FINANCIAL DEVELOPMENT, HUMAN CAPITAL AND POLITICAL STABILITY

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CONTENTS

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In this paper we take a look at the empirical relationship between the level of financial development and socio-economic variables reflecting different levels of development in the light of the recent literature on the role of human capital in economic development. The empirical results, based on a cross-sectional analysis of 57 developing countries, indicate that human capital and socio-political stability are important factors explaining the level of financial development of these markets.

INTRODUCTION

In 1911, Joseph Shumpeter argued that the services provided by financial intermediaries are essential for economic development. More recent theoretical reasoning and empirical evidence suggest a positive and significant relationship between financial development and economic growth. Empirical analyses, including firm-level studies, industry-level studies, individual country studies and broad cross-country comparison, demonstrate a strong positive link between the functioning of the financial system and long-run economic growth. Undoubtedly, this relationship is also shaped by non-financial developments.[1]

In this paper we take a look at the empirical relationship between the level of financial development and socio-economic variables reflecting different levels of development in the light of the recent literature on the role of human capital in economic development.

To follow the empirical literature on this issue (Barro, 1991), this paper utilizes a cross-country analysis of developing countries. Although, a great deal of scepticism toward cross-country regressions is shared by many investigators (Arestis and Demetriades, 1997), our focus is entirely on correlations and make no attempt to attribute causation. This is unfortunately not possible due to the nature of data used to measure socio-economic variables and particularly human capital or political instability.

The evidence presented in this paper relates to the positive correlation between measures of financial development and measures of human capital development. Surprisingly, there is very

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[1] For a survey of the literature see Levine (1997) and Pagano (1993).

little analysis on this particular issue and this empirical work appears to be the first investigation for developing countries.[2]

The paper is structured as follows. Section I reviews the recent literature on the relationship between financial development and economic development. In section II we present simple relationships among the variables in order to further explore the empirical association. In section III we use simple linear regressions which control for other factors that may be associated with financial development. The paper is concluded with a discussion of the major findings.

I. FINANCIAL AND ECONOMIC DEVELOPMENT

Since Goldsmith (1969) documented the relationship between financial development and economic development 30 years ago, there has been a noticeable increase in attention paid to the factors responsible for the development and distribution of international financial services.

The importance of an effective financial system to economic development was substantiated by McKinnon (1973) and Shaw (1973). According to Lynch (1996), the McKinnon and Shaw analysis injected life into the financial development debate and encouraged contributions from many other theorists, most of whom supported their thesis. Recent literature emphasizes the role of financial intermediaries in improving the allocation of resources. Authors like Greenwood and Jovanovic (1990) and King and Levine (1993a) have developed financial models in which financial sector services contribute to economic growth.[3] However, several doubts have been raised with regard to this approach in the environment of less developed countries (Lucas, 1990).

Empirical evidence in the literature suggests that the developing countries rather have a supply-leading causality pattern of development than a demand-following pattern (Fritz, 1984; Jung, 1986; Dee, 1986). Many governments have indeed established new financial institutions under what has been termed a “supply-leading approach” to financial development and have

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[2] Following Nelson and Phelps (1996), inter-country differences in factor endowments, such as the capital-labour ratio and the education level, have been considered as important factors in economic development or in explaining international trade patterns. However, empirical studies using the Heckscher-Ohlin-Samuelson theory have not proved very successful (Trefler, 1995).

[3] See also Fry (1982, 1995), McKinnon (1991) and the World Bank (1989).

considered locally incorporated institutions or even State-owned monopolies an essential element of their economic and political independence.[4]

In describing the conceptual links between the functioning of the financial system and economic growth, Levine (1997) highlighted that comparisons of financial structure and economic development using only industrialized countries tend to suggest that financial structure is unrelated to the level and growth rate of economic development. As shown by Outreville (1992) there is a significant relationship between the financial capacity in insurance markets and the market structure of these countries. As recognized by Levine (1997), there are also severe analytical problems with linking financial development to economic performance. Kindleberger (1974, 1985) also listed a number of plausible factors and also pointed to the difficulties of reaching quantitative evaluations.

Undoubtedly, the financial system is also shaped by non-financial developments. Changes in technology (Merton, 1992), non-financial sector policies like fiscal policies (Bencivenga and Smith, 1991), the legal system (LaPorta et al., 1996), political changes and human resources development, impact on the relationship between financial development and economic development. In this paper we attend to one of these aspects of financial development, namely the relationship between financial development and human capital development.[5]

II. MEASURES OF FINANCIAL DEVELOPMENT

Quantity indicators based on monetary and credit aggregates are the traditional measures of financial development and deepening. Although they may not enable to assess accurately a country's financial development (Lynch, 1996) they are the only indicators readily available in the monetary survey in IMF Statistics especially for developing countries.

The simplest indicator is the money/GDP ratio, which measures the degree of monetization in the economy. Financial development is generally identified with the growth of the real size of the financial sector and in relation to GDP, i.e. financial deepening (Feldman and Gang, 1990).

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[4] According to this view, called "supply-leading", the financial sector precedes and induces real growth. In the "demand-following" pattern, on the contrary, the real side of the economy develops, its demands for financial services materialize and are met passively from the financial side. As the process of real growth occurs, the supply-leading impetus gradually becomes less important, and the demand-following financial response becomes dominant (Patrick, 1966: 177).

[5] See the earlier work of Krueger (1968).

The ratio M2/GDP measures the overall size of the financial intermediary sector and is strongly correlated with both the level and the rate of change of the real GDP per capita. On the other hand M1/GDP is not strongly associated with the level of economic development (King and Levine, 1993b).

Broad money M2 is often taken as an adequate measure of the size of the financial sector, as well as because of the lack of data on other financial assets. It should be kept in mind however, that this measure does not consider the full extent of financial intermediation. This variable also may be an appropriate measure of monetization in inflation prone countries.[6] In a recent paper Boyd et al. (1996) document the empirical relationship between inflation rates and financial market performance. They employ "refined" measures of financial development which are not available for many developing countries.

Liu and Woo (1994) suggest as a proxy for the degree of financial sophistication the ratio of the long-term to short-term financial assets value. Money supply (M1) is used as the short-term financial assets value. The ratio of broad money to narrow money (M2/M1) should be positively related to a country's level of financial development. Savings deposits increases more rapidly than transaction balances as the financial system expands. An alternative measure would be the "quasi-liquid liabilities" defined by King and Levine (1993b) as the difference between the broad and narrow money ratio to GDP.

Other measures such as the bank ratio defined as the ratio of bank credit to bank credit plus central bank domestic assets are not consistent across developing countries due to measurement and definitional problems (Levine, 1997).

The analysis presented here is based on a cross-section of 57 developing countries for which two proxies of financial development have been calculated over the period 1988–1990 (Appendix 1). All data used in this paper are taken from Statistics published by the International Monetary Fund, from Handbooks published by the United Nations or from other published references (Appendix 2).

The economies of scale factors are usually measured by the per capita gross domestic product (GDP). Examination of the data for the developing countries listed in Appendix 1 provides scant evidence for the relation between the degree of financial development and the level

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[6] The reciprocal of this ratio, namely GDP/M2, is a measure of the income velocity of money. A high-income velocity indicates a financially repressed economy yet to undergo expansion of its real monetary base. Studies suggest that changes due to disinflation and deregulation have had a smaller effect on M2 than on M1 growth and that the relationship between M2 growth and inflation has remained fairly stable (Bernanke and Blinder, 1988; Reichenstein and Elliott, 1987).

of development as measured by the per-capita Gross Domestic product (GDP) (\s 1 and 2). In fact, individual country experiences are too heterogeneous to accord neatly with any very simple generalization. Some societies have achieved high levels of human development at modest levels of per capita income. In the light of the results discussed in the following section, this suggests that other societies have failed to translate their comparatively high income levels and rapid economic growth into commensurate levels of human development.[7]

III. FINANCIAL DEVELOPMENT AND MEASURES OF SOCIO-ECONOMIC DEVELOPMENT

The United Nations Development Programme (UNDP) published in 1990 a first *Human Development Report* providing indicators on human development. Human development is a process of enlarging people's choice. The most critical ones are to lead to a long and healthy life, to be educated and to enjoy a decent standard of living. Human development is measured by UNDP as a comprehensive index – called the human development index (HDI) – reflecting life expectancy, literacy and command over the resources to enjoy a decent standard of living.

Figure 2 shows the relationship between the level of financial development and the human development index for the 57 countries considered.

The key component knowledge-literacy figures incorporated in the HDI index are only a crude reflection of access to education. Rapid improvements in basic education have sharply increased the ability of people in developing countries to read and write. Several developing countries have adult literacy rates above 90 per cent, comparable to the rates in industrialized countries. Skilled and well-educated people have generally better access to information and are more likely to behave as less risk adverse people. Higher education leads to lower risk aversion and higher savings as shown by Kelly (1980).

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[7] Aristotle warned against judging societies merely by such things as income and wealth.

Figure 1

The relationship between financial development and the size of the market

[For technical reasons, it is not possible to reproduce the graph here.]

Figure 2

The relationship between financial development and the human development index

[For technical reasons, it is not possible to reproduce the graph here.]

A standard approach is to treat human capital, or the average years of schooling of the labour force, as an ordinary input in the production function. The recent work of Mankiw et al. (1992) is in the tradition. Human capital endowment for each country is proxied by the percentage of the labour force with third-degree education (EDUC) as proposed by Baldwin (1971).

As an alternative Benhabib and Spiegel (1994) propose a measure of human capital accumulation (HCA) to examine cross-country evidence of physical and human capital stocks on the determinants of the capacity of nations to adopt, implement and innovate new technologies.

Individuals or households are assumed to maximize total lifetime utility subject to a lifetime wealth constraint implicitly assuming that the social and political environment is stable. This assumption however can be questioned on its empirical relevance specially for the developing countries.[8]

Socio-political instability is hard to define and measure in an easy way which can be used for econometric work (Venieris and Gupta, 1986). It has been argued by Gupta (1990) that the inclusion of socio-political variables in general and the factors of political violence in particular, changes the traditional model of economic growth. While investment in human capital is part of the income-increasing force, factors causing political instability, on the other hand, are part of the income-retarding force. The index published in Romer (1993), SPI(1), is used in this study. Following Barro (1991) he measures political instability as the mean number of revolutions and coups per year.[9] An alternative measure of socio-political instability SPI(2) calculated by Alesina and Perotti (1996) is also tested here. It is, however, available only for 43 countries.

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[8] Socio-political instability introduces a new element of uncertainty in the decision-making process, as recently shown by Venieris and Gupta (1986).

[9] It is worth noting that his results suggest that political instability is strongly associated with inflation and monetary instability.

IV. EMPIRICAL RESULTS

Correlations among the variables are presented in table 1 and linear regressions analyses are summarized in table 2. To assess the strength of the partial correlations we include in the regressions those variables that might be expected to be associated with financial development (Greenwood and Smith, 1997). The results confirm that a significant relationship exists between the level of financial development and the variables associated to the measure of human resources development. However the results differ slightly depending on the measure adopted in the analysis.

In general, the t-values associated with the estimated coefficients are higher with the M2/M1 measure with the exception of political instability which is negatively correlated and significant only when associated with the M2/GDP measure.

Table 1

Correlation matrix

	M2/M1	*M2/GDP*	*HDI*	*HCA*	*EDUC*	*SPI(1)*
M2/M1	1.0					
M2/GDP	0.52	1.0				
HDI	0.65	0.52	1.0			
HCA	0.45	0.24	0.76	1.0		
EDUC	0.56	0.24	0.66	0.65	1.0	
SPI(1)	-.10	-.26	-.22	-.07	0.21	1.0

The linear regression analysis includes a size variable measured by the GDP, a variable measuring human resource development and the variable measuring socio-political instability.[10] Since the predetermined variables are assumed to be uncorrelated with the disturbance term, the ordinary least squares' method can be applied to estimate the impact co-

[10] Multiple equilibria could be present if there are economies of scale in the financial sector. Azariadis and Drazen (1990) make the point that multiple equilibria could be driving the much-studied correlation between initial schooling and growth. Multiple equilibria in the context of cross-country regressions may overstate the relationship between human capital and financial development.

Table 2

Registration analysis

	(57 countries)		*(43 countries)*	
	M2/M1	*M2/GDP*	*M2/M1*	*M2/GDP*
GDP	0.0023 (2.94)	0.01 (3.73)	0.0034 (2.58)	0.0039 (3.09)
HDI	3.69 (6.29)	39.74 (4.51)	3.70 (5.17)	27.29 (3.41)
HCA	0.26 (3.57)	1.93 (1.84)	0.24 (2.86)	0.56 (0.62)
EDUC	0.07 (4.99)	0.41 (1.81)	0.08 (4.73)	0.31 (1.54)
SPI(1)	-0.56 (0.78)	-18.47 (1.99)	-0.21 (0.25)	-17.79 (2.26)
SPI(2)	-	-	-0.02 (0.25)	-0.53 (2.26)

efficients of the equation. Several equations have been estimated to test for alternative proxies for the variables and the regression results are presented in table 3. The Park test has been used to verify the assumption of homoscedasticity by regressing the residuals obtained from the regression on the size variable. There is no statistically significant relationship between the variables.

A fundamental precondition for substantial financial deepening is that real interest rates should be positive. Fragmented markets in less developed countries often produce negative real deposit rates which discourage savings in financial assets. In practice, inflation varies considerably across countries and time, making comparisons difficult. Also, countries with the strictest financial market controls and high inflation level show the largest differential between real interest rate and nominal interest rate volatility.

Structural characteristics of the market of financial institutions play a major role in determining the allocational efficiency of the demand for, and supply of, financial services.

Table 3

Estimates of the equation

57 countries	*Intercept*	*GDP*	*EDUC*	*SPI(1)*	*R2/F*
M2/GDP	29.27	+0.0046	+0.11	-9.56	0.39
		(4.50)	(0.52)	(1.14)	11.25
M2/M1	1.96	+0.000	+0.07	-1.02	0.37
		(0.95)	(4.49)	(1.62)	10.55
43 countries	*Intercept*	*GDP*	*EDUC*	*SPI(2)*	*R2/F*
M2/GDP	29.95	+0.0023	+0.27	-0.50	0.34
		(1.75)	(1.42)	(2.90)	6.61
M2/M1	1.72	+0.000	+0.08	-0.03	0.42
		(0.71)	(4.30)	(1.61)	9.31

Note: The t-values are shown in parentheses. The equation is estimated with a constant.

Distortions also arise when a government imposes a panoply of control measures and taxes. A variety of factors, especially in the economies of developing countries may account for the prevalence of price distortions. The term "financial repression" usually describes a set of policies that aim to use the financial system to channel resources into specific sectors of the economy (Feldman and Gang, 1990).

It may be argued that the level of financial development is determined endogenously and belongs to a general interdependent system of simultaneous equations. An alternative approach is to regress the measure of financial development on the GDP per capita, the average inflation rate, the real rate of interest, and a dummy variable associated to a monopolistic market.

There is disagreement in the literature on the actual effects of interest rate policy on savings, and the results depend partly on how real interest rates are estimated (Khatkhate, 1986). The bank discount rate reported for all countries in the International Financial Statistics Survey is used here. To calculate the real rate, the inflation averaged over the period 1987–1990 is subtracted to the current (1990) bank discount rate.

The estimates of the equation are shown in table 4 with and without the market size variable proxied by the GDP variable. The results are not statistically significant.

Table 4

Estimates of the equation

(57 countries)

Intercept	*GDP*	*Inflation*	*Real rate*	*Monopoly*	*R2/F*
(1) 27.38	+1.01	-0.04	+0.01	5.02	0.40
	[5.70]	[0.67]	[0.16]	[0.88]	8.62
(2) 38.13	-	-0.08	+0.03	+2.49	0.07
		[1.07]	[0.78]	[0.96]	0.56

Note: The t-values are shown in parentheses. The equation is estimated with a constant. The dependent variable is the ratio M2/GDP in both equations.

V. CONCLUSION

The purpose of this paper is to compare the level of financial development in several developing countries with different levels of economic development. The view that human resources development can be promoted only at the expense of economic growth poses a false tradeoff. It misstates the purpose of human development and underestimates for example the returns in education which in turn leads to more risk-taking by skilled and well-educated people.

The main results of the data analysis, based on a cross-sectional analysis of 57 developing countries, are as follows:

- The correlations among the variables show (i) quite high positive correlations between measures of financial development and human capital measures, and (ii) smaller negative correlations between Romer's measure of political instability and measures of financial development;
- The linear regression analysis of measures of financial development on measures of human capital development and political instability confirm that measures of financial development

are positively correlated with real GDP per capita and with measures of human capital development and negatively correlated in most cases but not significantly with measures of political instability;

- Measures of inflation, the real interest rate and monopoly power in the financial sector are all insignificant determinants of financial development.

The evidence presented in this paper is, of course, not definitive partly because of possible measurement errors, but more fundamentally, because the evidence points only to association between variables, and not to the nature of the causal links among these variables. Undoubtedly, financial development is shaped by non-financial developments but more information is needed about the determinants and implications of non-financial variables.

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Appendix 1: List of countries

Country	*GDP per capita*	*M2/GDP*	*M2/M1*
Singapore	12963	90.0	3.88
Cyprus	7834	73.6	4.35
Barbados	6655	42.2	3.39
Malta	6484	90.0	2.49
Korea, Republic of	5626	40.0	4.15
Gabon	4351	23.3	1.61
Trinidad-Tobago	4022	51.7	4.18
Argentina	3261	27.3	2.73
Mexico	2814	24.3	2.92
Uruguay	2677	56.3	7.04
Venezuela	2515	32.0	2.42
Mauritius	2374	64.3	4.50
Malaysia	2368	70.3	3.12
Botswana	2274	30.1	3.03
Chile	2110	42.5	6.58
Algeria	2106	15.4	1.22
Panama	2047	38.0	5.24
Syria, Rep.	2009	82.0	1.92
Turkey	1939	35.0	3.21
Costa Rica	1875	44.4	3.02
Jamaica	1640	53.0	3.14
Tunisia	1553	51.4	2.07
Thailand	1466	69.5	7.04
Congo	1288	20.3	1.42
Colombia	1247	18.9	1.78
Paraguay	1231	19.4	2.30
El Salvador	1159	29.7	2.79
Cameroon	1066	21.3	1.74
Sudan	1026	27.8	1.16
Ecuador	1008	18.0	1.63
Morocco	1006	48.8	1.41
Dominican Rep.	991	24.4	1.81
Egypt	971	49.2	2.87
Guatemala	831	23.8	2.36
Côte D'Ivoire	829	30.3	1.61
Senegal	797	23.7	1.63
Philippines	706	31.8	3.80
Bolivia	624	18.2	3.36
Honduras	594	33.7	2.16
Indonesia	580	41.1	3.16
Zambia	518	38.0	1.94
Sri Lanka	466	30.5	2.25
Togo	459	44.0	2.10
Central African Rep.	433	21.0	1.14
Ghana	417	15.3	1.29
Benin	411	18.0	1.29
Kenya	371	28.7	2.19
India	358	46.1	2.86
Pakistan	336	39.7	1.39
Niger	326	19.7	1.63
Nigeria	299	22.5	1.65
Madagascar	267	20.8	1.22
Malawi	219	21.4	1.92
Sierra Leone	217	21.6	1.23
Burundi	201	18.1	1.47
Bangladesh	200	31.3	3.50
Chad	199	21.2	1.06

Appendix 2: Data sources

GDP, inflation, population	*UNCTAD Handbook of International Trade and Development Statistics*
M1,M2, interest rates	*IMF International Financial Statistics*
GDP, HDI, education, life expectancy	*UNDP Human Development Report*
Human capital accumulation (HCA)	Benhabib and Spiegel (1994)
Socio-political instability (SPI)	(1) Romer (1993) (2) Alesina and Perotti (1996)

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