by firms (e.g. Rajan 1992).[20] The quality of a country's accounting standards and the legal protection given to creditors are important determinants of industrial specialization. The results for the indicators of financial depth and the aggregate amount of credit in an economy are somewhat weaker. We address the potential problem with reverse causality by instrumenting for financial endowments. The results show that exogenous variation in financial endowments does shape industrial specialization.

Since ours is one of the first papers approaching the relation between the financial sector and specialization and trade, we have aimed at simplicity and clarity in the empirical analysis. Extensions of this study might allow for other amendments common in the empirical HOV-analysis. These specific extensions would be to allow for cross-country technological and demand differences as suggested by Trefler (1993), Davis and Weinstein (1996), and Harrigan (1997). Another interesting extension would be to analyze the potential effects of financial markets on the choice of technology. Since financial markets are supposed (and shown) to solve information problems in the market place, they are likely to affect the choice of technology. Carlin and Mayer (1999) take a first step in this direction by showing that the financial system affects R&D. To get a better understanding of its effect on technology, we would also need a better grasp of why some industries are more dependent on external financing than others. This might be a fruitful area for future research with implications for the literatures on growth as well as international trade. Incorporating other institutional factors would be another extension along the same lines. As long as industries differ in their use of the services provided by these institutions (and the services are non-tradable), we would expect the pattern of specialization to be determined by institutional factors.[21]

Finally, we might expect specialization and trade pattern identified in this paper to disappear over time. Multinational corporations are supposedly insensitive to local financing conditions. To the extent that MNC:s continue to increase their share of international trade, local financial markets should exert a continuously smaller impact on the pattern of production and trade. The same applies if financial markets

[20] The finding that banking sector concentration is conductive for the growth of financially dependent industries reported in Cetorelli and Gambera (2001) also hinges on conditional convergence.
[21] Naturally, measuring input requirements of institutional factors, and institutional quality is difficult. That wage-setting institutions compressing the wage distribution can affect the industrial composition is supported by evidence in Davis and Henrekson (2000).

effectively become better integrated across countries over time.[22] Hence, it might be fruitful to extend the analysis along the time dimension.

[22] Petersen and Rajan (2001) document an increase in the physical distance between small firms and lenders in the US over time. This increase is correlated with higher bank productivity and hence, constitutes evidence that financial development reduces the need for proximity between borrowers and lenders.

Appendix

Table A1. Correlations and summary statistics: Endowments

	Mcap	Strade	Lly	Dc	Conc	Margin	Acstan	Acstan 83	Credi-tor	Mino-rity	Secsch	Scienw	HCQ1	Kapw1	Agrilw	Rwood w	Elecw	Steelw
Mcap	1																	
Strade	0.80***	1																
Lly	0.72***	0.68***	1															
Dc	0.74***	0.75***	0.72***	1														
Conc	-0.36*	-0.50**	-0.47**	-0.18	1													
Margin	-0.46**	-0.50**	-0.43**	-0.68***	-0.11	1												
Acstan	0.39*	0.16	0.00	0.43*	0.24	-0.37*	1											
Acstan83	0.48**	0.35	0.01	0.50**	-0.02	-0.49**	0.70***	1										
Creditor	0.27	0.33	0.20	0.20	0.03	-0.36	0.08	-0.01	1									
Minority	0.49**	0.36	0.31	0.51**	-0.06	-0.25	0.45**	0.29	0.16	1								
Secsch	0.15	0.38*	0.17	0.45**	-0.11	-0.46**	0.31	0.31	0.30	0.45**	1							
Scienw	0.62***	0.81***	0.38**	0.71***	-0.23	-0.66***	0.42*	0.67***	0.30	0.34	0.53***	1						
HCQ1	0.42*	0.53**	0.54***	0.47**	-0.19	-0.61***	0.03	0.05	0.61***	0.07	0.33	0.57***	1					
Kapw1	0.28	0.33	0.21	0.54**	-0.05	-0.68***	0.63***	0.56**	0.11	0.43*	0.63***	0.70***	0.34	1				
Agrilw	-0.02	-0.13	-0.12	-0.07	0.15	0.00	0.27	0.03	-0.39*	0.40*	0.11	-0.07	-0.45**	0.23	1			
Rwoodw	-0.15	-0.28	-0.20	0.07	0.49**	-0.24	0.50**	0.24	0-.16	0.28	0.27	0.00	-0.18	0.40*	0.20	1		
Elecw	0.01	-0.04	-0.17	0.20	0.38*	-0.26	0.59***	0.40*	-0.04	0.41*	0.37*	0.33	-0.06	0.63***	0.19	0.60***	1	
Steelw	-0.08	-0.12	-0.07	0.02	0.27	-0.30	0.25	0.12	-0.12	-0.09	-0.08	0.05	0.01	0.31	-0.03	0.59***	0.05	1
Mean	0.38	0.16	0.67	0.83	0.61	0.029	66	65	1.86	2.29	2.7	4.9	50,2	44.3	1.0	3752	18.7	1581
Stdev	0.27	0.15	0.30	0.42	0.23	0.013	10	11	1.06	1.42	1.1	2.4	5,8	12.5	1.4	4725	12.1	3292
75th perc.	0.48	0.21	0.75	1.09	0.46	0.018	74	73	3	4	3.1	6.5	54,2	53.0	-	-	-	-
25th perc.	0.15	0.04	0.50	0.49	0.87	0.044	61	61	1	1	1.9	2.7	44,6	39.9	-	-	-	-

*** indicates significance at the 1%-level, ** at the 5%-level, and * at the 10%-level. The last two rows display the values of the observations belonging to the 75th and the 25th percentile respectively.

Table A2. Correlations and summary statistics: Intensities

	Findep	Ahi	Cvai	Capva	Wood-int	Land-use	Elint1	Ironint
Findep	1							
Ahi	0.36**	1						
Cvai	0.14	0.10	1					
Capva	0.05	-0.13	-0.07	1				
Woodint	-0.06	-0.09	0.13	-0.11	1			
Landuse	-0.09	0.31*	-0.03	-0.13	-0.04	1		
Elint1	-0.19	-0.22	0.54***	-0.02	0.21	-0.05	1	
Ironint	-0.11	-0.06	0.20	-0.02	0.04	-0.03	0.14	1
Mean	0.34	0.07	0.15	0.41	1.7	0.03	185	0.03
Stdev	0.42	0.06	0.07	0.25	6.8	0.18	285	0.18
75th perc.	0.47	0.09	0.20	0.42	-	-	-	-
25th perc.	0.06	0.02	0.11	0.26	-	-	-	-

*** indicates significance at the 1%-level, ** at the 5%-level, and * at the 10%-level. The last two rows display the values of the observations belonging to the 75th and the 25th percentile respectively.

Table A3. Correlations and summary statistics: Dependent variables

	Mean	Stdev	Correlations	
Ln(r_{ij})	-0.164	0.482	1	-
Balassa	-0.210	0.431	0.69***	1
Z_{fd}	0.86	0.28	1	-
W_{fd}	-0.12	0.19	0.74***	1

*** indicates significance at the 1%-level, ** at the 5%-level, and * at the 10%-level.

Table A4. Industries and countries included

ISIC	*Sectors*	*Countries*
3110	Food	Australia
3130	Beverages	Austria
3140	Tobacco	Belgium
3210	Wearing Apparel	Canada
3220	Textiles, Apparel &	Denmark
3230	Leather & Products	Finland
3240	Footwear	France
3310	Wood Products	Germany
3320	Furnitures & Fixtures	Greece
3410	Paper & Products	Italy
3420	Printing & Publishing	Japan
3520	Other Chemicals	Mexico[1]
3522	Drugs & Medicines	Netherlands
3530	Petroleum Refineries	New Zealand
3540	Petroleum & Coal Pr	Norway
3550	Rubber Products	Portugal
3560	Plastic Products, n	Spain
3610	Pottery, China etc	Sweden
3620	Glass & Products	UK
3690	Non-Metallic Products	USA
3710	Iron & Steel	
3720	Non-Ferrous Metals	
3810	Metal Products	
3820	Non-Electrical Mach	
3825	Office & Computing	
3830	Electrical Machinery	
3832	Radio, TV & Communication	
3840	Transport Equipment	
3841	Shipbuilding & Repair	
3843	Motor Vehicles	
3850	Professional Goods	
3900	Other Manufacturing	

[1] Accounting standards from 1983 are missing for Mexico.

Data description

Dependent variables

$r_{ij} = Q_{ij}/C_{ij} = Q_{ij}/(Q_{ij} + M_{ij} - X_{ij})$, where Q_{ij} is the production, C_{ij} is the consumption, M_{ij} are the imports from the rest of the world, X_{ij} are the exports to the rest of the world, of industry i in country j. Average values 1989-91. Source: STAN. The definition is from Gustavsson et al. (1999).

Balassa = $(X_{ij} - M_{ij}) / (X_{ij} + M_{ij})$. Source: STAN.

$Z_{ik} = \sum_i x_{ij} f_{ik} / \sum_i m_{ij} f_{ik}$, where x_{ij} and m_{ij} are the shares of exports (imports) of sector i from (to) country j, and f_{ik} is the input requirement of factor k in sector i. The measure is called Z_{fd} when using external financing requirements and Z_{hc} when using human capital requirements. Source: x_{ij} and m_i are constructed from STAN average values in 1989-91, f_{ik} for external financing is FINDEP (Rajan and Zingales (1998)) and human capital intensity is AHI. The definition is from Lundberg and Wikner (1997).

$$W_{jk} = \frac{\sum_i f_{ik}(X_{ij} - M_{ij} - B_j \frac{Q_{iw}}{GDP_w})}{\sum_i f_{ik} C_{ij}}$$, where f_{ik} is the input-requirement of factor k in sector i, X_{ij} the exports of sector i in country j, M_{ij} the imports of sector i in country j, B_j is country j's trade imbalance and C_{ij} country j's consumption of good i. Q_{iw}/GDP_w is the share of world output of good i in world GDP. The measure is called W_{fd} when using external finance requirements. Source: X_{ij} , M_{ij} and C_{ij} from STAN average values 1989-91. f_{ik} for external finance is FINDEP. Q_{iw} the sum of production over the 22 countries included in the study and GDP_w is the sum of GDP for the countries in the study. B_j = total export-total import of goods and services for 1990 from World Development Indicators.

Financial variables

<u>External finance dependence:</u>

FINDEP. Capital expenditure minus cash flows from operations divided by capital expenditures. Data source: Rajan and Zingales (1998).

<u>Financial sector development:</u>

MCAP: Stock market capitalization to GDP, average 1989-91. Source: Beck et al (1999).

STRADE: Stock market total value traded to GDP, average 1989-91. Source: Beck et al (1999).

LLY: Liquid liabilities to GDP, average 1989-91. Source: Beck et al (1999).

DC: Private credit by deposit money banks and other financial institutions to GDP, average 1989-91. Source: Beck et al (1999).

CONC: Market share of the three largest banks. Source: Beck et al (1999).

MARGIN: Net interest margin to total assets. Source: Beck et al (1999).

ACSTAN: Accounting standards 1990. Source: Rajan and Zingales (1998).

ACSTAN83: Accounting standards 1983. Source: Rajan and Zingales (1998).

<u>Legal variables:</u>

MINORITY: Index of minority share holder rights, range 0-6. Source: La Porta et.al. (1998).

CREDITOR: Index of creditor rights. Range 0-4. Source: La Porta et.al. (1998).

RULELAW: *International Country Risk (ICR)* index of law and order tradition. Source: La Porta et.al. (1998).

SCAND, GERMAN, FRENCH, ENGL: Dummies of legal origin. Source: La Porta et.al. (1998).

CIVIC: Index of the strength of norms in civic cooperation. Source: Knack and Keefer (1997).

Human capital

Human capital intensities:

POSTSEC: The share of post-secondary schooling in total employment, 1990, Swedish industries. Source: SCB Regional Labor Statistics, unpublished.

AHI: $\sum_j \{(EMPLOYMENT_{ij} / WORKERS_j) \times POSTSEC_i\} /$ *number of countries.* Source:

EMPLOYMENT from STAN average 1989-91, WORKERS from Penn World Tables 5.6.

Human capital endowment:

SECSCH: Average years of secondary schooling in the population over 25. Average 1985-90. Source: Barro and Lee (2000).

SCIENW: Number of scientists and engineers per worker. Year 1990 or the closest available (1988-93). Source: United Nations Statistical Yearbook.

HCQ1: Indicator of labor force quality, based on international mathematics and science test scores. Based on fixed world average test score. Source: Hanushek and Kimko (2000)

Physical capital

Physical capital intensities:

CVAI = $\sum_j capitalformation_{ij} / \sum_j value\ added_{ij}$ **,** Average 1989-91. Source: STAN.

CAPVA = Capital stock/ Value added in UK. Average 1993-95. Source: OECD Statistical Compendium, Industry, Science and Technology, Industrial Structure Statistics – Industrial Surveys.

Physical capital endowment:

KAPW1: KSTOCK/WORKERS. Capital per worker, thousands of dollars. Average 1988-90. Source: KSTOCK: Real net capital stock in millions of US dollars. This is the accumulated, depreciated, and deflated series (15 years, 13.33% depreciation rate) of gross fixed capital formation in each country. Investment deflators were taken from Summers and Heston. Average 1988-90. From the Factor endowments database, (FEDB) compiled by Maskus and Poterba.

Natural resources

Natural resource intensities:

LANDUSE: Agricultural land intensities: Dummy for food production (ISIC 311/2).

WOODINT: Definition: Millions of SEK worth of input of forestry products divided by millions of SEK worth of production (times 100). Source: SCB (1992).

IRONINT: Use of iron ore. Dummy for iron & steel production (ISIC 3710).

ELINT1: Definition: Total amount of purchased electrical energy in megawatt hours divided by total number of thousands of hours worked. Average value 1990/1991. Source: SCB Industristatistik.

Natural resources endowment:

RWOODW: RWOOD/WORKERS. RWOOD: Round wood production, cubic meters. Average 1989-91. Source: United Nations Statistical Yearbook.

AGRILW: AGRILAND/WORKERS. AGRILAND: Area of arable land and land under permanent crops or permanent pasture in thousands of hectares. Source: The Production Yearbook of the FAO. Average 1988-90. FEDB.

ELECW: ELEC/WORKERS. ELEC: Indigenous production of electricity (Gwh). Average 1989-91. Source: OECD Basic Energy Statistics, various issues.

STEELW: STEEL/WORKERS. STEEL: Crude steel and pig iron production in metric tons. Average 1989-91. Source: United Nations Statistical Yearbook.

General country factors

GDPPC: GDP per capita. Average 1988-90. Source: Penn World Tables 5.6.

GDPPW: GDP per worker. Average 1988-90. Source: Penn World Tables 5.6.

POP: Population in thousands. Average 1988-90. Source: Penn World Tables 5.6.

WORKERS: Workforce in thousands. Average 1988-90. Source: Own calculations GDPPC*POP/GDPPW.

GDP: Total GDP. Average 1988-90. Source: Own calculations GDPPC*POP.

TOTEXP: Total manufacturing export value in dollars. Average 1989-91. Source: STAN.

TOTIMP: Total manufacturing import value in dollars. Average 1989-91. Source: STAN.

GOVSH: Government share of employment. Defined as government employment/WORKERS. Average value 1989-91. Source: OECD Economic Outlook.

References

Allen, F. and D. Gale (2000), *Comparing Financial Systems*, MIT Press: Cambridge.

Anderson, J. and D. Marcouiller (1999), "Trade, Insecurity, and Home Bias: An Empirical Investigation", NBER working paper #7000.

Balassa, B. (1979), "The Changing Pattern of Comparative Advantage in Manufactured Goods", *Review of Economics and Statistics*, 61, 259-266.

Balassa, B. (1986), "Comparative Advantage in Manufactured Goods: A Reappraisal", *Review of Economics and Statistics*, 61, 315-319.

Beck, T. (2001) "Financial Dependence and International Trade", World Bank Working Paper #2609.

Beck, T. A. Demirgüc-Kunt, and R. Levine (1999), "A New Database on Financial Development and Structure", World Bank Working Paper #2146.

Beck, T., and R. Levine (2001) "Industry Growth and the Allocation of capital: Does Having a Market- or Bank-Based System Matter?", forthcoming *Journal of Financial Economics*.

Bound, J., D. Jaeger, and R. Baker (1995), "Problems with Instrumental Variables Estimation When the Correlation Between the Instrument and the Endogenous Explanatory Variables is Weak", *Journal of the American Statistical Association*, 90, 443-450.

Bowen, H., E. Leamer, and L. Sveikauskas (1987), "Multicountry, Multifactor tests of the Factor Abundance Theory", *American Economic Review*, December, 791-809.

Bowen, H. and L. Sveikauskas (1992), "Judging Factor Abundance", *Quarterly Journal of Economics*, May, 599-620.

Carlin, W. and C. Mayer (1999), "Finance, Investment and Growth", CEPR Discussion Paper #2233.

Cetorelli, N. and M. Gambera (2001) "Banking Market Structure, Financial Dependence and Growth: International Evidence from Industry Data", *Journal of Finance*, LVI:2, 617-648.

Davis, D. and D. Weinstein (1996), "Does Economic Geography Matter for International Specialization?", NBER WP #5706.

Davis, S. and M. Henrekson (2000) "Wage-setting Institutions as Industrial Policy", SWOPEC Working Paper #352.

Demirgüc-Kunt, A. and R. Levine (1996) "Stock Market Development and Financial Intermediaries: Stylized Facts", *World Bank Economic Review*, 10:2, 291-321.

Demirgüc-Kunt, A. and V. Maksimovic (1998), "Law, Finance, and Firm Growth", *Journal of Finance*, 53, 2107-2137.

Ellison, G. and E. Glaeser (1999), "The Geographic Concentration of Industry: Does Natural Advantage Explain Agglomeration?", *American Economic Review Papers and Proceedings*, May, 311-316.

Guiso, L., P. Sapeinza and L. Zingales (2001) "The Role of Social Capital in Financial Development", mimeo University of Chicago.

Gustavsson, P., Hansson, P. and Lundberg, L., (1999), "Technology, Resources, Endowments and International Competitiveness", *European Economic Review*, 43, August, 1501-1530.

Harrigan, J. (1997), "Technology, Factor Supplies, and International Specialization: Estimating the Neoclassical Model", *American Economic Review*, September, 475-494.

Huang, H. and C. Xu (1999), "Institutions, Innovations, and Growth", *American Economic Review Papers and Proceedings*, 89, 438-43.

Hanushek, E. and D. Kimko (2000), "Schooling Labor-Force Quality, and the Growth of Nations", *American Economic Review*, 90, 1184-1208.

Huybens, E. and B. Smith (1999), "Inflation, Financial Markets and Long-Run Real Activity", *Journal of Monetary Economics*, 43, 283-315.

Jayaratne, J. and P. Strahan (1996), "The Finance-Growth Nexus: Evidence from Bank Branch Deregulation", *Quarterly Journal of Economics*, 111, 639-670.

Kletzer, K and P, Bardhan (1987), "Credit Markets and Patterns of International Trade", *Journal of Development Economics*, 27, 57-70.

Knack, S. and P. Keefer (1997), "Does Social Capital Have an Economic Payoff? A Cross-Country Investigation", *Quarterly Journal of Economics*, 112, 1251-1288.

La Porta, R., F. Lopez-de-Silanes, A. Schleifer, and R. Vishny (1998), "Law and Finance", *Journal of Political Economy*, 106, 1113-1155.

La Porta, R., F. Lopez-de-Silanes, A. Schleifer, and R. Vishny (2000), "Investor Protection and Corporate Governance", *Journal of Financial Economics*, 58, 3-27.

Leamer, E. and J. Levinsohn (1995), "International Trade Theory: The Evidence", in

Grossman and Rogoff (eds.), *Handbook of International Economics*, Vol. 3. Amsterdam: North-Holland.

Levine, R., N. Loayza, and T. Beck (2000), "Financial Intermediation and Growth: Causality and Causes", *Journal of Monetary Economics*, 46, 31-77.

Levine, R. and S. Zervos (1998), "Stock markets, banks, and economic growth", *American Economic Review*, June, 537-558.

Lundberg, L. and P. Wiker (1997), "Skilled labor and international specialization in OECD countries", *International Review of Applied Economics*, Vol. 11, No 3, p 369-385.

Maskus, K., C. Sveikauskas, and A. Webster (1994) "The Composition of the Human Capital Stock and its Relation to International Trade: Evidence from the US and Britain", *Weltwirtschaftliches Archiv*, 130, 50-76.

Myers, S. and S. Majluf (1984), "Corporate Financing and Investment Decisions When Firms Have Information Investors Do Not Have", *Journal of Financial Economics*, 13, 187-221.

Pagano, M., O. Randl, A. Röell, J. and J. Zechner (2001) "What Makes Stock-Exchanges Succeed? Evidence from Cross-Listing Decisions", *European Economic Review*, 45, 770-782.

Petersen, M. and R. Rajan (1995), "The Effect of Credit Market Competition on Lending Relationships", *Quarterly Journal of Economics*, 110, 407-443.

Petersen, M. and R. Rajan (2001), "Does Distance Still Matter: The Information Revolution in Small Business Lending", mimeo University of Chicago.

Rajan, R. (1992), "Insiders and Outsiders: The Choice Between Informed and Arms Length Debt", *Journal of Finance*, 47, 1367-1400.

Rajan, R. and L. Zingales (1998), "Financial dependence and growth", *American Economic Review*, June, 559-586.

Shleifer, A. and R. Vishny (1986), "Large Shareholders and Corporate Control", *Journal of Political Economy*, 96, 461-488.

Stiglitz, J. (1985), "Credit Markets and the Control of Capital", *Journal of Money, Credit and Banking*, 17, 133-152.

Svaleryd, H. and J. Vlachos (2001), "Markets for Risk and Openness to Trade: How are they Related?", forthcoming *Journal of International Economics.*

Trefler, D. (1993), "International Factor Price Differences: Leontief Was Right!", *Journal of Political Economy*, 101, 961-987.

Wood, A. (1994), “Give Heckscher and Ohlin a Chance!”, *Weltwirtschaftliches Archiv*, 130, 20-49.

Wurgler, J. (2000), “Financial Markets and the Allocation of Capital”, *Journal of* Financial Economics, 58, 187-214

Table 1. Determinants of specialization (defined as in 3.6). Basic regressions.

Dependent variable Ln(r_{ij}).	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*
FINDEP×Ln(MCAP)	0.218***									
	(3.12)									
FINDEP×Ln(STRADE)		0.165***								
		(2.86)								
FINDEP× Ln(LLY)			-0.002							
			(-0.020)							
FINDEP×Ln(DC)				0.161*						
				(1.89)						
FINDEP×CONC					-0.407**					
					(-2.40)					
FINDEP×MARGIN						-5.592				
						(-1.46)				
FINDEP×ACSTAN							0.012***			
							(2.53)			
FINDEP×ACSTAN83								0.017***		
								(3.39)		
FINDEP×MINORITY									0.014	
									(0.51)	
FINDEP×CREDITOR										0.066**
										(2.00)
AHI×Ln(SECSCH)	1.505***	1.344***	1.782***	1.469***	1.744***	1.552***	1.494***	1.441***	1.729***	1.650***
	(3.15)	(2.73)	(3.82)	(2.93)	(3.76)	(3.13)	(3.17)	(2.50)	(3.69)	(3.54)
CVAI×Ln(KAPW1)	2.223***	2.241***	2.375***	2.231***	2.366***	2.266***	2.186***	3.319***	2.356***	2.350***
	(2.73)	(2.76)	(2.89)	(2.72)	(2.90)	(2.77)	(2.68)	(2.88)	(2.87)	(2.87)
LANDUSE×Ln(AGRIW)	0.024	0.022	0.031	0.026	0.027	0.026	0.035	0.027	0.032	0.024
	(0.44)	(0.40)	(0.53)	(0.46)	(0.50)	(0.45)	(0.61)	(0.47)	(0.55)	(0.42)
FOREST×Ln(RWOODW)	0.008***	0.008***	0.008***	0.008***	0.008***	0.008***	0.008***	0.008***	0.008***	0.008***
	(8.22)	(8.26)	(8.12)	(8.27)	(8.35)	(8.24)	(8.33)	(8.40)	(8.31)	(8.25)
% increase in r_{ij} [1]	10.8	12.2	-	5.4	7.0	-	6.1	8.7	-	8.5
ADJ R^2	0.300	0.300	0.281	0.289	0.290	0.286	0.295	0.330	0.282	0.285
# OBS.	619	619	619	619	619	619	619	587	619	619

Robust t-values in parenthesis. *** indicates significance at the 1%-level, ** at the 5%-level, and * at the 10%-level. Regressions include industry and country fixed effects. [1] The interpretation of this value is given in the text.

Table 2. . Determinants of specialization (defined as in 3.6). Different aspects of the financial system.

Dependent variable Ln(r_{ij}).	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*
FINDEP×Ln(STRADE)	0.173***	0.143***	0.132***	0.156***						
	(2.95)	(2.41)	(2.48)	(2.64)						
FINDEP×Ln(DC)	-0.019				0.144*	0.080	0.137			
	(0.24)				(1.71)	(0.98)	(1.57)			
FINDEP× CONC		-0.189			-0.368**			-0.564***	-0.409***	
		(1.13)			(2.28)			(3.09)	(2.42)	
FINDEP×ACSTAN			0.008*			0.010**		0.015***		0.011***
			(1.85)			(2.09)		(2.90)		(2.47)
FINDEP×CREDITOR				0.023			0.042		0.067**	0.057*
				(0.72)			(1.28)		(2.08)	(1.76)
ADJ R^2	0.30	0.30	0.30	0.30	0.29	0.30	0.29	0.30	0.29	0.30
# OBS.	619	619	619	619	619	619	619	619	619	619

Robust t-values in parenthesis. *** indicates significance at the 1%-level, ** at the 5%-level, and * at the 10%-level. All regressions include indicators of human- and physical capital, agricultural- and forestland, as well as industry and country fixed effects.

Table 3. Specialization sensitivity analysis

	MCAP	*STRADE*	*LLY*	*DC*	*CONC*	*MARGIN*	*ACSTAN*	*ACSTAN83*	*MINORITY*	*CREDITOR*
1) Balassa	0.159***	0.129***	0.184**	0.191***	-0.379**	-4.67*	0.005	0.009***	-0.004	0.036
	(2.73)	(2.82)	(1.90)	(3.13)	(-2.24)	(-1.82)	(1.48)	(3.23)	(-0.15)	(1.28)
2) Scientists per worker	0.209***	0.164***	-0.026	0.154*	-0.396**	-5.447*	0.012***	0.017***	0.014	0.067**
	(2.83)	(2.80)	(-0.33)	(1.73)	(-2.33)	(-1.38)	(2.47)	(3.12)	(0.51)	(2.00)
3) British capital intensities	0.224***	0.167***	-0.007	0.170**	-0.407**	-6.038*	0.012***	0.018***	0.016	0.067**
	(3.26)	(2.90)	(0.95)	(2.05)	(-2.41)	(-1.60)	(2.74)	(3.60)	(0.59)	(2.04)
4) US excluded	0.212***	0.162***	-0.014	0.146*	-0.391**	-5.919	0.011***	0.017***	-0.002	0.075**
	(2.97)	(2.67)	(-0.18)	(1.68)	(-2.12)	(-1.49)	(2.47)	(3.34)	(-0.05)	(2.16)
5) Electricity and steel added	0.235***	0.172***	0.014	0.194**	-0.370**	-7.119*	0.014***	0.019***	0.023	0.068**
	(3.36)	(2.97)	(0.19)	(2.27)	(-2.16)	(-1.85)	(3.04)	(3.64)	(0.82)	(2.07)

Robust t-values in parenthesis. *** indicates significance at the 1%-level, ** at the 5%-level, and * at the 10%-level. Each cell refers to an individual regression and shows the point estimate of the interaction between financial dependence and financial development. All regressions include indicators of human- and physical capital, agricultural- and forestland, as well as industry and country fixed effects. In row 1, the dependent variable is $(X_{ij} - M_{ij}) / (X_{ij} + M_{ij})$, in rows 2-5 it is $\ln(r_{ij})$. In row 2, the number of scientists per worker (SCIENW), rather than secondary schooling (SECSCH), is used to measure human capital endowments. In row 3, British capital intensities (CAPVA), than the capital formation to value added ratio (CVAI), are used to measure capital intensities. In row 4, the US is excluded from the regressions. In row 5, ELINT1×ln(ELECW) and IRONINT×ln(STEELW) are added to the regressions.

Table 4. Instrumental variable analysis of specialization

	MCAP	*STRADE*	*LLY*	*DC*	*CONC*	*MARGIN*	*ACSTAN*	*ACSTAN83*	*MINORITY*	*CREDITOR*
1) CIVIC	0.377*	0.310*	0.273*	0.198**	5.791	-12.308*	0.019**	0.069	0.161*	0.109**
	(1.81)	(1.88)	(1.77)	(1.89)	(0.59)	(-1.85)	(2.16)	(1.47)	(1.75)	(1.96)
F (first stage)[a]	39.32	39.79	267.17	323.46	1.42	128.44	69.73	7.35	57.42	287.62
	(0.000)	(0.000)	(0.000)	(0.000)	(0.233)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Correlation[b]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)	(1.00)
2) Legal origin and rule of law	0.155	0.112*	0.278	0.283**	0.480	-9.780*	0.009*	0.019**	0.044	0.246***
	(1.24)	(1.67)	(1.43)	(1.94)	(1.46)	(-1.76)	(1.64)	(1.90)	(1.21)	(2.48)
F (first stage)[a]	50.63	138.46	86.97	115.97	45.84	155.52	147.08	60.54	428.51	57.24
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
OIR test[c]	2.79	1.80	2.35	2.72	1.61	0.62	1.18	2.54	2.35	1.49

Robust t-values in parenthesis. *** indicates significance at the 1%-level, ** at the 5%-level, and * at the 10%-level. Each cell refers to an individual regression and shows the point estimate of the interaction between financial dependence and financial development. All regressions include indicators of human- and physical capital, agricultural- and forestland, as well as industry and country fixed effects. The dependent variable is $\ln(r_{ij})$. In panel 1, we instrument indicators of financial development with the index of the strength of norms in civic participation (CIVIC) from Knack and Keefer (1997). In panel 2, we instrument indicators of financial development with the "rule of law"-index and dummies of legal origin.

a) The F-statistic (and p-values) on the excluded instruments in the first stage regression.

b) Gives the correlation coefficients (and p-values) of the correlation between the residuals from the second stage regression with the instrument.

c) The null hypothesis of the overidentification test is that the residuals from the second stage regression are not correlated with the instruments. Critical values for the test (χ^2, 3 d.f.): 5%=4.11, 10%=6.25.

Table 5. Rank test between the factor content of net trade (Z_{jk} defined as in equation 4.1) and endowment

Production factor	*Proxy*	*Kendalls rank test*
Financial endowment	STRADE	0.305*
	MCAP	0.221
	DC	0.286*
	LLY	0.324**
	CONC	-0.484***
	MARGIN	-0.074
	ACSTAN	-0.058
	MINORITY	-0.116
	CREDITOR	0.226

*** Indicate significance at 1%-level, ** at 5%-level, * at 10%-level

Table 6. Factor content of net trade (defined as in equation 4.1). Basic regressions.

Dependent variable Z_{ik}	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*
MCAP		0.577**								
		(2.43)								
STRADE			1.250**							
			(2.80)							
LLY				0.549***						
				(3.23)						
DC					0.329					
					(1.50)					
CONC						-0.682**				
						(-2.41)				
MARGIN							-3.403			
							(-0.50			
ACSTAN83×1000								0.005		
								(1.46)		
MINORITY									0.000	
									(0.00)	
CREDITOR										-0.027
										(-0.58)
KAPW1	0.006	-0.001	0.001	0.000	-0.000	0.003	0.004	0.005	0.006	0.006
	(0.88)	(0.13)	(0.27)	(0.02)	(-0.02)	(0.65)	(0.61	(0.54)	(0.89)	(0.86)
SECSCH	0.032	0.040	-0.021	0.035	0.015	0.015	0.030	0.035	0.032	0.042
	(0.80)	(1.07)	(-0.43)	(0.96)	(0.32)	(0.35)	(0.69	(0.83)	(0.63)	(1.07)
RWOODW/1000	-0.021	-0.012	-0.003	-0.008	-0.016	-0.010	-0.021	-0.022	-0.021	-0.022
	(-1.55)	(-1.14)	(-0.29)	(-0.75)	(-1.66)	(-0.01)	(-1.51	(-1.58)	(-1.64)	(-1.50)
AGRILW	-0.080**	-0.073***	-0.062**	-0.058**	-0.059*	-0.066**	-0.075**	-0.077*	-0.080	-0.088**
	(-2.39)	(-3.22)	(-2.74)	(-2.70)	(-1.94)	(-2.27)	(-2.38	(-2.05)	(-1.64)	(-2.56)
Constant	0.664***	0.635***	0.755***	0.475*	0.674***	1.188***	0.870*	0.412*	0.664***	0.698***
	(4.50)	(4.88)	(6.78)	(2.12)	(4.86)	(6.60)	(2.11	(1.94)	(4.31)	(4.80)
Adj R^2	0.133	0.459	0.467	0.468	0.295	0.381	0.090	0.099	0.071	0.081
N.obs	20	20	20	20	20	20	20	19	20	20

*** Indicate significance at 1%-level, ** at 5%-level, * at 10%-level. t-statistics based on robust standard errors in parentheses.

Table 7. Factor content of net trade (defined as in equation 4.1). Different aspects of the financial system

Dependent variable Z_{ik}	*(1)*	*(2)*	*(3)*
STRADE	0.718	0.990**	
	(1.75)	(2.42)	
LLY	0.316		0.434**
	(1.71)		(2.55)
CONC		-0.477**	-0.473**
		(-2.43)	(-2.52)
ADJ R^2	0.490	0.571	0.568
# OBS.	20	20	20

Robust t-values in parenthesis. *** indicates significance at the 1%-level, ** at the 5%-level, and * at the 10%-level. All regressions include indicators of human- and physical capital, agricultural- and forestlands.