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Abstract

During the last years the relationship between financial development and economic growth has received widespread attention in the literature on growth and development. This paper summarises in its first part the results of this research, stressing the growth-enhancing effects of an increased interpersonal re-allocation of resources promoted by financial development. The second part of the paper seeks to identify the determinants of financial development based on Diamond's theory of financial intermediation as delegated monitoring. The analysis shows that the quality of corporate governance of banks is the key factor in financial system development. Accordingly, financial sector reforms in developing countries will only succeed if they strengthen the corporate governance of financial institutions. In this area, financial institution building has an important contribution to make.

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Introduction[1]

"The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else."[2]

John Maynard Keynes' concluding statement in the General Theory is every bit as true now as it was sixty years ago when the book was first published. The most recent example of the phenomenon he was describing is the development of the new growth theory - or, as it is also known, endogenous growth theory - which, building on a paper by Paul Romer and one by Robert E. Lucas, came into being during the mid-1980s.[3] Its appearance led to a veritable flood of theoretical and empirical contributions in the various branches of economics, and in the 1990s the new growth theory has clearly become the premier field of research activity in macroeconomic theory.[4] A further example is the new theory of finance which is grounded in the economics of information and which in the meantime has come to be regarded at least as an equal partner of neoclassical capital market theory.[5] Even a rather selective analysis of working papers and publications issued by the IMF, the World Bank and the EBRD shows that the

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1 The author is grateful to Stephan Boven, Reinhard H. Schmidt and Marcel Stremme for helpful comments. The usual disclaimers apply.

2 Keynes, J.M. (1964), The General Theory of Employment, Interest, and Money, New York and London, p. 383.

3 See Romer, P. (1986), Increasing Returns and Long Run Growth, in: Journal of Political Economy, Vol. 94, pp. 1002 - 1037; Lucas, Robert E. (1988), On the Mechanics of Economic Development, in: Journal of Monetary Economics, Vol. 22, pp. 3 - 42. Important refinements in terms of the specification of the theoretical model employed - in the sense that new combinations of assumptions regarding the state of the (economic) world were introduced - are to be found in the following contributions: Romer, P. (1990), Endogenous Technological Change, in: Journal of Political Economy, Vol. 98, pp. 1187 - 1211; Grossman, G.M. and E. Helpman (1991), Innovation and Growth in the Global Economy, Cambridge; and Aghion, P. and P. Howitt (1992), A Model of Growth through Creative Destruction, in: Econometrica, Vol. 60, pp. 323 - 351.

4 This becomes especially clear if one looks at modern American university textbooks; see, for example, Romer, D. (1996), Advanced Macroeconomics, New York, et.al., and Barro, R.J. and X. Sala-i-Martin (1995), Economic Growth, New York et. al.

5 The following may be regarded as pioneering works in the development of this new theory: Akerlof, G.A. (1970), The Market for "Lemons": Qualitative Uncertainty and the Market Mechanism, in: Quarterly Journal of Economics, Vol. 84, pp. 488 - 500, Jensen, M.C. and W.H. Meckling (1976), Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, in: Journal of Financial Economics, Vol. 3, p. 305 - 360 and Stiglitz, J.E. and A. Weiss (1981): Credit Rationing in Markets with Imperfect Information, in: AER, Vol. 81, pp. 393 - 410

influence of both theories on thinking at these institutions, which are of such great importance for the economic development of many countries, is considerable.

In recent years, a great many contributions have been published which seek to integrate the relevant findings of proponents of both of these theories.[6] In the first part of the present paper (sections 1-3) the results of this research are summarised with the aim of identifying factors which may help to answer the following question: Why do economies which have a developed financial system exhibit higher per capita growth rates than economies whose financial systems are underdeveloped? The analysis begins by considering the results of recent empirical research which was motivated by the development of the new growth theory and answers this question as follows: The financial system not only serves to facilitate the intertemporal resource transfer, but also - and this is its most important achievement - effects an interpersonal re-allocation of resources. This re-allocation has positive growth effects if the recipients of the resources have better investment opportunities than those who provide the resources.

The second part of the paper (sections 4-6) seeks to identify the determinants of financial sector development. Starting from the empirical fact that a sizeable number of countries have been unable to stimulate the development of their financial systems, it explores the question of why it is difficult to set in motion, and organise over time, a successful process of financial system development. In the search for an explanation, the discussion relies primarily on the central model of the theory of financial intermediation which was developed by Diamond.[7] This model is used to derive a frame of reference for endogenous financial system development by asking the following question: What are the conditions and assumptions which, in Diamond's model, produce the outcome that financial intermediaries are capable of efficiently carrying out the intertemporal, interpersonal resource transfer? The answer implies that setbacks in the process of financial system development may be due to the fact that these assumptions and conditions have not been fulfilled. It turns out that with this approach, the quality of the corporate governance of banks is identified as the key factor in financial system development. Specifically, the availability of mechanisms which can ensure that banks are soundly governed, and thus that both technical and moral mismanagement are avoided, is the decisive prerequisite for successful financial

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6 For a brief recapitulation, see Pagano, M. (1993), Financial markets and growth: An overview, in: European Economic Review, April 1993, Vol. 37, pp. 613 - 622; as well as Levine, R. (1996), Financial Development and Economic Growth - Views and Agenda, Working paper 1678, The World Bank, Washington, DC; Galetovic, A. (1994), Finance and Growth: A Synthesis and Interpretation of the Evidence, International Finance Discussion Papers No. 477, Washington DC.

7 See Diamond, D. (1984), Financial Intermediation as Delegated Monitoring, in: Review of Economic Studies, Vol. 51, pp. 393 - 414.

system development. If this prerequisite is given, the process of financial system development will have positive growth effects. But it also turns out that financial system development will be growth-promoting only if this prerequisite is given.

Proceeding from this insight, section 6 deals with the following question: Can financial sector reforms, including the reform of banking supervision and regulation, help to set in motion a sound process of financial system development? While the answer given is basically affirmative, it also suggests that a number of other assumptions must also fulfilled, and that this process takes a very long time. It can be accelerated, but efforts to speed things up will not prove to be meaningful, or in fact even feasible, unless they they seek to improve the quality of corporate governance of banks and other financial institutions, as sound corporate governance must be regarded as the very heart, and motor, of financial system development. In this area, financial institution building has an important contribution to make.

1. New growth theory and financial development

The popularity of new growth theory[8] among both scholars and economic policy-makers, can be attributed above all to two things:

1. The new theory succeeds in eliminating two implications of the old, neo-classical growth theory which were extremely unsatisfactory from both a theoretical and an empirical point of view:

   a) a change in the saving and investment rate, i.e. in capital accumulation, has only an effect on the long-run equilibrium of the *level* of real per capita income but not on its rate of growth.

   In other words, the old theory implied that by increasing capital accumulation an economy will not succeed over the long term in boosting the growth rate of real per capita income. This is not only at odds with the intuitions behind what many economists thought and wrote both before and after the formulation of neo-classical growth theory; it is also incompatible with the empircal facts, which show that the growth of real per capita income correlates

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[8] Fairly non-technical surveys can be found in the Journal of Economic Perspectives (1994), Vol. 8, No. 1, which explores endogenous growth theory in detail via a symposium. The authors are Paul M. Romer, Gene M. Grossman and Elhanan Helpman, Robert M. Solow and Howard Pack.

positively with the rate of savings and investment.[9] The new growth theory formulates models which demonstrate a positive influence of the savings and investment rate on the long-term real per capita growth rate.[10]

b) the most important variable which, over the long term, determines the growth rate of real per capita income, namely the rate of technical progress, is assumed to be exogenous, i.e. it is not explained as the result of rational economic actions taken by agents.[11]

The new growth theory describes the process by which technological progress/change is created endogenously, either as a by-product of physical or human capital accumulation,[12] or as targeted investment undertaken by rationally calculating firms in a model of monopolistic competition.[13]

2. The new theory offers economic policy many new avenues by which it can influence growth processes: research policy, trade policy, policy in the area of patents, education policy and industrial policy.[14] Structural and institutional factors can now also be regarded as determinants of growth.[15]

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9 See Barro, R. J. (1991), Economic Growth in a Cross Section of Countries, in: Quarterly Journal of Economics, Vol. 106, pp. 407 - 444.

10 These models are known as “Ak” models, and their key charactistic lies in the fact that the employment of physical capital in the production of goods is subject to marginal returns which are no longer declining but constant.

11 Accordingly, David Romer summarises the explanatory power of traditional neoclassical growth theory as follows: “..., it is only a small exaggeration to say that we have been modelling growth by assuming it.” Romer, D. (1996), p. 25.

12 This type of model, which has its origins in the work of Arrow, is the characteristic feature of the contributions of Romer, P. (1986) and Lucas, R.E. (1988), and has been labelled the “learning-by-doing” approach.

13 These “innovation based growth models” are the distinguishing feature of the contributions of Romer, P. (1990); Grossman, G.M and E. Helpman (1991); and Aghion, P. and P. Howitt (1992).

14 These areas of policy intervention were enumerated by Paul Romer; see Romer, P. (1994), The Origins of Endogenous Growth, in: Journal of Economic Perspectives, Vol. 8, p. 21.

15 In this connection, Ramser speaks of the “market organisation” as an determinant of economic growth; see Ramser, H.J. (1993), Grundlagen der “neuen” Wachstumstheorie, in: Wirtschaftswissenschaftliches Studium, Vol. 22, p. 123.

The world of economic research has responded to these new insights and the postulation of these new policy options with a series of theoretical and empirical investigations whose goal is to ascertain the key determinants of economic growth.[16]

On the face of it, the focus of the new growth theory on processes in the real economy would seem to leave little room for a theoretical analysis of the correlation between financial development and economic growth. Thus, it is not surprising that empirical investigations have established the financial sector as a credible determinant of growth. In 1989, working in the tradition of McKinnon and Shaw, Alan Gelb had already pointed to the correlation between indicators of financial development and economic growth.[17] The next major contribution along these lines was that of Robert King and Ross Levine, who succeeded in demonstrating via cross-country regressions[18] that variables which capture the level of financial asset formation in an economy contribute significantly to explaining why economies exhibit a given average per capita growth rate over long periods of time.[19] Examples of such variables are

- the ratio of liquid liabilities, equalling currency held outside of the banking system plus demand and interest-bearing liabilities of banks and nonbank financial intermediaries, to GDP (DEPTH);

- the ratio of credit issued by the banking system to private enterprises to GDP (PRIV/Y);

- the ratio of domestic credit issued by deposit banks to domestic credit issued by deposit banks and the central bank (BANK);

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16 Critics see this relatively large number of options as evidence of an arbitrary quality which tends to reduce the practical relevance of the new growth theory in economic policy-making to zero; see, for example, Mankiw, N. G. (1995), The Growth of Nations, in: Brookings Papers on Economic Activity, Vol. 25, p. 309; as well as Ramser, H. J. (1993), p. 122f.

17 See Gelb, A. (1989), Financial policies, growth and efficiency, Working paper no. 421, The World Bank, Washington, DC.

18 A cross-country regression is based on a sample of countries, putting on the left-hand side each country's average growth rate over a long period (for example, 30 years) and on the right-hand side a set of variables expected to determine that growth rate. For a detailed overview of cross-country regressions in the context of economic growth which deals with the underlying methodology involved, the way in which they are to be interpreted, and their strengths and weaknesses, see Levine, R. and S.J. Zervos (1993), as well as Mankiw, N.G. (1995), p. 301ff.

19 See King, R.G. and R. Levine (1993), Finance, entrepreneurship, and growth, in: Journal of Monetary Economics, Vol. 32, pp. 513 - 542.

- the ratio of claims on the nonfinancial private sector to domestic credit (PRIVATE).

Indeed, compared with other fiscal, monetary and trade-policy indicators, these indicators of the level of financial development prove to be quite robustly associated with growth.[20]

Table 1, which presents selected findings of King and Levine, gives a brief overview of the most basic statistical evidence on financial development and economic growth, i.e. contemporaneous correlations between the above-mentioned financial indicators and the real per capita growth rate for 80 countries over the period 1960-1989.

Table 1: **Contemporaneous correlations between financial indicators and the real per capita growth rate**

	DEPTH	PRIV/Y	BANK	PRIVATE
GYP	0.56	0.37	0.44	0.50

Source: King, R.G. and R. Levine (1993), p. 530

Thus, to sum up, it may be concluded that "successful" development of the financial system - in the sense that the values calculated for the indicators of financial development described above are high - goes hand in hand with a high real per capita growth rate. However, the correlation between the various financial development indictors and the real per capita growth rate is not sufficient to imply that a causal connection exists between these two variables in the sense that financial development is a precondition for an increased rate of growth.[21] In addition, more comprehensive empirical analyses show that the positive correlation between the indicators of financial development and the real per capita growth rate is not a constant, but rather that

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[20] See Levine, R. and S.J. Zervos (1993), p. 428. The positive correlation between financial system development and economic growth can be measured not only with the help of variables which capture the level of financial asset formation in the banking system. The formation of financial assets on stock markets, as shown by various indicators of stock market development like size, liquidity and risk diversification, also exhibits a positive correlation with the real per capita growth rate. See Levine, R. and S. Zervos (1996), Stock Market Development and Long-Run Growth, in: The World Bank Economic Review, Vol. 10, pp. 323 - 339.

[21] "It is unclear whether the relation between growth and financial sophistication isolates the effect of an exogenous improvement in the financial system on the growth rate, or, in reverse, reflects the impact of good growth prospects on the incentive to develop the financial sector." Barro, R. J. and X. Sala-i-Martin (1995), p. 443.

- as the level of development in the economies studied rises, the significance of the correlation declines;[22] and that

- in so far as the quantitative relationships are concerned, there are significant regional deviations which can even determine whether the correlation will be negative or positive - as shown, for example, by the fact that a negative correlation was calculated for a sample consisting of twelve Latin American countries.[23]

The following are two further empirical findings which suggest that the link between financial development and economic growth is rather complex:

- Studies of the western industrial countries show that by far the largest share of physical capital accumulation is financed by firms internally. Despite the increasing liberalisation of financial systems, the significance of internal financing has tended to increase rather than decrease: at 69.3%, the share of internally financed investments is lowest in Japan, and highest in Great Britain, where it works out at 97.3%.[24]

  The predominance of internal over external financing in business expenditure on physical capital is not a new phenomenon. It was also a characteristic of the phase of the industrialisation process in the latter half of the 19th century.[25] Contrary to many beliefs about the significance of bank finance in German industrialisation, the evidence shows that in most cases, internally-generated funds were by far the most important source of investment finance for industrial companies. Of 11 large firms in the Ruhr steel industry, only one had an internal financing ratio of less than 60% during the period 1878-1914.

  While the significance of internal financing is also great in developing countries, self-financing is not as dominant in such nations as it is now, and has been in the past, in the western industrial countries. Firms had an internal financing ratio of more than 50% in only

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22 See De Gregorio, J. and P.E. Guidotti (1992), Financial Development and Economic Growth, IMF Working Paper WP/92/101.

23 *Ibid.*

24 See Mayer, C. (1989), Myths of the West - Lessons from Developed Countries for Development Finance, Working paper No. 301, The World Bank; Mayer's findings are confirmed by Corbett, J. and T. Jenkinson (1996), The Financing of Industry, 1970 - 1989: An International Comparison, in: Journal of the Japanese and International Economics, Vol. 10, pp. 71 - 96.

25 See Edwards, J. and S. Ogilvie (1995), Universal Banks and German Industrialization: A Reappraisal, CEPR Discussion Paper, No. 1171.

three out of the ten countries covered by the sample of countries analysed by Singh and Hamid.[26]

- Crisis-like developments within the financial system are accompanied by high output losses (see Table 2). This is true now, and was also true in the past.[27] Whether countries do or do not face financial crises is an important determinant of the response of the real sector to the development of the financial indicators.[28]

Table 2: „**Percentage Change in GDP Five Years before and after the Initiation of Bank Insovency, 1975 - 1994** (No. of observations in parenthesis)

Region	Mean GDP Growth	
	Five year before crisis	Five year after crisis
All Crisis Cases*	3.2% (290)	2.0% (240)
subsample OECD countries*	2.8% (50)	1.8% (52)
Non-OECD countries*	3.3% (240)	2.0% (188)
Memo: non-crisis countries**	2.2% (80)	2.3% (64)

* A t-test (significant at $P<0.05$) indicates that the pre- and post-crisis means differ.

** Since there was no crisis in these countries, the sample was split in half, i.e., 1980-87 for the first observation and 1988-94 for the second, Although it should not be necessary, a t-test indicates that there was no significant slowdown in the non-crisis countries.

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[26] See Singh, A. and J. Hamid (1992), Corporate Financial Structures in Developing Countries, IFC Technical paper No.1, Washington, DC.

[27] See Mishkin, F. (1991), Asymmetric Information and Financial Crises: A Historical Perspective, in: Hubbard, R.G. (ed.), Financial Markets and Financial Crises, Chicago, pp. 69 - 108**,** Caprio, G. and D. Klingebiel (1996), Bank Insolvency: Bad Luck, Bad Policy, or Bad Banking?, Paper prepred for the World Bank's Annual Bank Conference on Development Economics, Washington, DC, and Caprio, G. (1997), Safe and Sound Banking in Developing Countries - We're Not in Kansas Anymore, The World Bank, Working Paper No. 1739, Washington, DC.

[28] See Johnston, B.R. and C. Pazabasiogly (1995), Linkages Between Financial Variables, Financial Sector Reform and Economic Growth and Efficiency, IMF Working paper WP/95/103.

Source: IMF, International Financial Statistics, and Caprio and Klingebiel, 1996.“ [29]

Two broad conclusions can be drawn from the empirical evidence:

1. Financial system development is an important factor in the growth process of an economy. However, experience has shown that not every process of financial system development is accompanied by high economic growth - as illustrated by the example of Latin America - and that the correlation between financial system development and economic growth becomes weaker as the income level rises. Moreover, in quantitative terms the financial system is not as closely involved in the process of real capital accumulation as might have been expected, at least not in the sense that it provides the funds to finance investment by productive enterprises, since by far the largest share of business investment undertaken in a given period is financed internally.

2. Financial system development is a difficult process. This is shown not only by the history of recurrent financial crises, but also - again - by the fact that even in countries with a well developed financial system a large proportion of business investment is financed internally.

Thus, if we wish to analyse the nature of the links between financial system development and economic growth, we must answer two questions:

a) Why is financial system development important for the growth process of economies?

b) Why is financial system development difficult?

2. The central function of a financial system: The intertemporal, interpersonal transfer of resources

The significance of financial system development for the growth process may be inferred from the functions which the financial system fulfils, or is supposed to fulfil, in an economy. Merton and Bodie distinguish six basic or core functions[30]:

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[29] Caprio, G. (1997), p. 5.

[30] See Merton, R.C. and Z. Bodie (1995), A Conceptual Framework for Analyzing the Financial Environment, in: Crane, D. B. (ed.), The global financial system: a functional perspective, Boston, p. 5.

a) the clearing and settling of payments to facilitate trade,

b) the pooling of economic resources and the subdividing of shares in various enterprises,

c) the transfer of economic resources through time, across borders, and among industries,

d) the managing of risk,

e) the provision of price information to co-ordinate decentralised decision-making by different sectors of the economy, and

f) the overcoming or mitigation of incentive problems due to asymmetric information.[31]

However, the financial system cannot fulfil any of these functions unless it performs one central function - Merton and Bodie call it the "primary function" - namely, that of intertemporal and interpersonal resource transfer.[32] Now we must seek to determine the extent to which the financial indicators enumerated above tell us whether the financial system is performing this central function.

The first two indicators of financial development mentioned in the preceding section show, for a certain point in time, the extent to which an intertemporal, interpersonal resource transfer is being effected in an economy via the banking system. The level of liquid liabilities in the banking system is a measure of the resource transfer from the non-financial sector to the financial sector; the level of lending by the banking system to the private sector reflects the extent of the resource transfer back to the non-financial sector. Accordingly, as regards the first two financial indicators, the results of the cross-country regressions can be summed up as follows: the more

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[31] In the literature one encounters differing notions as to the precise number and nature of the individual functions; see, for example, Merton, R.C. and Z. Bodie (1995), p. 26ff.; Levine, R. (1996), Financial Development and Economic Growth - Views and Agenda, Working Paper No. 1678, The World Bank, Washington, DC; and Stiglitz, J. (1992), The Role of the State in Financial Markets, Institute for Policy Reform, p. 13, for an overview of the range of differing views on the functions of a financial system

[32] See Merton, R.C. and Bodie, Z. (1995), p. 12. After all, the first five presuppose the intertemporal and interpersonal transfer of resources, and it only makes sense to formulate the final function if such a resource transfer takes place.

extensive the intertemporal resource transfer organised by the banking system, the higher the average per capita growth rate.[33]

By contrast, the other two financial indicators tell us more about who the recipient of the resource transfer from the banking system is (private sector as opposed to public sector) and who undertakes the resource transfer (commercial banks vs. central bank). This differentiation with respect to the recipient and the initiator of the resource transfer suggests that the individual resource transfers do not all have the same impact on growth. Thus, the formulation of the correlation between financial system development and economic growth is modifed as follows: the more loans which the banking system, represented by the commercial banks as opposed to the central bank, disburses to the private sector as opposed to the public sector, the higher will be the average growth rate of real per capita income.

We have now established a link between the financial indicators and the central function which the financial system is supposed to fulfil. Now we must seek to answer the question of why the performance of this function has growth-promoting effects.

3. Links between the intertemporal, interpersonal transfer of resources and economic growth

Neoclassical theory, which provides the basis for both the new and the old theory of growth, proceeds from the notion of a Robinson Crusoe economy. It analyses economic activities from the perspective of a single agent who is faced with the task of allocating a given quantity of resources intertemporally in a utility-maximising manner. In modern theory, Robinson Crusoe is embodied by the representative agent, with the function of representation encompassing the entire private sector, comprising all private households as well as all firms. The operative notion here is that, ultimately, firms belong to the private households, i.e. that “the firm is simply a veil with value measured by the present value of its net returns.”[34]

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[33] Moreover, as has been mentioned above, the financial indicators which do not relate to the development of the banking system, but rather to development of stock markets, point to the same result, i.e. they show a correlation with the growth rate of real per capita income. However, in the case of stock market transactions, the financial sector merely fulfils a co-ordination function, i.e. it is not itself the recipient and initiator of the resource transfer - it does not operate as a financial intermediary.

[34] Burda, M. and C. Wyplosz (1993), Macroeconomics - A European Text, Oxford et al., p. 49.

This model provides - under certain assumptions - a precise analysis of the optimality conditions of the intertemporal resource transfer, i.e. of the extent to which the representative agent should forgo consumption, accumulate capital, and allocate resources over time.[35] Thus, determining whether or not this intertemporal resource transfer will consistently generate positive per capita growth of real income is merely a question of determining the properties of the underlying production function, i.e. ascertaining whether physical capital used in the production of goods exhibits decreasing (traditional growth theory) or constant (new growth theory) marginal returns.

By contrast, the financial system effects not only an intertemporal, but also an interpersonal resource transfer. The latter, though, cannot be captured by a model which relies on the construct of a representative individual.[36] This means that the model implicitly assumes every form of financing activity to consist of internal financing. In order to build a bridge to empirical reality, in which external financing can also be observed, it is assumed that the intertemporal, interpersonal transfer of resources via external financing has no impact on either the range of options for carrying out the intertemporal transfer of resources or the optimality conditions of that transfer: an "increase in wealth occurs regardless of whether firms borrow to finance the investment or use their own savings"[37] - or, as it is formulated in the Modigliani-Miller theorem: "the market value of any firm is independent of its capital structure."[38]

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35 The model was developed in 1928 by Ramsey - see Ramsey, F. (1928), A Mathematical Theory of Saving, in: Economic Journal, Vol. 38, pp. 543 - 559 - and forms the basis of modern macroeconomic theory.

36 Transactions on financial markets thus pose great problems for the neoclassical model world with its representative agent because they inherently imply that two agents undertake two actions whose respective economic effects are at odds with each other. Thus, the occurence of a transaction on a stock market means that one agent expects prices to fall and the other expects them to rise. As a result, the two agents cannot be aggregated to form a single, representative individual. See Tobin, J. (1980), Asset Accumulation and Economic Activity, Oxford, p. 26; a similar line of reasoning is advanced in Gertler, M. (1988): Financial Structure and Aggregate Economic Activity: An Overview, in: Journal of Money, Credit and Banking, Vol. 20, p. 565. For a discussion of fundamental problems of the representative agent model, see Kirman, A.P. (1992), Whom or What Does the Representative Individual Represent?, in: Journal of Economic Perspectives, Vol. 6, No. 2, S. 117 - 136.

37 Burda, M. and C. Wyplosz (1993), p. 49.

38 Modigliani, F. and M.H. Miller (1958), The Cost of Capital, Corporation Finance and the Theory of Investment, in: American Economic Review, Vol. 48, p. 268.

The empirical correlation between financial system development and economic growth contradicts this theoretically derived statement. This means that the model does not capture important forms of growth potential due to its inherent construction:[39]

1. Various agents have investment opportunities whose productivity differs, which means that it is not feasible to fully exploit the growth potential of an economy until the interpersonal transfer of resources has been organised.

2. Investment opportunities are not infinitely divisible: larger investments exhibit a higher marginal productivity, which means that - even if every agent had access to the same investment opportunities - the growth potential of an economy would not be utilised unless the interpersonal transfer of resources had been organised.

By definition, interpersonal resource transfer does not produce additional capital. It enables the available resources to be better utilised. In other words, "a financial system contributes to growth and development by mobilizing saving and then efficiently allocating the saving across investment projects."[40] That taking advantage of this opportunity which a functioning financial system offers can have a decisive influence on growth in economies becomes clear if we remember that even in economies and periods in which weak economic growth was - and is - observed, this weakness of growth can hardly be explained by referring to an absolute shortage of capital:[41]: "After all, it is not true that early economies were incapable of accumulating large amounts of physical capital. What is striking about investments like those in pyramids, raised field systems, cathedrals, and possibly even flood control and irrigation systems is both the size

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[39] This had already been pointed out by McKinnon and Shaw in their critique of the old, monetary growth theory. See McKinnon, R.I. (1973), Money and Capital in Economic Development, Washington DC; and Shaw, E.S. (1973), Financial Deepening in Economic Development, New York, London, Toronto.

[40] Gertler, M. and A. Rose (1994), Finance, public policy and growth, in: Caprio, G.; Atiyas, J. and J.A. Hanson (eds.), Financial reform, Theory and experience, Cambridge, p. 15.

[41] Apart from the empirical facts, the concept of a capital shortage, in an absolute sense, is difficult, if not impossible, to define because "gross national income is always and necessarily sufficient to finance, to buy and pay for, gross national product." (Gurley, J.G. and E. S. Shaw (1960), Money in a Theory of Finance, Washington, DC, p. 20). Statements to the effect that developing or transitional economies, for example, suffer from a capital shortage are thus meaningful only if such economies are compared with another economy or other economies which have more capital at their disposal. Thus, not only at this basic conceptual level but also in terms of their relevance for economic policy-making, such claims do not differ very much from the statement that, compared with the United States of 1997, the United States of 1797 suffered from a severe shortage of capital. On this point, see also Flassbeck, H. (1985), Zur Theorie des Kapitalmangels, in: Ehrlicher, W. and Simmert D. (eds.), Der volkswirtschaftliche Sparprozeß, Beihefte zur Kredit und Kapital, Vol. 9, pp. 159 - 176.

of the social investment involved and the relatively low rate of return it generated. If large unexploited investment opportunities were present in early times, it is hard to understand why they were not pursued."[42]

The answer to the implicit question here is: because many agents were not, or are not, given a chance to pursue their investment opportunities, which were, or are, more productive than those of agents who had, or have, capital.[43] To be sure, a functioning financial system is only one of the prerequisites that must be given in order for agents to have this chance.[44] In economies which are organised on market principles, however, this is an essential prerequisite. If this prerequisite is given, the empirical correlation between financial system development and economic growth can be formulated as follows: Financial deepening counteracts the depressing effect of capital deepening on the marginal product of capital[45] by facilitating a continuous interpersonal re-allocation of resources which, at the level of the economy as a whole, keeps the

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[42] Romer, P. (1990), Increasing returns and new developments in the theory of growth, in: Barnett, W.A. et. al. (eds.), Equilibrium Theory and Applications, Cambridge MA, p. 97. A detailed analysis of an important phase of German economic history which is generally regarded as a period of capital scarcity, and one which serves to confirm the broad conclusion which Romer draws, is found in Borchert, K. (1961), Zur Frage des Kapitalmangels in der ersten Hälfte des 19. Jahrhunderts in Deutschland, in: Jahrbücher für Nationalökonomie und Statistik, pp. 401 - 421. Easterly and Fischer also show that the weak growth in the former Soviet Union in the 1970s and '80s cannot be attributed to a general shortage of capital, but rather was a consequence of the insufficient productivity of resource employment; see Easterly, W. and S. Fischer (1995), The Soviet Economic Decline, in: The World Bank Economic Review, Vol. 5, No. 3, pp. 341-371.

[43] The validity of this statement is confirmed by the experience of practically every micro finance institution. Even a superficial analysis of the profitability of micro and small enterprises shows that the marginal productivity of the economic activities carried out by this target group is much higher than the "market level". Thus, Zeitinger is correct when he speaks of a "democratisation of credit" which is achieved by micro finance institutions; see Zeitinger, C.P. (1986), Democratizar, Profundizar y Descentralizar el Sistema Financiero, in: Superintendencia de Banca y Seguros y del Conevneio Peru (ed.), Cajas Municipales de Ahorro y Credito, Lima, pp. 17 - 40.

[44] Only for reasons of completeness the self-evident fact should be mentioned that, in order for this to be feasible, not only a financial system is required, but also many other, more fundamental prerequisites, e.g. one must be able to speak justifiably of economic agents - something that, for example, was not possible in centrally planned economies. Moreover - and this is a prerequisite which is universally acknowledged to be essential because it represents a fundamental precondition for any type of economic activity which implies an interpersonal resource transfer - a legal and judicial system must be in place which makes it possible for one party to a contract that has been concluded to take legal action to compel another party to that contract to meet his/her obligations as stipulated in that contract if that party should fail to fulfil them. For a discussion of the significance of legal parameters for the organisation of the interpersonal resource transfer, see Sirri, E.R. and P. Tufano (1995), The Economics of Pooling, in: Crane, D. B. (ed.), The global financial system: a functional perspective, Boston, p. 82ff., and Krahnen, J.P. and R.H. Schmidt (1994), Development Finance as Institution Building, Boulder, Co, pp. 33ff..

[45] See Helpman, E. (1992), Endogenous macroeconomic growth theory, in: European Economic Review, Vol. 36, pp. 237 - 267.

marginal return of capital from declining. Since it can be assumed that the private sector exploits investment opportunities which are significantly more productive than the investments undertaken by the public sector[46] financial deepening which involves the private sector as opposed to the public sector should lead to a higher rate of growth of per capita income.

As has already been suggested,[47] this proposition was at the heart of the "message" of the new development finance literature of the 1970s: The growth of many developing countries is impeded because the financial system is prevented by a policy of financial repression from efficiently carrying out the growth-promoting process of the interpersonal transfer of resources. As regards economic policy, the conclusion that followed from this was that the financial system had to be liberalised in order to usher in a process of economic growth. Experience showed, however, that liberalisation often did not have the desired positive impact on growth, but rather led ultimately to financial crises, recession and/or a revival of inflation.[48] Thus, it is not surprising that the cross-country regressions for those Latin America countries in which a thoroughgoing liberalisation programme was implemented in the financial sector in the 1970s and '80s show a negative correlation between financial system development - as measured by the financial indicators - and economic growth.

Consequently, the statement that financial system development promotes economic growth must be qualified: a financial system contributes to growth and development by mobilising saving if it efficiently allocates the saving across investment projects. Thus, if the link between financial system development and economic growth is to be explained satisfactorily, the basic neoclassical model must not only be extended in such a way as to permit the derivation of the growth effects of various forms of financing. Indeed, the assumptions must also be modified in such a way that financing can be be defined as a problem, thus refuting the Modigliani-Miller theorem, which posits the irrelevance of the particular form of financing selected. This is achieved by the new theory of finance which is grounded in the economics of information.

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46 None of the large-scale investments mentioned by P. Romer has its origin in the private-sector.

47 See footnote 38.

48 See Diaz-Alejandro's article, which has come to be regarded as a classic discussion of this phenomenon: Diaz-Alejandro, C. (1985), Good-Bye Financial Repression, Hello Financial Crash, in: Journal of Development Economics, Vol. 19, pp. 1- 24.

4. The new theory of finance and financial system development

4.1 Fundamental aspects

The new theory of finance which is grounded in the economics of information substitutes for the assumption of complete, uniformly distributed information the assumption that information is asymmetrically distributed between lender and borrower in order to be able to demonstrate the relevance of financing. The existence of asymmetrically distributed information gives rise to moral hazard and adverse selection problems, i.e. it involves the risk for the lender (principal) that the behaviour of the borrower (agent), during or after the implementation of an externally financed investment, will not be congruent with the interests of the lender. This can create a situation in which market relationships that would be profitable for both parties - and this is the case if the borrower has a better investment option than the lender - do not come about.[49]

For this reason, the organisation of the intertemporal, interpersonal transfer of resources, i.e. of external financing, is a relevant economic problem to which agents respond with a great many different forms of financing, each of which makes use of certain mechanisms to mitigate moral hazard and adverse selection problems. Examples of such mechanisms are screening, self-selection, und monitoring.[50] What they all have in common is that the borrowers must relinquish something which forms part of their "inner life", either information (e.g. balance sheet ratios, business plans, market position, socio-economic position) and/or assets (collateral, participation using own funds) in order to ensure that the interests of the lender and borrower are congruent before, during and after the implementation of the externally financed investment, and thus to render the provision of external financing possible. Accordingly, the utilisation of the above mechanisms represents an attempt to simulate the conditions of internal financing, in which, by definition, neither moral hazard nor adverse selection problems can occur because lender (principal) and borrower (agent) are identical.[51]

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[49] For a classic discussion of this point, see Akerlof's analysis: Akerlof, G.A. (1970) and, as regards financing relationships, see Stiglitz, J.E. and A. Weiss (1981).

[50] See Gertler, M. and A. Rose (1994), p. 25.

[51] Following Merton and Bodie, we can describe the objective of these mechanisms as that of creating between lender and borrower “a strongly interdependent utility function”, and thus of imitating the conditions which are characteristic of informal financing relationships, particularly within a family (Merton, R.C. and Z. Bodie (1995), p. 9).

If we give due consideration to these aspects, we will be in a position not only to explain the above-mentioned empirical fact that internal financing is by far the most frequent form of financing, followed by debt financing by financial intermediaries and the provision of financing via financial markets,[52] but also to formulate the condition that must be met in order for financial system development to be conducive to growth:

> The growth-promoting effects of the financial system are an outgrowth of its capacity to carry out an intertemporal, interpersonal resource transfer, with such effects being contingent on its ability to overcome information- and incentive-related problems which are associated with this resource transfer.[53]

Commercial banks are particularly well suited to overcome information and incentive problems efficiently because they can organise the resource transfer not merely once and with a single borrower, but with respect to many borrowers, i.e. they can exploit economies of scale. However, if these economies of scale are to be tapped, it is essential that the process of overcoming the information- and incentive-related problems associated with the transfer of resources from the bank's depositors to the bank does not end up creating costs which offset, i.e. cancel out, this advantage. It was Diamond who demonstrated that this is not the case.[54] Given that his model greatly influenced the theory of financial intermediation, it makes sense to take a brief look at the idea which forms the core of the model.

4.2. The Diamond model of financial intermediation: Financial intermediaries as delegated monitors

The starting point for the analysis is a direct credit relationship between a borrower, an entrepreneur who wishes to carry out an investment project, and a lender, who wishes to, or is supposed to, finance the investment. Both parties, lender and borrower, are aware of the

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[52] The theoretical rationale for this empirical fact has been provided by Myers, S. C. and N.S. Majluf (1984), Corporate Financing and Investment Decisions When Firms Have Information that Investors Do Not Have, in: Journal of Financial Economics, Vol. 13, pp. 187 - 221.

[53] In this sense, helping to overcome or mitigate incentive problems due to asymmetric information (function f in the list enumerated by Merton and Bodie) is not one of the primary functions of the financial system. Rather, its ability to do this is the essential precondition which must be given if it is to be able to perform its primary function, that of carrying out the intertemporal and interpersonal resource transfer.

[54] See Diamond (1984).

expected return to the project and of the risk associated with it. The expected return is higher than the market return (R), whereby the risk includes the possibility of failure, i.e. the possibility of a return of zero. Since both parties are risk-neutral, the investment - or, as the case may be, the financing of the investment - is advantageous for both lender and borrower.

The financing problem results from the fact that the information on the return which the investment project will generate is distributed asymmetrically: While the borrower can observe the return directly, the lender will incur costs if it wishes to determine the return which has in fact been realised. This may induce the borrower to announce, on the repayment date, a return to the investment project which is lower than the one which was in fact achieved so as to minimise its payment obligations vis-à-vis the lender. Thus, the borrower exhibits moral hazard behaviour, i.e. it acts against the interests of the lender.

It is assumed that the borrower has no resources of its own which the lender can claim should a return be reported which is lower than the market return R. In this sense it is not possible for the borrower to signal to the lender by means of an appropriate equity participation or the provision of loan security that an identity of interests obtains between the two parties, i.e. that it will only report a return lower than R if the return generated by the investment in fact turns out to be less than R.

Diamond proposes two possible ways of solving the information and incentive problem:

a) Borrower and lender design a loan contract under which the borrower incurs non-pecuniary costs (NPK), e.g. a severe loss of reputation, if it reports a return which is lower than R. On the one hand, these non-pecuniary costs ensure that the borrower will only report the return as being lower than R if this is in fact the case. The information and incentive problem which was created by the asymmetrical distribution of information is solved in this way. On the other hand, the non-pecuniary costs represent deadweight costs for the borrower[55] because they are also incurred if the return is in fact lower than R - an outcome which can certainly occur, since it has been assumed that the investment project involves the risk of failure.

b) The lender monitors the borrower, i.e. bears costs equal to K.

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55 Jensen and Meckling speak of “residual loss”; see Jensen, M.C. and W.H. Meckling (1976), Theory of the Firm: Mangaerial Behavior, Agency Costs and Ownership Structure, in: Journal of Financial Economics, Vol. 3, pp. 305 - 360.

In the case of a direct credit relationship between a single lender and a single borrower, the decision rule is thus as follows: the monitoring costs (K) will be borne if they are less than the non-pecuniary costs of the contract in the absence of monitoring: K < NPK.

In Section 2, organisation of the process of pooling of economic resources and of that of subdividing shares in various enterprises was identified as one of the core functions of the financial system, on the one hand because this renders large-scale investments - which can be expected to exhibit a higher marginal productivity - possible, and, on the other, because it minimises the risk incurred by investors. This means that frequently many (m) investors will be involved, or will have to be involved, in the financing of an investment project. However, this leads to a corresponding decline in the attractiveness of the monitoring solution since monitoring costs equal to m*K are incurred.[56] For this reason, it makes sense to use the services of a financial intermediary in order to delegate monitoring to it, which makes it possible to bring the monitoring costs back down to K.

In order for this to be feasible, it must be possible to solve the information- and incentive-related problems that now arise between the financial intermediary/commercial bank and the lenders/the bank's depositors in such a way as to minimise the costs to which they give rise. Diamond calls these costs delegation costs (D) because it is the aim of the bank's depositors to delegate to the bank the task of monitoring the borrowers. It is advantageous to use the services of financial intermediaries if the sum of monitoring costs (K) and delegation costs (D) is less than the non-pecuniary costs which would be imposed on the final borrower or the monitoring costs of many lenders:

$$\mathbf{K+D \leq \min [NPK, m*K].}$$

Diamond shows that under certain conditions the delegation costs (D) will be very low. In order for this to be the case, the following prerequisites must be given:

- The financial intermediary must have concluded a deposit contract with the depositors in which the bank guarantees the depositors a return equal to the market return R. It must have bolstered the credibility of this return guarantee by designing the contract such that the bank

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[56] In addition, because a lender thinks that all other (m-1) lenders will also monitor the actual return, it may decide to become a free rider, i.e. cease monitoring. Since all lenders will think this way, a classic free rider problem is created.

incurs high non-pecuniary costs if it should be unable to meet its payment obligations to the depositors.

- The financial intermediary must finance a great many projects, and thus have a correspondingly well diversified portfolio.

If these prerequisites are given, the delegation costs incurred with the financial intermediary are zero because the high non-pecuniary costs represent an incentive for the bank to in fact monitor its borrowers. The idea here is analogous to that, on which the advantageousness of monitoring in a direct lender-borrower relationship is based: monitoring occurs if the non-pecuniary costs which are incurred if the reported return is less than R are greater than the monitoring costs. For this reason, depositors will conclude a deposit contract with the bank under which the non-pecuniary costs of a payment which is less than R exceed the bank's monitoring costs with respect to its borrowers. Thus, monitoring of the borrowers is in the bank's own interest, which means that the depositors can be sure that the bank will in fact monitor its borrowers.

In the case of a direct financing relationship between lender and borrower, the non-pecuniary costs represent an additional burden for the borrower (deadweight costs) since it must also bear these costs if the reportable return is in fact lower than the market return. As has already been noted, the probability of this outcome is relatively high in the case of a single investment project. But compared with the position of the lender in a direct financing relationship, the position of a bank gives it a decisive advantage: it can conclude loan contracts with many borrowers. Thus, to the extent that this gives the bank a well diversified portfolio, the probability that a bank will in fact not be able to pay R, and hence be forced unjustly to bear the non-pecuniary costs, is zero. The reason for this is that the average return on the investment projects of the monitored firms is - in accordance with the assumptions - greater than R, which means that if portfolios are sufficiently large and well diversified, a minimum portfolio return equal to R will in fact be achieved, provided the bank does in fact monitor the borrowers. However, this also implies that the bank never has to bear the high non-pecuniary costs, i.e. that they equal zero. As a result, compared with the direct relationship between one borrower and many (m) lenders, the bank continues to enjoy an economies-of-scale advantage with respect to monitoring costs ($K < m*K$), and does not incur any additional costs due to its role as borrower from its (m) lenders/depositors. Accordingly, commercial banks may be regarded as efficient institutions for the organisation of the intertemporal, interpersonal resource transfer in so far as the resolution of information- and incentive-related problems is concerned.

4.3 Banks as delegated monitors: Model and reality

The result achieved with Diamond's model points to new ways of explaining the positive correlation between financial system development and economic growth. In particular the correlation between the volume of lending by commercial banks - as opposed to central bank lending - and the average growth rate of real per capita income can now be explained: unlike central banks, which (are supposed to) fulfil monetary-policy functions, commercial banks perform monitoring tasks, which renders the efficient financing of productive investments feasible. For this reason, lending by commercial banks is a particularly appropriate measure of financial system development, which appears to exhibit a particulary close correlation with the growth rate of real income.[57] As regards the design of financial systems, the recommendation to economic policy makers which can be derived from the model is also straightforward: a financial system which relies on banks can support the growth process of economies.[58]

But this positive message of the Diamond model should not obscure the empirical fact that, particularly during the last fifteen to twenty years, there has been a pronounced increase in the number of bank failures and financial crises in both the industrial and the developing countries.[59] While macoeconomic and terms-of-trade shocks certainly contributed to the rise in the number of bank failures, it is equally clear that “poor banking” has been an important factor here: "In all the countries in the sample (Argentina, Chile, Malaysia, the Philippines, Spain, Thailand and Uruguay - A.W.) poor risk diversification, inadequate loan evaluation, and plain fraud were the main factors leading to financial institutions' liquidation or intervention."[60]

In view of this negative empirical evidence, it makes sense to bear in mind precisely what the Diamond model is: we should regard it as a model, a frame of reference. In other words, it is not a description of the reality of banks and banking. Rather, it “merely” describes conditions under which banks can solve information and incentive problems in an efficient manner, and thus

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57 Accordingly, this correlation forms the point of departure for models which integrate the new growth theory and the new theory of finance; see, for example, King, R.G. and R. Levine (1993), pp. 516 - 528.

58 A representative discussion of this point, focusing on the creation or reform of financial systems in the transition economies of Central and Eastern Europe, is found in Corbett, J. and C. Mayer (1991), Financial Reform in Eastern Europe: Progress with the wrong model, in: Oxford Review of Economic Policy, Vol. 7, No. 4, pp. 57 - 75.

59 See Caprio, G. and D. Klingebiel (1996), Caprio, G. (1997)

60 Sundararajan, V. and T.J.T. Balino (1991), Issues in Recent Banking Crises, in: Sundararajan, V. and T.J.T. Balino (eds.), Banking Crises: Cases and Issues, Washington DC, p. 16.

organise the interpersonal, intertemporal transfer of resources. As a result, the model is a very suitable instrument for arriving at an answer to the question of when a financial system will produce financial deepening of the type capable of contributing to increased economic growth.[61] The conditions which must be met in order for banks to solve information and incentive problems efficiently are as follows:

1. There must be no macroeconomic risks which could could cause the expected return on a diversified portfolio to be less than the market return R; the possibility of bank failures due to "economic acts of God"[62] is thus ruled out.

2. Banks must be able to monitor (and/or analyse) borrowers.

3. Banks must have diversified portfolios.

4. The non-pecuniary costs which would have to be borne by a bank if it failed must be so high that they provide a sufficient incentive to the bank to monitor its borrowers, i.e. to bear the monitoring costs which are associated with lending.

In addition to these conditions, the Diamond model also involves the assumption that the identity of interests between borrower and bank and between bank and lender can be created in only one of two ways: either by means of monitoring or via a contract which sets non-pecuniary costs for the respective borrower at a level which solves the incentive problem which results from the asymmetric distribution of information. For tractability reasons, other mechanisms for the solution of information and incentive problems are not considered.

There can be no doubt that these conditions are not met, and that this assumption is not valid, in the real world:

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61 The positive growth impacts of the financial system can be captured even if an economy is undergoing a financial crisis. The reason for this is that the crisis is usually accompanied by large-scale dislocations in the real economy which can be attributed, at least to some extent, to an inability on the part of the financial system to continue to perform its functions. For a classic discussion of this point, see Bernanke, B. (1983), Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression, in: American Economic Review, Vol. 73, pp. 257 - 276.

62 See Fetter, F. W. (1931), Monetary Inflation in Chile, International Finance Section of the Department of Economics and Social Institutions of Princeton University, Princeton; cited in: Caprio, G. (1997), p. 21.

- In the real world, macroeconomic risks exist which can negatively influence the creditworthiness of bank borrowers, measured in terms of their ability to earn, on average, the market return R. And because this is so, the ability of banks to meet their payment obligations with regard to their depositors is also reduced.[63] As has already been noted, macroeconomic shocks and adverse macroeconomic developments are an important cause of bank failures.

- There are many banks whose capabilities in the area of (analysis and) monitoring are insufficiently developed and whose portfolios are highly concentrated. The fact that the possibility of practices and policies of this type - i.e. “bad banking” - is ruled out in Diamond's model is, however, not an outgrowth of an ad hoc assumption. Rather, it follows from the model's inherent logic. And that logic stipulates that the non-pecuniary costs which banks must potentially bear when they mobilise deposits must always be assumed to be high enough so that the banks will either undertake the investments needed to acquire the requisite monitoring skills, or already possess such skills. The same incentive ensures that the banks will maintain adequately diversified portfolios.

- The comparison between the model and the real world yields a similar result if we look at the question of whether banks in fact wish to monitor. This problem comes up over and over in conjunction with agent or pocket banks and their connected lending activities, and here as well, Diamond sees the solution as being provided by the central characteristic of the deposit contract, i.e. the level of the non-pecuniary costs. Within the bounds of his model's inherent logic, he resolves this problem in a satisfactory manner, and thus there is no need to deal with it explicitly.

Summing up the results of the comparison, it is accurate to say that, apart from the problem of macroeconomic risks, it points to the overriding significance of non-pecuniary costs in the deposit contract. It is these costs which - assuming rational behaviour on the part of bank managers - cause them to pursue a policy in their asset-side (lending) business which in turn furnishes a satisfactory rationale for assuming the utility of financial intermediation where none existed before: the employment of an appropriate credit technology which is grounded in the principles of monitoring and diversification. Indeed, use of this credit technology creates a situation in which the bank does not have to bear the high non-pecuniary costs at all. In other

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63 Using the example of the financial crisis in the U.S. in 1982, B. Friedman highlights this connection; see Friedman, B. (1982), Comments and Discussion with regard to Carron, A.S., Financial Crises: Recent Experience in U.S. and International Markets, in: Brookings Papers on Economic Activity, Vol. 12, p. 419.

words, in the Diamond model the bank's depositors successfully exercise corporate governance functions vis-à-vis the bank's managers via the non-pecuniary costs: “It eliminates all moral hazard or bank failure risk.“[64]

If the disparity between the implications of the Diamond model - in which banks are efficient organisers of the intertemporal, interpersonal resource transfer in the presence of asymmetric information - and the empirical facts, which show bank failures to be almost a regular occurence - not just in developing and transition economies, but particularly in such economies[65] - turns out to be so pronounced, it must be due to one of two things:

- either the non-pecuniary costs in the real world are not high enough to cause the corporate-governance effect of the deposit contract to be sufficiently great to induce the banks to pursue a lending policy which gives rise to a stable banking system,

- or the non-pecuniary costs of the deposit contract are fundamentally incapable of causing corporate governance to be exercised to a sufficient degree.

If the latter is true, then this would mean that this mechanism for the creation of an identity of interests between the bank and its depositors must at least be supplemented by other mechanisms which serve to overcome the problem of asymmetric information. Empirical evidence shows that this is indeed the case.

5. Viewing financial development from the perspective of the economics of information

It is one of the characteristics of the theory of finance which is grounded in the economics of information that it has identifed a whole range of mechanisms which can create an identity of interests between the two parties to a financing relationship.[66] By far the most important, and most frequently used, option in the case of a borrower-bank relationship is the provision of

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64 Dewatripont, M. and J. Tirole (1996), The Prudential Regulation of Banks, Cambridge and London, p. 109.

65 Caprio speaks of a “boom in banking crises”; see Caprio, G. (1997), p. 2.

66 See, for example, Schmidt, R.H. (1981), Grundformen der Finanzierung - Eine Anwendung des neo-institutionalistischen Ansatzes der Finanzierungstheorie, in: Kredit und Kapital, Vol. 14, pp. 186 - 221.

suitable loan security[67] or, as the case may be, participation by the borrower in the financing of the investment project using its own funds. Even in developed financial systems, banks do not rely solely on their (credit-analysis and) monitoring skills, but also use other mechanisms which can overcome information and incentive problems.[68] In this sense, the way in which the Diamond model is used to describe the asset-side business of commercial banks is in need of modification.

In view of the empirical evidence, the Diamond model's depiction of the liability-side business of banks - in which neither the provision of security nor equity participations by the banks in their capacity as borrowers of funds from their depositors play any appreciable role - appears to be a more accurate representation of the reality of banking systems in the developed world. Indeed, the equity ratio of commercial banks is usually very low, and this turns out to be the most important difference between enterprises in the financial and non-financial sectors when one compares the liability side of firms' balance sheets.[69] This suggests that - at least in western countries, where bank failures, while observable, are not as widespread as in developing and transition economies - the non-pecuniary costs are sufficiently high to create an identity of interests between depositor and bank.

While the Diamond model correctly depicts the current reality of the liability-side operations of western banks, if we look at the history of the western banking system we see that the fit between model and reality was much less close in the past. Above all when the process of financial system development was just getting under way, the similarity between the the liability side of a balance sheet for a bank and that of a non-financial firm was much greater than one would suspect based given the pronounced difference observable today. Figure 1 depicts the evolution of the equity ratio of American banks during the period 1840-1989.[70] The data underscore that the ratio of equity to total assets was very high at the beginning of the process of financial system development, with the value showing a more or less steady decline once it began

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67 See Terberger, E. (1987), Der Kreditvertrag als Instrument zur Lösung von Anreizproblemen: Fremdfinanzierung als principal/agent-Beziehung, Heidelberg, p. 39.

68 The relative significance of loan security also increases with the efficiency of the legal system as a mechanism for the foreclosure and liquidation of collateral, and also in proportion to the costs of (credit analysis and) monitoring.

69 See Greenbaum, S.I. and A. V. Thakor (1995), Contemporary Financial Intermediation, Fort Worth et al., p. 49.

70 The figure is taken from: The Department of the Treasury (1991), Modernizing the Financial System, Washington DC.

to fall. A similar evolution can be observed if one looks at the historical data on the share of equity capital in the balance sheet total of German commercial banks.[71]

Fig.1: **Equity as a percent of assets for all insured U.S. commercial banks, 1840 - 1989**

Evidently, none of today's highly developed banking systems - and thus no bank - started out as a "Diamond bank" which was established by many (m) lenders/depositors as an instrument of delegated monitoring. Thus, this empirical fact regarding the foundation and evolution of banking systems and banks can only be interpreted to mean that, at this early stage of financial system development, it was not possible to exercise corporate governance by means of correspondingly high non-pecuniary costs in the framework of a deposit contract. Rather, the banks' owners had to exercise the corporate governance function. In other words, they had to show, first of all,

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[71] In 1872, equity capital accounted for 45% of the balance sheet total of the German banking system. By 1900 this share had fallen to 34%, and in 1927 it stood at only 10%. By 1960 the value had declined to 5%. See Stützel, W. (1964), Bankpolitik heute und morgen, Frankfurt, p. 46

- that they were able, by utilising mechanisms for the resolution of incentive and information problems, to organise an intertemporal, interpersonal resource transfer and to build up a diversified portfolio,

- and that they were able to supply a sufficient amount of equity capital to set the development process of a bank in motion and signal to potential depositors that they would act in accordance with the interests of the latter in their asset-side business.[72]

Thus, if we wish to understand how a (bank-based) financial system develops, we must initially abandon the notion of a financial intermediary as it is described by Diamond. Only if we do this will we be able to recognise the true nature of the problems posed by the development of financial intermediaries.[73] For if we assume - in line with the empirical evidence - that the characteristics of the deposit contract will not be sufficient to overcome the incentive problems that exist between a bank's depositors and the bank, the order of importance and the (temporal) sequence of the development of assets-side (lending) and liability-side (deposit) operations by banks is the reverse of what we find in Diamond's model. While the Diamond model suggests[74] that the impetus for the process of the foundation and development of banks came from the liability side, due to the fact that many lenders wished to minimise monitoring costs, the empirical evidence suggests that it was a successful asset-side business which fuelled the development of financial systems. The reason for the formulation of this differing view is that in the Diamond model it is not necessary to ask how, and under what conditions, asset-side business can be successfully conducted. Rather, in Diamond's model the incentive-compatible funding of asset-side operations is seen as the central problem of financial intermediation. However, the empirical evidence on the development of financial systems shows that the successful execution of asset-side transactions is the central problem, and that it is not until later

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72 "The organisers' willingness to invest in their firm's equity serves as a signal of the quality of the firm's information and the assets selected on the basis of this information." Leland, H.E. and D.H. Pyle (1977), Informational Asymmetries, Financial Structure and Financial Intermediation, in: The Journal of Finance, Vol. 32, p. 384.

73 If, on the other hand, the Diamond model is used as a blueprint for new financial intermediaries, or for ones which are still in the early stages of their development, the implications for economic policy are very straightforward: as regards the creation and development of financial intermediaries, policy-makers must adopt a "laissez faire" approach like the one recommended in the New Development Finance literature of the 1970s; on this point see Gertler, M. (1988), Financial Structure and Economic Activity, in: Journal of Money, Credit and Banking, Vol. 20, p. 577.

74 It should be noted that use of the term "suggests" is justified only in conjunction with the question "How does a financial system develop?" Since Diamond does not even ask this question, use of the term "suggests" should not, and in fact must not, be understood as a form of criticism of the model.

- not until after this problem has been solved - that the incentive-compatible expansion of the pool of resources availble to fund lending - becomes the focus of attention.

Historically, the evolution of the banking systems of advanced industrial countries - which developed in the private sector of those countries' economies - exhibits the following characteristics:[75]

- Banks were founded by firms or private individuals whose successful business operations in the framework of their non-financial enterprises had enabled them to accumulate an appreciable amount of capital, which they then, as the owners of financial institutions, made available to other firms via those institutions.

- The newly founded banks concentrated initially on asset-side transactions with non-financial firms

  - with whose activities they were quite familiar due to their own previous experience in the real economy (i.e. the newly established banks already had the requisite credit-analysis and monitoring skills, and they also knew that an effective demand for external financing existed), and

  - whose activities could be financed without incurring very high costs for analysis and monitoring.

  This is the why firms often entered the banking business via the provision of short-term trade credits,[76] and why newly created banks limited their activities to a specific region,[77] and why,

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75 See Neal, L. (1987), Development of Financial Institutions, in: Eatwell, J.; Milgate, M. and P. Newman (eds.), The New Palgrave: A Dictionary in Economics, Vol. I, A - D, p. 659 - 662. The description of the development of the German financial and banking sysem, which is cited as an illustrative example, is based on Tilly, R. (1967), Germany, 1815 - 1870, in: Cameron, R. (ed.), Banking in the Early Stages of Industrialization, New York et. al., pp. 151 - 182; Feldenkirchen, W. (1982), Kölner Banken und die Entwicklung des Ruhrgebiets, in: Zeitschrift für Unternehmensgeschichte, pp. 81 - 106; and Hauswald, R.B.H. (1995), On the Origins of Universal Banking: An Analysis of the German Banking Sector 1848 to 1910, Stanford University, mimeo.

76 The empirical evidence shows that major bank failures in early German financial history were often attributable to the fact that the banks involved did not adhere to these principles, but rather lent to unknown industrial firms which were difficult to analyse and monitor - e.g. the “Bank für Handel und Industrie zu Darmstadt” or the “Schaaffhausener Bankverein”. See Tilly, R. (1967), p. 162 und Feldenkirchen, W. (1982), p. 89.

77 See Feldenkirchen, W. (1982), p. 90; Hauswald, R.B.H. (1995), p. 8.

at least in the initial years of their development, they usually had highly concentrated portfolios.[78]

- During the initial years of their business operations, the increase in banks' total assets was funded almost exclusively by retained earnings. External financing of banks via deposits played hardly any role at all, and demand deposits in particular were scarcely utilised as a source of funds.

- The expansion of the financial system correlated with the increase in the number of options available for securing loans.

For this reason, financial intermediaries should be seen as firms which, at least in the early stages of their development, do not differ significantly from non-financial firms with regard to either the asset or liabillity side of their balance sheets. In so far as the activities on the asset side of the balance sheet of financial intermediaries are concerned, this has the following implications:

(1) Financial intermediaries provide a specific product: the efficient organisation of external financing, i.e. the efficient organisation of the intertemporal, interpersonal transfer of resources.[79] This presupposes that information and incentive problems are overcome by the employment of a certain financial technology,[80] i.e. the utilisation of the mechanisms described above.

(2) The provision of this product necessiates investments: intermediaries must first acquire screening and monitoring capabilites. These investments have to be financed.

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78 That this transition period is necessary can be seen from the development of the German banking system: "The portfolios held by German banks in the late nineteenth century seem to have been quite risky. ... Indeed, quite a few of the banks went under, so the risks did affect the banks' depositors as well. Given this observation, the analysis of banking and financial intermediation must go beyond Diamond and study again the relation between banks and their depositors under conditions that involve a non-negligible probablility of bank failure." Hellwig, M. (1990), Banking, financial intermediation and corporate finance, in: Givannini, A. and C. Mayer (eds.), European financial integration, Cambridge, New York, p. 49

79 "A bank can be simply thought of as a firm whose activity is to make loans." Stiglitz J.E. (1992), Explaining Growth: Competition and Finance, Paper prepared for Villa Mondragone International Economic Seminar on “Differences in the Rates of Growth: Globalization or Regionalization of the Processes of Endogenous Growth, Rome, p. 40.

80 Calomiris specifically uses the term "financial technology" in this connection; vgl. Calomiris, C.W. (1993), Financial Factors in the Great Depression, in: Journal of Economic Perspectives, Vol. 7, No. 2, p. 70.

(3) Financial intermediaries only undertake these investments if they are regarded as profitable, i.e. there must be an effective demand for this product.

As regards its liability-side business, this perspective implies that, over the short-to-medium term, a bank cannot assume that it will be able to fund its operations by attracting deposits which are contractually safeguarded by means of correspondingly high non-pecuniary costs which are incurred in case the bank should fail. The reason for this is that, in its asset-side business, the bank does not yet fulfil the conditions (ability to monitor, and demonstrated intention to monitor; diversified portfolio) which would render funding of this type possible. This is why, due to the information and incentive problems involved, financial intermediaries must pass through the same stages of development as non-financial firms. Thus, the description of this process of development given by Gertler and Rose for a non-financial firm provides an apt characterisation of the evolution of a bank, as well:

When the bank starts up, it has a low net worth for two basic reasons: Its financial resources and collaterizable assets are limited, and its horizon is - due to its limited experience in monitoring and its by definition highly concentrated portfolio - unsure. The cost of external finance is high, accordingly. The bank relies heavily on internal funds to finance investments. Over time it accumulates financial assets. By establishing a track record and gaining experience, it raises the market's assessment of its survival probability. The resulting rise in net worth makes obtaining external finance feasible. The likely first candidate is credit from depositors, who have intimate knowledge about the quality of the bank’s lending activities, since net worth is probably still insufficient to eliminate gains from evaluation and monitoring. As the bank grows further and establishes a more certain horizon, it may eventually reach the point where net worth is sufficient to obtain direct deposits from the public, acting as delegated monitor via a deposit contact which implies large non-pecuniary costs in the event of failure.[81]

This gives us a stylised picture of the phased, endogenous development of a financial system which has been derived on the basis of the new theory of finance (see Chart 1).

During the first phase, which we shall call the accumulation phase, non-financial firms finance their activities primarily via retained profits, i.e. they accumulate capital internally. On the one hand, this capital structure serves as evidence that they exhibit an effective demand for external financing provided by financial intermediaries. On the other hand, a not insignificant share of these financial intermediaries will be founded by firms which operate successfully in the product

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[81] See Gertler, M. and A. Rose (1994), p. 32

markets, the reason for this being that - once the prerequisites for the provision of external financing under the conditions of asymmetrically distributed information are given - an investment in financial intermediation is profitable.

Chart 1: **Stylised depiction of endogenous financial system development**

Accumulation phase:

Non-financial firms finance their operations via retained profits, thus building up equity capital. Some of these firms found the first financial intermediaries.

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Probation phase:

Financial intermediaries begin to lend. Because their monitoring capabilities are still very limited and their portfolios are still very concentrated, lending must be funded primarily with own resources.

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Expansion phase:

The quality of the financial intermediaries' monitoring skills increases; their accumulated loan portfolios are increasingly diversified. For this reason, the most highly developed institutions begin to mobilise deposits.

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Mature phase:

Financial intermediares develop into “Diamond banks”.

During the second stage of development, which we shall call the “probation phase”, lending by financial intermediaries to firms begins. Because the financial intermediares can themselves do little or nothing that would enable a potential creditor to overcome information and incentive problems (collateral, participation using own funds on a sufficient scale), thus creating an identity of interests between creditor and debtor, initially the intermediaries must finance their

operations exclusively via retained profits. Attracting deposits is either not possible at all, or feasible on only a very limited scale and under very specific conditions.[82]

During the expansion phase, those financial intermediares which are best at supplying the product “provision of credit” extend the scope of their activities. As they do so, funding constraints are increasingly eliminated because the intermediaries increased their capital during the probation phase, which in turn makes it easier for them to attract additional resources. During the final phase, the mature phase, this occurs in the form described by Diamond, i.e. via the standard debt contract for the mobilisation of deposits.

6. Financial development and corporate governance

6.1 Corporate governance via banking regulation and banking supervision

The stylised picture of an endogenous process of financial system development, which was derived from the empirical evidence on financial system development in the western industrial countries as viewed from the perspective of the economics of information, may be seen as a renewed attempt to define an appropriate frame of reference - this time for determining how financial systems should develop. Although the example of western industrial countries played an important role in the delineation of this framework, it cannot be regarded as a description of how the process of historical development actually unfolded. Indeed, even in those countries which today have the most advanced financial systems, the evolution of those systems was anything but smooth.[83] On the contrary: in the final analysis, financial crises were what prompted economic

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82 As has already been noted, the substance of these conditions can be summed up with the help of the technical term “interdependent utility function”: such an interdependent utility function, i.e. an identity of interests, must already exist between the creditor and the debtor prior to the initiation of the financing relationship. This is, for example, often the case within a family, and this is why funds obtained from family members often account for a considerable share of the external financing provided to economic agents. This also applies to business start-ups and to firms during the first few years of their existence. For a representative discussion of this phenomenon, see Pierenkemper, T. (1990), Zur Finanzierung von industriellen Unternehmensgründungen im 19. Jahrhundert - mit einigen Bemerkungen über die Bedeutung der Familie, in: Petzina, D. (ed.), Zur Geschichte der Unternehmensfinanzierung, Berlin, pp. 69 - 97. Thus, Krupp had been in business for 24 years before it received its first bank loan; up until then the “external” financing received by the firm had come almost exclusively from family members.

83 See, for example, Mishkin (1991).

policy-makers to intervene in financial system development with a view to regulating the activities of intermediaries.[84]

Certainly since the Great Depression, and most likely before then as well, the search for answers to the question of how the process of financial system development can be shaped so as to minimise the probability of crises has provided economic theory with one of its main areas of inquiry, and defined one of the principal areas of activity for economic policy.[85] The smooth development observed in the 1950s and '60s suggested that the right answers to this question had been found, and thus the interest of researchers in this area declined and other issues came to dominate economic-policy debates. Over the last twenty years, though, financial system development has been characterised by an increasing degree of instability in both industrial and developing countries,[86] and with the initiation of the economic transition process in the former communist countries the problem of wholly inadequate financial sector development in Central and Eastern Europe has been highlighted.[87] And this has meant that the issue of financial sector policy design has once again been given a very high priority by both economic policy makers and those who engage in research on the theory of economic policy.[88]

Although recent crises, and crisis-like developments, in industrial countries and the financial sector crises in developing and transition countries have certain common features, it appears

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84 The establishment of central banks was presumably the most important intervention; see Friedman, B. M. (1990), Implications of Corporate Indebtedness for Monetary Policy, Washington DC, mineo, p. 28. For an explanation of the existence of central banks as counterparts to commercial banks which has been derived from the economics of information, see Goodhart, C.A.E. (1987), Why Do Banks Need a Central Bank?, in: Oxford Economic Papers, Vol. 39, pp. 75 - 89.

85 See, for example, Milton Friedman's plan to introduce a 100% minimum reserve requirement; see Friedman, M. (1948), A Monetary and Fiscal Framework for Economic Stability, in: American Economic Review, Vol. 37, pp. 245 - 264. It is hardly surprising that, shortly after the Great Depression, neither the proponents of neoclassical/monetary macroeconomics nor those who followed Keynes advocated a broad-based liberalisation of the financial system

86 For a concise overview of the relevant events and trends - as regards developing countries - see The World Bank (1989), World Development Report 1989, Washington, DC; as well as - with respect to industrial countries - Bank for International Settlements (1992), Annual Report, Basle.

87 At the beginning of the transition process, Bruno spoke simply of a “missing financial infrastructure”; see Bruno, M. (1993), Stabilization and the macroeconomics of transition - How different is Eastern Europe?, in: Economics of Transition, Vol. 1, p. 13.

88 In conjuction with the process of reform in Central and Eastern Europe, financial sector policy falls in the category of “second-generation transition issues”; see The World Bank (1995), World Bank Discussion on Second Generation Transion Issues, in: Transition, The Newsletter about Reforming Economies, Vol. 6, Nos. 5-6, pp. 1-6, and IMF (1996), World Economic Outlook, Washington, DC, pp. 78 - 97.

advisable to differentiate between the industrial countries on the one hand, and the developing and transition economies on the other: For one thing, industrial countries incurred substantially lower costs (in terms of output declines and the implicit fiscal costs of restoring the solvency of the financial system) as a result of crisis-like developments than developing countries have.[89] For another, the macroeconomic and institutional parameters that are involved and which shape the environment in which policies for the resolution and avoidance of crises can be formulated, are totally different.[90] Finally, the level of development of financial systems in the industrial countries and that of many developing and transition countries is very different. Indeed, many countries which fall into the latter category still find themselves in one of the first two phases of financial system development, due either to the historical legacy of earlier forms of economic, political and social organisation, which has until recently precluded a process of financial system development (transition countries), or to the fact that the process of development was "derailed" at a relatively early stage and failed to pass successfully through even the first or second phase (developing countries).

Thus, in 1994, of the 38 low-income economies for which the relevant data are available, 15 exhibited a broad money/GDP ratio of 20% or less.[91] In 1980, 14 countries in the low-income category - out of 35 - had not achieved a broad money/GDP ratio of more than 20%. Of these 14 countries, only one - Bangladesh - was able to make significant progress in terms of quantitative financial system development, while in the case of four countries this financial development indicator in fact declined.[92] By comparison, of the twenty high-income economies for which the World Bank publishes values for this indicator, Israel was the only one for which a level of less than 40% was reported. Over the period 1980-1994, every high-income country with the exception of Sweden was able to increase this indicator, in some cases by a significant amount.

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89 See Caprio, G. (1997).

90 See Mishkin, F. S. (1996), Understanding Financial Crises: A Developing Country Perspective, The World Bank, Washington, DC.

91 In 1995, less advanced transition countries exhibited a broad money/GDP ratio of 16.8%; see IMF (1996), World Economic Outlook, October, Washington, DC, p. 96.

92 See The World Bank (1996), From Plan to Market, World Development Report 1996, Washington, DC, p. 190/191. Of the middle and upper-middle economies, 13 were able to achieve a significant increase in financial depth, i.e. a rise of more than 10 percentage points, during this period. This group of countries includes all of the Asian and Gulf countries which are listed in the table.

Consequently, many economies are still at a point in their evolution where the process of financial system development must, for all practical purposes, start from the very beginning. And this means that one must ask what would be the appropriate financial sector policy for such economies, i.e. one which can ensure that this process, once it gets underway, does not come to a standstill again. In other words, “the 'quality' of financial sector reform matters.”[93]

At present, the debate over ways and means of enhancing the quality of financial sector reform is largely dominated by the notion that, while the policy of financial system liberalisation that was implemented, and which was inspired by the financial development literature, was correct, it must now be supplemented by measures giving greater emphasis to banking regulation and supervision. There are two main arguments that may be advanced to make the case for placing greater emphasis on banking supervision and regulation so as to ensure that the financial systems in developing and transition economies evolve in such a way that their develoment will produce positive growth effects:

1. Compared with the western industrial countries, banking supervision and regulation are underdeveloped in many developing and transition countries: the banking supervisory regime is less strict, and the measures taken to monitor, implement and enforce the existing regulations are less rigorous than in western countries. Moreover, banking supervisory agencies are understaffed and personnel are not as well qualified as their western counterparts, and they have also not been provided with the technical means needed to monitor banks effectively.

2. Banking supervision and regulation have the task exercising, for and on behalf of the banks' depositors, the corporate governance function with respect to bank managers, i.e. to perform a “monitoring service in screening, auditing, covenant writing, and intervention activities that depositors are unable or unwilling to do for themselves. From this perspective the goal of regulation is to provide active representation for depositors.”[94]

As a result, banking supervision and regulation should be designed, and implemented by the responsible agencies, in such a way that

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93 Johnston, R.B. and C. Pazarbasioglu (1995), p. i.

94 Dewatripont, M. and J. Tirole (1994), p. 6.

- the content and the effect of the non-pecuniary costs of the deposit contract presupposed by Diamond in his intermediation model are imitated, e.g.in the form of licence revocation or by means of other sanctions; that

- other mechanisms which serve to overcome the information and incentive problems in the bank-depositor relationship are incorporated to supplement the non-pecuniary costs, e.g. via a minimum capital ratio; and that

- lending guidelines - e.g. on large-scale loans - are in force which imply the adoption and implementation of a credit policy that will limit moral hazard in banking through diversification.

It is evident that if this recommendation, which aims to ensure a satisfactory course of financial system development in developing and transition economies, is followed, banking supervision and regulation will play a key role in producing the desired outcome. In this connection, two questions must be posed[95]:

1. Are conditions in developing and transition economies such that the same banking supervisory and regulatory standards can - and should - be applied as are employed in western financial systems?

2. In view of the broad parameters of economic and financial development which obtain in developing and transition economies, are banking supervision and regulation in fact capable of playing this key role?

The stylised picture which was devised to serve as a frame of reference for financial system development suggests that the first question must be answered in the negative. In particular, the minimum capital ratio[96] should be set much higher than in western industrial countries, and it should be made contingent on two factors:

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95 The following discussion draws heavily on Caprio, G. (1997), and on personal experience acquired by the author, who in recent years has served as a consultant to various development agencies, both national and international financial institutions.

96 The emphasis is on “ratio”: minimum equity capital requirements which prescribe an absolute volume of capital are less suitable because in borderline cases they serve merely to erect a quantitive barrier to entry to the banking market, but do not permit qualitative regulation. Accordingly, the absolute minimum should be set solely with a view to ensuring that the number of banks does not rise to a level so high that it exceeds the monitoring capacity of the banking supervisory authority. However, if the capital ratio is sufficiently high,

- How long has the bank been operating under the current ownership structure and with its current management, and reporting positive results?

- How diversified is the bank's portfolio?

Here again, the Diamond model forms the theoretical background for both criteria. The first criterion seeks to address the corporate governance problem and is based on the notion that every new bank, and every significant change in the ownership structure and in the composition of management, poses the question of whether, and to what extent, the existing corporate governance structures are sufficient to prevent technical and moral mismanagement.[97] The second criterion focuses on the decisive prerequisite for ensuring that the bank's asset-side business is such that it is prudent to mobilise deposits: the diversification of the portfolio.[98]

While it is still possible to derive the answer to the first question largely from theoretical insights, answering the second question poses a primarily empirical problem, i.e. one must regard every country as a separate case and pose this question individually for each one. There are, however, criteria which have been derived from economic and politico-economic considerations which can provide an indication of whether the question should be answered in the affirmative or in the negative in a specific case. These criteria are as follows:[99]

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e.g. 50% during the first two years of a bank's operation, the required monitoring effort will probably be small.

97 See De Juan, A. (1991), From Good Bankers to Bad Bankers, Ineffective Supervision and Management Deterioration as Major Elements in Banking Crises, EDI working paper, The World Bank, Washington, DC, p. 3.

98 Seen against this background, the problem of connected lending also becomes much less acute. Based on empirical evidence, connected lending is often considered to be one of the main causes of bank failures in developing and transition countries. On the other hand, though, the historical development of the financial systems of the western industrial countries shows that, when they first started operating, banks usually granted loans to firms with which they were connected, and in the case of Germany the banks initially lent to firms they themselves had founded**.** Thus, the question of whether connected lending promotes or impedes financial system development can only be answered if we consider the way in which such lending is funded: if connected lending is funded with deposits explicitly or implicitly guaranteed by the state, i.e. if no corporate governance is exercised, we will hardly find it surprising that such loans are not granted using a credit technology based on analysis and monitoring. If, on the other hand, these loans are funded with the bank's own resources, i.e. the capital of the bank's owners, just the opposite will presumably be true: due to its close ties to the borrowing firms, the bank will be in a position to analyse and monitor them very well and very easily. However, an even more important point with regard to this case is that, even if this assumption is incorrect, connected lending will not generate or contribute to financial crises because uninformed depositors who are incapable of exercising the corporate governance function are not affected.

99 See, once again, Caprio, G. (1997).

- concentration of wealth, income, and ownership of non-financial and financial firms in a given country;

- presence, and effective functioning, of checks and balances in the state apparatus and in the government.

A highly concentrated wealth, income and ownership structure and/or a rather undemocratic government which is subject to one-sided political pressures, and which, for its part, “passes on” such pressure to the government agencies, would suggest that the question of whether the banking supervisory and/or regulatory institutions are able to fulfil their function of depositor representation must be seen not only as a question of the quality of the staff training, of technical resources, and of the nature of the accounting and legal frameworks. In other words, the fact that the corporate governance function has been transferred to the banking supervisory authority will only prove to be a sign that financial system development is proceeding along a sounder, more beneficial path if the socio-economic and political power structures in a given country are such that the banking supervisory agency is in fact able to perform this function.

6.2 Building sound corporate governance structures for banks: The narrow bank proposal

The scepticism regarding the ability of the banking supervisory authority to assume the corporate governance function has led to McKinnon's recommendation[100] that - with one exception - financial system development in transition and developing countries should be forced to conform to the pattern of the frame of reference derived above. McKinnon proceeds from the following assumptions regarding the state of the financial system and the scope for the exercise of corporate governance:

- the banks exhibit strong technical deficiencies in terms of the design of asset-side operations;

- given the output losses which regularly accompany financial crises, and taking into account politico-economic considerations, it appears unrealistic to assume that, in the event of bank failures or of a general financial crisis, the depositors would participate in the losses. Thus, de

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[100] See McKinnon, R.I. (1992), The Order of Economic Liberalization, Financial Control in the Transition to a Market Economy, Baltimore and London. McKinnon's proposal regarding the course of financial system development is part of a general strategy for converting an economy - whether in a transition or developing country - into a market economy which also takes into account macroeconomic aspects and issues of structural policy.

facto, the state bears the risk, either explicitly - via the organisation of deposit insurance - or implicitly - via the government budget.[101] Accordingly, even if it were possible to design deposit contracts with high non-pecuniary costs in the event of bank failure, it is unlikely that banks and depositors would conclude such contracts since both sides would have no incentive to do so.

- The banks which collect deposits are not subject to corporate governance to a sufficient degree, due not least to the structure of their liabilities, which consist in large part of deposits. Since these are explicitly or implicitly guaranteed by the state, and given inefficient and lax banking supervision and regulation, the banks have no incentive to invest in, and then utilise, credit technologies and lending policies which preclude an unstable course of development.

Given that

- the banks already have deposits, and thus that in the process of financial sector development the third step was, as it were, taken before the first one, and that

- the collection of deposits from the private sector, whether from private households or from firms, may, in itself, be regarded as a desirable, growth-promoting strategy because it offers investors a relatively efficient means of self-financing larger, and thus more productive, investments via the internal accumulation of financial assets,[102]

McKinnon makes a “narrow bank proposal” to the effect that banks which collect deposits from the public should be prohibited from undertaking asset-side transactions with the private sector, i.e. that these banks should only be allowed to acquire government debt instruments or deposit funds at the central bank. The theoretical background of this recommendation is clear: banks

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[101] Given that the sources of revenue available to fund the government budget are usually not sufficient for this purpose, responsibility for dealing with the problem is, de facto, delegated to the central bank, which, via an inflationary monetary policy which erodes the real value of the deposits, ends up saddling the depositors with the losses in real terms after all. See Caprio, G. (1997) and Winkler, A. (1996), Macroeconomic Stabilisation in Transition Economies - The Relevance of Financial System Development, IGS Discussion Paper 15, Birmingham.

[102] This is the core of the complimentarity hypothesis between money and capital developed in 1973 by McKinnon; see McKinnon, R.I. (1973).

whose corporate governance structure is inadequate may only engage in types of asset-side business in which the possibility of moral hazard can be ruled out.[103]

McKinnon is willling to accept the disadvantages of this limitation, specifically the fact that during this phase firms can only make use of internal financing or endeavour to obtain external financing from the nonbank capital market. The reason for his willingness to accept its drawbacks is, first, that this constraint to which firms would then be subject - the limitation of their financing options to internal forms of financing - should not necessarily be seen as a bad thing, or be seen exclusively as an impediment, because it forces the firms to work under a hard budget constraint, namely that of the product market.[104] And second, this constraint is, at least during the first phase of development, not as much of an obstacle to growth as it might appear. Third, and this is the most important argument that can be cited in favour of McKinnon's approach, it enables institutions to establish themselves within the nonbank capital market which exhibit a suitable corporate governance structure. Because they grant loans or undertake equity capital participations using own resources, they will be subject to the risk of moral hazard in lending to a much lesser degree than banks whose deposits are explicitly or implicitly guaranteed by the state. The probability that the principles of monitoring and diversification will be observed is much greater.

In a second step - according to McKinnon - this nonbank capital market gives rise to financing instruments and/or financial institutions, with the latter differing from banks as regards their liability-side business in so far as their liabilities do not represent money, i.e. they would not be covered by an explicit or implicit government guarantee.[105] After a few years, these institutions could apply for a banking licence; in order to ensure the security of their deposits, the scope of the new banks' asset-site operations should, initially, continue to be quite narrow - specifically, it should be confined to limited and collateralised short-term lending.

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[103] Thus, in principle this is a new, modified version of Friedman's 100% minimum reserve plan whose rationale McKinnon derives not only from the inherent logic of financial system development but also from macroeconomic as well as fiscal- and monetary-policy considerations.

[104] „Though preliminary, the evidence suggests that forcing enterprises to rely heavily on internal finance by imposing hard budget constraints and tight credit policies early in the transition can lay the foundation for a recovery in fixed investment. ... However, soft budget constraints and inflationary credit policies can obscure the ability of an enterprise to survive in a market-oriented economy and limit its eventual access to external finance for investment“ EBRD (1994), Transition Report, London, p. 55 and 57.

[105] Seen from the perspective of the approach which relies on the efficacy of a sound banking supervisory and regulatory regime, McKinnon's proposal thus implies that institutions which grant loans to private firms would initially have to have an equity ratio of 100% or, to put it in somewhat less drastic terms, they would initially be prohibited from accepting deposits from the public.

McKinnon's proposal met with only a limited response, not least because it has rather radical implications.[106] After all, in essence McKinnon is saying that, at least temporarily, a prohibition of financial intermediation in the classic sense - that of banks mobilising savings mainly from private households in order to channel them to productive enterprises - is necessary in order to permit institutions to grow which have demonstrated that they are in fact capable of performing this intermediation.[107] It remains necessary for an even longer period to forgo characteristics of financial intermediation which, in themselves, would be desirable, e.g. long-term lending to finance investment.[108] While the empirical evidence shows that more long-term finance tends to be associated with higher productivity of firms and investment, the data shows that this will only be true if the availability of more long-term finance is a result of endogenous financial system development. Artificial long-term lending induced by government subsidies in the form of cheap funding will not serve to increase the ability of firms to grow faster. In some cases subsidised long-term loans were even associated with lower productivity. Thus, one can only conclude - and McKinnon would certainly concur - that "institutional differences between developed and developing country financial markets, such as the adequacy of banking and stock markets and the legal infrastructure, are important in affecting the supply of term credit and can be changed, though not overnight."[109]

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106 Cornelli, Portes and Schaffer speak, for example, of "unnecessarily extreme responses" to the weaknesses of the banking systems in the countries of Central and Eastern Europe; Cornelli, F.; Portes, R. and M.E. Schaffer (1996), The Capital Structure of Firms in Central and Eastern Europe, Discussion Paper No. 1392, Centre for Economic Policy Research, London, p. 10. In the view of Caprio and Levine, implementing McKinnon's proposal would, as it were, involve a certain risk of "overkill" - the risk that there would, in the end, be too much of a good thing (self-finance and equity at the level of the firm); see Caprio, G. and R. Levine (1994), Reforming Finance in Transitional Socialist Economies, in: The World Bank Reserach Observer, Vol. 9, pp. 1 - 24.

107 The - temporary - prohibition also precludes banks from playing a role in the excercise of corporate governance in firms because they themselves are largely ungoverned. McKinnon thus concludes that, initially, the state should not relinquish its ownership role in large enterprises because, as long as the financial system remains underdeveloped, only the state is capable of exercising the corporate governance function. This sceptical attitude vis-à-vis rapid privatisation of state enterprises - particularly in the transition economies - was also one of the reasons why, as regards liberalisation strategies, McKinnon's position remained a minority view. On this point, see, with regard to the countries of Central and Eastern Europe, Caprio, G. (1995), The role of financial intermediaries in transitional economies, in: Carnegie-Rochester Conference Series on Public Policy, Vol. 42, p. 278.

108 See Caprio, G. and A. Demirgüc-Kunt (1997), The Role of Long Term Finance: Theory and Evidence, Working paper No. 1746, The World Bank, Washington, DC.

109 Caprio, G. and A. Demirgüc-Kunt (1997), p. 25.

6.3 Building sound corporate governance structures for banks: The role of financial institution building

While McKinnon's proposal has certainly elicited differing responses, the empirical evidence in the transitional countries shows that in countries which have already made substantial progress towards achieving macroeconomic stabilisation, overcome financial crises, and/or carried out reforms in the area of banking supervision and regulation, the financial system turns out to be quite similar to what would one would have ended up with if McKinnon's recommendations had been followed: The banks focus almost exclusively on the acquisition of government debt instruments and - apart from a few exceptions - almost completely stop providing financing to firms.[110] Private micro, small and medium-sized enterprises must therefore rely almost exclusively on internal financing, and thus they exhibit a capital structure in which debt plays only a small role.[111]

As a result, the decisive question, at least in so far as the transitional economies are concerned, is not whether McKinnon's recommendation should be followed, but whether - as predicted by McKinnon - institutions will develop out of this situation which will extend the "frontier of finance" by incentive-compatible means, thereby initiating a sound process of financial system development. In the long run, and assuming all other relevant factors remain unaltered (the so-called *ceteris paribus* assumption), there is little reason to doubt that this will eventually happen. The really pressing question, though, is whether the respective institutions and economies will be able to take as much time to complete the processes involved here as the western industrial countries took to develop their financial systems. Since "in its essentials, these countries had a modern financial system by the beginning of this century",[112] and this development began in the 1840s,[113] financial system development in western industrialised countries took around 60 years

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110 See Borish, M.S. and M. Noel (1996), Private Sector Development During Transition - The Visegrad Countries, Discussion Paper No. 318, The World Bank, Washington, DC; Stremme, M. (1997), The Benefit of the Doubt, Russia's overall economic situation in summer 1997, Working Paper No. 16, Internationale Projekt Consult (IPC) GmbH, Frankfurt. Drawing on his experience as a consultant, the author can confirm that similar features have emerged in the financial systems of Albania and Armenia. In Georgia, due to the fact that treasury bills do not exist, the size of the consolidated balance sheet of the banking system is negligible (less than 6% of GDP).

111 See Cornelli, F.; Portes, R. and M.E. Schaffer (1996).

112 Galetovic, A. (1994), p. 8 (source cited is Goldsmith, R. (1985), Comparative National Balance Sheets, Chicago).

113 As regards Germany, Kindleberger concludes that, "Generally, (...) the banks of Germany remained primitive well into the nineteenth century." Kindleberger, C. (1993), A Financial History of Western Europe, New York^2, p. 118.

to complete. Thus, it is unlikely that we will simply be able to wait until an endogenous process of financial system development, which is induced exclusively by the presence, and benign effects of, a positive overall environment, runs its course. After all, it must be assumed that, in many countries, it will be a long time before this positive overall environment emerges, or, alternatively, that it will not begin to emerge until a sustainable growth process has been set in motion. Accordingly, we must endeavour to answer a question which is put to the international financial institutions and donors, e.g. by economic policy-makers in the relevant countries - namely, whether there are perhaps, after all, ways of accelerating this development process.

The answer to this question is Yes, provided the national and international financial institutions which would like to promote financial system development support an institution building process,[114] with support being provided at all levels that have been identified as being crucial for a satisfactory process of financial system development. Specifically, what is needed is

- technical assistance in order to enable lending to be organised in such a way as to ensure that appropriate credit-analysis and monitoring techniques are employed and that the principle of diversification is observed;[115]

- financial assistance in order to enable the process to be set in motion in such a way that it conforms to the basic pattern defined by the theory of financial system development as outlined above, i.e. in such a way that, at least during an initial phase, the instiution receiving support is able to operate without collecting deposits, during which time it demonstrates that it is capable of analysing and monitoring borrowers;

- corporate governance in order to ensure that the institution receiving support will be able to achieve the goal of being able to perform financial intermediation, and that it will be capable of fulfilling this function on a sustainable basis.

Up until now, the idea that the financial development process can be fostered through institution building has been looked at almost exclusively in conjunction with, and from the perspective of,

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114 See Krahnen, J.P. and Schmidt, R.H. (1994).

115 Referring to the situation in Central and Eastern Europe, Caprio states that "..., technical assistance from abroad also appears to have been quicker at delivery at the central-bank level but understandably lagging with respect to the more numerous commercial banks. Still, the assistance is beginning to arrive, suggesting that greater gains can be expected." Caprio, G. (1995), p. 270.

micro and small enterprise promotion.[116] This is understandable, given that the neglect of this target group - which in many developing countries comprises the bulk of the economically active population[117] - by the formal financial sector, which, as measured by the financial indicators enumerated above, will not necessarily be underdeveloped, represents a challenge not only in terms of social policy and broad equity concerns, but also from the standpoint of financial sector policy.[118] In countries in which the overall level of financial system development is, however, very low and/or growth in the real economy is generated almost exclusively by the activities of micro, small and medium-sized enterprises - e.g. in many of the reforming economies of Central and Eastern Europe[119] - institution building undertaken with the goal of offering appropriate financial services to small and medium-sized enterprises is conducive to the general process of financial system development.[120]

Moreover, the provision of support for the establishment of a target group-oriented financial institution - regardless of whether it is furnished in the context of an upscaling or downscaling approach[121] - would seem to be a particularly appropriate form of contributing to the general process of financial system development because this approach makes it possible to imitate the ideal-typical case of the development of a financial intermediary in an almost natural manner:

- adherence to the principle of diversification can be rapidly achieved due to the small loan amounts involved;

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116 See Schmidt, R.H. and C.P. Zeitinger (1994), Critical Issues in Small and Microbusiness Finance, Working Paper No. 1, Internationale Projekt Consult (IPC) GmbH, Frankfurt.

117 In Peru 48 per cent of the economically active population is employed in enterprises that provide work for four persons or less. See Lepp, A. (1996), Financial Products for MSEs - the municipal savings and loan bankers of Peru, in: Small Enterprise Development, Vol. 7, pp. 15-24.

118 See Von Pischke, J.D. (1991).

119 See Borish, M.S. and M. Noel (1996).

120 "..., reformers should keep in mind that the financial reforms desired in TEs [Transitional Economies] are in many respects more like financial development." Caprio, G. (1995), p. 294.

121 In essence, the upscaling approach entails creating a new institution whose goal is to be able to offer appropriate financial services to the target group. By contrast, the downscaling approach is geared to overcoming the reluctance of existing commercial banks to cater to the demand of the target group of micro, small and medium-sized enterprises by transferring to these banks a credit technology that reduces substantially the risk-related costs and transaction costs entailed in lending to this target group. Krahnen/Schmidt and Schmidt/Zeitinger use the terms "downgrading"und "upgrading".

- staff can be taught the requisite analysis and monitoring skills, both relatively easily and relatively quickly, at training workshops providing theoretical instruction and through on-the-job training, whereby this practical training plays a particularly important role;[122]

- the enterprises usually need short-term working capital loans to complement self-financed investments in fixed assets, the extent of which will be limited in any case;[123]

- given that the institution will often face no competition in this market, it can supplement and reinforce the incentive effects of collateral by employing the graduation principle: By initially granting relatively small, short-term credits, but then gradually increasing the volume and the maturity of loans, the institution establishes a strong incentive on the part of the borrowers to ensure their continued, long-term access to credit by meeting all of their obligations. Borrower and bank both grow and are involved in an interdependent process of development;

- only a relatively small amount of funding - which should be furnished by international or national financing institutions - need be provided in order to ascertain, during a test phase, whether the institution is benefiting from the technical assistance and successfully applying the know-how being transferred to it. Once the institution has demonstrated that it is successfully carrying out asset-side operations, this should serve as proof to the central bank (if the upscaling approach is being employed) and/or to clients in the private household sector (if the downscaling approach is being employed) that it is now permissible for the institution to seek actively to collect deposits, i.e. begin to carry out financial intermediation in the classic sense, assuming an analysis of the probable costs and benefits of deposit mobilisation has shown this to be a sound course of action.[124]

Here again, though, the decisive question is how one can best go about ensuring that the institution will exhibit a corporate governance structure capable of keeping it from drifting off into moral hazard banking - something that can happen even if its staff has received adequate training, it has the requisite technical capabilites and has been provided with sufficient financial resources. The international and national financial institutions can play an important role in this

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122 See Wallace, E. (1996), Financial institutional development - the case of the Russia Small Business Fund, in: Levitsky, J. (ed.), Small Business in Transition Economies, London, p. 77 and 83.

123 “Just like OECD countries, TEs need financing for trade and working capital, and it is difficult to find examples where the banking system does not dominate this activity.” Caprio, G. (1995), p. 290.

124 For a detailed discussion of this point, see Schmidt, R.H. and C.P. Zeitinger (1994), pp. 86ff.

context by influencing the bank's behaviour, consistently and over the long term, either by providing credit lines[125] or by acquiring an equity stake in the institution. How we answer the question of whether existing financial institutions

- have a satisfactory corporate governance structure, i.e. have so far not engaged in small-scale lending “merely” because they felt it would prove to be too risky and/or too costly (both of these reasons for not wishing to serve the target group can be eliminated, at least in part, by introducing an appropriate credit technology), or, if they do not, whether they

- at least have the potential to develop a corporate governance structure which would ensure the sustainability of their operations and commitment to the target group, assuming an involvement by the international financial institutions

is crucial for the decision as to whether a downscaling or an upscaling approach should be recommended in a given case. If the answer is No - to both parts of the question - then the upscaling approach, in which both governance structure and by-laws can in essence be designed from scratch - is preferable. These structures must then be put in place, and their proper operation in practice ensured, by the international financial institutions, either direcly - via an equity participation - or indirectly - through the provision of technical and financial assistance, with the provision of such assistance being made contingent, in so far as this is possible, on the provider being given a seat on the institution's supervisory board.

When attempting to answer this question, it is helpful to use the criteria set forth above, which, for their part, are intended to help one decide whether an effective banking supervisory agency can even be established in a given economy to serve as the representative of the depositors. For, in the final analysis, we are dealing with the same phenomenon here: institution building is not just a function of technical assistance, training and financial support. If these were the only factors involved, then the US$ 5 billion which Von Pischke reckons has been spent on projects aimed at improving the credit supply for small and micro enterprises[126] would certainly have had a greater impact.

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125 It becomes considerably easier to exercise the corporate governance function if the international financial institution - as, for example, in the case of the EBRD - is able to work directly with banks without any form of sovereign guarantee, “securing for itself the opportunity for direct communication with the partner banks, and for intervention in their operations.” Zeitinger, C.P. (1996), Micro-lending in the Russian Federation, in: Levitsky, J. (ed.), p. 93; for a similar assessment, see Wallace, E. (1996), p. 83.

126 Von Pischke, J.D. (1991), p. 65.

This brings us back to the starting point of the discussion, namely the Diamond model with its implicit emphasis on role of corporate governance: Financing is important, training is important, and the credit technology that is selected is important. But without structures and monitoring and control mechanisms which ensure that these three elements are brought together and adapted so that they can mesh in practice, they will not be sufficient to ensure sustainable success in institution building and financial development, an important element of any economic growth process.

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