

THE RELATIONSHIP BETWEEN FINANCIAL
DEVELOPMENT AND ECONOMIC GROWTH IN
TRANSITION ECONOMIES.

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Abstract

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Economic growth is one of the ultimate goals of any economic system. This paper examines the question whether in transition economies the level of financial development influences economic growth. The empirical investigation was carried out using both simple cross-country correlation analysis and dynamic pooled least squares. Generally, the results are somewhat indefinite. Cross-country correlation analysis shows strong positive link between financial development and economic growth. However, the panel estimation results are rather ambiguous. In addition, several simple Granger causality tests were run in order to estimate the direction of causality between financial development and economic growth. Since the main focus of the paper is on transition economies, the indicator reflecting one of the major drawbacks of financial systems of some transition economies – inter-enterprise arrears – was introduced and then tested using the data on Ukraine and Russia.

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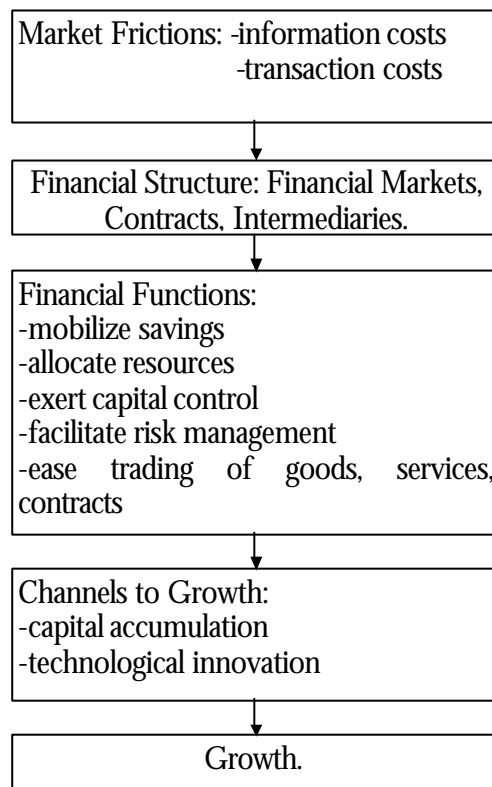
Chapter 1

SURVEY OF THE UNDERLYING THEORY.

First, we should mention two overviews of the literature on relationships between “real” and “financial”. Both are quite thorough examinations of the existing literature on the field. The major difference between articles is that Gertler (1988) mainly deals with papers that examine the allocative consequences of informational asymmetries in financial markets at the micro level. Levine (1997), in contrast, emphasizes the works, which primarily explore the relationship between efficiency of financial sector of the economy, quality of financial intermediation and economic growth. In other words, Gertler (1988) describes the micro models of financial intermediation and how these financial arrangements eliminate at least part of the negative consequences of the positive information and transaction costs (researchers simply relax some of the assumptions of the Modigliani-Miller Theorem and show why financial intermediaries are important in such a imperfect world).

On the contrary, Levine (1997) considers the models which take the process as a whole, that is, which describe the macroeconomic consequences of the existence and the development of the financial structure as a whole and not of each particular financial instrument or market separately. The overview by Levine consists in large part of description of so-called functional approach. The functional approach focuses on the relationship between quality of functions performed by financial sector and economic growth. In principle, these functions are the same for different countries and do not change over time. However, the quality and type of financial structure significantly differ across countries. This approach concentrates on the financial system as a whole, and not on some

particular institution or instrument. The graph below best illustrates the framework of functional approach (Levine, 1997):



Market frictions, for example, positive transaction and information costs induce the emergence of financial structure – a set of financial markets, institutions and contracts. Financial structure, in turn, affect capital accumulation, technological innovation, savings rate by providing certain functions.

There are several growth models, which take into account financial markets, intermediaries and financial functions. By performing certain functions financial markets eliminate some types of market frictions and thus influence economic

growth. In other words, these growth models imply the relationship between certain channels to growth and growth itself. For example, Aghion and Howitt (1992) develop a model in which financial system affects steady-state growth by changing the rate of technological innovation. They found that both the average growth rate and the variance of the growth rate are increasing functions of the size of technological innovations. Rebelo (1991) states that financial system affects the rate of capital formation and, therefore, steady-state growth.

There are several papers, which model the emergence of financial markets in response to some imperfections of real world (transaction and information costs, risks, and corporate control problems). For example, Diamond and Dybvig (1983) model liquidity risk problem, by looking at investors who are subject to random shocks after choosing between liquid and illiquid investment opportunities.

For empirical evidence of existence of the relationship between financial structure and economic growth we may address King and Levine (1993a, 1993b, 1993c). These papers study large number of countries over the period 1960-1989. Using size of the financial system as well as some additional measures of volume and quality of financial services, they analyze whether the level of financial development predicts long-run economic growth, capital accumulation and productivity growth. They used the cross-sectional specification:

$$G(j) = \alpha + \beta F(i) + \gamma X + \varepsilon,$$

where $G(j)$ stands for vector of long-run real per capita growth indicators,

j – one of three growth indicators,

$F(i)$ stands for vector of financial development indicators,

i – one of the four financial development indicators,

X – stands for matrix of control variables.

The following indicators were used to represent economic growth (Levine, 1997):

- the average rate of real per capita GDP growth,
- the average per capita capital stock growth,
- productivity growth.

To represent financial development were used (Levine, 1997) :

- average liquid liabilities (currency plus short-term deposits) of the financial system over real GDP (the measure of the size of the financial sector),
- the average the ratio of commercial banks credit to overall lending in the economy (commercial bank lending plus central bank lending), this is a measure of allocating credit by commercial banks as opposed to central bank, the former is supposed to be more effective than the latter,
- the average of the ratio of credit allocated to private enterprises to total domestic credit (without interbank lending),
- the average of the ratio of credit allocated to private enterprises to real GDP.

Other variables influencing economic growth were introduced in the model as a matrix X. These are:

- per capita income,
- average education,
- political stability indicators,
- indicators reflecting exchange rate, trade, fiscal and monetary policy.

The results obtained support the hypothesis that the level of financial development significantly affect economic growth.

Beck, Levine and Loayza (1999b) investigate the relationship between the level of financial intermediaries development and channels to economic growth and growth itself. The specifications are very similar to those of King, Levine (1993), but the emphasis of this paper is rather on sources of growth and not growth

itself. That is, in the first instance paper evaluates the relationship between the above mentioned indicators of the financial development and physical capital accumulation, total factor productivity growth and private savings rates. The empirical tests suggest strong positive relationship between them. Again, authors used both pure cross-country technique and GMM technique. They also control for other variables affecting sources of growth and country specific effects.

There is another important aspect of the relationship between financial development and economic growth. This is the issue of legal environment. Levine (1997b, 1998) as well as Beck, Levine and Loayza (1999a) examine this question. The hypothesis behind these models is that legal environment affect both financial development of the country and its economic growth. The authors showed that several variables representing the accounting standards and legal characteristics of the economy significantly influence financial development and economic growth.

Sultan and Mishev (1999) examine the case of Ukraine. This is not a purely descriptive country-case study (it does contain several empirical estimations of the dependence of the economic growth in transition economies on the level of the banking sector development). They analyze the main trends and problems associated with the development of the financial system in general and banking sector in particular and support their inferences by the data on the Ukrainian banking system. The paper also attempts to compare the values of several indicators of financial development of Ukraine and other eastern and central European countries. One of the most useful things in the paper is that it points out some crucial features of the current situation of the banking sector in Ukraine, for example, low level of development of the financial sector measured by the ratio of total deposits per capita, low level of change in the size of banking

loans to private borrowers across time, gradual decline of the credit portfolio in dollar terms, huge ratio of bad debt etc. The paper presents the results of some cross-country regressions of the average percentage change in the real GDP on the average percentage change in 1) the banking loans to private borrowers (1995-1997) and 2) the banking loans to public sector (1996-1998). Both regressions show the positive relationship between dynamic efficiency of credit allocation in the economy and economic growth.

Chapter 2

DESCRIPTION OF THE DATA

For empirical investigation we used two sets of data on transition economies. First was used to perform cross-country correlation analysis, second was used to estimate panel specification.

The data were taken from IMF database -- International Financial Statistics. However, for some countries IFS database does not contain all necessary observations. In these cases, the observations from annual reports of central banks and statistical offices of corresponding countries were used instead of IMF estimates. If none of the sources provided sufficient information, the estimates of TACIS¹ were used. In order to insure full comparability of the data series, the observations from IFS and domestic databases were compared. Since almost all transition economies have already passed on to new national accounting standards and IMF is using this data in its IFS database, the observations were almost identical. For some countries, however, the observations differ. This especially concerns FSU countries, which have been experiencing high rates of inflation and/or high variability of output. In these cases, the entire data series were taken from domestic sources.

First data set consists of the annual observations on 15 transition economies of the Central and Eastern Europe and Former Soviet Union starting from 1993 up to the 1998. The countries included in the sample are:

1. Armenia;

¹ Regional TACIS funded projects regularly issue Economic Trends Reports.

2. Belarus;
3. Bulgaria;
4. Croatia;
5. Czech Republic;
6. Estonia;
7. Hungary;
8. Latvia;
9. Lithuania;
10. Poland;
11. Romania;
12. Russia;
13. Slovak Republic;
14. Slovenia;
15. Ukraine.

The annual observations were then averaged over the six years period and pairwise correlation coefficients between average economic growth rates and average values of financial indicators were calculated.

The sample of countries, which has been used for the panel estimation is somewhat smaller due to shortage of data and consists of eight countries. The sample period is the same – starting from first quarter of 1993 up to the fourth quarter of 1999. The observations in the data set are collected on the quarterly basis. Besides economic growth and financial indicators the data set contains the time series on a number of control variables, such as interest rate, inflation rate, balance of payment. The countries in the sample are:

1. Armenia;
2. Czech Republic;
3. Estonia;

4. Latvia;
5. Lithuania;
6. Slovak Republic;
7. Slovenia;
8. Ukraine.

Chapter 3

3.1. CROSS-COUNTRY CORRELATION ANALYSIS

In order to assess the degree of association between economic growth and financial development a number of pair-wise correlation coefficients have been calculated. In particular, we were interested in correlation between the average real GDP growth and three indicators – PRIVATE, BANK and LLY. PRIVATE is calculated as a ratio of total claims on the private sector to the GDP. BANK is calculated as a ratio of total claims initiated by commercial banks to the total claims initiated in the economy (commercial banks plus monetary authorities). LLY is the ratio of liquid liabilities of the economy (money plus quasi-money) to the GDP.

The first measure, PRIVATE, reflects both – the size of financial sector and comparative efficiency of the resource users. Since private sector invests funds in more productive projects, the higher value PRIVATE takes – the higher is efficiency of the resource employment, and, consequently, the expected future growth rates would be higher. Second measure, BANK, is closely related to the relative efficiency of the resource distributor. In particular, funds channeled in the economy by commercial banks are more likely to promote future economic growth, for commercial banks are more likely to discover profitable investment opportunities than central bank is. Clearly, higher value of this indicator is supposed to be related to higher growth rates. Third measure, LLY is supposed to capture the size of financial system of the economy and is rather rough.

Therefore, we had expected all financial indicators to be positively correlated with economic growth. Table 1 shows the simple correlation coefficients between

average growth rates and average values of financial indicators of the transition economies in the sample. Although the correlation between growth rates and PRIVATE is not substantial, both indicators are positively correlated with economic growth.

However, the inspection of underlying data revealed that Armenia has comparably high values of financial development indicators and very low average values of financial indicators.

Table 1. Correlation between growth and financial indicators.

	Average real GDP growth	PRIVATE	BANK	LLY
Average real GDP growth	1			
PRIVATE	0.333	1		
BANK	0.594	0.73	1	
LLY	0.283	0.621	0.308	1

Moreover, such a bad average performance is due to sharp slowdown in the real GDP in 1993 (about 99%). Probably this drastic fall is explained by the war in Caucasus. During all subsequent periods, Armenia demonstrated slow growth of the real GDP. Then, we decided to exclude the 1993 observations from the data set and recalculate the correlation coefficients. The results are shown on the Table 2. On average, the results improved. Although the correlation between BANK and growth fell from 59% to 49%, the correlation between PRIVATE and growth approximately doubled. Now both correlation coefficients are quite high and support the hypothesis of strong link between financial development and economic growth.

Table 2. Correlation between growth and financial indicators.

	Average real GDP growth	PRIVATE	BANK	LLY
Average real GDP growth	1			
PRIVATE	0.64	1		
BANK	0.495	0.73	1	
LLY	0.359	0.543	0.590	1

In addition, we constructed one indicator of financial development, which is specific for transition economies. This index reflects the amounts of inter-enterprise arrears. The index was calculated as a ratio of payables plus receivables of domestic enterprises to GDP and it is supposed to capture the inefficiency of financial sector. The reason behind this inference is that arrears constitute alternative financial mechanism, as opposed to traditional financial system. This alternative mechanism is highly inefficient and channels resources to most unproductive uses. Thus, we anticipate the correlation between this index and growth rate to be negative. The data necessary to calculate this index is available only on two countries – Ukraine and Russia². Nevertheless, the time series were collected on the monthly basis and we had sufficient number of observations to look at each of the two countries separately. We estimated the simple correlation coefficients between real GDP growth rates and values of ARREARS index lagged 12 months. For both countries correlation coefficients appeared to be negative: for Ukraine $-(-0.29)$, for Russia $-(-0.48)$. Basically, CEE countries do not suffer that much from inter-enterprise arrears, so the inference based on two

² Data were taken from Ukrainian Economic Trends and Russian Economic Trends, respectively.

big economies of Former Soviet Union is likely to reflect the situation in all FSU countries.

Thus, based on simple correlation analysis, we may conclude that both financial and real developments are closely related and more developed financial system on average coincides with better performance in real terms.

However, simple correlation analysis has a number of drawbacks. First, it cannot help in understanding the direction of causality between variables. It just signifies that variables move together. It may well be the case that there is no any relationship between financial development and economic growth. The positive significant correlation is the result of the influence of some third variable on both real and financial development. As an example of such variable, we could mention the progress in reforms or some legal environment characteristics. Second, cross-country analysis tells nothing about dynamic structure of the problem. In particular, it is important to know how long it takes for the financial improvements to show up in the higher growth rates.

3.2. PANEL ESTIMATION

The next step in examining the relationship between financial development and economic growth was to look at the dynamic structure of problem and to determine whether changes in the financial development of a country affects its future growth rates. In order to estimate the growth equation the fixed effects panel technique was used.

We estimated the following specification:

$$Gr_{it} = \mathbf{a} + \mathbf{b}_1 * FI_{it} + \sum_{m=1}^4 \mathbf{b}_m * X_{mit} + \sum_{k=1}^3 \mathbf{g}_k * D_k + \mathbf{e}_{it}$$

where Gr_{it} stands for growth rate of i^{th} country during the period t ;

\mathbf{a} stands for common intercept;

FI_{it} is the value of financial indicator of i^{th} country at a time t ;

$\hat{\mathbf{a}}_1$ is the coefficient of interest;

$\hat{\mathbf{a}}_m$ are the coefficients of control variables;

X_{mit} is the value of m^{th} variable of i^{th} country at a time t ;

D_k are seasonal dummies.

To control for other factors influencing growth we used four variables:

- Logarithm of the initial real per capita income (GDP). According to economic growth theory, there may be a difference in growth rates between richer and poorer countries;

- Lagged Openness to trade (lag is equal to 2); openness to trade is calculated as a ratio of the sum of exports plus imports over GDP. Growth theory tells that degree of openness of the economy is important determinant of the growth rates.
- Lagged inflation (lag is equal to 2); Inflation is calculated as a percentage change of the CPI;
- Lagged lending interest rate (lag is equal to 4);
- Country risk variable.³ This variable is supposed to capture country specific effects associated with success of transition.

The lag lengths I have chosen were the result of substantial amount of testing. Initially, we tried to fit shorter lags into the model (-2 or -4, which correspond to half a year and year, respectively). The coefficients associated with financial indicators were consistently insignificant. The use lengthier lags allowed to increase performance significantly. They became much less sensitive to changes in conditioning set.

I used the rates of change of financial development indicators rather than levels. In order to justify this selection I performed Augmented Dickey-Fuller tests on underlying time series. PRIVATE and LLY series turned out to be first-order integrated for all countries (at 1% significance level). BANK series were first-order integrated at 1% significance level for all countries except for Lithuania and Slovenia, the data on which allowed to reject the null hypothesis of unit root even at 10% and 5% significance levels, respectively. All mentioned tests were carried out using the version of ADF test with intercept (the plots of series for some

³ The data is from Euromoney Confidential country-risk database.

countries signified about the possibility of trend-stationarity). Then, I tested the series for unit root using ADF without intercept. Naturally, all financial indicators turned out to be I(1) for all countries at 1% significance level.

Then we ran six separate pooled least squares with identical control sets, two for each indicator. In one regression financial indicator enters with lag of 6 quarters, i.e. one and a half of a year, in the second – with the lag of 8, i.e. two years. Investigation of the effects of the changes in financial variables at different lags would help to understand the speed of adjustment in growth rate to changes in financial system. The summary of the regressions can be seen on the table 3.

Table 3. Panel regressions results.

Variable	Coefficient	Parameters
Financial Indicators		
BANK(-6)	0.294(*)	R ² = 46% D-W=1.99
BANK(-8)	0.57(***)	R ² = 49.5% D-W=1.97
PRIVATE(-6)	0.24(***)	R ² = 55.8% D-W=2.47
PRIVATE(-8)	-0.31(***)	R ² = 63% D-W=1.97
LLY(-6)	0.41(***)	R ² = 61.4% D-W=2.54
LLY(-8)	-0.53(***)	R ² = 74.6% D-W=1.75

* - significant at 10%; ** - significant at 5%; *** - significant at 1%.

Note: to remove seasonality three dummies were included.

The first measure, BANK, performs quite well in terms of both sign and significance. At both lags, BANK showed positive significant effect on growth rates. Other two indicators, however, demonstrated quite disturbing picture. Although at both lags they were significant, the coefficients changed the sign leading to conclusion that the effects of PRIVATE and LLY on growth rate are indefinite. This dual effect could be supported by the visual inspection of the trends in development of real per capita GDP, PRIVATE and LLY (see Appendix A).

One possible explanation of bad performance of PRIVATE could be that even though increasingly large proportions of the domestic credit go to private sector, the relative efficiency of private borrowers may be the same as of borrowers in other sectors. The reason behind it is that few years ago private sector was completely state-owned and it may take much time for privatized enterprises to catch up with relative performance in western countries. Moreover, the results in general are not robust and the significance of coefficients may easily turn unimportant after minor changes in the conditioning set of variables.

As for last measure of financial development, LLY, it is quite rude approximation of the size of the financial system, and given that size does not necessarily implies efficiency, this outcome is not surprising.

Thus, the panel results are somewhat inconclusive. A number of causes might have lead to it. First, time series are short and during the period under consideration many of transition economies were in the process of adopting

modern national accounting standards. Second, chosen measures of financial development may not fully reflect the improvement in the quality of the financial functions provided to the economy. Moreover, it is natural for transition economies of CEE and FSU to have booming financial sectors in the first years of transition, while real development requires more time.

3.3. CAUSALITY ISSUE.

In order to empirically assess causality issue we performed several simple Granger causality tests. We proceeded as follows:

1. The variable of interest (GROWTH and all three financial development indicators) was regressed on its own past values. We have chosen the lag of four periods, the higher values of lags turned out to be insignificant and did not add much to explanatory power of the model for all variables.
2. Then, the lagged values of other variable were added. In other words, if dependent variable is GROWTH, we added lagged values of each financial indicator, in turn.
3. Using F-distribution we tested whether the lagged values of explanatory variable add significantly to the performance of the model. The following formula was used:

$$F = \frac{(RSS_R - RSS_{UN})/m}{RSS_{UN}/(n-k)}$$

Where,

RSS_R stands for sum of squared residuals of the model with past values of dependent variable only (restricted model);

RSS_{UN} sum of squared residuals of unrestricted model (with lagged values of explanatory variable);

n is a sample size;

m is a number of lags of explanatory variable included in the model (four in our case);

k is a number of parameters to be estimated in unrestricted model (eight in our case);

and F follows F-distribution with m and (n-k) degrees of freedom, respectively.

The following results were obtained:

Table 4. Granger causality tests.

		INDEPENDENT VARIABLE		
DEPENDENT VARIABLE	GROWTH	BANK	PRIVATE	LLY
GROWTH		F=6.5963 (***)	F=6.9883 (***)	F=14.251 (***)
BANK	F=33.544 (***)			
PRIVATE	F=19.6181 (***)			
LLY	F=14.7818 (***)			
Note: *** -significant at 1% significance level				

Thus, on the basis of simple Granger causality tests we can infer that there is bi-directional Granger relationship between economic growth and financial development. These tests, however, have a number of drawbacks. First, the results of Granger tests are sensitive to chosen lag structure. Second, a multidirectional relationship may well be a result of the influence of some third force on the variables of interest.

CONCLUSIONS

Despite the rather inconclusive panel results, the data are generally supportive to the hypothesis of positive influence of financial development on future growth rates. However, the importance of the financial development should not be overemphasized. In principle financial development cannot be the source of growth by itself, it can only facilitate it given that real sector is proposing some profitable investment opportunities. This is very important for transition economies, because many of them suffer from the absence of the well-developed markets, poorly defined property rights and contract enforcement mechanisms. Without these premises, there would not be enough investment projects to put money in, and, consequently, there would be no explicit role for financial sector to play in facilitating economic growth. On the other hand, the process of creation of modern market environment with well-defined property rights and contract enforcement mechanisms is intimately related to the development of the financial system. The process of legal development would help to eliminate different sorts of alternative financial mechanisms and would increase the potential for financial system to operate more efficiently, for example through reducing the value of bad debts on the balance sheets.

BIBLIOGRAPHY

Aghion, Philippe and Peter Howitt. 1992. A Model of Growth Through Creative Destructure. *Econometrica*, Vol. 60 (2): 323-51.

Beck, Thorsten, Ross Levine and Norman Loayza. 1999a. Financial Intermediation and Growth: Causality and Causes. *World Bank working paper*.

_____. 1999b. Finance and the Sources of Growth. *World Bank working paper*

Bencivenga, Valerie R. and Bruce D. Smith. 1992. Deficits, Inflation, and Banking System in Developing Countries: The Optimal Degree of Financial Repression. *Oxford Economics Papers*, 44(2): 195-209.

_____, Ross M. Starr. 1995. Transaction Costs, Technological Choice, and Endogenous Growth. *Journal of Economic Theory*, Vol. 67(1): 153-77.

Bernanke, Ben and Mark Gertler. 1990. Financial Fragility and Economic Performance. *Quarterly Journal of Economics*, Vol. 105(1): 87-114.

Diamond, Douglas W., Philip H. Dybvig. 1983. Bank Runs, Deposit Insurance, and Liquidity. *Journal of Political Economy*, Vol. 91(3): 401-419.

Easterly, William. 1993. How Much Do Distortions Affect Growth? *Journal of Monetary Economics*, Vol. 32(4): 187-212.

EuroMoney Confidential DataBase (www.euromoney.com).

Fremdling, Rainer and Richard Tilly. 1976. German Banks, German Growth, and Econometric History (in Notes and Discussions). *Journal of Economic History*, Vol. 36(2): 416-424.

International Monetary Fund DataBase – International Financial Statistics.

Gertler, Mark. 1988. Financial Structure and Aggregate Economic Activity: An Overview. *Journal of Money, Credit and Banking* Vol. 20:559-588.

Goldsmith, Raymond W. 1969. Financial Structure and Development. New Haven, CT: Yale University Press.

Grossman, Sanford J. and Merton H. Miller. 1988. Liquidity and Market Structure. *Journal of Finance*, Vol. 43(3): 617-633.

King, Robert G. and Ross Levine. 1993a. Financial Intermediation and Economic Development. In *Financial Intermediation and the Construction of Europe*. Eds.: COLIN MAYER AND XAVIER VIVES. London: Centre for Economic Policy Research: 156-189.

_____. 1993b. Finance and Growth: Schumpeter Might Be Right. *Quarterly Journal of Economics*, Vol. 108(3): 717-737.

- _____. 1993c. Finance Entrepreneurship and Growth: Theory and Evidence. *Journal of Monetary Economics*, Vol. 32(3): 513-542.
- King, Robert G., Sergio T. Rebelo,. 1993. Transitional Dynamics and Economic Growth in the Neoclassical Model. *American Economic Review*, Vol. 83(4): 908-931.
- Levine, Ross. 1997. Financial Development and Economic Growth: Views and Agenda. *Journal of Economic Literature*, Vol. XXXV: 688-726.
- _____ 1997b. Law, Finance and Economic Growth. *World Bank Working Paper*: 688-726.
- _____ 1998. The Legal Environment, Banks, and Long-Run Economic Growth. *World Bank Working Paper*: 688-726.
- Pagano, Marko. 1993. Financial Markets and Growth: An Overview. *European Economic Review*, Vol. 37(2-3): 613-622.
- Rebelo, Sergio T. 1991. Long-Run Policy Analysis and Long-Run Growth. *Journal of Political economy*, Vol. 99(3): 500-521.
- Sandberg, Lars G. 1978. Banking and Economic Growth in Sweden before World War I. *Journal of Economic History*, Vol. 38(3): 650-680.

Sultan, Khwaja M., Dimitar G.Mishev Role of the Financial System in Economic Growth in Transition Countries - the Case of Ukraine's Banking System. *HIID working paper*, Volume 1, October 1999.

