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The Relationship between Financial Development and Economic Development

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ABSTRACT

In this paper, we investigate the relationship between financial development and economic growth in the emerging economies. We explore the effects of financial liberalization and the impact of financial development on economic growth in the emerging economies. Financial liberalization creates market-based incentives that promote economic growth, (Davies, 2010).This paper reviews, appraises, and critiques theoretical and empirical research on the connections between the operation of the financial system and economic growth. It describes the role of financial system development in economic growth at the macro level, both theoretically and empirically. It also describes briefly the relationship of corporate finance and firm performance. According to these discussions, the nature of casualty between the two was established. On the other hand, there is a very common view that financial development is significant and provides to economic growth popularly known as supply lending activity. Equally, there is an order following the belief which states that economic growth stimulates the progress of the financial sector. In addition, researchers state that a pointer association exists between financial development and economic growth. Due to the argument surrounding the link between the two, a group of researchers has subjected the financial growth link to experimental proof. However, despite their efforts, a gap remains in the literature. These results from the fact that very few studies have given attention to the stage development theory, developed by Patrick in nineteen sixty six, where the direction of casualty between the two variables changes over the course of development. The scarcity of experimental studies on Patrick's theory may be due to limitation of information. It finally concludes the review and presents some policy implications in view of the reviewed literature. Furthermore, theory and evidence imply that better developed financial systems ease external financing constraints facing firms, which illuminates one mechanism through which financial development influences economic growth. The paper highlights many areas needing additional research.

Introduction

The reason for this study is to extend the literature on finance development links. This is by focusing on testing Patrick's stage of development theory for the South American economies of Jamaica, Trinidad, Tobago and Barbados using forecasting econometrics between 1950's to date, (Kohl, 2008).Emerging market economies and financial development are a focus that has gathered huge interest for a very long time; the argument being whether the effects of financial development have an impact on the economic prosperity of most emerging economies. This subject was first analyzed by Bagehot (1873), Schumpeter (1912) and John Hicks (1969). They pointed out that industrialization in most developing countries was largely due to the availability of financial systems to mobilize productive, financial capital. In this argument, Bagehot and Hicks seem to find a common ground on the input of financial services on economic growth. Levin (1997), in his argument states that, the development of financial markets and institutions play an incredibly critical task in the expansion of different sectors of the economy. Economic development is subject to availability of the physical and human capital. Financial resources are needed to ascertain the availability of these capitals. In fact, an economic system equipped with an effective and efficient financial system can mold this investment function in an optimal manner. For example, financial system can contribute towards this end by encouraging the public to save and reallocate their savings to productive investment projects, while competently addressing the issues of risk and return. Hence, financial system. Development is the process involving actions such as founding and expounding functions of financial institutions, developing new (innovative) financial products and developing markets for these products. However, the recent financial crisis in the developed economies is an example of the downside of the financial development and is an indication of the complexities involved in relationship between economic and financial development. Moreover, despite the fact that the two are related, the direction of causality in this relationship is yet another undecided phenomenon. Economists and states have long been interested in the relationship between .financial development and economic growth, and promoting .financial development has been an integral part of many countries. Growth strategies. A body of literature since the work of King and Levine (1993) and Rajang and Zing ales (1998) has found a positive link between .Financial development and growth, yet Levine (2004), reviewing the empirical literature, cautions that available evidence users from .serious short comings, .and that .we are far from genitive answers to the questions: Does finance cause growth, and if so, how?. A critical impediment to a better understanding of this relationship is the lack of exogenous variation in variables of interest: the literature has relied

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primarily on evidence from cross-country comparisons. Economists disagree sharply about the role of the financial sector in economic growth. Finance is not even discussed in a collection of essays by the "pioneers of development economics" (Meier and Seers, 1984), including three Nobel Prize winners, and Nobel Laureate Robert Lucas (1988, p.6) dismisses finance as an "over-stressed" determinant of economic growth. Joan Robinson (1952, p. 86) famously argued that "where enterprise leads finance follows." From this perspective, finance does not cause growth; finance responds to changing demands from the "real sector." At the other extreme, Nobel Laureate Merton Miller (1988, p.14) argues that, "[the idea] that financial markets contribute to economic growth is a proposition too obvious for serious discussion." Drawing a more restrained conclusion, Bagehot (1873), Schumpeter (1912), Gurley and Shaw (1955), Goldsmith (1969), and McKinnon (1973) reject the idea that the finance-growth nexus can be safely ignored without substantially limiting our understanding of economic growth. Research that clarifies our understanding of the role of finance in economic growth will have policy implications and shape future policy-oriented research. Information about the impact of finance on economic growth will influence the priority that policy makers and advisors attach to reforming financial sector policies. Furthermore, convincing evidence that the financial system influences long-run economic growth will advertise the urgent need for research on the political, legal, regulatory, and policy determinants of financial development. In contrast, if a sufficiently abundant quantity of research indicates that the operation of the financial sector merely responds to economic development, then this will almost certainly mitigate the intensity of research on the determinants and evolution of financial systems. Besides reviewing the results, I critique the empirical methods and the measures of financial development. Each of the different econometric methodologies that has been used to study the finance-growth nexus has serious shortcomings. Moreover, the empirical proxies for "financial development" frequently do not measure very accurately the concepts emerging from theoretical models. We are far from definitive answers to the questions: Does finance cause growth, and if it does, how?

There is no general agreement among economists that financial development is beneficial for growth. In a simple endogenous growth model, Pagano (1993) uses the AK model to conclude that the steady state growth rate depends positively on the percentage of savings diverted to investment, so one channel through which financial deepening affects growth is converting savings to investment. Arrow (1964) and Debreu (1959) argued that in the absence of any information or transaction costs, there is no need for a financial system, the so-called Arrow- Debreu model. Goldsmith (1969), McKinnon (1973) and Shaw (1973) are among those economists who explored the relationship between financial development and economic growth some four decades ago. They found that financial markets and economic growth rate are positively related. The major weaknesses in their study were; i) lack of theoretical explanation for this relation (the then existing theoretical discussion was about financial development and level of productivity and not the rate of growth), and ii) failure to establish the direction of causality between financial development and growth.

Theoretical foundation

There are two main approaches that explain the relationship between financial and economic development. These approaches are the neo-classical approach and the endogenous growth models, as explained here onward. The neo-classical advocates explain that economic growth is dependent on both the accumulation of productivity input factors and the technological advancement and traditionally, finance was related to the first item. However, if technology is to increase production and thus growth rate, then firms" capital stock must incorporate these advances which will require a supportive financing system. The underlying assumption is thus, that the interest rate brings state of equilibrium in savings and investments. Neo-classical theory suggests that the optimal growth rate equals the real interest rate. Prior to the realization of market imperfections and information asymmetries, investment decisions were considered independent of financing decisions. Despite the fact that considerable amount of work has been done under the influence of the two main approaches. However, the uncertainty still exists as far the relation of economic development and financing is concerned. The endogenous growth models realize the importance of entrepreneurship and innovation and magnify the role of finance to induce research and innovation. These models encompass financial institutions impact on economic growth rate. Financial development affects economic growth through several channels as indicated by the famous "AK" model; $Yt=AKt$ (Pagano, 1993). This model assumes production of one type of good (Y) with one type of input that is capital (K), and "*A"* here refers to capital productivity. K depends on the rate of savings, where only certain portion (f) of savings (S) is invested. Form this simplest model, a steady growth equation is derived, that is: $g = A\ f\ S - d$. Here, "d" is for depreciation rate. This equation explains that financial development can impact economic growth either through capital productivity or financial system efficiency; in other words by reducing loss of resources, and/ or the saving rate. Instead of examining the impact of banking sector development on the growth of externally dependent firms, recent work studies the impact of banking market structure and bank competition on industrial development. Corelli and Gambaro (2001) examine the role played by banking sector concentration on firm access to capital. Using the RZ methodology, they show that bank concentration promotes the growth of industries that are naturally heavy users of external finance, but bank concentration has a depressing effect on overall economic growth. Classes and Leaven (2004) disagree, however. They note that industrial organization theory indicates that market concentration is not necessarily a good proxy for the competitiveness of an industry. Consequently, they estimate an industrial organization-based measure of banking system competition. Classes and Leaven (2004) then show that industries that are naturally heavy users of external finance grow faster in countries with more competitive banking systems. They find no evidence that banking industry concentration explains industrial sector growth. The results support the view that banking sector competition fosters the provision of growth enhancing financial services. Building on RZ, Classes and Leaven (2003) examine the joint impact of financial sector development and the quality of property rights protection on the access of firms to external finance and the allocation of resources. In particularly, they show that financial sector development hurts growth by hindering the access of firms to external finance and insecure property rights hurts growth by leading to a suboptimal allocation of resources by distorting firms into investing excessively in tangible assets. Thus, even when controlling for property rights protection, financial development continues to influence economic growth. This conclusion is different, however, from Johnson, McMillan, and Woodruff's (2002) study of post-communist countries. They

find that property rights dominate access to external finance in explaining the degree to which firms reinvest their profits.

Extending the RZ approach, Beck, Demirguc-Kunt, Leaven, and Levine (2004) highlight another channel linking finance and growth: removing impediments to small firms. They examine whether industries that are naturally composed of small firms grow faster in financially developed economies. More specifically, as in RZ, they assume that U.S. financial markets are relatively frictionless, so that the sizes of firms within industries in the U.S. reflect technological factors, not financial system frictions. Based on the U.S., they identify the benchmark average firm-size of each industry. Then, comparing across countries and industries, Beck et al (2004) show that industries that are naturally composed of smaller firms grow faster in countries with better-developed financial systems. This result is robust to controlling for the RZ measure of external dependence. These results are consistent with the view that small firms face greater informational and contracting barriers to raising funds than large firms, so that financial development is particularly important for the growth of industries that, for technological reasons, are naturally composed of small firms.

Using a different strategy, Warbler (2000) also employs industry-level data to examine the relation between financial development and economic growth. Using industry-level data across 65 countries for the period 1963-1995, he computes an investment elasticity that gauges the extent to which a country increases investment in growing industries and decreases investment in declining ones. This is an important contribution because it directly measures the degree to which each country's financial system reallocates the flow of credit. Wurgler (2000) uses standard measures of financial development. He shows that countries with higher levels of financial development both increase investment more in growing industries and decrease investment more in declining industries than financial underdeveloped economies.

Duck and Zing ales (2003) provide additional firm-level evidence on the mechanisms through which financial development influences growth by examining whether financial development influences the private benefits of controlling a firm. If there are large private benefits of control, this implies that insiders can exploit their positions and help themselves at the expense of the firm. The resultant loss of corporate efficiency could have aggregate growth Effects.

Neuse and Kotler (1998) and Levine et al. (2000) represent two different poles in the literature. Neuse and Kruger focuses on time series properties of the data ignoring the simultaneity issue, while Levine et al. (2000) deal with simultaneity without accounting for the time series properties of the data. An alternative is explored in this paper. This alternative consists briefly in the following: In Levine et al. (2000) estimation is conducted in two steps, first a cross-sectional regression of growth on finance and ancillary repressors, and GMM in the second stage to address simultaneity. In our estimation approach, we exploit both the cross-sectional and time-series dimension of the data by using panel integration techniques. In that way we can address the simultaneity issues of the repressors but we also have another important advantage relative to previous research.

In Levine et al. (2000), the first-pass cross-sectional regression represents the long-run regression while the second-pass regression (estimated by GMM) captures the short-run dynamics. The two regressions, however, are not connected as they should: One would expect that the second-pass regression can be derived from the long-run model by appropriate restrictions but this does not seem possible within the Levine et al. (2000) framework. More importantly, Levine et al. (2000) do not formally test that the first-pass regression is valid so it is not certain that it represents something structural. It is, therefore, not certain whether the second-stage regression represents an adjustment to the long-run equilibrium implied by the first stage. Within the panel integration framework used in this paper, we are able to address these important issues, and at the same time we retain the flexibility of the Levine et al. (2000) approach in that we are able to provide long-run estimates, short-run adjustments, and address the endogeneity issues by formally treating all variables as part of a vector auto regression in the context of testing for integration, and estimating panel integrating regressions. More importantly, we can formally test whether there is indeed a structural, long run relationship between financial development and growth. There is a growing body of theoretical and empirical literature linking financial sector development and economic growth. The recognition of a significant and positive relationship between financial development and economic growth dates back to Schumpeter (1912), who states that financial markets play an important part in the growth of the real economy. He specifically stresses the role of the banking sector as an accelerator of economic growth due to its role as a financier of productive investments. Theoretical models have identified a number of channels through which financial integration can promote economic growth, especially in developing countries. A large part of the theoretical literature shows that financial intermediaries can reduce the costs of requiring.

Information about firms and managers, and lower the costs of conducting transactions (see Levine, 1997). Greenwood and Jovanovich (1990) and Levine (1991) have constructed models where efficient financial markets improve the quality of investments to increase the average Return and thus accelerate economic growth. Greenwood and Jovanovich have developed a model in which financial intermediation allows agents to diversify risk across a spectrum of Risky capital investment. By providing more accurate information about production Technologies and exerting corporate control, better financial intermediaries can enhance Resource allocation and accelerate growth. The financial intermediaries' prime task is therefore to channel funds to the most profitable investments with the help of collected and Analyzed information. The essential argument in Levine is that the financial sector serves one primary function in ameliorating transactions, lowering information costs and alleviating credit constraints. This facilitates the allocation of resources, across space and time, and in an uncertain environment. By effectively mobilizing resources for projects and moderate credit constraints, the financial sector may play a crucial role in permitting the adoption of better technologies and thereby encouraging growth. Technology, especially as knowledge, is a common good, a good idea which can be used by many and which will still be as good. Technological improvements can thus enhance economic growth and improve the standard of living in the broad mass.

There are huge differences in annual average GDP per capita growth from 1965 to 1999 in the sample. I use equation 4.1.1 to calculate the variations in growth rates between the countries. $s_o(1+r)^t = s_t$ (4.1.1)

Where s_t equals the amount the initial variable s_0 would grow to, if the annual growth rate in s is r. t denotes years, while s_t denotes the outcome of s after t periods. All countries

Experience a certain growth. The summary statistic in table 4.1 implies a mean of the annual average growth in GDP per

capita at 0.013. By using equation 4.1.1, an average country would over the period 1965-1999 have a GDP per capita growth rate, affected by all possible observed and unobserved conditions, at 57 % over 35 years:

$$(1+ 0.013)^{35} =1.57 \quad (4.1.2)$$

Table 4.2 shows the ranking of the sample into four income groups and the associated GDP per capita level in 1965 and 1999 respectively. The ranking and the specified income levels provide a picture of the income differences in the world. With reference to table 4.2, the average annual growth rate in the Very Rich group (0.03) is higher compared to average annual growth rates in the other groups. The table shows that some of the countries in the Poor and Very Poor group actually appear with negative annual average growth rates in GDP. Thus, there are significant inequalities between the countries. Some countries separate from the sample by converging to a high steady state income, while some are found well below the average. Temple (1999) characterizes some countries as 'growth disasters', where the GDP per capita has fallen since 1965, and others as 'growth miracles', where it has risen rapidly. Examples of the disaster countries are Zambia and Ghana, while Japan is a so-called 'miracle growth' country, increasing its income level from US$ 12,226 to the extremely high US$ 42,318 per capita over 35 years. Comparing the income levels to the levels of the financial variables (table 4.2) can illustrate how financial development may lead to economic growth. These cross-country variations can be illustrated graphically. The bar graph in figure 4.1 represents the cross-sectional relationship between the initial levels of financial variables and income level. 1965 is still selected as the initial year. I have chosen GDP per capita in 1999 to represent the income level, to see whether there is a link between high initial levels of financial variables and wealth today. Three bars represent each income group, where the first bar measures liquid liabilities, the second credit by banks and the last bar illustrates a group's level of credit to the private sector. By moving to the right of the bottom axis, income per capita increases, and the bar graph reveals substantial differences between the countries.

The figure shows a tendency towards a relationship between high initial levels of the financial variables and a high income level today. The bars are significantly higher for the Very Rich group. The significant variation between this group and the other groups prevails for all the variables. The Very Rich group had a ratio in the level of bank credit to GDP of almost 90 %, while the Very Poor group had a ratio of under 10 %. For example, Burundi increased its GDP per capita level with only a marginal change from 1965 to 1999. Burundi had low initial levels and low average levels of the financial variables. Italy had, on the other hand, high initial levels of all the financial indicators, in addition to a high annual GDP per capita growth. A glance at the cross-country variations gives the impression that countries with substantial economic growth are countries with a large initial size of the financial sector. Correlation is used to measure a possible relationship between two variables. The method can tell whether the variables vary together, and it is appropriate to explore the trends from figure 4.1. Table 4.3 shows the correlations between financial indicators and economic growth, when the three financial indicators are measured in average values over the period from 1965 to 1999, and economic growth is measured by GDP per capita in 1985 and 1999 respectively. The correlations utilize GDP in two different years, with a ten year time span, to see whether the correlation can give an impression of potential development over the years. Table 4.3 summarizes the values of the financial measures relative to real GDP per capita in the total sample and in each of the four income groups. The t-test checks the validity of the models by finding whether each variable influences the dependent variable. High t-values represent significance and give the model a high explanation rate. The covariance between the growth indicators and the financial variables is significant between all the variables in the total sample. This means that I have identified a possible link between financial development and economic growth. The correlation results indicate that the variables are most likely to vary together and financial sector development to correspond positively with GDP per capita

The link between economic growth and financial development in poor countries is of particular interest. I use the quartiles in table 3.2 as dummies to allow for qualitative effects. The dummies can illustrate whether changes in long run development depend on initial income level. The interaction variables for the four income groups are integrated in table 4.3, displaying the matching covariance for each group. This means that an interaction variable for the Very Poor group assigns a country with a value equal to 1 if it is a country in the specified group, 0 if not. The correlation between the average of liquid liabilities and GDP per capita in 1985 has a positive, significant *t* value in the total sample. However, this is not the case in each income quartile and the correlations are no longer significant between all the variables. The table illustrates that the size of the financial sector influences the economy more in Very Rich and Very Poor countries. This holds for GDP measured in both 1985 and 1999.

The differences between the two periods are not substantial, but the correlation has strengthened within all the groups over the 12 years. The Very Rich group had 0.64 of GDP per capita in liquid liabilities in 1985 rising to 0.66 in 1999, and the covariance in the Poor group strengthened from 0.27 up to 0.54. These results indicate that the Very Rich and Rich groups possess the highest percentage of liquid liabilities. Apart from this, the strength of the correlations does not increase with income. Table 4.3 displays a statistically significant and positive relationship in credit to the private sector, and the covariance is positive in all the income groups. The variable ranges from 0.31 up to 0.76 in 1985 and strengthen in 1999. The last indicator, credit by banks, shows the highest correlation within the Very Rich group, yet the Poor group increased its covariance more. The correlation in the Poor group increased from about 0.11 up to 0.36, while the Very Poor group experienced a strong correlation, going from a fraction of bank credit at 0.48 to 0.51.

Levine (1997) presents correlation coefficients, but he finds somewhat higher correlations according to increased income per capita. Note, however, that my sample is more diverse than Levine's and measured over a longer time span. My results state that all three financial variables had a stronger correlation in 1999 than in 1985, yet the increase in correlations did not follow an increase in GDP per capita. There is a strong correlation in the total sample between each of the financial indicators and economic growth. However, the fact that two variables have a significant covariance tells us nothing about the *direction of causation* from one variable to another. Neither does the fact that two variables vary together state anything about the degree of influence from one variable to another.

The Econometric Model

The choice of model is based on the assumption that there is a relationship between financial development and economic growth, in order to detect existing differences between the countries.

Table 1. Correlations Dependent on Initial Income

Variables	All countries	Very Rich	Rich	Poor	Very Poor
		GDP per capita i n 1985			
Liquid liabilities	0.696	0.641	0.379	0.266	0.496
	[7.22]	[3.01]	[1.99]	[0.99]	[2.06]
Credit by banks	0.776	0.599	0.553	0.107	0.479
	[8.85]	[2.70]	[2.40]	[1.59]	[2.16]
Credit to private	0.663	0.76	0.311	0.603	0.687
	[6.42]	[4.21]	[1.18]	[3.26]	[3.41]
GDP per capita in 85		22147	2602	916	325
		GDP per capita i n 1999			
Liquid liabilities	0.731	0.658	0.402	0.543	0.498
	[6.74]	[3.15]	[1.58]	[2.90]	[2.07]
Credit by banks	0.811	0.664	0.325	0.361	0.508
	[6.95]	[3.20]	[1.24]	[2.03]	[2.13]
Credit to private	0.699	0.78	0.535	0.809	0.681
	[6.83]	[4.30]	[2.29]	[5.63]	[3.25]
GDP per capita in 97		27285	3492	947	275
Observations	60	15	15	15	15

T-values in brackets

Table 2. Variable description

Variable	Variable notation	Coefficient	Expected sign
yit	The average annual GDP per capita growth.	Dependent	
	A constant term for the cross-section.	b_o	
$^{x}1,i$	A vector of the coefficients belonging to the financial indicators.	b_1 |	
$^{x}2,i$	A vector of the coefficients belonging to the control indicators.	b_2 |	
$^{y}i,0$	The log of initial income, measured by GDP per capita in initial year 1965.	*b2 yo*	<0
M^3i	The size of the economy in country *i*, measured in average or initial value.	b_1 |	>0
Pi	Credit to private sector in country *i*, measured in average or initial value.	b_1 |	>0
Bi	Credit provided by banks in country *i*, measured in average or initial value.	b_1 |	>0
$^{S}i,0$	A log of initial secondary school enrolment in country *i* and year 0	b_2S	>0
GCi	Government consumption in country *i*, measured in average or initial value.	*b2GC*	>0
Ii	The inflation rate in country *i* , measured in an average or initial value.	b_2I	<0
Ti,t	Trade in country *i*, a control variable measured in average or initial value.	b_2T	<or>0

Table 3. Average Financial Development and Simultaneous per Capita GDP Growth

	Average Annual Growth in GDP per				Capita 1965-99	
Liquid liabilities	0.023	[2.97]				
Credit to private			0.025	[3.48]		
Credit by banks					0.015	[2.61]
Log GDP in 1965	-0.008	[-3.62]	-0.009	[-4.06]	-0.008	[-3.41]
Log school in 1965 Government	0.010	[4.74]	0.010	[5.20]	0.010	[4.45]
Consumption	0.007	[1.94]	0.007	[1.93]	0.006	[1.58]
Inflation	-0.004	[-4.74]	-0.004	[-4.79]	-0.004	[-5.13]
Trade Openness	-0.018	[-2.70]	-0.017	[-2.75]	-0.017	[-2.55]
Constant	0.041	[3.45]	0.047	[3.95]	0.041	[3.35]
Adjusted R2	0.5 51	0.573			0.536	
Observations 60						

T-values in brackets

Table 4. Framework for Calculations

Liquid liabilities	Credit to private sector	Credit by banks
Average GDP growth	0.013	0.013	0.013
GDP growth over 35 years	57 %	57 %	57 %
Averaged financial variables:			
Coefficients	0.023	0.025	0.015
Additional GDP growth due			
to financial development	14 %	18 %	13 %
Annual additional growth due			
to financial development	0.4 %	0.5 %	0.4 %
Initial financial variables:			
Coefficients	0.029	0.023	0.018
Additional GDP growth due			
to initial financial			
development	15 %	13 %	11 %
Annual additional growth due			
to initial financial			
development	0.4 %	0.3 %	0.3 %

Table 5. Influence of Financial Development on Economic Growth Conditioned on Initial Income

Annual growth in GDP per capita	Very Poor group	Poor group	Rich group	Very Rich group	Adj. R-squared
	0.037	0.032	0.029	0.020	0.539
Liquid Liabilities	[1.68]	[2.14]	[2.81]	[2.59]	
	0.056	0.035	0.028	0.020	0.567
Credit to Private	[2.05]	[2.85]	[2.61]	[2.44]	
	0.047	0.017	0.018	0.015	0.604
Credit by banks	[1.71]	[1.80]	[2.26]	[2.35]	
Observation	15	15	15	15	60

The empirical implementation involves questioning whether the independent indicator can explain variations in the dependent variable. In reference to earlier literature, the empirical implementation involves questioning whether the independent indicator can explain variations in the dependent variable in my econometric model is the annual growth rate of GDP per capita, y. The independent variables are the three financial indicators for expressing and measuring financial sector development are liquid liabilities, credit to the private sector and credit provided by banks. In addition, a vector of various variables is included to control for other factors that might affect economic growth.

The regressions estimate the same dependent variable, i.e. average annual growth in GDP per capita over the period 1965-1999, while the financial variables are measured in two different ways to obtain as much information as possible. The regressions apply either average values over the period 1965-1999 or the influence from initial financial variables on subsequent growth. By applying averaged aggregates I avoid the problem of missing observations, and I can test the finance-growth relationship. Each of the three financial indicators is used in separate regressions, isolated to see the possible effect from each indicator. Thereafter, I use the financial variables exclusively in 1965 to analyse causality problems. The initial variables can detect whether there exists a causal relationship between financial development and economic growth, to see whether economic growth actually follows financial development. This model can indicate whether the financial variables in 1965 predict the rate of economic growth over the next 35 years. I also include control variables in each of the regressions to control systematically for other factors influencing economic growth. To achieve the best comparison between the regressions, I prefer to include the same countries. The regressions are based on panel data that consists of 60 countries (cross-country units) and 35 years (time series), thus i=1, 2.., 60 and t=1965, 1966, 1999. $y_{i,t} = b_0 + b_1^{|} X_{1,i} + b_2^{|} X_{2,i} + e_{i,t}$ $i = 1,..,$ n $t = 1,...T$ (5.2.1)

where

$X_{1,i}$ = $\{M3_i , P_i , B_i\}$ includes the financial variables assumed to influence growth, and

$X_{2,i}$ = $\{S_{i,o} , y_{i,0} , GC_i , I_i , T_i\}$ represents a matrix of conditioning information to control for other factors associated with economic growth.

$X_{1,i}$ and $X_{2,i}$ are either measured as average variables over the period from 1965 to 1999 or as

Initial variables measured in 1965. Thus, the equation can be specified as:

$y_{i,t} = b_0 + b_1^{|} X_1 + b_2^{|} X_2 + e_{i,t}$, including averaged indicators, and (5.2.2) $y_{i,t} = b_0 + b_1^{|} X_{1,0} + b_{2,0}^{|} X_{2,0} + e_{i,0}$, including initial variables (5.2.3) Equation (5.2.1) describes the relationship between the growth indicator and financial variables. The left hand side variable symbolizes economic growth. $y_{i,t}$ is the annual averaged growth in GDP per capita for a country i at time t, and equals in the equation above

$\sum Yt - Yt-1$

The variable represents the ratio of income level, the main object to check for T economic growth. The value of $y_{i,t}$ differs from $b_0 + b_1^{|} X_{1,i} + b_2^{|} X_{2,i}$ by a martine_t , which captures measurement errors and left-out variables. The (as yet unspecified) constant states that $y_{i,t}$ assumes a value of b_o when the independent variables equal zero.

The explanatory variables to the right are included in either the $X_{1,i}$ vector, consisting of financial variables, or in the $X2,i$ term consisting of other control variables. $X_{1,i}$ is a vector of L explanatory observed variables and the vector estimates the coefficients which can illustrate the influence of financial development. $b_1^{|}$ is a vector of the K coefficients that are being estimated. The coefficient $b_1^{|}$ shows how strong $X_{1,i}$ influences the dependent variable. Believing that $X_{1,i}$ has some causal

effect, the marginal impact of $X_{1,i}$ can be explored to see how much a possible increase in the financial indicator appears to affect GDP per capita growth. Thus, the coefficient $b_1|$ symbolizes the effect of a change in the financial indicators.[4] High coefficients signal an important influence from explanatory variables on the dependent variable. The main function of the financial sector is to channel funds from savers to investors. High coefficients belonging to the credit variables can therefore indicate that the financial sector fulfils its function by channeling funds to investments. The regression equation includes variables to control the influence of other indicators apart from the financial variables. X_{it} is a vector of *M* control variables with the belonging $b_2|$ as a coefficient. The regression equation includes the initial value of income, in $y_{0,}$ where the subscript 0 indicates the initial year and b_2^{yo} is the associated coefficient. With reference to chapter 3, this variable has been included to check for convergence. If convergence occurs, b_2^{yo} will be negative and the countries with higher initial income will have a lower growth. A coefficient value of –1 corresponds to perfect convergence. If the coefficient is 0, growth is uncorrelated with initial income and there is no convergence at all. The sample is characterized by a wide diversity in income levels, so it is suitable to remodel the next regression equations. An interaction variable can be added to capture significant differences between the groups. An interaction variable combined with the financial variables allows the financial variable to vary among the income groups. The aim is to see whether the inequality between countries makes a difference in the regressions. It is of interest to check whether this inequality predestines the relationship between finance and growth. This approach allows identification of central parameters. The hypothesis aims to check whether the financial variables influence differently among the income groups and test whether financial development can be an explanation for convergence. Thus, it will be possible to analyses the influence of the coefficients on a more individual level and to obtain a more precise picture. The econometric model may now be specified as follows:

$$yit = b0 + b1|X1,i * DVR + b1|X1,i * DR + b1|X1,i * DP + b1|X1,i * DVP + b2|X2,i + e \quad (5.3.1)$$

Where the variable denotations are similar to the ones in model 5.2.1. Variations between groups are now easily computed if there are statistical differences in the influence of financial indicators dependent on initial income level. The interaction variable takes the value 0 or 1 depending on a country's initial income:

D_{VR} = 1 if a country has a GDP per capita level of more than US$ 6000,
= 0 otherwise.

D_R = 1 if a country has a GDP per capita level of more than US$ 935 or less than US$ 6000, = 0 otherwise.

D_P = 1 if a country has a GDP per capita level of more than US$ 435 or less than US$ 935, = 0 otherwise.

D_{VP} = 1 if a country has a GDP per capita level less than US$ 435,
= 0 otherwise.

Based on the empirical implementation in chapter 5, the link and causality between financial sector development and economic growth will be analyzed.

Table 2 tabulates the OLS regressions based on equation 5.2.2. The table expresses the influence of average financial sector variables on annual average growth in GDP per capita, carried out for 60 countries over the period 1965 to 1999. All the independent variables are period averages, except for lagged GDP per capita and educational attainment measured at the beginning of the period. The regressions include one observation per country, summarizing to the total number of 60 observations per regression.

The results are strongly supportive of my hypothesis, both in signs and statistical significance. The influences from the financial variables are estimated separately in 3 different regressions. According to the discussion in table 3, and quoting the theory in chapter 2, I have included 3 variables to measure the size of the financial sector, the activity of the financial sector and the growth of the banking sector. All three variables, that is, liquid liabilities, credit to the private sector and by the banking sector, have a positive and statistically significant influence on economic growth. Most of the t-values valid the model and verify that the model is very precisely determined. The three financial indicators enter with high *t*-values at a 0.01 significance level. The results support the findings reported in chapter 4, which identified a possible link between financial development and economic growth, and they are consistent with the theory in chapter 2. The empirical findings support the positive relationship stated by, among others, Levine (1997). In chapter 4, I calculated a growth in GDP per capita determined by all possible conditions at 57 % over 35 years. This is the natural average growth all average countries will experience. However, I will isolate the effects of each financial variable on economic growth to assess the importance of financial sector development. The calculation of the finance growth relationship can be explored by combining the summary statistics with the regressions results, which will be used as a framework for the analyses and further conclusions. The first column in table 3 shows the results of *liquid liabilities*, as an explanatory variable on economic growth. My main interest in using OLS regressions is to detect variations between countries. The summary statistics for liquid liabilities (table 4.1) show the difference between the Very Poor group (0.22) and the mean within the sample (0.38): 0.38 - 0.22 = 0.16 .the difference implies that if a Very Poor country increased its level of liquid liabilities similar to the average level, the expansion would result in an increase of the variable at approximately 80 %. I include all the results in the following equation to achieve the value of a 'changed' GDP growth and to explore the separate financial effect:

$$(1 + \bar{Y} + b * [? X])^{t} =? Y$$

Where the symbols denote:

Y = annual average growth in GDP per capita b = financial regression coefficients? X = absolute change in the financial variable? Y = changed GDP per capita growth over the period

t = Years with growth

By inserting the regression coefficient (0.025) and the different liquid liabilities values into equation 6.1.2, we see that a poor country experiences a growth in GDP per capita of 78 % over 35 years after an increase in the financial variable:

$$(1 + 0.013 + 0.023 * [0.38 - 0.22])^{35} = 1.78$$

This means that an enlarged level of liquid liabilities would result in an increased GDP per capita growth of 14 % over 35 years compared to the average GDP per capita growth all countries will experience:

$$'Changed\ 'GDP\ growth \quad -1 = ^{1.78} \quad -1 = 0.14$$

A rise in an exogenous stimulus, similar to an increase in liquid liabilities, has a positive effect and accelerates the annual GDP per capita growth. The annual growth in GDP per capita if a poor country increased its level of liquid liabilities would be [$(1.78)^{135}$ = 1,017] nearly 2%, and the annual difference in GDP per capita growth after an increase would be approximately 0.4% each year. The annual growth difference a poor country

experiences if it increases its level of liquid liabilities supports the theory of the ability of financial sector development to result in increased economic growth. Thus, a change in behavior would probably raise the income level for the poorest countries, and reduce existing inequalities. The results of the further calculations are listed in table 6.2. These results are all based on the same procedure and framework as the one used above. Later in the analysis I shall refer only to table 6.2, rather than calculate the separate results each time.

The coefficient of *credit provided to the private sector* is statistically significant and displays the expected positive sign. Credit to the private sector influences economic growth most strongly by a coefficient at 0.025. An increase in credit to the private sector explains economic growth through mobilized savings or the allocation of resources to a higher number of investors. Capital floods and reduced credit constraints, from augm**ented** private credit, can lead to both capital accumulation and technological innovation. Savers can invest in research and production equipment to improve productivity, hence improving earning possibilities. If the poorest quartile raised the level of credit to the private sector (0.16) equal to the level of the sample mean (0.35), they would increase private sector credit by more than 100 %. I use expression 6.1.2 to achieve the results of an increased level of credit to the private sector:

$(1+ 0.013+ 0.025*[0.35 -0.16])^{35} = 1.85$

With such an expansion in credit to the private sector, poor countries could have increased their GDP growth by 18 % over 35 years or nearly 0.5 percentage points each year. Guatemala may illustrate the influence of an increased level of private credit on economic growth. Guatemala's average value of private credit over the period 1965-1999 is 0.15 (see table 4.2). Based on the GDP per capita level in 1965, Guatemala is classified in the Rich group. However, as a result of low growth, many of the countries in the Poor group had in 1999 a GDP per capita growth exceeding that of Guatemala. If Guatemala had experienced a hypothetical exogenous increase in private sector credit equalizing the level to the sample mean (0.35), this could have resulted in a nearly 17 % higher GDP per capita growth over 35 years. An increased financial sector could have stimulated the economic activities in Guatemala at such a level, so the country would have accelerated the economic growth rate. A higher level of credit to the private sector can reduce income inequality as the poor may have a widening access to the financial sector, and the increase in credit can increase the possibility of starting new projects, leading to higher economic activity.

The last indicator to symbolize the development of the financial sector's influence on economic growth is the variable expressing *credit provided by banking sector*. Quoting the discussion in chapter 3, this variable can quantify the growth of the banking sector since it reflects the level of financial savings, as well as measuring the activity of financial sector development. If the variable implies a demonstration of the activity in the financial sector, and if the regression states a positive link between the variable and GDP per capita, this means that financial sector development has a positive relationship with economic growth. Countries associated with a high level of the bank credit variable would in that way have a better chance of escalating economic growth. According to earlier discussion, a well-developed banking sector can reduce transaction costs by transferring savings more efficiently. The variable coefficient (0.015) is statistically significant. This would result in an annual growth in GDP per capita of nearly 0.4 percentage points each year or 13 % over 35 years if the poorest countries moved from their low level of credit by banks at 0.24 to an average level at 0.48. Development of the banking sector would probably increase the level of the credit provided by banks. An improvement of the amount of credit by banks can ease trading, mobilize savings and allocate resources to expand capital accumulation or technological innovation to establish economic growth.

Thus, all the results show a positive and significant relationship between simultaneous financial development and economic growth. The increased income level a country will experience by an improvement of the financial sector will be important for poverty reduction. Financial sector development drives the technological progress, which according to endogenous growth theory is fundamental to economic growth. Calculating the separate effects of financial sector development indicates positive effects, and an expansion in private credit seems to increase the income level most strongly. The coefficient of the initial *liquid liabilities* variable has a value of 0.029 and is statistically significant. If poor countries had already in 1965 increased the size of the financial sector to the same level as the richest groups, the poorest group would have experienced a growth of nearly 0.7% each year. This implies that they had to increase the level of liquid liabilities in 1965 from 0.12 to 0.35. On the other hand, if poor countries 'only' increased their level equal to the average (0.26), they would still have a yearly increase at 0.4 percentage points. This implies an income increase of approximately 15 % in 1999. A low level of financial development or distortions in the financial sector can increase the cost of investment and thus retard economic growth. The initial values can be an approach to determining this cost. By comparing cross-country variations in liquid liabilities in the initial year, the differences present a relationship between those countries with the largest financial sector in 1965 and those countries which are the richest today. Rich countries can explain substantial economic growth by capital accumulation and technological innovation, while these channels to growth can be explained by the initial priority on financial sector development. Countries with an initially large financial sector were more likely to mobilize savings and allocate resources, resulting in increased GDP per capita levels. Levine (1997) uses Bolivia to exemplify the influence of an increase in the financial sector. He concludes that Bolivia would have grown about 0.4 % faster per annum if it had raised the financial level in 1960 to the mean value of developing countries. Using the same method to calculate the effects, we can compare our results with Levine's. In 1965 Bolivia had an initial level of liquid liabilities at 0.1. If Bolivia had increased the initial level of liquid liabilities equal to the mean sample level, which was 26 % of GDP, the country would have grown approximately 0.4 % faster per annum. The result of an increase in liquid liabilities is just in line with Levine's results, even though there was a time span of five years between the initial years. The growth would have been about 14 % larger in 1994 than it actually was. Concerning *credit to private sector*, the outcome in the Poor group would result in an annual growth rise of more than 0.3% by equalizing the credit level to the average. Burundi was one of the poorest countries in 1965, and the country still ranks among the world's least developed countries. If Burundi had increased its credit to the private sector from 0.03 to the mean 0.21 in 1965, Burundi would have grown 0.4 % faster per year, and achieved a nearly 15 % higher growth rate in GDP per capita in 1999, another result which supports the hypothesis of a positive relationship between finance and growth. As mentioned in the introduction, the lack of a well-functioning financial sector may constrain

credit demanded to investments. A reduction of this 'loan rationing' can spur economic development, as allocated credit is substantial for the channels to stimulate economic growth. The initial level of *credit provided by banks* has a stronger influence on subsequent economic growth (0.018) than the average level had on simultaneous growth (0.016). Referring to the so-called 'disaster' and 'miracle' countries, Japan is a so-called miracle country with an enormous growth in GDP per capita over the last 30 years. Japan had an initial level of credit provided by the banking sector far above the mean level. Ghana, on the other hand, was one of the disaster countries, with an annual GDP per capita growth that was negative over the same period. Compared to the initial influence of financial development on economic growth, Ghana had both a credit level provided by the banks and a credit level to the private sector below the average. An increased credit flow in this country would, referring to former calculations, cause an increase in economic growth.

Regression equation 5.3.1 captures whether there are significant differences between the countries. This regression includes an interaction variable combining the financial indicators with the initial income level. The aim is to explore country variations and to see whether the inequality between countries makes a difference in the regressions.

Except for the interaction with credit by banks, the results seem to follow a path. It seems as though the coefficients systematically change with income differences. The Very Poor group is more influenced by an increase in one of the financial variables, and the economic growth will be higher because of a financial increase in one of these countries. In the Very Rich group, economic growth seems to change only slightly with an increase in one of the financial variables compared to the poorer countries.

Not all the group specific results are significant, but it is still possible to say something about the differences. The liquid liabilities and the private credit coefficients are strongest when one of the variables interacts with the Very Poor group, with an influence of 0.037 and 0.056. The weakest coefficients are in the Very Rich group, with an influence of 0.020. As the size of the financial sector is more substantial in the Very Rich group, a possible economic growth effect is perhaps saturated by an increase in liquid liabilities, so an increase will not have the same effect as in the poor countries.

The most important financial variable in the case of the Very Poor group is credit to the private sector (0.056). This interaction coefficient is also statistically significant. There are different sources of demand for private credit. The demand varies between fixed capital; capital required for new start-ups or a substantial expansion of existing production, working capital; credit required for ongoing production activity; and consumption credit. The last type is typically demanded by poor individuals who are strapped for cash. The need for the three different groups will differ among the countries. Inhabitants of poor countries are probably in need of all types of credit. Inhabitants of rich countries demand credit for already existent production. This emphasizes how credit constraints may be detrimental on economic development. If poor countries have a broader access to all types of credit, this type of financial sector development influence more on economic growth in developed countries, than countries without strict credit constraints.

The coefficients show that the poorer a country is the stronger is the influence of an increase in credit to the private sector. This may be caused by the poor countries' needs of all types of credit, and their demand for credit to fixed capital, working capital and consumption capital. There is a higher existing level of trade and business activities in the Very Rich group, so that increased credit to the private sector may have a more significant effect in the poorer countries. A possible increase in credit to the private sector generates a larger effect in the poorer groups since the credit may help to allocate resources and mobilize savings, and thus increase economic growth. In table 6.4, the three poorest groups have a positive influence stronger than that in table 6.1 (0.025), while the Very Rich group is less affected (0.020).

The influence of credit provided by banks on economic growth is quite similar between the groups, with the exception of the Very Poor group, and does not follow any specific income-dependent path. Some of the results are insignificant in general, especially the results attached to bank credit. A reason for this could be unreliable data or missing observations. Still, the results may display some of the variations between the different income groups. Since not all the group specific results were significant, I only stress the relation between financial sector development and economic growth, and the positive influence of financial sector development regardless of the group specification.

Conclusion

Financial development and economic growth have been strange bedfellows. Most studies conclude that on the whole, financial development plays a significant role in fostering growth. However, some recent studies find that financial deepening adversely affects growth. In this paper, we apply advanced econometric techniques to assess the impact of FD on growth. These include the error-correction based autoregressive distributed lag ARDL (p,q) model, which offers three different tests, namely, mean group (MG) presented by Pesaran and Smith (1995), pooled mean group (PMG) developed by Pesaran et al. (1999), and dynamic fixed effect (DFE) estimators. The results obtained from these estimations confirm that financial development and economic growth are negatively associated in the long run when one considers all middle income countries. Though the finding of this research is partially in line with Loayza and Ranciere (2006) who found that FD negatively influences economic growth in the short run, but it strongly contradicts their findings that FD fosters economic growth in the long run. The aim of this paper was to find an empirical relationship between financial sector development and economic growth, and I explored in section 2 the reasons for including the financial sector in a growth theory perspective. In general, the theoretical literature and empirical research show that countries with a more developed financial sector will grow faster than countries with a less developed financial sector. Since Goldsmith (1969) documented the relationship between financial and Economic development 30 years ago, the profession has made important progress. Rigorous theoretical work carefully illuminates many of the channels through which the emergence of financial markets and institutions affect and are affected by economic development. A growing body of empirical analyses, in clouding firm-level studies, industry level studies, individual country-studies, and broad cross country comparisons, demon stage a strong positive link between the functioning of the financial system and long-run economic growth. Theory and evidence make it difficult to conclude that the financial system merely and automatically responds to industrialization and economic activity, or that financial development is an inconsequential addendum to the process of economic growth. McKinnon (1973) suggests that liberalization of financial markets allows penetration of financial services among the rural population. This group of people are always on

the lower cadre of the social cycle. Therefore, providing them with accessible tools of finance could be considered a very significant step towards achieving economic growth. This is because peasant communities could be mainly left out due to poor infrastructure, insecurity and abject poverty. Providing these people with access to credit gives them the opportunity to expand their business activities to middle class economy, (Loera & Ranchero, 2004). King and Levine (1993), Levine and Zeros (1998), Levine (2000), Levine et al. (2000) and Beck and Levine (2001) have developed new approaches to this issue. They identify: "Bank credit to the private sector, stock market activity and description of the legal structure such as the degree of shareholder and creditor defense," as the main reasons for financial differences in between most countries. Levine (2000) further shows the impact of financial development on growth as through "total feature productivity rather than via capital accretion or saving rates." Financial development could be calculated by factors, for example, depth, access, effectiveness and strength of the financial structure that includes its market, intermediaries, and range of assets, institutions and regulations. This paper reviewed theoretical and empirical work on the relationship between financial development and economic growth. Theory illuminates many of the channels through which the emergence of financial instruments, markets and institutions affect -- and are affected by -- economic development. A growing body of empirical analyses, including firm-level studies, industry-level studies, individual country-studies, time-series studies, panel-investigations, and broad cross-country comparisons, demonstrate a strong positive link between the functioning of the financial system and long-run economic growth. While subject to ample qualifications and countervailing views noted throughout this article, the preponderance of evidence suggests that both financial intermediaries and markets matter for growth even when controlling for potential simultaneity bias. Furthermore, microeconomic-based evidence is consistent with the view that better developed financial systems ease external financing constraints facing firms, which illuminates one mechanism through which financial development influences economic growth. Theory and empirical evidence make it difficult to conclude that the financial system merely - and automatically -- responds to economic activity, or that financial development is an inconsequential addendum to the process of economic growth. In the remainder of this Conclusion, I discuss broad areas needing additional research. In terms of theory, Section II raised several issues associated with modeling finance and growth. Here I simply make one broad observation. Our understanding of finance and growth will be substantively advanced by the further modeling of the dynamic interactions between the evolution of the financial system and economic growth (Smith, 2002). Existing work suggests that it is not just finance following industry. But, neither is there any reason to believe that it is just industry following finance. Thus, we need additional thought on the co-evolution of finance and growth. Technology innovation, for instance, may only foster growth in the presence of a financial system that can evolve effectively to help the economy exploit these new technologies**.** Furthermore, technological innovation itself may substantively affect the operation of financial systems by, for example, transforming the acquisition, processing, and dissemination of information. Moreover, the financial system may provide different services at different stages of economic development, so that the financial system needs to evolve if growth is to continue. These are mere conjectures and ruminations that I hope foster more careful thinking. In terms of empirical work, this paper continuously emphasized that all methods have their problems but that one problem plaguing the entire study of finance and growth pertains to the proxies for financial development. Theory suggests that financial systems influence growth by easing information and transactions costs and thereby improving the acquisition of information about firms, corporate governance, risk management, resource mobilization, and financial exchanges. Too frequently empirical measures of financial development do not directly measure these financial functions. While a growing number of country-specific studies develop financial development indicators more closely tied to theory, more work is needed on improving cross-country indicators of financial development. Although many empirical studies have investigated the relationship between financial depth, defined as the level of development of financial markets, and economic growth, the results are ambiguous. On the one hand, cross country and panel data studies find positive effects of financial development on output growth even after accounting for other determinants of growth as well as for potential biases induced by simultaneity, omitted variables and unobserved country-specific effect on the finance-growth nexus, see for example King and Levine (1993), Khan and Senhadji (2000) and Levine et al. (2000). On the other hand, time series studies give contradictory results. Demetrius's and Hussein (1996) find little systematic evidence in favor of the view that finance is a leading factor in the process of economic growth. In addition they found that for the majority of the countries they examine, causality is bi-directional, while in some cases financial development follows economic growth. Lintel and Khan (1999) used a sample of ten less developed countries to conclude that the causality between financial development and output growth is bi-directional for all countries. All these results show that a consensus on the role of financial development in the process of economic growth does not so far exist. Much more research needs to be conducted on the determinants of financial development. To the extent that financial systems exert a first-order impact on economic growth, we need a Fuller understanding of what determines financial development. There are at least two levels of analysis. There is a growing body of research that examines the direct laws, regulations, and macroeconomic policies shaping financial sector operations. There is a second research agenda that studies the political, cultural, and even geographic context shaping financial development. Some research examines how legal systems, regulations, and macroeconomic policies influence finance. LLSV (1997, 1998) show that laws and enforcement mechanisms that protect the rights of outside investors tend to foster financial development. Beck, Demirgüç-Kunt, and Levine (2003b, 2004b) show that legal system adaptability is crucial. The financial needs of the economy are continuously changing, so that more flexible legal systems do a better job at promoting financial development than more rigid systems. Barth, Capri, and Levine (2004, 2005) and La Porte, Lopez-de-Silages, and Shellfire (2005) show that regulations and supervisory practices that force accurate information disclosure and promote private sector monitoring, but do not grant regulators excessive power, boost the overall level of banking sector and stock market development. Monetary and fiscal policies may also affect the taxation of financial intermediaries and the provision of financial services (Bencivenga and Smith, 1992; Huygens and Smith, 1999; Routine and Sale, 1992, 1995). Indeed, Boyd, Levine, and Smith (2001) show that inflation has a large – albeit non-linear – impact on both stock market and bank development. At a more primitive level, some research studies

the forces shaping the laws, regulations, and institutions underlying financial development. LLSV (1998) stress that historically determined differences in legal tradition shape the laws governing financial transactions. Haber (2004b), Haber, Maurer, and Razo (2003), Pagano and Vulpine (2001), Roe (1994), and Rajang and Zing ales (2003a) focus on how political economy forces shape national policies toward financial development. Guise, Sapiens, and Zing ales (2004) examine the role of social capital in shaping financial systems, while Stutz and Williamson (2003) stress the role of religion in influencing national approaches to financial development. Finally, some scholars emphasize the impact of geographical endowments on the formation of long-lasting institutions that form the foundations of financial systems (Engerman and Sokoloff, 1997, 2002; Acemoglu, Johnson, and Robinson, 2001; Beck, Demirguc-Kunt, and Levine, 2003a; Easterly and Levine 2003). This broad spectrum of work suggests that political, legal, cultural, and even geographical factors influence the financial system and that much more work is required to better understand the role of financial factors in the process of economic growth. Undoubtedly, the financial system is shaped by nonfinancial developments. Changes in telecommunications, computers, nonfinancial sector policies, institutions, and economic growth itself influence the quality of financial services and the structure of the financial system. Technological improvements lower transaction costs and affect financial arrangements (Merton 1992). Monetary and fiscal policies affect the taxation of financial intermediaries and the provision of financial services (Bencivenga and B. Smith 1992; Routine and Salami, 1995). Legal systems affect financial systems (Aorta et al. 1996), and political changes and national institute tins critically influence financial development (Haber 1991).

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