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MACROECONOMIC POLICIES:
NEW ISSUES OF INTERDEPENDENCE

by

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PREFACE

Interdependence is on the increase at the global level. Whereas small, poor and underdeveloped states were traditionally dependent on the developed and industrialised economies, globalisation is undermining the idea that such dependency conditions are static. On the contrary, goods, capital, enterprises and people are on the move. New actors are emerging on the global stage creating new sources of comparative advantage; they are sweeping away traditional locational advantages, thus increasing the vulnerability of economies and social groups which fail to adjust rapidly to the new realities.

Policies and policy makers also need to adjust. Market forces alone cannot restructure the productive base, raise investment in capacity building or reform institutions. The growing influence of the global market requires the systematic and sustained promotion of mutually reinforcing policy actions on the part of both OECD and developing countries, i.e. systemic coherence in policy making.

This Working Paper argues that policy coherence cannot be improved without due attention to macroeconomic interdependence. First and foremost, the list of key players on the global macroeconomic scene is expanding, in particular through China and India, but increasingly through Brazil as well. Key global commodity and manufactured prices, wages, exchange rates and interest rates are no longer determined in key OECD countries, but frequently outside the OECD area. Second, intensified financial integration and the rising leverage of institutional investors raise the amplitudes of global credit cycles, creating volatility and liquidity risks for the world economy. Third, Asia's dollar peg and its rising official reserves strengthen its role as a price setter in global financial and goods markets. Needless to say, these developments have an immediate impact on poor countries, both positive and negative, which is still poorly understood.

This study was produced at the request of the OECD Horizontal Project on Policy Coherence for Development. It responds to some of the Organisation's concerns about the effects of the new macroeconomic linkages in the global economy and the search for adequate policy responses to them. This paper also reveals information and challenges that are important for developing countries and regions themselves. It represents an important contribution to our knowledge of the effects of interdependence and policy coherence on the relationship between OECD countries and the developing world.

Prof. Louka T. Katseli
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20 January 2005

RÉSUMÉ

Ce document de travail s'intéresse à trois nouveaux défis de la politique macro-économique : les implications macro-économiques de l'émergence de la Chine ; les conséquences de l'intensification de l'intégration financière ; et l'interaction entre les régimes asiatiques de taux de change avec les politiques monétaires des pays de l'OCDE.

La Chine décide désormais du niveau des prix sur certains marchés internationaux des matières premières et de l'énergie. Son influence mondiale se fait nettement ressentir au-delà des marchés des biens et des matières premières, jusque sur les marchés financiers internationaux. L'acquisition par la banque centrale chinoise de larges quantités d'actifs étrangers a accru l'influence du pays sur les cycles économiques mondiaux et consolidé son importance d'un point de vue financier et macro-économique. La Chine ne doit donc plus seulement être perçue comme un pays producteur de biens à bas prix, mais aussi comme une source d'« épargne bon marché ». Exportateur/importateur régulateur, la Chine pourrait déstabiliser les marchés des matières premières, ce qui n'irait pas sans de lourdes répercussions sur les pays en développement. Les variations du déficit de production de la Chine auront également des effets sensibles sur les principaux taux d'intérêt et de change mondiaux.

Deuxième défi, la vague de *mondialisation financière* qui remonte au milieu des années 1980 : elle rend en effet l'analyse macro-économique centrée sur un pays progressivement inutile et les politiques nationales inopérantes. En outre, l'augmentation prévisible de l'épargne institutionnelle, sous-tendue par l'évolution démographique et l'abandon des régimes de retraite par répartition au profit de systèmes par capitalisation — mais aussi par la nécessité d'obtenir des rendements corrects malgré les effets contraires d'une contraction de la main-d'œuvre dans les pays de l'OCDE — devrait intensifier les effets macro-économiques des cycles conjoncturels dans les pays de l'OCDE et ailleurs. Confrontés à de faibles rendements, les comités stratégiques des fonds de pension et les investisseurs individuels sont de plus en plus attirés par les fonds spéculatifs, à la recherche de classes d'actifs non corrélés et de rendements absolus (plutôt que supérieurs à un seuil de référence). La politique économique devrait tenir compte de ces nouveaux acteurs, dans la mesure où ils ont probablement amplifié les cycles internationaux du crédit, ce qui pourrait avoir des conséquences désastreuses à la fois sur les pays importateurs de capitaux et sur la rentabilité des investissements des pays exportateurs de capitaux.

Troisième défi, enfin, pour les grands pays de l'OCDE – la politique de constitution de réserves importantes et de flexibilité limitée du taux de change de l'Asie. Cette région devrait maintenir son arrimage – explicite ou non – au dollar tant que la Chine n'abandonnera pas son ancrage à cette monnaie. Les importants excédents des paiements courants se sont traduits par une augmentation soutenue des achats de bons du Trésor américain par les banques centrales des pays d'Asie de l'Est. L'interaction étroite entre les producteurs asiatiques et les consommateurs américains – les premiers offrant aux seconds *à la fois* des biens « à bas prix » (d'où la faible inflation des prix américains à la consommation) et une épargne « bon marché » (d'où la faiblesse des taux d'intérêt américains) – a encouragé les États-Unis à relâcher leur politique monétaire, l'euro servant de degré de liberté « résiduel » dans le système monétaire mondial. À l'inverse, cet ancrage des taux de change a créé d'évidents problèmes à l'Asie, non seulement du fait des tensions commerciales ainsi produites mais aussi par suite de l'aggravation des problèmes de surchauffe économique et de croissance des liquidités.

SUMMARY

Three novel macroeconomic policy challenges are discussed in this paper: the macroeconomic implications of China's emergence; the implications of intensifying financial integration; and the interaction of Asia's foreign exchange regime with monetary policy in the OECD area.

First, China may now be regarded as a price maker on some international commodity and energy markets. Its global impact nowadays stretches importantly not just into goods and commodity markets, but equally into world financial markets. The acquisition by the Chinese official sector of large amounts of foreign assets has raised the country's global cyclical, financial and macroeconomic importance. Hence, China should not just be perceived as a producer of low-priced goods, but likewise of "cheap savings". China as a swing exporter/importer could destabilise commodity markets, with important repercussions for developing countries. Variations in China's output gap will have important repercussions on key global interest and exchange rates.

Second, the wave of *financial globalisation* since the mid-1980s makes nationally oriented macroeconomic analysis increasingly meaningless and policies ineffective. Moreover, the prospective rise in institutional savings, fed by demographic trends and switches from PAYG to funded pension systems, together with the need to achieve decent capital returns despite the headwinds of shrinking labour forces in the OECD area, can be expected to intensify the macroeconomic effects of business cycles in both OECD and non-OECD areas. Faced with low returns, pension-fund strategy committees and individual investors have been increasingly turning to hedge funds, searching for uncorrelated asset classes with a focus on absolute (rather than benchmark-oriented) returns. These new actors may require policy attention as they have probably introduced amplifiers to global credit cycles, with potentially harmful effects to both capital-importing countries and investment returns in capital-exporting countries.

Third, Asia's high-reserve policy and limited exchange rate flexibility have relevant implications and certain repercussions for main OECD countries. Asia is unlikely to drop the dollar peg — explicit or implicit — as long as China does not. Sizable current account surpluses have translated into a sustained increase in US Treasury bill purchases on the part of East Asian central banks. The pairwise interaction between the Asian producer and the American consumer, with Asia delivering "cheap" goods (keeping US consumer price inflation down) and "cheap savings" (keeping US interest rates down), has permitted an accommodative US monetary stance, with the euro as the "residual" degree of freedom in the global monetary system. In turn, exchange-rate pegs have clearly been causing problems in Asia, not only through trade friction, but also by exacerbating the country's accelerating liquidity growth/overheating economic growth problems.

I. INTRODUCTION

The emergence of China and India in the world economy is ever more evident, cross-border financial links are ever more intense and leveraged, and trade and production are ever more integrated between advanced and developing countries. It is high time to review how macroeconomic policies interact with each other between OECD and non-OECD countries¹. The period of simultaneous macroeconomic stimulus in the United States and China seems to come to an end, and new policy challenges are arising, challenges that have been perceived so far mainly in the financial community. These policy challenges call for the attention of macroeconomic policy makers, financial regulators, trade officials, energy experts and the development community. To be sure, they require an understanding of the complex issues of interdependence, before they can be properly addressed. Policy coherence today cannot ignore macroeconomic interdependence.

Consider what has happened in early 2004. The accommodative stance of the US Federal Reserve and the Asian central banks, in conjunction with active fiscal policies in some important OECD countries, had boosted virtually every asset class just about everywhere. With rising official reserves of Japan and China absorbing US Treasury bills, spreads on emerging-market bonds shrank to levels not seen since just ahead of the Asian crisis in 1997, while raw material and energy prices boomed to unprecedented levels, lifting the corresponding currencies. For the typical capital- and raw material-dependent developing country, the mix of external conditions — high growth in the United States, high raw material prices and expansive macroeconomic policies in the G7 countries with low short- and long-term interest rates — was as good as it can get.

The outlook changed in April 2004 when the US Federal Reserve and China's monetary authorities simultaneously started to guide financial-market expectations towards a period of monetary tightening. Since then, raw material prices (excluding energy) and the corresponding exporter currencies have closely reflected market expectations about the monetary policy stance in China, just like long-term rates in the G7 countries, and spreads on emerging-market bonds. After benefiting from China's emergence and corresponding growth rates, observers have now started to worry about the fall-out of China's possible landing, whether it be hard or soft, to lower growth.

1. As a convenient shorthand, economists call the North-South interactions which focus on short-run issues, including through financial markets, "macroeconomic" interactions, to distinguish them from the trade-as-an-engine-of-growth paradigm. Former work at the OECD secretariat dealing at least partly with macro interactions includes the so-called Oyake-Report "The Major Developing Economies and the OECD" (1988), the report "OECD Linkages with Major Developing Economies: Challenges and Opportunities" (1994) as well as Saunders and Dean (1986). The OECD Report "The World in 2020: Towards a New Global Age" (1997) did not deal with macroeconomic interactions as defined here.

Asia's economic catching-up has made issues of interdependence much less unidirectional than they were in the early 1990s. The mutual repercussions of policy actions have thus gained in importance. Since the creation of the OECD, policies in the United States, Japan and the EU shaped key global macroeconomic parameters, such as interest rates and raw material prices, while policy moves outside the OECD area had only a limited global impact. Increasingly though, policy changes – both expected or real – in China and in other big non-OECD countries have immediate and sometimes strong global effects on the world economy. How these effects materialise, is what this paper considers.

First, this paper will present a short literature review and then a roadmap of policy challenges which might subsequently be further investigated. The focus is on a selected number of macro parameters – such as monetary indicators, terms of trade, raw material and energy prices – and country features – net debt/reserves positions, raw material/energy net export position, China trade exposure. These macro parameters and country features seem of immediate policy relevance to three novel macroeconomic *policy challenges*:

- the macroeconomic implications of China's emergence;
- liquidity, investor risk appetite, financial regulation and crisis vulnerability; and
- the interaction of Asia's foreign exchange regime with monetary policy in the OECD area.

Before these challenges are discussed in turn, a quick tour of the literature on macroeconomic interdependence will be useful in providing methodology and perspective.

II. A MINI SURVEY OF THINKING ON MACRO LINKS

Interdependence used to be perceived as being between the centre – the “North” – and the periphery – the “South”. The centre provided manufactured goods and capital, the periphery raw materials; growth interaction was unidirectional, from the North to the South; in the latter, growth was constrained by domestic savings and investment, whence the need for foreign capital, and by a limited domestic consumer base and low skills, whence the need to stimulate growth through foreign trade. Those were the days of the two-gap approach, pioneered by Chenery and Strout, and of the trade-as-an-engine-of-growth paradigm, emphasised early on by Ricardo, Nurkse, Haberler and Lewis. While these theories retain much of their truth, those days are long gone and these theories are now woefully inadequate (for a survey, see Currie, Muscatelli and Vines, 1988).

The oil shocks and commodity price inflation of the 1970s and 1980s and related debt problems led to greater emphasis in the literature on the role of short-run and financial aspects of North-South linkages, with policy formulation concerned with how best to respond to the oil supply shock. In the mid-1980s, strong US recovery (sucking in imports from developing countries) and corresponding high real interest rates (a burden to debtors) and a strong US dollar (depressing raw material prices) proved a mixed blessing to the non-OECD area. Two important papers (on which more below), emphasising interest rates, exchange rates and terms of trade, analysed the respective cash flow and welfare effects in a general-equilibrium framework (Dornbusch, 1985; van Wijnbergen, 1985).

The 1980s literature had still focused on the unidirectional impact of OECD macro policies on the “South”. Improved domestic policies, including more open trade and exchange regimes, closer financial linkages and a corresponding rise in capital flows, a marked rise in intra-regional trade, and greater diversification of the exports of the “South” explain why the traditional trade-based business cycle linkages between the “North” and the “South” have changed (Hoffmaister, Pradhan and Samiei, 1998). Recent work on North-South linkages emphasises the increasing importance of the South for growth in the world economy and the increasing importance of financial relative to trade linkages (Currie and Vines, 1995; for the Asia-Pacific region, see Hsiao, Hsiao and Yamashita, 2003). Divergences in demographics between OECD and non-OECD areas also tend to impact on key macroeconomic variables, but they operate in the long term rather than in cyclical short-term frequency (Turner *et al.*, 1998; Reisen, 2004).

The bi-directional nature of macroeconomic interdependence has now been sealed with China’s rapid growth and its integration into the world economy. Recent concerns about a possible “China shock” (see Section III.1.), centring on worries about energy prices, US treasury

yields, and China's import growth, show to what extent the balance of direction has changed in the macroeconomic interdependence between world regions. India, whose population number UN population expert predict to exceed China's more than 1.2 billion people from the coming decade, has started later to open up to the global economy, but is bound to reinforce the global effects already seen now to flow from China.

The general-equilibrium analysis of the 1985 papers by Dornbusch and van Wijnbergen are still useful to structure research on macro links in that they focus on how *key policy variables* meet *key country elements* to shape final, endogenous outcomes for growth and welfare. Their models emphasise the role of relative prices, neglected in earlier structuralist analysis of North-South links, as these shape importantly macroeconomic variables and welfare in the developing world. Terms of trade (the relative price of manufactured goods and raw materials), real *internal* exchange rates (the relative price of manufactures and of home goods or services), and the relative value of the US dollar and world real interest rates (deflated by nominal devaluation relative to the US dollar) are highlighted as price variables. Translated to current policy concerns, consider Table 1 in the spirit of these 1985 papers; the table may help to gain immediate insights about the impact of a slowdown in raw material prices, which would likely result from a China slowdown, and a rise in OECD interest rates, which could result from a lowered build-up of China's foreign exchange reserves that have largely been invested into US treasury bills (see Section III.3. for detail).

Table 1. Selected Key Country Elements

Net foreign debt/assets	High net debt	Medium net debt	Low net debt	High net FX assets
Raw materials trade position				
Net exporter	Brazil	Australia	South Africa	Norway
Net importer	Turkey	India	EU	Japan

Note: See text for explanations.

The country examples in Table 1 illustrate that the impact of a China slowdown would be uneven. It is likely that various outcomes on macroeconomic variables may deviate considerably from what partial-equilibrium analysis would predict. Assume that a China slowdown would reduce raw material prices and the pace at which China buys US treasury bonds as official reserve growth slows, hence raise the US Treasury bond yield. Japan, for example, while heavily exposed to China through manufactured exports, would nevertheless enjoy positive effects from a China slowdown, as raw material and input cost drop (and reserves earn higher interest income); Brazil, by contrast, is likely to suffer unambiguously from a China slowdown, resulting from Brazil's net debt position and as a net raw material exporter on which higher interest rates would have to be paid just while raw material prices drop. For Turkey, another highly indebted country, the impact of a Chinese slowdown would be ambiguous as higher interest rates are attenuated by the beneficial impact of lower prices for raw materials of which Turkey is a net importer. Likewise, the impact of a slowdown in China's output growth will be ambiguous for the other countries serving as examples in Table 1.

Empirical evidence on the significance and size of macroeconomic interactions between OECD and non-OECD areas has been discussed and collected by Frankel and Roubini (2001), Reinhart and Reinhart (2001), and Chinn (2004). The initial emphasis on international trade, through variations in external demand, internal exchange rates and terms of trade, had been followed by a heightened emphasis on capital flows subsequent to *de facto* financial opening in many developing countries. While trade and capital *flows* are essential in propagating international links, the speculative currency attacks of the 1990s have raised the awareness for the importance of *stock* imbalances (between real cash balances, short-term debt and official reserves) as well as currency and maturity mismatches in private and public balance sheets (Calvo and Mendoza, 1996). In the wake of the Asian and Latin American financial crises, a country's "balance sheet" in terms of currency and maturity (mis)matches of asset and debt *stocks* has been emphasised recently as an important channel for the transmission (and remission) of macroeconomic shocks. This *stock channel* complements the traditional *flow channels* of short-term macroeconomic interdependence — trade and finance *flows*.

Here is not the space to review all the linkages that the literature has been able to identify and quantify; suffice it to mention the most significant *shock elements* and *country elements*. The literature identifies as most important and significant macro variables from the "North" GDP growth (through trade and raw material prices), interest rates (as they push or pull capital flows), and variations of key currencies (impacting on relative competitiveness and on raw material prices). The most important "South" variables that shape macro interactions are the income elasticity of its exports, the share of exportable relative to non-tradable production, the degree of raw material dependence, and the level and currency mix of foreign debt. Interest rates are relatively more important to Latin America than to Asia; OECD GDP growth is relatively more important for Asia than for Latin America; global trade and finance links with Africa have been too small, except for raw materials and oil, to find an important place in the empirical literature on macroeconomic interactions between advanced and developing countries.

Four major macroeconomic shocks or impulses can be distinguished:

- *cyclical variations in GDP growth*, which trigger output/demand effects, changes in a country's terms of trade and capital flows;— *monetary impulses*, which determine in turn investor risk appetite, interest rates and yield curves, and capital flows;
- *fiscal impulses*, which act similar to monetary impulses plus through crowding out of private investment;
- and the *degree of G3 volatility*, that is of key currencies, interest rates and output.

Country elements determine how macroeconomic impulses impact on economies:

- through their *net asset and net debt positions in foreign exchange*;
- through *trade flows*, via *openness* to trade, *income elasticity* of main exports, and *raw material dependence*;
- and through foreign capital flows, notably debt flows (bond and bank credit) and foreign direct investment.

Cyclical growth fluctuations, or variation in output gaps, connect country groups through various channels: foreign demand (through exports and imports), changes in relative prices (terms of trade), and capital flows (through prospective returns on capital). Chinn (2004), working for the OECD Development Centre, finds for the period 1980-2003 the correlation of real GDP growth rates between G7/Advanced Countries and All Developing Countries significant and higher than 0.5. He also finds that for the group of the Asian NICs the respective correlation is close to 1. This suggests the importance of trade links for the propagation of business cycles. However, terms-of-trade effects have also been found to be a significant channel as the elasticity of commodity prices with respect to world industrial production has remained high.

The terms-of-trade effects of output fluctuations are closely linked with fluctuations in raw material prices. As in Dornbusch (1985), a *fall in the world real price of commodities* will mean lower terms of trade for the net raw material exporter nation. This results in lower real income, the effect of which dominates the positive impact on lower factor costs and increased local supplies of both manufactures and services (due to a gain in external competitiveness in manufacturing as the real price of manufactures declines, and a real currency depreciation as the real price of home goods drops). By contrast, the raw material importing country will enjoy improved terms of trade and higher real income. As a result, demand increases for all goods, raising the full-employment real prices of both home manufactures and services.

Higher growth prospects in the capital-rich countries may stimulate FDI and equity flows, as lower equity cost (which may result from higher stock-market valuations) stimulates equity investment abroad. Debt flows, by contrast, to non-OECD have been shown to be negatively associated to growth in the OECD area as low OECD asset returns push capital towards emerging-market debt. Following Calvo *et al.* (1993), whether capital flows are “pushed” by low cyclical asset returns² or whether they have been “pulled” by deregulation, opening of capital accounts and privatisation in developing countries, has been discussed intensively.

A *rise of interest rates in the OECD area* will affect a majority of non-OECD countries negatively; the net debtors directly as their disposable income is decreased, and the raw material exporters indirectly as reduced output prospects and higher storage cost lead to lower raw material prices. Net debtors are likely to experience a further burden to the extent that the level of OECD area rates also tends to raise the spreads for emerging-market debtors (Frankel *et al.*, 2000; Sløk and Kennedy, 2004). These effects will result in lower investment and growth in a large part of the non-OECD area, with negative repercussions for the OECD area.

US Federal Reserve interest cycles and spreads on emerging-market bonds (EMBI+), debt-related flows, variations in investor risk appetite and emerging-market crises seem to be closely linked (Kumar and Persaud, 2002). Low US rates push hard-currency debt flows towards emerging markets, high rates suck them back towards safe havens. As liabilities grow in dollar, yen and euros, mismatches in the balance sheets of emerging-market private and public sector have often developed, in particular when the Fed has kept interest rates lower and longer than in a typical cycle. Sløk and Kennedy (2004) provide significant evidence that the G3 monetary

2. Besides structural factors such as the institutionalisation of asset management, cross-listings on stock markets, and demography.

impulse (M2) is an important explanatory variable for the EMBI+ spread (the yield difference of emerging-market bonds over US treasury bonds)³, although country-specific factors remain an important determinant of EMBI+ spreads (for South Africa, e.g. see Grandes, Peter, and Pinaud, 2003).

When leading central banks cut interest rates, they tend to decrease debt cost and cause more capital to flow into emerging markets. The inflow boosts economic performance in the emerging economies, which increases optimism and triggers more capital inflows. The financial system in emerging economies does not price risks well (e.g. little long-term financing), the positive economic impact of capital inflow is exaggerated and, hence, the optimism of foreign investors that drives the capital inflow is also exaggerated. This is a bubble phenomenon, which has been well explained by the financial instability hypothesis (Minsky, 1991). When the Fed reverses its policy, the bubble bursts.

The *fiscal impulse* has been rather neglected in the empirical literature on macroeconomic linkages, although it has been at the core of concerns in the analytical papers by Dornbusch (1985) and van Wijnbergen (1985). The IMF *World Economic Outlook* (2004) provided an excellent analysis of what is at stake: an expansive OECD fiscal policy tends initially to raise world output as disposable income and, through the fiscal multiplier, world demand. Van Wijnbergen shows that, with no crowding out (as the private sector raises savings to satisfy debt neutrality), interest rates may even fall initially but terms of trade in developing countries worsen. This results from the incipient excess demand for OECD goods, as the higher public spending falls disproportionately on OECD home goods and as income is shifted from low net savers (non-OECD) to high net savers (OECD area). Should, however, the private sector fail to accommodate higher fiscal deficits with higher savings, crowding out occurs and interest rates rise immediately, putting a burden on developing-country debtors through higher interest rates, and if these trigger a higher US dollar, on the local-currency equivalent of debt stocks.

In any case, at some point OECD public debt rises to such an extent that a withdrawal of the initial fiscal stimulus and higher real rates of interest are likely to result (IMF, 2004). This has important effects on balance sheets in developing countries through the “financial accelerator effect”: rising real rates of interest reduce both domestic demand in developing countries and the value of collateral that backs their liabilities. In response, spreads on new loans rise, which, in turn, leads to cutbacks in new debt and investment. Likewise, a fiscal impulse can lead to an appreciation of the US dollar, in particular in connection with tightened monetary policy; this tends to worsen corporate balance sheets in developing countries if debt is dollar-linked while receipts and assets are more in local currency (currency mismatches, the “original sin” phenomenon).

Finally, *G3 volatility in interest rates, exchange rates and output* will impact through balance sheets, trade and financial flows to developing countries and back. Reinhart and Reinhart (2001) provide an excellent discussion of the issues involved, a highly relevant analysis for any exchange-rate agreement on a global scale. *Fluctuations between key currencies* — the euro, the dollar and the yen — impact developing (and other) countries through various channels:

3. After correcting for the outlier effects related to the 2002 US corporate scandals (on which see Reisen, 2003).

- balance-sheet effects, notably where financial-market limitations do not permit the avoidance of currency mismatches (“original sin”);
- changes in competitive positions as many developing countries peg their currency implicitly or explicitly to the dollar or the euro;
- the independent impact of dollar strength/weakness on raw material prices, and hence on the terms of trade;
- (excess) FDI which is motivated by the avoidance of key currency fluctuations; and
- variations in debt servicing cost, which in turn feed back to the capacity to incur new debt.

The last point needs further explanation. With full capital mobility, a potential commitment on the part of the G3 authorities to dampen G3 currency fluctuations requires willingness to subject monetary policy to the end of currency targets, resulting in a more unstable monetary supply and more interest volatility than under freely floating exchange rates. This in turn would destabilise output in the G3 countries, with respective consequences already discussed above. Whether a non-OECD country is a net beneficiary of G3 exchange rate targets would then depend on its trade openness, raw material dependence (either as exporter or as importer), and the level of foreign currency debt. Reinhart and Reinhart (2001) produce simulations to conclude that Latin America typically benefits (in the form of higher GDP growth) from low interest rate volatility, while key currency fluctuations matter less; the Asian NICs benefit disproportionately from lower volatility between G3 currencies; other developing countries need both stable key currencies and stable G3 consumption expenditures to maximise their GDP growth.

From this mini survey, some preliminary policy lessons can be drawn. First, given the importance of balance-sheet effects, the avoidance of emerging-market crises requires consideration by leading OECD countries of their macroeconomic policy mix on exchange and interest rates; this does not imply the need for exchange-rate target zones, as they may be counterproductive. Second, debtor non-oil developing countries benefit most from a combination of strong OECD growth, low real interest rates, and a weak US dollar. A policy mix as experienced in the early 1980s, therefore, with tight monetary policy and loose fiscal policy that led to rising interest rates and a strong dollar, is harmful first to the developing world, and given the intensified global links, is bound to backfire on the OECD area.

III. NEW ISSUES OF MACROECONOMIC INTERDEPENDENCE

III.1. The China Effect

Policies matter. The prospective slowdown in China is one of the key sources of uncertainty in the world economy. Can the Chinese authorities engineer a soft landing, or will it be hard? The concern, formulated in the financial instability hypothesis (Minsky, 1991), is that, over a protracted period of high growth, economies tend to move from a financial structure dominated by self-finance (e.g. retained earnings) to highly leveraged firms and individuals. Further, China's dollar peg – while stimulating the country's global integration – denies the world an important policy variable – currency adjustment – to address global imbalances; pegs, even when “hard”, have repeatedly been seen to raise the vulnerability to speculative currency attacks. The major lesson of the 1997-98 Asian crisis is to avoid currency pegs and to allow exchange-rate flexibility to buffer the monetary system of developing countries against pressures arising from financial flows into and out of the economy. China's dollar peg, furthermore, leverages US monetary policy disproportionately as China is big and growing.

Size matters. China's population, accounting for 20 per cent of the world total, is several times larger than that of Japan and the “Asian tigers” combined. Since 1980, China has grown faster for longer than any country in history. By 2003, China's economy, with a gross domestic product of over \$1.4 trillion, accounted for 55 per cent of Asian exports. Japan's economy has recovered largely with a crucial boost from rising net exports – a substantial portion of which have flowed to China. What little growth the German economy has experienced over the past two years is derived from rising exports, again, primarily to China. Likewise, rising exports to China have helped to lift US growth at a time when substantial excess capacity existed in the aftermath of the 1990s overinvestment boom. By 2003, China had evolved as a major contributor to global demand growth. China's open economy accounted for 7.2 per cent of world imports while accounting for 16.5 per cent of global import growth (for detailed information on China's recent impact, see IMF, 2004).

Marginal demand matters. In view of its *share* in global economic aggregates, the common perception of China as a heavyweight of the world economy may be deemed excessive: at market exchange rates, the country makes up “only” around 4 per cent of world GDP while accounting for 20 per cent of the world population. Yet, average shares in world aggregates, be it GDP or trade, do not tell the full story. Seen from a dynamic and comparative perspective, China already stands out as a major player in the world economy. China is now the sixth largest economy (at

market exchange rates) and the fourth-largest trader in the world. The UN (2004) estimates China's contribution to global economic growth at about 15 per cent in 2002-03⁴.

Meanwhile, Asia has become ever more "China-centric": China alone accounts for 18 per cent of South and East Asian trade. A vibrant domestic growth has turned China into one of the main outlets for Asian exports. Between 1998 and 2002, China's imports have been critical to the growth of neighbouring countries' exports. The growth of exports to China alone has prevented Japanese exports to the world from dropping: Japan's former dependence on the US market has been added a second major pillar with China's imports. Moreover, China accounted for 46.8 per cent and 78.3 per cent of export growth in Korea and Chinese Taipei respectively over the same period, according to ITC data.

Although its external economic ties remain undoubtedly concentrated in Asia if measured by trade flows, China has also become the largest marginal consumer of many raw materials and energy products, with a strong link to raw material, food and energy providers in Africa, Australia and Latin America. Growth in China has been driven by booming investment (exceeding 40 per cent of GDP), which has been itself related to commodity intensive processes of industrialisation, urbanisation and infrastructure construction. Alongside soaring demand for housing and cars, the investment trend has helped drive Chinese imports of raw materials up to record levels. Chinese shares in global materials' trading have skyrocketed. Considering that China is still at the early stage of a process of economic catching up, the "hungry dragon" is likely to become "voracious" in the medium/long term⁵.

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4. Quantitative studies of the China impact can be found in, for example, IMF, *World Economic Outlook*, Ch. 2., April 2004; Yang, Yongzheng, "China's Integration into the World Economy: Implications for Developing countries", IMF Working Paper, WP/03/245, December 2003; and in Ma, Jun, "China: Changing the Landscape of the World Economy", Deutsche Bank China Economics, February 2003.
 5. However, estimating Chinese future demand for raw materials (and its impact on world commodity prices) based on income elasticities (themselves computed on an historical basis) is partly flawed since China is on the whole better endowed with natural resources than other Asian industrialisers. Therefore, Chinese supply-response to a rise in world commodity prices must not be underestimated (Pomfret, 1997). Moreover, China's raw materials' demand will replace the demand by other countries to a certain extent.

Table 2. China's Demand Power

Product	China's imports, annual growth in value between 1998-2002 (%)	Annual growth of world imports between 1998-2002 (%)	China's share in world imports 1998 (%)	China's share in world imports 2002 (%)	Ranking in world imports 2002	Annual growth of China's net imports in value between 1998-2002 (%)
Copper and articles thereof	26.0	1.0	9.2	15.9	1	40.7
Ores, slag and ash	21.0	3.0	9.5	14.1	2	33.2
Fertilizers	-5.0	-1.0	14.4	13.3	1	13.9
Textile, fibres, fabric, etc.	n.a.	n.a.	10.4	12.3	n.a.	-2.6
Oil seed, oleagic fruits, grain, seed, fruit, etc.	24.0	2.0	7.6	12.2	2	45.5
Iron and steel	23.0	1.0	6.3	10.2	1	40.0
Plastics and articles thereof	14.0	4.0	6.9	8.5	2	29.3
Electrical, electronic equipment	28.0	6.0	4.9	8.0	2	90.0
Optical, photo, technical, medical, etc. apparatus	36.0	6.0	3.5	6.8	3	101.5
Organic chemicals	32.0	6.0	3.5	6.2	4	71.4
Nuclear reactors, boilers, machinery, etc.	21.0	2.0	3.8	5.7	3	-8.3
Aluminium and articles thereof	10.0	3.0	3.2	3.7	7	-16.8
Mineral fuels, oils, distillation products, etc.	32.0	17.0	2.1	2.9	11	55.7

Source: own estimates based on ITCtradeMap data.

A prospective slowdown in Chinese demand growth should, in principle, also trigger a sharp fall in commodity and energy prices (see Table 2). Contrary to Pomfret's (1997) assessment that China is a price-taker (in trade economics jargon: a small country) in raw material, food and energy markets, the country may now (based on data ten years on) be regarded as a price-maker on some international commodity and energy markets. China's impact can be as easily exaggerated as underestimated as long as supply factors, speculative bubbles (including hoarding) and terror premia are not properly controlled for. This stresses the need for an econometric estimation of commodity prices' (oil prices in particular) response to *China's demand* growth momentum relative to *global supply* factors; the *Interlink* model might be usefully employed here. The analysis will have to reckon that China is partly replacing production, hence commodity and energy demand, elsewhere so that its demand should not simply be added to the existing demand on a global scale; that the convergence of living standards in Asia's giant will likely stimulate net overall demand; and that, in time, India will generate much of the incremental world demand for primary commodities over the coming decades.

China's global impact nowadays stretches importantly not just into goods and commodity markets, but equally into world financial markets. China is not just perceived as a producer of low-priced goods, but likewise of "cheap savings" (Dooley, Folkerts-Landau and

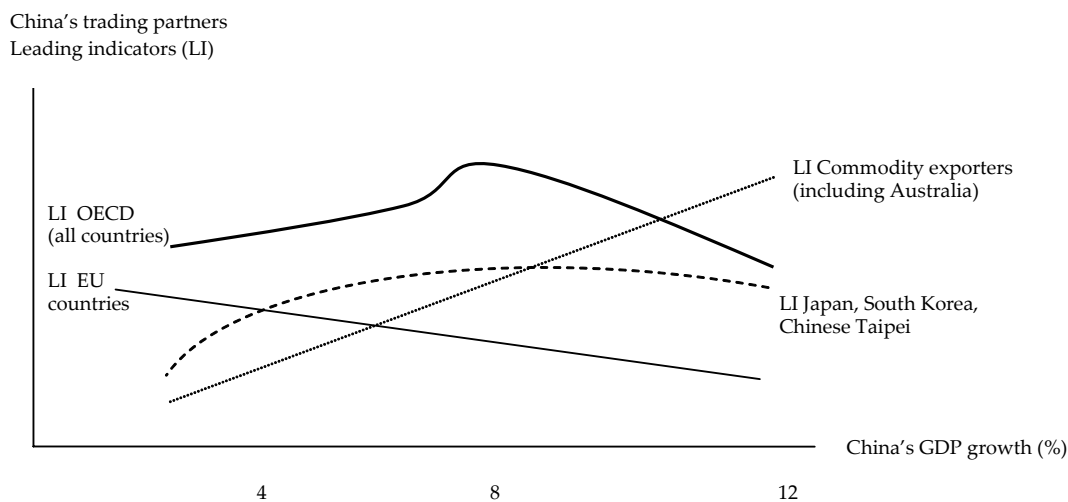
Garber, 2004). Although now the biggest destination for foreign direct investment inflows, China's impact on global capital markets is not so much in its demand for foreign savings. It is rather the acquisition by the Chinese official sector of large amounts of foreign assets, not least US long-term Treasury bills (as of mid-2002, China was the second-largest foreign holder of this asset class, i.e. \$165 billion or 6.5 per cent of total foreign holdings), that has raised the country's global cyclical, financial and macroeconomic importance. Lower net capital flows to China, for example, might obviate the need for Chinese authorities to buy US Treasury notes for sterilisation purposes; the same would hold if the Chinese currency was floated; in turn, the US dollar might weaken, and US interest rates rise (so be careful what you wish for!). Only a few years ago, investors gauged monetary cycles by watching the US Federal Reserve closely; meanwhile, China's macroeconomic policies are taking on almost a similar importance for short-term price movements in financial assets.

What impact should a slowdown of China's growth have on the world economy? To be sure, a slowdown of China's output growth would be a return to the growth of *potential output*, which is often quoted as 7 or 8 per cent per annum. As emphasised by Baker and Jen (2004), the growth nexus is probably far from linear. The response of global activity to an economic landing in China may be seen as roughly "convex", depending on the severity of China's expected slowdown. Should the Chinese authorities manage to engineer a *soft landing* of the economy, a very limited impact on global growth is to be expected and it could even be positive overall. The impact on Asian countries would remain mild (the potential drop in external demand would be partly offset by lower commodity prices)⁶ while non-Asian OECD countries would benefit from lower commodity prices and suffer limited impact on their export sectors. Commodity exporters (Australia, Argentina, Brazil, Russia) would be the main losers, but even the latter would record limited losses (a Chinese soft landing alone is unlikely to reverse the long bet on commodity forward markets).

In contrast, a Chinese *hard landing* should in theory be very costly from a global growth perspective (see Figure 1). The impact of a collapse of China's economic activity would be mostly and strongly felt by Asian neighbours and commodity exporters. Those OECD countries which are the more exposed to China (the exporters of capital goods) might also be affected. It may be assumed that their losses would largely exceed other countries' gains stemming from lower commodity prices.

6. Some oil-importing Asian economies that benefit the most from vibrant Chinese imports, also suffer from China's dynamism through the channel of high commodity prices. For those countries, of which Korea is a typical example (see Lam and Xie, 2004), a soft landing of the Chinese economy would have limited fall-out on their growth momentum.

Figure 1. The “Convex Response” Hypothesis



So far, the prospect for a soft landing looks good. Industrial output growth, one of the key indicators of overheating, has declined to 15.5 per cent in the year to July 2004 and is on course to reach 12 per cent by year end. This is a far cry from the unsustainable 23 per cent annual rate recorded in February 2004.

III.2. Financial Interdependence: New Rules, New Actors, New Risks and Benefits

Next to the rise of China and India in the world economy, it is the growing financial integration⁷ of countries recently closed to global financial markets which makes nationally oriented macroeconomic analysis increasingly meaningless and policies ineffective. The recent wave of financial globalisation since the mid-1980s has been marked by a surge – and subsequent reversals – in private capital flows to the so-called emerging markets, mostly in Asia, Latin America and Central and Eastern Europe (see Table 3). True, almost all private capital flows have gone to not more than about twenty developing countries; but these countries cover 90 per cent of the developing-country population⁸.

7. Prasad *et al.* (2003), in their widely quoted IMF paper, make a definitional distinction between financial globalisation and financial integration. They define financial globalisation as an aggregate concept that refers to rising global linkages through cross-border capital flows, while financial integration refers to an individual country's linkages to international capital markets.

8. It is often observed that the bulk of private capital flows cover only a handful of countries; such observation is, however, distorted by country-size bias as many poor countries receive a high share of flows in proportion to their GDP but are too small to make weight in total numbers on private flows.

Table 3. Net Private Flows to Emerging Markets, in Billions of US dollars

	Annual average 1990-2000	Annual average 1995-1996	Annual average 1997-2000	Annual average 2001-2003	2003
Emerging Markets Total ^a	111	218	69	99	171
- direct investment	76	102	148	129	76
- portfolio investment	50	72	26	-16	29
- other private (banks, etc.)	-15	44	-105	-15	66
Memo: current account balance	-24	92	9	113	142
FX reserves build-up	56	114	79	203	282

Notes: a) China, India, Indonesia, Korea, Malaysia, Philippines, Chinese Taipei, Thailand; Argentina, Brazil, Chile, Colombia, Mexico, Peru, Venezuela; Czech Republic, Hungary, Poland, Russia, Turkey; South Africa.

Source: BIS, 74th Annual Report, Basel 2004; BIS, 73rd Annual Report, Basel 2003.

The first half of the 1990s saw a massive expansion of private financial flows from developed to developing countries, which was widely welcomed as a positive contribution to development. Foreign savings can be beneficial: by adding to domestic savings (rather than crowding them out) they stimulate capital accumulation; by raising the recipient economy's efficiency (e.g. through improving resource allocation, dynamising competition, interaction with human capital, deepening domestic financial markets or reducing capital costs for local entrepreneurs); and by lowering consumption risks over various states of nature through enlarging choices for portfolio diversification, but also through appropriately sharing risks between capital exporters and importers. Capital inflows into developing countries fuel short-term growth, as they reduce risks of bank insolvencies (and so stimulate domestic credit) and as they raise average productivity of installed capital. Hence, swings in capital flows are costly, regardless of how they are financed.

However, the second half of the 1990s revealed that these private flows could be easily reversible, as a succession of financial crises in emerging markets seriously set back important progress in economic growth and poverty reduction. Since 1994, such reversals have contributed to severe financial crises in most of Latin America, large parts of South East Asia, and also in some transition countries. These crises were often aggravated by cross-border financial contagion, where market liquidity suddenly dried up for particular countries – not because of economic fundamentals in these countries, but because they shared some characteristics with another economy suffering a loss of market confidence. Short debt maturities, a high share of debt (both domestic *and* foreign in open economies) to foreign exchange reserves, high deficits on the current account of the balance of payments (as a percentage of GDP) and a pegged exchange rate raise a country's vulnerability to "speculative attacks". The large devaluations that follow are costly to growth, particularly after extended periods of capital surges, if these surges tend to fuel dollar debt relative to liquid assets, to raise the non-tradable share in the economy and to dollarise corporate liabilities.

The long series of financial crises affecting emerging market economies in the 1990s (Mexico, East and South East Asia, Russia, Brazil) and more recently (Argentina, Turkey) also had important repercussions on advanced and developing countries. Output slumps in the crisis countries translate into lower demand for exports from OECD countries and raw material exports; portfolio investors (both equity and bonds) have seen lower returns in their globally diversified portfolios, impairing future pension returns; commercial bank lenders have been forced to write down credit losses, reducing tax receipts correspondingly; and, as the Russian crisis and the subsequent global financial turmoil has shown, emerging market crises can even put the entire global financial system at risk. The subsequent monetary easing by the leading central banks, in the absence of global lender of last resort (a task for which the IMF is undercapitalised) may cause bubbles (such as in 2000 on global equity markets) which are subsequently difficult to control and costly to rein in.

Looking forward, financial integration will proceed under new rules, with new actors and entail new risks and benefits that are still not well understood, but cannot be ignored. To cope with emerging-market crises, the international community has developed and promoted a range of voluntary international standards of good practices for economic policies and for the financial infrastructure (Reisen, 2002*b*). While financial markets have globalised and capital flows freely, there is continued fragmentation between 200+ national jurisdictions with respect to currencies, supervision, taxes, laws and regulation (civil, commercial, bankruptcy, criminal courts). When a country becomes more globalised, its institutional, legal and other structures need to move towards international best practices if it wants to provide the appropriate market signals and information in the beauty contest for global capital supply. The current international effort to codify best practices and to disseminate them widely should help the seamless integration of local economies into global markets, hence broadening and further intensifying the process of global financial integration.

Two international regulatory initiatives in particular seem to deserve policy attention for their potential impact on the pricing and volume of global capital flows, the first effecting cross-border bank credit and, the second, global portfolio bond flows to developing countries. The first is the new capital adequacy framework commonly known as *Basel II*, which was approved by Basel Committee on Banking Supervision and endorsed by the G10 on 29 June 2004. There is little analysis (but see Deutsche Bank, 2001; Reisen, 2001; Weder and Wedow, 2002) of whether Basel II will have an impact on international bank lending flows to emerging markets. However, sub-investment grade sovereign borrowers, still the majority among developing countries, are expected to face significantly higher bank credit costs while investment-grade borrowers are likely to benefit. Another concern related to Basel II is its possible pro-cyclicality. It is possible that the volatility of flows will increase further if ratings are explicitly used to determine capital costs.

Second, after heated debate over the desirability of the reforms to the way that financial markets and the international community deal with sovereign debt crises⁹, efforts at strengthening the framework for crisis resolution will continue to focus on promoting *collective action clauses* (CACs) in international sovereign *bond issues*. Mexico's and Brazil's successful sale of global bonds with CACs in spring 2003 – the first placement of bonds with CACs by emerging market sovereigns into the US market – suggests that the long-held opposition to CACs in some quarters may be easing. Given the ongoing opposition of investors and some sovereigns to greater use of collective action clauses (CACs) in emerging market bonds – on the grounds that prospective emerging-market bond finance would be more costly – new evidence on the way that financial markets have priced the use or non-use of CACs is very policy relevant. Overall, the empirical evidence to date supports the conclusion that the use of CACs will modestly reduce funding costs for investment grade emerging market borrowers and raise them for lower-rated countries (Kletzer, 2004). By pricing moral hazard in sovereign debt markets, CACs could encourage market discipline. By facilitating creditor co-ordination, CACs should also reduce the costs in terms of a nation's output that are due to protracted debt restructurings.

New actors, resulting from demographic pressures and the institutionalisation of asset management in OECD countries, have probably introduced amplifiers to global credit cycles, with potentially harmful effects to both capital-importing countries and investment returns in capital-exporting countries (BIS, 2004). The investor demand for peripheral asset classes, e.g. high-yield emerging-market bonds or sub-investment grade corporate bonds, depends much on a combination of investor risk appetite and the search for yield. Both appetite and search are stimulated when asset returns in the OECD area are low (the *push factor* in Calvo *et al.*, 1993). The BIS 74th Annual Report explains the refusal to adjust nominal target rates of return, among others, to institutional and regulatory constraints for life insurance companies and pension funds, whose liabilities are linked to a minimum guaranteed return (either by statutes or by contracts, but also by the market-based discount rates applied for defined-benefit schemes). To avoid funding gaps, such institutional investors are led to invest in higher-yielding, higher-risk instruments. The prospective rise in institutional savings, fed by demographic trends and switches from PAYG (unfunded Pay-As-You-Go) to funded pension systems, together with the need to achieve decent capital returns despite the headwinds of shrinking labour forces in the OECD area, can therefore be expected to intensify the macroeconomic effects of business cycles in both OECD and non-OECD areas.

Faced with low returns, pension fund strategy committees and individual investors have been increasingly turning to hedge funds, searching for uncorrelated asset classes with a focus on absolute (rather than benchmark oriented) return. Hedge funds can have a significant impact on small, illiquid markets where their exposure can be heavily concentrated. Roughly 75 per cent of hedge funds use leverage, with an average ratio of 2:1 (as measured by the ratio of loans obtained relative to equity capital) for the industry as a whole. This suggests that the industry could have as much as \$1.5-2.0 trillion in levered assets, according to estimates by Morgan

9. Argentina is currently a country unable to return reasonably quickly to market financing and in need of external debt restructuring to reduce its debt servicing burden. A lack of clear rules on how to resolve unsustainable debt situations for sovereign debtors is partly responsible.

Stanley (McCaughrin, 2004). The Bank of England (2004) has recently warned that rising interest rates could provoke "financial distress" if investors decide to switch from hedge funds, high-yield bonds and other risky investments.

The 2004 spring slide and subsequent recovery in emerging market bonds provides an example of how OECD monetary policy (or merely market expectations thereof) is amplified by hedge funds and other leveraged investors. The slide was not driven by a country or regional crisis. Instead the trigger was a tightening of US rates. Emerging market debt was hit disproportionately by reflex risk aversion on the part of investors and large-scale unwinding of speculative carry trades — borrowing at low US interest rates to buy higher-yielding assets. Once concerns over rising US rates had stabilised, emerging market bonds rallied. This reflected the improving economic fundamentals, reduced risk of contagion of problems between countries and a rising tide of liquidity seeking higher yield. By early July 2004, JP Morgan's sector index, the EMBI Global, was up 7.6 per cent from lows in early May, while spreads over US Treasuries have narrowed from around 549 to 475 basis points. Monetary policy makers, bank supervisors and developing-country finance ministers have to reckon the higher amplitudes of financial price variance introduced by hedge funds in guiding expectations, assessing bank risks and gauging borrowing costs.

III.3. Currency Regimes, Asian Reserves and OECD Deficits

While the world's richest country is also its biggest capital importer and net debtor, emerging market economies have, notably in Asia, accumulated enormous quantities of foreign currency reserves since the Asian 1997/98 crisis. The massive build-up of foreign currency reserves in East Asian central banks, partly reinvested in US Treasury Bills, prevented US long interest rates from rising and the US dollar from further depreciating to adjust for global imbalances. Recent evidence has documented a negative relationship between yields to maturity on long-term US Treasury bonds and official holdings of these bonds in East Asian central banks (BIS, 2004a). That much of Asia strictly or implicitly pegs to the dollar (whatever may be officially pronounced) is not new¹⁰; exchange rate targets have repeatedly been uncovered through detecting implicit weights for basket pegs, reserve volatility, or interest rate volatility (summarised by Branson, 2001); new is the sheer amount of official reserve accumulation (see Table 4).

10. Targets of slightly undervalued real effective exchange rates can be rationalised in the development context: they provide a bias towards exports and may thus stimulate growth in countries where the absence of deep financial systems and distorted local prices would otherwise provide inferior signals for the dynamic allocation of resources (McKinnon and Schnabl, 2004).

Table 4. Reserve Accumulation in Emerging Markets since the Asian Crisis

	Foreign Exchange Reserves ^a					
	(in billions of US dollars)					
	1996	2000	2001	2002	2003	March 2004
Asia ^b	477.4	694.5	770.5	944.2	1 208.1	1 302.9
China	105.0	165.6	212.2	286.4	403.3	439.8
Hong Kong, China	63.8	107.6	111.2	111.9	118.6	123.8
India	19.7	37.3	45.3	67.0	97.6	107.2
Korea	33.2	95.9	102.5	120.8	154.5	162.7
Chinese Taipei	88.0	106.7	122.2	161.7	206.6	226.5
Latin America ^c	141.3	136.1	135.9	140.1	170.7	178.8
Argentina	17.7	24.4	14.5	10.4	13.1	13.5
Brazil	58.3	32.5	35.7	37.4	49.1	51.6
Mexico	19.2	35.1	44.4	49.9	57.7	60.3
Central Europe ^d	40.1	51.5	51.3	63.2	72.9	75.4
Russia	11.3	24.3	32.5	44.1	73.2	79.6
South Africa	0.9	5.8	5.8	5.6	6.2	7.9

Notes a) End of period: for the regions, sum of the economies listed in the footnotes.

b) China; Hong Kong, China; India; Indonesia; Korea; Malaysia; Philippines; Singapore; Chinese Taipei and Thailand.

c) Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

d) Czech Republic, Hungary and Poland.

Source: IMF, National Data (Table initially published in BIS, 74th Annual Report, 28 June 2004).

In recent years, East Asia has funded nearly half of the US huge current account deficit — the other half having been financed essentially by European private capital flows; East Asian central banks are among the biggest net foreign purchasers of US Treasury bonds. The counterpart of US deficits has been a huge current account surplus run by most East Asian economies. These sizable current account surpluses have translated into a massive build-up of US dollar reserves or a sustained increase in US Treasury bill purchases on the part of East Asian central banks. The pairwise interaction between the Asian producer and the American consumer, with Asia delivering “cheap” goods (keeping US consumer price inflation down) and “cheap” savings (by keeping US interest rates down), has permitted an accommodating US monetary stance, with the Euro as the “residual” degree of freedom in the global monetary system. In turn, exchange-rate pegs have clearly been causing problems in Asia, not only through trade friction, but also by exacerbating the country’s accelerating liquidity growth/overheating economic growth problems.

Asia is unlikely to drop the dollar peg — explicit or implicit — as long as China does not. However, currency flotation and capital account liberalisation are not a viable option, because of China’s effectively insolvent banking sector and underdeveloped financial system. Should Beijing open up the capital accounts and allow foreign banks to conduct *renminbi* business, this could create a bank run and risk a collapse of China’s state-owned banks. A much recommended exchange-rate policy option has been a widening of the *renminbi*’s trading band, but this alternative is also problematic in the near term. Too small a widening would not only offer insufficient relief to the trade and liquidity imbalances, but also encourage speculation of a

further widening of the band; too large a widening, on the other hand, runs the risk of the *renminbi* appreciating to levels harmful to export growth. The option of pegging the *renminbi* to a basket of currencies is another alternative that has been frequently suggested (for early proponents of Asian basket pegs, see Reisen and van Trotsenburg, 1988), but it denies Chinese firms engaged in merchandise trade to buy *renminbi* forward contracts to hedge against exchange-rate risks (McKinnon and Schnabl, 2004).

Asia's high-reserve policy and limited exchange rate flexibility have relevant implications and certain repercussions for main OECD countries (see Dooley, Folkerts-Landau and Garber, 2004). First, Asia can now be considered a price-maker for key currencies, thanks to its "awesome" foreign reserves. Second, OECD, especially US, monetary policy cannot afford to ignore the leverage effect that the co-existence of Asian dollar pegs and the growing importance of the Asian economies introduce into the global-economy cycle.

First, while a move to more exchange rate flexibility in East Asian exchange regimes would likely drive an appreciation in their currencies, a rise in US long interest rates and a potential reversal in US current account deficits, it is less apparent how a rebalancing of dollar reserve portfolios held by East Asian official sector would affect these variables. The problem is that these official sector investors are much too large now to be price takers in foreign exchange and fixed income markets. Diversification of reserves may trigger currency volatility. This danger may also explain why Asian reserves have remained biased towards US assets. Dooley, Folkerts-Landau and Garber (2004) note that reserve diversification would have implications for foreign exchange market intervention by both the ECB and Asian central banks. If Asian central banks rebalance reserves away from the dollar, private investors will require a fall in the dollar against the euro and the ECB might feel forced to stabilise the euro/dollar rate.

Second, if East Asia is not set to allow more flexibility in exchange policies and official reserve diversification proves insufficient in bringing about a depreciation of the US dollar against East Asian currencies, either the euro zone will have to bear the brunt of the adjustment in global imbalances through a strengthened euro or the US will be bound to implement a set of corrective fiscal and monetary measures (Dooley, Garber and Folkerts-Landau, 2004). Monetary tightening in the US should feed through China's domestic interest rates on a one for one basis, as China keeps its currency pegged to the US dollar. However, remaining capital controls and domestic sterilisation could make it less than 100 per cent the pass-through from US to China's (and other countries) short term rates. While in recent years, China's peg to the US dollar has been inflationary, US tightening should contribute to a slowdown in China through the peg. However, China and the US do not form an optimal currency area (OCA): business cycles will not be sufficiently synchronised and the relevant policy parameters will not be flexible (and endogenous to the requirements of the peg) enough to avoid serious output volatility.

IV. POTENTIAL IMPLICATIONS FOR POLICY FORMULATION

Macroeconomic interdependence between the OECD area and developing economies is today much less unidirectional than only a decade ago, mainly thanks to Asia's catch-up. As the mutual repercussions of economic policies are gaining importance, they demand due attention by authorities. Moreover, financial links seem to gain importance relative to trade links, posing new challenges to our understanding of complex issues before policy can be properly formulated.

Macroeconomic shocks, regardless of whether they originate in the OECD or elsewhere, are transmitted (and remitted) through a country's "balance sheet" in terms of currency and maturity (mis)matches of asset and debt *stocks* and trade and finance *flows* (migration is ignored for short-run responses). From the recent literature on the subject, this paper takes home some preliminary policy lessons. First, given the importance of balance-sheet effects, the avoidance of emerging-market crises requires consideration by leading OECD countries of their macroeconomic policy mix on exchange and interest rates; this does not imply the need for exchange-rate target zones, as they may be counterproductive by raising interest and output volatility. Second, debtor non-oil developing countries are best off with a combination of strong OECD growth, low real interest rates, and a weak US dollar. A policy mix as experienced in the 1980s, therefore, with tight monetary policy and loose fiscal policy that led to rising interest rates and a strong dollar, is harmful first to the developing world, and given the intensified global links, is bound to backfire onto the OECD area.

The *prospective slowdown in China* is currently one of the key sources of uncertainty in the world economy. China may now be regarded as a price-maker on some international commodity and energy markets. China's impact can be as easily exaggerated as underestimated as long as supply factors, speculative bubbles (including hoarding) and terror premia are not properly controlled for. This stresses the need for an econometric estimation of commodity prices' (oil prices in particular) response to *China's demand* growth momentum relative to *global supply* factors in a general-equilibrium framework (such as the *Interlink model*). China's global impact nowadays stretches importantly not just into goods and commodity markets, but equally into world financial markets. China is not just perceived as a producer of low-priced goods, but likewise of "cheap savings". The acquisition by the Chinese official sector of large amounts of foreign assets has raised the country's global cyclical, financial and macroeconomic importance.

So what impact would a slowdown of China's growth have on the world economy? Again, there seems a useful role for the Interlink model to answer such a question. The growth nexus is probably far from linear. The response of global activity to an economic landing in

China may be seen as roughly “convex”, depending on the severity of China’s expected slowdown. Should the Chinese authorities manage to engineer a *soft landing* of the economy, a very limited impact on global growth is to be expected and it could even be positive overall.

The wave of *financial globalisation* since the mid-1980s makes nationally-oriented macroeconomic analysis increasingly meaningless and policies ineffective. Two international regulatory initiatives in particular (*new rules*) seem to deserve policy attention as for their potential impact on the pricing and volume of global capital flows, the first effecting cross-border bank credit and the second global portfolio bond flows to developing countries. First, the new capital adequacy framework commonly known as *Basel II*; there is little analysis whether Basel II will have an impact on international bank lending flows to emerging markets and whether concerns about its possible pro-cyclicality are justified. Second, efforts at strengthening the framework for crisis resolution will continue to focus on promoting *collective action clauses* (CACs) in international sovereign *bond issues*.

Moreover, the prospective rise in institutional savings, fed by demographic trends and switches from PAYG to funded pension systems, joint with the need to achieve decent capital returns despite the headwinds of shrinking labour forces in the OECD area, can be expected to intensify the macroeconomic effects of business cycles in both OECD and non-OECD areas. Faced with low returns, pension fund strategy committees and individual investors have been increasingly turning to hedge funds, searching for uncorrelated asset classes with a focus on absolute (rather than benchmark oriented) return. These new actors may require policy attention as they have probably introduced amplifiers to global credit cycles, with potentially harmful effects to both capital-importing countries and investment returns in capital-exporting countries.

Finally, Asia is unlikely to drop the dollar peg – explicit or implicit – as long as China does not. As a result, East Asian central banks are among the biggest net foreign purchasers of US Treasury bonds. Sizable current account surpluses have translated into a massive build-up of US dollar reserves or a sustained increase in US Treasury bill purchases on the part of East Asian central banks. The pairwise interaction between the Asian producer and the American consumer, with Asia delivering “cheap” goods (keeping US consumer price inflation down) and “cheap” savings (keeping US interest rates down), has permitted an accommodative US monetary stance, with the euro as the “residual” degree of freedom in the global monetary system. In turn, exchange-rate pegs have clearly been causing problems in Asia, not only through trade friction, but also by exacerbating the country’s accelerating liquidity growth/overheating economic growth problems.

Asia’s high-reserve policy and limited exchange rate flexibility have relevant implications and certain repercussions for main OECD countries. If, for example, Asian central banks rebalance reserves away from the dollar, private investors will require a fall in the dollar against the euro and the ECB might feel forced to stabilise the euro/dollar rate. If, by contrast, East Asia is not set to allow more flexibility in exchange policies, either the euro zone will have to bear the brunt of the adjustment in global imbalances through a strengthened euro or the US will be bound to implement a set of corrective fiscal and monetary measures.

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