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FINANCIAL DEVELOPMENT, MACROECONOMIC VOLATILITY, AND ECONOMIC GROWTH

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Abstract

The main objective of this study is to empirically evaluate the impact of financial development upon macroeconomic volatility, economic growth and upon the relationship between macroeconomic volatility and economic growth. The panel dataset used in this study contains observations for 78 countries worldwide during the period 1960-1995. Most of the data sources used are standard and widely used in comparable empirical studies. There are four different relations that are estimated with the panel dataset: -the importance of a better-quality financial system for overall (average) economic growth (1); -the effect of (aggregate) growth volatility upon mean growth rate (2); - the extent to which a more developed financial sector manages to dampen aggregate shocks, and thereby reduce growth volatility (3), and; -the power of financial intermediaries and stock markets to affect (change) the relationship between mean growth and volatility (4). The paper is organized as follows: the first section is an introduction to the research topic, while the second

section gives an overview of some theoretical and empirical findings in four different, though interrelated, strands of the literature. Section three presents the dataset used and the empirical strategy pursued. The main findings are presented in section four. Finally, section five concludes.

Key words: Economic growth, financial sector, financial development, macroeconomic volatility

Introduction

There are several reasons why countries with better-developed financial systems perform well in economic terms and ultimately, experience higher growth of income per capita. The most general explanation, which has received considerable attention in recent years, is that the development of a good financial infrastructure is a direct consequence of a generally stable institutional setting. The importance of institutions for economic performance in the long-run has been most vividly presented by North and Weingast (1989). They argue that the "credible commitment", which England achieved during the Glorious Revolution (1688), was a keystone in the construction of its path-breaking institutional system and finally, a crucial condition for its

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(economic) successes in the following two centuries. Moreover, recent research in Law and Finance Theory points out that the origin of the legal system can explain the cross-country differences in financial development, and economic growth (La Porta, Lopez-de-Silanes, Shleifer and Vishny, 1997, 1999).

Besides these lines of research that focus on the broad (institutional) picture why financial development and economic growth co-exist in some countries and not in others, there are numerous studies that analyze the channels through which more finance can lead to higher growth. Two channels occupy a central position in this research: i) more rapid capital accumulation (capital deepening) in the sense that a better functioning financial system makes possible a faster re-use of savings or re-investment of profits; ii) technology changes (efficiency) that point out the role of finance in channeling resources from people that put them aside to those that have the most profitable ideas/projects, thereby increasing efficiency in allocation. Additionally, a third channel through which finance can lead to higher growth is through its role in reducing macroeconomic volatility. Better-developed financial systems are expected to dampen aggregate shocks and smooth out output deviations. In turn, one may argue that less volatility means more predictable outcomes, and ceteris paribus, this can lead to more investment and higher growth. The volatility channel received relatively less attention in the literature on finance and growth. Therefore, the integration of the volatility channel in the financial development-economic growth link occupies a central place in my investigation.

The main objective of this study is to empirically evaluate the impact of the financial development upon macroeconomic volatility, economic growth and upon the relationship between macroeconomic volatility and economic growth.

The rest of the paper is organized as follows: the next section gives an overview of some theoretical and empirical findings in four different, though interrelated, strands of research. Section three presents the dataset used and the empirical strategy pursued. The main findings are presented in section four. Finally, section five concludes.

II. LITERATURE REVIEW

II. 1. Finance-Growth Nexus

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The complementarities and interdependencies between the rise of industrial production and the development of capital markets have been observed at least as far back as the beginnings of the nineteenth century. Later, in the first half of the past century, this interdependence captured the attention of many prominent scholars who mainly focused their debates on the direction of causality between finance and growth. While Schumpeter (1912) stressed the leading role of financial development for overall economic growth, Robinson (1952) argued that finance simply follows the successes in the "real sector": "where enterprise leads, finance follows". Though the two camps have put many arguments forward in the following decades, no definitive and unanimous conclusion has been reached yet.¹ In general, finance can influence the aggregate rate of economic growth through five instruments:² i) production of ex-ante information about possible investment opportunities through a decrease in the information costs, ii) monitoring of investments and implementation of corporate governance, iii) trading, diversification, and management of risk, (iv) mobilization and pooling of savings, and (v) facilitation in the exchange of goods and services.³ An extensive survey of the most up-to-date theoretical as well as empirical literature on this finance-growth nexus can be found in Levine (2004).

Moreover, there is a subcategory of research within this field that emphasizes the importance of financial structure, rather than finance per se, as a crucial determinant of the growth process. Some authors stress the superiority of financial intermediaries relative to capital markets in the allocation of financial resources.

¹⁾ For later debates on the same issue see McKinnon (1973), Lucas (1988) or Miller (1988) for example.

²⁾ The functioning of the three channels described above depends crucially on the success of these five instruments.

³⁾ This classification of the instruments through which finance can accelerate growth is due to Levine (2004).

Most notably, Stiglitz (1985) points out to the possibility for free-riding behavior in the large, anonymous stock markets. Since the information about firms and their monitoring has a (quasi) public-good character, only limited number of market participants has a genuine interest in providing it. Furthermore, Schleifer and Vichy (1997) emphasize the ineffectiveness of capital markets to discipline managers through takeover(s) (threats) in presence of asymmetric information. According to this literature, it is the development of the banking sector and its long-term relationships with the industry that lead to higher growth since capital markets might produce serious misallocation of financial resources. On the other hand, Allen and Gale (1999) show that banks cannot act in the most efficient way in an environment of fast innovation and change. Similarly, Rajan and Zingales (2002) emphasize the superiority of capital markets in eliminating or cleansing the least profitable firms in times of aggregate negative shocks.

The preceding overview of the major issues in the financial development (structure) – economic growth literature leads to the first major issue this analysis attempts to empirically evaluate: how important is the level and structure of financial development for the subsequent rates of economic growth?

II. 2. Volatility and Growth

Business cycles are widely regarded as normal, natural phenomena in the capitalist systems. The volatility in the rate of economic growth that they produce is not only their most familiar characteristic, but can be seen also as their blueprint on the long-run course of economic growth. The latter phenomenon was already observed in the 1940-1950s by Schumpeter, Hicks and Kaldor, among others. Though many scholars recognize the likely impact of macroeconomic volatility on the subsequent growth rates, there is a major disagreement about the sign of this relationship.⁴ Many theoretical arguments imply a positive relationship between volatility and economic growth. For example, Aghion and Saint-Paul (1991, 1998) and Hall (1991) show that the opportunity costs of innovation and R&D activities is low in times of economic distress. Therefore, a more volatile economy will allocate a higher proportion of its workforce to these productivityenhancing activities, thereby inducing a higher growth rate. Moreover, precautionary savings (due to the higher level of uncertainly in more volatile periods) argument by Deaton (1991) or the "cleansing effect" proposed in Caballero and Hammour (1994) can lead to survival of the (relatively) more efficient producers only. Through all these links, a more volatile economy will lead to faster economic growth. Conversely, business cycles might lead to skill loss if the workers that become unemployed during recessions lose (part of) their professional abilities (van Ewijk, 1994).⁵ Moreover, volatile growth and/or frequent recessions might reflect broader institutional failures in the countries affected. Finally, Stiglitz (1993) argues that research output falls during recessions because of imperfect capital markets that do not accept human capital as collateral.

The inconclusiveness of the theoretical models signals that the sign of this relationship has to be established empirically. However, the empirical conclusions are not more optimistic. The pioneer studies in this field done by Kormendi and Maguire (1985) and Grier and Tullock (1989) find a strongly positive correlation between volatility and average growth. In an influential study, Ramey and Ramey (1995) find a negative relation between the level of volatility of GDP per capita and the overall long-run growth of the economy in a cross-section analysis with 92 countries. This result is robust after the inclusion of various control variables like the share of investment in GDP, population growth, human capital etc. Nonetheless, this relation turns out insignificant when only the OECD-countries are included in the analysis. A more recent study by Martin and Rogers (2000) reaches a similar conclusion using three different datasets.⁶

About a comprehensive survey of the main theoretical as well as empirical findings about the relationship between the business cycles and economic growth see Canton (1997).

⁵⁾ Here a distinction can be made between mild and wild business cycles, the former associated with higher, while the latter with lower economic growth.

⁶⁾ They use data for 90 European Union regions in the period 1979-1992, developed countries during the period 1960-1988, and developing countries in the period 1960-1988.

The relationship between volatility and growth is the second issue I will test with my dataset. Besides the estimations for the whole dataset (78 countries), I will investigate this issue in four additional sub samples for groups of countries that are clearly identified in the literature.

II. 3. Finance and Volatility

The wave of financial crises in the emerging markets during the 1990s put light on the role that financial institutions and capital markets play in dampening or magnifying the shocks from the real sector. One of the basic functions of a well-developed financial system is the provision of (partial) risk-sharing among economic agents at all levels of aggregation. Nonetheless, higher leverage in an economy means a higher interdependence with the other market participants, and therefore, can lead to substantial spillover effects and stronger declines in output. Many authors focus especially on the relationship finance-volatility at different stages of (economic) development and in different country groups around the world. Acemoglu and Zilibotti (1997) argue that in the early stages of development there are many indivisible investment projects that cannot be financed in incomplete capital markets. Since most of these high-yields, productivity-enhancing projects cannot get appropriate financial resources, they will never be undertaken, thereby contributing to more variable and lower growth rates on average. In a microeconomic model with imperfections in the credit markets, Kiyotaki and Moore (1997) show that effects from the other sectors can be amplified and made more persistent. Furthermore, Aghion, Banerjee and Piketty (1999) emphasize that a less developed financial system (together with unequal investment opportunities) can be a generator for macroeconomic volatility. In a more recent theoretical paper, Aghion, Bachetta and Banerjee (2004) show that countries (small open economies) with better financial systems can achieve more stable growth-paths. However, countries that are at an intermediate level of financial development will be most volatile according to their model.

Empirical evidence suggests that the development of the financial sector can indeed lead to lower growth volatility. Easterly, Islam and Stiglitz (2001) argue that the role of financial markets is essential in explaining growth volatility in a set of 74 countries for the period 1960-1997.⁷ They derive several important conclusions: first, credit constraints appear much more important than wage-rigidities and frictions in the labour market; second, the effect of financial sector development on volatility is non-linear, so that after a certain threshold, more finance means more volatility. Moreover, Raddatz (2002) claims that sectors, which depend relatively more on external financing, experience less volatility in more financially developed countries. Finally, Denizer, lyigun and Owen (2002) test for the effect of several financial indicators on growth, consumption and investment volatility. Using fixed-effects estimations for a group of 70 countries in the period 1956-1998, they conclude that not only the financial system per se, but also the manner in which it develops, reduce macroeconomic volatility.⁸ Beck, Lundberg and Mainoni (2001) present a theoretical model that focuses on the impact of two types of shocks (real-sector and monetary) upon growth volatility. Their model predicts that more developed financial sector dampens the real, while it magnifies the impact of monetary shocks on aggregate output.9 Subsequently, they find evidence in favor of this hypothesis using a panel dataset for 63 countries in the period 1960-1997. Overall, they reach a conclusion that the impact of the financial sector on output volatility is not unambiguous, but rather depends on the relative importance of real versus monetary shocks.

II. 4. Financial Development and the Growth-Volatility Relationship

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The level of investment is a principal channel through which volatility exerts its impact on the rate of economic growth according to the theoretic literature surveyed above. Therefore, many studies predict that a more

9) Terms of trade volatility is used as a proxy for real, while the volatility of the inflation rate is used as a proxy for monetary shocks.

⁷⁾ They aggregate the data in two subperiods of 18 years each (1960-1978 and 1979-1997) so that they are left with a panel with only two observations per country.

The dataset consists of variables averaged over a five-year window in order to capture not only the immediate but also the medium-term effect of the financial sector on volatility.

volatile economy will be considered more risky as well, which in turn will lead to lower level of investment and slower economic growth.¹⁰ If this argument is correct, then controlling for the investment level in a growth regression should leave the direct effect of volatility on growth insignificant. However, Aghion et al. (2004) find that although the effect of volatility is slightly reduced after investment is included in their analysis, it still remains strongly significant. Therefore, they focus on another possible channel - the composition of investment - through which volatility exerts its (negative) impact on growth. They develop a theoretical model, which predicts that more financially developed countries will experience a less negative relationship between volatility and growth. Thus, besides the direct influence that finance exerts on growth, and the effect it has on growth volatility, their model implies that the level of financial development *qualitatively changes the relationship* between volatility and growth. Their preliminary results from cross-section regressions for 70 countries suggest support this hypothesis. Nonetheless, they do not differentiate between different sources of finance, different groups of countries (they only report separate results for the OECD-subset of countries) nor do they consider the time-variation in the dataset. These are the issues I would like to address in the fourth and final part of this empirical study.

III. EMPIRICAL STRATEGY

III. 1. Data Description

The panel dataset used in this study contains observations for 78 countries worldwide during the period 1960-1995. Most of the data sources used are standard and widely used in comparable empirical studies. The major part of the macroeconomic variables is constructed from the Penn World Tables 6.1. The growth rate of real GDP per capita is computed as the log difference of two consecutive per capita real GDP levels available in PWT 6.1. Subsequently, this variable is averaged over seven five-year periods (1961-1965, 1966-1970, 1971-1975, 1976-1980, 1981-1985, 1986-1990 and 1991-1995). This is comparable with the measure(s) for growth volatility computed as the standard deviation of the real GDP per capita growth rate over the corresponding five-year time-windows. In a similar way, I compute the standard deviation of the ratio between the growth rate of real consumption and real GDP per capita. This is used as an additional variable for macroeconomic volatility and the level of consumption smoothing following Bekaert, Harvey and Lundblad (2004). My main interest lies in explaining the behavior of these variables by a number of factors.

A central place among the explanatory factors is given to the indicators of financial development. These are constructed as five year averages for each country in the dataset compiled by Beck, Levine and Loyaza (2000). I use three indicators for bank development and three indicators for stock market development. Each of these six measures captures a different aspect of the financial sector.

The level of development of the financial intermediaries is measured by three variables: i) Deposit Money Banks Assets to GDP ratio; ii) Liquid Liabilities to GDP ratio; and iii) Private Credit by Deposit Money Banks to GDP ratio. The first two indicators stress the importance of the financial services performed compared to the overall level of the economy. While the first variable roughly refers to the size of the commercial banks (by their assets), the second one includes currency, all interest-bearing liabilities on the balance sheets of commercial banks and other, non-bank financial institutions. Therefore, this is a better aggregate indicator for the size of the overall financial sector (measured by the liability side of the balance sheet). Finally, the third variable measures the size of the financial intermediaries by the activity that they perform. The Ratio of the private credit by money banks to GDP captures exclusively the portion of bank credit that is issued to the private enterprises. Thereby, it refers precisely to the main bank activity – channeling resources from savers to investors (Levine and Zervos, 1998).

¹⁰⁾ The opposing literature's principal argument is that higher volatility implies more risk, which in turn, leads to more savings due to precautionary reasons, and faster capital accumulation.

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Three indicators are used to measure the development of stock markets on a cross-country basis: i) Stock Market Capitalization to GDP ratio, ii) ratio of the Total Value Traded to GDP; and iii) Stock Market Turnover ratio. Similar to the measures for bank development, each of these indicators refers to a specific aspect of stock market development. The capitalization ratio shows the total value of all the shares listed on the stock exchanges in certain country (a stock variable) relative to its overall economic activity on a yearly basis (a flow variable). Furthermore, a reasonable picture about the activity of stock markets during certain period of time can be found by comparing the value of shares that were actually being traded (in a year) to GDP. This is the main reason for including the second variable in the analysis. Finally, an important indicator for the overall functioning of the stock market is its liquidity, i.e. the frequency by which the shares listed "change hands". The last measure refers to this aspect by comparing the value of shares traded relative to the value of all shares listed on the market.

Different control variables are used in the analysis. It is a standard in growth regressions to include the initial real GDP per capita level as control for possible convergence among countries. In this analysis, I include the logarithm of real GDP per capita in the period preceding the period for which the average growth rate is calculated (i.e. In(gpc1960) as a control in the regression with the growth rate for 1961-1965 as dependent variable). As control for the level of human capital, I include the average years of schooling in the population. Moreover, I control for other institutional or political factors. In order to measure the degree of openness or economic integration of a particular country, I include two variables: the ratio of total trade (exports plus imports) to GDP and the black market exchange premium. The latter serves also as an indicator for frictions in domestic markets. Finally, I include the average inflation rate over each five-year period as a control for monetary policy stance and the share of government expenditures in the economy to control for the importance of the public sector. Additional control variables have been used for the institutional quality and similar characteristics. However, these results are not included as they do not significantly change the main conclusions. Moreover, many of them have low variability through time, which make their usefulness in panel estimations rather dubious.¹¹ Finally, especially important control variable in the growth-volatility regressions is the investment ratio, since the neoclassical economics identifies it as the main channel through which macroeconomic volatility exercises a negative impact on the GDP growth rate. To test for the validity of this argument I report each growth regression twice: once without and once with the investment control.

III. 2. Model Specification(s)

There are four different relations that I estimate with the panel dataset described in the previous section:

- the importance of a better-quality financial system for overall (average) economic growth (1);
- the effect of (aggregate) growth volatility upon mean growth rate (2);
- the extent to which a more developed financial sector manages to dampen aggregate shocks, and thereby reduce growth volatility (3), and:
- the power of financial intermediaries and stock markets to affect (change) the relationship between mean growth and volatility (4).

In order to empirically evaluate the first two relations (1) and (2), I run static panel model estimations for model(s) of the following form:

 $growth_{it} = \beta_0 + \beta_1 \ln(initial)_{it-1} + \beta_2 V_{it} + \gamma X_{it} + \mu_i + \varepsilon_{it}$ (3.1)

^{10 11)} A number of variables can be considered for this purpose as the (intellectual) property rights protection, legal origin etc.

- dependent variable is the mean growth rate for economy *i* at time t_{i}^{12}
- *In*(initial) is the level of real GDP per capita preceding the first period included in the calculation of the dependent variable;
- *V* is the explanatory variable of our primary interest, i.e., the average indicator for financial sector development for the first relation (1), the volatility of economic growth for economy *i* during time period *t* in the second relation (2);
- X contains all the other variables used as controls in the regression, and:
- the error term is decomposed into two parts: country-specific and i.i.d. component.

The third relation is estimated according to the following specification:

$$volatility_{ii} = \beta_0 + \beta_1 growth_{ii} + \beta_2 V_{ii} + \gamma X_{ii} + \mu_i + \varepsilon_{ii}$$
(3.2)

In this relation I test for the impact of the financial sector on aggregate volatility. The mean growth rate is included as a control variable since periods of higher mean growth are expected to produce higher volatility as well (Denizer et al., 2002). The main variable of interest is V, the effect of the financial indicators. Finally, the error term is decomposed as before and variables X are used as controls.

Finally, I evaluate the impact of financial development on the relation between volatility and growth (4) using the following panel model specification:

 $growth_{ii} = \beta_0 + \beta_1 \ln(initial)_{ii-1} + \beta_2 volatility_{ii} +$ $\beta_3 finance_{ii} + \beta_4 volatility_{ii} * finance_{ii} + \gamma X_{ii} + \mu_i + \varepsilon_{ii}$ (3.3)

This is a modified version of equation (3.1) where I include measure for volatility, for financial development and their linear interaction term.

For each model specification I run fixed-effects and/or random-effects panel estimations. The choice between these two procedures is based on the results from the Hausman test (Hausman, 1978). Most of the regressions having the mean growth rate as dependent variable turn out to be appropriate only when estimated by fixed-effects method. On the contrary, most volatility regressions show no systematic difference among the coefficients estimated using the two methods, thereby signaling that the random-effects method should be preferred.

The model(s) will be estimated for five different (sub)samples as the relations among the variables of interest might differ significantly from one sample of countries to the other. The first includes all 78 countries for which data is available. The regression results for this group will be found under the header "Whole sample". "Industrial" refers to the sub sample that includes 21 developed, industrial countries. Three sub samples of developing countries are investigated. First, I run estimations for the (heterogeneous) group of all developing countries – "Developing". Then this heterogeneous group is split in two parts: MFIs (more financially-integrated economies, 19 in total) and LFIs (less financially-integrated economies, 38 in total) according to the classification done by Kose, Prasad and Terrones (2004).¹³

¹²⁾ Time periods refer to the five-year windows I use to calculate growth volatility and the other average variables.

¹³⁾ The descriptive statistics reported in the appendix compare the evolution of the variables of highest interest in this study across the different groups of countries.

IV. RESULTS

IV. 1. Financial Development and Growth

Table 1 in the appendix shows the results from the growth regression (3.1), which relates the rate of economic growth with the level of bank development. The first column in the table presents the results for the whole sample of 78 countries, followed by the sub samples of industrial, developing, MFIs and LFIs. For each of these (sub)samples, two different specifications of the basic regression are reported: one without, the other with a control for the investment ratio.

In accordance with the convergence hypothesis, the countries that had relatively higher initial level of real GDP per capita grew less rapidly in the following five-years. Moreover, human capital measured by the average years of schooling enters with a positive sign, though it is rarely significant. Countries with higher share of government (public) expenditures and larger black-market premium tend to grow less, while more open economies in general experience higher rates of growth.¹⁴ The variable of main interest – level of bank development - enters with positive sign (but insignificant) in the specification for the whole sample. More interestingly, all measures of bank development indicate higher growth for the developing countries and two of them enter with very significant coefficients. Similar conclusion applies for the sub categories MFIs and LFIs, though they are significant in the first group only. Finally, including the investment ratio in the regression(s) does not change these results. Bank finance contributes significantly to economic growth in the developing world after taking into account the investment ratio differences among them. Conversely, more bank finance means lower mean growth rates for the industrial countries. Two of these measures are significant at 10 percent and enter with negative signs. Table 2 reports the results for the same regression(s) where bank development is lagged one period. In general, the control variables retain their signs (and significance), but the finance variable changes sign in the specification for the whole sample. Moreover, it is even more significantly negative for the industrial countries sub sample.¹⁵

Similar estimations are performed for the effect of stock market development on economic growth. The controls are generally significant and with the correct (expected) sign.¹⁶ The indicator for stock market development enters with positive sign in all specifications. Moreover, its effect rarely changes when a control for investment is included in the regression. Contrary to the results for bank finance, better stock markets benefit all countries, irrespective of their level of development. Table 4 presents the same set-up, but now the stock market variable is lagged for one period. Its coefficient changes sign and becomes even significantly negative in the specification for the whole sample, thereby indicating that it is not only the (contemporaneous) level of financial development, but also its increase as compared to the previous five-year period that leads to higher subsequent growth.¹⁷

Finally, I include measures for bank finance and stock market development in table 5. For bank finance I include the measures for overall liquid liabilities to GDP (the results do not change if we include the other two measures instead), while for stock market I include the ratio of total value traded to GDP since it contains the highest number of observations.¹⁸ The results in the first panel of table 5 indicate that both types of finance lead to higher growth.¹⁹ Furthermore, stock market development is more important than financial

¹⁴⁾ This result does not apply to the LFIs, where trade openness means less growth.

¹⁵⁾ The additional regressions that I do not report in this paper indicate that the change in the level of financial development is an important factor in explaining growth around the world.

¹⁶⁾ The only exception being the school variable that is not significant and even changes sign for the MFIs, suggesting that the countries at middle stages of development do not benefit much from the human capital they possess.

¹⁷⁾ This result deserves much more attention. Nonetheless, this will be investigated more extensively in some later study.

¹⁸⁾ These two indicators (liquid liabilities and value traded on the stock markets) are used in the rest of the regressions where both types of financial development are included in the specification.

¹⁹⁾ An exception to this is the group of LFIs where bank finance enters with a negative sign. Though these results have to be taken with reservation since the overall number of observations in this group is rather low (32 in total, so 2 observations per country).

intermediates and enters with a significant sign at the 5 percent level in the specification for industrial countries. Results are not robust when I use a lagged value for these indicators and even turn out negative.

IV. 2. Volatility and Growth

Table 6 presents the results for the second issue that I investigate in this study. The dependent variable is the same as before – average growth rate of real GDP per capita over the five-year periods. The set of instruments (the same as before) indicates similar results as before. All of the variables enter with the expected signs and are significant in the whole as well as in the sub samples for developing countries.²⁰ Major conclusion from this table is that higher volatility is associated with lower economic growth. This result is clearly robust to the inclusion of a control variable for investment. While this significant negative relationship applies to the whole sample and to each of the three different sub samples of developing countries, industrial countries seem to be "immune" to higher volatility. Volatility enters with negative but insignificant sign for this set of developed countries.

IV. 3. Financial Development and Volatility

In tables 7-11 I focus on the third relation: the impact of finance on growth volatility. For each of the five samples I use two different specifications. The first has the volatility of the real GDP growth rate as a dependent variable. In the second specification I use volatility (standard deviation) of the ratio between the growth rate of real GDP (as a measure for aggregate risk-sharing) as a dependent variable. The set of control variables enters with the expected sign. Larger government share, higher inflation rate, more investment and greater (trade) openness all lead to more volatility. Though this picture does not change substantially from one group of countries to the other, most significant results are obtained for the whole sample and for the sub sample of developing countries. The mean growth rate enters with a significant negative sign in all but the specification for industrial countries. Most importantly, all the indicators for financial intermediaries enter the relation with negative sign. Bank finance seems to lead towards lower output volatility in all and higher risk-sharing in all but the subset of industrial countries. Though some of these indicators lose their significance somewhat when they are lagged for one period in table 8, the major conclusions remain still valid.

The relationship between stock market development and output volatility can be observed in table 9. In general, deeper financial markets lead to less volatile growth, though this effect does not apply to the developed countries (negative, but insignificant coefficients).²¹ Similarly as in the case of bank finance, the stock market indicators retain the "correct" sign, though lose of their significance when lagged for one period (table 10).

Finally, table 11 presents the relative importance of bank and stock market finance in reducing growth volatility. The latter seems more important for the whole sample and the group of developing countries, while none of them has a significant sign in the specification for the industrial countries. When these indicators are measured by their lagged values only the coefficient for stock market in the specification for developing countries stays significant and with the expected, negative sign.

IV. 4. Financial Development and the Volatility-Growth Relationship

The final set of regressions investigates whether the relationship between volatility and growth depends on the level of financial development. Table 12 indicates that higher volatility leads to lower growth, though its effect is reduced when I control for bank finance. Moreover, in none of the sub samples is the interaction

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²⁰⁾ The variable school is never significant in these specifications either.

²¹⁾ The effect on risk-sharing for the LFIs is rather counterintuitive, but one can speculate that the low number of observations is the main reason for this (about 30 observations in total, so two per country included).

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term finance-volatility significantly positive. This indicates that better developed financial systems do not mitigate the effect of volatility on growth. If anything, more developed financial intermediaries magnify the effect of volatility on growth for the set of industrial countries. When I use the lagged values for the bank finance indicator, the results change only for the MFIs. The countries at intermediate level of development are the only ones that benefit from more developed financial system. Though volatility retains its negative impact on growth, the financial intermediaries substantially mitigate this effect.

The last table 13 presents the results of the same specification(s) for stock market development. Again, my empirical findings contradict the prediction of the model in Aghion et al. (2004). Deeper stock markets do not reduce the negative impact of volatility on growth. The only exception is the group of MFIs again, though the positive coefficient of the interaction term is not significant at conventional significance levels.

V. CONCLUDING REMARKS

The aim of this study was to find empirical evidence about four different, though interlinked relations between the level of financial development, macroeconomic volatility and economic growth. The first set of estimations focused on the impact of finance on growth. Better financial intermediaries lead to higher growth for the set of developing countries, while deeper stock markets do not have significant effect. By contrast, stock markets lead to higher while banks lead to lower economic growth for the group of industrial countries. These conclusions hold irrespective of the measures used as financial indicators. Second, the more volatile economies tend to grow less on average than the more stable ones. This is relevant for every group of developing countries (but not for the industrial ones) and robust to the inclusion of different controls. Third, the level of investment is relevant for growth in both types of estimation, but it does not capture the effect of financial development or volatility on growth. Fourth, larger financial sectors dampen the effect of aggregate shocks and thereby reduce growth volatility. Stock markets outperform again bank finance for the developing countries. Finally, the development of the financial sector (irrespective of its structure) does not attenuate the negative effect of volatility on growth. Clearly, most of the relations studied apply in different ways for industrial and for developing countries. Generally, more finance is associated with faster growth. Moreover, better financial systems reduce macroeconomic volatility, though they do not mitigate its negative effect on economic growth.

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Classification of Countries

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Industrial Countries	MFI	LFI
Australia	Argentina	Algeria
Austria	Brazil	Bolivia
Belgium	Chile	Cameroon
Canada	Colombia	Central African Republic
Denmark	Cyprus	Congo
Finland	Egypt, Arab Rep.	Costa Rica
France	India	Dominican Republic
Germany	Indonesia	Ecuador
Greece	Israel	El Salvador
Ireland	Korea, Republic of	Gambia, The
Italy	Malaysia	Ghana
Japan	Malta	Guatemala
Netherlands	Mexico	Guyana
New Zealand	Pakistan	Haiti
Norway	Peru	Honduras
Portugal	Philippines	Iran, Islamic Republic of
Spain	South Africa	Jamaica
Sweden	Thailand	Kenya
Switzerland	Venezuela	Lesotho
United Kingdom		Malawi
United States		Mauritius
		Nepal
		Nicaragua
		Niger
		Panama
		Papua New Guinea
		Paraguay
		Rwanda
		Senegal
		Sierra Leone
		Sri Lanka
		Sudan
		Syria
		Togo
		Trinidad and Tobago
		Uruguay
		Zaire
		Zimbabwe











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Table 1. Economic Growth and Bank Development

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	Whole sa	mple	Industrial Developing		ng	MFI		LFI		
	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv
				LIQU	ID LIABILIT	IES				
linitial	-0.045	-0.050	-0.025	-0.023	-0.053	-0.068	-0.041	-0.053	-0.070	-0.084
	(6.48)**	(7.55)**	(3.09)**	(2.76)**	(5.63)**	(7.54)**	(3.00)**	(4.11)**	(5.67)**	(7.15)**
school	0.000	0.004	-0.001	-0.001	-0.001	0.004	-0.002	0.003	-0.003	0.001
	(0.14)	(1.84)	(0.71)	(0.72)	(0.30)	(1.56)	(0.58)	(0.78)	(0.84)	(0.34)
Ibmp	-0.009	-0.008	0.534	0.569	-0.009	-0.009	-0.029	-0.028	-0.006	-0.006
	(2.34)*	(2.26)*	(2.47)*	(2.57)*	(2.26)*	(2.35)*	(2.76)**	(2.89)**	(1.19)	(1.26)
aov	-0.163	-0.126	-0.201	-0.193	-0.168	-0.120	-0.065	0.004	-0.178	-0.144
0	(3.45)**	(2.77)**	(3.01)**	(2.86)**	(2.94)**	(2.25)*	(0.67)	(0.04)	(2.59)*	(2.24)*
trade	0.023	0.015	0.017	0.017	0.016	0.000	0.055	0.036	-0.002	-0.015
	(2.58)*	(1.75)	(1.11)	(1.12)	(1.38)	(0.01)	(2.98)**	(2.05)*	(0.13)	(1.12)
П	0.007	0.000	-0.016	-0.017	0.046	0.043	0.039	0.026	0.016	0.027
	(0.55)	(0.01)	(1.78)	(1.82)	(2.14)*	(2.15)*	(1.59)	(1.13)	(0.47)	(0.87)
inv	· · /	0.135	· · /	0.026	、	0.173	()	0.173	· · /	0.164
		(6.17)**		(0.84)		(6.43)**		(3.95)**		(4.99)**
Obs	418	417	116	115	302	302	110	110	192	192
Number	73	73	17	17	56	56	19	19	37	37
R^2	0.23	0.31	0.59	0.59	0.22	0.33	0.29	0.40	0.29	0.39
				BA	NK ASSET	5				
linitial	-0.045	-0.053	-0.046	-0.046	-0.051	-0.071	-0.033	-0.054	-0.065	-0.085
	(7.17)**	(8.70)**	(7.78)**	(7.67)**	(5.44)**	(7.71)**	(2.50)*	(4.10)**	(5.31)**	(7.11)**
school	-0.000	0.003	0.001	0.001	-0.001	0.004	-0.002	0.003	-0.003	0.002
	(0.01)	(1.58)	(0.32)	(0.38)	(0.24)	(1.61)	(0.67)	(0.77)	(0.79)	(0.52)
Ibmp	-0.009	-0.008	0.058	0.063	-0.008	-0.007	-0.028	-0.027	-0.006	-0.005
	(2.43)*	(2.26)*	(0.79)	(0.84)	(2.00)*	(1.94)	(2.61)*	(2.78)**	(1.25)	(1.09)
gov	-0.146	-0.138	-0.118	-0.112	-0.160	-0.158	-0.077	0.000	-0.144	-0.163
-	(3.39)**	(3.36)**	(2.01)*	(1.86)	(2.92)**	(3.14)**	(0.77)	(0.00)	(2.19)*	(2.68)**
trade	0.017	0.010	0.039	0.039	0.013	-0.003	0.060	0.035	-0.005	-0.017
	(2.03)*	(1.18)	(3.17)**	(3.17)**	(1.19)	(0.26)	(3.25)**	(1.95)	(0.39)	(1.38)
ba	0.010	0.015	-0.009	-0.009	0.039	0.047	0.013	0.022	0.017	0.029
	(1.07)	(1.63)	(1.41)	(1.41)	(2.09)*	(2.74)**	(0.62)	(1.15)	(0.54)	(0.99)
inv		0.125		0.015		0.163		0.186		0.155
		(6.50)**		(0.51)		(6.56)**		(4.26)**		(5.23)**
Obs	452	451	147	146	305	305	110	110	195	195
Number	77	77	21	21	56	56	19	19	37	37
R^2	0.26	0.33	0.60	0.60	0.21	0.33	0.28	0.40	0.27	0.38
				PRI	VATE CRED	IT				
linitial	-0.046	-0.052	-0.043	-0.042	-0.057	-0.071	-0.048	-0.055	-0.066	-0.083
	(7.32)**	(8.46)**	(7.12)**	(7.01)**	(6.02)**	(7.73)**	(3.58)**	(4.24)**	(5.34)**	(7.02)**
school	-0.000	0.003	0.001	0.001	-0.001	0.004	-0.002	0.002	-0.003	0.002
	(0.20)	(1.38)	(0.31)	(0.35)	(0.29)	(1.53)	(0.64)	(0.52)	(0.76)	(0.59)
lbmp	-0.008	-0.007	0.089	0.093	-0.007	-0.007	-0.028	-0.027	-0.005	-0.004
	(2.28)*	(2.14)*	(1.21)	(1.25)	(1.71)	(1.70)	(2.73)**	(2.80)**	(1.14)	(1.00)
gov	-0.149	-0.139	-0.158	-0.153	-0.151	-0.145	-0.100	-0.021	-0.138	-0.152
	(3.43)**	(3.35)**	(2.53)*	(2.39)*	(2.81)**	(2.88)**	(1.05)	(0.22)	(2.13)*	(2.54)*
trade	0.018	0.012	0.034	0.035	0.011	-0.002	0.050	0.035	-0.005	-0.017
	(2.08)*	(1.41)	(2.96)**	(2.96)**	(0.98)	(0.19)	(2.69)**	(1.87)	(0.39)	(1.32)
рс	0.014	0.013	-0.014	-0.014	0.063	0.057	0.055	0.040	0.021	0.021
	(1.28)	(1.22)	(1.90)	(1.89)	(2.80)**	(2.68)**	(2.00)*	(1.52)	(0.61)	(0.65)

inv 0.115 (5.82)**			0.012 (0.41)		0.147 (5.83)**		0.148 (2.95)**		0.153 (5.16)**	
Obs	445	444	142	141	303	303	108	108	195	195
Number	77	77	21	21	56	56	19	19	37	37
R^2	0.27	0.33	0.60	0.59	0.24	0.33	0.34	0.40	0.27	0.38

Dependent Variable: Growth Rate of Real GDP Per Capita, Period Average

Table 2. Economic Growth and Bank Development Lagged One Period

	Whole sample		Industrial		Developi	ng	MFI		LFI	
	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv
				LIQU	ID LIABILIT	IES				
linitial	-0.036	-0.046	-0.028	-0.023	-0.035	-0.056	-0.023	-0.036	-0.063	-0.089
	(5.54)**	(7.17)**	(3.35)**	(2.74)**	(4.02)**	(6.29)**	(2.22)*	(3.45)**	(4.87)**	(6.95)**
school	-0.001	0.003	-0.001	-0.001	-0.001	0.005	-0.003	0.001	-0.004	0.003
	(0.26)	(1.56)	(0.71)	(0.71)	(0.38)	(1.63)	(0.94)	(0.26)	(0.97)	(0.70)
lbmp	-0.011	-0.010	0.586	0.600	-0.011	-0.011	-0.026	-0.025	-0.007	-0.007
	(2.83)**	(2.86)**	(2.79)**	(2.83)**	(2.42)*	(2.59)*	(2.39)*	(2.51)*	(1.38)	(1.51)
gov	-0.183	-0.181	-0.195	-0.196	-0.187	-0.186	-0.134	-0.057	-0.150	-0.167
	(4.14)**	(4.28)**	(2.88)**	(2.88)**	(3.47)**	(3.70)**	(1.45)	(0.63)	(2.32)*	(2.80)**
trade	0.025	0.016	0.018	0.018	0.023	0.006	0.065	0.047	0.006	-0.012
	(2.64)**	(1.69)	(1.16)	(1.20)	(1.97)*	(0.52)	(3.71)**	(2.65)**	(0.36)	(0.85)
II_1	-0.013	-0.012	-0.009	-0.015	-0.012	-0.008	-0.002	-0.005	-0.028	-0.018
	(1.74)	(1.56)	(1.39)	(2.04)*	(1.11)	(0.75)	(0.17)	(0.41)	(1.73)	(1.22)
inv		0.120		0.027		0.155		0.155		0.166
		(5.81)**		(0.89)		(5.83)**		(3.31)**		(5.29)**
Obs	414	413	119	118	295	295	109	109	186	186
Number	75	75	20	20	55	55	19	19	36	36
R^2	0.24	0.31	0.59	0.60	0.21	0.31	0.28	0.36	0.30	0.41
				BA	NK ASSET	S				
linitial	-0.037	-0.045	-0.047	-0.047	-0.034	-0.054	-0.023	-0.036	-0.059	-0.083
	(6.18)**	(7.74)**	(8.13)**	(8.01)**	(3.98)**	(6.21)**	(2.22)*	(3.44)**	(4.76)**	(6.79)**
school	-0.000	0.003	0.001	0.001	-0.001	0.004	-0.003	0.001	-0.004	0.002
	(0.16)	(1.62)	(0.58)	(0.61)	(0.35)	(1.58)	(0.91)	(0.27)	(1.05)	(0.55)
lbmp	-0.011	-0.011	0.041	0.044	-0.011	-0.011	-0.026	-0.026	-0.008	-0.008
	(3.16)**	(3.16)**	(0.57)	(0.61)	(2.61)**	(2.72)**	(2.42)*	(2.53)*	(1.72)	(1.73)
gov	-0.183	-0.177	-0.124	-0.119	-0.192	-0.190	-0.139	-0.059	-0.146	-0.162
	(4.42)**	(4.47)**	(2.13)*	(1.99)*	(3.65)**	(3.87)**	(1.49)	(0.65)	(2.33)*	(2.80)**
trade	0.020	0.012	0.033	0.034	0.019	0.002	0.066	0.047	-0.001	-0.017
	(2.36)*	(1.43)	(2.96)**	(2.96)**	(1.69)	(0.19)	(3.74)**	(2.65)**	(0.09)	(1.30)
ba_1	-0.008	-0.006	-0.009	-0.009	-0.007	-0.005	-0.004	-0.003	-0.020	-0.015
	(1.49)	(1.24)	(2.14)*	(2.11)*	(0.86)	(0.61)	(0.37)	(0.34)	(1.64)	(1.39)
INV		0.118		0.012		0.152		0.154		0.160
01	440	(6.08)^^	4 4 7	(0.41)	004	(5.86)^^	400	(3.28)^^	400	(5.30)^^
Obs	448	447	147	146	301	301	109	109	192	192
	10	0 22	21	21	0.01	0.21	19	19	30	30
R°2	0.20	0.33	0.01	0.01		0.31 IT	0.28	0.30	0.29	0.41
linitial	-0.037	-0.045	-0.043	-0.043	-0.035	-0.054	-0.026	-0.037	-0.057	-0.081
millia	(6.09)**	(7 53)**	(7.38)**	(7.26)**	(4.08)**	(6 19)**	(2 51)*	(3 44)**	(4 70)**	(6.69)**
school	-0.001	0.003	0.001	0.001	-0.001	0.004	-0.003	0.001	-0.004	0.002
001001	0.001	0.000	0.001	0.001	0.001	0.004	0.000	0.001	0.004	0.002

	(0.30)	(1.46)	(0.36)	(0.37)	(0.41)	(1.53)	(0.93)	(0.24)	(1.17)	(0.44)
lbmp	-0.011	-0.011	0.064	0.066	-0.011	-0.011	-0.026	-0.026	-0.008	-0.008
	(3.10)**	(3.10)**	(0.88)	(0.90)	(2.57)*	(2.69)**	(2.47)*	(2.51)*	(1.69)	(1.75)
gov	-0.187	-0.181	-0.151	-0.149	-0.193	-0.191	-0.143	-0.064	-0.146	-0.162
	(4.48)**	(4.53)**	(2.49)*	(2.39)*	(3.67)**	(3.87)**	(1.54)	(0.68)	(2.33)*	(2.79)**
trade	0.021	0.012	0.028	0.029	0.020	0.003	0.071	0.048	0.001	-0.016
	(2.48)*	(1.47)	(2.53)*	(2.53)*	(1.82)	(0.26)	(3.91)**	(2.51)*	(0.04)	(1.24)
pc_1	-0.011	-0.009	-0.012	-0.012	-0.010	-0.007	-0.002	-0.005	-0.027	-0.016
	(1.66)	(1.41)	(2.31)*	(2.29)*	(1.00)	(0.70)	(0.19)	(0.42)	(1.77)	(1.16)
inv		0.116		0.007		0.151		0.151		0.158
		(5.87)**		(0.24)		(5.74)**		(2.91)**		(5.19)**
Obs	441	440	142	141	299	299	107	107	192	192
Number	76	76	21	21	55	55	19	19	36	36
R^2	0.27	0.33	0.62	0.62	0.21	0.31	0.29	0.36	0.30	0.40

Dependent Variable: Growth Rate of Real GDP Per Capita, Period Average

Table 3. Economic Growth and Stock Market Development

	Whole sample		Industrial		Develor	oing	MFI		LF	1 _
	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv
linitial	-0.054	-0.063	-0.099	-0.102	-0.041	-0.070	-0.025	-0.052	-0.207	-0.236
	(4.21)**	(4.85)**	(5.09)**	(4.65)**	(2.13)*	(3.05)**	(1.22)	(2.06)*	(2.70)*	(3.14)*
school	0.002	0.005	0.004	0.004	0.001	0.009	-0.004	0.004	0.040	0.040
	(0.63)	(1.33)	(1.41)	(1.42)	(0.23)	(1.28)	(0.56)	(0.58)	(1.99)	(2.06)
Ibmp	-0.028	-0.023	0.022	0.021	-0.025	-0.019	-0.027	-0.023	-0.013	0.033
	(2.17)*	(1.78)	(0.20)	(0.18)	(1.52)	(1.15)	(1.47)	(1.29)	(0.35)	(0.68)
gov	-0.227	-0.139	-0.007	-0.010	-0.216	-0.067	-0.265	-0.126	-0.175	0.079
Ŭ	(2.40)*	(1.41)	(0.06)	(0.08)	(1.47)	(0.42)	(1.56)	(0.68)	(0.61)	(0.24)
trade	0.017	0.023	0.023	0.024	0.034	0.039	0.020	0.006	-0.032	0.043
	(0.93)	(1.30)	(1.03)	(1.05)	(1.10)	(1.32)	(0.49)	(0.13)	(0.57)	(0.57)
smcap	0.014	0.010	0.030	0.031	0.006	0.001	0.011	0.012	0.059	0.097
	(1.40)	(1.08)	(2.73)**	(2.69)**	(0.41)	(0.09)	(0.65)	(0.69)	(0.58)	(0.98)
inv	, ,	0.104	. ,	-0.011	, , ,	0.174	. ,	0.167	. ,	0.350
		(2.56)*		(0.26)		(2.17)*		(1.76)		(1.41)
Obs	180	180	82	82	98	98	69	69	29	29
Number	54	54	21	21	33	33	18	18	15	15
R^2	0.23	0.27	0.44	0.44	0.22	0.28	0.18	0.23	0.66	0.73
				VA	LUE TRAD	ED				
linitial	-0.064	-0.066	-0.052	-0.048	-0.065	-0.080	-0.051	-0.071	-0.173	-0.170
	(6.34)**	(6.66)**	(3.52)**	(3.04)**	(3.83)**	(4.58)**	(2.79)**	(3.66)**	(3.71)**	(3.59)**
school	0.002	0.004	-0.000	-0.001	0.003	0.008	-0.001	0.005	0.023	0.021
	(0.71)	(1.27)	(0.14)	(0.20)	(0.65)	(1.63)	(0.23)	(0.98)	(0.99)	(0.91)
lbmp	-0.034	-0.030	-0.020	-0.013	-0.033	-0.025	-0.032	-0.028	-0.015	0.009
	(3.12)**	(2.69)**	(0.19)	(0.13)	(2.16)*	(1.64)	(1.84)	(1.72)	(0.49)	(0.23)
gov	-0.160	-0.087	-0.015	0.003	-0.183	-0.065	-0.278	-0.121	-0.018	0.104
	(2.07)*	(1.06)	(0.15)	(0.03)	(1.47)	(0.50)	(1.78)	(0.74)	(0.08)	(0.39)
trade	0.034	0.035	0.006	0.004	0.044	0.050	0.018	0.014	0.013	0.052
	(2.23)*	(2.38)*	(0.33)	(0.21)	(1.41)	(1.64)	(0.48)	(0.38)	(0.18)	(0.60)
smvt	0.029	0.024	0.029	0.029	0.028	0.008	0.043	0.029	0.722	0.872
	(2.21)*	(1.90)	(2.71)**	(2.71)**	(0.87)	(0.25)	(1.20)	(0.85)	(1.32)	(1.51)

 $\hfill \ensuremath{\mathbbmath {\mathbbmath \mathbb{R}}}$ Financial development, macroeconomic volatility, and economic growth

	inv		0.083		0.026		0.170		0.186		0.178
			(2.31)*		(0.71)		(2.40)*		(2.36)*		(0.87)
	Obs	199	199	96	96	103	103	71	71	32	32
	Number	55	55	21	21	34	34	18	18	16	16
	R^2	0.34	0.36	0.41	0.41	0.34	0.39	0.30	0.38	0.73	0.75
TURNOVER RATIO											
	linitial	-0.062	-0.077	-0.088	-0.080	-0.053	-0.094	-0.035	-0.079	-0.214	-0.230
		(4.55)**	(5.52)**	(4.08)**	(3.54)**	(2.65)*	(3.71)**	(1.61)	(2.86)**	(2.61)*	(2.71)
	school	0.002	0.005	0.003	0.002	0.001	0.011	-0.004	0.008	0.039	0.038
		(0.61)	(1.42)	(0.86)	(0.68)	(0.14)	(1.46)	(0.58)	(0.93)	(1.52)	(1.45)
	lbmp	-0.023	-0.016	0.065	0.068	-0.022	-0.014	-0.025	-0.018	0.003	0.039
		(1.80)	(1.30)	(0.56)	(0.58)	(1.31)	(0.84)	(1.36)	(1.05)	(0.08)	(0.71)
	gov	-0.220	-0.115	-0.049	-0.027	-0.167	-0.036	-0.202	-0.054	-0.005	0.202
		(2.13)*	(1.10)	(0.38)	(0.21)	(1.05)	(0.22)	(1.04)	(0.28)	(0.02)	(0.52)
	trade	0.035	0.036	0.033	0.027	0.048	0.040	0.038	0.023	0.006	0.058
		(2.03)*	(2.17)*	(1.30)	(1.05)	(1.80)	(1.55)	(1.34)	(0.84)	(0.07)	(0.59)
	smtr	0.012	0.016	0.010	0.012	0.033	0.030	0.034	0.030	0.267	0.383
		(1.74)	(2.38)*	(2.21)*	(2.45)*	(1.63)	(1.52)	(1.70)	(1.58)	(1.15)	(1.43)
	inv		0.140		0.049		0.225		0.236		0.322
			(3.17)**		(1.12)		(2.46)*		(2.39)*		(0.92)
	Obs	167	167	77	77	90	90	64	64	26	26
	Number	54	54	21	21	33	33	18	18	15	15
	R^2	0.26	0.33	0.43	0.44	0.28	0.36	0.26	0.35	0.78	0.82

Dependent Variable: Growth Rate of Real GDP Per Capita, Period Average

Table 4. Economic Growth and Stock Market Development Lagged One Period

	Whole sample		Industr	rial	Develop	oing	MFI		LF	il i
	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv
				CAPIT	ALIZATION	RATIO				
linitial	-0.041	-0.042	-0.042	-0.041	-0.028	-0.035	-0.023	-0.027	-0.120	-0.180
	(5.14)**	(5.25)**	(5.13)**	(4.77)**	(1.88)	(2.26)*	(1.52)	(1.73)	(2.10)	(2.29)
school	0.005	0.006	0.002	0.001	0.005	0.007	0.000	0.002	0.041	0.049
	(1.81)	(1.92)	(0.52)	(0.47)	(0.99)	(1.27)	(0.04)	(0.30)	(2.17)	(2.45)
lbmp	-0.033	-0.027	0.026	0.035	-0.027	-0.023	-0.033	-0.030	-0.009	0.005
	(2.69)**	(2.21)*	(0.27)	(0.34)	(1.78)	(1.57)	(2.00)	(1.83)	(0.22)	(0.12)
gov	-0.178	-0.068	-0.106	-0.093	-0.140	-0.059	-0.240	-0.149	-0.356	-0.251
	(2.57)*	(0.87)	(1.21)	(0.96)	(1.30)	(0.50)	(1.77)	(0.96)	(1.32)	(0.89)
trade	0.028	0.027	0.018	0.019	0.043	0.037	0.052	0.042	-0.013	-0.016
	(2.27)*	(2.21)*	(1.21)	(1.21)	(2.21)*	(1.88)	(2.14)*	(1.64)	(0.27)	(0.34)
smcp_1	-0.026	-0.027	-0.020	-0.021	-0.030	-0.029	-0.018	-0.019	-0.037	-0.073
	(3.14)**	(3.31)**	(2.51)*	(2.50)*	(2.07)*	(2.03)*	(1.14)	(1.22)	(0.49)	(0.89)
inv		0.120		0.025		0.103		0.090		0.291
		(2.69)**		(0.40)		(1.48)		(1.17)		(1.09)
Obs	167	166	77	76	90	90	60	60	30	30
Number	57	57	21	21	36	36	17	17	19	19
R^2	0.36	0.40	0.64	0.63	0.32	0.35	0.38	0.40	0.65	0.73
				VA	LUE TRAD	ED				
linitial	-0.042	-0.042	-0.042	-0.041	-0.028	-0.034	-0.027	-0.031	-0.120	-0.064
	(5.48)**	(5.59)**	(5.68)**	(5.44)**	(1.90)	(2.17)*	(1.87)	(2.03)*	(2.14)	(1.03)
school	0.004	0.005	0.002	0.002	0.003	0.005	-0.000	0.001	0.030	-0.004

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	(1.73)	(2.01)*	(0.77)	(0.79)	(0.71)	(1.06)	(0.07)	(0.28)	(1.30)	(0.13)
lbmp	-0.026	-0.019	0.006	0.018	-0.017	-0.014	-0.027	-0.024	0.033	0.075
	(2.35)*	(1.69)	(0.06)	(0.19)	(1.20)	(0.98)	(1.72)	(1.53)	(0.66)	(1.40)
gov	-0.205	-0.112	-0.051	-0.035	-0.212	-0.138	-0.318	-0.254	-0.367	-0.802
	(2.99)**	(1.47)	(0.63)	(0.42)	(1.93)	(1.07)	(2.51)*	(1.72)	(1.34)	(2.14)
trade	0.031	0.029	0.015	0.016	0.049	0.041	0.057	0.048	0.030	0.139
	(2.64)**	(2.47)*	(1.02)	(1.05)	(2.55)*	(2.02)*	(2.41)*	(1.85)	(0.45)	(1.51)
smvt_1	-0.027	-0.027	-0.012	-0.014	-0.049	-0.040	-0.026	-0.023	-0.156	-0.480
	(2.45)*	(2.49)*	(1.43)	(1.56)	(1.80)	(1.43)	(0.88)	(0.80)	(0.83)	(1.78)
inv		0.097		0.035		0.081		0.064		-0.550
		(2.64)**		(0.92)		(1.10)		(0.84)		(1.56)
Obs	185	184	91	90	94	94	62	62	32	32
Number	57	57	21	21	36	36	17	17	19	19
R^2	0.32	0.35	0.58	0.58	0.28	0.30	0.39	0.40	0.56	0.69
				TUI	RNOVER R	ATIO				
linitial	-0.042	-0.041	-0.042	-0.042	-0.019	-0.023	-0.027	-0.027	-0.001	-0.076
	(5.02)**	(4.99)**	(4.58)**	(4.33)**	(1.30)	(1.52)	(1.71)	(1.71)	(0.02)	(1.52)
school	0.006	0.006	0.002	0.002	0.004	0.004	0.002	0.002	-0.004	0.020
	(1.95)	(2.03)*	(0.48)	(0.50)	(0.70)	(0.85)	(0.39)	(0.42)	(0.14)	(1.18)
lbmp	-0.036	-0.029	0.020	0.024	-0.027	-0.025	-0.037	-0.037	-0.013	-0.041
	(2.98)**	(2.43)*	(0.19)	(0.22)	(1.92)	(1.75)	(2.33)*	(2.24)*	(0.25)	(1.39)
gov	-0.178	-0.039	-0.083	-0.071	-0.150	-0.064	-0.349	-0.325	0.136	0.931
	(2.36)*	(0.44)	(0.88)	(0.67)	(1.31)	(0.45)	(2.36)*	(1.83)	(0.35)	(2.75)
trade	0.027	0.023	0.019	0.018	0.048	0.041	0.051	0.049	0.044	-0.022
	(2.20)*	(1.90)	(1.15)	(1.11)	(2.57)*	(2.12)*	(2.13)*	(1.88)	(0.93)	(0.66)
smtr_1	-0.011	-0.011	-0.004	-0.005	-0.026	-0.022	-0.020	-0.020	-0.037	0.054
	(1.97)	(2.16)*	(0.92)	(0.94)	(2.13)*	(1.77)	(1.25)	(1.21)	(0.77)	(1.35)
inv		0.133		0.019		0.080		0.021		0.791
		(2.75)**		(0.27)		(1.04)		(0.26)		(2.97)
Obs	154	153	72	71	82	82	55	55	27	27
Number	56	56	21	21	35	35	17	17	18	18
R^2	0.34	0.39	0.61	0.60	0.35	0.37	0.44	0.44	0.62	0.93

Table 5. Economic Growth with Joint Bank and Stock Market Development

	Whole sample		Industr	ial	Developi	ng	MFI		LFI	
	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv
		JC	DINT EFFE	CT: LIQUID	LIABILITIES	AND VALU	JE TRADED			
linitial	-0.061	-0.063	-0.032	-0.032	-0.067	-0.078	-0.055	-0.068	-0.157	-0.154
	(5.20)**	(5.41)**	(1.93)	(1.72)	(3.37)**	(3.94)**	(2.53)*	(3.18)**	(3.43)**	(3.33)*
school	0.002	0.004	-0.001	-0.001	0.003	0.009	-0.001	0.006	0.024	0.023
	(0.68)	(1.16)	(0.29)	(0.28)	(0.63)	(1.64)	(0.24)	(1.00)	(1.10)	(1.03)
lbmp	-0.034	-0.029	0.040	0.035	-0.034	-0.024	-0.033	-0.027	0.011	0.035
	(2.88)**	(2.47)*	(0.03)	(0.03)	(2.14)*	(1.49)	(1.85)	(1.62)	(0.32)	(0.81)
gov	-0.166	-0.092	-0.040	-0.039	-0.178	-0.068	-0.264	-0.127	-0.000	0.123
	(1.87)	(0.97)	(0.31)	(0.29)	(1.39)	(0.51)	(1.63)	(0.76)	(0.00)	(0.48)
trade	0.039	0.041	-0.033	-0.033	0.044	0.050	0.017	0.014	0.023	0.062
	(2.12)*	(2.27)*	(1.04)	(1.03)	(1.39)	(1.64)	(0.45)	(0.39)	(0.33)	(0.76)
II	0.000	-0.003	0.000	0.000	0.010	-0.010	0.014	-0.012	-0.115	-0.116
	(0.01)	(0.16)	(0.01)	(0.01)	(0.25)	(0.26)	(0.33)	(0.28)	(1.40)	(1.39)
smvt	0.024	0.020	0.027	0.027	0.029	0.007	0.044	0.028	0.698	0.849

Financial development, macroeconomic volatility, and economic growth

	(1.65)	(1.42)	(2.53)*	(2.47)*	(0.89)	(0.20)	(1.22)	(0.78)	(1.34)	(1.54)			
INV		(1 00)*		0.001		0.174		0.193		0.179			
Ohs	177	177	74	(0.02) 74	103	(2.30)	71	(2.33)	32	(0.32)			
Number	51	51	17	17	34	34	18	18	16	16			
R^2	0.33	0.35	0.40	0.40	0.34	0.39	0.30	0.38	0.78	0.80			
JOINT EFFECT: LIQUID LIABILITIES AND VALUE TRADED (LAGGED)													
linitial	-0.038	-0.038	-0.026	-0.023	-0.027	-0.033	-0.026	-0.030	-0.088	-0.034			
	(4.65)**	(4.60)**	(2.51)*	(2.08)*	(1.74)	(2.01)*	(1.75)	(1.90)	(1.20)	(0.44)			
school	0.004	0.004	0.001	0.001	0.003	0.005	-0.000	0.002	0.038	0.004			
	(1.33)	(1.45)	(0.47)	(0.30)	(0.70)	(1.04)	(0.03)	(0.29)	(1.44)	(0.13)			
lbmp	-0.024	-0.018	0.325	0.359	-0.017	-0.014	-0.027	-0.025	0.023	0.065			
	(2.16)*	(1.61)	(1.19)	(1.23)	(1.12)	(0.92)	(1.74)	(1.54)	(0.43)	(1.14)			
gov	-0.217	-0.132	-0.102	-0.101	-0.204	-0.133	-0.317	-0.256	-0.240	-0.675			
	(2.89)**	(1.57)	(1.13)	(1.04)	(1.80)	(1.02)	(2.48)*	(1.71)	(0.71)	(1.59)			
trade	0.039	0.038	-0.018	-0.015	0.048	0.041	0.056	0.047	-0.031	0.079			
	(2.91)**	(2.79)**	(0.75)	(0.64)	(2.43)*	(1.96)	(2.34)*	(1.81)	(0.29)	(0.64)			
II_1	-0.009	-0.009	-0.004	-0.006	0.006	0.005	0.012	0.010	0.041	0.040			
	(0.94)	(0.93)	(0.38)	(0.41)	(0.35)	(0.26)	(0.46)	(0.38)	(0.72)	(0.76)			
smvt_1	-0.022	-0.021	-0.007	-0.007	-0.058	-0.047	-0.044	-0.039	-0.052	-0.377			
	(1.60)	(1.50)	(0.81)	(0.66)	(1.55)	(1.22)	(0.89)	(0.77)	(0.22)	(1.21)			
inv		0.083		0.026		0.080		0.061		-0.545			
Oha	400	(2.12)*	70	(0.68)	04	(1.06)	00	(0.79)	00	(1.49)			
UDS	103	102	12	/ 1	91	91	17	17	29	29			
	0.01	0.24	10	10	აა ი ეი	0.20	17	0.40	0.50	0 70			
R. 2	0.31	0.34	0.04	0.03	0.29	0.30	0.39	0.40	0.59	0.72			

Table 6. Economic Growth and Volatility

	Whole sample		Industr	ial	Develop	oing	MFI		LFI	
	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv
linitial	-0.038	-0.047	-0.048	-0.047	-0.034	-0.054	-0.029	-0.043	-0.051	-0.077
	(6.60)**	(8.70)**	(8.03)**	(7.89)**	(4.33)**	(7.09)**	(2.98)**	(4.68)**	(4.69)**	(7.28)**
school	-0.003	0.002	-0.000	0.000	-0.003	0.003	-0.001	0.003	-0.009	-0.001
	(1.38)	(0.98)	(0.01)	(0.04)	(1.29)	(1.09)	(0.29)	(1.09)	(2.32)*	(0.38)
lbmp	-0.011	-0.011	0.047	0.053	-0.011	-0.011	-0.021	-0.019	-0.009	-0.009
	(3.27)**	(3.36)**	(0.64)	(0.71)	(2.72)**	(2.96)**	(1.98)	(1.93)	(1.98)*	(2.19)*
gov	-0.106	-0.127	-0.111	-0.105	-0.102	-0.139	-0.062	0.015	-0.067	-0.120
	(2.81)**	(3.63)**	(1.83)	(1.70)	(2.21)*	(3.29)**	(0.69)	(0.18)	(1.24)	(2.44)*
trade	0.033	0.018	0.032	0.033	0.035	0.009	0.059	0.030	0.015	-0.011
	(3.95)**	(2.24)*	(2.82)**	(2.84)**	(3.29)**	(0.89)	(3.29)**	(1.77)	(1.10)	(0.86)
volatility	-0.002	-0.002	-0.001	-0.001	-0.002	-0.002	-0.004	-0.003	-0.001	-0.001
	(3.83)**	(4.15)**	(0.82)	(0.90)	(3.38)**	(3.32)**	(2.93)**	(3.13)**	(2.20)*	(2.09)*
inv		0.136		0.018		0.163		0.198		0.166
		(8.11)**		(0.60)		(7.50)**		(4.96)**		(6.56)**
Constant	0.317	0.348	0.463	0.455	0.256	0.354	0.232	0.266	0.375	0.509
	(8.68)**	(10.20)**	(10.72)**	(9.99)**	(5.44)**	(7.90)**	(3.81)**	(4.87)**	(5.60)**	(8.02)**
Observations	471	470	145	144	326	326	114	114	212	212
Number of										
groups	76	76	21	21	55	55	18	18	37	37
R-squared	0.27	0.38	0.60	0.60	0.22	0.36	0.33	0.47	0.28	0.43
Absolute value	e of t statisti	cs in parent	heses							
* significant at	5%; ** sigr	ificant at 1%	þ							
	,									

Table 7. Volatility and Bank Development

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	Whole sample		Industrial		Developi	ing	MFI		LFI	
	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv
				LIQU	ID LIABILIT	IES				
gov	6.743	11.312	-8.169	4.920	14.000	16.275	7.670	2.540	18.074	19.468
-	(2.00)*	(4.16)**	(1.62)	(0.90)	(3.25)**	(4.93)**	(1.74)	(0.95)	(3.00)**	(4.16)**
pi	0.557	1.599	0.937	-0.899	0.249	1.434	1.602	0.268	-0.694	2.960
	(1.07)	(4.15)**	(0.25)	(0.19)	(0.42)	(3.49)**	(3.31)**	(0.84)	(0.72)	(4.50)**
inv	1.455	5.159	0.056	-1.346	-0.278	5.785	2.442	-1.606	-2.813	6.017
	(0.68)	(3.19)**	(0.02)	(0.41)	(0.11)	(3.18)**	(0.66)	(0.65)	(0.89)	(2.59)**
trade	2.000	2.423	-0.426	1.265	1.886	2.421	-0.200	1.346	1.198	2.588
	(3.17)**	(4.94)**	(0.62)	(1.71)	(2.45)*	(4.06)**	(0.18)	(1.98)*	(1.30)	(3.32)**
growth	-27.530	-18.204	-9.856	3.218	-27.442	-17.959	-16.593	-6.730	-26.151	-16.988
	(4.90)**	(4.45)**	(1.04)	(0.28)	(4.11)**	(3.93)**	(2.11)*	(1.29)	(2.77)**	(2.79)**
11	-2.670	-2.916	-1.446	0.018	-3.000	-4.234	-0.546	-2.351	-0.897	-3.765
Oha	(3.50)""	(4.94)***	(1.98)"	(U.UZ)	(Z.Z4)"	(4.48)	(U.4 1)	(2.73)""	(0.39)	(2.14)" 105
UDS Number	415	417	113	113	302 54	304 55	108	109	194	195
Number	/ 1	12	17	17 B/	04 ΔNK ΔSSET	90 S	10	19	30	30
aov	7.119	10.911	-4.851	2.745	15.812	16.598	11.596	4.147	18,481	17.993
3	(2.18)*	(3.93)**	(1.30)	(0.74)	(3.65)**	(4.83)**	(2.60)**	(1.42)	(2.95)**	(3.65)**
pi	0.661	1.753	0.766	4.742	0.408	1.623	1.660	0.396	-0.612	3.068
	(1.31)	(4.54)**	(0.25)	(1.34)	(0.71)	(3.87)**	(3.59)**	(1.25)	(0.63)	(4.48)**
inv	1.557	4.238	2.501	1.592	-0.605	4.865	3.383	-2.156	-2.156	5.180
	(0.78)	(2.66)**	(0.93)	(0.55)	(0.25)	(2.63)**	(0.97)	(0.89)	(0.70)	(2.18)*
trade	1.918	2.418	-0.315	0.833	2.091	2.516	0.996	1.051	1.593	2.827
	(3.36)**	(5.05)**	(0.58)	(1.58)	(2.83)**	(4.22)**	(0.96)	(1.72)	(1.72)	(3.54)**
growth	-25.457	-14.899	-6.919	8.623	-25.434	-15.402	-19.305	-5.826	-24.454	-13.548
	(4.74)**	(3.72)**	(0.80)	(0.87)	(3.83)**	(3.31)**	(2.56)*	(1.12)	(2.60)**	(2.18)*
ba	-2.768	-2.234	-0.768	0.260	-4.188	-4.339	-3.251	-2.358	-2.194	-2.390
	(4.65)**	(4.49)**	(1.60)	(0.51)	(3.14)**	(4.40)**	(2.88)**	(2.98)**	(0.83)	(1.17)
Obs	448	450	144	144	304	306	108	109	196	197
Number	75	76	21	21	54	55	18	19	36	36
aov	5 825	10 11/	-5 660	1 5/13	13 28/	1/ 756	8 000	2 07/	18 316	17 255
gov	(1.81)	(3.68)**	(1.36)	(0.39)	(3 19)**	(4.38)**	(1 97)*	(1.05)	(3 12)**	(3.65)**
ni	0.581	1 665	1 514	4 901	0 295	1 486	1 607	0.376	-0 738	2 964
P1	(1.13)	(4.25)**	(0.48)	(1.35)	(0.50)	(3.51)**	(3.33)**	(1.17)	(0.76)	(4.30)**
inv	1.586	4.700	2.041	1.541	-0.488	5.512	4.197	-0.204	-2.109	5.386
	(0.78)	(2.91)**	(0.73)	(0.52)	(0.20)	(2.94)**	(1.04)	(0.08)	(0.70)	(2.27)*
trade	1.739	2.334	-0.476	0.817	2.021	2.596	0.320	1.040	1.455	2.828
	(3.04)**	(4.90)**	(0.83)	(1.50)	(2.73)**	(4.31)**	(0.28)	(1.54)	(1.61)	(3.58)**
growth	-25.806	-15.446	-5.669	5.190	-26.079	-15.599	-17.645	-6.370	-25.239	-14.043
	(4.72)**	(3.81)**	(0.64)	(0.51)	(3.89)**	(3.35)**	(2.25)*	(1.21)	(2.68)**	(2.26)*
рс	-2.841	-2.682	-0.754	0.067	-4.213	-5.490	-2.189	-2.740	-3.298	-3.614
	(4.09)**	(4.57)**	(1.33)	(0.12)	(2.61)**	(4.54)**	(1.36)	(2.54)*	(1.18)	(1.60)
Obs	441	443	139	139	302	304	106	107	196	197
Number	75	76	21	21	54	55	18	19	36	36

Table 8. Volatility and Bank Development Lagged

	Whole sample		Industrial		Developing		MFI		LF	
	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv
				LIQU		TIES				
gov	8.403	10.645	-5.078	4.805	15.116	15.717	7.809	0.790	19.840	21.435
-	(2.06)*	(3.51)**	(1.08)	(0.99)	(2.85)**	(4.20)**	(1.91)	(0.28)	(2.52)*	(4.10)**
pi	0.890	1.703	2.159	-1.582	0.638	1.519	1.517	0.383	-0.067	3.033
	(1.61)	(4.22)**	(0.60)	(0.34)	(1.00)	(3.51)**	(3.21)**	(1.14)	(0.06)	(4.41)**
inv	3.037	3.227	0.545	-0.791	1.339	3.772	3.856	-2.494	0.012	3.884
	(1.35)	(1.96)*	(0.19)	(0.25)	(0.49)	(1.99)*	(1.04)	(0.94)	(0.00)	(1.63)
trade	2.893	1.821	-0.410	1.379	3.230	1.391	0.222	0.210	3.606	1.809
	(4.37)**	(3.80)**	(0.58)	(1.96)*	(3.86)**	(2.40)*	(0.23)	(0.34)	(3.25)**	(2.42)*
growth	-24.620	-15.028	-7.001	10.444	-25.311	-14.930	-18.206	-4.998	-21.393	-12.573
	(4.24)**	(3.58)**	(0.78)	(0.97)	(3.59)**	(3.16)**	(2.34)*	(0.90)	(2.18)*	(2.03)*
II_1	-2.638	-1.065	-0.946	0.305	-2.//2	-0.907	-1.693	-0.168	-2.028	-0.736
Oha	(3.50)""	(1.99)"	(1.47)	(U.4 2)	(2.4 7)" 207	(1.23)	(1.70)	(U.25)	(1.13)	(0.03)
Number	404 75	400 76	20	20	201 55	209 56	100	107	101 27	10Z 27
Number	15	70	20	20 B/	ANK ASSET	S	10	19	57	51
dov	5,807	8,913	-3.524	3.395	12.638	13.550	8.533	0.901	16.030	18,338
901	(1.47)	(3.02)**	(0.96)	(0.95)	(2.40)*	(3.67)**	(2.12)*	(0.30)	(2.07)*	(3.57)**
pi	1.001	1.784	2.049	5.642	0.734	1.588	1.549	0.351	0.034	3.111
r	(1.83)	(4.47)**	(0.68)	(1.64)	(1.15)	(3.62)**	(3.40)**	(1.04)	(0.03)	(4.46)**
inv	3.276	3.166	2.287	1.192	0.879	3.372	3.411	-2.654	-0.034	3.574
	(1.51)	(1.99)*	(0.84)	(0.41)	(0.32)	(1.79)	(0.96)	(1.01)	(0.01)	(1.51)
trade	2.506	1.731	-0.444	0.827	3.141	1.572	0.306	0.202	3.471	2.011
	(4.06)**	(3.87)**	(0.82)	(1.59)	(3.84)**	(2.82)**	(0.34)	(0.34)	(3.21)**	(2.79)**
growth	-21.277	-12.675	-2.044	10.838	-22.636	-13.426	-18.039	-4.941	-18.186	-10.060
	(3.77)**	(3.10)**	(0.25)	(1.17)	(3.21)**	(2.80)**	(2.41)*	(0.89)	(1.86)	(1.60)
ba_1	-2.014	-0.633	-0.254	0.664	-2.436	-0.727	-2.202	-0.346	-1.375	-0.238
	(3.43)**	(1.47)	(0.57)	(1.37)	(2.51)*	(1.11)	(3.03)**	(0.64)	(0.84)	(0.23)
Obs	437	439	144	144	293	295	106	107	187	188
Number	/6	//	21	21	55	56	18	19	37	37
dov	5 630	0.062	-3.8/1	2 155	12 2/6	13 78/	7 100	2 320	16.015	18 38/
gov	(1 41)	(3.002	(0.96)	(0.57)	(2 32)*	(3 73)**	(1 70)	(0.93)	(2.08)*	(3.58)**
pi	0.967	1.751	2.422	5.729	0.694	1.561	1.553	0.407	-0.002	3.104
P.	(1.75)	(4.37)**	(0.78)	(1.62)	(1.08)	(3.57)**	(3.31)**	(1.32)	(0.00)	(4.45)**
inv	3.196	3.589	2.155	0.997	0.785	3.875	3.799	0.564	-0.166	3.488
	(1.45)	(2.24)*	(0.77)	(0.34)	(0.28)	(2.04)*	(0.97)	(0.22)	(0.05)	(1.47)
trade	2.453	1.658	-0.469	0.827	3.109	1.472	0.075	-0.151	3.406	2.031
	(3.94)**	(3.71)**	(0.83)	(1.54)	(3.78)**	(2.63)**	(0.08)	(0.29)	(3.17)**	(2.82)**
growth	-21.560	-13.634	-2.825	8.881	-22.523	-14.111	-17.163	-9.363	-18.425	-10.139
	(3.77)**	(3.31)**	(0.33)	(0.92)	(3.17)**	(2.95)**	(2.18)*	(1.79)	(1.88)	(1.61)
pc_1	-2.178	-0.796	-0.230	0.485	-2.575	-0.642	-1.913	0.370	-1.533	-0.694
	(3.04)**	(1.53)	(0.43)	(0.85)	(2.13)*	(0.79)	(2.16)*	(0.62)	(0.72)	(0.50)
Obs	430	432	139	139	291	293	104	105	187	188
Number	76	77	21	21	55	56	18	19	37	37

Table 9. Volatility and Stock Market Development

No inv Inv gov -3.628 1.380 3.337 4.313 -6.027 4.848 -7.498 -0.478 7.685 10.987 (1.17) (0.49) (0.94) (0.80) (1.20) (1.17) (1.38) (0.14) (0.57) (1.01) pi 1.477 0.649 -1.672 -0.159 1.445 0.407 1.399 0.648 3.112 -1.914 (3.60)** (1.53) (0.51) (0.03) (2.78)** (0.93) (2.97)** (1.95) (0.80) (0.60) inv -0.418 -0.790 0.562 1.961 -2.088 -4.207 -2.699 -4.908 -5.840 -7.323 (0.18) (0.32) (0.23) (0.43) (0.59) (1.40) (0.67) (1.56) (0.71) (1.09) trade 0.889 1.028 -0.325 0.365 1.959		Whole sample		Indus	Industrial		ing	MFI	MFI		LFI	
CAPITALIZATION RATIO gov -3.628 1.380 3.337 4.313 -6.027 4.848 -7.498 -0.478 7.685 10.987 (1.17) (0.49) (0.94) (0.80) (1.20) (1.17) (1.38) (0.14) (0.57) (1.01) pi 1.477 0.649 -1.672 -0.159 1.445 0.407 1.399 0.648 3.112 -1.914 (3.60)** (1.53) (0.51) (0.03) (2.78)** (0.93) (2.97)** (1.95) (0.80) (0.60) inv -0.418 -0.790 0.562 1.961 -2.088 -4.207 -2.699 -4.908 -5.840 -7.323 (0.18) (0.32) (0.23) (0.43) (0.59) (1.40) (0.67) (1.56) (0.71) (1.09) trade 0.889 1.028 -0.325 0.365 1.959 1.243 2.940 1.300 2.315 0.513 (1.62) (1.99)* (0.59)		No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv	
gov -3.628 1.380 3.337 4.313 -6.027 4.848 -7.498 -0.478 7.685 10.987 (1.17) (0.49) (0.94) (0.80) (1.20) (1.17) (1.38) (0.14) (0.57) (1.01) pi 1.477 0.649 -1.672 -0.159 1.445 0.407 1.399 0.648 3.112 -1.914 (3.60)** (1.53) (0.51) (0.03) (2.78)** (0.93) (2.97)** (1.95) (0.80) (0.60) inv -0.418 -0.790 0.562 1.961 -2.088 -4.207 -2.699 -4.908 -5.840 -7.323 (0.18) (0.32) (0.23) (0.43) (0.59) (1.40) (0.67) (1.56) (0.71) (1.09) trade 0.889 1.028 -0.325 0.365 1.959 1.243 2.940 1.300 2.315 0.513 (1.62) (1.99)* (0.59) (0.43) (2.12)* (1.61)					CAPI	TALIZATION	RATIO					
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	gov	-3.628	1.380	3.337	4.313	-6.027	4.848	-7.498	-0.478	7.685	10.987	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		(1.17)	(0.49)	(0.94)	(0.80)	(1.20)	(1.17)	(1.38)	(0.14)	(0.57)	(1.01)	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	pi	1.477	0.649	-1.672	-0.159	1.445	0.407	1.399	0.648	3.112	-1.914	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		(3.60)**	(1.53)	(0.51)	(0.03)	(2.78)**	(0.93)	(2.97)**	(1.95)	(0.80)	(0.60)	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	inv	-0.418	-0.790	0.562	1.961	-2.088	-4.207	-2.699	-4.908	-5.840	-7.323	
trade 0.889 1.028 -0.325 0.385 1.999 1.243 2.940 1.300 2.315 0.513 growth -22.282 -6.417 -5.440 5.750 -27.102 -4.098 -28.409 -1.314 -36.081 -12.191 $(4.08)^{**}$ (1.02) (0.64) (0.32) $(3.69)^{**}$ (0.66) $(3.64)^{**}$ (0.22) (1.80) (0.75) smcap -0.964 -0.574 -0.398 -0.436 -1.364 -0.511 -1.853 -0.465 -1.687 10.043 (2.15)* (1.24) (0.64) (0.39) $(1.98)^{*}$ (0.88) $(2.58)^{**}$ (0.92) (0.29) $(2.12)^{*}$ Obs 181 181 82 82 99 99 69 69 30 30 Number 55 55 21 21 34 34 18 18 16 16	ta da	(0.18)	(0.32)	(0.23)	(0.43)	(0.59)	(1.40)	(0.67)	(1.56)	(0.71)	(1.09)	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	trade	0.889	1.028	-0.325	0.365	1.959	1.243	2.940	1.300	2.315	0.513	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	arowth	(1.02)	(1.99) 6.417	(0.59)	(0.43) 5.750	(Z. IZ) 27 102	(1.01)	(Z.ZO) 28.400	(1.49)	(1.14)	(0.31)	
smcap -0.964 -0.574 -0.398 -0.436 -1.364 -0.511 -1.853 -0.465 -1.687 10.043 (2.15)* (1.24) (0.64) (0.39) (1.98)* (0.88) (2.58)** (0.92) (0.29) (2.12)* Obs 181 181 82 82 99 99 69 69 30 30 Number 55 55 21 21 34 34 18 18 16 16	giowin	-22.202	-0.417	-3.440	(0.32)	(3 69)**	-4.090	-20.409	-1.314	-30.001	-12.191	
(2.15)* (1.24) (0.64) (0.39) (1.98)* (0.88) (2.58)** (0.92) (0.29) (2.12)* Obs 181 181 82 82 99 99 69 69 30 30 Number 55 55 21 21 34 34 18 18 16 16	smcan	- 0 964	-0 574	-0.398	-0 4 36	- 1 364	(0.00) -0 511	-1 853	-0 465	-1 687	(0.73) 10 043	
Obs 181 181 82 82 99 99 69 69 30 30 Number 55 55 21 21 34 34 18 16 16	omoup	(2.15)*	(1.24)	(0.64)	(0.39)	(1.98)*	(0.88)	(2.58)**	(0.92)	(0.29)	(2.12)*	
Number 55 55 21 21 34 34 18 18 16 16	Obs	181	181	82	82	99	99	69	69	30	30	
	Number	55	55	21	21	34	34	18	18	16	16	
					V	ALUE TRAD	ED					
gov -3.506 0.856 0.549 5.963 -8.027 1.773 -8.806 -1.458 -2.474 13.742	gov	-3.506	0.856	0.549	5.963	-8.027	1.773	-8.806	-1.458	-2.474	13.742	
(1.20) (0.37) (0.16) (1.20) (1.65) (0.51) (1.62) (0.43) (0.21) (1.76)		(1.20)	(0.37)	(0.16)	(1.20)	(1.65)	(0.51)	(1.62)	(0.43)	(0.21)	(1.76)	
pi 1.669 0.740 0.348 0.968 1.805 0.499 1.848 0.694 1.895 -1.233	pi	1.669	0.740	0.348	0.968	1.805	0.499	1.848	0.694	1.895	-1.233	
$(4.09)^{**}$ (1.94) (0.11) (0.19) (3.52) ^{**} (1.24) (3.85) ^{**} (1.91) (0.45) (0.50)		(4.09)**	(1.94)	(0.11)	(0.19)	(3.52)**	(1.24)	(3.85)**	(1.91)	(0.45)	(0.50)	
inv 1.746 0.536 3.617 3.159 -1.914 -3.827 -0.272 -2.649 -5.581 -4.718	inv	1.746	0.536	3.617	3.159	-1.914	-3.827	-0.272	-2.649	-5.581	-4.718	
(0.79) (0.25) (1.39) (0.78) (0.54) (1.35) (0.07) (0.76) (0.73) (0.95)	fue de	(0.79)	(0.25)	(1.39)	(0.78)	(0.54)	(1.35)	(0.07)	(0.76)	(0.73)	(0.95)	
ITade U.512 U.939 -U.994 U.497 2.428 I.03U 3.U43 I.151 2.301 I.433	trade	(1.00)	0.939	-0.594	0.497	2.428 (2.66)**	1.030	3.043	1.101	2.001	1.400	
(1.00) (2.19) (1.13) (0.00) (2.00) (2.40) (2.39) (1.32) (1.33) (1.10)	arowth	(1.00) -17.026	(2.19) -5.749	(1.13) -0.814	(0.00)	(2.00) -22.684	(2.40)	(Z.39) _23.833	(1.32) -3.250	(1.33) -26.821	(1.10) _0.302	
(3.42)** (1.07) (0.09) (0.03) (3.37)** (0.54) (3.20)** (1.57) (1.64) (0.03)	giowin	(3.42)**	(1.07)	(0.09)	(0.03)	(3.37)**	(0.54)	(3 22)**	-0.200	(1.64)	(0.03)	
smvt -1 381 -1 144 -0 297 -0 121 -3 348 -1 846 -4 348 -1 319 17 759 52 233	smvt	-1.381	- 1 144	-0 297	-0 121	-3 348	- 1 846	-4 348	-1 319	17 759	52 233	
$(1.97)^{*}$ (1.72) (0.43) (0.11) $(2.17)^{*}$ (1.44) $(2.63)^{**}$ (0.92) (0.42) (1.77)	0	(1.97)*	(1.72)	(0.43)	(0.11)	(2.17)*	(1.44)	(2.63)**	(0.92)	(0.42)	(1.77)	
Obs 200 200 96 96 104 104 71 71 33 33	Obs	200	200	96	96	104	104	71	71	33	33	
Number 56 56 21 21 35 35 18 18 17 17	Number	56	56	21	21	35	35	18	18	17	17	
TURNOVER RATIO					TU	RNOVER RA	TIO					
gov -5.103 0.629 4.211 7.395 -9.731 0.704 -9.336 -4.541 -10.357 16.947	gov	-5.103	0.629	4.211	7.395	-9.731	0.704	-9.336	-4.541	-10.357	16.947	
(1.60) (0.23) (1.21) (1.31) (1.76) (0.18) (1.42) (1.22) (0.68) (1.67)		(1.60)	(0.23)	(1.21)	(1.31)	(1.76)	(0.18)	(1.42)	(1.22)	(0.68)	(1.67)	
pi 1.597 0.707 0.139 4.285 1.481 0.439 1.326 0.706 1.853 0.515	pi	1.597	0.707	0.139	4.285	1.481	0.439	1.326	0.706	1.853	0.515	
$(3.85)^{**}$ (1.75) (0.05) (0.78) (2.71) ^{**} (1.08) (2.56) [*] (2.13) [*] (0.37) (0.16)		(3.85)**	(1.75)	(0.05)	(0.78)	(2.71)**	(1.08)	(2.56)*	(2.13)*	(0.37)	(0.16)	
inv -1.257 -1.331 1.150 3.197 -4.007 -7.431 -2.290 -5.085 -10.550 -10.805	inv	-1.257	-1.331	1.150	3.197	-4.007	-7.431	-2.290	-5.085	-10.550	-10.805	
(0.52) (0.54) (0.64) (0.67) (1.02) $(2.53)^{*}$ (0.49) (1.41) (1.04) (1.67)	fue de	(0.52)	(0.54)	(0.44)	(0.67)	(1.02)	(2.53)*	(0.49)	(1.41)	(1.04)	(1.67)	
Trade U.669 U.751 -U.163 U.624 1.479 1.315 U.833 1.080 3.480 2.222	trade	0.669	(1.57)	-0.163	0.624	1.479	1.315	0.833	1.080	3.480	2.222	
(1.27) (1.57) (0.31) (0.73) (1.00) (2.03) (0.77) (1.30) (1.31) (1.31)	arowth	(1.27)	(1.57)	(U.ST) 3 169	(0.73) 8 127	(1.00)	(2.03) 2.481	(0.77)	(1.30)	(1.31) 22.201	(1.31)	
growiii -10.704 -3.940 -3.100 0.137 -23.333 -2.401 -23.423 -0.377 -22.301 1.432 (3.25)** (0.63) (0.36) (0.44) (2.01)** (0.41) (2.80)** (0.00) (1.15) (0.10)	growin	-10.704	-3.940	-3.100	0.137	-23.000	-2.401	-20.420	-0.577	-22.301	1.43Z (0.10)	
smtr -0.204 0.019 0.109 0.675 -0.181 0.074 -0.503 -0.008 3.419 4.310	smtr	-0.204	0.019	0.109	0.675	-0.181	0.074	-0.503	-0.008	3.419	4.310	
(0.55) (0.05) (0.34) (1.14) (0.19) (0.10) (0.53) (0.01) (0.51) (1.02)	- // ·	(0.55)	(0.05)	(0.34)	(1.14)	(0.19)	(0.10)	(0.53)	(0.01)	(0.51)	(1.02)	
Obs 168 168 77 77 91 91 64 64 27 27	Obs	168	168	77	77	91	91	64	64	27	27	
Number 55 55 21 21 34 34 18 18 16 16	Number	55	55	21	21	34	34	18	18	16	16	

Table 10. Volatility and Stock Market Development Lagged

	Whole sample		Industrial		Developing		MFI		LF	
	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv
				CAPIT	ALIZATION	RATIO				
qov	-11.043	1.580	5.574	10.313	-16.620	2.993	-7.375	-1.451	-6.877	10.908
0	(2.12)*	(0.59)	(1.32)	(1.71)	(2.23)*	(0.80)	(1.60)	(0.42)	(0.39)	(1.36)
pi	1.473	0.453	-0.206	-1.032	1.212	0.150	1.756	0.459	-0.470	0.906
	(2.59)**	(1.10)	(0.05)	(0.17)	(1.87)	(0.38)	(4.26)**	(1.41)	(0.08)	(0.31)
inv	-10.459	-1.515	2.022	5.860	-17.111	-3.271	-2.491	0.296	-21.853	-5.632
	(2.87)**	(0.62)	(0.51)	(1.00)	(3.65)**	(1.30)	(0.53)	(0.08)	(1.98)*	(1.25)
trade	1.600	1.044	-0.774	0.701	3.801	1.154	1.888	-0.080	5.367	1.598
	(2.24)*	(2.31)*	(1.25)	(0.80)	(3.70)**	(2.02)*	(1.95)	(0.11)	(2.53)*	(1.59)
growth	-8.561	-9.975	2.217	0.311	-23.779	-11.543	-23.303	-5.646	-11.776	-15.016
	(1.16)	(1.54)	(0.22)	(0.02)	(2.38)*	(1.72)	(2.60)**	(0.78)	(0.43)	(1.04)
smcap_1	-0.569	-0.648	-0.252	-0.770	-1.057	-0.380	-1.288	0.407	2.032	0.206
01	(0.80)	(1.12)	(0.33)	(0.64)	(1.02)	(0.55)	(1.50)	(0.60)	(0.53)	(0.10)
Obs Numerican	160	161	/5	/5	85	86	59	59	26	27
number	52	53	21	21		32 ED	17	17	14	15
dov	-5 252	0 587	3 067	5 063	_0 /31	1.840	-8 360	-0.961	-0.780	13 20/
gov	(1.02)	(0.23)	(1 15)	(1 20)	(1.25)	(0.52)	-0.303	(0.29)	(0.05)	(1.68)
ni	1.575	0.502	0.681	0.968	1 125	0.286	1 854	0 414	-2 070	0 485
P'	(2.91)**	(1.22)	(0.21)	(0.19)	(1.88)	(0.74)	(4.12)**	(1.31)	(0.44)	(0.17)
inv	-2.831	-0.180	1.370	3.159	-11.245	-2.031	-1.018	0.900	-14.361	-5.730
	(1.03)	(0.09)	(0.50)	(0.78)	(2.91)**	(0.96)	(0.22)	(0.27)	(1.99)*	(1.64)
trade	1.879	1.235	-0.662	0.497	3.762	1.597	1.223	-0.031	4.976	2.337
	(3.07)**	(3.18)**	(1.28)	(0.66)	(4.46)**	(3.49)**	(1.25)	(0.04)	(3.59)**	(3.09)**
growth	-15.783	-10.802	0.934	0.500	-31.454	-13.393	-18.714	-7.496	-22.859	-20.146
	(2.31)*	(1.76)	(0.10)	(0.03)	(3.54)**	(2.17)*	(2.08)*	(1.17)	(1.12)	(1.51)
smvt_1	-1.345	-0.788	0.150	-0.121	-4.138	-0.210	-3.118	1.004	-2.142	-0.984
	(1.48)	(1.00)	(0.21)	(0.11)	(2.35)*	(0.15)	(1.42)	(0.62)	(0.60)	(0.41)
Obs	179	180	89	96	90	91	61	61	29	30
Number	53	54	21	21	32	33	17	17	15	16
				TUF	RNOVER RA					
gov	-6.061	1.861	5.875	13.389	-11.001	4.079	-6.331	-0.681	-10.694	14.140
ni	(1.06)	(0.60)	(1.31)	(2.03)"	(1.35)	(0.93)	(1.13)	(0.16)	(0.59)	(2.02)"
þi	1.704	(1 10)	(0.27)	0.930	(2.24)*	(0.40)	1.900	(1.27)	-1.095	0.440
inv	(2.09) -0.106	(1.19) _1 173	(0.37)	(0.15) 0.176	(Z.Z4) _15 331	(0.49)	(4.47)	(1.37)	(0.23) -17.510	-5 906
IIIV	(2 36)*	(0.44)	(0.12)	(1.40)	(3.26)**	(1 18)	(0.21)	(0.07)	(1 32)	(1 29)
trade	(2.30)	(0.44)	-0 703	0.996	3 784	1 165	1 182	0.048	4 693	1.541
	(2.31)*	(2.11)*	(1.14)	(1.12)	(3.90)**	(1.89)	(1.24)	(0.07)	(2.69)**	(1.84)
growth	-10.538	-9.804	3.591	2.265	-32.709	-13.039	-18.738	-5.106	-12.350	-48.028
0	(1.33)	(1.38)	(0.35)	(0.14)	(3.21)**	(1.72)	(1.99)*	(0.67)	(0.43)	(3.37)**
smtr_1	-0.146	-0.444	0.409	-0.341	-2.189	-0.542	-1.104	-0.537	-1.364	-1.046
	(0.32)	(1.13)	(1.11)	(0.60)	(2.54)*	(0.84)	(1.30)	(0.80)	(0.74)	(1.11)
Obs	147	148	70	70	77	78	54	54	23	24
Number	51	52	21	21	30	31	17	17	13	14

Table 11. Volatility with Joint Bank and Stock Market Development

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	Whole sample		Industri	al	Developi	ng	MFI		LFI			
	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv		
		JC	DINT EFFEC	T: LIQUID	LIABILITIES	AND VALU	JE TRADED					
gov	-4.851	0.532	-1.629	7.502	-9.104	3.961	-8.847	1.379	-1.106	10.949		
-	(1.60)	(0.22)	(0.41)	(0.99)	(1.85)	(1.05)	(1.56)	(0.39)	(0.09)	(1.34)		
pi	1.761	0.557	0.531	-10.226	1.986	0.305	1.855	0.509	3.704	-0.839		
	(4.13)**	(1.37)	(0.12)	(1.23)	(3.80)**	(0.73)	(3.75)**	(1.39)	(0.96)	(0.34)		
inv	-0.762	-1.200	0.792	-0.490	-2.437	-3.262	-0.298	-0.988	-5.220	-4.680		
	(0.33)	(0.51)	(0.32)	(0.10)	(0.69)	(1.14)	(0.07)	(0.28)	(0.73)	(0.95)		
trade	1.042	1.401	-0.621	0.244	1.888	2.069	3.022	2.166	1.228	0.906		
	(1.80)	(2.83)**	(1.02)	(0.21)	(2.00)*	(2.83)**	(2.03)*	(2.20)*	(0.64)	(0.68)		
growth	-18.828	-6.165	-5.088	9.314	-21.001	-3.873	-23.718	-5.628	-23.897	0.551		
	(3.47)**	(1.12)	(0.48)	(0.46)	(3.09)**	(0.71)	(3.07)**	(0.98)	(1.45)	(0.05)		
II	0.611	-0.654	-0.745	-0.064	1.675	-1.779	0.039	-2.156	6.808	3.411		
	(0.92)	(1.15)	(1.11)	(0.05)	(1.26)	(1.69)	(0.03)	(2.06)*	(1.52)	(1.09)		
smvt	-1.917	-0.734	0.249	-0.465	-3.433	-1.517	-4.340	-1.632	15.226	51.299		
	(2.37)*	(0.90)	(0.37)	(0.36)	(2.20)*	(1.18)	(2.57)*	(1.16)	(0.37)	(1.75)		
Obs	178	178	74	74	104	104	71	71	33	33		
Number	52	52	17	17	35	35	18	18	17	17		
JOINT EFFECT: LIQUID LIABILITIES AND VALUE TRADED (LAGGED)												
gov	-9.672	-0.207	4.924	12.739	-11.566	1.473	-8.054	-2.410	-7.186	13.551		
	(1.71)	(0.07)	(1.00)	(1.61)	(1.45)	(0.39)	(1.56)	(0.71)	(0.39)	(1.45)		
pi	1.383	0.536	-3.078	-8.743	1.065	0.258	1.813	0.565	-2.646	0.538		
	(2.45)*	(1.22)	(0.64)	(1.09)	(1.72)	(0.64)	(3.80)**	(1.72)	(0.51)	(0.18)		
inv	-4.783	-2.238	1.490	-0.864	-12.492	-2.672	-1.075	0.732	-17.284	-7.198		
	(1.61)	(1.04)	(0.48)	(0.17)	(3.08)**	(1.20)	(0.23)	(0.22)	(2.10)*	(1.82)		
trade	2.508	1.677	-0.861	1.551	3.869	1.678	1.280	-0.371	4.966	2.603		
	(3.68)**	(3.80)**	(1.06)	(1.20)	(4.44)**	(3.56)**	(1.23)	(0.52)	(3.17)**	(3.10)**		
growth	-18.514	-9.348	6.915	19.160	-31.755	-13.150	-19.237	-5.974	-24.340	-19.958		
	(2.48)*	(1.44)	(0.59)	(0.99)	(3.48)**	(2.09)*	(2.10)*	(0.93)	(1.06)	(1.42)		
II_1	-1.318	0.321	-0.691	2.034	-0.017	-0.119	-0.287	1.508	-0.066	-0.283		
	(1.61)	(0.50)	(0.85)	(1.56)	(0.01)	(0.15)	(0.20)	(1.54)	(0.03)	(0.22)		
smvt_1	-0.469	-1.228	0.699	-2.087	-4.230	-0.157	-2.783	-1.109	-2.936	-0.908		
	(0.40)	(1.19)	(0.81)	(1.48)	(1.75)	(0.09)	(0.92)	(0.53)	(0.68)	(0.33)		
Obs	158	159	71	71	87	88	61	61	26	27		
Number	47	48	18	18	29	30	17	17	12	13		

Table 12. Growth-Volatility Relationship and Bank Development

	Whole sample		Industrial		Developing		MFI		LFI	
	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv
				LIQU	IID I IABII IT	IFS				
linitial	-0.044	-0.049	-0.024	-0.022	-0.051	-0.066	-0.044	-0.053	-0.067	-0.083
	(6.26)**	(7.41)**	(3.05)**	(2.69)**	(5.27)**	(7.25)**	(3.15)**	(4.09)**	(5.25)**	(6.80)**
school	-0.001	0.002	-0.002	-0.002	-0.003	0.002	-0.000	0.005	-0.005	-0.001
	(0.61)	(1.12)	(1.03)	(1.00)	(1.00)	(0.87)	(0.08)	(1.40)	(1.30)	(0.27)
lbmp	-0.009	-0.008	0.505	0.540	-0.010	-0.010	-0.018	-0.015	-0.006	-0.006
	(2.47)*	(2.41)*	(2.35)*	(2.46)*	(2.39)*	(2.49)*	(1.59)	(1.49)	(1.21)	(1.32)
dov	-0.120	-0.076	-0.200	-0.193	-0.123	-0.071	-0.001	0.058	-0.150	-0.116
0.	(2.43)*	(1.61)	(2.92)**	(2.78)**	(2.02)*	(1.27)	(0.01)	(0.66)	(1.98)	(1.66)
trade	0.033	0.025	0.019	0.019	0.025	0.009	0.047	0.027	0.008	-0.005
	(3.46)**	(2.74)**	(1.27)	(1.27)	(2.06)*	(0.81)	(2.56)*	(1.54)	(0.49)	(0.36)
vol	-0.002	-0.002	0.003	0.003	-0.001	-0.001	-0.005	-0.005	-0.001	-0.001
	(2.40)*	(2.72)**	(1.36)	(1.30)	(1.19)	(1.38)	(2.17)*	(2.75)**	(0.83)	(0.68)
П	0.003	-0.004	-0.008	-0.009	0.051	0.047	0.032	0.002	0.017	0.040
	(0.21)	(0.32)	(0.74)	(0.88)	(1.86)	(1.89)	(0.92)	(0.07)	(0.41)	(1.03)
ll vol	0.001	0.001	-0.007	-0.007	-0.002	-0.002	0.002	0.004	0.000	-0.002
	(0.26)	(0.25)	(2.00)*	(1.97)	(0.52)	(0.55)	(0.35)	(0.93)	(0.04)	(0.34)
inv	()	0.143	(,	0.032		0.178	(***)	0.182	(***)	0.171
		(6.62)**		(1.05)		(6.70)**		(4.33)**		(5.11)**
Obs	405	404	114	113	291	291	107	107	184	184
Number	71	71	17	17	54	54	18	18	36	36
R^2	0.26	0.35	0.62	0.62	0.24	0.37	0.36	0.48	0.30	0.41
				LIQUID LI	ABILITIES (L	AGGED)				
linitial	-0.035	-0.046	-0.027	-0.023	-0.033	-0.054	-0.022	-0.036	-0.060	-0.087
	(5.39)**	(7.09)**	(3.31)**	(2.70)**	(3.81)**	(6.10)**	(2.19)*	(3.69)**	(4.57)**	(6.64)**
school	-0.002	0.002	-0.002	-0.002	-0.003	0.003	-0.002	0.003	-0.006	0.001
	(0.96)	(0.95)	(0.88)	(0.88)	(1.00)	(1.08)	(0.56)	(0.92)	(1.52)	(0.17)
lbmp	-0.010	-0.010	0.595	0.620	-0.010	-0.010	-0.013	-0.011	-0.007	-0.007
	(2.75)**	(2.72)**	(2.81)**	(2.91)**	(2.32)*	(2.43)*	(1.18)	(1.15)	(1.32)	(1.37)
gov	-0.146	-0.143	-0.210	-0.217	-0.140	-0.145	-0.101	-0.012	-0.116	-0.140
	(3.18)**	(3.30)**	(3.01)**	(3.09)**	(2.49)*	(2.76)**	(1.12)	(0.14)	(1.68)	(2.21)*
trade	0.035	0.026	0.019	0.019	0.035	0.017	0.059	0.035	0.018	0.000
	(3.55)**	(2.71)**	(1.19)	(1.22)	(2.84)**	(1.46)	(3.41)**	(2.05)*	(1.09)	(0.02)
vol	-0.002	-0.002	-0.002	-0.001	-0.002	-0.002	-0.007	-0.007	-0.001	-0.001
	(2.13)*	(2.58)*	(0.68)	(0.22)	(1.62)	(1.99)*	(3.14)**	(3.66)**	(0.79)	(0.83)
II_1	-0.014	-0.015	-0.011	-0.014	-0.012	-0.012	-0.036	-0.043	-0.022	-0.014
	(1.40)	(1.55)	(1.06)	(1.33)	(0.78)	(0.82)	(2.03)*	(2.59)*	(0.85)	(0.59)
ll_1_vol	-0.001	0.000	0.001	-0.001	-0.001	-0.000	0.010	0.011	-0.002	-0.001
	(0.25)	(0.00)	(0.24)	(0.32)	(0.44)	(0.08)	(1.87)	(2.18)*	(0.48)	(0.43)
inv		0.124		0.030		0.155		0.179		0.164
		(6.08)**		(0.99)		(5.86)**		(4.08)**		(5.14)**
Obs	402	401	118	117	284	284	106	106	178	178
Number	73	73	20	20	53	53	18	18	35	35
R^2	0.27	0.35	0.60	0.61	0.24	0.34	0.35	0.46	0.32	0.43

Table 13. Growth-Volatility Relationship and Stock Market Development

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	Whole sample		Industrial		Develop	ing	MFI		LF	I
	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv	No inv	Inv
				VA	LUE TRADI	ED				
linitial	-0.069	-0.071	-0.052	-0.047	-0.066	-0.076	-0.049	-0.066	-0.180	-0.181
	(7.18)**	(7.52)**	(3.45)**	(2.99)**	(4.39)**	(4.74)**	(3.01)**	(3.85)**	(5.03)**	(4.84)**
school	0.002	0.003	-0.001	-0.002	0.002	0.006	-0.003	0.002	-0.008	-0.011
	(0.61)	(1.19)	(0.47)	(0.57)	(0.48)	(1.11)	(0.67)	(0.43)	(0.43)	(0.54)
lbmp	-0.019	-0.014	-0.038	-0.033	-0.006	-0.003	-0.003	-0.001	0.056	0.049
	(1.69)	(1.28)	(0.35)	(0.31)	(0.39)	(0.22)	(0.15)	(0.06)	(1.77)	(1.39)
gov	-0.223	-0.154	0.003	0.032	-0.298	-0.212	-0.298	-0.163	-0.519	-0.638
	(3.00)**	(1.94)	(0.03)	(0.30)	(2.59)*	(1.69)	(2.13)*	(1.12)	(2.00)	(1.88)
trade	0.042	0.044	0.007	0.004	0.072	0.073	0.018	0.013	0.193	0.188
	(2.93)**	(3.11)**	(0.33)	(0.20)	(2.44)*	(2.49)*	(0.49)	(0.36)	(2.44)*	(2.27)
vol	-0.004	-0.004	-0.001	-0.001	-0.006	-0.006	-0.007	-0.007	-0.005	-0.006
	(4.25)**	(4.32)**	(0.72)	(0.98)	(4.14)**	(3.71)**	(3.93)**	(3.90)**	(1.63)	(1.64)
smvt	0.008	0.001	0.037	0.035	-0.029	-0.038	-0.020	-0.031	1.824	1.772
	(0.45)	(0.06)	(2.29)*	(2.15)*	(0.72)	(0.94)	(0.50)	(0.79)	(2.35)*	(2.18)
smvt_vol	0.008	0.010	-0.004	-0.003	0.019	0.018	0.045	0.045	-0.557	-0.578
	(0.95)	(1.23)	(0.62)	(0.42)	(0.59)	(0.59)	(1.34)	(1.43)	(1.64)	(1.62)
inv		0.080		0.037		0.109		0.163		-0.112
		(2.35)*		(0.95)		(1.64)		(2.33)*		(0.58)
Obs	199	199	96	96	103	103	71	71	32	32
Number	55	55	21	21	34	34	18	18	16	16
R^2	0.42	0.44	0.43	0.43	0.49	0.51	0.48	0.54	0.88	0.89
				VALUE	TRADED (L	AGGED)				
linitial	-0.045	-0.046	-0.045	-0.045	-0.034	-0.036	-0.027	-0.029	-0.158	-0.095
	(5.97)**	(6.04)**	(5.80)**	(5.51)**	(2.55)*	(2.50)*	(1.97)	(2.00)	(2.17)	(0.99)
school	0.006	0.006	0.003	0.003	0.006	0.006	0.002	0.003	0.032	0.007
	(2.34)*	(2.59)*	(1.05)	(1.06)	(1.27)	(1.31)	(0.46)	(0.60)	(1.08)	(0.17)
lbmp	-0.016	-0.009	0.005	0.019	-0.004	-0.003	-0.005	-0.004	0.008	0.047
	(1.41)	(0.83)	(0.05)	(0.19)	(0.28)	(0.23)	(0.30)	(0.25)	(0.13)	(0.65)
gov	-0.205	-0.116	-0.044	-0.025	-0.231	-0.207	-0.306	-0.272	-0.368	-0.705
	(3.05)**	(1.55)	(0.51)	(0.28)	(2.30)*	(1.72)	(2.62)*	(1.98)	(1.25)	(1.56)
trade	0.028	0.025	0.014	0.015	0.048	0.046	0.042	0.038	0.056	0.121
	(2.41)"	(2.26)"	(0.99)	(1.01)	(2.58)*	(2.28)*	(1.89)	(1.55)	(0.49)	(0.92)
VOI	-0.004	-0.004	-0.001	-0.001	-0.005	-0.005	-0.005	-0.005	-0.005	-0.004
amut 1	(3.40)""	(3.42)***	(0.33)	(0.47)	(2.98)""	(2.86)""	(2.07)"	(2.50)"	(1.03)	(0.71)
smvt_1	-0.048	-0.04/	-0.006	-0.010	-0.04/	-0.045	-0.003	-0.062	-0.080	-0.374
amut 1 val	(2.03)"	(2.06)"	(0.27)	(0.44)	(0.72)	(0.09)	(0.81)	(0.78)	(0.42)	(1.05)
smvt_1_voi	0.010	0.010	-0.004	-0.002	-0.010	-0.010	0.008	0.008	-0.048	-0.013
im.	(0.04)	0.002	(0.33)	(0.19)	(0.29)	(U.20)	(0.17)	(0.17)	(0.30)	(0.09)
IIIV		(2.50)*		(0.030		(0.27)		(0.47)		-0.440
Obs	192	(2.59)" 182	00	(0.97)	03	(0.37)	62	(0.47)	21	(0.99)
Number	103	102	90 21	09	95	95	17	17	10	10
	030	0 4 2	21	21	0.44	0.44	0.51	0.51	0.66	0.72
R^2	0.59	0.42	0.00	0.00	0.44	0.44	0.51	0.01	0.00	0.72