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Impacts of the Asian Crisis on Developing Economies. The Need for Institutional Innovations

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Karl Wohlmuth

I. The Issues

The Asian Crisis has confronted the developing countries, the least developed countries, the emerging countries and also the transition countries with severe economic and social repercussions. Although also the developed market economies were confronted with the harsh effects of the Asian Crisis, nonetheless the effects on the other country groupings are more severe, and the policy changes needed are of greater scope and require more deliberations.

In this paper we discuss, *firstly,* some evidence on the impacts of the Asian crisis, and we also show that the impacts have to do with the unequal development between the productive system and the financial system, between technological innovations and financial innovations, that has caused the most severe repercussions. Related to this is the fact that international locational innovations as taking place by production relocations and direct investments in its various forms were affected by the Asian crisis. A bias towards debt finance in the international system and against equity finance at the national and the international level has caused and aggravated the problems associated with the Asian Crisis.

In the *second* part we go deeper to show that the National Innovation Systems (NISs) and the National Financial Systems (NFSs) have to be distinguished carefully so as to analyse the role of unequal development in the evolution of the Asian crisis. We will see that not only Schumpeter but also all the Neo-Schumpeterian schools look at the consequences of a paralleled or unparalleled development of money and finance on the one side and production and technology on the other side, but also at the role of the two systems and their interactions.

We would like to suggest and to give enough evidence for the hypothesis that most of the agenda for reform as proposed after the Asian Crisis as a cure for the national financial systems and the international financial architecture is one-sided and superficial, and that much more is needed to reform the financial systems in Asia and elsewhere. Part of this story is the acknowledgement that a modern and effective NFS has, first of all, to be related to the NIS, and secondly, a coherent NFS has to include not only regulatory regimes for the financial sector and its institutions, but also appropriate exchange rate and capital account liberalisation regimes so that financial innovations can follow and in cases also lead the technological innovations. The necessary institutional innovations at the national level are discussed.

In the *third* part of the paper we discuss the international institutional innovations needed to avoid in the future the huge costs for developing and transition countries in terms of lost output, foregone locational innovations, and the severe social repercussions of the currency and banking crises as observed since 1997. Although the phenomenon of the huge economic and social costs of banking and currency crises is well-known since a long time, only the new dimension of the Asian Crisis as a *global crisis* has led to the presentation and discussion of so many international plans to reform the international financial architecture. The debate on the relevance of the *grand* plans for the reform of the international financial system continues so as to avoid a similar global crisis in the future, but none of these *grand* schemes for reform has in the foreseeable future any chance for realisation. More disturbing is the fact that the main issue in the debate is neglected, the imbalance between debt finance and equity finance at the international level, an imbalance that reinforces the unequal development of financial and production systems at the national level.

The important issue of how to overcome the global imbalances between debt finance and equity finance had been discussed so far only in the context of *good* national economic policies. According to this view, a developing or transition country has the choice to attract direct investment and equity finance by good economic policies, by giving incentives, by pursuing appropriate locational policies, and by establishing a balanced macroeconomic framework. However, it became obvious that the international financial system also has to generate the necessary framework conditions and incentives. In this context the international system biases against direct investment and equity finance in developing and transition countries play a decisive role, and have to be discussed in the context of the required international innovations. From the point of view of neo-Schumpeterian thinking this is a very important dimension because these biases distort continually locational innovations, and also disrupt the coherent development of NFSs and NISs. This paper therefore brings together financial, technological and locational innovations in the context of the Asian Crisis, and leads us to guidelines and policies for overcoming the unfavourable consequences of the crisis by inducing national and institutional innovations to the benefit of developing and transition countries.
In the *concluding* part of the paper a summary of the main findings is presented.

II. Lessons for Developing Economies from the Asian Crisis

II.1 Some Evidence on the Effects of the Asian Crisis on the Developing Economies

Although it had been shown by OECD econometric work that the Asian crisis had produced more severe effects on the developed market economies than anticipated immediately after the emergence of the crisis (see Richardson/Visco/Gorno 2000), the impacts on developing and transition economies in terms of output loss, financial credibility loss, and in terms of social effects are much more severe. Much more severe are also the negative long-term effects of the crisis on the level and the structure of direct investment and on the human capital accumulation. The Asian crisis had important output, trade and growth effects on developing and transition countries – by constraining OECD investment, growth and imports. A most important trade channel that affected the developing and transition country groups was by the way of constraining the world demand for commodities, but the shrinking commodity demand had not only impacts on the commodity exporters, especially in Africa and in Latin America, but had also affected trade flows directed to these producers.

Based on the global modelling work of the OECD the conclusion is important that the *severity of the crisis was underestimated* at the time and that obviously the predictability of the global modelling work of the OECD has to improved. It is argued by OECD economists that model-based assessments of the Asian Crisis could have been more appropriate if there would have been available more information on the size, the composition and the distribution of the global shock that was caused by the Asian Crisis. Also major other influences on the sequence of the crisis as the strength of stock market effects and the asset price interdependencies in a world of high capital mobility played a role, but also the imbalance between a booming US economy and a structurally weak Japanese economy was linked to the Asian crisis by most important financial transmission mechanisms. Most important is the fact that the scale of the Asian Crisis as a *global* crisis was underestimated because of a *modelling based* mainly *on trade flows* rather than including in an appropriate way also the volatility of international financial flows and the interdependencies with the real economy. The amplifying effects of financial system deficiencies on the real economy in Asia, in developing and transition countries, and even in Japan were also neglected in assessments of the consequences of the Asian Crisis. It is therefore obvious that the Asian Crisis was not seen as a crisis of both spheres, the financial *and* the real economy.

Confidence effects on financial markets led to reassessments by institutional investors concerning the credibility of developing and transition countries, and these "pure" contagion effects in turn had severe consequences not only for monetary policy responses in many countries, but also for the balance sheets of banks and companies that deteriorated further around the globe of the emerging economies. There is a good argument to improve information about the real and the financial economy so that excessive capital flows can be avoided and more informed investment decisions can be placed. However, more information, regulation and supervision is not enough to cope with the transmission of financial impulses by portfolio, credit and market confidence effects. The most adequate response to the Asian Crisis is a concerted redesign of NISs and NFSs in developing and transition economies.

At the level of the world economy we observe severe repercussions of the Asian Crisis, but at the regional level a quite different impact region by region and country by country can be ascertained. With regard to developing countries we see quite different repercussions in quantitative and qualitative terms. There is some evidence available regarding the impact of the Asian Crisis on the developing countries (see especially UNCTAD 1998b, 1999a, World Bank 1999b), and we see that the effects for these countries differed depending on a) the trade and financial linkages with Asia and b) the global linkages via commodity markets, other goods markets and capital markets.

Latin America suffered from a serious growth decline from 5.4 per cent in 1997 to just over 2 per cent in 1998, showing a high vulnerability to external shocks like the Asian Crisis (see UNCTAD 1999a, p.8-14). Despite of improvements in macroeconomic policies, the dependence on external financing made Latin America especially vulnerable to the effects of the Asian Crisis. The drop of capital inflows to Latin America and the deterioration of the terms of trade after the Asian Crisis led to a tightening of monetary policy and then to undesirable growth and social effects. The sharp decline of commodity prices had particularly severe effects on Latin America. The worsening of the trade balance and of the current account deficit to 4 per cent of the GDP hit Latin America. Resulting debt increases especially in Argentina, Brazil and Chile worsened the situation. It is especially important to notice that Latin America *changed drastically* from high growth in 1997 into a sharp deceleration of growth (UNCTAD 1999a, p. 9). Exports recovered not as rapidly as necessary because of follow-up effects of the Asian Crisis on trade financing.

In *Africa* the economies were in the first phase of the Asian Crisis more isolated from the impacts because of the rather limited access to international finance, and also because of the much stronger trade links with the European Union (EU) and with the USA than with Asia. Only South Africa was affected in this first phase by financial contagion from Asia. However, the deepening of the Asian Crisis then more and more affected Africa via the trade and commodity markets (see also in more detail AfDB 1999, especially Chapter 3). The substantial drop in 1998 of the commodity prices affected all commodity producers in Africa heavily. Most severe was the drop in oil prices as no less than 60 per cent of the region `s export earnings comes from oil (UNCTAD 1999a, p. 14). The current account deficit then surged from 4.9 billion dollars in 1997 to 16.5 billion dollars in 1998. Most important – also according to a central argument of this paper – is the fact that the direct investments to Africa fell by 20 per cent in 1998. For Africa this effect is most severe – as locational innovations in the Schumpeterian sense depend just on these investments. "Pure" contagion effects – flight of capital to "quality locations" – made borrowing for whole of Africa more costly, but especially so for the more developed African countries having already access to commercial credit as South Africa, Egypt, Morocco and Tunisia. The Asian Crisis has so further complicated the problem of the heavy debt burden and of unsustainable high debt-service obligations. For Africa, the Asian crisis affected the region at the very moment of the first turnaround in growth and investment after a period of decline and stagnation since 1980 (Wohlmuth 2000b).

For the *Asian developing economies*, the Asian Crisis had quite diverse effects. For developing Asia, growth slowed from 5.8 per cent in 1997 to 1.6 per cent in 1998, making this growth figure for the first time in the 1990s lower than for Latin America and Africa. Only China and some South Asian countries managed to sustain growth. For the Newly Industrialising economies the effects were severe with the exception of Taiwan. Hong Kong, Singapore and Korea suffered in terms of negative growth and social effects. Wage and employment declines were especially severe. The established trade linkages of Korea in Asia resulted in severe external demand declines. This was then followed by shrinking domestic demand because of a credit crunch, reduced household incomes and unfolding of weaknesses of corporate and financial sectors. In the ASEAN-4 countries (Thailand, Philippines, Indonesia, Malaysia) income fell in 1998 by 9 per cent. Insolvencies of banks and corporations in the context of depreciating currencies and a sharp reversal of private capital flows affected the economies in the region. Recovery is considered as conditional on improving export demand and on a successful restructuring of banks and companies. Although these countries are showing signs of recovery, the overall speed of recovery is still unsatisfactory, especially in finance and corporate sectors.

In South Asia, the Asian Crisis had rather limited impacts, due to the restrictions these countries still had have with regard to capital account convertibility and short-term foreign debt accumulation. Growth even improved in 1998 relative to 1997. However, adverse impacts came then with the unfolding of the Asian Crisis, as restrictions on trade credits to India and generally more difficult financing conditions emerged for the financing of the current-account deficits. A slowdown of growth was only retarded but could not be avoided. Even a relocation of direct investments back to East and South East Asian countries may affect India in the future as the Asian Crisis has led to a reassessment of direct investment decisions within Asia (UNCTAD 1998a). The case of India drastically shows that even a country with capital account restrictions is affected considerably by the Asian Crisis and can not overcome so easily the financial market effects and the negative effects on direct investments (see also for India Chandrasekhar/Ghosh 1999). It may be so that India has to assess realistically the potential for attracting foreign investments after the crisis; this reassessment has to include the policy decisions with regard to the exchange rate regime and the extent of capital account liberalisation. Also Pakistan and Bangladesh were affected by the Asian Crisis but internal problems and regional conflicts (floods, nuclear test sanctions) have been of decisive importance.

West Asia `s development was dominated by the situation of the international oil market. Sharp declines of growth in 1998 relative to 1997 followed. The important trade linkages with the Asian crisis countries brought with it severe export revenue losses. Even the Saudi currency came under pressure and had to be stabilised by interventions. Increasing unemployment and the high costs of social and welfare programmes pose problems for the macro-economy.

For China we find some interesting tendencies with regard to the impacts of the Asian Crisis. Growth in China was not considerably affected, and both the control of capital flows as well as the policy of a managed integration into the world financial system helped to control the effects of the Asian Crisis. However, as China is heavily trade-linked with Asia the Asian crisis had negative effects on the exports, but the government tried to compensate the demand effects by an expansionary fiscal policy. Nonetheless, foreign direct investments (FDI) to China with a share of 80 per cent of all foreign investments in China (UNCTAD 1999a, p. 13) were largely unaffected. Slowing direct investments from Asian countries were replaced by EU and US direct investments. All this shows that the intra-Asian relocation of production by the way of FDIs was affected, and that the intra-Asian production networks that had been established in the recent decade may have become weakened.

What we can observe form these regional assessments is that the developing countries did not escape the consequences of the Asian crisis whatever their policy in terms of exchange rate regimes and extent of capital account liberalisation has been. But it is also clear that developing countries with a more coherent policy and with more effective NFSs can overcome the consequences of the crisis earlier. Most important is the behaviour of direct investment during and after the crisis. Some countries were much more affected than others, and especially Africa had suffered from a redirection of Asian direct investment (AfDB 1999, p. 8). As direct investment is heavily concentrated in Africa on commodities exploration (oil, minerals and metals), Africa was also in this respect hit very hard by the global slowdown following the Asian Crisis.

Beside of these important trade, direct investment and finance channels and the respective transmission mechanisms (prices, terms of trade, and demand contraction) that are at work, the developing countries in Asia and elsewhere are affected also by unsolved structural and economic policy problems as well as financial sector weaknesses in Japan (see Schnabl 2000), but also by the strong pull effects of US growth (OECD 2000), as the resulting combination of exchange rate changes, stock market effects and interest rate adjustments will not be favourable.

Neglected are so far in the evaluation of the Asian Crisis the long-term effects of the Asian Crisis that result from social effects and human capital accumulation effects. *Social effects* are important also because a management of these effects is crucial for the future stability of the crisis countries (see especially World Bank 2000b for a recent assessment of the poverty effects of the financial crises). The studies on the social effects of the Asian Crisis show that the benefits of globalisation and of financial market integration may be eroded considerably by the financial crises-induced poverty and income distribution effects. The World Bank argues that the social effects are enormous (World Bank 2000b, p. 47), although the effects on urban and on rural poverty are differing from country to country. A high degree of labour market flexibility can limit the negative effects, as informal sector employment increases, and labour mobility is higher and can be a relief. Real public expenditures on education and on health fell in most crisis countries (World Bank 2000b, p. 47). Irreversible effects on human development and on future growth may result (World Bank 2000b, p. 48). Especially also these effects show how necessary *institutional innovations* are in order to prevent the unfolding of financial crises with all these negative effects on growth, income, investment, trade, direct investment, finance, the social situation and the speed of human capital accumulation. Regional effects, intra-regional effects and inter-regional effects of the Asian Crisis therefore have to be evaluated carefully by analysing finance and trade linkages and respective transmission mechanisms. It is also necessary to identify changes in the direction and the level of direct investments and changes with regard to established inter-regional and intra-regional production networks of corporations that are so important elements of locational innovations, and have to be considered in an overall evaluation of the impacts of the Asian Crisis.

Whereas we referred so far to evidence related to impacts on developing countries, the impacts on *transition economies* are largely comparable in severity (see UNCTAD 1999a, pp. 14-16). Most affected were the exporters of primary commodities and of semi-processed goods, particularly to South East Asia. There is now observable a growing differentiation among transition countries in access to international capital markets and to direct investments. Some countries in Central and Eastern

Europe could sustain FDIs despite of the Asian crisis because of a better investment climate, trade linkages with Western countries and an already established integration into transnational production networks.

II. 2 Explaining the Asian Crisis and drawing Conclusions for Developing Economies

We see that the Asian Crisis has provoked many schools of thought to explain what happened. First, three generations of approaches to understand currency and banking crises have been developed and are now used to analyse what has happened in Asia. On the other hand, three approaches to explain contagion are used to show how the crisis became a global crisis. Furthermore, three elements of policy choice – the "trilemma" of policy in the context of international capital mobility – are put forward to show what has to be done to avoid further crises. The *generation models*, the *contagion models* and the *trilemma models* dominate the discussion on the causes of the crisis, the processes during the crisis, as well as the discussion how to overcome such events in future.

Most prominent are the three generations to explain currency and banking crises. The *first* generation of models assumes consistently that fundamental factors like budget deficits, current account deficits, the acceleration of inflation rates, and excessive credit lending lead to balance of payments problems and to a decline of international reserves up to the point where the reserves are so depleted that a speculative attack can be successfully undertaken in the context of a system of pegged exchange rates. Irresponsible governments lead the country to this situation. However, as these fundamental factors were not that weak in the concerned Asian countries (Eichengreen 1999, Mishkin 1999), these generation models are not widely used for explaining the Asian Crisis (see especially the data in Mishkin 1999, p.11 on the fundamental factors prior to the crisis).

The *second* generation of crisis models assumes that the government behaves quite rational, that the government at any point in time is using implicitly a type of cost-benefit analysis to assess the desirability of sticking to the pegged currency rate. The advantages of maintaining the peg in terms of investor confidence and low transactions costs are compared with the costs associated with higher interest rates that are necessary to defend the peg, leading then to higher credit costs, lower spending, unemployment and generally higher social costs especially for the fixed income earners. As the costs relative to the benefits then become to high to defend the peg the government in a rational decision decides to devalue. The government minimises the overall cost by comparing the costs of maintaining stable exchange rates with the costs of devaluing the currency (Donges 1999). Even good fundamental data can in this world of decision-making lead to a speculative attack as the investors easily will know if the costs are increasing to stabilise the peg. "Herding" behaviour among investors will then work through the markets. Other countries with similar factors or a similar behaviour of government and investors are then also affected. As Eichengreen (1999) and other observers of the Asian Crisis show even these second generation models and scenarios are not that relevant for Asia. Only after the crisis the growth problems, increasing levels of unemployment, high short-term debt levels and financial sector problems were recognised as a fact, but not at the time before the crisis (see Eichengreen 1999, p. 138). Therefore, something more was considered necessary to explain what really has happened.

The *third* generation of crisis explanations argues that financial sector asymmetries, microeconomic problems of the sector, "moral hazard" and "adverse selection", an uneven policy of opening the country for capital flows and for financial sector deregulation, lack of supervision and regulation, and a lack of competition in the financial sector count as explaining factors for the Asian Crisis. More than this, the argument of a "crony capitalism" is brought in, a situation where the intense networks between government, the state bank sector and/or state-controlled banks, and the state industries and/or state-controlled industries influence mutually the decision-making, thereby transforming all policies (financial policies, industrial policies, budget policies) to the benefit of a small group of decision-makers. This is then a story completely contradictory to the "Asian Miracle" Story brought forward by the famous World Bank Study

(World Bank 1993). The *networks* are *not* any more *developmental* but to the contrary are leading to crisis. Crony Capitalism, Moral Hazard and Asymmetric Information became the key terms (see Eichengreen 1999 and Mishkin 1999). In this view no longer the condition of the "real economy" as in the first and second generation models is relevant, and also diagnosis and therapy become much more difficult (Donges 1999). Currency and banking crises are in the third generation models more interrelated and have to do primarily with microeconomic distortions, political interdependencies, and a lack of institutional changes in the financial sector. At an unspecified and unpredictable date the knowledge of investors about the "system of crony capitalism" may lead to a speculative attack and to herding behaviour affecting other countries also. As credit booms and expansionary financing modalities are then associated with moral hazard, adverse selection, crony capitalism, at a certain point in time the investors feel that the situation will not be managed by the government, anticipating bank runs and currency depreciations in the context of "country runs". In this situation it becomes obvious to all that neither an effective national lender of last resort exists nor an effective international lender of last resort to prevent liquidity problems and to restructure for insolvency. For long the investors rely on the implicit and explicit guarantees that payments, deposits, repayments and transfers will work and will be honoured. In such a case early warning might be extremely difficult if not a completely new system of financial sector surveillance is created (see Donges 1999, p. 135).

This approach does not explicitly consider corporate sector problems and macroeconomic issues, and the interaction and interrelation of the real economy and the monetary economy is rather obscured. This explanation contradicts all Keynesian and Schumpeterian thinking on the generation of crises in capitalism. These three generations of models to explain the Asian Crisis are therefore not at all helpful in redesigning the financial and corporate sectors in developing and transition economies affected by currency and banking crises.

What makes the crisis spread to become a global crisis? Three factors may do so to explain contagion in the world economy. *First* is the "common cause" factor. Crises "cluster" because of specific fundamental factors being a problem in various or many countries at a certain point in time. Financial crises then start and spread because of similar conditions with regard to fundamental macroeconomic factors, common structural deficiencies, or unfavourable external impacts on countries of similar strength, or similar effects on financial systems. Internal factors (macroeconomic or microeconomic deficiencies) as well as external factors (interest rate shocks or export declines) may play a role. *Secondly*, contagion can arise because of spillovers that play a role if trade and financial linkages are at work or if interdependencies in creditor portfolios are relevant. All this may spread the crisis if such spillovers are important either in the Asian region or elsewhere. *Thirdly*, "pure" contagion is referred to for cases where creditors re-evaluate the "fundamentals" of all emerging countries and "flee to quality", say to the stock markets in the USA. Empirical evidence shows that "spillovers" and "pure contagion" play a role in what happened in Asia to spread the crisis to the world economy. There is the presumption that in the Asian Crisis these two effects were more important than in other crises where the common cause factor may have played a larger role (see IMF 1998a, pp. 83-88).

The consequence of these analytical results for the argument in our paper is that these contagion models reinforce the necessity to think about adequate NFSs that are more *resilient* in he context of high international capital mobility. Insofar the contagion models tell us nothing about appropriate responses for policy-makers to cope with pure contagion and spillovers.

Third, the explanation of the Asian Crisis rests on the hypothesis that the countries have brought them into a "trilemma" situation (referring to Summers, Krugman, Obstfeld, and others that have worked with this instrument to explain policy inconsistencies). The policymakers in Asia as elsewhere are confronted with the choice between "liquidity", "autonomy" and "confidence", meaning that they want to realise at the same time the benefits of international capital mobility (liquidity), of exchange rate stability (confidence), and of an independent and pro-active monetary policy (autonomy). As these three goals are not reconcilable, the choice has to be made deliberately between these three objectives. The governments can do this selection themselves or ask for/get advice from regional or international bodies (as the Asian Development Bank, or the

International Monetary Fund-IMF). The role of the IMF and of regional bodies is then to give advice and follow up with surveillance after the government has made its decision in the trilemma situation. But the trilemma situation is not specific to the countries affected by the Asian Crisis, as so many governments of developing and transition countries have to decide what policy on capital mobility, on the exchange rate regime and on the type of (active or passive) monetary policy they want to pursue. Nonetheless, this "trilemma" explanation is now at the heart of the debate on the new international financial architecture (Krugman/Obstfeld 2000, pp. 712-714). Anyway, the governments can only decide on policy tradeoffs accordingly if they have as a base for their decisions functioning NFSs, what brings us back to the main theme of the paper.

Although the three generation models, the contagion models and the trilemma models seem interesting and far-reaching in the analysis of currency and banking crises, nevertheless these models ignore the most important aspect of the Asian Crisis, the *uneven development* of the production system (real economy) and the financial system (financial infrastructure and financial depth), and also the role of the interdependencies with regard to these two sectors. It seems necessary to look at the characteristics of uneven development of the two systems (sectors, spheres) of the economy first and then to try to understand the interdependencies.

These explanations of the Asian crisis as shortly outlined above are dissociated from the most important dynamic force of development, investment – and so also from investment efficiency, from innovation, and from structural changes in the economy. Later we will see how Schumpeter and the Neo-Schumpeterians look at investment, how they relate investment to finance, and how they link technological innovation to financial innovation.

II. 3 Uneven Development of the Production System and the Financial System

Krugman has provoked the interesting debate about the deficiencies of the Asian development path by attacking the Asian Miracle story – as propagated by the World Bank (see World Bank 1993) – as unsound, ideologically biased and superficial (Krugman 1999a, b). Although many critics have argued that the story of the Asian Miracle is an idyllic description of the Asian development process with a developmental state, a wise industrial policy, a clever interconnection of company managers, bankers, bureaucrats and politicians, a highly selective and only temporary type of protection without negative effects on competition, many critics have rather early argued that the story is rather naive and unfounded. Even World Bank experts joined the ranks of the critics to point to so many weaknesses of the Asian development model (see Walton 1997). As so many others have praised the Asian development model in terms of a system of very rational and highly developmental interventions (like Wade 1990), the arguments by Krugman were shocking for many circles because he even demonstrated that the empirical work of the World Bank was not serious enough by hiding the true calculations on the Total Factor Productivity (TFP) in the Asian Miracle countries only in the Annex of the famous report (see Krugman 1999a, and Krugman 1999b, p. 55). He argues that Asian development was brought forward in a rather similar fashion as the Soviet-type development model (although with better results), in some sense being a replication of the Stalinist model of development as based mainly on inputs growth rather than on efficiency gains. He uses the neoclassical growth accounting methodology not himself but he refers to econometric studies on comparative total factor productivity gains that were undertaken by other economists shortly before or after the appearance of the Asian Miracle study. The conclusion of all that work is that Total Factor Productivity growth in some Asian countries has not only been small but in some countries even negative what means that there is no "catching up" observable in most of Asia to the efficiency levels in OECD countries.

The analysis on the consequences of this type of an inputs-based growth in Asia now brings in the fact that capital inflows to Asia became more and more important despite, or better, just because of unfavourable tendencies in terms of total factor productivity growth, investment efficiency and rates of return on investments in Asia. Asia became more and more dependent on capital inflows despite of these deteriorating facts for investors (see Ling/Peng 1996 on the increasing gap between ex ante savings and ex ante investments in Asia).

It is the IMF who summarised the facts to focus on the *paradox* of increasing capital flows to Asia just in periods of a decreasing investment efficiency. The relevant empirical assessments on investment and investment efficiency are put together and give *another picture* of what is at the core of the Asian Crisis. Reviewing the Total Factor Productivity (TFP) estimates and various other indicators for investment efficiency and capital investment returns for Asian countries one may surprised conclude that in the context of diminishing returns to capital in Asia nonetheless the governments have successfully managed to sustain capital inflows by pegged exchange rates, by implicit and explicit guarantees to investors, by misusing the financial system in this direction, and also by granting a wide array of subsidies (see on these issues IMF 1998b, pp. 82-87).

A wide variety of *empirical measures* and estimates is now available to demonstrate that Asia has suffered from *"over-investment"* and from *declining investment efficiency*. Several measures of over-investment were calculated and summarised by the IMF economists (see IMF 1998b, pp. 82-87). Although these approaches for measurement are highly diverse, the emerging picture is revealing. Direct tests of declining investment efficiency and over-investment had to be replaced by indirect tests. The direct test would require to know more about the economy-wide rate of return on domestic investment. If the economy-wide real rate of return on domestic investment is lower than the rate of growth of the economy, any reduction of capital accumulation may enhance welfare and future growth. However, such direct measurement of over-investment is not easy and so far not possible. Indirect ways of measurement are however possible. *Firstly*, when comparing gross investment with gross capital income we can see if investment is consistently exceeding capital income, and if this is the case we may look at this as a warning signal and as an indication of over-investment. For Korea it can be shown that the share in capital income fell substantially from 55 per cent to less than 40 per cent between the mid-1970s and the mid-1990s, whereas the share of total investment in Gross Domestic Product (GDP) rose from around 25 per cent to about 40 per cent. This indicates that the efficiency of investment in Korea may have declined rather rapidly.

Secondly, the Incremental Capital-Output Ratios (ICORs) were increasing fast in Asian countries. A rise can however indicate not only a declining efficiency of investment but also important structural shifts in the economy that are associated with more use of capital. In all Asian crisis countries the ICORs increased in the 1990s. In Korea and in Thailand these estimates doubled in the years between 1990 and 1995, what is a too short period to explain the doubling with structural shifts only. Efficiency of investment obviously declined rapidly.

Thirdly, sharply increased investment in sectors producing non-traded goods and services like real estate and construction and in protected sectors like the petroleum industry is another measure of declining efficiency and of over-investment. Over-investment in these sectors and in sectors with excess capacity (as in semiconductors, steel, ships) necessarily is associated with low returns. For Asian economies we can observe in the 1990s annual growth rates of value added in non-traded sectors like real estate and construction of more than 10 per cent as a fact outpacing growth in tradable goods sectors.

Fourth, monopolised industries as in Korea with the dominance of the "chaebols" clearly over-invested and could finance these investments on the basis of their easy access to the credits, but the net profits of the largest 30 "chaebols" were close to zero by 1996 (IMF 1998b, p. 86). The policy of directed lending as in Korea meant also that the financial system lost its financial intermediation capacity and was becoming affected by highly asymmetric information benefiting in the short-term only the "chaebols".

Fifthly, over-investment and investment financed by short-term bank lending caused troubles for the banks as bank portfolios deteriorated quickly before and after the Asian Crisis. Therefore the increase of the share of non-performing loans to industry is another relevant indicator; the structure of credits to industry to a large extent based on short-term domestic and foreign lending is also a relevant indicator showing signs of over-investment.

Declining capital profitability is therefore a most important indication of over-investment. It is important to come back to the fundamentals of Asian development to understand the evolution, the spread and the impacts of the Asian Crisis. It is not enough to look at the macroeconomic fundamentals, the validity and sustainability of the exchange rate regime and the financial market conditions, but to look at the *financial intermediation problems* that arise in the context of over-investment, short-term bank lending and weak financial sectors.

From our point of view the Asian Crisis can only be analysed when regarding both sectors, the *production system* and the *financial system*, and this brings us back to Schumpeterian concepts, to innovations in the production system and to innovations in the financial system. In this regard unequal development between the two systems, between the innovative processes in these two spheres can help to explain the Asian Crisis. We will see that innovations in these two spheres are linked and highly interdependent. For the first workshop of our research groups in September 1998 we prepared a paper (see Wohlmuth 2000a) where we argued that *National Innovation Systems still matter*; now we will go a step further and we will argue that *National Financial Systems matter*, and that they can not be restructured, developed or redeveloped without linking up with National Innovation Systems.

III. Institutional Innovations: Restructuring National Innovation Systems and National Financial Systems

III.1 Schumpeter, the Neo-Schumpeterians and the Need for Institutional Innovations

What would Schumpeter say about the causes, the evolution and the impact of the Asian Crisis? What would he say about the lessons to be learned in economic policy-making from the greatest crisis of capitalism since the Great Depression? Schumpeter has since his first writings in 1910 maintained the position that the banker (the financial institution) is an entrepreneur, has an entrepreneurial role to play, and stands vis a vis the entrepreneur in the industrial economy, so that finance of investments is a complex process in the economy between two groups of entrepreneurs. The entrepreneur in the monetary/financial sphere, the banker, has to perform the role of entrepreneurial selection, of project selection, of selecting the best entrepreneurs and their projects for financial support. For this to work properly the "financial entrepreneur" has to be really "independent", independent from the entrepreneurs of the industrial economy, and necessarily also independent from politics. *Independence* is a precondition for the financial entrepreneur to be innovative, and the entrepreneurs in the industrial economy can not be productive and innovative without such an independent financial entrepreneurial class. Only then the banker can play the Schumpeterian role to be the "ephor" as the *guardian* and *adviser* of the capitalist system, obviously for Schumpeter the most important framework condition for the development of a performing entrepreneurial class in industrial capitalism. Independence is understood in terms of financial relationships, in terms of personal connections, in terms of moral integrity, in terms of political independence, and so on. Only this independent position allows the *banker* to select entrepreneurs and to be innovative, and not to act static, as a financial entrepreneur; only then he will push new combinations in the Schumpeterian sense leading the system to processes of "creative destruction".

We see that Schumpeter looks from the start at a *monetary production economy*. Minsky (1990) relates the views of Schumpeter to the characteristics of the "managed money capitalism" of our times with huge funds managed by institutional investors and with substantial changes from credit-based to market-based financing systems that have tremendous consequences for the role of the financial entrepreneur in our times (Minsky 1990, pp. 69-71). When we refer to the structural changes and the weaknesses of financial intermediation in our times we could argue with Schumpeter that the financial entrepreneurs may have lost their independence, their role as ephors of the system, and their innovative capabilities. When we relate the theories of asymmetric information in finance, and the concepts of adverse selection and moral hazard to the Asian Crisis, we are reminded of what Schumpeter says about the role of independence of the bankers for any functioning system of financial intermediation (see Schumpeter 1961 (1939), pp. 117-131). Insofar we see that for Schumpeter the third generation models of explaining the Asian crisis in terms of aggravating conditions of the financial institutions affected by highly asymmetric information would imply such a systemic failure as the bankers are no longer the ephors, the guardians, the selectors, the innovators, but have already become part of a *static* economic system. Understandably such static financial bureaucrats can not select investments or avoid "over-investment". Financial institutions and financial entrepreneurs have the same role to perform as the entrepreneurs of the industrial economy – to realise new combinations, and to negotiate with the entrepreneurs in the industrial economy on which of the new combinations should be financed. The bankers are therefore not simply financial middleman or financial intermediaries, but they are *innovative selectors,* negotiators and facilitators that *lead* the path to innovation, and are therefore *leading growth* in the economy.

Often it was asked whether the role of bankers, and the role of finance more generally is not over-stressed by Schumpeter. Empirical evidence accumulated on the Schumpeter hypothesis that bankers and financial intermediaries *authorise entrepreneurs to innovate*, meaning bluntly that without finance and access to finance no innovation whatsoever would be possible. The empirical evidence on the Schumpeter hypothesis about the *finance-innovation connection* is quite important (see especially the study by King/Levine 1993). In a comparative analysis the authors investigate whether higher levels of financial development are positively related to growth and development. This empirical work for over 80 countries for the period of 1960 to 1989 is based on various indicators of financial development to make the empirical work as robust as possible, and these indicators are related to various developmental variables (per capita GDP growth, the rate of capital accumulation, and improvements in economic efficiency). The outcome of this impressive empirical work is highly important. It is found that higher levels of financial development are positively associated with faster rates of economic growth, physical capital accumulation, and economic efficiency improvements, controlling the analysis for numerous country and policy characteristics. More than this, the study also allows to conclude that the *predetermined* component of financial development is a good predictor of long-run growth over 10 to 30 years (King/Levine 1993, p. 730). So finance does not only *follow* growth, but also *leads* growth and development.

What Schumpeter emphasised already in 1911 is now relevant when investigating the situation of Asia since the early 1990s with signs of over-investment, declining growth rates relative to former periods (Asian Miracle growth rates), and widely observed fundamental weaknesses of the whole financial system. More than this, King/Levine (1993) also conclude that this important and proven correlation between the level of financial development and current and future rates of economic growth contrasts sharply with the weak correlation that exists between growth and a large variety of other economic indicators (King/Levine 1993, p. 719).

The implications for understanding the Asian Crisis and for responding to it are important. When financial systems loose the ability to *lead* growth, then growth rates can not be sustained and crisis is inevitable. Unequal development of financial systems and production systems can then explain the depth of the crisis, the enormous stage of contagion, and the blocking of the innovative processes not only in the financial system but also in the production system. Financial sector problems can therefore not be considered in isolation from the state of innovativeness of the whole economy because growth is reduced in a situation where bankers/financial institutions as in Asian countries have lost the ability to be innovative entrepreneurs. The adverse selection/moral hazard theory is stating nothing more than that the banks lost the main function to select entrepreneurs and to be innovative in the sense of realising new combinations on the market.

Market-oriented development therefore requires according to Schumpeter that two – analytically quite distinct – groups of entrepreneurs exist: innovators in production and innovators in finance. Economic systems can benefit from a wave of innovations in the financial system leading to new financial products and financial processes. Retarding financial systems with regard to rates of financial innovation can lead quickly to a blocking of technological innovation also. Technological innovators leading the market economy can then not benefit from adaptable and innovative financial systems, and overall growth can be retarded by these stagnating financial systems.

In this sense the Asian Crisis can not be cured by better regulation or supervision of financial systems only, but a coherent restructuring approach is necessary that links technological and financial innovation processes. It is not clear why the enormously voluminous Asian Crisis literature has not considered so far this very important developmental lesson.

Important is therefore not only the connection of finance and production, or the relation of financial and industrial entrepreneurs in the system, but also the direction of change, the rate of innovation and the adaptability of the financial systems. To remain effective the financial system has to adapt to the requirements of industrial innovators, and also with regard to direct investment to the needs of locational innovators (a theme we will discuss later).

There is an important debate whether *market-based financial systems* that rely on financing via securities on capital markets are out-performing the *credit-based financial systems* that rely mainly on banking institutions. This discussion is particularly relevant for Asia and many developing countries (and also transition countries) with their still great weight of credit-based finance systems. The credit-based system is nowadays associated with a leading role of the banks in the allocation of credit too often towards controlled/protected/subsidised/state-owned industries, and the market-based system is associated with a more open, flexible, adapted and more direct form of financing enterprises. The first type of financial systems is therefore called *relational financing*, the second type *transactional financing*. More recent tendencies of financial innovations since the 1970s have strengthened the role of direct (or market-based or securities-based) financing systems relative to indirect and credit-based financing systems.

From the point of view of technological innovations, the Neo-Schumpeterians are divided on the implications of these two systems of finance for the speed and direction of technological innovations. Credit-based systems are often seen by them as being more long-term oriented than market-based systems, thereby facilitating long-term research &

development and technological innovations; on the other hand credit-based systems may be more conservative with regard to the selection of projects and entrepreneurs. Market-based systems are considered as more short-term in evaluating and selecting projects and entrepreneurs, so hindering long-term research & development to some extent, and thereby retarding the technological change, although such a system of finance may be more open to new ideas and new entrepreneurs (see Tylecote 1994). However, more recent evidence shows that the conventional assessments of the two systems might be misleading and are changing fast because the credit-based systems protect too much their affiliated enterprises and sectors where they are strong so that innovations might be retarded. On the other hand market-based systems may be more open and may enhance technological competition because start-up firms and firms with innovative ideas have more chances to get finance for new technologies so that they can become a competitive force on the market. There is some evidence that a higher share of direct or market-based financing is associated with more technological dynamics (see also Capoglu/Geyikdagi 1991 on the validity of these correlations).

In this regard we can say that the banker in the static sense, the banker lacking the power for financial innovations is replaced by the new forms of direct finance and market-based finance so that finance again leads growth via the newly framed, competitive, deregulated and increasingly globalised capital markets. Financial systems like in Asia (see on the comparative financial systems in Asia especially Zahid 1995) that conserve the role of protected banks and resist the development of appropriate capital markets are static, and growth is then negatively affected by the unequal development of the financial system relative to the production system. The Asian Crisis is then also a reflection of the necessary readjustments between the two systems of finance and production, and if successful, a revitalisation of Asian growth may emerge . This is another meaning of "financial systems weaknesses" that we find in the literature since the onset of the Asian crisis. Such a crisis – as Schumpeter teaches us – cannot be overcome by new regulations, by more supervision and by better monitoring only, but primarily by restoring Schumpeterian competition (see Wohlmuth 2000a) in the finance sector, and by re-establishing the Schumpeterian financial entrepreneur. Then the role of the financial system can be supportive to financial as well as technological innovators, to financial and industrial entrepreneurs, and can lead again to an innovative market economy.

There is need to have a closer look at the National Financial Systems (NFSs) and the National Innovation Systems (NISs) in order to understand the causes and the depth of the Asian crisis from a neo-Schumpeterian point of view. It is also necessary to refer to Schumpeter`s process of "creative destruction" in this context. Inadequate and inefficient finance systems in Asia are replaced by more adjusted and transactions-oriented systems that may support the genuine Schumpeterian role of banks to "authorise" entrepreneurs (by allocating funds) to innovate. Financial innovations as well as product, process and locational innovations are part of the whole process of dynamic development. Creative destruction is a process including and affecting the established national systems of finance as well, as the financial entrepreneurs have the unique role in capitalist economies to choose and to select innovators in the industrial production process. Referring to Schumpeter`s creative destruction process we can say that it is related to all elements of capitalist development, so that the stability of the system is interrupted by any tendency of unequal development of the financial system relative to the production system. Referring to the Asian crisis, we can see now that a process of destruction of inappropriate financing systems has set in, that too restricted and closed financial systems, the dominance of relational banking, monopolistic forms of banking, the dominance of state banking and of credit subsidies, and financial systems lacking control are destructed now, as economic systems require finance sectors that are open to product, process and locational innovations. These structural changes are quite necessary now as we know from Japan that the finance system has concentrated on specific forms of innovation, so rather on process innovations than on product and locational innovations (see Schumpeter on the totality of the creative destruction process, 1946 (1942), Chapter 7, pp. 134-142). Most important is in this context the analysis by Schumpeter (1912, Chapter 3 on Credit and Capital) that "credit" serves entrepreneurial development, especially so in the process of industrial development (Schumpeter 1912, p. 148). Only the entrepreneur needs credit, because only he is the motor of development.

When regarding the credit booms in Asia found before the crisis, it is obvious that credit went not only to “entrepreneurs”, but also has enhanced over-investment in many forms. According to Schumpeter credit and innovation are related insofar as the necessary factors of production are released only by credit towards innovative (technological) activities. New combinations can only be realised by “credit” because only credit releases factors of production from other occupations (especially structurally weak sectors). This link between finance, credit and innovation got lost over the Asian development process in the 1990s, and now the necessary restructuring process has set in.
Some ideas of Schumpeter and the neo-Schumpeterians on Finance and Innovation are provided in figure 1:

III. 2 Restructuring National Finance Systems and National Innovation Systems

Based on Schumpeter`s analyses about the role of finance and banking in economic development, and based on the observations of the neo-Schumpeterians that national innovation systems still matter in times of globalisation (see the review by Wohlmuth 2000a), we can now say that also National Financial Systems (NFSs) matter and have to develop in concertation with the National Innovation Systems (NIS). NISs and NFS have – as we can see – a quite complex interaction in functions and in time, and we also recognise periods where one system leads and then follows the other system. Weak NFSs can retard financial innovations, and inadequate financial innovations will impede technological development and the continual adjustment of the NISs.
The Asian Crisis is interpreted here as a process of inadequate mutual adjustment of the NISs and NFSs. Since the neo-Schumpeterians coined the term "National Innovation System" (see Patel/Pavitt 1994) we know that the NISs are highly dependent on the quality of the finance system also. NISs are defined as "the national institutions, their incentive structures and their competencies, that determine the rate and direction of technological learning or the volume and composition of change-generating activities in a country." (Patel/Pavitt 1994, p. 12). The highly differing performance of the NISs in international comparisons raises the question about the role of system failures, and broadly speaking two groups of system failures are discussed by the neo-Schumpeterians, first, incentives failures and second, competency failures. *Incentive failures* are related to the level of inter-firm mobility of person-embodied knowledge, leading to incentive problems in training and R&D in corporations. Other incentive failures arise in terms of the degree of "appropriability" of codified knowledge, because of differing intellectual property rights protection regimes. More important seem to be *competency failures* because these are institutional failures in the competence of institutions (banks, firms, government institutions, etc) to evaluate and to benefit from intangible investments that are increasingly

specialised and professionalised in nature (R&D activities), and are long-term and complex in its economic impact. In this context finance systems play a prominent role as the neo-Schumpeterians distinguish “myopic” and “dynamic” systems (Patel/Pavitt 1994, p.12). Myopic systems consider investments in technological activities like a conventional investment, whereas dynamic systems rather evaluate investments into technological learning by regarding the long-term potential and the inherent potential for opening of new markets, options and chances in the future based on knowledge accumulation.

It is now an open question whether the credit-based or the market-based finance systems are dynamic or rather myopic. Some recent evidence shows that market-based systems are more dynamic as they force the banks and the financial institutions to be more open to new entrants, towards start-up companies, to new technological fields and sectors, thereby generating more technological competition in the economy. Anyway, in order to minimise competency failures the two systems, the NFS and the NIS are inter-linked. A NFS that is beset by competency failures is harmful to the NIS, and a NIS that is not open and dynamic enough cannot draw on the available resources of the NFS.

There is a high degree of complementarity between technical and financial innovations (see Heertje 1988), and consequently also at the institutional level between NISs and NFSs. Only appropriate NISs and NFSs allow a quick diffusion of new technical solutions and of new financial instruments on the market. A dynamic market economy requires that both systems function smoothly. NISs and NFSs are linked by the inherent functional complementarity of technical innovations and financial innovations, and both systems depend on the processes of speeding the diffusion of innovations throughout the economy. NFSs can provide the necessary finance for the technical innovators, the small entrepreneurs that lack start-up or venture capital, but also the large companies that lack appropriate patent protection for their new products but need finance to be quickly on the market to defend their inventions. If the NFS is appropriate to all types of innovators, to all types and sizes of companies – large, medium or small – , then this system is neutral towards the technical innovators.

However, too often in developing and transition countries the NFS is biased against the small- and medium-sized companies, against large companies in sectors where codified knowledge is more important than tacit knowledge, against companies that need more than others protection by patents, against companies that are more research–dependent, and against companies that need in their start-up and development phases a more dynamic NFS for their support. It is however not only the complementarity that matters in bringing forward technical inventions and technological innovations, as there are many other interdependencies also between the NFS and the NIS that matter. Especially also for the diffusion of new technologies the NFS is important, as an adaptable and flexible finance system is here required. Global competition of firms is based on locations with highly different working principles and spheres of interaction between NFSs and NISs. The quality of both systems and the relation between them is an important locational factor in attracting companies and in realising competitive advantage. Heertje (1988) argued many years before the Euro currency was introduced that the lack of an integrated European finance system is one of the most important reasons for European problems in innovation and diffusion with regard to new technologies (Heertje 1988, pp. 9-12). Insofar Europe has responded late but is still away from an integrated European financial architecture. However, this is on the way now and may support a European Innovation System to emerge in the next decades (BIZ 2000, Chapter 7).

The complementarity between NFSs and NISs has therefore various dimensions – a time dimension, a functional dimension, a sectoral dimension, a life cycle dimension, an investment category dimension, and as well a regulation dimension. Some of these dimensions are often neglected in the debates about restructuring the two systems. Tylecote (1994) reminds us that there is an important investment category dimension to be considered. Innovations have to be financed for various categories of investment (physical capital, R&D, training, production, and marketing). He argues that these categories of business expenditures – all of which constitute innovations relative to former expenditures of the same type or category – have a quite different *visibility* to outside finance institutions relative to inside the firm finance possibilities. Physical capital expenditures are more visible as innovative expenditures to outside financiers than other categories like investment in training, in marketing, in specific types of R&D, and other production-related expenditures. In order to secure that not only physical capital and some more visible elements of R&D are financed, the national finance system has to be structured accordingly. The earlier view that credit-based systems have advantages in getting financed less visible investment categories is now more and more doubted because of the increasing openness and efficacy of market-based finance systems for future-oriented technological investment.

There are also important technological life cycle interdependencies between the two systems – the NFSs and the NISs. If we look at the life cycle of process and product innovations (see Prakke 1988) we can observe the changing impact of the NFS over the life cycle. The concept of the technological life cycle assumes that over various phases the technology is developed to become then specific/adjusted/developed. New technologies on the way to the market show a rapidly changing intensity and number of innovations over time, and finance has to respond to these phases of development. In the companies working on the basis of such new technologies various distinct phases between the basic R&D phase and the final phase of technology development have to be considered, and these phases have quite different implications for the relation between inside and outside finance. During observed five phases (R&D, start of business, period with rising growth, period with normal conditions of growth, and final phase) we find diverse financial instruments that are needed, start-up finance, finance for investment to start and accelerate production, and then finance to further technical development and market adjustment on a larger scale, what then leads even to greater reliance on market-based finance.

The venture capital market is most interesting and important in this context as bankers and industrial entrepreneurs can perform the classical Schumpeterian role of "authorising entrepreneurs to innovate". It is argued that there is a complex learning process involved on both sides between the financial entrepreneurs and the industrial entrepreneurs (Prakke 1988, p. 77-79). The sensitive relation between financial and industrial entrepreneurs can be studied when looking at the development of the venture capital industry, and the example of the US venture capital

market shows how complex the learning process between these two groups of entrepreneurs is, and how far the potentials and results can diverge. Companies based on the development of new technologies show highly complex interdependencies with finance markets. The development of such companies during distinct phases can be interrupted quickly if these interdependencies with the finance markets are not recognised and developed early enough, as the weakest element in the finance chain- for the activities in the life cycle to take place- determines the performance of the whole venture. Start-up companies need a critical mass of suppliers of such finance to lead to a vivid market; later in the life cycle various forms of credit-based and market-based lending have to fit the development path of the new company, so as to avoid financing problems between and within the respective phases. Financing has to fit the conditions of the early period of unstable conditions where technologies are developing, also the transition periods where product and process technologies are developed and explored for the market, but then also the period of stable and specific technologies that have found acceptance on the market. A NFS is adequate only if it provides finance for all these phases and for all types of companies that need the finance for technological development. More than this, even small differences in financing conditions and financing costs between countries related to the finance of start-up and/or established companies can lead either to a vicious cycle of stagnation or a virtuous cycle of dynamic growth (Prakke 1988, p. 89).
We also see that the whole investment process in a firm is depending on using timely various types of financial innovations, and that the relative dynamics with regard to some types of financial innovations can lead to a vicious or virtuous cycle of decline or growth (see Vinals/Berges 1988 on the often neglected relation between financial innovations and capital accumulation). Financial innovations can benefit companies (and necessarily also the finance systems) by reducing information asymmetries, and by influencing cash flows and profits. They influence not only the level of investment but also the innovativeness of investment, as different categories of investment – according to their visibility and support from outside finance – can have a distinct impact on the innovativeness of the companies and of the economy. The impact on investment is obviously most important with regard to financial innovations

as, for example, variable interest products, swaps and leasing instruments, but also in other areas the impact on investment may be forthcoming. We see that financial innovations that affect directly the rate of return – by reducing risks and by making available finance that was not accessible before – are most important for investment and so for technological innovations (see Vinals/Berges 1988, and the more recent literature on financial innovations by products and markets – see OECD 1995).

However, the advantages of financial innovations have to be balanced with potentially destabilising macroeconomic effects, effects on the efficacy of the monetary policy, and effects on the stability of the banks and the financial sector (see Artus/De Boissieu 1988), all of which may have effects on the investment climate that may not be favourable. This also explains why a NFS has to provide not only for a dynamic process of financial innovations, but also for the necessary stabilising and regulatory elements of systemic control with regard to the strength of banks, the financial market stability, and the efficacy of monetary policy. This also implies that any functioning NFS is related to the appropriateness of the exchange rate regime, the regime for the supervision and regulation of the whole banking and finance system, and a national regime with regard to the international capital flows. NFSs are therefore quite distinctive as regards characteristics, incentives, rates and direction of innovation.

There is not too much evidence on the NFSs in Asia (although more recent evidence is accumulating after the Asian Crisis – see especially the early study by Zahid (Ed.) 1995, and the recent studies by Brooks/Queisser (Eds.) 1999, OECD CCNM (Centre For Co-Operation With Non-Members) 1999, and Ariff/Khalid 2000). Even less evidence is available for most of the developing and transition economies, although development and transformation economics has given a closer look at these systems after the Asian Crisis (so Ariff/Khalid 2000 give some guidelines for developing and transition countries in their promotion and conduct of NFSs).

However, new interest is emerging, not only with regard to the design of NISs and NFSs in developing and transition economies, but also more broadly with regard to the effects of globalisation on these two systems (see Wohlmuth 2000a, Allen 1994 and Schaberg 1999). Globalisation acts on both systems, on the NIS and the NFS. NISs need to become more cooperative and open, NFSs have to change from a one-sided direction in financing towards a country-specific mix of credit-based and market-based systems, and also need to be more open (see Wohlmuth 2000a on the the future of NISs, and OECD 1995 and Schaberg 1999 on the future of NFSs).

Concerning the properties of a National Financial System (see especially OECD 1995 and Schaberg 1999) we observe that after so many years of globalisation NFSs still are existent, are different from each other, have not rapidly converged, maintain these differences to a large extent, and impact quite differently on the innovation processes in industry and services sectors of the countries concerned.

A "national" financial system (NFS) can be defined as a network of institutions and actors that provides, *first*, for external finance, like loans, shares and other securities for investment, this constituting the financial system in the narrow sense, *second*, for internal finance in all relevant and company-specific forms and allocation modalities for retained earnings, and *third*, for those elements that constitute the specific national system of corporate governance as a contract between owners, users and managers of investment funds. These three elements of a NFS can then provide for the three central functions (provision of venture capital, supervision of the way how capital is used, and the creation of resources itself – three functions in the Schumpeterian sense of an innovative financial entrepreneur (see on the various components and functions of a national financial system OECD 1995, pp. 32-34).

In a much broader sense the national financial system is dependent on the very important framework conditions such as the exchange rate regime, the international capital flows regime, the supervisory and regulatory regime, and the systemic and structurally decisive relation between the central bank and the financial institutions (the central bank acting then as the "ephor of the ephors" in the Schumpeterian sense vis a vis the banks as the "ephors"). Therefore, the narrow, the broader and the broadest definitions of the NFSs have to be distinguished carefully and properly in order to guide reform.

Effective NFSs depend on these framework conditions as well as on the various elements, components and functions to be delivered by the system. NFSs are efficient only if they adequately manage risks what requires that asymmetric information in the system is minimised (see the debate on the efficiency properties of the NFSs in OECD 1995, pp. 35-39; and on the information asymmetries in financial systems and the policies to correct them in developing and transition countries see ADB 1998, p. 31, and World Bank 1999c, pp. 81-98). The NFSs are therefore also highly complex risk management systems that process financial information under uncertain and asymmetric conditions which are aggravated further in times of crisis.

The notion of a NFS is still relevant after so many years of internationalisation and globalisation as there are specific national characteristics with regard to components, functions, efficiency and framework conditions. When looking at various indicators concerning the structure of NFSs (like the structure of the financing of non-financial enterprises, the proportion of self-financing of enterprises, the variation in the equity/liabilities ratios and the long-term/short-term liabilities ratios, the propensity to take bank loans, the differences in debt structure, and the relation between financial and non-financial assets in the portfolio of non-financial enterprises) we observe quite distinct NFSs (see OECD 1995, pp. 39-42). For a NIS to become and remain dynamic, a dynamic change of the NFS is also important. Only those NFSs are supporting innovations that have the following properties: *flexibility* (to support several areas of technological specialisation), *adaptability* (to sustain the structural adjustment of industry and the whole economy), *specific functionalism* (to support and promote specific areas of innovations, like start-ups or technological clusters), and *resilience* (to sustain comparative advantages of the NFSs even in times of globalisation), only to mention the most important characteristics with regard to a NFS that is capable of financing technological development (see OECD 1995, p. 41). Especially in times of globalisation comparative advantages can be maintained if these properties are realised and strengthened.

It is obvious that the Asian NFSs have lost long before the Asian Crisis some or all of these properties what is proven also by over-investment and the inefficiency of both, of investment and of financial intermediation. On the other hand they retained for some time comparative advantages in financing specific industrial areas where the limits of closed and credit-based systems did not block so far industrial and technological development.

The adaptability of Asian NFSs seems to have declined dramatically as we can see from the inability of most of the Asian NFSs to develop bond and other securities markets. The assessment by the International Monetary Fund (IMF) is revealing (see IMF 1998b, pp. 89-96). The Asian governments have intervened heavily by the way of state-owned financial enterprises, by regulations, and by guiding, selecting and rewarding specific market participants. Financial intermediation by banks was unduly favoured at the cost of securitisation. Nonetheless, there was not a unique model of financial sector development in Asia, but very specific systems co-existed (IWF 1998b, p. 90). The public sector role in creation, ownership and in management of financial institutions differed but remained strong over many years, and still it is strong in some country cases. Protection of financial institutions, financial sector entry control, and widespread licensing in financial sectors weakened the role of the Schumpeterian financial entrepreneur. Tax incentives and subsidies also affected heavily the financial sectors. Specific forms of financial repression redistributed income and incentives. The transition from capital controls to a more liberalised system of international capital flows created large problems on the basis of a still biased, distorted and protected NFS. Neglect and underdevelopment of securities markets even increased the financial intermediation role of the banks in various forms to finance capital accumulation.

The role of non-Schumpeterian bankers was rather strengthened in Asia. Indicators show the extent of these biases. The corporate debt to equity ratio increased not only in Korea to extremely high levels, to nearly 400 per cent at the eve of the financial crisis in Korea (IMF 1998b, p. 92). The elimination of the bias against securities markets is a most important task for reforming the NFSs in Asia in the years ahead. The shares of companies traded on the stock exchanges are still too closely held, with a low volume of shares effectively traded, and equity markets are playing a limited role not only in government finance but also in corporate finance, what is a result of the existence of so many family-controlled firms, so that as a result equity prices play not a decisive role in guiding and supervising management. Bond and money markets are even less developed and less liquid in Asia, and government securities markets were less developed because of other forms of government financing that were available. Bond markets were even actively discriminated by granting monopoly rights to banks as in Thailand (IMF 1998b, p. 93-94). Growth of financial intermediation was not paralleled by effective and co-ordinated supervision and regulation. Financial "distress" (bank failures, closures, panics) and financial "stress" (increasing levels of non-performing loans) were becoming widespread (IMF 1998b, p. 94). But Asian NFSs can also be regarded as highly diverging when looking at the responses in these countries to banking and financial sector problems. The governmental attitudes in cases of bank failures differed widely. There have been great differences between Hong Kong, Singapore and Taiwan on the one side, and Indonesia, Thailand, Korea, and Malaysia on the other side, where state interventions maintained in operation most of the troubled banks and finance institutions. Ad hoc liberalisation of financial sectors and of capital flows in Asian countries presented additional problems because they were not matched by coherent macro-economic and sector policies, by a strengthening and reform of the NFSs, and by an upgrading of regulation and supervision. Instead of reforming NFSs and relying on more coherent policies, the current account situation dictated the way of controlling and decontrolling capital flows in- and outwards (IMF 1998b, p. 95). Banking reform was late and not effective enough in some countries to provide for adequate capital, to avoid overexposure with risks, and to restrict lending to related parties. Most important, banking reform was not focused on Schumpeterian financial entrepreneurs.

The message is that the NFSs in Asia had not contributed enough to a more innovative path of development by a dynamic financial sector led by Schumpeterian entrepreneurs, but the system was rather consolidated in the direction of protecting static finance institutions, being more and more prone to moral hazard and adverse selection.

Another deficiency is the lack of progress with regard to venture capital in Asia, in developing, transition and emerging countries. Part of any developed NFS are venture capital institutions, although even in developed market economies the degree of development of this sector differs. This segment of the financial sector is especially important so as to create and to develop Schumpeterian entrepreneurs. Some emerging and developing countries as Israel, Hong Kong, Malaysia, and India are developing such an industry more rapidly than others as part of their NFSs and NISs (see United Nations 1999, pp. 207-224).

The Asian Crisis has created new conditions for the venture capital industry in Asia and in other emerging countries. The conditions have improved because of the development of stock markets and lower share prices on stock markets, because of the necessity to find financing alternatives to bank loans, and because of the new chances for developing a high-technology sector in these countries on the basis of technology transfers and venture capital inflows (see United Nations 1999, pp. 221-224). Not only has equity capital and direct investment capital for such an industry proved more resilient in times of crisis, but the new export and development chances make a country less vulnerable in periods of recession. Therefore, the development of such a venture capital industry is a major task in any process of reconstructing national finance systems in developing and transition economies, by “breeding” Schumpeterian technology firms and finance institutions at the same time. Some countries responded to the Asian Crisis in this way as Taiwan, Hong Kong, Singapore, and even China and India when they created international venture capital networks with the USA and with various national and international organisations (see United Nations 1999, pp. 221-224).

Most important is however the effective “bridging” and restructuring of the NFSs and the NISs by a reform of policies, by appropriate incentives, and by specific measures of institution-building. As a response to the Asian Crisis, national and international programmes to support those companies with private equity and venture capital that are sound but affected by high debt positions are proliferating. Co-operation between venture capital funds and technology firms of developed countries and Asian private industrial firms and finance funds is thriving now.

Development of a venture capital industry requires governmental action in those fields that also improves in many ways the entrepreneurial framework conditions in general: education, training, support of investment-friendly policies, a more developmental orientation of taxation, and improving and securing high accounting standards (United Nations 1999, p. 224).

What remains to be done is pursuing firm policies to strengthen the NFSs in the context of increasingly volatile and unstable global financial markets (see United Nations 1999, pp. 237-245 on an agenda of policies and programmes for developing and transition economies). It is consensus that the structure of the NFSs has to be adjusted, that ist functioning has to be improved, and that supervision of NFSs has to be strengthened, but especially so in the sense of Schumpeter`s role for the bankers. It is obvious that *risk management* in the context of liberalised capital flows is becoming more and more important and that improving bank lending, promoting equity capital formation and attracting direct investment are complementary elements of a strategy for developing and transition countries. As a most important trigger factor in the Asian Crisis had been the extreme level of domestic and foreign short-term and inter-bank debt, proposals to discourage short-term lending along the Chile model got some prominence, but it seems to be far better to encourage long-term debt and especially equity and direct investment. It is clear that derivative markets, money markets, and credit markets have to be seen as interrelated and need therefore an integrated scope of supervision (United Nations 1999, pp. 238-239), but making the developing and transition countries more attractive for equity capital and direct investment is a more promising policy prescription than focusing too much on supervision and monitoring. Overgenerous credit subsidies and explicit or implicit guarantees to the domestic banking system may have contributed to the excessive levels of foreign short-term borrowing and may have virtually eliminated the Schumpeterian functions of the banking sector. Capital-adequacy standards and financial safety regimes are important to reconstruct the banking industry but these reforms should not lead to a new bias in favour of debt finance relative to equity capital and foreign direct investment as entrepreneurial financial sources.

Studies on the efficacy of national finance systems show how many indicators diverge despite of the speed of globalisation and the extent of internationalisation of financial markets; the national systems diverge in terms of sophistication, depth and volume of financial markets, influence of banking on industry, access of domestic firms to foreign capital markets, access of foreign firms to local capital markets, financial constraints to technological development, and availability of venture capital. National Finance Systems are therefore not eroded but are becoming even a most important part of the competitive advantage of firms and countries. This is a most important lesson for developing and transition countries in their policy reforms ahead. NFSs and NISs are both important elements of the Schumpeterian competition process, and determine the position of firms on the world market (Wohlmuth 2000a). A similar pattern of divergence relates to the national systems of financing innovations in a narrower sense (see OECD 1995, Chapter 3).

The typology of existing NFSs shows that even among the credit-based and market-based finance systems systemic differences are observable (OECD 1995; see the synopsis on p. 69 referring to the complex relations and interdependencies between industry and finance in national financing systems). NFSs have important implications for pricing mechanisms in the process of capital allocation, for ownership, monitoring, coping with adjustment and risk management, and for industry financing by debt-equity ratio, financing instruments and role of external financing. While such systems have developed in OECD countries over long periods, the globalisation of finance markets forces developing and transition countries to develop quickly *resilient and adaptable financial systems*. Important for explaining the role of the finance system before, during and after crises is a careful analysis if there exists an inherent tendency of NFSs to finance over-investment in particular protected and controlled sectors, or a tendency to under-invest in certain future-oriented sectors and areas (see OECD 1995, Chapter 4).

In another paper we have argued that the NISs are operating now in a context of increasing global competition so that they have to open and to enlarge their range (Wohlmuth 2000a). The NFSs are now undergoing the same process of becoming part of the global competition process (OECD 1995, pp. 89-90; Allen 1994; Schaberg 1999). As an *actor*, the NFS impacts on the economy and on the NIS by enhancing global competition, and sometimes the NFS is also a *referee* of the global competitive process by limiting finance in areas of assumed over-investment and by stimulating finance in areas of assumed under-investment. This role of the NFS as a *referee* causes frictions in national economy but is important to select innovators; it has not worked as successfully in Asian countries prior to the Asian Crisis as in the USA or in other developed economies

(OECD 1995). For the NFSs of small countries – and most of the developing and transition economies belong to this category – globalisation brings particularly dangerous challenges as strong *centrifugal forces* play a role in finance, and as larger countries have distinctive scale advantages, so that smaller countries may have increasing difficulties to finance certain types of investment in small- and medium-sized industries, and in industries of medium technology branches. So we see that only efficient and open NFSs can help smaller countries to cope with the globalisation effects, what makes them however more vulnerable. Government therefore has an important role in those branches which are of developmental impact but need finance – small- and medium-sized companies and low- and medium-technology industries. Governments reforming their NFSs in Asia and in other developing countries have to care for these companies and sectors.

It is also an open question whether the Asian NFSs are moving gradually towards "benchmark" financial systems (see Dodds 1996 on the direction of structural changes of the Asian Pacific financial systems and their future prospects). Nonetheless – irrespective of such a move towards "benchmark" systems – national specifics will also in the future constitute the basis of comparative advantages/disadvantages of the firms.

Some ideas of this complex subject are shown in figure 2:

III. 3 Corporate and Financial Sector Restructuring In Asia – A Guide for other Developing Countries?

When looking at the reforms in Asia when restructuring and re-capitalising finance institutions and companies after the Asian crisis we see that innovative elements of restructuring can only be found in some countries, sectors and spheres of finance and industrial activity, but we also see that the reforms lack generally the dimension of Schumpeterian entrepreneurship. Most effort is devoted to recapitalisation and restructuring by the way of establishing new government bodies, and much less effort is devoted to providing for the independence of finance institutions and entrepreneurial freedom of companies. Reform is rather a formal and bureaucratic process of correcting some more obvious institutional weaknesses in the financial and corporate sectors.

We have to distinguish between the formulation of objectives and targets for restructuring, and then the phases of implementation and evaluation of the restructuring processes. The objectives in all crisis countries relate to a comprehensive restructuring strategy (ADB 2000, p. 23), although at the implementation level we see that interest groups and specific coalitions prevented so far the realisation of both, corporate and financial sector restructuring.

Concerning the *objectives* for financial and corporate sectors we find the dual commitment to escape quickly from the consequences of the crisis and to address the structural weaknesses itself. The focus was therefore on restructuring insolvent financial institutions by closures, mergers or recapitalisation; improving corporate governance; reducing labour market rigidities; and deregulating domestic markets.

Three principles governed the *financial restructuring process*: minimising the risk of moral hazard by using public money for bank recapitalisation; maximising the participation of the private sector by appropriate incentives; and ensuring a comprehensive restructuring process with all relevant institutional, legal and regulatory aspects. *Corporate restructuring* had similar objectives: to find quick ways of allocating losses and of facilitating asset mobility so as to reduce the debt overhang in the corporate sector; and to develop an efficient bankruptcy regime and to modernise corporate governance (ADB 2000, p. 24).

To what extent could these restructuring objectives be implemented, and to what extent was the restructuring process based on Schumpeterian processes of competition rather than on bureaucratic governmental policies? The close look at the crisis countries shows a great diversity in implementation procedures, but the creation of new governmental institutions to restructure debt in financial and corporate sectors is a common element as is the initiation of steps to reform the regulatory and supervisory regimes. Restructuring by Asset Management Corporations played an increasing role, but the outcome of all this institutional effort is meagre. Schumpeterian processes of dynamic development have not been initiated, neither with regard to the banks as financial entrepreneurs nor with regard to the corporations as industrial entrepreneurs. Asset mobility remains low, refunding the public money used for reducing the debt overhang is a very slow process, and new entrepreneurial potential is not mobilised. Implementation suffered from so many weaknesses (see ADB 2000, pp. 21-40, BIZ 1999, pp. 53-56, BIZ 2000, pp. 53-58, and World Bank 2000b): *first*, there was a tremendous lack of synchronisation of corporate and financial sector reform. Banks were not prepared for company restructuring, and had rather weak incentives to do so. In a still ongoing lending retrenchment process the banks even endangered indebted but viable companies. Introduction of stricter regulatory and supervisory regulation contributed to further lending retrenchment and so endangered not only the large but more and more also the small and medium enterprises (SMEs). Corporate and financial sectors became more vulnerable because of this lack of effective co-ordination of the restructuring activities. *Second*, corporate restructuring processes were even more confused than financial restructuring processes because neither the scale of the problem nor the methodologies used for corporate restructuring allowed a smooth operation – the restructuring based on the "London approach" of voluntary, out-of-court and mediated debt workouts between creditor banks and debtor companies under some form of government mediation lacked experience and credibility. *Third*, it was not realised that the credit system is a most important financial and industrial information collection, processing and distribution system of the private sector, and that administratively managed closures, mergers and recapitalisation did not always consider this fundamental role of banks and other credit institutions. At the same time the erosion of social, human and managerial capacities in corporations was not halted by the type and way of corporate restructuring chosen. Closures of banks and outright insolvencies of corporations have damaged the entrepreneurial sector. *Fourth*, banks as the creditors and the government as a mediator of the debt workouts could not co-operate effectively with corporations because effective bankruptcy procedures did not exist and sanctions to speed up and to enforce the negotiations did not exist or could not work properly in the political environment and in the context of a mutual debt dependency of banks and corporations. All this slowed considerably the speed of restructuring the corporations. *Fifth*, the lack of important intermediary institutions, as for example investment banks, made the crisis countries too dependent from foreign investment banks to facilitate mergers and acquisitions, or forced them to rely on ill-equipped commercial banks with experience in short-term working capital finance only. *Sixth*, the reforms were not “owned” by the countries themselves, perhaps – some experts say this – with the exception of Korea.

From these *six deficiencies and limitations of Asian restructuring* we see that restructuring in Asia was not a Schumpeterian process of supporting entrepreneurship and stimulating innovativeness, but that this was rather a non-Schumpeterian process of conserving existing structures between banks, governments and corporations. This type of restructuring even may have strengthened vested interest groups opposing effective reforms. Concerning the evaluation of the whole restructuring process, we see that short-term and long-term tasks of formidable complexity are still ahead. *Short-term action* is required because of the necessity of, *first*, to strengthen the reform processes as quickly as possible by improving especially the working of the Asset Management Companies that have to dispose of the assets they had bought from banks to relieve them from the burden of non-performing loans (NPLs) to the corporate sector. This means that public money should be recovered more quickly thereby reducing the very high budgetary costs and risks of restructuring. *Secondly*, further improvements in corporate and financial governance are necessary by applying new forms of disclosure of information and more overall transparency, by strengthening competition laws, by privatising state-owned enterprises, by dismantling monopolies and cartels, and by changing corporate relations that exist in close networks between governments, banks and corporations. It is however not so obvious that a *blueprint* for such action exists, and so much has to be done what can not be achieved in the short-term. Vested interests oppose some of these measures that could be considered as *Schumpeterian economic policies* to this effect.

Also a most important but *long-term task* in the context of restructuring the finance and corporate sectors in Asia is the consolidation of the budget, as large budget imbalances and a huge debt accumulation have occurred after the Asian Crisis. These effects have severe repercussions on macroeconomic stability and on the developmental prospects. The role of the banks as "ephors" of the system is further weakened because of macroeconomic instability and inflationary expectations, and because of the lack of bond markets in Asia to finance these deficits a further distortion of the financial markets may follow. Further instability effects may result from "forced" government borrowing, and the debt accumulation might inhibit social and physical infrastructure development. Most important in the long-term is therefore the *development of the financial markets*, especially of the bond markets. Bond markets were neglected in Asian countries from the supply side and the demand side, from the public sector and from the private sector, and from political as well as commercial actors. Although there was an earlier development of equity markets in Asia, the dominant role of bank lending was not changed. This dominance has also limited the role of the central bank in control of the financial sector and in responding to the crisis.

The message is that all measures so far have not strengthened the Schumpeter entrepreneur in the finance and industry sectors, and the "reforms" seem to have even weakened the role of the ephors (the banks) and of the "ephor of the ephors" (the central bank).

The *Asian way of restructuring* the financial and corporate sectors after the crisis is *not a blueprint* for developing and transition economies, as it was a rather bureaucratic, not a synchronised process, and not at all Schumpeterian in the sense of creating viable financial and industrial corporations and dynamic entrepreneurs. It is not a guide because even the macroeconomic indicators deteriorated during the times of crisis management, and because the developmental effects are increasingly harmful.

This is an important lesson for other countries – *first*, to avoid the emergence of such banking and currency crises by appropriate policies and by a more balanced development of production and finance systems, and especially by promoting NFSs and NISs that are interconnected, and *second*, to avoid the negative impacts of the restructuring process itself by mismanaging the corporate and finance sectors which show a delicate relation between fragile banks and fragile companies. Developmental impacts are especially negative in those countries where the position of SMEs is weakened further by neglect of this size of companies and by lack of involvement of these corporations in the restructuring process.

To the *cumulative output losses* of the Asian crisis (for the five crisis countries a cumulative loss of approximately 30 per cent of the gross domestic product is estimated) another high share for financial restructuring costs has to be added (estimated as 58 per cent of GDP in Indonesia, 16 per cent in Korea, 10 per cent in Malaysia, and 32 per cent in Thailand), bringing the total costs to a level that is often compared with the effects of the Great Depression (ADB 2000, pp. 21-22). As these are rather conservative estimates of the extremely high full costs of the crisis itself and of the restructuring process after the crisis, a Schumpeterian restructuring policy is so important to follow now the steps undertaken so far. Such a policy is also important for the developing and transition countries so as to speed up development and transformation.

IV. Institutional Innovations: Volatility of Capital Flows and International Financial Architecture

At the national level institutional innovations as outlined above are urgent concerning the NFSs and the interrelation with the NISs. At the international level drastic systemic changes are required because of the serious effects of the volatility of the capital flows on the stability of the international financial system and on the development prospects of emerging countries. However, the great *differences in the volatility of capital flows* have to be considered in this context. As we know from recent analysis on these issues (UNCTAD 1999b, pp. 52- 61, UNCTAD 1998c, pp. 208-240, World Bank 1999a, pp. 47-67, ADB 1999, pp.190-196, World Bank 1999b, pp.141-151, and UNCTAD 1998a) the impact of the volatility of the capital flows on the Asian Crisis has to be considered in more detail, as international capital flows have quite different effects with regard to Foreign Direct Investment (FDI) and non-FDI flows. There was much more *resilience of the FDI flows* (inflows and outflows) before, during and after the Asian Crisis than of short-term and portfolio capital flows. Resilience is far greater in quantitative terms for FDI flows especially in crisis times what helps to get out of the crisis earlier, and the positive connection between FDI flows and productivity growth is very well established what also helps to overcome the crisis. All this evidence requires that at the national level as well as at the international level new modalities are found to attract these more resilient capital flows and to restructure the international system in such a way that *biases against FDI flows and equity finance* are eliminated. In this part of the paper we discuss the international aspects of the problem – how to eliminate the biases against equity capital and FDI flows, and how to restructure the international financial architecture accordingly. All this has also to do with the Schumpeterian and neo-Schumpeterian approaches as direct investment is always based on entrepreneurial decisions and leads to locational innovations and to important processes of international technological learning. Direct investment in all cases (may it be market-oriented, resources-oriented or efficiency-seeking) is an expression of locational innovation by Schumpeterian entrepreneurs (see Wohlmuth 2000a). Schumpeterian entrepreneurs continuously decide on the type and range of innovations (product innovations, process innovations, and locational innovations), and when the international system is biased against direct investments, then the Schumpeterian entrepreneur will have to concentrate more on the other types of innovations, leading to obvious losses for the company, the country and the world economy.

The facts about the resiliency of FDI flows in crisis periods are well established, but are most pronounced in the context of the Asian Crisis countries. FDI flows to developing Asia and especially to the five crisis countries remained remarkably resilient in 1998, and also in the following year we find this positive trend compared to the behaviour of bank lending and portfolio capital investment, a tendency to be observed before, during and after the crisis. Reasons for this are that FDI flows are based on a transnational corporate network of integrated international production that existed already in Asia and is preserved and adjusted in crisis periods. In this existing international and inter-regional production network some companies have adjusted their strategies accordingly to the exchange rate changes, the market restrictions, and the other economic and political developments that followed the crisis. *First*, some corporations could compensate declining domestic sales in the Asian crisis countries by exports to other Asian or non-Asian countries, responding to the devaluations and the deterioration of the market conditions in the crisis countries; *second*, some transnational corporations took advantage of lower asset prices to buy shares or related companies completely; *third*, some transnationals took initiative during and after the crisis to consolidate the financial and economic position of their affiliates; and *fourth*, some corporations invested more during and after the crisis because of a relaxation of foreign investment regimes in some countries after the crisis. On the other hand there were some obvious *structural changes of direct investment flows* when we look at the "flying geese" pattern of relocation of production between Japan, the developing countries in Asia and the Least Developed Asian countries. Some interesting effects occurred as *relocation speed slowed* along the Flying Geese pattern. FDI inflows to the Asian Least Developed Countries declined dramatically because of the decline of foreign investments from developing Asia, the countries far less affected by cuts of direct investment inflows. This tendency is a result of the currency devaluations and of the declining capacity to invest by transnational corporations (TNCs) and other internationalising companies in Japan and in developing Asia. The slowing down of TNC-based restructuring towards the Least Developed Asian and to some few other developing Asian countries as Indonesia is a quite important observation, but the flying geese relocation pattern of Asian development is only slowed but not interrupted; the *investment/development path* of Asian countries (see Wohlmuth 2000a) is only *modified* in the time dimension, not in the structural dimension. This slowdown also occurred because of the weight of declining direct investment outflows by Japanese corporations that adjusted their strategies toward their Asian investment partners where they have affiliates or related companies. A sharp decline of direct investment followed in Indonesia, in Taiwan and Hong Kong but the overall figures for developing Asia are supporting the fact that direct investments are rather resilient capital flows.

Efforts to attract more FDI flows have affected especially the foreign investment policies in the crisis countries, and changes of the foreign investment regimes were therefore proposed and partially undertaken so as to mobilise more FDI inflows. National policies to benefit from these inflows have been pursued by opening further sectors for FDI inflows, relaxing and facilitating rules, restrictions and procedures. Cross-border Mergers and Acquisitions became more important after the Asian Crisis as a vehicle of direct investment, although Asian countries lack a genuine competence in their financial systems for such complex transactions. Although there are some differences observable between countries in the Asian region, the overall resilience of direct investment is strong enough to build on it a development strategy.

However, the resilience with regard to FDI inflows has to be differentiated carefully from the resilience of outflows. Developing Asia benefited from resilient inflows but reduced considerably FDI outflows, thereby slowing the Asian restructuring processes and the speed of locational innovations. This may create structural problems in these countries in the future if this trend can not be overcome soon. FDI inflows to Asian countries may gain momentum earlier than the FDI outflows from Asian countries what is in fact an adjustment along the investment/development path after the crisis. In order to build on the resilience and on the advantages to restructure along the flying geese pattern, the policies on FDI will have to change more quickly. Various studies on Asian foreign investment regimes show that these countries in general maintain relatively open trade regimes, but some countries have still relatively closed and restricted foreign investment regimes (ADB 1999, p.193) compared with other developing countries. Policies are therefore in some countries changed so as to attract FDI inflows by more liberal rules, requirements, ceilings, and procedures. However, the *international dimension* is important *to make the FDI flows even more resilient in the future.*

What can be done at the international level? First of all, there is too much focus on the national dimension of making FDI flows more resilient and reducing the capital flows with higher volatility. The ongoing debate about an "orderly" national sequencing of the capital account liberalisation process assumes that the countries have to think carefully about their degree and way of opening the capital account, and that they themselves can decide about the result of the liberalisation policies. Carefully chosen capital account liberalisation policies are also recommended by the World Bank and the IMF. However, the *international dimension is overlooked*. The discussion on strengthening the International Financial Architecture (IFA) is concerned with another role for the IMF as a "lender of last resort" to countries in "panic" and affected by "speculative attacks" and an IMF as a more efficient crisis manager, with modalities to "bail-in" the private sector in debt rescheduling and in the process of crisis management, with ideas about a better supervision and regulation of financial systems based on internationally agreed standards, and with discussions about appropriate exchange rate and capital account liberalisation regimes.

However, as Rogoff (1999) reminds us, there are *biases in the international financial system* against direct investment and equity finance that "subsidise" bank lending at the international level, thereby generating more volatile international capital flows. These biases should be considered more carefully in discussions about a new IFA rather than thinking about another IMF, a world central bank, a better international crisis manager, an international bankruptcy court for cases of a financial country "run", and a global supervisory authority for the financial markets. It is the idea of *grand* schemes that is heavily criticised by Rogoff (1999), and he recommends another "plan" with more realistic recommendations

The plan is simply oriented towards creating some *neutrality* in the international financial system between bank lending and direct investment. This plan is most important for developing and transition countries so as to benefit from the resilience and the developmental contribution of FDI flows. However, these countries have to co-ordinate in the future their national policies on capital account liberalisation, on exchange rate regimes and on foreign investment with such an international effort.

What are these biases according to Rogoff (1999, pp. 37-39)? There are *four sources of biases* towards debt contracts in the international financial system leading then to the necessity to rework the system in such a way that these obstacles are removed. *First*, deposit insurance systems in both the creditor and the debtor countries are working in such a way that taxpayers subsidise bank intermediation, leading to an over-expansion of banks and an attitude of governments to bail-out banks in crisis at any cost. According to Rogoff (1999) not only the deposit insurance subsidy component matters but also the costs of bailing out banks in crisis add to enormous subsidies for international debt. *Second*, the way of enforcing international lending contracts by relying heavily on creditor country courts and G7 institutions is a major factor creating a bias toward bank lending. Legal rights for creditors in developed countries are much stronger than the rights for the providers of equity finance and for the direct investors. Debt holders are protected more than the providers of equity finance and the direct investors. Changes in tax laws, in labour laws, in shareholder rights, in rules and procedures on direct investment can affect negatively the rights of shareholders and direct investors in a very effective and non-transparent way. *Third*, equity markets are severely underdeveloped in developing economies, and obviously international aid and development co-operation could focus much more on financial sector development rather than following a path of debt accumulation by debt-financed development projects and programmes. It is therefore necessary to give much more importance in international co-operation to the development of equity markets and to the establishment of more favourable foreign investment regimes. For Asia this means that especially the bond markets have to be developed rapidly as an alternative to bank lending along with a further development of equity markets and more adequate foreign investment regimes. However, all this has to be seen primarily as an *international task* and not only as a national task of the countries concerned. International steps to broaden and to deepen the equity markets of the developing and the transition economies are therefore important. *Fourth*, the way of international crisis management by the IMF and the G 7 countries leads to a recycling of the assistance funds to the creditor countries and banks, so that the contribution of these countries and banks to the resolution of the crises is kept minimal and the bias against direct investment is consolidated. The recycling of funds from the crisis countries to the debt holders is a perverse reaction in the system, and is leading to further moral hazard and adverse selection in the international credit system. Guarantees given by governments to debt holders in various forms sustain this system. Direct investment and equity capital are then affected negatively by asset price developments and by a lower level of protection of investors rights.

However, the *international cure* of all these biases is not easy. We have seen the collapse of the negotiations on a Multilateral Agreement on Investment (MAI), the difficulties to negotiate in the frame of the WTO sessions on direct investment, and the complexities of discussions on the promotion of direct investment and equity capital formation in the IMF, the World Bank and the UNCTAD . However, there are ways to reduce the extremely high level of *international subsidies to bank lending* by applying more strictly the Basel II accords, by further improving and applying international standards and commitments for banks, and by measures to reduce the extent of contagion in the international banking system. The legal bias towards debt contracts in the international financial system can also be reversed. Reversing legal trends means to give equal rights to holders of debt and equity contracts. Discouraging the one-sided legal protection of debt contracts in industrialised countries can be a way to be chosen.

The elimination of these biases would automatically induce debtors and creditors to work on better frameworks for equity markets and direct investment flows, and would give inducements to promote these markets in developing and transition countries. The recycling of the emergency funds provided by the IMF and the G 7 countries from crisis countries to debt holders in developed economies can only be changed by new forms of crisis management to be used by the IMF, especially by involving private sector credit lines and negotiating other commitments by the private sector.

Obviously there is a need to confront the blueprints for a new International Financial Architecture with these issues and to remove the biases and obstacles against equity capital and direct investment.

Problems may arise in the transition period but there can be found some solutions, especially by redirecting aid to affected developing and transition countries, but the emerging economies will have strong incentives to move more quickly to institutional changes for the development of dynamic equity markets and appropriate foreign investment regimes.
After eliminating these biases, equity finance and direct investment will play a much larger role relative to bank credit. Benefits would occur for all the developing and transition countries as dependence on bank lending is reduced, thereby affecting positively the balance sheets of companies that were too vulnerable prior to the Asian Crisis. Macroeconomic stabilisation will also benefit because the *central bank* in these countries can then more effectively play the *dual role* of a guarantor of stabilisation by pursuing a strict monetary policy and as a real lender of last resort in times of banking crises.

V. Conclusions

We have taken up in this paper the central issues (in Part I) of the causes, the evolution and the consequences of the Asian Crisis, by focusing not only on the effects of the crisis on the Asian countries most concerned, but also highlighting the impacts on developing and transition economies. It is found necessary to learn from the evolution and dynamics of the Asian Crisis, and also from the crisis management undertaken so as to prevent such a dynamics of the crisis and an inappropriate crisis management in the future.
We found in Part II that the Asian Crisis is too often analysed only with regard to the evolution period after the onset of the crisis, but it is necessary to look at the pre-crisis period, the period of crisis evolution, the period of crisis management, and then to draw conclusions for the post-crisis period. Such an analysis is required as the true costs of the crisis can only be assessed in this way. The Asian Crisis as a global crisis has affected via financial and trade channels the developed countries, the developing and transition countries, and especially hard also the least

developed countries, but most important is the fact that beside of the huge cumulative output losses direct investment flows and human capital accumulation were affected negatively. Therefore the long-term repercussions of the Asian Crisis have to be ascertained. We also surveyed the most prominent theories to explain the emergence of the Asian Crisis, and we found that the various and quite heterogeneous explanations (the three generations models, the three stages of contagion models, and the three policy objectives/trilemma explanations) are not considering the aspects being most important in any interpretation of economic crises – the relation between investment, finance and innovation. These aspects are however considered explicitly in the Schumpeterian theory, by focusing on the role of the financial entrepreneur, and on the role of the investor as an industrial innovator. We went therefore on to show that the Asian Crisis has to be related to the investment and innovation process in Asia in a longer-run time perspective, in order to understand the emergence of the Asian Crisis in the 1990s. It was necessary to review the available evidence on "over-investment" and on "declining investment efficiency" in Asia to come then to the conclusion that the unequal development of the production and financial systems are at the root of the particular character of the Asian Crisis, and not some inherent weakness of financial systems that can be overcome by some structural reforms and better supervision only. It became obvious that the Schumpeterian focus on the financial and the industrial entrepreneurs can help to identify more appropriate reform proposals concerning the financial sectors in Asia and also in other developing and transition countries.

In the Part III we went a step further to discuss more explicitly the Schumpeterian and the neo-Schumpeterian approaches in the context of financial crises. Schumpeter argues that bankers as financial entrepreneurs are "ephors" (guardians, supervisors and advisers) of the capitalist system and that they are effectively "authorising" industrial entrepreneurs to innovate. Therefore Schumpeter and the neo-Schumpeterians look at the credit and finance systems as the complementary side of innovations, and so technological and financial innovations are for them interdependent and cannot be separated. From this Schumpeterian approach concerning the relation between financial

and industrial entrepreneurs as a structured and negotiated process of innovative behaviour we move on to analyse the institutional innovations with regard to the National Financial System (NFS) and the National Innovation System (NIS). We see that an unequal development of these two systems can retard growth, can lead to crises, not only to currency and banking crises, but also to crises in production systems by retarding structural changes and by eroding innovative capacities.
Therefore the evolution of the two systems and the interdependence of the two systems has to be understood. This is of importance for redesigning the NFSs and the NISs also in developing and transition countries. We see that the Asian national finance systems have accumulated certain structural weaknesses – at various levels of decision-making and governance, in some of the financial market institutions and in certain segments of the financial markets, but most important is the lack of Schumpeterian financial entrepreneurs in the formal financial sectors and therefore a highly unsatisfactory interaction between technological and financial innovative activity is the result.
Most important are institutional innovations that relate to both, the NFS and the NIS. The dynamic evolution of the NIS depends on a NFS that is – according to the neo-Schumpeterians – capable of evaluating investments in a dynamic rather than in a myopic way, so that also investment with a high degree of innovativeness can be financed. NFSs that have a high speed and range of financial innovations can support investment activity in many ways, by positively affecting the main determinants of investment activity like capital cost, cash flow and the rate of return, by financing less visible but important investment categories as research & development, marketing activities and organisational changes, by speeding up the development of venture capital markets, and by arranging finance along the life cycle of technological innovations. On the other hand the development of the NIS also affects the NFS in many ways, especially by demanding more innovative and efficient finance institutions that are capable of playing their role as “ephors” so that over-investment as in Asia is recognised earlier and can be precluded.
We also look at the crisis management process and we see that the Asian restructuring process for corporate and financial sectors was so far unsatisfactory and not conducive to create or reconstruct the

Schumpeterian financial entrepreneur, and did not link in a better way the two important systems of a dynamic economy. The restructuring process was rather non-Schumpeterian – bureaucratic, ad hoc and short-term in focus. So we can say that the institutional innovations in Asian countries are yet to come at the national level so as to remove the bottlenecks that result from the unequal and inefficient development of the financial and banking systems and from the unbalanced relation to the technological and production systems. The Asian restructuring process is therefore not at all a guide for developing and transition countries when responding to crises.

In Part IV we discuss the necessary complementary institutional innovations at the international level as wee see it after so many talk about a new International Financial Architecture (IFA) since the Asian Crisis. We observe severe biases in the ongoing discussions about the foundations of a new International Financial Architecture, as the most important distortion of the international financial system is not considered in the popular reform proposals – the non-neutrality of the finance system between bank lending and credit finance on the one side and equity finance and direct investment on the other side. It is not so clear why these systemic conditions are not more widely discussed and why not more steps are taken to remove the systemic bias. The biases towards debt contracts are rather consolidated by international subsidies, legal provisions, the international crisis management, and a bank- and credit-centred development co-operation concept for developing and transition countries. It is a most important Schumpeterian perspective to remove these biases against equity capital and direct investment as just these forms of finance allow locational innovations to take place so as to balance these with product and process innovations in the Schumpeterian sense. It would be very helpful to create more neutral patterns of financing so as to speed up investment and innovative activity in developing and transition economies. In this sense, the lessons from the Asian Crisis for these two country groups are many, and they are so important that action at the national and the international level has to follow soon.

We see that superficial explanations of the Asian Crisis ignore the investment and the innovation processes, and limit unnecessarily the menu of options for reform. We see that finance and production systems are so systematically linked that national financial systems and national innovation systems have to be developed in a coherent and consistent way as otherwise growth and structural change are impeded, either by retarding technological or financial innovations. We also see that demands of developing countries for a reform of the international economic order should focus more on the neutrality between bank lending and equity finance/direct investment so as to avoid the calamities that follow from the deficiencies of the present system.

Schumpeterian policy reforms at the national and the international levels may therefore lead to new options for developing and transition economies. The study of the Asian Crisis by using Schumpeterian methodologies is therefore highly relevant for the ongoing discussion about policy reforms for the 21st century.

References

ADB (Asian Development Bank), 1999, Asian Development Outlook 1999, Published for the Asian Development Bank by Oxford University Press, New York

ADB (Asian Development Bank), 1998, Asian Development Outlook 1998, New York, Oxford University Press for Asian Development Bank

ADB (Asian Development Bank), 2000, Asian Development Outlook 2000, Published for the Asian Development Bank by Oxford University Press, New York

AfDB (African Development Bank), 1999, African Development Report 1999, Published for the African Development Bank by Oxford University Press, New York

Allen,R.E.,1994, Financial Crises and Recession in the Global Economy, Aldershot, Hants, England/Brookfield, Vermont, USA: Edward Elgar

Archibugi, D./J. Howells/J. Michie, 1998, Innovation Systems In A Global Economy, CRIC Discussion Paper No. 18, August, Manchester Centre for Research on Innovation and Competition, The University of Manchester

Ariff, M./A. M. Khalid, 2000, Liberalization, Growth and the Asian Financial Crisis. Lessons for Developing and Transitional Economies in Asia, Cheltenham, UK/Northampton, MA, USA: Edward Elgar

Artus,P./Ch. De Boissieu, 1988, Der Finanzinnovationsprozeß: Ursachen, Erscheinungsformen und Konsequenzen, pp. 92-111, in: Heertje, Ed., 1988, op. cit.

Bartzokas, A., 2000, The Policy Relevance Of The National Systems Of Innovation Approach, UNU/INTECH, Maastricht, Netherlands

BIZ (Bank Für Internationalen Zahlungsausgleich), 1999, 69.Jahresbericht, Basel: BIZ, 7. Juni 1999

BIZ (Bank Für Internationalen Zahlungsausgleich), 2000, 70.Jahresbericht, 1. April 1999-31.März 2000, Basel: BIZ , 5. Juni 2000-08-24

Brooks, D. H./M. Queisser, Eds., 1999, Financial Liberalisation In Asia, Development Centre Seminars, Paris: OECD/ADB

Calvo, G. A./E. G. Mendoza, 2000, Capital-Markets Crises and Economic Collapse in Emerging Markets: An International–Frictions Approach, pp. 59-64, in: The American Economic Review, Vol. 90, No. 2, May

Capoglu, G., 1990, The Internationalization of Financial Markets and Competitiveness in the World Economy, pp. 111-118, in: Journal of World Trade, Volume 24

Capoglu, G./Y. Geyikdagi, 1991, The Impact of Financial Systems on the Technological Dynamics of the Economy: An Empirical Assessment, pp. 115-121, in: MIR (Management International Review), Vol. 31, 2

Chadrasekhar, C. P./J. Ghosch, 1999, The Indian Economic Reform Process and the Implications of the Southeast Asian Crisis, Employment and Training Paper 55, Geneva: ILO Employment and Training Department

Deutsche Bundesbank, 2000, Geschäftsbericht 1999, Frankfurt am Main: Deutsche Bundesbank

Dodds, J. C., 1996, Pacific Financial Systems, pp. 43-81, in: G. Boyd, Ed., Structural Competitiveness in the Pacific, Corporate and State Rivalries, Cheltenham, UK/Brookfield, US: Edward Elgar

Donges, J. B., 1999, Globale Finanzmärkte, Währungskrisen und aufstrebende Volkswirtschaften, pp. 129-146, in: Zeitschrift für Wirtschaftspolitik, Jg. 48, Heft 2

Dosi, G./Ch. Freeman, S. Fabiani, 1994, The Process of Economic Development: Introducing Some Stylized Facts and Theories on Technologies, Firms and Institutions, pp.1-45, in: Industrial And Corporate Change, Volume 3, Number 1

Ebner, A., 2000, Schumpeterian Theory and the Sources of Economic Development: Endogenous, Evolutionary or Entrepreneurial?, Schumpeter Society Conference, Manchester, 8 June - 1 July 2000

Edwards, S., How Effective are Capital Controls, pp.65-84, in: The Journal of Economic Perspectives, Vol. 13, Number 4, Fall 1999

Eichengreen, B. et al., 1999, Liberalizing Capital Movements: Some Analytical Issues, IMF Economic Issues No. 17, Washington D.C.: International Monetary Fund, February

Eichengreen, B., 1999, Toward A New International Financial Architecture, A Practical Post-Asia Agenda, Washington D.C.: Institute For International Economics, February

Enoch, C., 2000, Interventions in Banks During Banking Crises: The Experience of Indonesia, IMF Policy Discussion Paper PDP/00/2, Washington D.C.: International Monetary Fund

Frenkel, M./L. Menkhoff, 2000, Neue internationale Finanzarchitektur: Defizite und Handlungsoptionen, pp. 259-279, in: Perspektiven der Wirtschaftspolitik, Band 1, Heft 3

Gatti, D. D./M. Gallegati/H. P. Minsky, 1996, Financial Institutions, Economic Policy, and the Dynamic Behavior of the Economy, pp. 393-411, in: Helmstädter, E./M. Perlman, Eds., Behavioral Norms, Technological Progress, and Economic Dynamics, Studies in Schumpeterian Economics, Ann Arbor: The University Of Michigan Press

Hagedoorn, J., 1996, Innovation and Entrepreneurship: Schumpeter Revisited, pp. 883-896, in: Industrial and Corporate Change, Volume 5

Heertje, A., 1988, Technik- und Finanzinnovationen, pp. 1-12, in: Heertje, Ed., 1988, op. cit.

Heertje, A., Ed., 1988, Innovation, Technik Und Finanzwesen, Oxford: Für die Europäische Investitionsbank verlegt bei Basil Blackwell, Oxford

Hozumi, T./K. Wohlmuth, Eds., 2000, Schumpeter and the Dynamics of Asian Development, Münster/Hamburg/London: LIT Verlag

IFC (International Finance Corporation), Economics Department, 1991, Financing Corporate Growth in the Developing World, IFC Discussion Paper Number 12, Washington D.C.: The World Bank

IMF (International Monetary Fund), 1998a, World Economic Outlook, May 1998, World Economic And Financial Surveys: Financial Crises, Causes and Indicators, Washington D.C.: International Monetary Fund

IMF (International Monetary Fund), 1998b, World Economic Outlook, October 1998, Financial Turbulence and the World Economy, Washington D.C.: International Monetary Fund

King, R. G./R. Levine, 1993, Finance And Growth: Schumpeter Might Be Right, pp. 717-737, in: The Quarterly Journal Of Economics, Volume CVIII, August, Issue 3

Krugman, P. R., 1999a (1996), Der Mythos Vom Globalen Wirtschaftskrieg. Eine Abrechnung mit den Pop-Ökonomen, Frankfurt/New York: Campus Verlag

Krugman, P. R., 1999b (1999), Die Grosse Rezession. Was zu tun ist, damit die Weltwirtschaft nicht kippt. Frankfurt/New York: Campus Verlag

Krugman, P. R./M. Obstfeld, 2000, International Economics. Theory and Policy, Fifth Edition, Reading, Mass. et al.: Addison-Wesley

Ling, L. S./T. K. Peng, 1996, The Savings and Investment Outlook in Developing East Asia, pp. 161-176, in: OECD, Future Global Capital Shortages. Real Threat Or Pure Fiction?, Paris: OECD

Minsky, H. P., 1990, Schumpeter: Finance and Evolution, pp. 51-74, in: Heertje, A./M. Perlman, Eds., 1990, Evolving Technology and Market Structure. Studies in Schumpeterian Economics, Ann Arbor: The University of Michigan Press

Mishkin, F. S., 1999, Global Financial Instability: Framework, Events, Issues, pp. 3-20, in: The Journal of Economic Perspectives, Vol. 13, Number 4, Fall

OECD, 1995, National Systems For Financing Innovation, Paris: OECD

OECD, 1999, Structural Aspects of the East Asian Crisis, OECD Proceedings, Paris: OECD

Patel, P./K. Pavitt, 1994, The Nature And Economic Importance Of National Innovations Systems, p. 9-32, in: STI Review, No. 14, Paris: OECD

Pavitt, K., 1998, Technologies, Products and Organization in the Innovating Firm: What Adam Smith Tells Us and Joseph Schumpeter Doesn´t, pp. 433-452, in: Industrial and Corporate Change, Vol. 7

Prakke, F., 1988, Die Finanzierung technischer Innovationen, pp. 64-91, in: Heertje, Ed., 1988, op. cit.

Richardson, P./I. Visco/C. Gioro, 2000, Predicting The Evolution And Effects Of The Asia Crisis From The OECD Perspective, Economics Department Working Papers No. 236 - ECO/WKP (2000)9, Paris: OECD

Rogoff, K., 1999, International Institutions for Reducing Global Financial Instability, pp. 21-42, in: The Journal of Economic Perspectives, Volume 13, Number 4, Fall

Schaberg, M.,1999, Globalization and the Erosion of National Financial Systems. Is Declining Autonomy Inevitable?, Cheltenham, UK/Northampton, MA, USA: Edward Elgar

Schnabl, G., 2000, Japan und die Asienkrise – internationale Übertragungsmechanismen von Konjunkturbewegungen, pp. 16-32, in: List Forum für Wirtschafts- und Finanzpolitik, Band 26, Heft 1

Schumpeter, J. A., 1935, 4. Auflage, Theorie der wirtschaftlichen Entwicklung, München und Leipzig: Duncker & Humblot

Schumpeter, J. A., 1946, Kapitalismus, Sozialismus und Demokratie, Bern: Verlag A. Francke AG.

Schumpeter, J. A., 1961 (1939), Konjunkturzyklen. Eine theoretische, hisotrische und statistische Analyse des kapitalistischen Prozesses, Erster Band, Grundriss Der Sozialwissenschaft, Göttingen: Vandenhoeck & Ruprecht

Schumpeter, J. A., 1987 (1910), Über das Wesen der Wirtschaftskrisen, pp. 227-274, in: J. A. Schumpeter, Beiträge Zur Sozialökonomik, Wien/Köln/Graz: Böhlau Verlag

Tylecote, A., 1994, Financial Systems and Innovation, pp. 259-267, in: M. Dodgson/R. Rothwell, Eds., 1994, The Handbook of Industrial Innovation, Aldershot, Hants, England and Brookfield, Vermont, USA: Edward Elgar

UNCTAD, 1998a, The Financial Crisis in Asia And Foreign Direct Investment: An Assessment, Geneva: United Nations

UNCTAD, 1998b, Trade And Development Report, 1998, Financial Instability and Growth in Africa, New York and Geneva: United Nations

UNCTAD, 1998c, World Investment Report 1998: Trends and Determinants, New York and Geneva: United Nations

UNCTAD, 1999a, Trade And Development Report, 1999, New York and Geneva: United Nations

UNCTAD, 1999b, World Investment Report 1999. Foreign Direct Investment and the Challenge of Development, New York and Geneva: United Nations

United Nations Chronicle, 1999, pp. 21-34: The East Asian Financial Crisis – Globalization`s Shadow, Volume XXXVI, Number 3, New York: United Nations Department Of Public Information

United Nations, Department Of Economic And Social Affairs, 1998, World Economic And Social Survey 1998. Trends And Policies In The World Economy, New York: United Nations

United Nations, Department of Economic And Social Affairs, 1999, World Economic And Social Survey 1999, Trends And Policies in The World Economy, New York: United Nations

Vinals, J./A. Berges, 1988, Finanzinnovationen und Kapitalbildung, pp. 144-183, in: Heertje, Ed., 1988, op. cit.

Wade, R., 1990, Governing the Market: Economic Theory and the Role of the Government in East Asian Industrialization, Princeton, New Jersey: Princeton University Press

Walton, M., 1997, Der Reifungsprozeß des ostasiatischen Wirtschaftswunders, pp. 7-10, in: Finanzierung & Entwicklung, September, 34. Jg., Nummer 3, Washington D.C.: IMF/Weltbank

Wohlmuth, K., 2000a, Global Competition and Asian Economic Development. Some Neo-Schumpeterian Approaches and Their Relevance, pp. 29-86, in: Hozumi/Wohlmuth, 2000, op.cit.

Wohlmuth, K., 2000b, Growth Prospects in Africa in an Era of Globalisation – The Optimists versus the Pessimists, in: K. Wohlmuth et al., Eds., African Development Perspectives Yearbook, Vol. 8: Africa`s Reintegration into the World Economy, Münster/Hamburg/London: LIT Publishers

World Bank, 1993, The East Asian Miracle. Economic Growth And Public Policy, A World Bank Policy Research Report, Published for the World Bank by Oxford University Press, New York

World Bank, 1998, Global Development Finance 1998, Analysis And Summary Tables, Washington D.C.: The World Bank

World Bank, 1999a, Global Development Finance. Analysis and Summary Tables, 1999, Washington D.C.: The IBRD/The World Bank

World Bank, 1999b, Global Economic Prospects and the Developing Countries, 1998/99: Beyond Financial Crisis, Washington D.C.: The IBRD/The World Bank

World Bank, 1999c, World Development Report. Knowledge for Development, Washington D.C.: The IBRD/The World Bank

World Bank, 2000a, Entering the 21st Century. World Development Report 1999/2000, Washington D.C.: The IBRD/The World Bank

World Bank, 2000b, Global Economic Prospects and the Developing Countries, 2000, Washington DC: The IBRD/The World Bank

Zahid, S. N., 1995, Financial Sector Development In Asia, Hong Kong, Oxford, New York: Published for the Asian Development Bank by Oxford University Press

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