EXCHANGE RATE MANAGEMENT, GROWTH, AND STABILITY: NATIONAL AND REGIONAL POLICY OPTIONS IN ASIA

Asia Pacific Trade and Investment Initiative
UNDP Regional Centre for Asia Pacific
Colombo Office

UNDP Regional Centre for Asia Pacific, Colombo Office Policy Paper Series

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First Published in September 2009

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ISBN: 978-955-1031-18-3

Layout and design by Copyline (Pvt.) Ltd.

Cover photo by Reuters

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About Asia Pacific Trade and Investment Initiative

In recent years international trade has assumed a central role in economic growth and poverty reduction efforts in developing countries. Accordingly, the Asia Pacific Trade and Investment Initiative (APTII) of the United Nations Development Programme (UNDP) Regional Centre for Asia Pacific, Colombo Office has been working to develop new approaches and strategies designed to help align trade dynamics with the objectives of poverty reduction and human development in the Asia Pacific region. Since its founding in 2002, the APTII has promoted innovative research and policy advice that seeks to define clear substantive linkages between trade and human development, and that is consistent with the objective of supporting the Millennium Development Goals (MDGs).

The APTII, striving to build on its previous work and achievements in this third and current phase of its work programme (2008-2011), aspires to make a significant contribution to policy dialogues by fostering regional trade and investment regimes that are consistent with human development goals in the region. A central challenge facing policy-makers is to facilitate patterns of inclusive regional integration that enable them to address specific development priorities and goals, particularly with reference to the development needs of least developed countries (LDCs), landlocked developing countries (LLDCs), and small island developing states (SIDS). The focus of APTII's current work programme, therefore, is on: 1) enhancing trade competitiveness and capacity development to formulate employment-responsive and gender-responsive trade policies; and 2) strengthening the capacity to implement pro-poor regional integration strategies, including through key regional processes and/or mechanisms. In line with this focus, APTII will publish a series of studies and discussion papers highlighting the policy implications of the multifaceted dimensions of current trade trends and patterns, as well as their human development impact in the Asia Pacific region.

Acknowledgements

This paper was prepared as part of the contribution of the Third World Network to the United Nations Development Programme's (UNDP) Asia Pacific Trade and Investment Initiative (APTII). An earlier version was presented in a UNDP Regional Conference, "Promoting Human Development in Trade Regionalism: Scope for South-South Cooperation in the Asia Pacific," Bali, 24-26 November 2008. I am grateful to the participants of the conference, particularly to Manuel F. Montes and Martin Khor, as well as to C.P. Chandrasekhar, Mehdi Shafaeddin, Biplove Choudhary, Cecilia Oh, Chatrini Weeratunge, Yumiko Yamamoto, Randika Jayasinghe and the editor, John Tessitore, for their comments and suggestions.

Preface

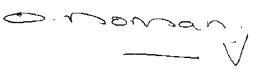
Maintenance of stable and competitive exchange rates for sustained growth and development has emerged as a key policy challenge for most economies in the Asia Pacific region. With the increasing global integration of developing countries into the global trading system and participation in international production networks, exchange rate management has taken on an added importance. The need for stable and competitive exchange rates is further enhanced by loss of space in trade and industrial policies as a result of the multilateral commitments in the WTO.

In reality, the ability of developing countries to achieve exchange rate stability has been significantly hampered by their deeper integration into international financial markets and increased openness to unstable capital flows. As the study notes, most damaging swings in capital flows have been a result of global factors beyond the control of developing countries notably by macroeconomic and financial conditions in major industrial countries. There exist no effective multilateral arrangements to discipline either policies in countries with disproportionately large impact on global financial conditions or financial markets. Developing countries have thus become increasingly vulnerable to external trade and financial shocks as a result of their greater openness.

The study argues that periods of severe economic shocks and disruptions have often led to significant changes in policy and institutions such as the creation of the Bretton Woods system, initiation of a process of monetary integration in Europe and even the triggering of Asian monetary cooperation post the 1997 crisis. In a similar vein, the conditions leading up to the current financial crisis and calls and initiatives for tighter regulation of international financial markets provide an impetus strengthening the case of deeper monetary integration in East Asia including a common currency regime and eventually, a monetary union.

Based on similar experiences elsewhere, the author emphasizes the rationale and the case for establishing common currency arrangements with supporting institutions and mechanisms including rules for policy coordination and adjustment, guidelines for capital account policies and regional funds and lender of last resort facilities. He has argued that the main benefit of a regional monetary integration in Asia would come from greater currency, payments and financial stability depending of course on the design of integration itself including of supporting institutions and mechanisms.

It is our hope that this policy paper will prove useful to governments, UNDP country offices, research institutions, civil society organizations and other stakeholders in the Asia Pacific region in addressing and crafting effective responses at both national and regional levels on the critical issue of exchange rate management.



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Abbreviations and acronyms

ACU	Asian Currency Unit
ADB	Asia Development Bank
AMS	Asian Monetary System
ASA	ASEAN Swap Arrangement
ASEAN	Association of South East Asian Nations
ASEAN+3	ASEAN plus China, Japan, and Korea
ASEAN 5	Indonesia, Malaysia, Philippines, Singapore, Thailand
BBC	Basket Parity, a Band, and a Crawl of the Rate Exchange
BIS	Bank for International Settlements
CEPR	Centre for Economic Policy Research
CGD	Commission on Growth and Development
EC	European Community
ECU	European Currency Unit
EME	Emerging Market Economy
EMS	European Monetary System
EMU	European Monetary Union
ERER	Equilibrium Real Exchange Rate
ERM	Exchange Rate Mechanism
ESCAP	Economic and Social Commission for Asia and Pacific
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GFS	Global Financial Stability Report
IIF	Institute of International Finance
ILO	International Labour Organisation
IMF	International Monetary Fund
MAS	Monetary Authority of Singapore
NIEs	Newly-Industrialized Economies
OCA	Optimal Currency Area
OTC	Over-The-Counter
PPP	Purchasing Power Parity
QDII	Qualified Domestic Institutional Investor
QFII	Qualified Foreign Institutional Investor
REOAP	Regional Economic Outlook: Asia and Pacific
SIVs	Special Investment Vehicles
TDR	Trade and Development Report
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
VSTF	Very Short-Term Financing
WEO	World Economic Outlook
WTO	World Trade Organisation

Executive summary

The exchange rate has become a growing focus of attention in the recent policy debate in developing countries largely for two reasons. First, with increased emphasis on export-led growth and the dismantling of tariff and non-tariff barriers, the role of the exchange rate in growth and development has gained added importance. Second, with rapid liberalization of the capital account in developing countries and the growing size and speed of international capital flows, the impact of exchange rate swings on economic activity has undergone a fundamental transformation. Currency movements no longer affect economic activity simply by leading to expenditure switching between domestic and foreign goods, as assumed in the traditional analysis. Instead, their impact on the economy operates mainly through private balance sheets because of growing dollarization of assets and liabilities, and exchange-rate swings tend to generate windfall losses or gains, thereby exerting significant influence on spending decisions and viability of firms and financial institutions.

These developments have made the management of the exchange rate all the more important – and all the more difficult to control. Exchange rates are no longer determined as a by-product of international flow of goods and services, or trade balances, but in asset markets where expectations of future changes and risk assessments play a central role. For this reason, it has now become increasingly evident that the management of exchange rates would call for action to influence the demand for and supply of foreign exchange as an asset, including currency market interventions as well as market-based and direct (administrative) regulations and control over capital flows and the extent of dollarization. These measures are needed not only to stabilize the exchange rate but also to reduce the vulnerability of domestic asset markets to external financial shocks, such as those transmitted from the current global financial turmoil.

This paper examines the link between the exchange rate and economic growth in developing countries. Since this operates mainly through trade, the analysis starts with a discussion of the effects of exports on capital accumulation and technical progress, followed by an analysis of the short and long-term impact of the real exchange rate on economic activity, jobs, and capital accumulation. Limits to what the exchange rate can achieve on its own are discussed; and it is argued that, important as it may be, exchange rate policy is no substitute for trade and industrial policy. Thus, the first section of the paper concludes that stable and competitively valued real exchange rates may be necessary, but not sufficient, for directing resources to traded-goods sectors and reaping the dynamic benefits associated with manufacturing exports. However, a weak currency is not always preferable to a strong currency because of a weaker currency's ramifications for intracountry and intercountry distribution of income. These imply that, in practice, considerable judgment and discretion are required for a judicious management of the exchange rate.

Maintaining stable and competitive exchange rates in most developing countries depends, inter alia, on how boom-bust cycles in capital flows are managed. An effective management should start in good times, since options are quite limited under sudden stops and reversals. Failure to prevent surges in capital inflows and unsustainable currency appreciations do not simply lead to instability in exchange rates and balance-of-payments but also to virulent financial and economic crises with durable and severe consequences for jobs, incomes, and investment. However, the task has become particularly daunting since the most damaging swings in capital flows are caused by global factors beyond the control of developing countries, notably by macroeconomic and financial conditions in major industrial countries, and there are no effective multilateral arrangements to discipline either policies in countries with disproportionately large impact on global financial conditions or financial markets.

Monetary policy on its own is often quite powerless in influencing capital flows so as to stabilize the exchange rate even when all available instruments are used, particularly at times of sudden shifts in market sentiments. Currency market interventions designed to absorb a surge in capital inflows to avoid appreciations and to build self-defence against sudden stops and reversals by accumulating reserves are second-best policies because they are costly and their impact on domestic liquidity cannot always be fully neutralized. Nor can they prevent asset market bubbles and currency and maturity mismatches in private balance sheets.

Under most circumstances regulation and control over capital flows would be necessary to prevent build-up of fragility. Standard prudential rules regarding capital charges, loan-loss provisions, and reserve and liquidity requirements can be extended and applied more rigor-

ously and in a counter-cyclical fashion to foreign currency positions and transactions in the financial system with a view to reducing maturity and currency mismatches and exchange-rate related credit risks. While useful and necessary, in most developing countries such measures would not be sufficient to prevent build-up of external fragility since not all foreign investment and borrowing are intermediated by financial institutions. Rather, direct tools may need to be applied to prevent currency and maturity mismatches in private sector balance sheets.

For most developing countries intermediate exchange rate regimes provide the most viable option for combining a relatively high degree of stability with the flexibility needed for occasional adjustments in order to maintain competitive exchange rates. A successful pursuit of such a regime calls for a judicious combination of monetary policy adjustments, currency market interventions, and control over capital flows.

In the absence of effective global arrangements to secure international monetary stability and given the difficulties in finding unilateral solutions, regional mechanisms present themselves as viable alternatives. This is particularly true for countries with close trade and investment links as in East Asia. Despite large stocks of international reserves and strong payments positions, intraregional and extraregional exchange rates have been highly unstable in the region. This carries not only the risk of contagion but also the seeds of conflicts, particularly when global markets are shrinking. There is a strong economic case for establishing common currency arrangements with supporting institutions and mechanisms, including rules for policy coordination and adjustment, guidelines for capital account policies, and regional funds and lender-of-last-resort facilities.

1. Introduction

The exchange rate has become a growing focus of attention in the recent policy debate in developing countries. This is due mainly to two reasons. First, with increased emphasis on export-led growth and the dismantling of tariff and non-tariff barriers, the role of the exchange rate in growth and development has gained added importance. Drawing on the experience of late-industrializers in East Asia, competitive and stable exchange rates have come to be seen as a key ingredient of successful industrialization.

Second, with rapid liberalization of the capital account in developing countries and the growing size and speed of international capital flows, the impact of exchange rate swings on economic activity has undergone a fundamental transformation. Currency movements no longer affect economic activity simply by leading to expenditure switching between domestic and foreign goods, as assumed in the traditional analysis. Their impact on the economy operates mainly through private balance sheets because of growing dollarization of assets and liabilities.[1] Since dollarization is almost always associated with widespread currency and maturity mismatches, exchange-rate swings tend to generate windfall losses or gains, thereby exerting significant influence on spending decisions and viability of firms and financial institutions. For this reason, swings in exchange rates now tend to generate much greater variations in economic activity than in the past, when the dollarization of private balance sheets was limited.

While these developments have made the management of the exchange rate all the more important, they have also made its control more difficult. This is because exchange rates are no longer determined as a by-product of international flow of goods and services, or trade balances, but in asset markets where expectations of future changes and risk assessments play a central role. For this reason, it has now become increasingly evident that the management of exchange rates would call for action to influence the demand for and supply of foreign exchange as an asset, including currency market interventions as well as market-based and direct (administrative) regulations and control over capital flows and the extent of dollarization. These measures are needed not only to stabilize the exchange rate but also to reduce the vulnerability of domestic asset markets to external financial shocks, such as those transmitted from the current global financial turmoil, triggered by widespread speculative lending and investment in major international financial centres.

These are the issues to be taken up in this paper. The following section examines the link between the exchange rate and economic growth in developing countries. Since this operates mainly through trade, the analysis will start with a discussion of the effects of exports on capital accumulation and technical progress, followed by an analysis of the short and long-term impact of the real exchange rate on economic activity, jobs, and capital accumulation. Limits to what the exchange rate can achieve on its own are discussed, and it is argued that, important as it may be, exchange rate policy is no substitute for trade and industrial policy. Past historical experience and more recent cross-country evidence on the link between the exchange rate and economic growth are reviewed. The main conclusion of this section is that stable and competitively valued real exchange rates may be necessary, but not sufficient, for directing resources to traded-goods sectors and reaping the dynamic benefits associated with manufacturing exports. However, a weak currency is not always preferable to a strong currency because of a weaker currency's ramifications for intracountry and intercountry distribution of income. These imply that, in practice, considerable judgment and discretion are required for a judicious management of the exchange rate.

Section 3 examines the links among international capital flows, exchange rates, and the real economy. It is argued that the boom-bust cycles in capital flows due to global factors have come to dominate exchange rate movements of most developing countries, capable of generating gyrations independent of their underlying fundamentals and macroeconomic conditions. Sharp devaluations caused by sudden stops and reversals of capital flows are severely contractionary—not because of supply rigidities emphasized by the structuralists in the 1970s and 1980s, but because of their impact on credit conditions and balance sheets. More importantly, these cycles tend to produce durable adverse effects on jobs and investment. Not only can losses of jobs and wages during crises exceed the gains that may have been reaped during boom periods, but recoveries from finance-driven

[1] Here dollarization is used to express denomination of assets and liabilities in foreign currencies generally, not just in dollars.

recessions are often jobless and without a strong upturn in investment.

This is followed in section 4 by an analysis of national policy options in managing exchange rates. It is argued that free floating is not a viable choice for developing countries. But under an open capital account regime, currency stability cannot be guaranteed even if monetary policy is fully assigned to this task. Monetary policy is often powerless in checking massive outflows triggered by sudden and widespread loss of confidence. At times of strong inflows currency market interventions and reserve accumulation could be reasonably effective in preventing unsustainable appreciations and current account positions, but they can also lead to credit, asset, and investment bubbles. Nor can they prevent currency and maturity mismatches in private balance sheets. Reserves accumulated from capital flows – borrowed reserves – are highly costly because they are invested in low-yielding foreign assets. For these reasons regulation and control over capital inflows need to be an integral part of exchange rate management.

Section 5 examines the post-1997 crisis experience of Asian countries in the light of the above considerations. It is shown that the region's response to the surge in capital inflows after the early years of the current decade has been to relax restrictions over resident outflows and to absorb excess supply of foreign exchange by intervention and reserve accumulation. While this approach has enabled countries in the region to avoid unsustainable currency appreciations and payments positions, it has not prevented rapid credit expansion or asset and investment bubbles which now render these countries vulnerable to shocks and contagion from the current global financial turmoil.

Section 6 turns to regional cooperation for greater monetary and financial stability in East Asia, including exchange rate arrangements and supporting such regional institutions and mechanisms as a common regional capital account regime, regional funds, and rules and guidelines for policy coordination and adjustment. It is argued that, given increased regional integration and the absence of multilateral arrangements for exchange rate cooperation, there is a strong economic rationale for regional monetary integration in Asia. Various options are discussed, drawing on the lessons from the European experience. The concluding section gives a summary of the main propositions, including national and regional policy recommendations for managing exchange rates and international capital flows.

2. Exchange rate, trade, and growth

2.1 The export-investment nexus

The role of the exchange rate in the process of economic growth derives mainly from its impact on trade, aggregate demand, capital accumulation, and productivity growth. However, this issue is barely addressed in the mainstream trade theory based on Ricardian comparative advantages, whereby cost differences that govern trade, specialization, and resource allocation are determined solely by differences in resource endowments or technology, and the impact of the exchange rate on trade and production is ignored.[2] On the other hand, the theory of comparative advantages focuses on the allocation of existing resources and the resulting one-off static gains, leaving aside dynamic interactions among trade, accumulation, and productivity growth that determine the evolution of comparative advantages over time. [3]

Nor is trade properly integrated into mainstream growth theories. Both neoclassical and Keynesian growth theories are designed primarily for closed economies, without paying attention to possible impact of trade on key parameters determining the long-term growth path – that is, savings, investment and technological progress. Although there is a host of ad hoc models designed to show the benefits of trade for growth, there is no accepted theory where growth is rigorously linked to international trade. [4]

There are supply-side and demand-side linkages between trade and growth. Neoclassical thinking emphasizes the former. On this view, free trade improves efficiency not only because of better allocation of resources based on comparative advantages (allocative efficiency) but also better use of resources (cost or X-efficiency) resulting from increased competitive pressures (Bhagwati 1994). However, for such one-off increases in efficiency and income to lift the growth path, they would need to translate into a permanently higher rate of investment.

A more dynamic supply-side impact of trade emphasizes technical progress and productivity growth. This depends not so much on import liberalization as expansion in foreign markets. Since Adam Smith's dictum that the division of labour is limited by the extent of the market, it has been recognized that exports can provide dynamic productivity gains by reducing the dependence of production on domestic market and helping achieve economies of scale.[5] These gains assume particular importance for industrialization and growth not only in small economies where the population size cannot accommodate optimum scale in most lines of industry but also for larger developing countries where income levels are not high enough for certain industries to become viable without exports.

In its most rudimentary form, exports provide a vent for surplus for countries with large amounts of underutilised land and labour, allowing them to increase production of primary products for foreign markets. Further progress depends crucially on industrialization, except for very small economies that could attain a relatively high level of income by specializing in off-shore financial services and tourism or by providing trade-related services to a vast industrial hinterland, such as Hong Kong.[6] This is true also for most resource-rich economies.[7] There is ample evidence that rapid expansion of manufacturing production and exports is a common feature of rapidly growing developing countries (UNCTAD TDR 2003; chap. 5).

With progress in industrialization, expansion in markets abroad helps firms to overcome high entry costs and to benefit from specialization and exploitation of scale economies, which can, in turn, accelerate learning-by-doing and productivity growth. These can also generate a range of externalities at the industry level and positive productivity-enhancing spillovers for the economy as a whole, including non-export sectors. However, the

[2] See Palley (2003) on the neglect of the impact of the exchange rate on the pattern of trade and production in the mainstream trade models.
[3] For further discussion of the shortcomings of the mainstream trade theory and its application through the so-called Computable General Equilibrium models, see Akyüz (2009).
[4] See the exchange between Srinivasan and Bhagwati (1999) and Rodrik (1999) on the link between trade and growth theories. That there is nothing new in these respects in the "new" or the endogenous growth theory, see Thirlwall and Sanna (1996) and Thirlwall (2003b).
[5] A main reason for increasing returns to scale is the existence of firm- or industry-specific fixed costs; see Krugman (1979).
[6] Hong Kong is industrially less developed than other first-tier newly-industrialized economies (NIEs), including not only Korea and Taiwan but also Singapore – an economy with a smaller population but much stronger industry. For a comparison, see UNCTAD TDR (1996: 130132).
[7] A good example is Sweden where large-scale modern manufacturing in a number of sectors played a key role in breaking its reliance on traditional commodity exports and rapidly upgrading its industrial capacity; see UNCTAD TDR (1997: Box 5).

productivity-enhancing effects of exports are not automatic and depend on a number of complementary factors, including public support (Keesing and Lall 1992; Lall 2004). This is the main reason why empirical evidence on the link between exports and productivity growth and positive spillovers from exporting is not conclusive.[8]

While recognizing that expansion to markets abroad could provide dynamic gains, the Keynesian and Structuralist schools emphasize the demand-side linkages between exports and growth, and focus on the balance-of-payments constraint – issues that have been underplayed in the orthodox theory by virtue of its assumptions of balanced trade and sustained full employment.[9] Not only are exports a component of aggregate demand but sustained export growth is essential for growth of components of domestic demand, since most developing countries are heavily dependent on imported intermediate inputs, capital goods, energy, and food for investment, production, and consumption. In particular, the imports of capital goods and technology needed to overcome the constraint that domestic production capabilities places on accumulation, growth, and industrialization requires generation of adequate foreign exchange through exports.

The dependence on imported capital goods and technologies embodied therein is generally greater during the initial stages of development, when such industries are lacking. Indeed, in the absence of foreign borrowing, an economy without a significant capital goods industry cannot really save and invest without exporting. It would need to put aside (save) part of its current production of consumables for exports in order to be able to expand its existing production capacity or invest in new lines of production by importing the capital equipment needed.[10]

Despite the hype about the benefits of removing barriers to imports in the mainstream literature, the trade-growth linkages are often discussed around the so-called export-led growth – a concept that is not always rigorously defined. Since sustained growth – as opposed to one-off increases in the degree of utilization of existing capacity – depends on capital accumulation and productivity growth, the concept of export-led growth should imply that growth of exports, rather than domestic demand, is the principal driving force behind investment and technological progress. However, the empirical literature on the link between growth and exports often relies on demand-side-growth-accounting based on *ex-post* national income identities.[11] This not only ignores the supply-side effects, but also the linkages between external and domestic components of demand, notably manufactured exports and investment. This linkage can be particularly strong in economies where an important part of manufactured value-added finds outlet in foreign markets, as in most East Asian countries. It also implies that an adverse export shock could impinge on income not only by reducing the foreign component of aggregate demand but through its direct impact on investment in traded-goods sectors.[12]

A virtuous interaction and cumulative causation between manufactured exports and investment in the growth and industrialization process involves, in effect, both supply-side and demand-side linkages.[13] Exports broaden the size of the market and thus allow scale economies to be exploited. They encourage investment over and above what can be done on the basis of domestic demand, and provide the foreign exchange needed for capital good imports and investment. Investment, in turn, improves export potential by adding to productive capacity and raising industrial competitiveness through productivity growth.

As demonstrated by successful late industrialization in East Asia, such a process of growth and industrialization is typically characterised by rising investment, exports, and manufacturing value-added, both absolutely and as a proportion of gross domestic product (GDP). In the early stages of East Asian industrialization, imports generally exceeded exports, and domestic savings fell short of investment, necessitating external financing. But over time both foreign exchange and savings gaps were closed as exports and domestic savings began to grow faster than investment. Growing profits supported by exports and investment have been the main factor behind rapid growth of savings. Thus, the *export-investment nexus* is complemented by an *investment-profit nexus* – a process of dynamic interaction between profits and investment wherein profits are simultaneously an incentive for investment, a source of investment, and an outcome of investment (Akyüz and Gore 1996). By contrast, most other developing countries in Latin America and Africa have been unable to sustain a virtuous interaction among

[8] See various country studies in Helleiner (1994) and the discussion in Eichengreen (2008: 17-19).
[9] For a lucid analysis, see Thirlwall (2003a), who emphasizes payments constraints and develops a model combining supply and demand linkages between exports and growth. The foreign exchange constraint also plays a key role in income determination and growth in gap models – see Taylor (1994). For an emphasis on the role of exports and the exchange rate as a driver of aggregate demand, see Frenkel (2008).
[10] If such an economy does not export, it can save only by storing consumables, which does not add to its production capacity. This also means that in such an economy investment cannot precede savings (exports).
[11] Growth is said to be led by exports if exports (or net exports) are growing faster than domestic demand, including public and private consumption and investment. For a recent attempt to quantify the contribution of exports to growth in some Asian countries, see ADB (2005).
[12] On this link in China, see Akyüz (2008a).
[13] The notion of a virtuous circle linked to export of manufactures is closely associated with the work of Kaldor (1989).

exports, investment, and savings. Although they experienced occasional investment booms supported by strong commodity export earnings and/or capital inflows, these could not be translated into a solid manufacturing export base and rising savings rates, with the result that these investment booms often came to an end when global trading and financial conditions deteriorated. [14]

2.2 Exchange rate, employment and investment

What is the role of the exchange rate in animating and sustaining a virtuous investment-export nexus and stimulating growth? Since the real exchange rate is the relative price between non-tradeable and tradeable goods, changes in the real exchange rate exert a strong influence on the distribution of resources between these two sectors.[15] However, from the point of view of dynamic linkages between exports and economic growth, what matters is not the effect of the real exchange rate on the use and allocation of existing resources, but on investment decisions, accumulation, and structural change. The role of the real exchange rate in the growth process runs through its effects on the relative profitability of investment in sectors with significant potential for increasing returns and productivity growth.

In many developing countries there are often limits to what currency changes can achieve in the short term in reallocating resources from non-traded goods towards traded goods sectors, including both exports and domestic substitutes for imports. In the conventional analysis these limits are formulated in terms of demand for traded goods or, more specifically, the impact of exchange rate changes on the distribution of aggregate spending between domestic and foreign goods – that is, expenditure switching. According to this analysis, a devaluation of the exchange rate reduces the prices of exports for foreign buyers and increases the prices of imports in domestic markets, and these changes raise the volume of exports and lower the volume of imports, respectively. The overall effect depends on price elasticities of demand: According to the Marshall-Lerner condition, if the sum of the elasticities of demand for exports and imports is greater than unity, the trade balance will improve. It is, however, recognized that there can be a J-curve effect; that is, the immediate impact of a devaluation on the trade balance can be adverse, because it takes time for expenditure patterns to adjust to changed relative prices. Thus, initially, quantity response tends to be sluggish. Over time, however, as export volumes increase and import volumes decline, the trade balance will improve and economic activity and employment will expand.

This analysis makes no reference to supply conditions, either for exportables or for domestic substitutes for imports. It assumes, in effect, that supply is fully flexible. However, supply rigidities are an inherent feature of many developing countries, as constantly pointed out by the structuralists during the 1970s and 1980s in the debate over the impact of devaluations on income and employment. The structuralist theory of contractionary devaluations was founded on the inelasticity of supply in economies where exports and the consumption basket of wage earners were supplied by the primary sector.[16] On this analysis, the reduction in real wages brought about by a devaluation would reduce the demand for domestic manufactures, but increased domestic prices of exportables would fail to raise output and employment in the primary sector because of supply rigidities. The increase in exports would also be limited because of low-price elasticity of domestic demand for food while imports would fall alongside declining employment in industry.[17] On the other hand, higher prices of imports would not stimulate production of domestic substitutes because of complementarity of imports with domestic manufactures – an outcome often attributed by the mainstream to import-substitution industrialization. In other words, devaluation would fail to switch resources from non-tradeables to tradeables and raise production for exports and import substitution. It would reduce the trade gap primarily through a contraction in economic activity.

There can be little doubt that supply rigidities can arise even in more diversified exporters of manufactures. Where exports are specific to foreign markets and consumed little at home (such as Barbie dolls or golf clubs), there would be a limited scope for switching goods from domestic absorption to exports. This is the case for many developing country exporters of manufactured consumer goods closely linked to international production networks.

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[14] On a comparison of phases of investment transition, exports, and savings between sub-Saharan Africa and East Asia, see Akyüz and Gore (2001); on the weakness of the links among investment, manufacturing value-added, and exports in Latin America, see UNCTAD TDR (2003; chap. V); on weak savings from profits and the high propensity to consume of property-owning classes in Latin America, see Akyüz (2006).

[15] For a succinct account of the impact of the real exchange rate on resource allocation and employment, see Frenkel and Taylor (2006). It should be noted that this theoretical notion of the real exchange rate does not have a single empirical counterpart. For alternative definitions and measurement, see Edwards (1989) and Harberger (2004).

[16] For a detailed analysis of the structuralist contractionary devaluation hypothesis, see Edwards (1989; chap. 8); for a more recent account, see Keifman (2007).

[17] It should be noted that exportables are not always wage goods in all commodity-dependent economies; for instance "basic food staples behave essentially as non-tradeables in much of sub-Saharan Africa" (Delgado 1995: 231), while most exported primary commodities have limited domestic markets. In such a case, too, devaluations would not lead to a significant expenditure switching and release goods for exports.

There are also limits to reallocation of resources so as to increase the supply of exportables. Unlike in the neo-classical theory of production where "factors of production" can be shifted freely among different lines of production, in reality skills, capital equipment, and organizational structures are often industry-specific and even product-specific, and cannot easily be reshuffled and deployed from one sector to another as the incentive structure is altered by changes in the exchange rate. Under these conditions the immediate impact of devaluations on exports and import substitution would depend largely on spare capacity in these sectors. Resources released from non-traded sectors may remain unemployed, skills may be eroded, and equipment may become obsolete until the production capacity is restructured and expanded through investment in skills and equipment according to changed incentives. Indeed, one can even talk about the supply-side J-curve effect of devaluations, whereby quantity response is delayed because existing resources cannot be rapidly redeployed to traded-goods sectors.

That such supply-side rigidities can create "adjustment costs" in the case of changes in the incentive structure due to import liberalization is recognized in the mainstream literature even though they are almost never explicitly quantified and incorporated in estimated benefits from trade liberalization (Akyüz 2009). Like big-bang trade liberalization, such costs tend to be much higher and persistent when exchange rates changes are sharp and unexpected.

Whether or not devaluations are contractionary in the short-term, the main conduit of a shift in relative prices to resource allocation is investment. But for real exchange rates to have a significant influence on investment, they need to remain relatively stable and predictable over time. Uncertainties created by large and unexpected swings in exchange rates and the consequent fluctuations in demand increase the risks of investment in traded goods sectors. Even when the average level of the real exchange rate over an extended period is favourable to traded-goods sectors, if it is subject to gyrations, it will not provide a reliable basis for directing investment to export and imports-substitution industries. In this sense the stability of the real exchange rate may be more important for growth than its average level over the medium term.

2.3 Limits and costs of reliance on the exchange rate

While competitive and stable real exchange rates play an important role in growth and industrialization, there are some caveats that need to be kept in mind. First, there are limits to what the exchange rate can do on its own in promoting industrialization and growth. Second, a weak currency is not always beneficial to stability and growth. Finally, there is a need to strike an appropriate balance between exchange rate stability and flexibility since under certain conditions efforts to maintain stable nominal and/or real exchange rates could prove to be highly damaging.

In no area of development policy can success be explained by the behaviour of a single variable, and this is certainly the case for the role of the exchange rate in growth and industrialization. While it is usually very difficult to maintain rapid growth for an extended period under overvalued and unstable real exchange rates, a weak and stable currency alone is not sufficient for sustained growth. Its impact on resource allocation, investment, and productivity growth depends very much on how it is combined with a host of other factors, including trade-related industrial policy measures, notably import tariffs and export subsidies.

Like the exchange rate, tariffs and subsidies can no doubt be used to shift resources to tradeable goods sectors. It has long been established that if exports are subsidized to the same extent as imports are taxed, the price ratio between exportables and importables would not be affected, but their prices will rise relative to non-tradeables, having the same effect as real devaluations.[18] As industrial policy tools, however, tariffs and subsidies are useful only when they differentiate among different categories of imports and exports, respectively, and this is how they were used by successful late-industrializers in East Asia.

While the exchange rate could be used to protect import-competing and export industries, it would do so uniformly.[19] However, in the course of industrialization the effective use of tariffs for infant industry protection would require the coexistence of low and high tariffs.

[18] See Edwards (1989: 81-82). According to orthodox view, when tariffs and subsidies differentiate among sectors they are "distortionary" and harmful. When they are "non-distortionary" they would not be needed since one can dispense with them and use the exchange rate to shift resources to tradeables; this would also have the advantage of avoiding rent-seeking behaviour associated with such interventions.
[19] For exchange rate protection, see Corden (1985).

Since at any point in time different industries would need different degrees of infant industry protection, an effective system of tariffs tends to be highly dispersed rather than uniform. Furthermore, over time tariffs need to be raised on some products but lowered on others, and dispersion may be rising or falling according to the stage of industrial development reached (Akyüz 2009). Much the same is true for subsidies; a country should not need to subsidize exports of products in which it has static comparative advantages, but would need to do so for industries that are yet to achieve maturity and benefit from scale economies.

These considerations suggest that, important as it may be in the allocation of resources between traded and non-traded goods industries and in reaping the dynamic benefits of exporting, the exchange rate policy is no substitute for trade and industrial policy interventions. However, since these instruments are no longer available to most developing countries because of their commitments in the World Trade Organisation (WTO), it is now absolutely essential to sustain stable and competitive real exchange rates in order to avoid payments crises and interruption to growth and development. [20]

The concept of equilibrium real exchange rate (ERER) is the standard reference in judging whether a currency is misaligned vis-à-vis underlying fundamentals. It is the rate that simultaneously secures internal and external equilibrium. Internal equilibrium refers to full employment or the attainment of potential output. External equilibrium is used synonymously with external sustainability and refers to the satisfaction of intertemporal budget constraint for the economy.[21] Defined in this way, ERER depends on a host of factors, both external and internal, including technology and productivity, tariffs and subsidies, capital account regimes, interest rates, and world prices for traded goods. There are several and repeated attempts in the literature to operationalize this theoretical concept and to measure the extent to which currencies are misaligned. However, since there are considerable uncertainties over how the key determinants of the ERER would move over time, such measures are not always a reliable guide to policy-making.

It has been argued that neutrality of incentives between traded and non-traded goods sectors, as advocated in the mainstream literature, would not be sufficient to secure their balanced growth because traded-goods sectors suffer disproportionately from institutional and market failures that pervade poor countries (Rodrik 2008). On this view, the costs entailed by these failures need to be compensated by sustained real exchange rate depreciations to increase the relative profitability of investment in traded-goods sectors.[22] However, since in principle the ERER should allow for any distortions that impinge on productivity and costs in traded and non-traded goods sectors, this argument boils down to the proposition that the impact of institutional and market failures on costs in the traded-goods sectors is not properly accounted for in measured/estimated ERERs.[23]

While overvaluation is generally considered as undesirable on grounds of its negative consequences for trade, industrialization, and growth, there is much less emphasis on the problems that could be posed by a policy of weak currency. Two types of difficulties are often mentioned, one internal, another external, and these will be discussed in some detail in the subsequent sections. On the internal side, currency interventions needed at times of large current account surpluses and/or capital inflows to prevent appreciations entail costs because reserves are invested in low-yielding foreign assets. Moreover, since it is not always possible to achieve full sterilization (that is, to offset the impact of the currency intervention on the monetary base), such a policy could also lead to domestic credit expansion, creating inflationary pressures in asset and/or products markets.[24] Externally, a policy of cheap currency could create frictions with trading partners and trigger competitive devaluations or hostile trade actions.

Perhaps more important from the viewpoint of social welfare is the impact of an aggressive export push through an undervalued currency on income distribution within and across countries. This raises the old issues of fallacy of composition and immiserizing growth, which have been largely sidelined in the more recent discussion of the link between growth and the real exchange rate. Given labour productivity, real devaluations imply

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[20] In Korea in the early 1980s "proper management of the exchange rate was considered all the more important … since the government began to expand trade liberalization, phasing out various exports subsidies and import protection measures" (Nam and Kim 1999: 235). But the very same country faced, 15 years later, the most serious balance of payments crisis and recession in its history because of its failure to manage capital flows and its currency.

[21] For the external debt-income ratio not to explode, today's external liabilities should be matched by the present value of future current account surpluses; for a discussion, see Akyüz (2007).

[22] Frenkel and Rapetti (2008) rightly ask why these failures should affect tradeable activities more than non-tradeable goods sectors.

[23] Most empirical measures of misalignments are based not on the ERER, as defined above; but on purchasing power parity (PPP) deviations, often adjusted for the Balassa-Samuelson effect, allowing for appreciations as a result of increases in productivity or per capita income. For alternative measures, see Aguirre and Calderón (2005) and Gala (2007). As noted by Aguirre and Calderón (2005: 3-4), a shortcoming of using PPP-based measures is that "PPP only accounts for monetary sources of exchange rate fluctuations and does not capture exchange rate fluctuations attributed to real factors," of which distortions due to institutional or market failures are a part.

[24] Corden (2008) focuses on reserve costs while Eichengreen (2008) emphasizes that a policy of weak currency sustained by interventions runs the risk that the currency adjustment may eventually come through a costly and financially disruptive inflation.

declines in real wages. To put it differently, for a nominal depreciation to produce a decline in the real exchange rate, nominal wages should lag behind traded-goods prices. If dollar prices of exports remain unchanged, profit margins in export sectors will increase – that is, real devaluations would redistribute income from wages to profits (Diaz-Alejandro 1963). Of course, if productivity increases over time, a weaker currency can be associated with rising real wages, as often happened in East Asia. But to the extent that real devaluations result in lower export prices in dollars, part of the productivity gains would be captured by consumers abroad at the expense of wages. With dollar prices of imports remaining unchanged, this would also be reflected in a decline in net barter terms of trade.

This outcome depends crucially on whether or not developing country exporters are "price takers" in world markets for manufactures. It is generally recognized that a small economy may be able to increase its exports of manufactures without putting any significant downward pressure on world (dollar) prices, but this would not be true for developing countries as a whole or for large economies such as China. However, even a small economy may need to lower the dollar prices of its exports if it supplies non-standard, differentiated products – which is more often the case in manufactures than in commodity exports. In such cases the benefits of any increased volume of exports may be more than offset by losses due to lower export prices, giving rise to immiserizing growth (Bhagwati, 1958). Even when rising quantities more than offset the impact of the decline in prices on export earnings, and the purchasing power of exports (income terms-of-trade) improves, falling export prices and net barter terms of trade can still entail resource losses. Evidence suggests that the purchasing power of manufacturing exports of developing countries have been rising rapidly, but prices of their manufactured exports have been weakening vis-à-vis those exported by advanced industrialized countries.[25]

This is also true for China, the most prominent developing economy pursuing an aggressive export-led growth policy based on cheap labour and cheap currency.[26] An important part of the benefits of productivity growth in China is shared between profit earners, including transnational companies, and Western consumers, even though absolute living conditions of workers have been improving rapidly. Since the early years of the decade labour productivity in manufacturing industry has grown by some 20 percent per annum, while nominal wage increases have been under 15 percent and real wage increases even lower. The share of labour cost in total gross output in mining, manufacturing, and utilities fell from 11.5 percent in 2002 to 7.1 percent in 2006; for the economy as a whole, the share of wages in GDP fell to about 40 percent after fluctuating between 50 and 55 percent in the 1990s. While average labour productivity in China is just under 20 percent of that in the United States, Chinese manufacturing hourly wage rate is about 3 percent of that in the United States. At the same level of average industrial productivity and income, Japanese and Korean wages in dollar terms were much higher than those in China today.[27]

The extent to which Chinese productivity growth has been passed onto Western consumers in the form of lower export prices rather than to workers in the form of higher wages is not very clear and further research is needed. However, there is no doubt that the United States consumers are one of the main beneficiaries of productivity growth in Asian exporters of manufactures. For instance, prices of products imported from the first tier NIEs (Korea, Taiwan, Singapore, and Hong Kong) fell by 2.4 percent per year from 1993 to 2006, compared with a 0.3 percent rise in average prices of total non-oil imports into the United States (Amiti and Stiroh 2007). Available statistics for more recent years show a similar trend for prices of imports from China, which registered a decline of 3 percent between 2003 and 2006. There was some increase in prices of products imported from China after 2006; but much of this was due, in the case of industrial supplies, to increases of prices that China paid for commodity inputs and, in the case of consumer and capital goods, to the sharp appreciation of the renminbi against the dollar, rather than domestic wage pressures (Amiti and Davis 2009).

The decline in the share of wages in China is mirrored by the decline in the share of consumption in GDP. During 2002-2007, the average growth rate of consumer spending was around 8 percent per annum, while gross fixed capital formation grew at a rate of 15 percent and exports 25 percent. Consequently, the share of consumption fell below 40 percent of GDP – almost half of the figure in the United States, and considerably less than the share of investment. The imbalance between the two key components of domestic demand has meant increased dependence of Chinese industry on foreign markets (Akyüz 2008a).

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[25] For a discussion, see UNCTAD TDR (2002: chap. IV) and Mayer (2003).

[26] See Zeng and Yumin (2002) for the earlier trend in China's terms of trade, and Yu (2007) for the more recent period.

[27] For productivity, wages, and profits, see Akyüz (2008a). Labour productivity figures refer to the whole economy and are taken from ILO (2007; Labour productivity and unit labour costs indicator, KILM 18). For hourly compensation in manufacturing in China in relation to those in the United States and other developing countries, see Banister (2005) and Roach (2007).

This experience stands in sharp contrast with that of late-industrializers in Asia, particularly Japan and Korea, where wages and household consumption grew in tandem with productivity and underpinned the expansion of capacity by providing a growing internal market. There is the risk that a cheap-currency, cheap-labour policy can weaken the efforts for upgrading and productivity growth while increasing the dependence of growth on expansion in foreign markets. This is indeed one of the conclusions reached by the Commission on Growth and Development:

> As with other forms of export promotion, exchange rate policies can outlive their usefulness. If the currency is suppressed by too much or for too long, it will distort the evolution of the economy by removing the natural market pressure for change. The cheap currency will tend to lock activity into labor-intensive export sectors, reduce the return to upgrading skills, and eventually harm productivity as a result. Like other industrial policies, a keenly priced currency is supposed to solve a specific, transitory problem. Eventually, as an economy grows more prosperous, domestic demand should and usually does play an increasingly important role in generating and sustaining growth. Exchange rate policy should not stand in the way of this natural evolution (CGD: 51).

Late-industrializers in East Asia did not rely on cheap currency for industrial development. By contrast, they occasionally tolerated moderate appreciations which, in some instances, provided incentives for upgrading and productivity growth. In Taiwan, for instance, the real exchange rate was allowed to appreciate almost continuously after the late 1960s. This, together with the rise in real wages, put considerable pressure on business to remain competitive in international markets, forcing them to achieve productivity gains that made it possible for the economy to continue to be one of the fastest growing in the world (Jenkins and Kuo 1997).

Finally, a rigid, immovable exchange rate can be as damaging as a highly volatile currency. Recurrent currency and balance of payments crises in emerging markets since the mid-1990s show that, under capital account liberalization, efforts to maintain a fixed nominal exchange rate can be disastrous even where monetary and fiscal disciplines are secured – often a recipe for boom-bust cycles in capital flows and exchange rates with serious repercussions for the real economy. There is now a growing consensus that a reasonable degree of flexibility is needed in order to prevent such gyrations.

This consensus also extends to the real exchange rate in view of increased susceptibility of developing countries to external trade and financial shocks as a result of their greater openness. Clearly a permanent shift in the variables affecting the ERER, including terms of trade and international interest rates, would call for an adjustment in the real exchange rate in order to avoid unsustainable current account positions. Similarly, temporary trade and financial shocks may call for changes in the real exchange rate in order to prevent the burden of adjustment from falling on domestic absorption, economic activity, and employment.

2.4 Cross-country evidence

Historically, real exchange rates have been more competitive and stable in late-industrializers in East Asia than in most other developing countries, including those in South Asia, Africa, and Latin America. This is an important, though not the only, reason why Asian NIEs were more successful in agricultural transformation in their initial stages of development and, subsequently, in building dynamic and competitive manufacturing industries. In Africa, where real exchange rates were relatively stable (Table 1), persistent overvaluation appears to have been a deliberate policy for extracting resources from agriculture, whereas in Latin America the extreme degree of instability is a reflection of the inability of countries to maintain competitive rates despite occasional devaluations in response to recurrent payments crises.

In most developing countries in the early stages of industrialization the evolution of exports and capital accumulation depends crucially on the performance of the agricultural sector. A major difficulty facing policymakers at this stage is how to sustain agricultural growth while extracting a surplus from agriculture for industrial development. In this respect the contrast between East Asian and sub-Saharan Africa is quite striking. Evidence shows that in both regions agriculture was taxed in the early stages of industrialization through pricing policies. Comparative analysis of the ratio of producer prices to border prices show that the implicit rate of taxation was not always higher in Africa, but the overall rate of taxation was much higher because exchange rate polices were not favourable to export crops. Rather, they were designed primarily for providing cheap imports to heavily protected industries (UNCTAD TDR 1998: Part Two, chap. 3; and Boratav 2001). However, the Asian success in agricultural development depended not only on favourable exchange rates for agricultural producers but also on complementary policies, including investment in agricultural infrastructure and provision of various productivity-enhancing services (Karshenas 2001).

In Latin America the dominant approach to exchange rate policy during the 1960s and 1970s was to

maintain fixed nominal exchange rates (often vis-à-vis the dollar), sometimes for as long as 10 years or even more, against a background of relatively rapid inflation, followed by sharp devaluations as real appreciations led to balance-of-payments crises. Real devaluations following nominal adjustments could not be sustained because inflation often continued unabated and even accelerated after currency adjustments. Many of these adjustments were stepwise, but even where devaluations were followed by crawling pegs, whereby the peg was shifted over time, subsequent nominal adjustments were not sufficient to maintain real exchange rates at levels favourable to traded-goods sectors. In other words, devaluations were not effective in bringing about real exchange rate adjustments needed to reduce structural external deficits and avoid recurrent payments crises.[28]

While nominal pegs were also used in some Asian countries such as Korea – which maintained a regime of *de facto* dollar peg until the end of the 1970s – in such cases not only were real appreciations generally more moderate but devaluations were not followed by rapid erosion of the real exchange rate.[29] Most Asian countries avoided gyrations in nominal and real exchange rates – until they liberalized the capital account in the 1990s and left their currencies to the whims of international capital flows.[30] Large devaluations, such as that in 1980 in Korea, was a response to external trade shocks, notably a sharp deterioration in the terms of trade, rather than to the erosion of the real exchange rate through rapid inflation. They were followed by a regime of crawling pegs, preventing appreciation of the real exchange rate. The Asian countries, too, no doubt experienced occasional misalignments and appreciations, but various other measures, including industry policy instruments, were used to maintain export momentum and avoid recurrent payments crises.

Recent studies on cross-country regressions to account for growth differences have increasingly included the level and volatility of the real exchange rate among the explanatory variables.[31] Evidence based on such regressions for Latin America suggests that overvaluations tend to slow growth of industrial employment and output. According to a cross-country study of 18 Latin American and Caribbean countries for 1970-1996, trade liberalizations had a small negative effect on employment growth, but the impact was greatly amplified by the appreciation of the real exchange rate, underlying the importance of proper exchange rate management at times of trade reforms (Marquez and Pagés 1998).

As already noted, most studies trying to estimate the impact of exchange rate misalignments on growth use purchasing power parity (PPP) measures, often adjusted for the Balassa-Samuelson effect. Studies by Cavallo, Cottani, and Kahn (1990) and by Dollar (1992) on developing countries report inverse correlations between real exchange rate overvaluations and economic growth. Similar results are found by Gala (2007) for 58 developing countries for the period 1960-1999. Razin and Collins (1999) lump together a large number of developing and developed countries and find that overvaluations harm growth, but this is not the case for undervaluation. Hausman, Pritchett, and Rodrik (2004) and Rodrik (2008) find that growth accelerations are usually associated with real depreciations.[32]

By contrast, a study of 60 countries over the period 1965-2003 finds that both real overvaluations and undervaluations hinder growth, although in the former case the effect is stronger (Aguirre and Calderón 2005). Moreover, the effect is non-linear: growth declines are larger, the larger the size of the misalignments. Thus, while small to moderate undervaluations enhance growth, large undervaluations hurt growth. Furthermore, in this study the impact of a movement of the real exchange rate would depend on the underlying circumstances. An increase in the real exchange rate at a time of significant and sustained improvements in terms of trade implies, in effect, a movement towards the ERER. The study shows that exchange rate changes in response to shifts in key determinants of the ERER help promote growth. Most other studies on the effect of exchange rate variability

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[28] Edwards (1989; part 2) provides an empirically rich account of the evolution of real exchange rates in Latin America and elsewhere over 1965-85. Sachs (1985) attributes superior adjustment of East Asia to shocks leading to the debt crisis in Latin America to better exchange rate and trade regimes; see also Gala (2007) for a similar view. In a study of 80 developing countries Shafaeddin (1992) found that in low-income countries, each 10 percent nominal devaluation led to a real devaluation of 3 percent after a year.

[29] For Korean exchange rate policy, see Nam and Kim (1999) and Eichengreen (2008: 8-9).

[30] For the evolution of exchange rates in a number of South and East Asian economies throughout the past three decades, see Chowdhury (2005).

[31] For a critical assessment of empirical studies on growth-exchange rate link, see Frenkel and Rapetti (2008). It should be kept in mind that cross-country growth regressions suffer from several methodological problems, including the failure to identify whether or not the explanatory variables are truly exogenous. The founder of the neoclassical growth theory, Solow (2001), criticises cross-country growth accounting exercises on grounds that the same specification applies to countries with different institutional histories so that differences in growth rates can only be explained by differences across countries in the values of the regressors used. Srinivasan and Bhagwati (1999) also criticise cross-country regressions, at least insofar as the benefits of trade openness are concerned, because of their weak theoretical foundations, poor quality of their data base, and their inappropriate econometric methodology; see also Rodrik (2005).

[32] The explanation given by Rodrik (2008) is already discussed above. A country making a rapid switch from an import-substitution strategy to an aggressive export push would need substantial incentive for producers in traded-goods industries since there are important entry costs to foreign markets. In such cases sharp depreciations and other export incentives can lead to a surge in exports and accelerate growth by easing the payments constraint. This happened in Turkey during the 1980s, as shown by several papers in Aricanli and Rodrik (1990). However, not all growth accelerations are associated with shifts in trade strategy.

on employment, investment, and growth focus on the observed behaviour of the real exchange rate without considering whether its movements are warranted by shifts in the underlying fundamentals.[33] Results are mixed, varying according to country samples, measures of volatility, and the specifications used.

It is sometimes argued that, while provoking instability, financial and currency markets also provide the means to hedge against instability so as to minimize its impact on the real economy. According to the findings of a cross-country study of 83 countries over the period 1960-2000, in countries with relatively low levels of financial development exchange rate volatility generally reduces growth, whereas in financially advanced countries there is no significant effect (Aghion et al 2006).

It is true that in developing countries the absence or underdevelopment of relevant derivatives markets limits the ability of individual agents to hedge against instability.[34] But it is not evident that in a country with liability dollarization it would be possible for the agents to hedge collectively, since this would require, in effect, pushing the currency risk abroad.[35] Moreover, quite apart from transaction costs, there are limits to hedging: "while forward contracts and currency options have proved to be effective means of reducing risk in managing financial portfolios, they cannot cushion companies engaged in international trade against the risk of exchange rate fluctuations" and "even the most sophisticated hedges are no substitute for stable exchange rates."[36] There is evidence that forwards, swaps, and options markets often develop faster when the currency is allowed to fluctuate. However, this is not only because these markets provide hedges against volatility, but also because currency volatility creates profit opportunities. In other words, it is not only that volatility is conducive to the development of hedging markets and instruments but the development of these markets and instruments can breed in greater volatility.[37]

The obvious conclusion from this maze of empirical work and theoretical considerations is that the influence of the exchange rate on growth is circumscribed by the overall economic environment and that there is no symmetry between the economic impact of overvaluation and undervaluation, and of gyrations and stability. First, there is no single and sure way of determining whether a currency is properly aligned with the underlying economic fundamentals, that is, to what extent it is overvalued or undervalued. This is largely because what constitutes the equilibrium exchange rates depends, *inter alia*, on long-term, sustained capital inflows, and passing a judgement on the latter has become almost an impossible undertaking. Second, while it may be very difficult to sustain rapid growth under sustained appreciations, whether or not depreciations would accelerate growth depends on a host of other factors. Finally, an economy is unlikely to maintain rapid growth for an extended period under highly unstable real exchange rates, but a stable currency may not necessarily promote growth; it may even hinder it when shifts in underlying fundamentals call for currency adjustments.

These considerations suggest that in practice a judicious management of the exchange rate would call for considerable judgement and discretion. Attention would need to be paid not only to the trade and growth performance of the economy and the evolution of its current account position but also to financial vulnerabilities that may result from capital flows and currency movements – an issue to be taken up presently.

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[33] For a recent survey of these studies, see Eichengreen (2008), which also provides empirical, cross-country evidence on the link between volatility and growth.

[34] For the development of hedge markets in emerging-market economies in recent years, see Saxena and Villar (2008). In Asia, over-the-counter (OTC) derivatives for foreign exchange barely exist outside Hong Kong and Singapore, which together account for over 50 percent of total turnover in foreign exchange spot markets in all emerging markets and 70 percent in OTC derivatives markets.

[35] Several Bank for international Settlements (BIS) studies find that the presence of foreigners helps in the development of derivatives markets in foreign exchange, and the demand for hedging is driven mainly by international investors in emerging market bonds and equities. The banking sector is the biggest user of OTC forex derivatives and keeps the largest open position in most emerging markets; see Saxena and Villar (2008) and Turner (2008) and the studies cited therein.

[36] See CEPR (2000), summary of a talk by Bernard Dumas based on Dumas (1994).

[37] On the evidence that these markets develop faster where the currency is allowed to fluctuate freely, see Eichengreen (2008: 3), who cautions that "there are limits to this argument that price variability is conducive to the development of hedging markets and instruments; high levels of volatility will be subversive to financial development … insofar as it induces capital flights and leads the authorities to resort to policies of financial repression."

3. Capital flows, exchange rates, and the real economy

3.1 Boom-bust cycles in capital flows and exchange rate gyrations

A common feature of the cross-country studies on the link between the exchange rate and economic growth is that they do not specify the forces driving the currency and the nature and causes of instability. Many of them lump together earlier episodes of appreciation and instability caused by domestic policy inconsistencies with those arising from boom-bust cycles in capital flows driven by global forces in the more recent periods. These episodes differ not only with respect to the causes of appreciations and instability but also their impact on employment, investment, and growth and, hence, the appropriate policy response. Indeed, the failure of the International Monetary Fund (IMF) to diagnose the nature of these crises and distinguish them from traditional currency appreciations and payments difficulties caused by domestic demand expansion and inflation led to serious errors in policy response, notably in East Asia where pro-cyclical monetary and fiscal tightening adopted in response to the 1997 crisis served to deepen the economic contraction caused by the reversal of capital flows.

Exchange rate misalignments and instability caused by boom-bust cycles in private capital flows is not a recent phenomenon. Perhaps the first most significant post-war episode was the experience of the Southern Cone countries in Latin America, notably Chile, during the late 1970s and early 1980s. The combination of financial liberalization, tight monetary policy, and fixed nominal exchange rates attracted large amounts of foreign capital to the region, leading to debt accumulation by the private sector and a consumption boom. Massive inflows of capital allowed the currencies to appreciate in real terms despite mounting trade deficits. The experiment ended with a currency and financial crisis, bringing down many banks and causing a sharp contraction in economic activity (Diaz-Alejandro 1985).

With rapid liberalization of the capital account in the 1990s, international private capital flows have become the driving force behind business cycles and exchange rates in many developing countries, capable of producing unsustainable economic expansions and currency appreciations followed by financial crises and recessions. While country-specific (pull) and global (push) factors both play important roles in determining the direction, size, and nature of capital flows, evidence shows that the most damaging episodes of such crises are those associated with boom-bust cycles in capital flows driven by global factors beyond the control of the recipient countries.[38]

Indeed, since the early 1990s currency and balance of payments crises have occurred under varying macroeconomic and financial conditions in Latin America, East Asia, and elsewhere (UNCTAD TDR 1995; chap. 2, 1997; chap. 3, 1999; chap. 3, and 2003; chap. 4). They were seen not only in countries with large and widening current account deficits (e.g., Mexico and Thailand), but also where deficits were relatively small and presumed sustainable (Indonesia and Russia). A significant currency appreciation is often a feature of countries experiencing currency turmoil (Brazil, Mexico, Russia, and Turkey), but this has not always been the case; appreciations in most East Asian countries hit by the 1997 crisis were moderate or negligible. In some cases crises were associated with large budget deficits, as in Brazil, Russia, and Turkey, but in others (Mexico and East Asia) the budget was either balanced or in surplus. Crises occurred not only where capital flows supported a boom in private consumption, as in Latin America, but also in private investment, as in East Asia. Again, in some episodes of crises external liabilities were largely public (Brazil and Russia) while in others they were private (East Asia). Finally, most countries hit by balance of payments and financial crises are said to have been lacking effective regulation and supervision of the financial system, but Argentina could not avoid a currency and payments crisis and default despite having one of the best systems of prudential regulations in the developing world and a financial system dominated by foreign banks.

Recurrent currency and financial crises under varying macroeconomic conditions have raised serious questions about the mainstream thinking that currency and balance-of-payments crises result primarily from macroeconomic policy inconsistencies, notably lack of fiscal and monetary discipline, and that price stability is

[38] This is also recognized by the World Bank (2003: 26): "dynamics of net capital inflows and the changes of official reserves over the cycle do indeed indicate that the push factor is more important for middle-income countries, while the pull factor dominates in high-income countries." On post-war cycles in capital flows, see UNCTAD TDR (2003: chap. 2); for more recent episodes, see IMF WEO (October 2007: chap. 3).

both necessary and sufficient for financial and exchange rate stability. In reality, in most countries financial boom-bust cycles, asset-price and exchange rate gyrations, and credit surges and crunches have all occurred under conditions of low and stable inflation – the most recent example being the global financial crisis triggered by the sub-prime debacle.[39] In the more extreme cases, as in Latin America, where price instability has traditionally been regarded as structural and chronic, single digit and stable inflation rates have been attained at the expense of increased financial fragility and instability through exchange-rate-based stabilization programmes relying on short-term, unstable capital inflows.

The pattern of exchange rate movements over the boom-bust cycles in capital flows is well known. If the currency is allowed to float freely, both nominal and real exchange rates would appreciate when capital inflows exceed the current account deficit; but the deficit itself would be widened by real exchange rate appreciations, requiring growing amounts of inflows to finance it. Under a nominal peg currency, market interventions would be necessary when inflows exceed the current account deficit. Still, the real exchange rate could appreciate depending on the rate of inflation. Here, too, real appreciations could widen the current account deficit so that increased amounts of capital inflows would be needed to support a nominal peg. This was the case in exchange-rate based stabilization programmes implemented in Latin America and Europe in the 1990s. In East Asia, too, in the run-up to the 1997 crisis nominal exchange rates were broadly stable, but this had nothing to do with disinflation; rather, it reflected the long-standing emphasis on stable exchange rates in export-led industrialization and growth. Moreover, central banks in Asian countries hit by the 1997 crisis had occasionally intervened in order to prevent appreciation.[40]

With a sharp reversal of capital flows, nominal rates tend to collapse, overshooting their longer-term levels. Thus, over the boom-bust cycle, nominal rates first appreciate or remain relatively stable during the surge in capital flows depending on the regime adopted, resulting in moderate-to-sharp real appreciations. The rapid exit of capital then leads to a collapse in the nominal rate. Even though this often leads to an increase in inflation, currency-cum-financial crises generally result in large real devaluations.[41] This is often followed by a recovery in the nominal exchange rate – a correction to downward overshooting seen at times of capital flight – but real exchange rates remain below the levels attained during the surge in capital flows. This pattern is observed even where the sudden stop or reversal of capital flows do not trigger a balance of payments crisis, as was the case in Singapore and Taiwan during the 1997 crisis and, as discussed below, in the current episode of sharp declines in capital flows triggered by the sub-prime crisis.

3.2 Wages, employment, and investment over the cycle

In almost all emerging market economies that experienced boom-bust cycles in capital flows in the 1990s, real wages rose rapidly at times of surges in capital inflows, but employment behaved differently in different countries.[42] Where the boom was driven by investment, unemployment fell during the expansion phase. This was the case in all the countries hit by the 1997 Asian crisis except Indonesia. By contrast, in Latin America, where booms were driven by consumption, unemployment was either stable or higher despite expansion of employment in services sectors, because of loss of competitiveness and jobs in industry.

During a surge in capital inflows, high real wages and cheap imports of capital goods, together with easy access to credit, tend to encourage investment and lead to capital deepening in an effort to restructure industry and raise productivity to meet foreign competition. This happened even in Latin America, where booms were driven primarily by private consumption. Investment growth was much stronger in East Asia, where firms augmented investment in the hope of increasing productivity and market shares, and expanded into new areas of production in response to rapidly falling prices of many of the electronic products exported, notably semiconductors. Again, most episodes of strong capital inflows produce booms in property markets and increased investment in residential and commercial construction.

Currency and maturity mismatches in balance sheets create serious problems for firms and financial institutions at times of rapid exit of capital and the collapse of the currency. These set off a process of debt deflation whereby attempts to escape from the squeeze on balance sheets of rising domestic cash needs to service

[39] See Borio and Lowe (2002) on the emergence of exchange rate and financial instability in a low inflation environment.
[40] For instance, in the run-up to the 1995 Mexican crisis the peso remained pegged to the dollar while in Korea the won fell against the dollar from 1996 until the contagion from the Thai crisis in 1997. For the exchange rate regimes in Asia before the 1997 crisis, see UNCTAD TDR (1998: chap. 3, box 2).
[41] It should be noted that several countries, including Argentina, Brazil, Mexico, Russia, and Turkey, have succeeded in overcoming their chronic price instability and avoiding a return of rapid inflation despite the collapse of their currencies and the external adjustment necessitated by the crisis.
[42] For the evidence cited in this section on the evolution of wages, employment, and investment in boom-bust-recovery cycles in emerging markets, see UNCTAD TDR (2000; chap. 4, TDR 2003; chap 4), ILO (2004), Van der Hoeven and Lübker (2005), and World Bank (2003: 23-26). In the more recent boom-bust cycle after 2002, the boom phase was not associated with faster wage growth in several Asian countries, notably India and China. On the Indian experience, see Chandrasekhar (2008).

foreign debt simply increase their financial difficulties by driving down exchange rates and asset values even further. Credit is cut as collateral values fall and banks try to consolidate their balance sheets (UNCTAD TDR 1998; chapter 3; and Krugman (1999). Credit conditions are often aggravated by monetary tightening and interest rate hikes aiming to check capital flight, producing sharp declines in employment and real wages alongside a deep contraction in output.

The decline in real wages was particularly steep in Indonesia, Mexico, and Turkey at times of crises – between 11 and 25 percent per annum. In East Asia unemployment went up rapidly, particularly in Korea and Indonesia (table 2). In Latin America, where booms failed to produce a significant growth in jobs, the subsequent crises took unemployment to exceptionally high levels: in Mexico open unemployment doubled within a year; in Argentina, where the currency board and the fixed exchange rate were maintained despite worsening external conditions, unemployment shot up in the wake of the Mexican crisis, reaching almost 20 percent in 1995; in Brazil open unemployment rose from 6 percent in the mid-1990s to almost 10 percent in 1999. A similar increase was registered in Turkey during the 2001 crisis.

Almost all episodes of crisis-induced currency declines in emerging markets produced sharp declines in output, reviving the debate over if and why devaluations are contractionary. Even in countries with highly diversified production and exports such as Korea, real depreciations were not immediately translated into larger export volumes. One possible reason given is contagion: that is, if currencies of all countries competing in the same export markets fall, none of them would gain competitive advantage.[43] However, this is not very plausible since most Asian countries hit by the crisis achieved rapid export growth subsequently. A much more important factor in delaying the response of exports to real depreciations was credit crunch; that is, with the breakdown of the credit system, firms became unable to raise operating capital needed to increase production and exports. Indeed, in Asia currency declines appear to have inflicted less damage on firms than cut-backs in domestic credit lines and rise in interest rates because many firms with large foreign debt were export-oriented.

During crises not only do exports fail to rise quickly in response to the decline in the currency but domestic demand shrinks because of the impact of the collapse of the currency on private balance sheets. Indeed, there is now a growing agreement that the balance sheet impact of currency declines, rather than supply-side rigidities or demand inelasticities, are the main reason why crisis-induced devaluations in emerging markets are contractionary (Krugman 1999; Frankel 2005). There is also some support from empirical studies, including a study of nine Latin American countries by Galindo, Izquierdo, and Montero (2006), that finds that real exchange rate depreciations can have a positive impact on employment growth, but this effect is reversed as liability dollarization increases. [44]

In expansion-recession-recovery cycles in emerging markets governed by international capital flows, losses of real wages, employment, and investment incurred at times of downturn are not fully recovered when the economy regains its pre-crisis level of GDP. In Asia during the recovery phase, real wages regained their pre-crisis levels only in Korea while they remained depressed elsewhere in the region. In Latin America, real wages were all lower than the peaks reached before the crises. More importantly, everywhere employment lagged considerably behind output growth, giving rise to the phenomenon of jobless recovery. Post-crisis open unemployment rates were higher than pre-crisis rates by 1.0 percentage point in Brazil and Mexico, 5.5 points in Argentina, and 4 points in Korea and Indonesia. In Turkey growth averaging over 7 percent for four years after the 2001 crisis did not make any dent in unemployment, and real wages barely recovered. The deterioration in the conditions of labour, particularly among the unskilled, is a major reason why poverty levels in most of these countries stayed high despite economic recovery. In all four Asian countries hit by the 1997 crisis, unemployment levels in 2007 stood above those observed before the crisis, particularly in Indonesia. Much the same is true for investment: investment rates in all Asian countries hit by the 1997 crisis are still below their pre-crisis levels (table 3).

Recoveries from economic downturns caused by the bursting of financial bubbles have also been weak in job creation and investment in some advanced countries. This was the case in the United States' recovery from the recession caused by the bursting of the dot-com bubble in 2001. Several explanations have been offered for this phenomenon (Akyüz 2008b: 184-86), but there is a growing consensus that the damage inflicted by financial crises on industry tends to be much deeper and longer lasting than difficulties resulting from economic contractions that occur in the context of traditional business cycles wherein finance takes a more passive and accommodative role.

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[43] See Rajan and Shen (2006), which also discusses other possible explanations and reviews studies on the income effect of crisis-induced devaluations in Latin America and Asia.

[44] See, however, Tovar (2006), which contends in an econometric analysis for Korea that devaluations are expansionary despite the balance sheet effect.

4. Managing capital flows and exchange rates

4.1 Policy trade offs and exchange rate regimes

According to conventional economic theory, it is not possible to pursue simultaneously an independent monetary policy, control the exchange rate, and maintain an open capital account. All three are *potentially* feasible, but only two of them could be chosen as *actual* policy – thus, the dilemma known as impossible trinity or trilemma. Once the capital account is opened, a choice has to be made between controlling the exchange rate and preserving an independent monetary policy. Using monetary policy as a countercyclical tool to stabilize economic activity could result in large cyclical swings in the exchange rate and the balance-of-payments. Conversely, if monetary policy is used to stabilize the exchange rate, it cannot act as a countercyclical macroeconomic tool and prevent large cyclical swings in economic activity.

The orthodoxy takes financial openness for granted and argues that only one of the two corner solutions is feasible. At the one corner lies independent floating whereby the currency is left to market forces without intervention. At the other corner there are the so-called hard pegs based on legally mandated, credible commitments to a fixed exchange rate by locking into a reserve currency through currency boards or adopting a reserve currency as a national currency (full dollarization) or by joining a monetary union – arrangements that would effectively eliminate monetary policy autonomy, and even the central bank as it is traditionally known with the function of lender of last resort.

This trilemma, however, is not absolute. In principle it is possible to choose among a variety of intermediate exchange rate regimes and secure a reasonable degree of currency stability by judiciously combining different degrees of monetary policy independence, financial integration, and currency-market interventions.[45] Even under floating rates it may be possible for a central bank without an explicit exchange rate target to retain a relatively high degree of monetary policy autonomy and, at the same time, try to influence the exchange rate by currency-market interventions in order to curb excessive volatility.

Intermediate regimes between corner or bipolar solutions include soft pegs, defined as "exchange rates that are currently fixed in value (or a narrow range of values) to some other currency or basket of currencies, with some commitment by the authorities to defend the peg, but with the value likely to change if the exchange rate comes under significant pressure" (Fischer 2001: 3). They also include crawling pegs, where the peg is shifted over time; fixed exchange rate bands, where the currency is allowed to float within a specified range; or crawling bands, where the band itself is allowed to move over time.[46] Among examples of intermediate regimes are the Bretton Woods system of adjustable pegs, the Exchange Rate Mechanism (ERM) of the European Monetary System (EMS), the fixed nominal pegs used in exchange-rate based stabilization programmes in Latin America to pin down inflation expectations, and the regime known as BBC – a basket parity, a band, and a crawl of the exchange rate – successfully implemented by Singapore and adopted in different versions by some other countries, including, since 2005, China and Malaysia.[47] The BBC regime combines flexibility with stability; it allows the currency to fluctuate within a relatively narrow range and for the central parity to be shifted in response to changes in the underlying fundamentals and to large and durable shocks.

These intermediate regimes call for the use of monetary policy, currency-market interventions, and rules over capital flows in appropriate combinations. Otherwise, instability and crises can be unavoidable. For instance, the Bretton Woods system of adjustable pegs operated under widespread controls over international capital movements but broke down with increased mobility of capital, which resulted from and exposed the inconsistencies between the pattern of exchange rates and domestic policy stances. Similarly, adjustable pegs in the ERM worked successfully under conditions of free capital movements as long as macroeconomic fundamentals were consistent with exchange rate targets, but broke

[45] For an attempt to quantify these configurations and to link them to exchange rate stability, see Aizenman, Chinn, and Ito (2008), which measures the degree of monetary independence by correlation between home and international interest rates, and uses an index of financial openness and the ratio of reserves to GDP, and links them to exchange rate stability measured as annual standard deviations of monthly exchange rates.

[46] On various regimes, see Edwards and Savastano (1999) and Williamson (2000).

[47] In Singapore monetary policy is focussed on the management of the exchange rate, rather than money supply or interest rates, which is seen as the most effective tool in maintaining price stability and competitiveness in a small and highly open economy. The system also relies on a large positive net foreign asset position and tightly regulated financial system; see Parrado (2004) and Burton (2005).

down during 1992-1993 when high-inflation countries such as Italy and the United Kingdom failed to make the necessary currency and/or policy adjustments (Akyüz and Flassbeck 2002). Again, the combination of soft pegs, free capital flows, and high inflation and interest rates proved to be damaging in countries pursuing exchange-rate based stabilization programmes, creating not only currency gyrations but also costly financial crises.

After recurrent crises in emerging markets with soft pegs in the 1990s, developing countries were advised to go for corner solutions. However, with the collapse of the Argentine currency board (convertibility), hard pegs fell from favour. The orthodox policy advice has increasingly emphasized assigning monetary policy to the task of inflation control (inflation targeting) and leaving the currency to float under a reasonably open capital account.

The problems with corner solutions are well established.[48] It is now widely recognized that hard pegs are not a viable option for a large majority of developing countries. Free floating, on the other hand, does not prevent boom-bust cycles in capital flows, unsustainable current account positions, and currency gyrations since exchange rate uncertainty cannot always curb herd behaviour in financial markets. Experience shows that crises are as likely to occur under floating rates as under soft pegs. The latest example is Iceland – an economy practicing inflation targeting and independent floating. It saw its currency strengthen during the surge in capital inflows after 2002; and its current account deficit grow to reach 18 percent of GDP in 2008, when its currency and economy collapsed with the global turmoil triggered by the sub-prime crisis (table 4).

Most emerging-market economies with independent floating currency regimes have been affected more severely by the current global instability than those with intermediate regimes of managed floating. In independent floaters, exchange rates appreciated sharply during the surge in capital inflows, and many of these countries ran large and growing current account deficits despite a favourable global trading environment (table 4). With the deepening of the sub-prime crisis and reversal of capital flows after mid-2008, currencies in all these countries fell sharply from their peaks. In countries with managed floating, appreciations during the earlier boom were moderate and most of these countries succeeded in generating sizeable current account surpluses in the preceding expansion. Even though they too have been hit by the global crisis, declines in their currencies have been moderate compared to independent floaters.

There is ample evidence against the bipolar view that with increased financial integration countries will move to the polar extremes of free float or hard pegs. It is true that with financial development and openness countries tend to move away from rigid exchange rate regimes, but instead of adopting free floating they seem to prefer intermediate regimes. A large majority of developing countries were using intermediate regimes until the second half of the 1990s. Moreover, many countries that claimed to have allowed their exchange rates to float were actually managing them by using interest rates and currency-market interventions because of "fear of floating" (Calvo and Rheinhart 2002). Following recurrent emerging market crises in the 1990s, there was a shift towards independent floating. After recovery, however, many countries shifted back towards intermediate regimes: "The persistent popularity of intermediate regimes … suggests that such regimes may provide important advantages. Indeed, the absence of a general bipolar tendency may be indicative of the possibility that intermediate regimes are able to capture some of the benefits of both extremes while avoiding many of the costs."[49]

4.2 Capital flows, monetary policy, and the exchange rate

A key question for countries adopting intermediate regimes is, therefore, how best to combine monetary policy action, currency-market interventions, and regulation of capital flows in order to sustain stable and competitive exchange rates without giving up the objectives of price stability, full employment, and rapid growth. This is not an easy task, since for developing countries global financial integration brings much greater erosion of monetary independence than is typically portrayed in economic theory. Monetary policy cannot always secure financial and macroeconomic stability whether it is geared towards a stable exchange rate or conducted independently as a countercyclical tool to pursue domestic objectives.

Because of exchange rate pass-through and extensive liability dollarization, there are strong spillovers from exchange rates to domestic economic and financial conditions. Thus, using monetary policy as a domestic countercyclical tool, with the benign neglect of external conditions, does not guarantee price and financial stability when there are large swings in capital flows and exchange rates. On the other hand, the effect of monetary policy on exchange rates is much more uncertain

[48] For a discussion, see Williamson (2000) and Akyüz and Flassbeck (2002) and the references therein.
[49] Rogoff *et al* (2004: 14). For the evolution of exchange rate regimes in emerging markets, see also Edwards and Savastano (1999), Fischer (2001), and Stone, Anderson, and Veyrune (2008). On the basis of quantitative measures of degrees of exchange rate flexibility, monetary independence, and capital account openness noted above, it has been shown that, since the beginning of this decade, emerging markets have moved towards managed exchange rate flexibility, using international reserves as a buffer and retaining some degree of monetary independence; see Aizenman, Chinn, and Ito (2008). On "the return of the middle way" in Asia, see MAS (2007: chap. 5) and Kawai (2007).

and unstable than is typically assumed in the theory of the impossible trinity because of volatility of risk assessments and herd behaviour. During financial turmoil hikes in interest rates are often unable to check currency collapses, while at times of favourable risk assessment a much smaller arbitrage margin can attract large inflows of private capital and cause significant appreciations.

Even when authorities are prepared to use greater discretion in monetary policy, they may face serious trade-offs because domestic conditions may call for one sort of intervention and external conditions another. This is most clearly seen at times of rapid exit of capital when liquidity expansion and cuts in interest rates needed to prevent financial meltdown and stimulate economic activity could simply accelerate flight from the currency. As a result, monetary authorities are often compelled to pursue a procyclical policy in an effort to restore confidence. However, this is rarely effective since, under crisis conditions, the link assumed in the conventional theory between the interest rate and the exchange rate also breaks down. When market sentiment turns sour, higher interest rates aiming to retain capital tend to be perceived as increased risk of default. As a result, the risk-adjusted rate of return could actually fall as interest rates are raised. This is the main reason why procyclical interest rate hikes implemented as part of IMF support during several episodes of financial crises were unable to prevent the collapse of the currency, instead serving to deepen economic contraction. Under such conditions, unilateral temporary debt standstills and exchange restrictions present themselves as the only viable options to prevent financial meltdown and a deep recession.

Monetary policy also faces hurdles at times of economic expansion associated with surges in capital inflows, asset bubbles, and currency appreciations. Tightening to check overheating could encourage external borrowing and short-term arbitrage flows. Lower interest rates could discourage such flows, but they fuel domestic credit expansion and overheating.

Countercyclical fiscal policy can no doubt help manage expansions. When the economy is overheating due to a boom in private spending supported by capital inflows, fiscal tightening would obviate the need for tighter monetary policy and higher interest rates and, hence, prevent further arbitrage inflows and appreciations. If budget revenues and expenditure structures are appropriately designed, this task could partly be done by automatic stabilizers. However, most developing countries lack either the policy space or the political will needed for the kind of fiscal tightening necessary to check strong economic expansions supported by a surge in capital flows. In reality, governments in many emerging markets tend to run procyclical fiscal policy, notably those with chronic fiscal deficits and large public debt (Akyüz 2006).

4.3 Currency-market interventions and reserves

Interventions and sterilization

A policy of resisting appreciations and accumulating reserves through interventions in currency markets at times of strong capital inflows and economic expansion and using such reserves to prevent sharp depreciations during sudden stops and reversals appears to be a sensible counter-cyclical response to instability in international capital flows. However, this is not always neutral in its consequences for monetary policy. If interventions are not fully sterilized, they would result in credit expansion, thereby generating inflationary pressures in asset and/or product markets. If they are sterilized by issuing government debt, they could lead to higher interest rates, which could, in turn, attract more arbitrage capital.

Whether or not interventions in emerging markets are successful in stabilizing exchange rates and preventing credit expansion and inflation is highly contentious. Examining several episodes of surges in capital inflows since the early 1990s, the IMF *World Economic Outlook* (October 2007: 122-24) concludes that sterilized intervention is likely to be ineffective and inflationary when the influx of capital is persistent: "a policy of resistance to exchange rate pressures does not seem to be associated with lower real appreciation while countercyclical fiscal policies have had the desired effect" and "the policy of sterilized intervention…often tends to be associated with higher inflation." By contrast, work done in the Bank for International Settlements (BIS) suggests that sterilized intervention has generally been more successful in emerging markets than in advanced countries, particularly where the banking sector is closely scrutinized.[50] Evidence from Asian emerging markets discussed below suggests that currency market interventions have been quite effective in checking appreciations in the recent surge in capital flows, but they have been only partially successful in sterilization.

The impact of sterilization on interest rates and arbitrage capital depends on the size and composition of capital flows. When capital inflows are moderate in size and concentrated in the market for fixed-income assets, sterilization by issuing government debt would not raise the interest rate. However, when they are broad-based and concentrated in direct and portfolio equity, as in

[50] See various studies in BIS (2005), notably Disyatat and Galati (2005) and Mihaljek (2005). See also Mohanty and Turner (2006).

most emerging markets in recent years, sterilizing them by issuing government debt can raise the interest rate and attract arbitrage flows, particularly when inflows are large compared to the size of the debt market.[51]

Sterilization by issuing government (or central bank) debt is also costly because interest earned on reserves is usually much lower than interest paid on such debt. This fiscal – or quasi-fiscal – cost of reserves has two components: a part due to the difference between external borrowing rate and the rate earned on reserves, which constitutes a net transfer of resources abroad, and another due to the difference between the interest rate on government debt and the external borrowing rate, which is an internal transfer to the private sector.[52]

Sterilization by raising non-interest-bearing reserve requirements of banks could address some of these problems; it could help reduce the fiscal cost of intervention and check credit expansion. However, by increasing the cost of credit, it could also encourage firms to go to foreign creditors. Banks may also shift business to offshore centers and lend through their affiliates abroad, particularly where foreign presence in the banking sector is important. A relatively tight supervision over the banking system would be needed to impose high reserve requirements and prevent regulatory arbitrage.

Reserve accumulation as self insurance

Traditionally, reserves covering three months of imports were considered adequate for addressing the liquidity problems arising from time lags between payments for imports and receipts from exports. The need for reserves was also expected to lessen as countries gained access to international financial markets and became more willing to respond to balance of payments shocks by adjustments in exchange rates. However, capital account liberalization in developing countries and their greater access to private finance has produced exactly the opposite result. Private capital flows have allowed running larger and more persistent current account deficits beyond the levels that could be attained by relying on international reserves or borrowing from the IMF. But this has also resulted in an accumulation of large stocks of external liabilities. Consequently, debtor countries have become increasingly vulnerable to sudden stops and reversals in capital flows, and this has increased the need to accumulate reserves to safeguard against currency turmoil and speculative attacks. Indeed, evidence shows a strong correlation between capital account liberalization and reserve holding, and a growing tendency to absorb capital inflows into reserves rather than using them for current payments (Aizenman and Lee 2005; Choi, Sharma, and Strömqvist 2007).

Vulnerability to a sudden stop and reversal of capital flows is often assessed on the basis of short-term external liabilities in relation to reserves. Foreign investment in equity and local-currency debt is not considered a serious potential threat to stability because the exchange rate risk is assumed by investors. Indeed, according to the so-called Greenspan-Guidotti rule formulated after the Asian crisis, in order to avoid a liquidity crisis, international reserves in emerging markets should meet short-term external foreign-currency denominated liabilities, defined as debt with a remaining maturity of up to one year.[53]

A problem with such rules is that vulnerability is not restricted to short-term foreign currency debt; what matters in this respect is liquidity of liabilities, including those denominated in domestic currencies. A move by non-residents from domestic equity and bond markets could create significant turbulence in currency and asset markets with broader macroeconomic consequences, even though losses from asset price declines and currency collapses fall on foreign investors. This potential source of instability naturally depends on the relative importance of foreign participation in local financial markets. The degree of vulnerability in this sense can be measured in terms of stock of foreign portfolio investment as a percentage of reserves.

Cost of reserve holding

Even when the fiscal cost of interventions is reduced by control over interest rates or higher reserve requirements, there could be a large transfer of resources abroad since the return earned on international reserves is less than the cost of foreign capital, including the cost of foreign borrowing and the foregone return on assets sold. In fact, it is more so for equity flows for the acquisition of ownership rights of existing assets, since rates earned by transnational companies exceed the cost of international borrowing by a very large margin (UNCTAD TDR 1999: chap. V).

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[51] Damill, Frenkel, and Maurizio (2007) argue that sterilized intervention would not interfere with monetary policy, focussing on the Argentine experience after 2002. Indeed, in Argentina where capital inflows were relatively moderate, sterilization seems to have been successful in keeping the real exchange rate within range and absorbing the resulting excess liquidity through emission of central bank paper despite opposition from the IMF. However, in a subsequent paper Frenkel (2008) recognizes that when foreigners invest in a wider range of local assets, sterilization could raise short-term rates.

[52] Rodrik (2006) calls the first component the social cost of foreign exchange reserves. For the distinction between the two types of transfers, see UNCTAD TDR (1999: chap. V); for a formal description, see Akyüz (2008b).

[53] For a discussion of the underlying theory, see Furman and Stiglitz (1998) and UNCTAD TDR (1999; chap. V); for an attempt to empirically determine the optimum level of reserves, see Jeanne and Rancière (2006).

Reserve accumulation in developing countries accelerated after the Asian crisis, particularly with the strong recovery of capital inflows in the early years of the 2000s. It has gained further momentum as developing countries taken together started to run twin surpluses in their balance of payments, that is, on both current and capital accounts.[54] Since 2001 reserves have increased at an average rate of $600 billion per year, exceeding $5.5 trillion, or 7 months of imports, at the end of 2008.[55]

Of the $4.6 trillion additional reserves accumulated by developing countries after 2001, less than two-thirds was earned from current account surpluses. The rest was accumulated from capital inflows; that is, they are "borrowed" in the sense that they accompany increased claims by non-residents in one form or another, including direct and portfolio equity investment, which entail outward income transfers. Other than China and Fuel Exporters, reserves in developing countries are entirely borrowed since, taken together, their current account has been in deficit.

Since in previous decades the current account of developing countries was in deficit, the entire stock of reserves held at the beginning of this decade was borrowed reserves. This means that almost half of the current stock of reserves in developing countries – that is, some $2.6 trillion – are borrowed reserves. This is more than twice their short-term debt and over 65 percent of their total debt to private creditors. Assuming a moderate 500 basis points margin between the borrowing rate and return on reserves, the annual carry cost of these reserves would reach some $130 billion.[56] This constitutes a net transfer of resources to major reserve-currency countries and exceeds total official development assistance to developing countries.[57]

4.4 Regulation and control of capital flows

While interventions in currency markets and reserve accumulation can prevent unsustainable currency appreciations and current account positions and provide self-insurance against sudden stops and reversals, it is not necessarily the best way to deal with volatile capital flows. In fact, this strategy lacks a strong rationale since it implies that a country should borrow only if the funds thus acquired are not used to finance investment and imports, but held in short-term, low-yielding foreign assets, resulting in large fiscal and social costs.

Furthermore, currency market interventions are not neutral in their impact on domestic monetary conditions. Failure to sterilize them fully would lead to domestic credit expansion, fuelling inflation in asset and/or product markets while debt financed sterilization can attract further destabilizing capital flows. Finally, such a strategy does not prevent currency and maturity mismatches in private balance sheets, or increased presence of foreigners in domestic financial markets, which often increases vulnerability to external shocks and contagion. Thus, regulation and control over capital flows would often be necessary to address the problems caused by volatile capital flows and the costs and difficulties encountered in dealing with them through monetary policy actions and/or currency market interventions.

There are several ways of influencing unstable capital flows, including market-based and administrative measures, widely used in industrial countries before the breakdown of the Bretton Woods system in the early 1970s and in many European countries until the late 1980s.[58] Since a large proportion of cross-border and cross-currency operations are intermediated by domestic financial institutions, notably banks, prudential rules such as capital and liquidity requirements and provisions for non-performing portfolios no doubt have implications for international capital flows. Similarly, market-based (indirect) measures of control over capital flows, such as unremunerated reserve requirements used in Chile and elsewhere, can be considered as part of prudential regulations insofar as they contribute to the solvency of these institutions. This means that measures to control capital flows cannot always be distinguished from prudential rules, and several measures that normally come under prudential policies can in fact be used for managing capital flows.

The risks associated with capital flows through the banking system could be addressed by applying more stringent rules for capital charges, loan-loss provisions, and liquidity and reserve requirements for transactions involving foreign currencies. In this respect, banking regulations need to address three fundamental sources of fragility: maturity mismatches, currency mismatches, and exchange–rate related credit risks.

Maturity transformation is a traditional function of the banking system, but this should not be encouraged in the intermediation between international financial

[54] Here capital account refers to non-reserve financial account as defined in IMF (2007).
[55] These figures, derived from the IMF World Economic Outlook Database, exclude the NIEs.
[56] The spread exceeded 700 basis points during the 1990s and never fell below 400 basis points. In the early years of this decade it fell towards 200 basis points but climbed up sharply after the sub-prime crisis, exceeding 400 basis points. As noted, foregone return on assets sold is generally much higher.
[57] The method used here to estimate reserve costs differs from that in the literature (e.g. Rodrik 2006) in that a distinction is made here between borrowed and earned reserves. Polak and Clark (2006) also refer to borrowed reserves in their estimation of the cost to poorest developing countries.
[58] For various measures of control used during the 1960s and 1970s, see Swoboda (1976); for international regimes applied to cross-border capital, see Akyüz and Cornford (2002); for the experience in developing countries, see Epstein, Grabel and Jomo (2003); for more recently introduced capital account measures, see IMF WEO (October 2007) and IMF GFS (October 2007).

markets and domestic borrowers, particularly since national monetary authorities cannot act as lenders of last resort in foreign currency. Banks tend to rely on central banks for the provision of international liquidity, trying to shift the cost of carrying large stock of reserves onto them. This exposes them to exchange rate and interest rate risks since, in the event of a sudden stop in capital inflows and inadequate central bank reserves, they may not have access to international liquidity or can do so only at very high costs. To reduce the liquidity risk, restrictions can be applied to maturity mismatches between foreign exchange assets and liabilities of banks with a view to preventing borrowing short in international markets and lending long at home, through stricter liquidity and reserve requirements and even direct limits.

Similarly, it is important to restrict currency mismatches between bank assets and liabilities and to discourage banks from assuming the exchange rate risk. Banks with short foreign exchange positions (that is, where forex liabilities exceed assets) run the risk of losses from depreciations while those with long positions lose from appreciations. Furthermore, maturity mismatches between forex assets and liabilities imply exposure to exchange rate risks even when assets are matched by liabilities in the aggregate. Currency mismatches can be restricted through quantitative limits on short and long positions (e.g., as a proportion of equity or total portfolios) or high capital charges on foreign exchange exposures. In most cases it may be more appropriate to prohibit currency mismatches altogether.

The third important risk associated with foreign exchange borrowing and lending by banks is the exchange-rate related credit risk. Banks can eliminate currency and maturity mismatches by lending in foreign currency, but unless their borrowers have foreign exchange earning capacity, this simply implies migration of the exchange rate risk which, in turn, results in greater credit risk. This kind of lending is particularly common in economies where an important part of bank deposits are in foreign currencies. It also proved problematic in some countries in East Asia in the run up to the 1997 crisis, where banks lent heavily in foreign currency for investment in property as well as to firms with little foreign exchange earning capacity. Such practices could be discouraged by applying higher risk weights and capital charges for foreign assets and more stringent standards of provision for foreign currency loans, or by prohibiting altogether. However, evidence suggests that only a few emerging markets have addressed the vulnerabilities arising from currency-induced credits risks even though many of them appear to have taken measures to reduce exposure to foreign exchange risks (Cayazzo *et al* 2006).

External financial fragility can no doubt be contained if prudential regulations could be appropriately extended to address specific risks associated with capital flows. Contrary to a widely held view, however, this does not imply that capital account liberalization should not be a cause for concern if it is accompanied by more comprehensive prudential regulations and supervision. First of all, conventional risk assessment methods and prudential rules tend to aggravate the cyclicality of the financial system. They need to be designed in a counter-cyclical fashion, tightened particularly at times of strong surges in capital inflows.[59] Second, regulatory safeguards are pretty ineffectual in the face of macroeconomic shocks that can drastically alter the quality of bank assets, and this is more so when the capital account is open. Finally, capital flows are not always intermediated by the domestic financial system. Indeed, the proportion of bank-related capital flows has been falling rapidly in recent years, with portfolio and direct equity flows now accounting for a large proportion of total inflows.[60] Therefore, direct restrictions over foreign borrowing and investment as well as market access may have to play a key role in managing the risks associated with capital flows.

When capital inflows are excessive, liberalization of resident outflows is sometimes seen as an option to relieve the upward pressure on the currency. This is, in fact, an alternative to sterilized intervention and it avoids the cost of carrying large stocks of international reserves. But, like interventions, it effectively does nothing to prevent currency and maturity mismatches in private balance sheets, or instability and vulnerability to shocks associated with greater presence of foreigners in domestic asset markets. It may encourage inflows, particularly the return of flight capital of residents (Reinhart and Reinhart 1998). In countries with weak property rights, it could also facilitate asset stripping and money laundering (Yu 2009). Its rationale as a longer-term strategy for closer integration of developing countries into global financial markets is highly contentious. As a countercyclical measure, it can be even more problematic: once introduced for cyclical reasons, it may not be easily rolled back when conditions change. Thus, unlike official reserves, these do not provide self-insurance against payments and currency instability and may even aggravate them when market sentiments change.

[59] Countercyclical design of prudential regulations is finding growing support after several boom-bust cycles in industrial countries, including the subprime expansion and crisis in the United States. For such measures, see BIS (2001); Borio, Furfine, and Lowe (2001), and White (2006).

[60] According to the Institute of International Finance (IIF, January 2009), net flows from commercial banks never reached 50 percent of total private flows during the past several years. Since the IIF gives equity flows on a net-net basis (that is, net outflows of equity by residents are deducted from net inflows by non-residents) and debt flows on gross basis, the share of net inflows from banks in total net inflows from non-residents is even lower.

5. Recent experience in Asia

Capital account and exchange rate policies in many Asian countries in recent years have been shaped by a determination never to allow a repeat of the 1997 crisis. A key lesson drawn from that experience is that if capital inflows are allowed to create large currency and maturity mismatches in private sector balance sheets and unsustainable bubbles in asset markets under conditions of weak payments and reserve positions, there is not much that governments can do at times of a sudden stop and reversal of these flows. There is, thus, an increased awareness that vulnerability to financial contagion and shocks depends in large part on how capital inflows are managed.

After a brief interruption, capital flows to emerging markets recovered strongly in the earlier years of this decade, and Asia has been among the main recipients. These flows were greatly influenced by the very same factors that led to a surge in speculative lending in the United States and elsewhere in the developed world – notably, ample global liquidity resulting from a policy of easy money and search for yield. Rather than applying tighter countercyclical restrictions over capital inflows, most Asian countries chose to relax restrictions over resident outflows and to absorb excess supply of foreign exchange in reserves while building strong payments positions by maintaining competitive exchange rates. In this way they have successfully avoided unsustainable currency appreciations and payments positions, and accumulated more than adequate international reserves to counter any potential current and capital account shocks without recourse to the IMF. However, they have not always been able to prevent capital inflows from generating asset, credit, and investment bubbles and reduce the vulnerability of domestic financial markets to adverse shocks and contagion from financial instability abroad. These policies are now exposing them to certain risks due to spillovers from the global financial turbulence, but not always of the kind that hit the region in the 1990s.

5.1 The surge in capital inflows

After falling to some $100 billion at the beginning of the millennium, private flows to emerging markets picked up rapidly, reaching an estimated level of $929 billion in 2007 before falling drastically to an estimated $465 billion in 2008 (table 5).[61] Recovery in capital flows to Asia was also strong, exceeding $300 billion at their peak in 2007. In gross terms capital inflows to Asia as a proportion of GDP have been close to historical highs, but in net terms they have been around the long-term average because of increased resident outflows (IMF REOAP April 2007; IIF October 2007).

During 2003-2007, about 60 percent of private capital inflows to Asia were in equity investment, of which two thirds were in direct equity and one third in portfolio equity.[62] Equity flows were particularly strong in China where a relatively large proportion of financial inflows appear to have been motivated by expectations of appreciation of the yuan (Setser 2008; Yu 2008). Some of these are reported to have entered the country through over-invoicing of exports. According to some estimates, the so-called "hot money" amounted to $5–$10 billion a month during 2007 (Anderlini 2007).

India also received large amounts of equity capital, but much of this was in portfolio equity rather than foreign direct investment (FDI). This is also true for Malaysia where cumulative equity portfolio inflows during 2002-2007 were nine times cumulative inflows of FDI (Khor 2009). Hedge funds from the United States and the United Kingdom have been very active in equity markets in the region, with assets managed by them being estimated to have grown sevenfold between 2001 and 2007.

Following the cutback after the 1997 crisis, international bank lending in Asia started to exceed repayments in the early years of this decade. There was a visible growth in syndicated loans privately placed by corporations in several countries. Private financial and non-financial corporations also engaged in carry-trade-style short-term external borrowing in India, Korea, and the Philippines, particularly through low-interest yen-linked loans. Highly leveraged hedge funds are also known to have been very active in carry trades in Asia. While restrictions on foreign entry to domestic bond markets were generally maintained, in countries such as Malaysia and Indonesia there have been marked increases in foreign holding of local-currency debt instruments. In the region as a whole, local

[61] The underlying figures in table 5 are on net-net basis for equity flows and gross basis for debt flows; that is, net outflows of foreign direct investment (FDI) and portfolio equity by residents are deducted from net inflows by non-residents. Thus, the current account balance plus private capital flows minus net lending by residents (and errors and omissions) would give changes in reserves – see IIF (October 2007: Box 3).

[62] For further discussion of components of capital flows to Asian emerging markets, see BIS (2007), IMF REO (October 2007), IMF GFS (October 2007), and McCauley (2008).

claims of foreign banks, including local bond holdings, as a percentage of all foreign banks' claims more than doubled since the beginning of the decade, suggesting a growing preference for international banks to lend in local currencies at higher rates.

5.2 Policy response: Currency market interventions and reserve accumulation

As noted above, after the Asian crisis several countries in the region moved towards more flexible exchange rate arrangements. But they have followed various shades of managed floating rather than leaving their currencies entirely to the whims of international capital flows. In order to build a strong payments position, most countries in the region successfully intervened heavily in foreign exchange markets to prevent appreciations.

Asian developing countries taken together had a current account surplus of 7 percent of GDP in 2007 and over 5 percent in 2008, up from 1.5 percent in 2001. Although this is largely due to China's strong export performance, a number of other countries have also been enjoying surpluses, in some cases in double-digit figures, as a percent of GDP. India has been running current account deficits, but at moderate levels. Among large countries only in Pakistan and Vietnam have deficits reached high levels: 8.7 and 11.7 percent of GDP in 2008, respectively. Most Asian currencies were kept relatively stable in real terms, despite excess supply of foreign exchange generated by capital inflows and current account surpluses, thanks to extensive interventions in currency markets (table 4).

To keep liquidity expansion and inflation under control, governments tried to sterilize interventions by issuing debt and raising reserve requirements in the banking system. In China, government control over the financial system allowed it to keep the fiscal cost of intervention down. Reserve requirements of banks were continuously raised from 7 percent in 2003 to 17.5 percent in 2008, and banks have come to hold over 80 percent of central bank securities issued for that purpose, with their share in total bank assets exceeding 20 percent (Yu 2008; BIS 2009: Box D4). In India the cash reserve ratio was also increased in several steps to reach 7.5 percent in 2008, but because of higher interest rates the cost of intervention is reported to have reached 2 percent of GDP in 2007 – more than half of the central government deficits. [63]

As in some mature economies, monetary policy in many countries in Asia has been expansionary and real interest rates have been considerably lower than those in other regions. After 2003 private credit growth in real terms reached nearly 9 percent per annum in China and 5 percent in many other East Asian countries.[64] The surge in capital flows was an important reason for the rapid expansion of liquidity since interventions in foreign exchange markets could not always be fully sterilized.

As of end-2008 total reserves in developing Asia (excluding NIEs) exceeded $2.2 trillion, and 86 percent of this figure was generated after 2001 (table 6).[65] Asian reserves now account for more than half of total reserves of the developing world. The twin surpluses that the region as a whole has been running on its balance of payments have been fully converted into reserves. Of the $2.4 trillion reserves accumulated after 2001, 60 percent is earned and the rest is borrowed. However, excluding China, almost three quarters of Asian reserves in recent years were from capital inflows. In countries running current account deficits, such as India, Pakistan, and Vietnam, reserves are 100 percent borrowed.

Asian reserves exceed the level needed to prevent a currency and balance-of-payments crisis under the Greenspan-Guidotti rule noted above. They are several times the total short-term external debt of the region, which stood at around $400 billion at the end of 2008, and more than twice the total external debt of some $1,160 billion. They now cover more than nine months of imports. However, in many countries reserves are not large in comparison with the stock of foreign portfolio investment. In 2008 the ratio of the latter to total reserves was greater than unity in Korea, Indonesia, and the Philippines and exceeded 80 percent in Singapore and Malaysia (ESCAP 2008). About half of the total stock of reserves in Asia is borrowed. This is a little more than the existing stock of external debt of the region. Again assuming a 500-basis-point spread, this would give an annual carry cost of some $60 billion for the region as a whole – that is, this is how much the region as a whole could save per year by paying up its external debt by drawing on reserves.[66]

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[63] Fiscal cost from ESCAP (2007: 21) and government deficits from IMF REOAP (October 2007: 20).
[64] For credit conditions and interest rates in Asia, see BIS (2007: 39-41), Mohanty and Turner (2006: 43), and IMF WEO (October 2007: 5).
[65] It should be noted that reserve figures are subject to a valuation effect, which can be large because of sharp changes in cross rates among reserve currencies.
[66] Since "borrowed" reserves of some countries fall short of their total external debt, realization of this aggregate benefit would require lending by countries with excess reserves to those with deficits, at rates earned on reserves.

5.3 Policy response: Liberalization of resident outflows

Many Asian emerging markets have been incurring high reserve costs and facing macroeconomic policy dilemmas mainly because they have chosen to keep their economies open to the surge in capital inflows rather than imposing tighter countercyclical measures of control. Capital accounts in the region are more open today than they were during the 1997 crisis.[67] In China, for instance, one of the countries with the tightest restrictions, calculations based on an IMF formula are said to show that 80 percent of the capital account has been liberalized.[68]

In several cases the opening to inflows has been selective, such as raising the limits on the QFII (qualified foreign institutional investors) in China. Some countries, including India, have liberalized sectoral caps on FDI. Foreign banks have generally been allowed greater freedom to operate, with many domestic borrowers receiving funding from such banks directly from abroad or through their local offices.

There have been, to be sure, some efforts to curb excessive inflows in order to ease the upward pressure on currencies. In 2006 China extended to foreign banks the restriction over borrowing abroad to fund domestic dollar assets. In 2007 its foreign exchange regulators took action against 10 international banks for breaching capital account regulations by "assisting speculative foreign capital to enter the country disguised as trade and investment" (Anderlini 2007). Exporters have been required to park their export revenues in temporary accounts in order to enable officials to check and verify that invoices are backed by genuine trade transactions.

In December 2006 Thailand imposed a 30 percent unremunerated reserve requirement on capital inflows held less than one year, including investment in portfolio equity, in order to halt continued appreciation of the currency. This provoked a strong reaction from the stock market, forcing the government to exempt investment in stocks from the requirements. The remaining restrictions were removed in March 2008. With a continued surge in capital inflows, India reversed the liberalization of the limits on external commercial borrowing, tightening them in 2007. Similarly, Korea restricted external funding of domestic lending by foreign banks and reintroduced limits on lending in foreign currency to domestic firms.

However, the main response to the surge in capital inflows has been to liberalize outward investment by residents. This is partly motivated by a desire to allow national firms to expand abroad and become important players in world markets. This has particularly been the case in China and India. However, while in China assets acquired abroad are financed from trade surpluses, in India these are, in effect, funded by capital inflows. As remarked by an observer, "the global flood of money (and attendant hubris) has enabled Indian companies like Tata to buy themselves a place on the world stage rather than earning it through export success or technological advance" (Bowring 2008a).

There has also been considerable liberalization of portfolio outflows. China took a decision to permit investment by its residents in approved overseas markets and raised the limits on corporate and individual purchases of foreign currency for mitigating the pressure for appreciation through the so-called QDII (qualified domestic institutional investor) scheme. The share of portfolio investment in the total international assets of China in 2006 was three times that of FDI abroad. In Malaysia, where limits on foreign assets held by some institutional investors were increased significantly, cumulative portfolio outflows during 2004-2007 were slightly below cumulative portfolio inflows and nine times direct investment abroad. In 2007 there was a net outflow of capital (excluding reserve accumulation), which absorbed as much as half of the current account surplus (Khor 2009). India, Korea, and Thailand have all liberalized rules limiting portfolio investment abroad, and Thailand abolished the surrender requirement for exporters.

5.4 Credit, asset, and investment bubbles

Recent capital inflows have resulted in a rapid increase in foreign presence in Asian equity markets. Figures for net equity inflows understate this because, as noted, there has also been a rapid increase in resident outflows. Non-resident holding of Korean equities reached almost half of market capitalization (McCauley 2008). In China foreign share as a percent of market capitalisation rose from 2.5 percent in 2001 to 23.2 percent in 2006, and in India from 6.6 percent to 10 percent in the same period (BIS 2009: table E1). The share of foreigner transactions in 2005 in average daily turnover was around 20 percent in Korea, 30 percent in Thailand, and 70 percent in Taiwan (Chai-Anant and Ho 2008).

There is also strong evidence that foreign investors tend to move in and out of some of the different Asian markets simultaneously. The IMF Global Financial Stability Report (IMF GFS October 2007) finds evidence on

[67] For recent measures in Asia, see BIS (2007), IMF REOAP (April 2007), IMF GFS (October 2007), and McCauley (2008).
[68] See Yu (2008 and 2009). It has been argued that China's capital controls remained substantially binding during the period of a de facto dollar peg until July 2005, as suggested by sustained and significant gaps between onshore and offshore renminbi yields. It is also found that since July 2005 there has been a partial convergence between onshore and offshore yields; see Ma and McCauley (2007).

herd behaviour among institutional investors. BIS (2009: 69) notes that increased market liquidity resulting from greater participation of foreigners in equity markets tends to reduce day-to-day volatility, but also argues that "even highly liquid markets do not insulate EME [emerging market economy] equity markets from a global retrenchment in risk appetite or a withdrawal of foreign investors."

Large investment by foreigners in equity markets, together with the consequent expansion of liquidity associated with the surge in capital inflows, have both been the cause and effect of sharp increases in stock prices in several Asian markets.[69] This is also suggested by a strong correlation between changes in net portfolio equity flows and stock prices in Asia – much stronger than that observed in Latin America (IIF October 2007: chart 13). For the region as a whole equity prices tripled between 2002 and 2008, with increases exceeding 500 percent in China and India. The price/earnings ratios also rose rapidly, resulting in a sharp drop in equity costs.[70] That such increases more likely reflected bubbles than improvements in underlining fundamentals was cautioned by the Institute of International Finance (IIF March 2005: 4): "there is a risk that the pickup in flows into some emerging market assets has pushed valuations to levels that are not commensurate with underlying fundamentals."

The two largest countries, China and India, that saw the strongest surge in capital inflows and stock markets also experienced a boom in property markets. During 2002-2006 residential property prices rose in real terms by over 8 percent per annum in China and 10 percent in India, and the price-to-rent ratio rose by more than 20 percent.[71] There was also acceleration of property price increases in Korea (15 percent), Singapore, and Vietnam during 2006-2007. While these were not as dramatic as increases in the United States – where the price-to-rent ratio rose by 30 percent over the same period – there are large pockets in China, India, Korea, and the Philippines where increases were comparable and even greater.[72] Housing loans expanded faster than other types of lending and have been a major factor in sharp increases in household indebtedness. In Korea where bank lending to households grew rapidly after 2005, household debt reached 140 percent of disposable income – above the level of household indebtedness in the United States (ADB 2007).

Such booms in equity and property markets are often a potential source of macroeconomic instability. There is evidence, not only from industrial countries but also from a number of Asian emerging markets, including Hong Kong (China), Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, and Thailand, that asset booms (defined as periods in which asset prices exceed their trend by more than 10 percent) significantly raise the probability of output being eventually pushed below its potential level and the price level above its trend (Gochoco-Bautista 2008).

In China and India ample liquidity, low equity costs, and low loan rates together have also created an investment boom, which may not be sustained with the return of normal financial conditions. In China where the share of investment in GDP reached 46 percent, the increase appears to have been associated with considerable excess capacity and wastage of capital.[73] Similarly, in India growth in investment has been faster than GDP by more than 5 percentage points per annum, with the investment ratio rising to over 30 percent of GDP from less than 24 percent in the early years of the decade.

5.5 Shocks and contagion from the global financial crisis

As a result of closer global financial integration, notably the increased presence of foreigners in domestic financial markets and liberalization of resident investment abroad, Asia has become highly susceptible to external financial influences. The region has indeed been receiving severe shocks and contagion from the global financial turbulence triggered by the sub-prime debacle through various channels, and facing the risk of asset deflation, a high degree of currency instability, and a sharp economic slowdown.

The increased holding of foreign assets has no doubt resulted in greater exposure to instability in their market valuations as well as exchange rate swings. Asian economies do not have large direct exposure to securitized assets linked to sub-prime lending, even though some losses have been reported in the region.[74] However, they appear to have invested large amounts in debt issued by United States Government-sponsored enterprises, including mortgage firms Fannie Mae and Freddie Mac

[69] In China the equity market is segmented between residents and non-residents in A-share and B-share markets, with the former being reserved exclusively for residents. Both residents and non-residents are allowed to use foreign exchange to invest in B shares. Large inflows of capital, together with growing current account surpluses, affect A-share equity prices mainly through liquidity expansion.
[70] Data on equity prices and price/earnings ratios are from IMF GFS (October 2007).
[71] For an analysis of developments in Asian housing markets, see IMF REOAP (April 2007), which somewhat underplays the extent of the bubble and the risks involved, but nevertheless points out that speculative dynamics cannot be ruled out, notably in China, India, and Korea.
[72] Korean and the United States data from OECD (2007: annex table 60). For others, see BIS (2007: 50) and IMF (2007b).
[73] On excess capacity, waste, and sustainability of the investment boom in China, see BIS (2007), Goldstein and Lardy (2004), Nagaraj (2005), and Branstetter and Lardy (2006).
[74] The Bank of China is reported to have lost some $2 billion on its holdings of collateralized securities, including those backed by US mortgages (Pearlstein 2008). Standard Chartered, in which Singapore's sovereign wealth fund, Temasek, owns a 19 percent stake, is reported to have been walking away from its $7.5 billion special investment vehicles (SIVs) sold in Asia and the Middle East (Bowring 2008b).

with combined liabilities of around $5.5 trillion. Holding by central banks outside the United States of such debt is estimated to be in the order of $1 trillion, and large amounts are also known to be held in private portfolios. China's holding of US agency debt is estimated to be at least 10 percent of its GDP, mostly in Fannie and Freddie assets (Pesek 2008). Had the United States government not bailed out these institutions, losses would have been severe. Moreover, should the dollar come under pressure, countries with a large stock of dollar reserves stand to incur considerable exchange rate losses.

There is considerable variation among Asian emerging markets in their vulnerability to sharp swings in the risk appetite and capital flows. Capital flows to emerging markets, including bank-related flows, initially kept up after the outbreak of the sub-prime crisis, but with the deepening of the credit crunch there is now a sharp decline that is more marked in Asia than in other regions (table 5). FDI remained relatively resilient, but with the widespread credit crunch in the United States and Europe there has been a sharp drop in commercial bank credits, from $156 billion to an estimated $30 billion, and this is expected to turn negative in 2009. Net portfolio equity flows to Asia, including outflows by residents, were already negative in 2007, and they are expected to have become even bigger in 2008, reaching $55 billion.[75] Redemption by highly-leveraged hedge funds from the United States and the United Kingdom is an important factor. These institutions, which had been very active in Asian equity markets in earlier years, are now hard hit by the crisis, and deleveraging by them appears to be a main reason for the exit of equity portfolio investment not only from Asia but also from emerging markets as a whole.[76]

With rapid exit of foreign capital and global retrenchment of risk appetite, asset bubbles in Asia have come to an end. Equity markets lost almost half of their values in 2008 in China and India. Booms in property markets too are now bust. In China house prices declined in December 2008 for the first time since the government started releasing the data in 2005, and urban fixed asset investment has been falling since September 2008. The government is now taking measures to revive the property market.[77] In Korea the slump that started in 2008 is now threatening to set off a process of debt deflation, reminiscent of the 1997 crisis when housing prices fell by some 13 percent (Citigroup 2009).

This cycle in Asian asset markets has many features reminiscent of the cycle in the 1990s, but is different in an important respect. In the current cycle asset deflation is not associated with currency crises and interest rate hikes, but severe trade shocks. The combination of asset deflation with sharp drops in exports and consequent retrenchment in investment can no doubt wreak havoc in the real economy.[78] This explains why in Asia "the slump in industrial production has been more significant and more rapid than in 1997-98."[79]

It is important to avoid destabilizing feedbacks between the real and financial sectors, particularly in China because of its wider regional ramifications. A sharp drop in growth can threaten the solvency of the banking system given the high degree of leverage of many firms, which can in turn lower growth further.[80] Whether or not the massive fiscal package introduced by the government would prevent such an outcome remains to be seen. In any event, the challenge faced by China is not only to overcome the deflationary impulses from the global financial crisis but to shift to a growth trajectory led by the expansion of domestic consumption.

Because of the sharp slowdown in total capital flows and reversal of portfolio flows, several currencies that had faced strong upward pressure against the dollar and the yuan after 2003, particularly the Indian rupee, Korean won, and Thai baht, have been falling sharply against both currencies since summer 2008 (table 7). Given strong deflationary impulses from the crisis, this may be viewed as a welcome development; and unlike 1997, governments now seem to be wary of throwing all their reserves into stabilizing their currencies. However, in some of these countries, notably India and Korea, reserves have declined rapidly as a result of exit of capital and growing current account deficits.[81]

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[75] Net portfolio investment outflows in 2008 from emerging markets as a whole is estimated to have been $89 billion (IIF January 2009). It appears that all the money that came into emerging markets funds in 2007 came out again in 2008 (Citigroup 2008).

[76] Wall Street Journal, 17 October 2008; see also RGE Monitor (2008). The tendency of investors to liquidate their holdings in emerging markets in order to cover mounting losses and margin calls means that, as suggested by McCauley (2008: 1), emerging markets are providing "liquidity under stressed conditions to portfolios managed in the major markets."

[77] See Xinhuanet (2009a) and Forbes (2008). In earlier years, concerned with the growing speculative spree, China had adopted measures to stem increases in property prices; see ESCAP (2007: 10).

[78] On some accounts, on its own the bursting of asset bubbles in China would lower growth only by a couple of percentage points; see Chancellor (2008).

[79] IIF (January 2009; 11). According to preliminary estimates, as of January 2009 some Asian countries, notably Korea and Singapore, experienced severe contraction in output during the last quarter of 2008. In China, where manufacturing output also dropped and loss of employment reached some 20 million, more recent indicators seem to be more encouraging; see Xinhuanet (2009b).

[80] BIS (2007: 56) notes that in China the bulk of recorded profits are earned by relatively few enterprises while the rest have high leverage, so that if growth slows significantly a substantial proportion of bank loans can become non-performing.

[81] For the behaviour of reserves on India and Korea during 2008, see Obstfeld, Shambaugh, and Taylor (2009) and RGE Monitor (2009a and b).

6. Regional monetary cooperation for stability

6.1 Global instability and the search for regional solutions

The main objective of the planners of the post-war economic architecture was to avoid the repetition of the breakdown of international trade and payments that had devastated the world economy during the interwar years. Exchange rate stability was believed to hold the key to the realization of this objective. This was most emphatically expressed by Keynes (1944: 5) during the Bretton Woods negotiations: "Tariffs and currency depreciations are in many alternatives. Without currency agreements you have no firm ground on which to discuss tariffs.... It is very difficult while you have monetary chaos to have order of any kind in other directions." The Bretton Woods architecture was based on three legs: multilateral discipline over exchange rate policies, restrictions over destabilizing capital flows, and provision of adequate international liquidity to countries facing temporary payments imbalances.

The convertibility of the dollar vis-à-vis gold at a fixed rate was designed to exert multilateral discipline over policies of the main reserve-currency country, the United States. Other countries undertook obligation to maintain their exchange rates within a narrow range of their par values and were allowed to change their par values under fundamental disequilibrium only with the consent of the Fund. Restriction over short-term capital flows, which had proved highly destabilizing during the interwar years, was seen as a key to stability of exchange rates. The IMF was to provide short-term financing to countries facing temporary shortfalls in international liquidity in order to avoid destabilizing currency adjustments, retrenchment in domestic absorption, and contraction in economic activity.

All three building blocks of the Bretton Woods system disappeared in the early 1970s with the default of the United States on gold convertibility and adoption of floating with incongruous commitments to exchange rate stability. Free movement of capital became the norm. And the Fund started to impose exactly the kind of procyclical policies that the post-war planners wanted to avoid in countries facing temporary payments difficulties.

Europe sought to maintain a certain degree of multilateral discipline over exchange rate policies among the countries in the region, having suffered most from political fallouts from instability and the collapse of world trade and payments in the interwar years. It agreed to float against the dollar but decided to try to stabilize intraregional exchange rates, since a move to free floating among the European countries would pose a serious threat of instability and disruption to intraregional trade, given a high degree of regional integration. Initial efforts to stabilize intra-European exchange rates through *ad hoc* arrangements led to the creation of the European Monetary System (EMS) in 1979, which culminated in the European Monetary Union (EMU) three decades later.[82]

Instability among reserve currencies after the breakdown of the Bretton Woods system had relatively limited impact on developing countries that were pursuing intermediate exchange rate regimes under relatively tight control over capital flows. But shortcomings of the third leg of the Bretton Woods arrangements – the provision of adequate international liquidity by the IMF – became highly visible with the increased volatility of the global economic environment, particularly in the early 1980s when a combination of hikes in interest rates and recession in industrial countries produced severe payments difficulties in several indebted countries, culminating in a debt crisis in Latin America. These shortcomings became even more visible with the 1997 Asian crisis. Realizing that developing countries could no longer rely on international financial institutions to address their liquidity problems during such times, an attempt was made to bring a regional solution by establishing an Asian Monetary Fund. After this was abandoned because of opposition from the United States and the IMF, the "ASEAN+3" (the 10 members of the Association of Southeast Asian Nations plus China, Japan, and Korea) went ahead with swap arrangements with the so-called Chiang Mai initiative, building on the existing ASEAN Swap Arrangement (ASA) established in 1977.[83] However,

[82] The first major political initiative for a European monetary union was taken in 1969 with the Werner Report, which proposed: for the first stage, a reduction of the fluctuation margins between the currencies of the members of the European Community (EC); for the second stage, complete freedom of capital movements; and for the final stage, an irrevocable fixing of exchange rates. For a critical account of the EMS and its applicability to other regions, see Bofinger and Flassbeck (2000) and UNCTAD TDR (2007).

[83] For ASA and Chiang Mai, see Henning (2002). These are not the first initiatives for regional monetary cooperation among developing countries. The Andean Reserve Fund and the Arab Monetary Fund were among the earlier examples, both going back to 1976; see Akyüz and Flassbeck (2002) and UNCTAD TDR (2007: chap. 5).

the initiative was largely symbolic, since the swap lines agreed would have been inadequate in the face of a strong region-wide attack on currencies. Thus, countries went for a more reliable solution by accumulating large stocks of international reserves.

Again, with the spread of shocks and contagion from the global financial crisis in 2008, ASEAN+3 decided to establish an $80 billion fund to safeguard regional stability, replacing the existing bilateral currency swaps under the Chiang Mai Initiative with a reserve-pooling mechanism (called the Chiang Mai Initiative Multilateralization) and coming closer to a regional monetary fund. Subsequently, the amount was raised in February 2009 to $120 billion as pressure mounted on currencies and reserves of several countries, to be accompanied by an independent regional surveillance mechanism to help determine the conditions for activation of and access to the fund.[84] There have also been further bilateral swap agreements among some countries in the region, e.g., between China and Korea, Japan and Indonesia, and Korea and Japan.

These initiatives no doubt reflect a shared concern over currency instability, against a background of rapidly deepening regional integration through trade and investment. However, the region lacks effective arrangements for the coordination of exchange rate policies. It is true that recent sharp swings in intraregional exchange rates (table 7) have been greatly influenced by differences in capital flows, current account balances, and macroeconomic conditions in different countries. Nevertheless, their origin also lies in differences in currency regimes pursued by the countries in the region, which now span the entire spectrum between the two corners, compared to widespread de facto dollar pegs before the crisis. At one corner there are economies with independent floating – Japan, Korea, and the Philippines; at another there is Hong Kong with a currency board. The intermediate regimes adopted in the region also show significant variations, with China and Malaysia using very tightly managed pegs against Thailand's and Singapore's more flexible regimes.[85]

The coexistence of a variety of regimes in East Asia implies that the intraregional exchange rates tend to manifest a high degree of instability in periods of large swings in the dollar. Lack of regional cooperation in exchange rate policies is of particular concern in the current juncture not only because the ongoing instability evokes the memories of contagion that led to a severe crisis about a decade ago but also because contraction in export markets often raises the temptation of beggar-my-neighbour exchange rate adjustments.

6.2 Rationale for exchange rate cooperation in East Asia

Significant changes in policy and institutions often follow severe economic shocks and disruptions. The Bretton Woods system was established after the world went through one of the bloodiest armed conflicts in the history of mankind following the breakdown of international trade and payments in the interwar period. The European process of monetary integration was triggered by the collapse of the Bretton Woods system, and the Asian monetary cooperation was sparked off by the 1997 crisis. Now, the global spread of financial crisis is giving rise to several initiatives for tighter regulation of international financial markets. Likewise, current difficulties provide considerable food for thought for deeper monetary integration in East Asia, including a common currency regime and, eventually, a monetary union.

It is generally recognized that Asia lacks a culture of regionalism, that is, the political will and regional institutions needed for such a drastic change. To date regional economic integration in Asia has been driven by markets, notably by transnational corporations, rather than by governments. By contrast, the European integration was a politically-driven process based on post-war transnational reconciliation in Franco-German relations, and on a shared vision by political left and right alike that regional political stability depended crucially on economic integration and stability. Such a reconciliation is lacking in East Asia where some countries have still failed to come to terms with their past. This is no doubt a major impediment to regional monetary integration even though there appears to be a strong economic rationale for it. Nevertheless, exploring various options can still help prepare the ground for the time when political realities become favourable, even though at present such efforts may appear to be no more than academic exercises. After all, history teaches that big changes almost always look implausible until they happen. [86]

East Asia has been undergoing rapid economic integration associated with fast and broad-based growth.

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[84] Thailand proposed to go even further, using 10 percent of reserves of ASEAN+3 to establish a reserve fund of some $350 billion; see Kate and Adam (2008) and RGE Monitor (2009d). For more recent developments regarding the Chiang Mai Initiative, see Henning (2009).

[85] This classification is from IMF (2008) based on members' actual, *de facto* arrangements as indentified by IMF staff, not officially announced arrangements.

[86] This was expressed with some foresight by Rogoff (1999: 28) during the debate on the reform of the international financial architecture after the Asian crisis: "It is easy to fall into the trap of thinking that big institutional changes are unrealistic or infeasible…. Not so long ago, the prospects for a single European currency seemed no more likely than those for the breakup of the Soviet empire or the reunification of Germany. Perhaps large institutional changes only seem impossible until they happen – at which point they seem foreordained. Even if none of the large-scale plans is feasible in the present world political environment, after another crisis or two, the impossible may start seeming realistic."

Intraregional trade among ASEAN+3 has been growing faster than trade with the rest of the world.[87] Intraregional exchange rates no doubt play an increasingly important role in determining the division of labour in the region. Maintaining stable and properly aligned currencies is essential for this process to be driven by underlying economic fundamentals, and for preventing financial instability and trade tensions in the region. It is quite unlikely that these objectives could be achieved with each country acting alone. They require closer monetary and financial cooperation to underpin the ongoing regional economic integration.

The main benefit of a regional monetary integration comes from greater currency, payments, and financial stability. This depends, of course, on how integration is designed, including supporting institutions and mechanisms. The European experience in this respect is quite encouraging. Despite the temporary setbacks in 1992-1993 and shortcomings in the design of policies and institutional arrangements (to be discussed below), the EMS was very successful in securing stability in intraregional exchange rates, containing financial contagion, and dealing with fluctuations vis-à-vis the dollar and the yen. The main beneficiaries were smaller economies. Although they had lost monetary policy autonomy vis-à-vis Germany as the anchor-currency country, they gained considerable strength vis-à-vis international financial markets. Besides, none of these countries, including Greece, Ireland, and Portugal, had to go to the IMF after the establishment of the EMS in 1979, even though economically they were less advanced than Korea when it had to resort to IMF support in 1997. In the absence of the EMS, open and smaller European countries would have had little option but to peg their currencies to the deutschmark and follow German monetary policy without enjoying the protection and support provided by the EMS.

The cost of giving up autonomy in exchange rate policy depends on the difficulties this would cause in maintaining stable and high levels of employment and economic activity. This issue is often examined in terms of whether the countries concerned could form an optimal currency area (OCA). According to the OCA theory, a monetary union would bring benefits if the economies concerned are sufficiently closely integrated, the shocks they are expected to receive are symmetrical, and their labour markets are flexible enough to absorb such shocks without causing unemployment.

Several studies examined empirically whether East Asia (ASEAN and/or ASEAN+3) adequately meets the conditions for a monetary union so as to generate benefits to all its potential members, often taking the European Union as a reference point. As in most empirical studies of this kind, the findings are inconclusive. According to some, Asia is too diverse to meet the criteria for an OCA: intra-regional trade and financial integration are limited, and regional shocks are not always symmetrical. According to others, however, it comes very close to meeting OCA conditions: income gaps of Asian countries have been closing not only with the rest of the world but also with each other, business cycles are closely correlated, and the shocks they receive are sufficiently symmetrical because of similarities in their trade patterns and integration into the global financial system.

A study by Goto and Hamada (1994) found that in some areas East Asia was more closely integrated than Europe. Similarly, an analysis conducted at the beginning of this decade showed that, in terms of various economic criteria, the region was no less ready for a regional monetary arrangement than Europe was before the EMU (Kawai and Takagi 2000). Bayoumi and Eichengreen (1999) came to the conclusion that East Asian countries satisfied the standard OCA conditions almost as well as Europe and that a common currency peg would be particularly beneficial for smaller and more open economies, while pointing out that because of the lack of an institutional framework such an arrangement would be risky. A subsequent study by Kawai and Motonishi (2005) reached a similar conclusion. According to Bayoumi and Mauro (1999) and Bayoumi, Eichengreen, and Mauro (1999), ASEAN is less suited for a regional currency arrangement than Europe was before the Maastricht Treaty, although the difference is not large. Plummer and Wignaraja (2007) argue, on the basis of increased correlation of business cycles, that the economic potential for monetary integration is strong, while Zhang, Sato, and McAleer (2004) maintain that labour markets in East Asia are no less flexible than in Europe. By contrast, Nicolas (1999) contends that similarity in ASEAN countries are exaggerated because of high levels of aggregation, and Chow and Kim (2003) and Kim (2008) find that macroeconomic shocks are quite asymmetric and heterogeneous not only in East Asia but also within ASEAN. More recently, Shirono (2008) has followed a different approach, focussing on the trade aspects of monetary integration, and found that a currency union could double bilateral trade in the region and bring welfare benefits, particularly if Japan were included.

While the OCA theory provides insight into understanding the factors affecting the costs and benefits of a monetary integration, it cannot be relied on to draw practical guidelines to decisions over monetary union. First, it pays little attention to costs of potential conflicts that may arise from beggar-my-neighbour trade, FDI, and exchange rate policies. Second, the theory does not pro-

[87] For the evolution of East Asian trade in comparison with other blocks, see MAS (2007: chap. 5).

vide thresholds on the degree of integration, symmetry in shocks, or labour market flexibility by which to judge whether conditions for the OCA are reasonably met. There are indeed studies that show that neither Europe nor the United States forms an OCA, with the costs of using a single currency exceeding the benefits in both cases; and that for Germany it would not be economically advantageous to join a monetary union (Ghosh and Wolf 1994).

More importantly, the theory of OCA ignores that trade patterns and income levels are endogenous; that is, joining a monetary union is likely to move countries closer to each other and hence to the conditions for an OCA. This has clearly been the case in Europe where considerable convergence of income and macroeconomic conditions occurred throughout the process of integration culminating in the EMU.[88] However, it is also important to recognize that endogenous convergence depends very much on institutional and behavioural changes that would be required to manage integration and to compensate for the loss of the exchange rate instrument – issues to which the theory of OCA pays little attention (Buiter 1995).

Intraregional trade was no doubt much higher in Europe than it is in East Asia today, reaching almost 70 percent of total trade of the former, compared to less than 50 percent in the latter. But in East Asia, too, it is likely to reach similar magnitudes if recent trends are maintained, and if initiatives such as the ASEAN Economic Community can be put into practice and extended to include China and Korea. Besides, intraregional trade and monetary integration can constitute mutually reinforcing processes in East Asia in the same way as they have in Europe: stable exchange rates help to expand trade and deepen regional economic integration, which can, in turn, achieve greater convergence to conditions needed to increase the benefits from common currency arrangements.

The contagion which spread the currency attacks during the 1997 crisis from Thailand to several other countries was partly caused by the belief that regional integration was deep enough to trigger competitive devaluations. In reality there is both competition and complementarity in East Asian trade. An important part of trade among the countries of the region is complementary intraindustry trade in intermediate goods linked to international production networks, with China at the centre.[89] In these networks based on vertical intraindustry trade specialization, China imports components and parts (mostly from the NIEs) and capital goods (mainly from Japan and Korea) as inputs into consumer goods exported largely to industrial countries, but also partly to other developing countries, including in the region.[90] Clearly, this is different from western European-type intraindustry trade, where countries both import and export final products produced by the same industries and compete in these markets. In vertical production networks competition is largely among countries supplying intermediate goods (e.g., computer chips) rather than in markets for final consumer products.

Although intra-industry trade in final consumables has also been developing rapidly in East Asia, the increase in intraregional trade over the past decade is largely due to growth of trade between China and other East Asian countries within industry-specific production networks, mirroring rapid growth of Chinese exports to the United States and the European Union. Thus, trade shocks from advanced economies tend to generate symmetrical effects across the region. Because of a high degree of import content of Chinese assembly industries, a one dollar decline in China's exports to the United States and Europe tends to reduce its imports from the rest of East Asia by more than a one dollar decline in its domestic consumption. This is clearly seen in the current crisis, during which declines in China's exports to the United States and Europe are mirrored by sharp contractions in its imports from the region and intraregional trade, with all major Asian economies experiencing double-digit drops in exports (RGE Monitor 2009c and 2009e).

Competition among East Asian countries in the United States and European markets for final products appears to be more intense than competition in intraregional trade in these products. Not only did the countries hit by the 1997 crisis export to the same destinations but they also exported the same products. Their exports to the United States was concentrated in two groups, namely, (i) semiconductors and capital goods industries and (ii) apparel, footwear, and household goods (Kochhar, Loungani and Stone 1998: 18-19). Competition among

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[88] The pioneering study in this area is Frankel and Rose (1996), which empirically shows, using the intensity of intra-union trade and correlation of business cycles, that countries are more likely to satisfy the criteria for entry into a currency union after taking steps towards economic integration than before. The OCA indices developed by Bayoumi and Eichengreen (1997) also show considerable convergence in Europe towards criteria for monetary union after 1987.

[89] For the nature and extent of intraregional trade in East Asia, see MAS (2007: chap. 5) and Shafaeddin (2008: section 5). For variations among countries' participation, see Rana (2006; table 1).

[90] According to an estimate based on 1995 input-output tables, only 20 percent of non-Japan intra-Asian exports in 2002 was for domestic demand – including consumption and capital formation – and the rest was in intermediate goods. Half of the latter was used in production for domestic markets and half for exports; see MAS (2003). Since 1995 there has been a rapid expansion of industry-specific production networks, notably in electronics. Therefore, more up-to-date input-output tables are likely to show a higher share of intermediate imports in production for exports. The same study also finds that about 68 percent of China's imports from East Asia are used, directly or indirectly, for domestic demand in China, including investment. However, no account is taken that an important part of investment in Chinese manufacturing is directly linked to exports.

Asian producers in third markets has certainly intensified since the 1997 crisis with growing penetration of China in the United States and European markets in areas of export interest to other Asian NIEs.

In finance, Asian regional integration is much more limited than in trade (MAS 2007: chap. 5; Kawai 2007). In fact Asia is integrated more closely with global financial markets than regionally. A very large proportion of portfolio investment in Asia comes from the United States and Europe, which also constitute the main destinations for Asian portfolio investment abroad. This provides a strong rationale for closer regional monetary cooperation because it implies, in effect, that Asian emerging markets are exposed to similar external financial shocks and contagion, and require similar policy responses. As already discussed, this has indeed been the case in the current global turmoil where such shocks have caused sharp declines in asset markets across the region. Such common financial shocks and contagion are generally neglected in the literature on OCA, which tends to focus on real supply and demand shocks.

6.3 Options for regional currency arrangements

As noted above, the main objective of European monetary cooperation after the collapse of the Bretton Woods system was to secure intraregional stability while floating collectively vis-à-vis the dollar and other reserve currencies. After the initial and barely successful experiments with "snake" and "snake in the tunnel," parity grids were established for each member currency vis-à-vis all other ERM currencies in two-tier bands of ± 2.25 percent, with the Italian lira enjoying a wider band of ± 6 percent, widened further to ±15 percent when it came under attack in the early 1990s.[91] The ERM was anchored to the deutschmark not only because it was the main reserve currency in the region but also because Germany was a large economy with a good track record in price stability. France was also big but not stable, while Holland was stable but not big enough (Bofinger and Flassbeck 2000). Joint intervention and unlimited short-term bilateral credits to weak-currency countries were the main instruments for maintaining currencies in parity grids. Parity adjustments were allowed to prevent build-up of fundamental disequilibria, at least until the 1987 Basle-Nyborg agreement, which sought to avoid further parity changes by liberalizing intra-marginal interventions in order to strengthen the credibility of the EMS.[92]

Could and should East Asia try to replicate the European experience by aiming at intraregional stability while adopting a benign neglect towards the values of their currencies vis-à-vis the rest of the world? Or should they go for a common mechanism designed to attain both internal and external stability, with provisions for appropriate adjustments if and when needed? What are the options in common exchange rate arrangements?

Replicating the ERM in East Asia can pose serious problems. First of all, there would be practical difficulties in pegging bilaterally and floating collectively without an independently floating reserve currency as an anchor. The yen is the only such currency at present, but there are political impediments to forming intraregional currency arrangements around the yen. More importantly, floating collectively – with or without an anchor reserve currency – would mean a significant degree of instability vis-à-vis third currencies. This would not have mattered much if East Asian developing countries traded mainly with each other and/or competed among themselves in third markets. But for the region as a whole and for most countries, the share of non-East Asian trade as a proportion of GDP is still very high and competition from third countries is quite intense. This means that fluctuations vis-à-vis third currencies could generate considerable swings in economic activity and undermine export-led growth strategies.[93] Adopting managed floating vis-à-vis the rest of the world would also be difficult without an internal reserve currency as an anchor. Thus, an AMS modelled on the EMS, with or without management of external parities, may have to wait until the Chinese yuan becomes a fully convertible world currency.

If the main objective is simply to maintain a stable pattern of intraregional exchange rates, a solution would be to move collectively to the other corner and fix all regional currencies to a reserve currency, notably the dollar.[94] This was advocated by McKinnon (2001) for most

[91] After the suspension of gold convertibility by the United States, the 1971 Smithsonian agreement established a 4.5 percent margin *(the tunnel)* for other currencies against the dollar (that is, ± 2.25 percent relative to the central rate). This effectively meant that European currencies could move by up to 9 percent against each other. Soon after the European Community established the *snake*, that is, bilateral margins of 2.5 percent, which effectively limited such movements among members of the EC to 4.5 percent. The *snake in the tunnel* came to an end in 1973 when the dollar started to float freely.

[92] This, in effect, helped create one-way bets against fundamentally misaligned lira and pound sterling, leading to the 1992-1993 turmoil; see Akyüz and Flassbeck (2002).

[93] Park and Wyplosz (2007: 14), who otherwise favour the replication of the EMS by establishing an Asian Monetary System (AMS) in the way suggested by Wyplosz (2004) over other regional alternatives, recognize that should a significant number of Asian countries adopt the European strategy, "they would be unlikely to sustain the export-led strategy. Either the exchange rates would jointly float, both up and down, or, given the economic weight of the AMS countries, attempts to manage the external parities would quickly meet strong resistance from the G7 and the IMF. This would likely signal the end of the export-led strategy for the region."

East Asian countries on grounds that soon after the 1997 crisis they had all gone back to some form of de facto dollar peg, but lack of any formal agreement left the door open to beggar-my-neighbour exchange rate policies, instability, and contagion. On this view, such threats could be avoided by a collective formal dollar peg, which would also insulate the intraregional exchange rates against fluctuations in the dollar. In order to avoid instability, it is argued, it would be necessary to strengthen prudential regulations limiting banks' foreign exchange exposures.

As noted above, since the beginning of the decade Asian developing countries have moved away from dollar pegs towards intermediate regimes of managed floating. Indeed, as indicated by wildly disparate fluctuations of regional currencies against the dollar since 2003 (table 7), the region is not a de facto dollar block. Returning to the dollar peg could defeat the central objective of improving the ability of the countries to collectively manage their exchange rates in the service of stability and growth. Unilateral pegging to the dollar is not the same thing as going into a monetary union with the United States, since it would not entail any commitment on the part of the latter country in the conduct of its monetary and exchange rate policies, or for financial support. The consequences of loss of monetary autonomy could be particularly severe given that the United States and East Asia do not come close to forming an OCA. Moreover, fixing to the dollar would not eliminate instability vis-à-vis third currencies and, hence, of effective exchange rates. Nor can vulnerability of such a regime to instability and crises be easily eliminated through standard prudential regulations for reasons discussed in section D, above. Such a solution may be appropriate for countries looking for a credible external anchor to stabilize the domestic price level, but not for East Asia where the record in monetary and fiscal discipline is as good as, and even better than, the United States.[95]

An alternative proposal is to collectively target a basket of three reserve currencies, rather than the dollar alone, with a common set of weights determined on the basis of regional trade shares.[96] Each country would announce a central parity vis-à-vis the basket and commit to keep it within a unilaterally chosen band. There would be no restrictions over the choice of the exchange rate regime by individual countries; that is, each country would be free to choose its own regime with respect to the common basket, including hard pegs and managed floating, provided that its exchange rate action is disciplined by the central basket rate. Thus, Hong Kong could stick to its currency board except that it would now fix its currency to the common basket rather than the dollar, and China, Malaysia and Singapore could all continue with their own variants of the BBC regime provided that they were willing to have their intervention disciplined by the central basket rate.[97] A restoration clause is proposed whereby countries would be allowed to temporarily suspend the peg when confronted with a massive speculative attack, with a credible commitment to return to the original parity as soon as practical. However, central parity and the band would also be allowed to crawl in response to changes in economic fundamentals and large and durable shocks.

Here, too, as in the dollar peg, changes among reserve currencies would not affect intraregional exchange rates: in other words, if each economy stabilizes its currency vis-à-vis a common basket of reserve currencies, they would also stabilize against each other. Moreover, the common basket peg would have the advantage of securing greater stability of effective exchange rates. However, these can still show considerable instability since weights used in the common basket would diverge from the optimal weights in unilateral country baskets. The compromise needed regarding the weights to be used in the common basket may face political hurdles when the trade of countries with the three reserve-currency countries differs widely. However, instability in effective exchange rates caused by pegging to a common basket (rather than their own optimal baskets) is expected to diminish over time as countries move closer to each other and, hence, towards the conditions for an OCA.

The proposed system is more flexible and less formal than the EMS. It does not call for a drastic change in the existing exchange rate regimes except for changing the target currency to a basket of three reserve currencies with common weights. Moreover, its implementation

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[94] According to Calvo and Reinhart (2002) dollar pegging is a rationale response to the problem of original sin, that is, the inability of developing countries to borrow in their own currencies. This is not relevant for most East Asian countries, which do not need to borrow in any currency. It has also become less relevant in Latin America where domestic-currency debt held by non-residents has been increasing rapidly, with international investors assuming the exchange rate risk in return for high yields. Some countries have also been able to issue local-currency-denominated global bonds at rates below those in domestic markets to benefit from lower jurisdiction spreads; see Akyüz (2007).

[95] These considerations are equally and even more valid for establishing a yen block in East Asia (Kwan 1998), which would face, in addition, political difficulties.

[96] For the original proposal, see Williamson (1999). See also Kawai and Takagi (2000), Ogawa and Ito (2000), and Williamson (2000 and 2005). A similar proposal was made by the staff of the French and Japanese Ministries of Finance in a joint paper: a "possible solution for many emerging market economies could be a managed floating exchange-rate regime whereby the currency moves within a given implicit or explicit band with its centre targeted to a basket of currencies" and "a group of countries with close trade and financial links should adopt a mechanism that automatically moves the region's exchange rates in the same direction by similar percentages" (MOF Japan 2001: 3-4).

[97] However, both Williamson (2000) and Kawai and Takagi (2000) consider a BBC regime combining a band and crawl with the basket as the norm for most countries.

would not depend on the existence of an anchor reserve currency in the region. An argument advanced against a common East Asian basket system is that, in the absence of support by the three reserve-currency countries, it would not be able to stand a determined speculation even under the Chiang Mai Initiative.[98] However, this would not be a problem if East Asia could collectively maintain a current account surplus and large amounts of reserves, and establish adequate intraregional credit lines.

The major problem, however, is that such an informal and flexible arrangement would not secure adequate discipline and commitment. Here, unlike in the EMS, central parities and bands would be unilaterally determined. Since any band width with a central parity in the common basket is permissible, there can be considerable intraregional instability unrelated to shifts among the reserve currencies. Although changes in exchange rates unwarranted by changes in the basket currencies can be challenged by other members, this might not be very effective if there is no commitment to defend a particular rate.[99] On the other hand, despite the restoration rule the proposed arrangement would not have effective safeguards against arbitrary changes in the central parity and even bands, and would not eliminate the scope for beggar-my-neighbour parity adjustments. Thus, it can only be an initial step until there is an economic and political convergence towards conditions needed for a formal and more tightly regulated system. [100]

Given the difficulties posed by soft regimes, and the lack of political will and solidarity to put in place more robust institutions and currency arrangements, it is sometimes suggested that Asia should make an even slower start by replicating the European Currency Unit (ECU) rather than the EMS by establishing an Asian Currency Unit (ACU) and promoting its use as a parallel currency alongside national currencies.[101] This is also seen as fitting better to the Asian approach to integration as a market-based rather than politically driven process. However, the ECU never played an important role in the European monetary integration. The use of an ACU alongside national currencies would lead to currency mismatches, and these could be quite damaging when intraregional exchange rates are highly unstable. This could in fact deter its widespread use in the absence of mechanisms to stabilize intraregional exchange rates. More importantly, the success of the ACU would depend in large part on strong government support, giving it legal tender status by using it in bond issues, settlements among central banks, and even pricing of public services. Thus, successful development of an ACU is politically no less untenable than effective intraregional currency arrangements.[102] One may then try to go all the way to introduce arrangements that would secure a reasonable degree of extraregional and intraregional exchange rate stability, instead of selecting a half way house that would turn out to be neither one thing nor the other.

6.4 Supporting mechanisms: Lessons from Europe

A regional arrangement designed to maintain stable intraregional and effective exchange rates needs to be supported by several mechanisms and institutions. The list of areas of cooperation needed is quite long, and includes macroeconomic policy coordination, market regulation, and surveillance, but here attention is focussed on two areas that hold the key for the viability of any arrangement for collective management of exchange rates: i) the management of capital flows and ii) intraregional lending and policy adjustment. In both respects, the European experience holds a number of useful lessons, both by its successes and shortcomings.

A regional capital account regime

Regional currency arrangements require a common set of principles regarding rules to be applied to international capital flows. This was indeed the case in Europe. The Treaty of Rome stipulated gradual removal of restrictions among the member states, but it also permitted introduction of controls in response to disturbances in the functioning of financial markets due to international capital movements, and authorized use of protective measures by countries experiencing balance-of-payments difficulties. Until 1988 when the Council adopted a new directive calling for the liberalization of capital movements within the community by 1990, the EEC regime for capital movements was governed by guidelines established by various Directives issued from early 1960s onwards. These divided capital flows into four different categories,

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[98] See Park and Wyplosz (2007: 13), which reiterates that an AMS modelled on the EMS would be as effective as pegging to a common basket in stabilizing the regional bilateral exchange rates.

[99] If, as Williamson (2005: 11) points out, a country accepts only an obligation not to intervene in a way that would tend to push the market rate away from the reference rate, but no obligation to defend a particular rate, it can adopt a behaviour of benign neglect when markets push the rate away from the central parity, and this could generate considerable instability when the band is very wide.

[100] For instance, Kawai (2007) sees a common basket system as a step towards a more rigid intraregional exchange rate stabilization scheme such as an Asian snake or an Asian ERM.

[101] This idea of ACU was pioneered by the Asian Development Bank. Eichengreen (2007) gives support to it as a parallel currency, while recognizing some of the difficulties noted below.

[102] Whether an ACU should be introduced and used alongside a common basket is contentious. According to Williamson (2005: 1) there is nothing to preclude the introduction and use of an ACU in the common basket system, but Eichengreen (2007) sees a major contradiction since a common basket in three reserve currencies would encourage use of these outside currencies in the region instead of the ACU.

with different rules for liberalization and regulation to be applied to each. They provided considerable leeway for restricting capital movements, particularly towards third parties. In fact, governments were required to have available and be able to use certain policy instruments for the control of international capital movements and for the sterilization of their impact on domestic liquidity, and to have rules governing investment in money markets by non-residents, loans and credits unrelated to current transactions, net external positions of credit institutions, and reserve requirements for holdings by non-residents.

In effect, until liberalization in the late 1980s the EMS operated under capital controls. The 1988 Directive prohibited restrictions among member countries and recommended that they should endeavour to attain the same degree of liberalization of capital movements with third countries. But recognizing that short-term international capital movements were capable of seriously disrupting the conduct of monetary and exchange rate policies even when there was no appreciable divergence among countries in economic fundamentals, the Directive retained provisos concerning control over such capital movements during periods of financial strain. This was subject to authorization by the Commission, but the right to unilateral action was recognized in urgent cases. It was indeed exercised during the 1992-1993 turmoil by a number of countries, including Ireland, Portugal, and Spain.

It is often argued that the main reason for the acceleration of the process of integration in Europe in the early 1990s towards full monetary union was because volatile capital flows made it very difficult to maintain parities (e.g., Park and Wyplosz 2007). Since this is not yet an option in Asia, any regional arrangement to stabilize intraregional and extraregional parities should be built on a common and effective capital account regime in the region.

Even though the overall trend in East Asia has been towards greater capital account openness, there is still considerable disparity among countries regarding the regimes for non-resident and resident flows. Harmonization of these should seek considerable tightening of rules and regulations to be applied to capital flows with third countries, along the lines discussed in section D, above. By contrast, the East Asian countries, notably the ASEAN 5 countries plus China and Korea, can afford a greater degree of capital account openness among themselves than was the case in Europe during the first decade of the EMS. In this respect China could play a special role by making the yuan fully convertible within the region and hence promoting it as a regional reserve currency. The recent move by China to allow the yuan to be used as settlement currency with neighbouring countries (including ASEAN and Russia), partly triggered by problems caused by dollar instability for China's exporters, and a number of bilateral swaps that China's Central Bank has signed with countries inside and outside the region are important steps in the internationalization of the yuan (AsiaNews 2009). Such moves could be supplemented by opening Chinese financial markets to residents in other member countries, including those with weaker savings and payments positions, to tap its high savings through the so-called Panda bonds – a step that could also help develop regional bond markets for closer financial integration and reduce the dollar-denominated external claims of China.[103]

Intra-regional lending and policy adjustment

Maintaining currencies within agreed bands would call for, inter alia, occasional interventions in foreign exchange markets in both directions. Countries would be constrained in doing this when markets push down a currency towards the lower edge of the band. In the case where currencies are pegged to a common basket of three reserve currencies, intervention and stabilization would require adequate holding of or access to these currencies.

The EMS did not incorporate a regional fund to support countries having to intervene to keep their currencies within the grids. Rather, it relied on bilateral lending and borrowing between strong-currency countries (often Germany) and weak-currency countries. There were two types of intervention: intra-marginal and marginal. Intramarginal interventions were carried out, often in dollars, by the country concerned at its own discretion, when its currency was within intervention points. But interventions had to be done jointly by both weak and strong-currency countries when a currency reached its bilateral intervention points, or by the strong-currency country making available unlimited amounts of a very short-term financing (VSTF) to the weak-currency country.[104] Lending and intervention by a strong-currency country were formally equivalent since reserves used in interventions were added to VSTF claims on the weak-currency country, and such claims had to be settled within 45 days. In the case of extension, the amount available was limited.

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[103] The ADB and the World Bank IFC issued Panda bonds in 2005. China has recently given permission to two foreign banks to issue yuan-denominated bonds in Hong Kong for sale to overseas investors (Areddy 2009). Currently there are suggestions in China that the United States Government and the World Bank consider issuing yuan-denominated bonds in Hong Kong and Shanghai markets; see RGE Monitor (2009f). This would mean China lending foreigners in its own currency rather than in dollars, passing the exchange rate risk onto borrowers.

[104] With the 1987 Basle-Nyborg agreement the VSTF was extended to intra-marginal interventions.

This VSTF did not have sufficient flexibility to provide breathing space for a country suffering from contagion. This was the case of France during the 1992-1993 turmoil when its macroeconomic fundamentals did not justify the attack on its currency alongside the lira and pound sterling; indeed, tight German monetary policy was a main factor in the speculative attack on the French franc. Provisions for suspension of asset settlement obligations for countries satisfying certain macroeconomic criteria linked to payments and fiscal positions and inflation would have certainly facilitated the stabilization of the French franc and prevented interest rate hikes and loss of jobs and incomes (UNCTAD TDR 1993: Part Two, chap. I). By contrast, the system left considerable discretion to strong-currency countries to opt out of their obligations to provide unlimited VSTF. This is what Germany eventually did in 1992 for fear of inflationary consequences of its lending to countries under distress, thereby deepening the crisis.

The EMS lacked symmetry in policy formulation and distribution of the burden of macroeconomic adjustment between weak and strong-currency countries. In fact, there were no clear guidelines for their respective responsibilities for policy adjustment in the face of market pressures on parities. Hegemony by Germany was not always balanced by its responsibilities vis-à-vis other members. Its policies did not always pay enough attention to the overall macroeconomic conditions of the region and their possible adverse impact on other members. This, together with lack of effective intraregional financing and lender-of-last-resort facilities, often pushed the burden onto weak-currency countries. This was the price paid for the stabilization influence that Germany provided to countries lacking a similar degree of fiscal and monetary discipline and credibility. Moreover, German monetary policy had a deflationary bias, and was mainly responsible for sluggish growth and persistently high unemployment in the region as a whole – an approach now inherited by the European Central Bank.

Multilateralization of regional credit lines would be necessary to avoid asymmetry. In this respect the move from Chiang Mai bilateral credit lines towards a regional monetary fund is a positive step in Asia. Furthermore, possible arrangements for guidelines for policy adjustment and conditions of access to an Asian fund should pay attention to shortcomings of the EMS as well as IMF lending practices to emerging markets in order to avoid deflationary and procyclical biases.

This brings us to a final point about relative positions and responsibilities of members of a possible AMS among the developing countries of the region. It is sometimes argued that China is far too big for other developing countries to join in partnership – far bigger than Germany was relative to other European countries. This means that the terms of any agreement for regional monetary integration could be dictated by the needs of the Chinese economy, which may not always coincide with those of smaller and more advanced countries in the region.

That China is likely to be more dominant than Germany ever was in Europe in shaping policies and practices in an AMS is probably correct. But this is a matter of relative economic power, not existence or otherwise of formal agreements for monetary integration. China will wield considerable influence on policies in the region with or without an AMS. Under current trends, it can soon consolidate its global position as an industrial powerhouse by becoming a major actor in the global financial system by moving to full convertibility and independent floating, making the yuan challenge the US dollar as the international reserve currency – possibly sooner than Chinese politicians are willing to accept and most observers expect.[105] This is likely to go through two stages: increasing the use of the yuan first in pricing and settlement of trade and financial transactions, and second in denomination of financial assets for lending and investment. As noted, China has already taken steps in both directions.

As the yuan becomes an international reserve currency, smaller and open Asian economies with close trade and investment links to China would not have much autonomy in monetary and exchange rate policies, but would have to follow it in very much the same way as the Swiss policy mimicked that of the Bundesbank and is now doing so with the ECB. For smaller and open East Asian economies, entering into monetary cooperation with China now under carefully defined and properly balanced reciprocal responsibilities could bring them more benefits than unilaterally pegging to the yuan and following China's monetary policy. In this bargain they are in a better position than were weak-currency countries of Europe in that most of them have a good record of monetary and fiscal discipline and do not depend on the stabilizing influence of another central bank.

[105] Empirical evidence indicates that the renminbi has been exerting significant impact on the exchange rates of the Asian currencies. It is also estimated, on the basis of a reserve currency model and counterfactual simulations, that the renminbi's potential as a reserve currency would be comparable to that of the Japanese yen and the British pound if it were to become fully convertible today; see Chen, Peng, and Shu (2009).

7. Conclusion

With increased integration of developing countries into the global trading system and international production networks, the exchange rate has gained additional importance in growth and development. The need to maintain stable and competitive exchange rates is further enhanced by loss of space in trade and industrial policies as a result of multilateral commitments in the WTO. However, the ability of developing countries to achieve this has been greatly compromised by their closer integration into international financial markets and increased openness to inherently unstable capital flows.

Maintaining stable and competitive exchange rates in most developing countries depends, *inter alia*, on how boom-bust cycles in capital flows are managed. An effective management should start in good times since options are quite limited under sudden stops and reversals. Failure to prevent surges in capital inflows and unsustainable currency appreciations do not simply lead to instability in exchange rates and balance-of-payments but also to virulent financial and economic crises with durable and severe consequences for jobs, incomes, and investment. However, the task has become particularly daunting since the most damaging swings in capital flows are caused by global factors beyond the control of developing countries, notably by macroeconomic and financial conditions in major industrial countries, and there are no effective multilateral arrangements to discipline either policies in countries with disproportionately large impact on global financial conditions or financial markets.

Management of exchange rates under free flow of capital faces serious dilemmas – even beyond that predicted by the conventional impossible trinity. Monetary policy on its own is often quite powerless in influencing capital flows so as to stabilize the exchange rate even when all available instruments are used, particularly at times of sudden shifts in market sentiments. Currency market interventions designed to absorb a surge in capital inflows to avoid appreciations and to build self-defence against sudden stops and reversals by accumulating reserves are second-best policies because they are costly and their impact on domestic liquidity cannot always be fully neutralized. Nor can they prevent asset market bubbles and currency and maturity mismatches in private balance sheets.

Under most circumstances regulation and control over capital flows would be necessary to prevent build-up of fragility. Standard prudential rules regarding capital charges, loan-loss provisions, and reserve and liquidity requirements can be extended and applied more rigorously and in a counter-cyclical fashion to foreign currency positions and transactions in the financial system with a view to reducing maturity and currency mismatches and exchange rate related credit risks. While useful and necessary, in most developing countries such measures would not be sufficient to prevent build-up of external fragility since not all foreign investment and borrowing are intermediated by financial institutions. Direct tools may need to be applied to prevent currency and maturity mismatches in private sector balance sheets. Easing or removing restrictions on resident outflows at a time of a surge in inflows to relieve the pressure on the currency carries the risk of opening the way to one-way traffic.

Monetary policy would be quite ineffective at times of rapid exit of capital resulting from a sudden change of market sentiment for reasons beyond the control of the country concerned, such as the shocks and contagion caused by the current global financial turmoil triggered by widespread speculative lending and investment in major international financial centres. Attempts to stem outflows by interest rate hikes and fiscal retrenchment simply add to deflationary and destabilizing impulses. In the absence of voluntary agreements by international creditors and investors to roll over their claims, unilateral temporary debt standstills and exchange restrictions may be the only viable option to check financial meltdown and economic contraction.

For most developing countries intermediate exchange rate regimes, and particularly the BBC regime, provide the most viable option for combining a relatively high degree of stability with the flexibility needed for occasional adjustments in order to maintain competitive exchange rates. A successful pursuit of such a regime calls for a judicious combination of monetary policy adjustments, currency market interventions, and control over capital flows. Indeed, well aware of the risks of leaving the exchange rate to the whims of cross-border capital flows, most Asian developing countries have opted for intermediate regimes in an effort to combine stability with flexibility against the orthodox advice to float independently and spare monetary policy for inflation targeting. They have been successful in maintaining relatively stable and competitive exchange rates and strong payments positions, even though lack of adequate control over capital

inflows exposed their asset markets to adverse shifts in global financial conditions. By contrast, countries that chose free floating have been hit harder by the current international financial turmoil both because of unsustainable appreciations and current account deficits, and the bursting of asset bubbles resulting from the earlier surge in capital inflows.

In the absence of effective global arrangements to secure international monetary stability and difficulties in finding unilateral solutions, regional mechanisms present themselves as viable alternatives. This is particularly true for countries with close trade and investment links as in East Asia. Despite large stocks of international reserves and strong payments positions, intraregional and extraregional exchange rates have been highly unstable in the region. This carries not only the risk of contagion but also the seeds of conflicts, particularly when global markets are shrinking. There is a strong economic case for establishing common currency arrangements with supporting institutions and mechanisms, including rules for policy coordination and adjustment, guidelines for capital account policies, and regional funds and lender-of-last-resort facilities. What is missing is not the need or the scope but the political will and solidarity. Perhaps current difficulties will provide an occasion for a common reflection for change before ever-growing international monetary and financial instability inflict irreparable damages.

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Annex A

Table 1: Stability of the real exchange rate[a] (quarterly data 1965-1985)

ASIA		LATIN AMERICA		AFRICA	
Singapore	6.32	Colombia	11.87	Zambia	16.48
Malaysia	7.59	Mexico	13.21	Etiopia	14.84
Republic of Korea	8.80	Paraguay	16.50	Tunisia	11.18
Thailand	8.14	Bolivia	18.35	South Africa	10.79
Philippines	14.62	Peru	21.51	Mauritius	8.00
India	18.09	Brazil	22.44	Kenya	7.86
Pakistan	27.53	Chile	28.29		

Source: Edwards (1989).
a: Measured by the coefficient of variation of quarterly changes in the multilateral real exchange rate index.

Table 2: Pre-crisis and post-crisis unemployment in Asia (percent of labour force)

	1994-1996	1998-1999	2003	2007
Indonesia	4.0a	6.0	9.7	9.1
Republic of Korea	2.1	6.6	3.6	3.2
Malaysia	2.8b	3.3	3.6	3.3
Thailand	1.1	3.2	1.5	1.2

Source: ILO LABORSTA.
a: 1996, b: 1995-1996.

Table 3: Pre-crisis and post-crisis investment in Asia (percent of GDP)

	1994-1997	2003-2007
Indonesia	31.4	24.4
Republic of Korea	36.5	30.0
Malaysia	42.3	21.7
Thailand	39.1	27.7
Philippines	23.2	15.4
Singapore	35.9	20.0
Taipei	23.8	21.0

Source: ADB Asian Development Outlook (various issues).

Table 4: Effective exchange rates and current accounts in emerging markets (percent change)

	NOMINAL		REAL		CA/GDP
Independent Floating	Boom	Bust	Boom	Bust	2008
Brazil	81.8	-24.3	44.0	-21.9	-1.8
Chile	29.0	-20.1	28.8	-15.8	-1.1
Iceland	6.7	-47.3	18.2	-38.3	-18.2
Republic of Korea	15.7	-34.6	18.7	-33.5	-1.3
Mexico	-4.6	-24.1	0.5	-20.0	-1.4
Poland	29.3	-21.6	29.3	-21.7	-4.7
SAR	6.5	-27.2	14.9	-20.1	-8.0
Turkey	9.6	-18.1	40.2	-7.1	-6.5
Managed Floating					
Argentina[a]	-16.4	-6.2	2.6	-2.3	0.8
China	9.8	0.3	12.4	1.3	9.5
India	2.7	-14.0	16.8	-11.2	-2.8
Malaysia	1.3	-5.9	1.2	-4.1	14.8
Singapore	7.5	-2.2	3.2	0.8	19.1
Thailand	12.9	-4.6	20.3	-7.4	3.1

Source: Exchange rate regimes from IMF (2008) based on members' actual, de facto arrangements. Effective exchange rates from BIS; current account balances from IMF WEO (October 2008).
Boom: January 2003 to peak 2007/2008.
Bust: Peak 2007/2008 to end-January 2009.
a. Classified as managed peg in IMF (2005) but fixed peg in IMF (2008).

Table 5: Private capital flows, current account balances, and changes in reserves in emerging markets (billions of US dollars)

	Total			Asia		
	2004	2007	*2008*[e]	2004	2007	*2008*[e]
Capital Flows	348.8	928.6	465.8	165.6	314.8	96.2
Current Account	150.2	434.0	387.4	115.2	420.2	386.4
Reserve Increases	398.2	948.7	444.3	296.1	587.8	373.1

Source: IIF (various issues).
e = estimate.

Table 6: Current account and reserves[a] (billions of US dollars)

	Asia	China
Reserves		
2008	2830.4	2201.3
2001	379.5	216.3
Increase	2450.9	1985.0
Current account[b]		
2002-2008	1458.9	1331.8
Borrowed reserves[c]		
2002-2008	992.0	652.3
Import coverage[d]		
2001	4.9	6.6
2008	9.4	13.8

Source: IMF WEO (October 2008).
a. 2008 figures are estimates.
b. Cumulative current account balance over 2002-2008.
c. Difference between increases in reserves and cumulative current account balance over 2002-2008.
d. Months of imports covered by reserves.

Table 7: Exchange rate swings in Asia during subprime bubble and bust (percentage change in nominal bilateral rates)

	Dollar rates		Yuan rates	
	Boom	Bust	Boom	Bust
Chinese Yuan	9.3	10.7	–	–
Indian Rupee	19.2	– 16.6	9.0	– 26.2
Indonesian Rupiah	– 2.7	– 20.0	– 11.0	– 27.7
Malaysian Ringgit	10.0	– 4.5	0.6	– 13.8
Philippine Peso	17.9	– 3.0	7.9	– 12.4
Singapore Dollar	14.7	0.3	4.9	– 9.5
S. Korean Won	28.8	– 33.5	17.8	– 40.0
Taiwan Dollar	5.9	–2.7	– 3.2	– 12.1
Thai Baht	43.4	– 14.3	30.9	– 22.6

Boom: From January 2003 to July 2007.
Bust: From August 2007 to February 2009.

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