EU-Korea Economic Exchange

Articles published during the Bruegel/Korea Institute of Finance project on 'EU-Korea policy responses to the global financial and economic crisis and the scope for internationalisation of the financial services industry'

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This book is published as part of an 18-month Bruegel/Korea Institute of Finance project on '**EU-Korea policy responses to the global financial and economic crisis and the scope for internationalisation of the financial services industry**' that has received a grant from European Commission budget line 19.05.01 *'Public Diplomacy, Policy Research and Outreach Devoted to the European Union and EU-Korea Relations'*. Opinions expressed are the authors' alone.

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Foreword

EVEN THOUGH THE ROOTS of the global financial crisis lay in risky financial structures in the United States and weaknesses in financial regulation, the crisis became global mainly because of significant financial and trade linkages between the US and other countries. Most countries, including European Union countries and Korea, have felt the impact of the global crisis. The major channels through which the global crisis transmitted to the EU economy seems to be related to the internationalisation of the financial services industry and financial interlinkages, while in Korea the trade channel was more important.

There was a striking difference between the ways in which the EU and Korea were affected by the global financial and crisis. While the initial shock was broadly similar after the collapse of Lehman Brothers in September 2008, Korea recovered very quickly and output in 2013 is expected to exceed by more than 18 percent the 2007 output level. But the EU's output is still expected to fall behind the pre-crisis value. The current mild impact of the crisis on Korea is in contrast to the harsh impact of the Asian crisis in the late 1990s, when Korean output fell significantly in 1998, though it recovered quickly after 1999.

Based on these observations, we launched a research project to learn from each other by studying the crisis response in the EU and Korea, and the potential for internationalisation of the financial services industry in the EU and Korea. This research was supported by the European Commission, for which we are grateful.

We organised two major conferences, one in Brussels on *Global financial services integration* on 16 April 2012, and one in Seoul on *The Eurozone crisis and its impact on the global economy* on 16 January 2013. We published four newsletters with various articles related to our research themes. This e-book collects our contributions to this project and presents the conference summaries.

Zsolt Darvas, Bruegel
April 2013

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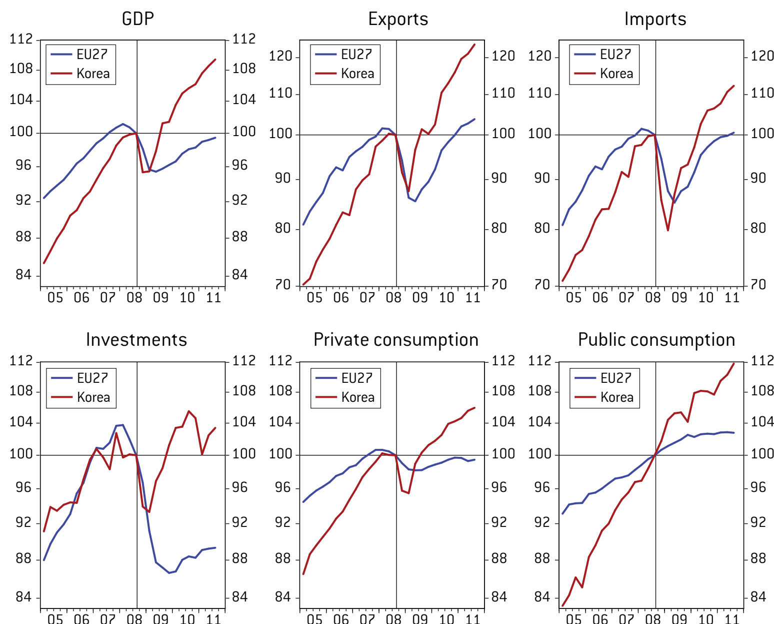
Weathering the storm: differences in crisis response in the EU and Korea

Zsolt Darvas, Bruegel

There is a striking difference between the ways in which the EU and Korea were impacted by the crisis. While the initial shock was broadly similar after the collapse of Lehman Brothers in September 2008, Korea has recovered very quickly and output in 2011Q3 exceeded by almost 10 percent the pre-crisis level, but the EU's output has not yet returned to pre-crisis values. What could explain this difference?

Figure 1 shows quarterly developments in GDP and its main components in the EU27 and Korea. There are indeed striking differences. In the EU, the decline in GDP started a few quarters before the collapse of Lehman Brother and the fall accelerated up to 2009Q1, while in Korea there was a sudden drop in a single quarter, in 2008Q4. But the major difference is the aftermath: in Korea growth picked up instantly when global

Figure 1: Quarterly GDP and its main components (2008Q3 = 100, constant prices, seasonally adjusted), 2005Q1-2011Q3



Source: Eurostat and OECD.

trade started to recover, while the EU recovery was gradual and modest, even if there are differences between EU countries. Certainly Korea, a country that has a lower GDP per capita than the EU27 average, should grow faster because of convergence, but the differences are unlikely to be related to this convergence factor.

Major differences can also be observed in domestic demand developments. The reaction of investors was almost identical up to 2009Q1,but investment fell further in the EU and has hardly recovered, in contrast to Korea where it has recovered quickly. Initially, private consumption fell much more in Korea than in the EU, but while it has also recovered quickly in Korea, it remained sluggish in the EU. Public consumption grew much faster in Korea. The external trade dynamics were not that different, though growth, especially of exports, was much faster in Korea.

One factor that could explain these differences is policy response. Korea has implemented a very significant fiscal stimulus: the fourth largest among G20 countries, well above the stimulus provided by any EU countries. While most EU countries also embarked on fiscal stimulus in the early phase of the crisis, their stimulus packages were much smaller due to much more binding fiscal constraints, which is the consequence of the generally higher debt levels and contingent liabilities. Also, several EU countries had to consolidate later. The Korean case therefore exemplifies the benefits of low public debt and the consequent fiscal space.

The differences in monetary policy response were not significant. Both the European Central Bank and the Bank of Korea lowered interest rates considerably and implemented decisive measures to support the banking sector. Both central banks cooperated with the Federal Reserve in terms of swap agreements to alleviate the US dollar liquidity problems of their respective financial systems.

However, there was a major difference in the reaction of the exchange rate: the real effective exchange rate of the Korean won depreciated by more than 30 percent and is still about 20 percent below its pre-crisis value. A recent International Monetary Fund research study concluded that without this significant depreciation, the output contraction would have been about five percent greater. In contrast the euro, the currency of 17 EU countries to which three others maintain a fixed exchange rate, after a sharp but short-lived impact, hardly depreciated during 2008-09. There was depreciation in 2010 but to limited extent, only about 10 percent, and, according to measures of the equilibrium exchange rate, the euro continues to be overvalued. This is certainly not helpful for economic recovery. On the other hand, most central European EU countries

with floating exchange rates, as well as Sweden and the UK, witnessed a significant deprecation, which may have helped to dampen the impact of the crisis.

A major, and perhaps the most important, reason for the different outcomes in the EU and Korea could be related to the lingering euro crisis, which impacts all EU countries because of their strong trade and financial linkages. The crisis has revealed specific problems related to (a) public finance sustainability and resolution of sovereign debt crises, (b) excessive private sector imbalances and competitiveness problems, and the consequent private sector debt accumulation, (c) the lack of sufficient mechanisms for fostering structural adjustment, (d) the lack of EU-wide mechanisms for supporting economic growth in the most distressed regions, (e) the discrepancy between the high-level banking sector integration and the weaknesses of the EU frameworks for regulation, supervision, and crisis resolution, and (f) more generally the weaknesses in the governance of the euro area, which has led to patchy, inadequate and belated policy responses.

There is a negative feedback loop between the crisis and growth in the EU, and without effective solutions to overturn the crisis, growth is unlikely to resume.

Internationalisation of Asian currencies and the international monetary system

Chung-Han Kim, KIF, and Shahin Vallée, Bruegel

The US dollar still accounts for more than 60 percent of foreign exchange reserves held worldwide, but history tells us that large macroeconomic changes are usually followed by major changes in the monetary system. Yet these changes are not mechanical and are rarely abrupt. Eichengreen and Flandreau (2011) recently highlighted how the pound sterling was overtaken by the US dollar as the world's leading currency in the interwar period and was eventually crowned as the central currency of the international monetary system after Bretton Woods. The collapse of the Bretton Woods system opened up the possibility of the emergence of a challenger to the dollar, but the contenders have been moderately successful so far. The internationalisation of the Japanese yen in the early 1980s effectively halted after the Japanese banking crisis of the early 1990s and receded after the launch of the euro, which until recently was largely seen as the most serious challenger to the dollar.

Japan's large trade surplus with the US throughout the late 1970s and early 1980s motivated the internationalisation of the Japanese yen in Asia. It began with the liberalisation of its financial market and the opening up of its banking system to foreign participation but progress was modest. The monetary boom of the 1980s partly provoked by the G7 interventions to weaken the yen eventually led to an asset bubble which collapsed in the early 1990s thereby undermining profoundly the internationalisation strategy of the yen. With a bankrupt banking system, which sank further following the Asian crisis of 1997, Japan couldn't possibly use its feeble banking giants to turn itself into the world's banker and thereby establish the yen as a leading reserve

Table 1: International currencies in foreign exchange reserves (%)

	1998	2000	2002	2004	2006	2008	2009	2010	2011Q3
USD	69.3	71.1	67.1	65.9	65.5	64.1	62.1	61.4	61.7
EUR	13.8*	18.3	23.8	24.8	25.1	26.4	27.6	26.3	25.7
GBP	2.7	2.8	2.8	3.4	4.4	4	4.3	4	3.9
JPY	6.2	6.1	4.4	3.8	3.1	3.1	2.9	3.8	3.8
Others	8	1.8	2	2	2	2.3	3.2	4.5	4.8

Sources: IMF, Currency Composition of Official Foreign Exchange Reserves 2011 (to 2010), BIS Quarterly Review, December 2011 (2011Q3). Note: * Based on Deutsche mark.

currency. The advent of the euro has slowly contributed to sidelining the yen further by shifting financial might on the European continent.

Yet the euro is too short-lived for full conclusions to be drawn, and the ongoing crisis continues to be a major challenge. Even before that, Europeans were divided over the importance of the international standing of their currency and the European Central Bank has shown during the crisis that it was only moderately interested in assuming the role of an international lender of last resort, which ought to be a defining feature of true leading reserve currency. In addition, there are idiosyncratic European challenges: the euro area's financial centre remains in a non-euro area country and the share of the euro in international reserves and in international issuance has receded. All in all, the consensual trajectory towards a bipolar international monetary system therefore seems to be somewhat put to test.

Indeed, outside of growing uncertainty weighing on the two leading currency areas, two important events seem to be shaping the international monetary system (IMS). One is the growing fragmentation of the world economic order with diminishing influence of the centre and growing influence of the periphery. The other is the growing contestation of the current monetary order regarded as both inefficient and unjust by the emerging world and by China in particular.

Indeed since 2009, China has expressed the clear willingness to reduce its dependence on the dollar and expand the role of its own currency in international transactions. Recently, China has launched an important pilot scheme to broaden the use of the renminbi in trade settlement transactions, followed by a large number of bilateral

Table 2: Foreign exchange transactions and international bonds

	Proportion of daily foreign exchange transaction amount (%)					Issuance of international bonds (US$ billions)					
	1998	2001	2004	2007	2010	1998	2001	2004	2007	2010	2011*
USD	43.4	45	44	42.8	42.5	1852	3613	4906	7535	10502	11100
EUR	-	19	18.7	18.5	19.6	-	2290	6216	10535	11794	12990
JPY	10.9	11.8	10.4	8.6	9.5	478	413	531	577	762	733
GBP	5.5	6.5	8.3	7.5	6.5	327	506	982	1704	2092	2132
AUD	1.5	2.2	3	3.3	3.8	34	32	120	237	327	364
CHF	3.6	3	3	3.4	3.2	115	124	228	301	401	448

Source: BIS, Quarterly Review, March 2011, Triennial Central Bank Survey, BIS Quarterly Review, December 2011.
Note: * September.

currency swap arrangements aiming at distributing the renminbi internationally as and when necessary. In addition, the creation of the renminbi offshore market in Hong Kong has allowed the circumventing of a number of capital account restrictions and the by-passing of financial regulations that govern the domestic renminbi market, which would have limited the use of the renminbi in international transactions. Yet, it is unclear what the ultimate Chinese strategy with respect to its currency and the IMS is. Will China seek to establish the renminbi as a regional anchor as a stepping-stone to its global ambitions? While Japan seems to have given up its international ambitions for the yen by signing up to a bilateral agreement with China to promote the use of the renminbi in regional transactions, other Asian countries might not be prepared to remain within their orbit around the renminbi so soon. India is a clear example, and Korea also seems tempted by the internationalisation potential of its own currency. Australia is also enjoying a wave of interest by international reserve managers that might be difficult to give up. There will therefore be a degree of domestic competition before a regional anchor emerges. This has important ramifications for international financial cooperation in the region, in particular for the creation of a stable safety-net mechanism and an effective multilateral surveillance framework. In this respect, the ongoing reforms of the Chiang Mai Initiative are encouraging on the safety-net front, and incomplete on the surveillance side.

It is also unclear if China seeks a hegemonic role in the monetary system to overtake the United States or if it simply wants a more balanced distribution of the reserve currency dividends and a fairer say in global economic governance. In brief, is China seeking to replace the current global monetary dominance by another or is it helping to move towards a more multilateral or multipolar international monetary system? The Chinese authorities themselves might not know the precise answer to this question and it is, in fact, likely to be largely path dependent. This is precisely why the current discussions surrounding the legitimacy of the G20 and the governance of the IMF are key. The faster Asia comes to play a role at the IMF that is commensurate with its importance in the world economy, the higher the chances that it will engage in currency reform in a way that is most compatible with the stability of the international monetary system and the efficiency of the world economy. International economic cooperation is never a given, it is always a struggle.

Global financial authorities must adapt to a changed world

Nicolas Véron, Bruegel

The first G20 summits in 2008 and 2009 were dedicated to overhauling global financial regulation, empowering international financial authorities and combating the economic downturn. Since then, progress has been uneven and priorities have shifted. The 2011 summit in Cannes was dominated by discussion of the policy chaos in Europe; financial regulatory matters were little more than an afterthought. The world still needs a functioning international financial regulatory framework, however, if the vision of a globally integrated financial system is to be sustained – and there would be huge economic costs if that vision were to be jettisoned. The crisis has demonstrated the perils of unregulated or poorly regulated financial activities. Coordination between different jurisdictions does not happen spontaneously, and the technical nature of financial policy calls for specialised institutions.

This is why global financial authorities are so important. These include the Financial Stability Board (FSB), an umbrella group of national and international organisations, and the ten FSB member organisations. These include the Bank for International Settlements (BIS) in Basel; four bodies hosted by the BIS, respectively the Basel Committee on Banking Supervision (BCBS), the Committee on the Global Financial System, the Committee on Payment and Settlement Systems, and the International Association of Insurance Supervisors; the International Accounting Standards Board (IASB) in London; the International Organisation of Securities Commissions (IOSCO) in Madrid; the Organisation for Economic Co-operation and Development (OECD) in Paris; and the International Monetary Fund (IMF) and World Bank, in Washington DC.

They are not a homogeneous group, and additional international bodies may be needed to tackle specific worldwide financial challenges. But a more immediate question is if the eleven institutions listed above have kept pace with changes in the geography of global finance. All were created in the twentieth century, when Europe and the US (and for a brief period, Japan) dominated the scene. We are in a different financial world now. Based on the Financial Times Global 500 rankings, emerging economies now weigh more than Europe in terms of large listed companies' aggregate value. Three of the world's top five banks by market capitalisation are Chinese, including the top two. Hong Kong and Singapore get closer to London and New York in financial centres' league tables. The crisis has accelerated this shift, as the West enters a long cycle of

deleveraging and slow growth, while emerging economies continue to catch up. At a less tangible level, the West's model of financial development has lost much of its aura of superiority.

The new landscape has produced a growing discrepancy between the reality of global finance and the authorities intended to oversee it. True, most of these authorities have expanded their membership to include large emerging economies. But in only one does the chief executive come from the emerging world (OECD Secretary-General Angel Gurria, a Mexican). Among the seven that have a permanent non-executive chair, only at IOSCO is the position is held by a non-Westerner. They are all located in either Europe or the US, making it more difficult for non-Westerners to attend meetings or even conference calls.

As the succession of Dominique Strauss-Kahn at the IMF has illustrated, emerging countries remain unwilling to seize the initiative and force a readjustment. But time is on their side. Westerners should acknowledge that it is in their enlightened self-interest to give up some positions unilaterally, instead of defensively claiming incumbency rights. This requires a monumental change in their mental map, especially for Europeans, who are more over-represented in this system than Americans, and who still often feel entitled to being at the centre of world affairs.

Concrete changes could include the relocation to Asia of, at least, the secretariats of some of the Basel-based committees, including the FSB, and of the IFRS Foundation, which hosts the IASB. This would be logistically easy to achieve. A more ambitious plan could include the move of the headquarters of either the World Bank or the IMF away from the US. At least for some transition time, non-Western candidates should be given priority as heads and chairs of global financial authorities. Certainly, France's Christine Lagarde, Sweden's Stefan Ingves, or Canada's Mark Carney, recently appointed at the IMF, the BCBS and the FSB respectively, are highly qualified. But a lot of talent lies elsewhere. The next prominent appointments should go to non-Westerners.

Even so, there will be no guarantee of success for global financial authorities. But without some serious rebalancing, they are assured of fading into irrelevance, even as the world needs them more than ever.

Prospects for the yen carry trade

Zsolt Darvas, Bruegel and Haesik Park, KIF

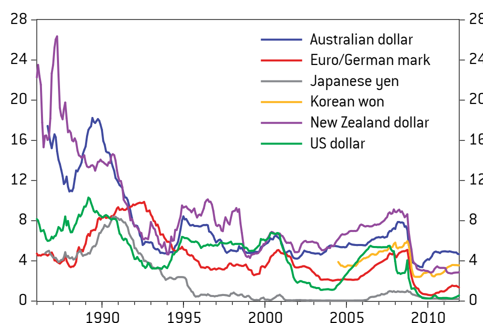
Certain carry trade strategies could contribute to financial market volatility and should thus be monitored by institutions responsible for financial stability. The volume of open carry trade positions also carries information about the risk appetite of investors. This contribution assesses the prospects for the Japanese yen carry trade on currency markets.

'Carry trade' refers to a risky financial position in which an investor borrows in a low-yield instrument and invests in a high-yield instrument, or engages in a transaction similar to this. A bank borrowing from a central bank and lending these funds to its customers at a higher interest rate, or purchasing higher-yielding securities, is also a kind of carry trade. If customers repay and the securities do not default, banks make a profit.

But carry trade is most frequently mentioned in the context of currency markets: currencies with the higher interest rate are purchased against currencies with the lower interest rate. Since the mid-1990s Japanese interbank interest rates are close to zero, suggesting that the Japanese yen could be a candidate for funding carry trade positions (Figure 1).

There are various ways to conduct carry trade. A simple way is to sell a low-yield currency (eg yen) and buy a high-yield currency (eg New Zealand dollar). But one need not possess a low-yield currency: borrowing in a low-yield currency, exchanging it for a high yield one and purchasing a government bond of this high-yield currency creates

Figure 1: Three-month interbank interest rates (%), Jan 1986 - Dec 2011



Sources: Datastream and Reserve Bank of New Zealand.

a leveraged carry trade exposure, whereby the investor is exposed to the return/risk of the full amount of the loan. Foreign currency margin trade could also be used: the investor needs to open a margin account and put a certain amount of money there. Then the financial services provider does the borrowing/lending operations behind it, and the investor can open a foreign currency position amounting to several factors of his/her deposit, thereby increasing both risk and expected return. There are various other derivative positions for setting-up carry trade positions.

The incentive to open carry trade positions also depends on the traders' appetite for risk. If other conditions are the same, the volume of carry trade expands with a high-risk appetite and reduces with a low-risk appetite. We found some evidence for this relationship when looking at some measures of carry trade volume and the VIX index (the implied volatility index of S&P 500 index options).

The exchange rate between the funding currency (eg yen) and the investment currency (eg New Zealand dollar) affects the rate of return on carry trades. Expectations about future changes to the exchange rate impact the decision to enter a carry trade strategy. When devaluation of the yen is expected, the expected rate of return for the yen carry trade rises and motivates investors to invest.

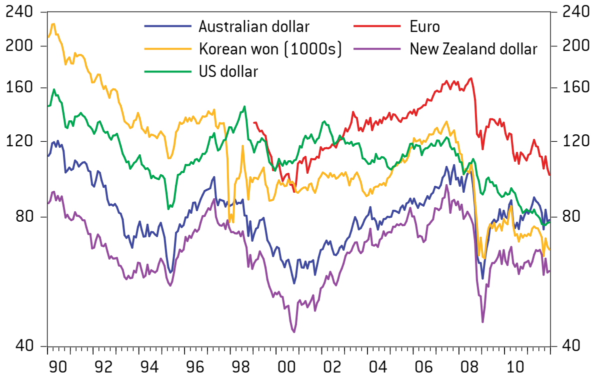
On the other hand, a high volume of carry trade activities can also impact the exchange rate, especially in markets in which currency turnover is not that large. For example, interest rates were very high in Iceland, attracting a large inflow of carry trade investment before the crisis, ie euros and dollars were exchanged for Icelandic kronas leading to the appreciation of the Icelandic krona's exchange rate. When carry trade investors tried to pull out their earlier investment during the course of the financial crisis, the korna depreciated massively.

Before the crisis, the yen depreciated significantly against the Australian and New Zealand dollars (Figure 2), thereby making the yen carry trade highly profitable. But after the collapse of Lehman Brothers the yen appreciated sharply against the Australian and New Zealand currencies – by about 40 percent – leading to severe losses for carry trade investors (Figure 3). Recently, there was no visible trend, but exchange rates were volatile.

How did yen carry trade positions evolve? There are various markets in which carry trade positions can be taken and certainly not all foreign currency transactions are motivated by carry trade. Open positions on the Tokyo International Financial Futures

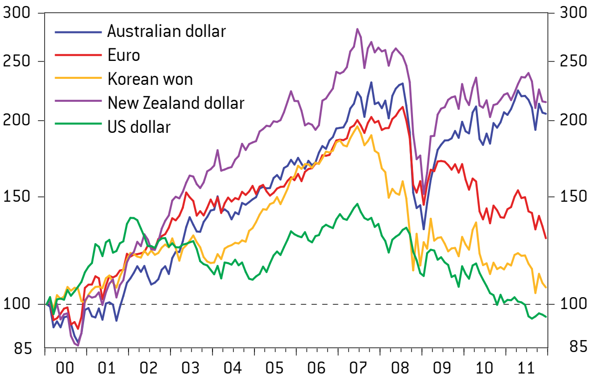
Exchange are indicated in Figure 4. Before the crisis, there was a clear trend of increasing long positions in foreign currencies, while short yen positions have also increased somewhat – consistent with carry trade. At the time of the collapse of Lehman Brothers there was a significant decline in open positions because of the sharp appreciation of the yen and the consequent losses on carry trade positions, which induced investors to close these positions. Figure 3 shows the return on non-leveraged positions, but losses on leveraged positions were of course much higher. The heightened risk aversion that emerged, and investor losses on other financial products, have also reduced their capacity to engage in derivatives positions. However, already

Figure 2: Yen exchange rates, Jan 1990 - Dec 2011



Source: Bank of Japan and Reserve Bank of Australia. Note: A lower value indicates a stronger yen.

Figure 3: Cumulative returns to 100 initial non-leveraged carry trade in yen against five currencies, Jan 2000 - Dec 2011

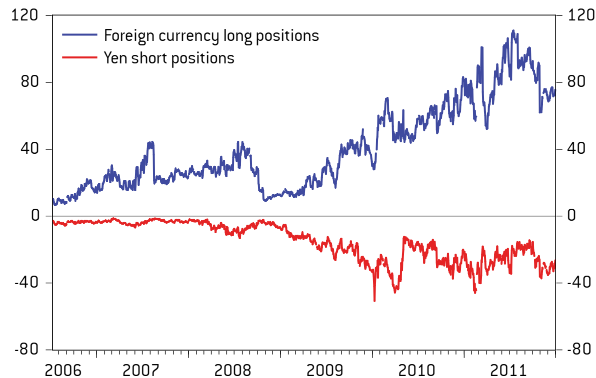


Source: Updated from Darvas, Zsolt (2009) 'Leveraged vary trade portfolios', *Journal of Banking and Finance*, 33(5), 944-957. Note: Transactions costs are considered, but not the interest income of collateral.

from mid-2009, the open positions increased dramatically, reaching a peak in summer 2011. Since then, open positions have declined somewhat.

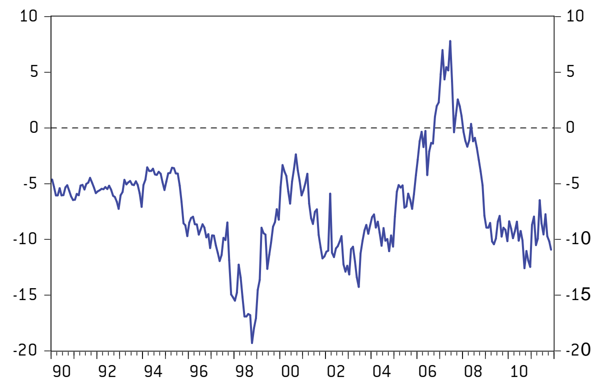
Trade through an interoffice account between the branch of a foreign bank in Japan and its head office abroad is another way of conducting yen carry trade. The Japanese branch of a foreign bank lends funds to its head office by funding the yen in the Japan-

Figure 4: Foreign-exchange margin trade at the Tokyo International Financial Futures Exchange ($100 millions), 10 July 2006 – 31 Dec 2011



Source: Tokyo International Financial Futures Exchange. Note: Yen short positions (ie investors 'selling' the yen) are the aggregate of short positions against seven major currencies: US dollar, euro, Australian dollar, New Zealand dollar, Canadian dollar, British pound and Swiss franc. Foreign currency long positions (ie investors 'buying' foreign currencies) are the aggregate of long positions against the yen for the same seven currencies.

Figure 5: Interoffice account net position of foreign banks' branches, January 1990 – November 2011 (¥ trillion)



Source: Bank of Japan. Note: Net position = lending minus borrowing.

ese interbank market, and the head office invests those funds in high-profit assets. When the volume of the yen carry trade expands, the net borrowing position (interoffice borrowing > interoffice lending) declines, or converts into a net lending position (interoffice borrowing < interoffice lending).

In the 1990s and early 2000s, the interoffice borrowing of these branches exceeded their lending (Figure 5). But from about 2004 to 2007 the net borrowing position turned to net lending, possibly implying the presence of carry trade. After June 2007, and the outbreak of the US mortgage crisis, net lending declined to a level of close to zero up to late summer 2008. After the collapse of Lehman Brothers it declined further to minus ¥10 trillion (close to the historical average) and did not recover since then. This suggests that carry trade through interoffice lending of banks' branches in Japan has not yet returned.

To sum up, the open positions of margin trades at the Tokyo exchange are almost at a historical high, though has declined during the past half year, and interoffice lending of foreign banks' branches are at the historical average. Risk appetite may fall due to the downgrade in the US credit rating, the fiscal crisis in Europe and the possibility of a double-dip recession. This may give rise to further unwinding of yen carry trade positions and an increase in market volatility.

Green financial innovation to boost private investment

Georg Zachmann, Bruegel

Decarbonising the economy is one of the critical challenges of the twenty-first century. Due to the limited carbon-reduction potential of incumbent transport and energy technologies, a major shift in the way we produce and consume energy is needed to avert potentially disastrous climate change.

This transition will only be possible through substantial upfront investment. It is unrealistic that these considerable sums will come only from the public sector. Pure public finance would imply a nationalisation of the energy sector; and public budgets are already over-stretched, even in times of relative stability.

Private investment is crucial for the success of the post-carbon transition. However, private actors are reluctant to engage heavily in 'green projects' that are markedly different from their usual lines of business. Green projects, such as carbon-free power plants, new transmission lines, refuelling infrastructure for clean cars, and investments in energy efficiency, are typically characterised by very long pay-back times and often low returns. Therefore, these investments would only be attractive if their risks were sufficiently low.

However, at present green projects are often more risky than conventional projects for various reasons: (1) The cash-flow of many green projects is critically dependent on the hard-to-predict future carbon price. The carbon market is not yet well-established. There are no clear accounting rules for carbon credits and no good models for hedging corresponding risks. (2) Currently, low-carbon projects rely primarily on government intervention schemes (subsidies, feed-in tariffs, obligations, emissions allowance trading, etc.) which provide neither a stable nor a long-term price signal for investors. (3) Moreover, the payoffs of green projects are subject to various levels of political, technical and regulatory uncertainty. Recent regulatory shifts in European renewables support schemes are telling examples of the political volatility of public support. For example, Spain and other countries cut its feed-in tariff for existing and new solar installations because of the financial crisis. This resulted in a wave of bankruptcies of solar companies and the loss of confidence of investors in corresponding schemes throughout Europe. Regulatory downside risk is not matched by a corresponding regulatory upside chance. The reason is that regulatory changes are typically targeted at creating 'additionality' and thus only compensate for investments induced by the new regula-

tion, but ignore already existing green projects. (4) Furthermore, the regulatory framework for new infrastructure assets (eg hydrogen refuelling stations) and new appliances (eg technical standards for fuel cell electric vehicles) remain unclear. These regulatory risks are further exacerbated by the often long-term and capital-intensive nature of green investments.

Political, technical and regulatory uncertainty is a significant impediment to private finance. Uncertainty, in contrast to risk, cannot be properly quantified or managed. Consequently, the absence of a robust regulatory environment and a credible and sufficient carbon-price signal translates into higher costs of capital for green projects. Private investors face a risk of stranded cost which is difficult to manage. This results in the inability of green projects to attract long-term debt and equity finance, while public funding is insufficient to cover all the gaps in investment.

A potential solution to the financing issues faced by green projects is being explored in the UK. The UK Green Investment Bank has been proposed as a publicly-driven intermediary structure. The core tasks of this institution will be to address the market failures faced by green projects, and to attract private investment by managing the inherent risks of low-carbon projects. The novel aspect of this proposal is a shift from current public support policies that simply provide higher subsidies, to a public-support system that reduces private investment risks. The UK Green Investment Bank (GIB) will start its operations in 2012, backed by an initial capitalisation of £3 billion.

The GIB will help to lower investment risk in three key ways. First, it will **pool and restructure currently dispersed government grants** for funding emerging green technologies. Second, it will be responsible for issuing **green bonds**. In the set-up phase, green projects are financed by equity. At the end of this phase, when the projects start to generate positive cash-flows, the GIB will buy up these green projects. This allows equity investors with an appetite for high-risk investments to sell their mature projects in order to generate funds for starting new green projects. The GIB can later issue green bonds to refinance its activities based on a broad portfolio of cash-flow generating green projects, and possibly ensuring high ratings through additional state guarantees. That is, ultimately, the GIB allows institutional investors, with an appetite for low-risk investments, to finance low-carbon projects. Third, the GIB will **unlock project finance** through:

1) Equity co-investments at the early stages of low-carbon projects.
2) The purchase and securitisation of green project finance loans (or pooling of the

loans provided by the commercial banks for green projects). In this way, risks can be mitigated and lending for these kinds of projects increased.

3) Long-term carbon-price underwriting or the provision of guarantees on a stable long-term (or floor) price for the investors.
4) Providing the insurance products for mitigation of the inherent risks related to a non-sustainable regulatory framework and possible market failures (eg offering to buy completed renewables assets, extreme events insurance or contingent loans facilities).

Even though, it is too early to evaluate the success of the UK GIB, the idea of establishing a special financial institution that will be responsible for managing the particular risks of low-carbon projects is well worth exploring. Such an institution might play a major role in attracting the long-term private capital needed for funding commercial green investments critical to the success of any post-carbon transition. **Furthermore, a public financial institution that has widespread exposure to green investment projects through its portfolio, could be an important signal to other market participants that the public sector is committed to supporting the low-carbon transition**. This signal reduces the perceived risk of abrupt support-policy changes, and might make it easier to finance green projects through commercial banks. Thus, the establishment of public instruments that serve to create credibility and to lower investment risk for private actors, and not merely to subsidise, may prove essential to the success of a post-carbon transition.

Development of the mobile payments market in Korea

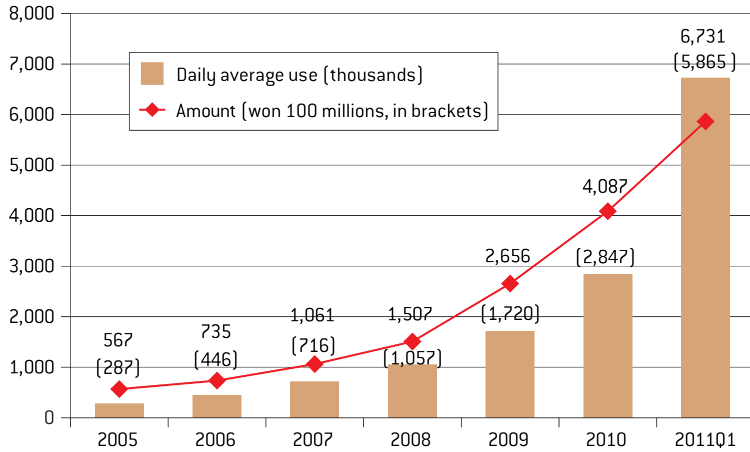
Jeong Ho Suh, KIF

Improved mobile communications, and links to credit card providers, along with the smartphone boom, has encouraged growth in Korea's domestic mobile payments market. In February 2010, SK Telecom secured a 49 percent share of the Hana SK Card to become the first limited partnership offering a form of 'communication-card'. Then, in June 2011, KT Capital acquired 38.86 percent of BC Card, becoming the largest shareholder. As of March 2011, the number of smartphone subscribers in Korea had already exceeded 10 million, while the use of mobile banking has expanded strongly since late 2009. Recently, NFC (Near Field Communication) technology has been added to USIM (Universal Subscriber Identity Module) cards. The latest combined features might increase demand for making payments via mobile devices. NFC allows for two-way communication within 10 centimetres. Currently, an electronic reader can read information held on a mobile credit card (one-way), but when a NFC chip is installed, the mobile device itself acts as the reader, and exchanging information (both ways) becomes possible.

Mobile payments using USIM chips ensure convenience and security, and offer a new business model. USIM allows security through encryption and reduces the data volumes transmitted. By installing USIM, an e-wallet can be created, where information on credit cards, discount cards, coupons and identification cards can be kept. This makes shopping with mobile devices convenient. Mobile cards are normally downloaded through a wireless network (OTA: over-the-air), which reduces costs related to card issuance.

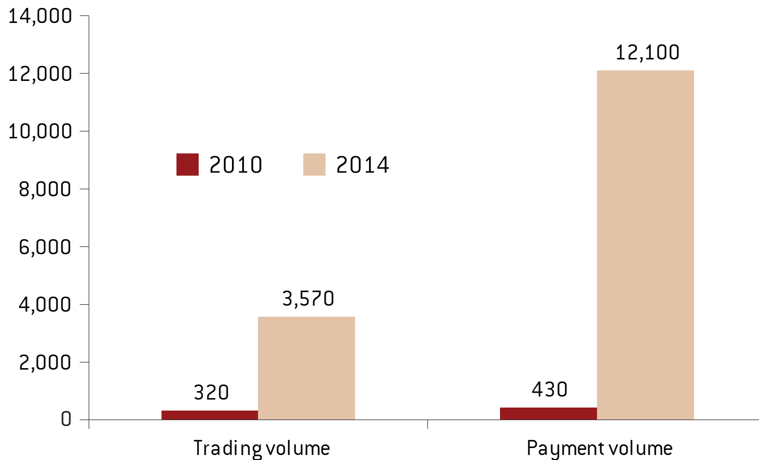
However, a lack of understanding between the finance and communication industries has so far held up the development of the mobile payments market. Therefore, it may be necessary to consider establishing TSMs (Trusted Service Managers) in which financial companies, mobile communication companies and VANs (Value-added Networks) participate as shareholders. Despite the high potential for development, the mobile payments market is having difficulty resolving issues of competition between sectors. It is strongly recommended that an intermediary intervene in the market. On 13 June 2011, the representatives of credit card companies, mobile communication providers and VANs came together to sign a memorandum of understanding. However, problems relating to costs and income distribution remain. The TSM is a business model (eg credit bureau) that plays many roles in managing USIM chips, distributing payment

Figure 1: Use of mobile banking in Korea



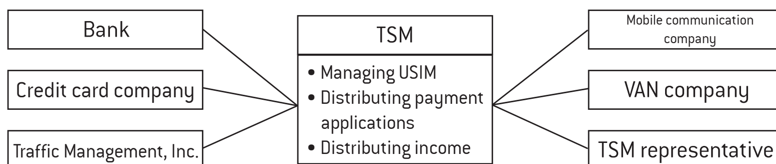
Source: Bank of Korea.

Figure 2: Expected use of mobile payments using NFC



Source: Gartner, Report on Industry Analysis from Shinyoung Securities. * Near-field communica-

Figure 3: Roles of TSM and its participants



applications, defining policies on dongle services, distributing income and so on. To foster better understanding between industries, it may also be necessary to have a director who represents the position of the TSM.

Move the Financial Stability Board's secretariat to Asia

Nicolas Véron, Bruegel

On the face of it, the financial crisis of 2007-08 has helped rebalance global financial governance, partially correcting the prior under-representation of emerging economies and particularly of Asia. From November 2008 to April 2009, the G7/G8 was superseded by the G20, the Financial Stability Board (FSB) was empowered and enlarged to include major non-Western economies, and discussions began on reconfiguring the governance of the International Monetary Fund and World Bank. The Basel Committee on Bank Supervision was also adjusted to broaden its membership.

Much remains to be done to enable Asians to feel a genuine sense of ownership, however. Membership may have been broadened, but these institutions, which were generally created by Westerners for Westerners, remain predominantly run by Westerners[1]. In a recent count of the 25 top full-time and part-time positions at the 11 main global financial authorities[2], 20 were held by Westerners, and only three by Asians, including two deputy positions (Véron, 2012). Meanwhile, Asia now represents 25 to 35 percent of the world's economy and financial system (depending on the indicator chosen), a share almost certain to increase in the near future. Asians correctly perceive a mismatch between their role in the global economy and their voice in global institutions (Cho, 2011).

An important but underestimated contributor to this mismatch is the fact that all global financial authorities are located in the West, and almost all in Europe (the two exceptions are the International Monetary Fund and World Bank, both in Washington). This is obviously a historical legacy. The first such institution, the Bank for International Developments (BIS), was established in Basel primarily to solve a European problem, the payment of first world war reparations by Germany, which involved mostly European stakeholders. Once created, institutions generally do not move, and some of them spin off new ones in the same place. The BIS now hosts five other global financial authorities, including the FSB. But the issue of location is not merely symbolic. Anyone who has ever had to plan a round trip from Beijing (or for that matter, Brasilia) to Basel knows that being physically close to global institutions, as are all Europeans, offers a practical advantage in international financial regulatory discussions.

For each institution, there is a good case for keeping it where it is. Beyond the cost of moving, the need for authorities to work together provides a justification for keeping them close to each other. In addition, Europe's time zones make it easier to maintain liaison with both Asia and the US. But according to this logic, no global financial authority will ever be located in Asia, and it will be increasingly difficult for Asians to resist the impression that they don't have an equal stake in the global system.

The G20 leaders should break this cycle. Fortunately, an almost ideal opportunity is at hand. Negotiations are ongoing under the Mexican presidency of the G20 to reform and strengthen the governance of the FSB, loosening its ties with the BIS both in terms of financing and of operational arrangements. The discussions are expected to produce an agreement at the mid-June summit of the G20 in Los Cabos. Much of the discussion concentrates on the future representation in the FSB's structures of different policy sub-communities (central bankers, finance ministry officials, supervisors). But relocation of its permanent secretariat should also be on the agenda. Unlike the IMF, OECD or BIS, the FSB secretariat has only a small staff of about 20 professionals, most of whom are internationally mobile. And because its global role is increasingly important, a transfer to Asia would be more than a token gesture.

Where in Asia? There are some obvious criteria: accessibility; political stability; the rule of law; and amenities that make it possible to attract highly qualified international staff. Among Asian cities, Hong Kong, Seoul, Singapore, and Tokyo meet these criteria to a sufficient degree. Switzerland can be expected to resist losing the FSB, but it would gain from strengthening the global financial policymaking order. So would all Western players.

Relocating the FSB to Asia should not be a substitute for other schemes to fulfil the G20 promise to deliver an effective global financial policy framework that will achieve stability, growth and inclusiveness. Nor should it substitute for financial reform in Asia, where the allocation of capital remains inefficient. But tackling the mismatch, in which Asians are inadequately empowered even as their economic and financial position is increasingly central, has to start somewhere. Moving the FSB secretariat eastwards would be a reasonable place to begin.

Notes:

1. Defining the 'West' according to common practice: the US and Canada, Europe up to the current eastern boundary of the EU, Israel, Australia and New Zealand.

2. These are the FSB itself and its ten members which have a global scope, namely the Bank for International Settlements, Basel Committee on Banking Supervision, Committee on the Global Financial System, Committee on Payment and Settlement Systems, International Association of Insurance Supervisors, International Accounting Standards Board, International Monetary Fund, International Organization of Securities Commissions, Organization for Economic Co-operation and Development, and the World Bank.

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Effects of IFRS on Korean banks, and future prospects

Jeong Ho Suh, KIF

Korean firms' business activities, such as risk management and foreign investment, have been affected by the obligation since 2011 to adopt International Financial Reporting Standards (IFRS). Korean banks may need to reshape their credit-rating models and enhance their loan-collection systems to prepare for further changes in loan-loss accounting. In addition, the financial authorities must provide adequate guidelines to minimise discretionary accounting and organise regulatory acts in order to prevent false disclosure.

Korea's accounting standards, and the quality of financial information, have improved since the adoption of IFRS in 2011, but comparability between financial statements has declined.

IFRS was first adopted for listed companies in EU member countries in 2005. Since then, it has expanded rapidly across the globe, leading Korea to also adopt the standards for its listed corporate bodies and most financial companies.

IFRS regards consolidated financial statements as the main financial statements, and greatly expands disclosure requirements. Therefore, transparency in accounting standards and the quality of overall financial information have been upgraded. However, it is commonly recognised that the comparability of financial statements has declined because unlike the previous Korean GAAP (K-GAAP) standards, IFRS follows 'principle-based standards'.

The introduction of IFRS benefited Korean banks by reducing the requirement to make an allowance for bad debts, but it has become more difficult for Korean banks to dispose of non-performing loans (NPL) through securitisation. And the adoption of IFRS has increased the exposure of Korean banks' profits to the fluctuation of foreign exchange rates.

Under IFRS, bad debts remain on the books even if the bank sells the debt to a third party through securitisation – where the bank is connected to the liquidised asset through subordinated debt or payment guarantee[1].

Direct investment in a foreign subsidiary is classified as a non-monetary asset where there is no profit and loss with the fluctuation of the exchange rate. On the other hand, the investment source is financed with monetary liabilities, which are subject to foreign exchange risk if there is no hedging[2].

Impairment of marketable securities directly affects net profit under IFRS, thus requiring enforcement of risk management on those securities.

In order to effectively utilise financial information for loan evaluation, Korean banks need to reshape their credit-rating models and re-educate loan officers.

Annual IFRS financial statements are being disclosed for the first time in the first half of 2012. So, use of financial information based on the previous K-GAAP standard will no longer be comparable. Also, a wide range of footnotes needs to be effectively utilised in the process of credit-rating evaluation.

Korean banks will have to enhance their loan-information infrastructure in order to prudently adapt to further changes in the accounting standard for loan losses.

Unlike the previous incurred-loss model, the expected-loss model of 'IFRS 9 Financial Instruments', which may be adopted in 2015, distributes credit loss provisions until maturity. So, a database of loan loss information needs to be developed in order to reflect long-term loss as a whole.

Empirical studies[3] of 90 EU banks showed that the cost of equity capital rose after the mandatory adoption of IFRS in 2005. But, countries with efficient legal enforcement[4], such as Belgium, Denmark, Germany and the United Kingdom did not see an increase in their capital costs. This indicates that prevention of false reports through legal enforcement rather than increased disclosure requirements is more effective in alleviating information asymmetry.

In an effort to embed IFRS in the banking sector, the authorities should provide more transparent disclosure guidelines, and enhance enforcement to prevent false disclosure. Since the intent of IFRS is to allow a certain degree of discretion to individual firms, it would be better to provide examples of bad adoption, rather than to specify rules on how to handle each footnote.

Notes:

1. For this reason, during 2010-11, domestic banks did not use the method of securitisation when disposing of insolvent obligations. This led to an energising of the NPL market in Korea.
2. Monetary assets include cash, loans, deposits, corporate bonds, etc, while non-monetary assets include stock investments, inventories, etc. If foreign assets or debts fall into monetary items, then they are evaluated using the exchange rate at the end of the fiscal year, but if they fall into non-monetary items, they are evaluated mostly using historical prices. In particular, as Korean banks expand their investments in Southeast Asia, their cross-currency exchange risk is increasing.
3. Hwang, L., J. H. Suh and S. Yim (2011) 'The Impact of Mandatory IFRS Adoption on the Cost of Equity Capital: An Empirical Analysis of European Banks', KIF *Working Paper*, December.
4. For more information, see La Porta, R., F. López-de-Silanes, A. Shleifer, R. Vishny (1998) 'Law and Finance', *Journal of Political Economy* 106, 1113-1155.

G20: Decreasing returns

Jean Pisani-Ferry, Bruegel

Macroeconomic coordination, the hallmark of the first few G20 summits, went through three successive phases. The first phase, from Washington to Pittsburgh, focused on stimulating the global economy across the board. The second phase, from Toronto to Cannes, shifted towards a more complex set of objectives, with the aim of avoiding a resurgence of global imbalances. The third phase, from Cannes onwards, put the focus on the European crisis. The initial achievement was major. But the story is one of diminishing returns. The effectiveness of the G20 in macroeconomic coordination declined from one phase to the next.

The G20 was created in extraordinary times. Its initial focus was on coordinating a global stimulus to ward off depression, equipping the IMF with sufficient resources to cope with potential requests, and beefing up global liquidity.

Data confirms that a stimulus was engineered not only in the advanced G20 group but also, and to a broadly similar extent, in the emerging group. Russia, India and China were among the countries where the 2008-09 effort was greatest. With hindsight, whether or not the IMF was right to call for a uniform response is a matter for discussion. Spain, especially, took part fully, but soon realised that it had overestimated its fiscal space. The IMF in this respect lacked caution. However it was probably wise to advocate an across-the-board stimulus, rather than a tailor-made one whose preparation would have taken precious time and opened the door to endless disputes.

The London summit also agreed on a $500 billion increase in IMF resources and on a special allocation of SDRs. The increase in IMF resources made a large increase in lending possible. Without the replenishment of resources at the time of the London summit, the commitment capacity of the Fund would have been severely constrained already in 2009.

Summing up, in this first period the G20 achieved fostered coordinated responses to the global crisis. For a group of rather heterogeneous countries with little tradition of dialogue and joint action, this must be considered a significant achievement.

The aftermath was more complicated because it involved addressing a conceptually debatable and politically delicate issue: the so-called global imbalances. The

intellectual background to the policy agenda was the fear that the recovery would leave these imbalances largely untouched. The goal, to quote from the Pittsburgh declaration, was to develop *"a forward-looking analysis of whether policies pursued by individual G20 countries are collectively consistent with more sustainable and balanced trajectories for the global economy"* that would feed into the leader's discussions and help decide on joint action. This was the purpose of the 'Mutual Assessment Process' (MAP).

This was a difficult endeavour. To start with, there had never been a consensus among economists on the risks involved in the persistence of global imbalances. Second, previous attempts at global discussions on imbalances had failed to deliver any meaningful result. Third, the G20 itself experienced difficulties with the topic, as indicated by the absence of an explicit reference to it in the Washington summit declaration of 2008.

As conducted for the Toronto and Seoul meetings, the MAP was a cumbersome exercise technically. At the Seoul meeting it was agreed to 'enhance' the MAP by outlining 'concrete policy commitments' for each of the members. This agreement opened the way to a more ambitious attempt at multilateral surveillance. A set of indicators and guidelines intended to help tackle global imbalances through policy adjustment in the key countries was adopted in April 2011. Recommendations were issued as part of the Cannes G20 Action Plan: there was agreement on differentiated budgetary consolidation strategies, including through letting automatic stabilisers work in Australia, Brazil, Canada, China, Germany, Korea and Indonesia.

The process however faces three difficulties. First, the model of international interdependence underlying the MAP may not capture the relevant channels of transmission of shocks. It puts emphasis on interdependence through flows and prices, while empirical research, notably the evaluations provided by the IMF in the context of its spillover reports, emphasises interdependence through cross-border holdings of financial assets. Interdependence through traditional channels can be dwarfed by that arising from gross holdings of financial assets and the bellweather role of US capital markets.

Second, the whole exercise is predicated on the assumption that global imbalances will remain a serious concern for the world economy. The pattern of imbalances, however, has changed significantly with the reduction of the Chinese surplus and the rise of those of oil-producing countries. Some observers do not see current-account

imbalances as a problem but as a normal response to the asymmetry in the state of public finances between the advanced and the emerging countries. There is a difficult trade-off here: to keep focusing on the same issue helps narrowing down differences through the development of common concepts, indicators and guideposts. As indicated by the European experience, however, this process takes time. Keeping the focus on a particular set of issues involves the risk of focusing the policymakers' attention on the wrong issues.

Third, it is not clear which of the participating countries is ready to trade a change in its own policy for a change in its partner's policy. Would, for example, a Chinese exchange-rate adjustment facilitate a US budget agreement?

On the whole, this second period was clearly less successful than the first.

The third phase started in Cannes in November 2011. The summit was meant to be devoted to global discussions, not least about reforming the international monetary system, but it was largely hijacked by the euro crisis. In the months that followed, the international discussion was again largely dominated by the European crisis.

Decisions announced on the occasion of the 2012 IMF/World Bank spring meetings in Washington resulted in pledges to increase IMF resources by $430 billion. Although these resources are not earmarked for any particular country, they are widely regarded as motivated by the precarious state of the euro area and some countries within it.

On this occasion however the G20 as an institution failed to provide the 'premier forum for international economic cooperation' that it said it would be. First, two major members, the US and Canada, broke ranks with the consensus on increasing IMF resources. Second, disagreements on the policy prescription for Europe could not be resolved. In a context of serious concerns about the pace of the recovery, the communiqués from Mexico (February) and Washington DC (April) did not go beyond platitudes.

There are probably two reasons for this disappointing result. First, Europe is difficult because of its internal coordination process. Two-level coordination (ie coordination within the EU and between the EU and external partners) is inherently difficult. Second, the problem at stake is highly asymmetric. The rest of the world expect from Europe that it sorts out its problems and while it has shown willingness to extend a helping hand, this inevitably comes with strings attached: emerging countries want more say

in exchange. This is not the easiest of all sorts of dialogue.

In conclusion, macroeconomic coordination has delivered less and less. To what extent is this decline in effectiveness due to the nature of the problems on the agenda and to what extent to the evolution of the dialogue and the participants' commitment to the process? There is no easy answer to this question. Clearly, what was done in 2008-09 was by nature exceptional and the subsequent steps were bound to be of lower intensity. Also, the mere willingness to discuss global policy issues and their national ramifications is a non-negligible achievement. Issues, at least, are increasingly named.

Yet the outcome remains disappointing. One cannot but ask questions about the ability of the G20 to avoid the traps that, over time, greatly reduced the effectiveness of the G7/G8 summits. It is certainly too early to claim that the G20 has failed, but early enough to wonder whether it is on track towards lasting success.

The state of foreign bank branches in Korea

Christopher Byungho Suh, KIF

Foreign bank branches in Korea have gradually gained importance, increasing their share of the total assets of the Korean banking industry from 6.3 percent in 2000 to 14.2 percent in 2009. But recently, both their growth and profitability have been stagnant. The likelihood of either closures or asset sales is increasing, especially with the rapidly deteriorating performance of US and European bank branches. Thus, monitoring the repatriation of funds from Korea to the foreign banks' headquarters should be strengthened, while the Bank of Korea and Financial Supervisory Committee should put in place a plan to handle potential large-scale capital outflows.

From 2000 to 2009, the foreign bank branches' total assets grew by 6.1 times from 47.6 trillion won (€40 billion) to 292.6 trillion won (€158 billion) (see Table 1), at a CAGR (Cumulative Annual Growth Rate) of 22.4 percent. And as a result, the market share of foreign bank branches (using total assets) increased from 6.3 percent to 14.2 percent during this period. Yet due to mergers and acquisitions, and financial difficulties in their home territories, the number of foreign bank branches in Korea fell from 43 in 2000 to 37 in 2009.

However, the total assets of foreign bank branches decreased sharply in 2010 by 42.9 trillion won, or 14.7 percent, to 249.7 trillion won (Table 1). The decrease was attributable primarily to European and US bank branches.

After the peak of profitability in 2008, the foreign bank branches, especially those of US and European banks, continued to face a worsening trend through 2011 (Table 2).

The foreign bank branches' net profit decreased by 45.5 percent in 2011 to stand at 1.2 trillion won compared to 2.2 trillion won in 2008. And, return on equity dropped from 19.5 percent in 2008 to 8.2 percent in 2010. The number of foreign bank branches recording net losses has continued to rise since 2008: 2008 (1), 2009 (1), 2010 (3), and 2011 (5).

US and European bank branches recorded a net profit of 0.6 trillion won in 2011, a decrease of 64.7 percent from 1.7 trillion won in 2008. The Asian bank branches' net profit peaked in 2009 and the decline in profit was less significant afterward.

Table 1: Total assets* of foreign bank branches in Korea by ownership

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
America	18.1	21.9	21.8	23.1	13.4	14.1	14.2	20.3	41.7	48.7	42.1
	(38.0)**	-37.7	-34.2	-29.5	-15.2	-14.7	-12.6	-13.3	-16.5	-16.6	-16.9
Europe	21.2	26	30.2	41.3	57.9	64.3	79.1	107.6	171.2	199	157.8
	-44.6	-44.8	-47.3	-52.6	-66	-67.2	-70.2	-70.5	-67.6	-68	-63.2
Asia	6.5	7.7	9.7	12.4	13.6	15.2	18.7	24.1	36.8	40.3	45
	-13.7	-13.2	-15.2	-15.8	-15.5	-15.9	-16.6	-15.8	-14.5	-13.8	-18
Australia-Africa***	1.8	2.5	2.1	1.6	2.9	2.1	0.7	0.7	3.6	4.7	4.8
	-3.6	-4.2	-3.3	-2	-3.3	-2.2	-0.7	-0.4	-1.4	-1.6	-1.9
Total	47.6	58	63.9	78.4	87.7	95.7	112.7	152.6	253.3	292.6	249.7

Source: "Bank Operations Statistics" (FSS). Notes: * Assets are shown in the upper values of the cells in 100 million won. ** The lower values in brackets are the percentage ratio to all foreign bank branches. *** In 2003 all the Arab banks closed their branches, leaving no African banks in Korea.

Table 2: Net profit and return on equity of foreign bank branches in Korea by ownership

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
America	3534	2498	1208	1136	227	456	667	1258	4179	4033	2546	1775
	(15.1)*	-11.2	-6.4	-6.9	-2.6	-5.9	-7.7	-11.5	-27.8	-16.5	-9.4	-
Europe	3078	2651	1379	2779	2501	240	1404	1902	13030	13132	6521	4364
	-11.9	-12.1	-6.1	-10.9	-8.9	-0.8	-3.9	-4.8	-21.7	-13.7	-6.3	-
Asia	819	749	540	675	615	690	802	919	2941	7050	5923	5935
	-8.4	-6.8	-5.1	-5.4	-4.3	-4.3	-4.5	-3.8	-9.9	-16.8	-11.1	-
Australia-Africa	-87	107	41	22	60	-76	22	-35	505	108	196	235
	(-6.1)	-6.7	-2.3	-1.4	-3.7	(-4.4)	-3.1	(-6.8)	-53.3	-4.2	-6.5	-
Total	7460	6116	3210	4612	3403	1310	2895	4044	20654	24323	15186	12309
	-12.1	-10.6	-5.9	-8.2	-6.5	-2.3	-4.6	-5.3	-19.5	-14.7	-8.2	-

Source: "Bank Operations Statistics" (FSS). Notes: Net profits are shown in the upper values of the cells in 100 million won. * The lower values in brackets are ROE in percent.

Table 3: Net profit and return on equity (ROE) of domestic banks

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
-41958	46842	50131	16819	87751	136343	133269	150477	77443	69300	93134	145259
(-11.0)	-12.8	-10.9	-3.4	-15.2	-18.4	-14.6	-14.6	-7.2	-5.8	-7.2	-8.5

Source: "Bank Operations Statistics" (FSS). Note: Net profits are shown in the upper values of the cells in 100 million won. The lower values in brackets are ROE in percent.

On the other hand, by 2011 the profit of Korean-owned banks returned to almost the pre-crisis level, though return on equity is below its pre-crisis peak (Table 3).

The Korean Financial Supervisory Service should monitor the global operations of foreign banks to prepare for potential bank closures because of the European crisis and the poor performance of foreign bank branches. In addition, the Bank of Korea should put a plan in place to handle potential large-scale capital outflows.

Between 2000 and 2010, 11 foreign bank branches closed their operations in Korea (five foreign bank branches entered the market during the same period). With this in mind, it is imperative that monitoring of home-country business operations is strengthened through cooperation between the regulators of the host and home countries.

In accordance with Article 62 (Domestic Assets of Foreign Financial Institutions) in the Banking Act of Korea, domestic customers are first to receive reimbursements from the bank in case of foreign bank branch closures. However, it is important to keep in mind that regulators must closely monitor and manage those foreign bank branches that repatriate excessive funds before closure since this could potentially make it difficult for the foreign bank branches to service their debts in Korea.

In addition, it is important to have a contingency plan ready in cases of foreign bank branches closing due to internal financial difficulties and/or inability to perform their core operations. Currently, the US is preparing to implement the Volcker Rule, which forbids proprietary trading. Once the Volcker Rule takes effect, foreign bank branches from the US are likely to reduce their investment portfolios significantly.

Conference report

Global Financial Services Integration, 16 April 2012

Bruegel hosted a Bruegel-KIF Conference on *Global Financial Services Integration* in Brussels on 16 April 2012. The conference, attended by 58 participants, featured three sessions after the introductory remarks of Bruegel director Jean Pisani-Ferry. In each session, four or five distinguished speakers from various continents and institutions made kick-off remarks, followed by lively discussions between the speakers and the audience, chaired by Bruegel and KIF research fellows. The conference was held under the Chatham House rule.

Session 1 focused on the challenges and advancements in the integration of financial market infrastructure in Europe and Asia *(summary prepared by Silvia Merler, Bruegel)*

One of the main problems when dealing with financial regulation and infrastructure is the difficulty of making these subjects easily understandable to the general public and policymakers. Market infrastructure is created and evolves to solve market problems. In particular, one of the main events that drove reform in this area was the Wall Street Paperback crisis of the late 1960s. Until then, the system for the delivery of/payment for stocks was entirely paper based. When the trading volume on New York Stock Exchange (NYSE) grew to 10 million shares a day, the system became clearly unsustainable and two innovations were introduced: the immobilisation of stock certificates deposited in a central depository and the introduction of multilateral netting of obligations through the use of Central Counterparties (CCPs).

The process of integration of financial market infrastructure in Europe is a long-lived one. Twenty years ago Europe looked like a patchwork of fragmented arrangements: each country had separate exchanges, separate Central Counterparties (CCPs) and separate Central Securities Depositories (CSDs). Most cash equity trading was uncleared, meaning that original counterparties were maintaining their original exposure. Moreover, there existed significant natural barriers to integration, especially because of the mutual ownership structure. As far as Europe is concerned, there have been five main drivers of integration:

- **Technology**. In the early 1990s trading took the form of "open outcry", based on the model of the Chicago stock exchange (initially introduced for the agricultural commodities market). This model had some advantages, but also acted to a consider-

CONFERENCE PROGRAMME

9:00-9:10 **Opening by Jean Pisani-Ferry** (Director of Bruegel)

9:10-10:55 **Session 1: Integrating Capital Markets Infrastructure: The European Experience**
Since the 1990s the European Union has achieved major steps towards the building of a regionally integrated policy framework for the regulation and supervision of capital markets infrastructure, and actual integration has progressed apace. This session took stock of the changes of the past 20 years, the current policy debates (EMIR, MiFID Review, competition policy) and the lessons for other regional blocs.

Chair: **Zsolt Darvas** (Research Fellow, Bruegel)
Speakers: **Paul Christensen**, Managing Director and Global Co-Head, Principal Strategic Investments, Goldman Sachs International; **Young Do Kim**, Research Fellow, KIF; **Patrick Pearson**, Head of unit, DG Markt, Financial markets infrastructure; **Laurence Walton**, Director of Regulatory Policy, NYSE Euronext's EU Government Affairs Department.

10:55-11:20 Break

11:20-13:05 **Session 2: The challenge of supervising multinational cross-border intermediaries**
The crisis since 2007-08 has highlighted the major and largely unresolved policy challenge of resolving internationally integrated financial services firms, especially in a systemic crisis environment. While the FSB has coordinated global discussions on this issue, the EU experience is unique given both the high degree of cross-border financial integration, including among banking groups, and the existence of a regional framework for legislation, and increasingly also for supervision and crisis resolution with the 2011 creation of European Supervisory Authorities.

Chair: **Christopher Byungho Suh** (Research Fellow, KIF)
Speakers: **Sangche Lee**, Commissioner, Financial Services Commission, Korea; **David Mayes**, BNZ Professor of Finance and Director of Europe Institute, University of Auckland; **Gong Minghwa**, Deputy Director General, China Banking Regulatory Commission; **Nicolas Véron**, Senior Fellow, Bruegel.

13:05-14:00 Lunch

14:00-16:00 **Session 3: Global standards and institutions: how strong can they be?**
The crisis has transformed European attitudes to global financial standard-setting, and cast doubt about the strength of the EU's commitment to global financial harmonization. It has also accelerated the increase in the representation of large emerging economies in global standard-setting processes, but this transition remains unfinished. This session will examine both the most important case studies (IFRS and Basel Accords) and the related institutional / governance issues.

Chair: **Nicolas Véron** (Senior Fellow, Bruegel)
Speakers: **Wang Jun**, Lead Financial Sector Specialist, FPD, World Bank; **Taiki Lee**, Senior Research Fellow, KIF; **Etienne Oudot de Dainville**, Deputy Assistant Secretary for Corporate Financing and Financial Markets, French Treasury; **Michel Prada**, Chair of the IFRS Foundation's Trustees; **Isabelle Santenac**, Global Chief Operating Officer, Ernst & Young Assurance.

16:00-16:10 Closing by **Nicolas Véron** (Senior Fellow, Bruegel)

Presentations from the conference, made available with the permission of speakers, can be accessed at:
http://www.bruegel.org/nc/events/event-detail/event/294-bruegelkif-conference-global-financial-services-integration/

able extent as a natural barrier to a full potential integration because each participant who wanted to trade on a specific market had to be present at the physical location, making it difficult to create links in open outcry markets across different geographical and time zones. Everything changed in the 1990s when trade became electronic. This had a profound effect on the cost and ease of trading, but also on accessibility because any trader could now access a market from any well-regulated jurisdiction in the world. An effective link between exchanges was now within reach.

- **Demutualisation**. Starting in the early 1990s, merger and acquisition activity was facilitated by demutualisation and Initial Public Offerings (IPOs). After 1992 there was a spread of demutualisation, starting with Deutsche Boerse, followed by a spate of IPOs at the turn of the millennium with the underlying objective of integrating post trade infrastructures.

- **Economies of scale and cost considerations**. Market infrastructure is essentially a processing business, both at the trading and post-trading levels. This business is characterised by high costs in building robust trading and clearing platforms and therefore scalability offers prospects of significant cost reduction. After increased commercial pressure in the late 1990s, market participants started thinking about the best way to reap these cost benefits, and the search for the most cost-effective and capital efficient solutions translated into a range of possible horizontally or vertically integrated models.

- **Economic and Monetary Union**. It goes without saying that the advent of the single currency was a huge game changer because it triggered extensive discussion on reform. Natural barriers to integration were removed and replaced by the opportunity for cross border synergies and economies of scale. The effect was even more important because this happened contemporaneously with the spread of electronic trading and exchange IPOs, and national products were soon replaced by European benchmarks.

- **Single market policies**. Back in 2001 the Giovannini group report stressed that the inefficiencies in clearing and settlement processes represented a significant obstacle to integrated financial markets in Europe. At the trading level, the issue was partially tackled with the introduction of the Investment Services Directive in January 1996, creating stock and futures/options exchanges but not removing concentration rules completely. The MIFID Directive (part of the 1999 Financial Services

Action Plan, adopted in 2004 and in force since 2007) introduced further changes especially in terms of a new competitive dynamic in cash equities trading. Concentration rules were prohibited, a Multilateral Trading Facility (MTF) category was created to operate alongside existing regulated markets, and harmonised high-level standards were introduced together with harmonised pre- and post-trade price transparency requirements. In 2003, another report by the Giovannini group was published, identifying 15 barriers to integration, divided into three categories (divergent technical requirements and market practices; differences in national tax procedures; differences related to legal certainty). The European Commission actively worked towards the elimination of these barriers, and the plan was to fix these with harmonised standards over three years (in parallel with the international works on harmonised standards for Central Counterparties).

At the clearing and settlement level, the situation is more complicated. In terms of clearing, financial market integration has not been tackled much so far because European regulators felt that in this specific field, market forces ought to find the right structure. This approach was not successful, as competition policy turned out to be ineffective and not suited to integrate markets and allow cross-border businesses to take places. The outbreak of the crisis in 2008 made it clear that there was not enough focus on the issue, and that there was a clear need for Over-the-Counter (OTC) derivatives businesses to be made more transparent and safe by shifting them into Central Counterparty clearing. This in turn introduced the need to clarify what a Central Counterparty is, what it should be doing and how the risk connected to its business should be managed. For these reasons, Central Counterparties came to the forefront of the EU regulatory effort, but more generally of the global regulatory effort. The recent wave of regulation in the field of OTC derivatives is in fact not only an EU initiative but a global one and the entire effort undertaken in the EU was actually spurred by global problems and got impetus by global initiative undertaken after the crisis in the G20 context. The discussion needs inevitably to be global and regulation must converge, because any attempt to regulate markets at the regional level would be a failure, as the business could easily relocate elsewhere. At the same time, regional specificity in the operational needs of Central Counterparties cannot be overlooked.

The area of settlement is even more complex than clearing, in the first place because of the huge volume of transactions involved ("quadrillions"). The aim of regulation in this field is to integrate settlement systems across Europe and create an internal EU market. As a consequence, the first step undertaken was to regulate Central Securities Depositories (CSDs) by means of single licensing, mutual recognition between coun-

tries to allow CSDs to actively provide services cross borders, and harmonised settlement dates with a short settlement period (2 days after trading) that should reduce the risk in the market. Another important step is the introduction of the right for corporates to issue into any CSD in any member state (not simple, because companies operate under national company law so this proposal poses a problem in understanding which corporate law should apply when companies are allowed to issue shares into CSDs in a different member state). As for clearing, the reform of the infrastructures in the settlement system is occurring under international attention, and the integration of Central Counterparties (CCPs) cannot occur without a corresponding move on Central Securities Depositories (CSDs).

Participants agreed there are several lessons that can be drawn from the European experience. First, in the area of financial market integration it is very difficult to escape from the international environment: the attention has become global and rightly so. The Financial Stability Board plays an important role, and attention is strong at G20 level. Second, particularly in the field of Central Counterparties (CCPs), there starts being more understanding now of the recent developments: it is becoming clear that requiring all OTCs to be cleared centrally in a small number of globally operating CCPs amounts to concentrating a huge amount of risk in a very small number of financial institutions. Therefore the crisis management of them has to be carefully dealt with.

Turning to the Asian perspective, Asian financial market integration is very different from the process undergone by the EU.

The discussion on Asia financial market integration initially was spurred by the 1998 crisis in Asia, concentrating on how to resolve the difficulties of supplying funds in Asia during the currency crisis in 1998. One aim was to efficiently circulate and invest accumulated money from savings in the Asian region. Other drivers were the decision to respond to severe competition in the financial industry, which is led by deregulation of finance and development of Information Technology and the idea to develop the financial industry in Asia through increasing market volume and integrating related infrastructures.

A first issue is how we decide to set the market integration range: the narrowest definition includes only Association of Southeast Asian Nations (ASEAN)[1], whereas the largest include ASEAN+6[2], or even other countries like the East Asia part of OECD, or the Asia-Pacific Economic Cooperation (APEC)[3].

Concerning the alternative scenarios of geographical and economic (financial) integration, each country's preference for the degree of integration is different according to the gains and losses involved. For example:

- Korea's objective is to take a favourable position by expanding its diplomatic relationships from conventional power countries to all Asian countries.
- China aims at checking the US and India, and integrating with Singapore or Malaysia, where Chinese emigrants play a primary economic role. Therefore China's preferred range of integration would be ASEAN+3[4].
- Japan would prefer a broader perspective (ASEAN+6) to check the growth of China, and plan country-based Asia-Pacific free trade.
- The US also has a stake in the process, willing to keep established interests and intensify collaboration with China, especially with regard to Hong Kong.

In general, there is a discussion similar to that about European cooperation about Asian cooperation, differentiating the geographical scope and the intensity of integration. But unlike Europe, Asia does not have an institution for regional political decision-making. There is an argument for establishing an inter-regional market based on self-regulation through the Asian common standard.

A very important issue is the Asian cross border bond market that is not very developed even though both demand for money and savings are huge in Asia. A good example is Korea, whose savings are disproportionately invested in Europe (compared to ASEAN + 3). This feature constitutes a weakness for the region, as it exposes the market to a considerable risk when the global financial market becomes volatile. In such circumstances – as happened during the recent crisis – the regional foreign exchange and bond market can become very unstable.

As a response, a first ASEAN+3 initiative took place in 2003 – the Asian Bond Markets Initiative (ABMI) – with the objective of stabilising the foreign exchange and bond markets in the region and to increase bond investment). The idea was to start from a first stage of local bond market integration, to spur cross border integration and eventually reach a state of deep integration and create an instrument like "Eurobonds".

However, because of the heavy dependence on the US dollar and the immaturity of bond markets and trading systems, the establishment of the cross-border bond market is being delayed, and the ABMI organised in 2003 is still not connected to the practical bond market. Since cross-border financial intermediation is not fully developed,

the establishment of the bond market itself is naturally limited. Also the leadership by Japan of the ABMI has not been enough to date for the realisation of an Asian bond market.

The issue of financial market integration is related to the development of an eventual single Asian currency, which is a remote prospect at best. A single currency would foster the quantitative growth of the cross-border bond market. Although a single currency has not been achieved and is a remote prospect, the safety net to support the liquidity of ASEAN+3 has been constructed by the multilateral dollar swap of CMIM (Chiang Mai Initiative Multilateralisation). An eventual single currency could be phased in gradually, starting with the establishment of a collective investment scheme and of a Monetary and Financial Stability Committee (MFSC) with home currencies pegged to the dollar, which could be followed by the establishment of a common currency ("Asian Currency Unit" – ACU) pegged to the dollar. Home currencies could be fixed to the ACU, which could be followed by ACU circulation and a flexible exchange rate system. However, because of the difference between countries' economic scale, including GDP and the inability to practice independent monetary and exchange policies, a single currency in the Asian region has not progressed. Also, with the euro-area crisis, scepticism about a single Asian currency has increased.

In terms of stock exchange integration, because of changes in regulatory conditions, computerisation of trading and liberalisation of capital movements, competition between stock exchanges has strengthened, as happened in Europe. But a distinctive feature of the integration of stock exchanges in Asia is that stock exchange integration occurs within countries, and not across countries, in contrast to Europe. In this environment, Korea can be seen as a promoter of integration. It has a 16 percent share in the Chang Mai Initiative and tries actively to interchange stock exchange infrastructure with other Asian countries.

Session 2: The challenge of supervising multinational cross-border intermediaries
(summary prepared by Lucia Granelli, Bruegel)

The global crisis has drawn attention to the inter-connectedness of markets and to the role played by cross-border intermediaries. It has highlighted that the first and primary responsibility in avoiding a crisis rests on intermediaries. No regulatory measure can substitute internal risk management practices and internal control systems.

Regulatory authorities play a very important and delicate role in case of crisis, how-

ever. For crises with an international dimension, regulatory gaps or issues of extra-territorial jurisdiction can generate conflicts between different national regulatory requirements and water down the effectiveness of regulatory measures. This is why global finance requires a single complete framework and the elimination of harmful inconsistencies.

Attempts to achieve global supervision of multinational intermediaries have not been successful so far. The Bank for International Settlements (BIS) has issued recommendations on supervision of cross-border banking designed to close loopholes. The set up of regulatory control should be however the starting point for international finance regulation. In this regard, information sharing can be considered as a first step in this direction.

Confidentiality in exchange for information sharing is an issue. If customer information needs to be protected on the one hand, bilateral agreements between banks and supervisory authorities could increase the degree of knowledge of the actual situation of the banking system as well as the ability to perform ex-ante supervision of these institutions. For ensuring full market discipline and squaring the circle, financial supervisors should then share information with central bankers and governments.

Looking at different experiences in some countries could offer inspiration to find a regime for handling large cross-border financial firms.

New Zealand

New Zealand is adopting a regime for resolving cross-border systemic banks that belongs to the end of the spectrum of separation. This system is characterised by the requirement of carrying out resolution calculations during the "value day" in order to avoid breaks in the flow of operations. Moreover, it intends to avoid liabilities for taxpayers. Its plausibility and applicability to other countries can be considered as uncertain though.

In New Zealand systemic banks are all owned by foreign (Australian) banks, which are also systemic in their home country. No bank has gone bankrupt during the global financial crisis, while some non-bank financial companies did. In the aftermath of the crisis, many directors of financial companies have been successfully prosecuted and open bank resolution for systemic banks has been endorsed. All systemic banks must now be locally incorporated and capitalised[5]. They also need to be capable of operat-

ing on their own within the “value day”. On that day, banks are in fact required to estimate likely losses, write-down all their claims in order of priority on a conservative estimate of losses, separate the claims dividing into a frozen and an unfrozen part, and re-open their activities backed by a government guarantee against further losses.

On the merits of the Open Bank Resolution, it can be argued that it does not provide any deposit insurance scheme or depositor preference in the way in which claims are written down. Furthermore, this regulation requires extensive pre-positioning. This involves knowing the eligibility of accounts by customer on any given day, as well as the ability to divide accounts and have residuals operating normally.

The Open Bank Resolution raises questions of plausibility. It seems politically impossible to impose losses on depositors. Notwithstanding its prescription, close outs will anyway be avoided with difficulties and valuation will not be so easy to do (the Irish example docet). Moreover, recapitalisation and long-term measures are left for the future, while a major test of the system is required on a regular basis.

Further concerns come from the fact that the Open Bank Resolution does not take into account the strong link existing between New Zealand systemic banks and their Australian parent banks. Reputation risk implies that parent companies should help their subsidiaries. Considering the different nationality of the parent banks, however, complying with New Zealand requirements turns out not to be trivial. In addition, Australian authorities are likely to bail out Australian banks in difficulties, conceding also a domestic depositor preference, possible creating inequality across borders.

As a result, the overall system could work, but still seems ambitious. Major depositor losses appear implausible, while sorting out break on the day should be avoided. Longer “funeral plans” for bankruptcy crises could be a more realist alternative. Also, banks are not always perfectly separable as required by the resolution framework. For New Zealand banks having an Australian parent bank, this distinction could be easier to carry out because operations at arms’ length are in a separate currency. Conversely, the transferability of the system in some European cases would not work without major costly changes in the bank structure.

China

In China, the China Banking Regulatory Commission (CBRC) issued the Guidelines on Consolidated Banking Supervision in 2008. This text defines the scope and methodology

of consolidated supervision and clarifies the requirements that banks should respect.

The CBRC has also continued to explore various approaches to enhancing consolidated banking supervision. It has conducted consolidated supervision of cross-border activities of banking groups during the processes of licensing and ongoing supervision. Banks have been required to have in place stringent policies and procedures for consolidated management.

Furthermore, the boards of directors of systemic banks have been declared ultimately responsible for the effective functioning of firewall mechanism established to prevent risk contagion. On-site examination on consolidated management has been constantly conducted to prevent cross-border diffusions of crisis. Banks have been also continuously urged to improve consolidated management. Particularly large and joint-stock commercial banks have been affected by this.

The CBRC has increasingly focused on improving supervision on systemic international financial institutions through optimised information collection, off-site surveillance and on-site examination practices. A policy framework for SIFIs should be formulated soon. It should provide a methodology for identifying SIFIs and require stricter supervisory requirements for SIFIs. For this purpose, along the capital surcharge of 1 percentage point for large banks implemented since 2009, liquidity surcharges and stricter large exposure limits for SIFIs are under discussion. The policy framework for SIFIs should also provide indications on activity restrictions and firewalls as well as resolvability of the SIFIs.

The most important element in the Chinese SIFI policy framework is enhanced and intensified supervision. More emphasis has been given to corporate governance and risk management. Offsite and on-site supervision should increase supervisory frequency and intensity.

Consolidated banking supervision should allow the incorporation of cross-border as well as cross-sector dimensions. To improve cross-border supervisory cooperation, from 2009 to 2011, the CBRC convened the supervisory college for three of the largest banks (ICBC, BoC, and CCB). As regards foreign banks operating in China, it has also continued to enhance supervisory cooperation with home supervisors as a host supervisor, starting from the licensing process of foreign banks and then maintaining regular contacts with home supervisors through bilateral visits.

Notwithstanding the improvements, the challenges that Chinese authorities still need to face regard firstly the enhancement of the supervision on financial holding companies. A main supervisor or lead supervisor system may be a good choice for the supervision of financial holding companies. In this case, the lead supervisor would be responsible for the consolidated supervision on financial holding companies, while other supervisors would be responsible for the functional supervision of their relevant sectional affiliates.

Secondly, parent banks should be asked to uniformly apply policies, management procedures, risk management and information transmission systems. The parent banks should exercise adequate oversight over subsidiaries. A centralised information management system could thus help improve the consolidated management of multinational financial institutions.

Finally, for strengthening cross-border supervisory cooperation, the relevant responsibilities of home and host supervisors should be better defined. The home supervisor should be responsible for the consolidated supervision and have an oversight over solvency and liquidity. The host supervisor should be the second in line to supervise foreign bank branches. Memorandum of understandings could thus be amended with concrete and feasible clauses about information exchange.

European Union

It is also useful to look at the EU experience. The European Systemic Risk Board has issued important regulations. Credible management of cross-border banking institutions is however lacking. Financial stability is thus still an issue that needs to be addressed.

The Vickers report proposes a functional ring-fencing concept to preserve the benefits of having a globally integrated financial system. This can be seen as an attempt to take into account the diverse international nature, characterising investment banks and distinguishing them from commercial banks.

Additionally, financial stability faces different challenges in Europe compared with China and the United States. Large European banks tend to have a majority of operations outside of their home country. China has mainly domestic financial institutions, which are nonetheless very large. There are still no clear-cut signals about how and when China will definitely open its financial borders. The United States have functioned so far as an anchor of the global system. In 2008 they did provide liquidity to foreign

banks that could have suffered of temporary illiquidity because of having the US as major counterpart.

Policy cooperation on globally integrated financial institutions remains a major challenge. Information sharing appears to be one of the most important aspects in this regard. Information sharing should be reinforced by a strong degree of coordination among national supervisory authorities. This calls for unified supervisory standards, and perhaps some new forms of specialised public authorities at global level. Multilateral cooperation indeed needs international bodies to avoid a mismatch of compliance.

Session 3: Global standards and institutions: how strong can they be? *(summary prepared by Dana Andreicut, Bruegel)*

Introductory remarks

Before the crisis hit, the EU was a pioneer in adopting financial standards. In the post-crisis era, the EU is still pushing other countries in an international harmonisation effort.

Emerging markets are playing an increasingly important role in international financial standards, including on accounting standards. These economies are now the primary drivers of global growth and are no longer prepared to simply accept standards given to them by developing countries. The IFRS (International Financial Reporting Standards) Foundation has responded to these desires in several ways and emerging markets are now well represented in the organisation. An emerging economies group was also set up, with the Chinese Ministry of Finance providing the secretariat. This group looks particularly at emerging markets and the challenges faced by them when applying IFRS. The outcome of the consultation of the future agenda of the IFRS also placed more emphasis on emerging economies. Furthermore, an IFRS office was established in Japan to underline the fact that accounting standards which in the past appeared either Europe- or transatlantic-centric are in fact a global good.

There is also a need to strengthen and deepen the way in which implementation and enforcement are carried out. This is necessary because the IFRS delivers standards but does not have any responsibility or power to implement or enforce the standards. The question is how to move forward from here. There is a plan which foresees building up a network of relations with standard setters and public authorities at the national and regional level.

China's experience

Looking more closely at Asia, and specifically at the Chinese experience, one can observe that the Chinese regulatory infrastructure is still fragmented. Furthermore, supervision has had a short history, it is still young and simple. On the one hand, there are many signs of a modern banking system, on the other hand there are also relics from the central planning era. Despite this tension, regulation has come a long way and has caught up with the international standards to a large extent.

Many Chinese regulations are developed from the Basel Accords. Where things can be easily replicated, progress is fast. When independence, autonomy or ideological shifts are required, implementation is more problematic. On paper, China is ahead of the game compared with the G20 average with regards to capital requirements.

China has also been contributing to the international rule setting by providing the perspective of emerging market economies. China however also faces some constraints. These include issues such as the international regulatory risk culture and the language barrier. Furthermore, attending international conferences and working groups appears to some as a burden, which results in the under-representation of Chinese regulatory authorities in international meetings.

The 2008 financial crisis has set back China in its financial reform. As the Western system lost some of its shine, many of the Chinese actors are questioning its credibility and believe that the country may be on its way towards its own system. Some scepticism was expressed as to whether this is in fact the case, as China still has a lot of learning left to do. The learning process was disrupted by the financial crisis.

There is also an ongoing debate regarding the implementation of certain regulations and potential negative spill-overs. This is particularly relevant for the implementation of stringent capital regulations. Small businesses were already hit hard by prudential regulation which constrained access to lending. Regulation also impacted the banks' capacity to generate revenue. The application of international standards without due consideration to the Chinese reality has had its downsides. This doesn't mean however that the implementation of international standards should be discontinued, but rather that it should be conducted with care.

Furthermore, banking supervision can only be as good as the banking system itself. If banks are homogenous and dominated by a bureaucratic culture, there are still areas

where internal controls are lacking, moral hazard is rampant and adverse selection is prevalent. In such a setting, it will be unrealistic to expect the bank supervisor to be fully professional and do its work properly. The system is further constrained by the limited capacity of bank supervisory staff.

The Financial Stability Board

A dense regulatory agenda is prevalent in the financial services industry. A new regulatory structure was created in 2009 in the form of the Financial Stability Board (FSB). Before the financial crisis, a variety of regulatory bodies existed, among them: technical standard setters (the Basel Committee, securities market, insurance and accounting regulators), and also a political impulse coming from the G7 and G8 meetings. One role of the FSB is to coordinate standard setting bodies. It thus provides the first interface between political impulses and the financial regulatory agenda. The FSB ensures timeliness by monitoring deadlines and publishing scoreboards on the progress of financial regulatory reform. It furthermore avoids gaps and overlaps, for example it coordinates the work of IOSCO, the CPSS and the BCBS on OTC derivatives and also undertakes joint strategy reviews.

The FSB also implements standards, together with other bodies, in particular the IMF and the World Bank. The FSB will never be as strong and as efficient as the IMF for certain assessments, but it will have the political legitimacy to look at certain issues, as was reflected by its horizontal assessment of compensation schemes.

A Korean perspective

Since 2002, global acceptance of IFRS has grown and more than 120 countries have adopted it or are in the process of adopting it. In 2011, Korea joined the framework. Korean regulators joined because they wanted to improve the transparency of corporate financial reporting. There was also a need to embrace global standards to reduce the cost of capital and raise the value of companies. Another motivation was the need to reduce the production costs of local companies.

Korean regulators provided assistance in the implementation of the new standards. They prepared a roadmap and gathered experts, giving them the opportunity to have an input early on in the process. Furthermore companies were also given sufficient time to prepare for the implementation. Efforts were undertaken to keep the corresponding costs to a minimum.

With the adoption of IFRS, several difficulties emerged however. The ever more complex financial reporting structure added to the compliance burden of businesses. Demand for auditing services is also likely to increase, which results in the need of the accounting industry to continue investing in good professionals.

Looking at the Korean experience, it becomes clear that a strong commitment from both the government as well as from the business community is key for successful implementation of IFRS. The government must sometimes step in and provide the necessary momentum. Emerging economies can ensure success by not rushing in the implementation process. This is especially true in light of recent changes made to global accounting standards. Because the transition to a new regime entails a fairly substantial cost, a cost-benefit analysis is a must. If there is a potential conflict between existing policies and new standards, adjustments should be made and exceptions allowed, ensuring that domestic industries are able to grow. Korea's experience can be an attractive model for emerging economies.

Auditing

With an increasingly global economic order, international standards have become crucial.

Many local accounting standards were privileging a longer term vision regarding business performance. If one looks at IFRS, one finds a shorter term, more market-driven vision regarding business performance. A debate needs to emerge in order to discover what type of performance one wants to see reflected. The Anglo-Saxon perspective favours a more short-run view, while other countries prefer a longer-term view.

The first challenge for auditors concerns the successful implementation of IFRS. All the big four audit networks have improved their organisation, yet they still face the cultural challenge in each country and need to deal with local regulators.

The rules are also very complex, which is challenging. A natural recommendation is to avoid complicating accounting standards. If this fails, the risk is that the financial statements will be understood by only a small group of experts.

Lastly, disclosures are also very important, over and above the financial statements themselves. Not only the quantity of information provided is important, what matters

more is its quality and that the right kind of information is made available.

Discussion

Drawing on the introductory presentations, several comments were made. It was highlighted that Korea is indeed a successful example of IFRS implementation. The recent financial crisis has put the spotlight on accounting for financial institutions, shifting attention from manufacturing entities, which had dominated debates in the mid 90s and early 2000s. Another reality of a changing world is the presence of innovation. The latter continues and develops in a way that may be detrimental to a good understanding of reality. Accountants need to decide how to react to innovation and how to handle it.

There are several ways to deal with the harmonisation of standards and one needs to choose the optimal route. The IFRS Foundation will need the support of the FSB and of the G20. If there is no political will for the harmonisation process and for the support of the implementation process, it will not work.

The discussion further addressed the topic of the FSB, which is facing several problems at the moment. How does one ensure that the FSB has the power it really needs to ensure the implementation of reforms? A risk of the emergence of an overly elaborated architecture, with a plethora of international standard setting bodies, exists, how does one avoid potential complications? How does one ensure that G20 leaders remain focused on this issue once the economy improves?

It was stated that the FSB does not get its strength from legal powers, but from the professionalism of its operations. When it comes to rule setting the strength will persist, but when it comes to enforcement, power belongs to individual jurisdictions. Hence the overall picture is a mixed one. There are however some ways to strengthen the position of the FSB. These include providing the FSB with a stronger institutional standing, by giving it legal personality and greater financial autonomy, bringing about a rebalancing of the FSB steering committee (which was already achieved) to ensure more diverse representation from different sectors (including finance ministers, the Commission etc. alongside central banks). Furthermore, the FSB could also improve its own governance by becoming more transparent.

Reacting to the question on the increasingly complex financial architecture, it was argued that the FSB ensures a unique ongoing cooperation between different kinds of

bodies. Expanding its scope makes it more complex, but this is a part of the process.

The question of China's currency convertibility and the relationship between it and the imposition of new financial standards was also raised. It was argued that currency convertibility depends on many factors, among which the convertibility of the capital account, which needs to precede the convertibility of the Renminbi. Furthermore, if the central bank does not have full independence, then convertibility can be problematic.

The issue of "mock-compliance" was also discussed, more specifically the question of how effective the IFRS implementation is, and whether the quality of compliance is a worry were addressed. Looking at Korea's experience, there is a demand on the government and business sides to adopt IFRS as quickly as possible. Korea needs foreign investors, thus to induce foreign investment the quality of financial reporting needs to be increased. There is an incentive for a transparent implementation of the IFRS and the avoidance of mock compliance.

There was further discussion of the creation of a network of public authorities ensuring that IFRS are implemented in a successful and consistent way. No detailed outline for the project is available at the moment. The need for political backing of IFRS was reiterated and the importance of post-implementation reviews of new standards was also stressed.

A general consensus emerged that there is a need for international governance, which takes into account the existence of different overlapping bodies and ensures a smooth functioning of the system.

The rise of Asia in science (part I)

Reinhilde Veugelers, Bruegel

The shifting geography of scientific output

The US has been the world's largest producer of scientific knowledge for decades, as measured by number of scientific publications in internationally peer reviewed journals*. Since 1994, however, EU countries considered as an integrated area, have outperformed the US in terms of number of publications. Now both the US and the EU (as well as Japan) are losing share relative to Asia, and particularly to China (Table 1).

The annual average growth rate for Chinese scientific publications from 1995-2009 was 15 percent. China only represented 2 percent of scientific publishing in 1995, but by 2009 accounted for about 9 percent of world scientific output. Although the most spectacular and consistent over time, China is not the only example of the Asian rise to prominence in science.

South Korea, Taiwan and Singapore have all increased their share of global scientific publishing. South Korea publications growth rate from 1995-2005 was similar to China's, but slowed in the later period 2005-09. India was on par with China in 1995, but its scientific publishing has increased less dynamically, only picking up some speed recently. Japan has remained more or less stagnant, even decreased its share in world publications in the last period, with negative growth rates.

Although Asia's rise holds for all scientific disciplines, a number of fields stand out. In engineering in particular (but also ch emistry, physics, mathematics and computer sciences) Asia, especially China have made the most rapid progress (see also Veugelers, 2010, 2011).

In engineering, China's share of world publications rose from 3 percent in 1995 to 15 percent in 2009 (Table 2). South Korea has also made substantial progress in engineering, with a share of 6 percent of world publications in this field in 2009. All Asian countries specialise in engineering: their share in this field is greater than their share in all disciplines, as the last column of Table 2 shows. A high degree of specialisation

* Publications and citations as recorded by Thomson's ISI-Web of science journals, which includes only journals that satisfy a number of quality criteria (internationally peer-reviewed). These journals have some English-language bias, and a disciplinary bias in favour of biomedicine and life sciences.

Table 1: The rise of Asia in science

All S&E fields	Share in world total number of publications			Average annual growth rates of publications		
Region/country/economy	1995	2005	2009	1995-2009	2005-2009	1995-2005
United States	34%	29%	26%	1%	0%	1%
European Union	35%	33%	32%	2%	1%	2%
China	2%	6%	9%	15%	14%	15%
India	2%	2%	3%	5%	8%	4%
Japan	8%	8%	6%	0%	-3%	2%
Singapore	0%	1%	1%	9%	4%	12%
South Korea	1%	2%	3%	13	8%	15%
Taiwan	1%	2%	2%	8%	6%	8%

Source: On the basis of NSF, S&E indicators 2012. S&E = science and engineering.

Table 2: Asia's rise in engineering

	Share in world total engineering articles			RSA in engi-neering*
Region/country/economy	1995	2005	2009	2009
United States	0.30%	20.7%	18.3%	0.70
European Union	30.2%	28.3%	26.4%	0.83
China	3%	10.9%	15.3%	1.70
India	2.8%	2.9%	4.1%	1.37
Japan	11.8%	10.2%	6.9%	1.15
Singapore	0.6%	1.4%	1.1%	1.10
South Korea	1.7%	5.9%	5.9%	1.97
Taiwan	2.4%	3.2%	3.7%	1.85

Source: On the basis of NSF, S&E indicators, 2012. * RSA (Revealed Scientific Advantage) is the country's share in engineering articles relative to its share in all S&E articles. A value greater than 1 indicates that the country specialises in engineering.

in engineering can be observed in South Korea, Taiwan and China. This specialization pattern reflects these countries' research priorities, consistent with their emphasis on developing high-technology manufacturing capabilities. Japan has a minor specialisation in engineering, but has also lost relative share in this discipline.

Researchers: gravitating towards Asia

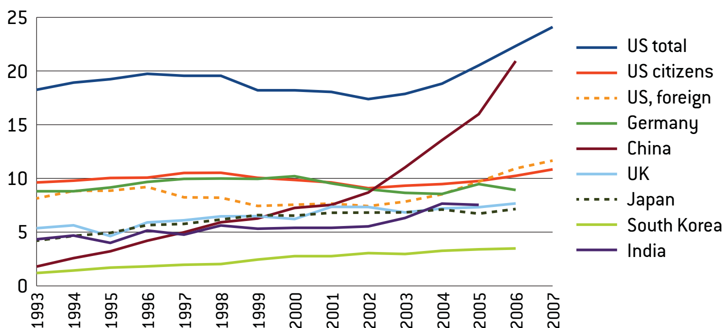
The building up of Asian scientific capacity is also reflected in rising numbers of bachelor, master and PhD degrees being awarded in Asia. This is evident particularly in the fields of natural sciences and engineering (NS&E), and is happening while government in Western countries are concerned about lagging student interest in NS&E, fields they believe offer the technical skills and knowledge that are essential for knowledge-intensive economies.

Figure 1 shows that the number of NS&E doctorates awarded by Chinese institutes have increased more than tenfold since the mid-1990s, to about 21,000 in 2006, nearing the number of NS&E doctorates awarded in the US. NS&E doctorate awards in South Korea and India have also risen.

Furthermore, most of the post-2002 increase in US NS&E doctorates is accounted for by degrees awarded to foreigners. Foreign nationals have earned more than half of US NS&E doctorates since 2006. Half of these foreign PhD students are from East Asia, mainly from China (31 percent), while for India the figure is 12 percent. South Koreans account for 10 percent of all foreign NS&E PhDs awarded in the US. The rise in Asia's own production of PhDs does not seem to crowd out the flows of doctoral students

Figure 1: Asian rising home production of PhDs

Doctoral degrees in natural sciences and engineering, selected countries, thousands, 1993-2007



Source: NSF, S&E Indicators 2010.

going from Asia to the US. Similar trends are also observed in the flow of Asian post-doctoral students going to the US (Veugelers 2010, Stephan 2012). The rise in tertiary degrees awarded in Asia seems to have provided an even bigger and better pool of talent for US PhD programmes.

Concluding remarks

New emerging economic powerhouses in Asia are building up their own scientific capabilities. This holds most for China, but is also true for Korea, Taiwan and Sing0apore. For India, it holds to a lesser extent, while Japan is, like the US and Europe, losing scientific power in relative terms.

This changing geography of the scientific world reflects how selected Asian governments have come to view science and technology as integral to economic growth, and have consequently taken steps to develop their indigenous science and technology infrastructures.

The rise of new emerging science powerhouses in Asia provokes the question of what the impact will be on science, innovation and economic growth. This will be examined in later contributions.

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Lessons from the launch of the US Consumer Financial Protection Bureau

Hyoungsik Noh, KIF

Summary: The US government established the Consumer Financial Protection Bureau (CFPB) in 2011 as an independent agency accountable to Congress. Despite political pressures, the CFPB has taken various initiatives to enhance consumer protection in financial services. The case is a useful guide to the Korean government in terms of setting optimal level of roles and obligations in establishing an equivalent institution, while reducing uncertainty for financial firms by providing timely information on regulatory changes.

Since the global financial crisis, prudential regulation and conduct regulation came to be conducted separately in many countries, such as the US, Belgium, France, the UK, Chile, South Africa, and China. In the US, the Consumer Financial Protection Bureau (CFPB) became primarily responsible for supervising financial institutions for consumer protection, a responsibility that was previously shared betwen the Fed, the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation and the National Credit Union Administration. However, consumer protection related to investment funds and insurance policies are exempt in this regard, and continue to be governed by the Securities and Exchange Commission, the US Commodity Futures Trading Commission and regulators in respective states. Also, financial firms with less than $10 billion in assets will be supervised by prudential authorities as before for consumer protection.

The CFPB is funded directly by the Fed, but as an independent bureau, it is monitored by Congress. The CFPB went through turbulent times filling the top position. When the CFPB launched in July 2011, President Obama nominated Richard Cordray as the head of the new agency, but it took almost six months before the appointment was finalised. Forty four Republican senators refused to endorse the appointment unless the Dodd-Frank Act was revised to weaken the power of the CFPB by replacing the top position with a five-member committee. Finally, the president turned to the recess appointment provision last January. The political backlash is still ongoing as some Republican state attorneys general refuse to sign the memorandum of understanding required for the work with the CFPB. Meanwhile, the CFPB concluded an MoU with the Federal Reserve Board, according to which CFPB employees may participate in the Fed's retirement pension plan. The MoU also mapped out a procedure for transfer of qualified Fed employees to the CFPB.

Because the CFPB is an independent agency monitored by Congress, the Fed cannot veto the CFPB's proposals. And Congress does not interfere with the CFPB's budget, as the bureau draws budget from the Fed within the upper limit set by the Dodd-Frank Act. Nonetheless, the Financial Services Committee of the House of Representatives voted to recommend a cut in the CFPB's annual budget to $200 million to enhance its accountability and reduce the budget deficit of the government.

Despite the political cacophony, the CFPB has taken various initiatives in the past year including *'Know Before You Owe'* and has proposed various regulations to enhance consumer protection. As a part of the efforts to protect borrowers, the CFPB proposed a new regulation on loan estimate and closing disclosure last July, mainly to streamline and consolidate information-disclosing forms for mortgage loans, credit cards and student loans. So far, most of the proposals concern high-cost mortgages, homeownership counselling, compensation to loan originators and mortgage servicing practices. The CFPB also took over from the Fed the task of revising regulations on ability to repay assessments. The revised regulation is scheduled to be finalised by January 2013.

Between July and October 2012, the CFPB ordered restitution and civil money penalties for a few credit card companies – Capital One, Discover, American Express – for fraudulent business practices. These included misleading customers to subscribe to debt repayment insurance, falsely advertising fee-charging optional services as free services, and failing to offer perks and benefits as promised.

If a comparable consumer protection agency is to be established in Korea, the government should decide on the status and power of the institution at a socially agreeable level, and financial regulators should endeavour to strengthen consumer protection with a consistent, long-term vision. The National Assembly is currently reviewing the bill to enact/ revise the acts on financial consumer protection. According to the bill, the new agency will use the budget of the financial regulator as the US CFPB does. However, its supervisory/regulatory powers will be weaker in comparison because the Financial Services Commission (FSC) will have the right to appoint and dismiss the head of the agency, and the agency would have limited power such as conducting investigations for merely fact-checking or urging the FSC or the Financial Supervisory Service (FSS) to take necessary measures.

In May 2012, the FSS established an inside group for financial consumer protection, which is expected to set a precedent for the work of the new agency in the field of providing consumer information, promoting financial education and guarding consumer

rights. Its performance evaluation will provide a guideline to further improve the policy framework for consumer protection. In making these efforts, it will be equally important that the government keeps a consistent policy direction and provide timely information on impending regulatory changes so that financial firms can cope with them efficiently.

Global financial reform and cross-border integration: Asian leadership needed?

Nicolas Véron, Bruegel

Before 2007-08, most global financial reform initiatives were based on a near consensus about the benefits from the free circulation of capital between jurisdictions, and from free cross-border competition between financial services firms. As a consequence of the financial crisis in the US and Europe, however, this near consensus can no longer be taken for granted. One implication is the increasingly tangible possibility of at least a partial fragmentation of the global financial system.

There are many indications that this fragmentation is becoming more likely. Rating agencies were unregulated in most of the world outside the US before the crisis (South Korea being one exception), but the G20 recommended they should be regulated and supervised by all major jurisdictions, with the risk of incompatible regulatory frameworks or inconsistent supervisory practices leading to geographical divergences in rating methodologies within the same rating agency. Another example is over-the-counter derivatives, the trading of which was hitherto cleared bilaterally by market participants, but for which the G20 mandated central clearing in regulated clearing houses, starting in 2013. Many investors fear a division of corresponding markets along the borders of country or currency areas. A third indication is the growing acceptance by international financial institutions, particularly the International Monetary Fund (IMF), of the adequateness of capital control measures under certain conditions, against the previously received wisdom of the so-called Washington consensus.

Around the globe, supervisors have nudged banks to ring-fence assets and maximise lending, in some cases pushing for splitting off of activities previously conducted through branches. In several countries that have run into fiscal difficulties, domestically-headquartered banks have been encouraged to increase their purchases of national sovereign debt. "Financial repression," an expression long reserved to economic historians, has re-entered the mainstream financial vocabulary. These developments have been particularly striking in the euro area, where countries are in principle committed to total openness to capital flows, but where an abrupt U-turn from financial integration to financial fragmentation has been identified by policy authorities including the European Central Bank. The developments are by no means unique to Europe, though, and variations of the same themes have been observed in most if not all main economic regions.

Simultaneously, the pre-crisis momentum for harmonisation of global financial standards has run into some setbacks in crisis-affected countries. The US has delayed any decision about the adoption of International Financial Reporting Standards, which it had endorsed for US-listed foreign firms in 2007 and had seemed on the verge of extending to US-listed issuers in 2008. In another example, the European Union, after championing the global use of the Basel II Accord on capital standards during the 2000s, now seems set to adopt legislation that the Basel Committee has deemed materially non-compliant with the new Basel 3 Accord that was adopted in 2010. For all the G20 talk about global solutions to global problems, financial reform has often seemed to be more driven by politics in the post-crisis context than in the previous period – and as the saying goes, all politics is local.

This new reality creates an unprecedented challenge for Asian policymakers. Asia has gained from dynamic financial development in the past two decades, and is entering a new phase in which cross-border financial openness could have a particularly beneficial impact, leading to better capital allocation and favouring the diffusion of efficient financing mechanisms. Asian policymakers arguably have a vested interest in the continuation or even the acceleration of global financial integration. Until recently, they could take for granted that such integration would continue as a natural consequence of commitments to financial openness in both the US and Europe, which together dominate those global institutions that most influence the global financial order: the IMF, the International Accounting Standards Board, or the Basel cluster around the Bank for International Settlements.

But this assumption that the West will champion further cross-border openness of the global financial system can no longer be taken for granted. As a consequence, Asian policymakers may have to take a more prominent leadership position in global financial reform discussions to make sure that the impetus towards global financial integration is not reversed. This would be a new situation. Some Asian policymakers may feel ill-prepared for it, but even so could find its implications difficult to escape.

Cooperation between home and host countries on the supervision of multinational banking groups

Sungwook Park, KIF

Summary: With regard to oversight of multinational banks, supervisory authorities in home countries used to play a greater role than those in host countries. However, the recent global financial crises underlined the need for more intervention by host countries. As a host to many multinational banking groups, the Korean government needs to inspect whether there are regulatory loopholes in financial supervision, and to make greater efforts to strengthen global-level cooperation.

The bankruptcy of the German bank Herstatt, in 1974, highlighted the need for international cooperation in supervising multinational banks. At the time, the German supervisory authorities started the bank's bankruptcy proceedings after the local market closed for the day, but, it upset the global FX market as the bank failed to make settlements worth $600 million in the New York market which was still open. The term, Herstatt risk, came from this episode which refers to a counterparty risk associated with FX settlements. Immediately afterwards, central bank governors of the G10 countries formed the Basel Committee for Banking Supervision (BCBS) for the better coordination on banking oversight.

The BCBS issued the Basel Concordat in 1975, a guideline on the collaboration between home and host countries over banks' overseas operations. Its main purpose was to ensure effective supervision without regulatory blind spots, and as such, it promoted information sharing between home and host countries' supervisory authorities. In 1983, the Committee revised the Concordat and gave a mandate to a home country for the worldwide consolidated supervision. It put together supervision criteria in 1992, emphasising the home country's information-collection right. These changes followed several banking scandals in which multinational banks (eg Italy's Ambrosiano bank in 1982, and Luxembourg's BCCI in 1991) moved their operations to tax havens or other loosely regulated places to circumvent supervision in their home countries.

However, the recent global financial crises and the collapse of Lehman Brothers underscored the importance of more active intervention by host countries. When large multinational banking groups go bankrupt, the shock spreads to their subsidiaries and branch offices in the host countries. As the Concordat was made during the time when banks' overseas operations had much less influence on both home and host countries,

'systemic risks' were hardly taken into account. If a bank's offshore business is not as systemically important in the home country as in the host country, the former would be reluctant to share information with the latter (see Table 1). Further, if the business of a multinational bank deteriorates, the home country is likely to conceal related information in case the host country ringfences the local branches to block out the adverse effects.

Cooperation between home and host countries on the oversight of multinational banks continues to be a controversial issue because of the financial trilemma among the conflicting policy goals: free cross-border banks, global financial stability, and national authorities. To break the impasse, the euro-area countries are considering a universal approach of forming a banking union, forgoing the national authorities. Conversely, a territorial approach may be considered to strictly ringfence business of local branches from that of the headquarters, which would deter free cross-border banking activities. Between these two extreme scenarios, countries are exploring how to gradually deepen cooperation through stronger supervisory colleges, elimination of legal barriers, and better incentive systems. Also, it is important to clarify bankruptcy proceedings for G-SIFIs to further promote cooperation between supervisory authorities in both home and host countries.

Against this background, Korea, as a host country of many multinational banks, needs to check for regulatory loopholes in banking oversight, and work closely with authorities of home countries to share information. Last but not least, the Korean government needs to voice its opinions more clearly in global discussions on the issue of regulating G-SIFIs to promote the perspectives of the emerging economies.

Table 1: Incentives for information sharing between home and host countries

		Home country	
		SI*	NSI*
Host country	SI*	(a) Active information sharing	(c) Home country lacks incentives to share information
	NSI*	(b) Host country lacks incentives to share information	(d) Both countries lack incentives to share information

Source: Herring, Richard (2007) 'Conflicts between home & host country prudential supervisors', in Evanoff, Douglas, George Kaufman and John LaBrosse (eds) *International Financial Instability*, World Scientific Publishing Co. * Overseas operation of the multinational bank is systemically important (SI)/not systemically important (NSI).

Financial regulatory reforms in the UK and US to manage systemic risks and strengthen consumer protection

Jabonn Kim, KIF

Summary: Compared to micro-prudence of financial institutions, 'systemic stability' and 'consumer protection' are harder to achieve because they are beyond the reach of the 'invisible hand' and of individual supervisory authorities. For this reason, it is of utmost importance to clarify who are the responsible parties for financial systemic stability and consumer protection. An independent regulatory committee for each of systemic risk and consumer protection, with strong legal bases, is expected to work most effectively.

In the financial industry, individual financial companies have a incentive to ensure their own soundness because it is necessary for business management and sustainability in the long run: this could be dubbed the 'invisible hand.' Furthermore, micro-prudence is incentivised even involuntarily since micro-prudential standards are required by the Basel committee. However, 'systemic risks' and 'consumer protection' are not taken care of by the 'invisible hand' or voluntary incentive mechanisms, since they are not included in the objective functions of financial firms.

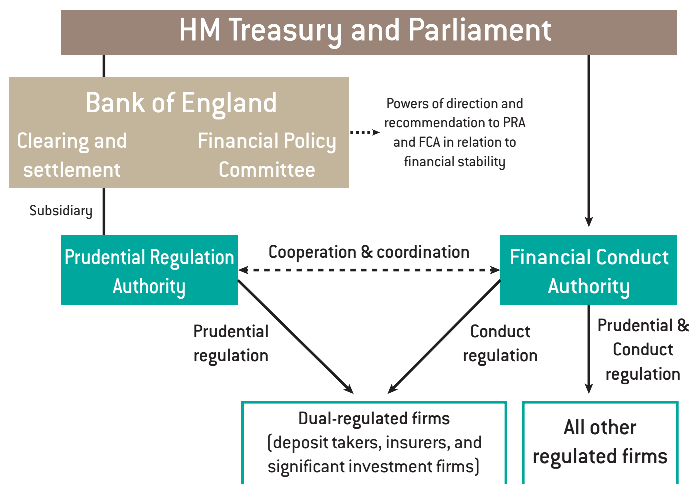
The United States and United Kingdom recently adopted two measures for systemic stability. First, the objective function of SIFI (systemically important financial institution)-type financial firms must be constrained by capital surcharges and liquidity regulation for 'systemic risks' and 'customer protection.' Second, legal frameworks underpinning systemic stability have been constructed, such as the Financial Stability Oversight Council (FSOC) in the US. This implies that regulatory concern has expanded from micro-prudence to macro-prudence to enhance financial stability and customer protection.

The FSOC is a legal framework for financial stability based on the Dodd-Frank Wall Street Reform and Consumer Protection Act. The council has a statutory mandate that creates, for the first time, collective accountability in terms of regulatory cooperation, information sharing and consolidated supervision (US Treasury, 2010, *Financial Stability Oversight Council*). Since the council launched in October 2010, 19 meetings have been held to examine systemic risks and find measures to address them.

Meanwhile, in the UK, the Treasury established a similar body, the Financial Policy Committee (FPC), based on the Financial Services Bill. Before that, the tripartite system – the Bank of England (BoE), the Financial Services Authority and the Treasury – shared the task of supervision based on memoranda of understanding, but no institution was clearly responsible for the job. To fix this, the Treasury installed the FPC within the BoE, expressly assigning the job of monitoring systemic risks to the bank. From a legal perspective, the BoE is under the Treasury, and accordingly, it can be said that the Treasury and the Parliament can now check the BoE's supervisory activities. The interim FPC held meetings in June and September this year to examine systemic risks and discuss proper regulatory measures. Additionally, the Financial Conduct Authority (FCA) was established exclusively to protect consumers and to regulate financial firms' conducts, as a peak of the so-called 'twin peaks' that may contribute to minimisation of the room for conflicts between prudential regulation and financial conduct regulation (see Figure 1).

The implication of regulatory reforms in the two countries is that systemic risk might be better taken care of by a regulatory body for which it is a sole responsibility. For systemic stability, the US adopted a 'collective accountability scheme' in which different regulatory bodies take supervisory looks at the SIFIs of each financial sector, while the UK adopted a 'single responsibility scheme' under the BoE in which a

Figure 1: UK financial regulation



Source: 'The financial conduct authority: approach to regulation', FSA, June 2011.

consolidated regulatory body, Financial Supervisory Authority (FSA), took a supervisory look at all the financial firms across financial sectors.

What useful lessons from this are there for Korea? In a country in which it remains undetermined whether a legal regulatory body for financial stability oversight should be organised, supervisory authorities may work individually on how to measure and cope with systemic risks. However, it will be hard to effectively oversee and regulate financial systemic risks without comprehensive coordination between regulatory bodies, since systemic risks are triggered and affected by diverse factors beyond the reach of individual regulatory bodies, such as monetary and cyclical macroeconomic shocks and the credit risk of SIFI-type financial firms (SIFIs). Therefore, the government needs to establish legal grounds to establish a committee equivalent to the FSOC in the US or FPC in the UK.

In addition, it should also be noted that in the UK, parliament may effectively check the activities of the regulatory authorities. Because of information asymmetry between consumers, regulatory bodies, and financial firms, it is recommendable that the Korean National Assembly takes on the role of ultimate monitor for regulatory supervisory regimes and activities. To do better job in this role, there should be a single monitoring committee, to avoid conflicts of interest between multiple assembly committees. Otherwise, politicians may push more for their own rents rather than for systemic stability and consumer protection.

Real exchange rate adjustments around the globe

Zsolt Darvas, Bruegel

Summary: Real effective exchange rate adjustment trends in the aftermath of the global financial and economic crisis were generally not out of line with historical developments, and were in the right direction for a number of major currencies, though with major exceptions. The largely asymmetric impact of the crisis on advanced and emerging countries and their different outlooks call for an exchange rate adjustment between the two groups. Yet neither of the two groups is homogeneous and, in particular, a weakened euro exchange rate toward all trading partners would help to overcome the euro crisis.

The real effective exchange rate (REER), which measures the development of the real value of a country's currency against the basket of the trading partners of the country, is an important indicator for assessing the change in price or cost competitiveness of a country. Changes in the REER can influence trade flows and provide incentives for the reallocation of production between the tradable and the non-tradable sectors. Various relative price and cost measures are used to adjust the nominal change in the exchange rate (as discussed eg in Chinn, 2006), of which the consumer price index (CPI) is the most frequently used, because of to its relative availability and cross-country comparability.

Figure 1 on the next page shows the developments of monthly CPI-based REERs for various countries around the globe between 1995 and 2012: five advanced economies (top-left panel), the BRICS (top-right panel), five Asian countries that experienced massive exchange rate depreciation during the 1997-98 Asian crises (bottom-left panel) and five larger emerging and developing countries from Europe and Africa (bottom-right panel).

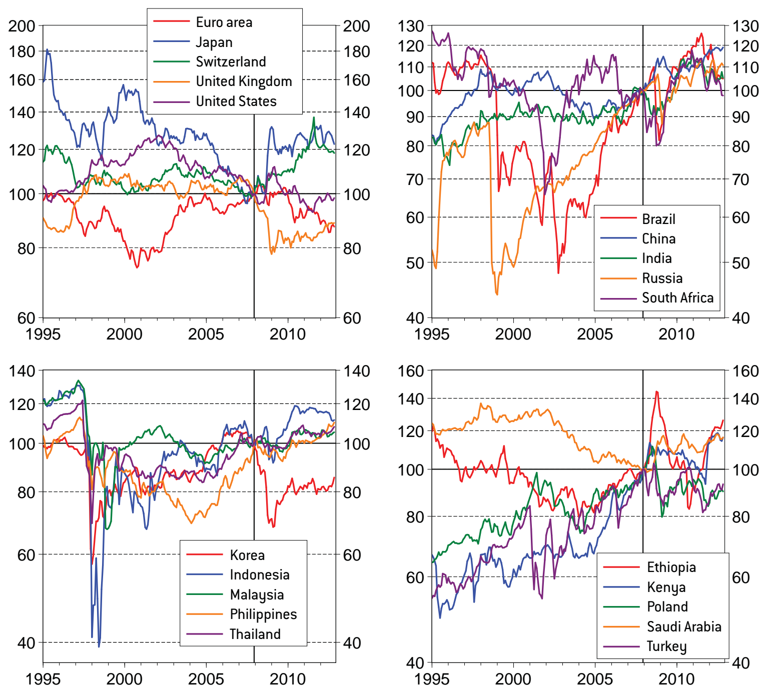
A first visual impression from the panels is that movements since 2007 have not been out of the ordinary relative to the developments of the preceding decade. The rapid rise of the Swiss franc is a clear exception, since the Swiss REER increased by almost 40 percent from December 2007 to August 2011. In August 2011, the Swiss National Bank introduced an upper ceiling to the franc/euro exchange rate in order to reverse the appreciation trend.

Switzerland received a huge inflow of capital related to the uncertainties of the euro-

crisis, and thereby the franc has been considered a 'safe-haven currency'. The rapid rise of the Japanese yen may also ben explained by safe-haven motivations, yet in late 2007 the yen had a very weak exchange rate and even after the appreciation, which followed the collapse of Lehman Brothers in September 2008, the Japanese REER remained below the average of the preceding decade.

Interestingly, two other safe-haven currencies, the US dollar and the UK pound sterling, did not appreciate much, even though the record low levels of their government bond yields would suggests that their demand has increased. The dollar appreciated somewhat after the Lehman shock, but has fallen subsequently, possibly due to the monetary policy of the Federal Reserve (three rounds of quantitative easing plus zero interest rate policy which is declared to last for a number of additional years). In cumulative terms the dollar's REER is almost at the same level where it was in late 2007.

Figure 1: Consumer prices index-based real effective exchange rates, January 1995 – November 2012 (December 2007=100)



Source: The November 2012 update of the database of Darvas (2012a), which includes annual CPI-based REERs for 178 countries (plus the euro area) and monthly REERs for 153 countries (plus the euro area), using a consistent methodology. Note: the REERs are calculated against the basket of 138 trading partners. The vertical line indicates December 2007.

And sterling has even depreciated sharply and is still about 10 percent weaker than in late 2007.

The currencies of those emerging countries that have floating exchange rates typically depreciated after the Lehman shock, but in most cases this proved to be temporary. Brazil, for example, had a rather strong exchange rate before the Lehman's collapse and faced a sharp but only temporary depreciation, and its REER increased to historical highs by the summer of 2011. Korea, on the other hand, is an interesting exception. Among the five Asian countries suffering from massive exchange rate deprecations in 1997-98, Korea was the only one in which the REER depreciated significantly after the Lehman shock, with the deprecation proving rather persistent. Other exceptions are the Polish zloty and the new Turkish lira, which also remained at a lower value than in late 2007, though both currencies appreciated very significantly before the crisis.

Turning to countries with limited exchange rate flexibility, such as China and Saudi Arabia, the developments of their exchange rates were largely determined by the movements of the US dollar. Following a long period of nominal fixity to the dollar at a rate of 8.3, the Chinese renminbi appreciated to about 6.85 from mid-2005 to mid-2008, when it was fixed again at this rate till mid-2010. Then the renminbi was again allowed to appreciate against the dollar to a rate of 6.25 in November 2012. Since the dollar was depreciating from about 2001, so did the renminbi till 2005 and it also followed the dollar's rise and fall after Lehman's collapse till mid-2010, when the renewed nominal appreciation and the somewhat higher inflation started to push up the real rate. In real effective terms the cumulative appreciation of the renminbi was close to 20 percent from December 2007 to November 2012. Along with domestic reforms including a gradual opening of the capital account*, the real exchange rate appreciation may have helped to reduce the current account surplus of China and led to a deceleration in the pace of reserve accumulation. These developments were the major reasons why the recent report of the US Department of Treasury (2012) does not name China as a currency manipulator. Saudi Arabia, on the other hand, keeps a tight peg to the dollar and continues to possess very large current account surpluses, which are supported by high oil prices.

* See Angeloni *et al* (2011) for an assessment of the roles of structural reforms and renminbi appreciation in global rebalancing.

Are these REER developments in line with economic principles?

There is a fundamental asymmetry between advanced and emerging countries concerning the short-term impact of the global crisis and also their medium-term outlooks (Darvas and Pisani-Ferry, 2010). In most advanced countries private sector deleveraging coupled with banking problems and fiscal consolidations set demand subdued for years to come. The output loss during the crisis proved to be permanent. In contrast, emerging countries were barely hit by the crisis with the main expectation of central and eastern European emerging countries. This fundamental asymmetry needs to be compensated by some adjustment in real exchange rates, even though the exports from the block of advanced countries to the block of emerging countries are not that high. Following the turbulent period immediately after the Lehman shock, some adjustment has started in this direction, but probably it is fair to claim that more is needed.

Yet neither the emerging, nor the advanced countries constitute homogenous blocks. Emerging countries that have open capital accounts and floating exchange rates are more exposed to volatile capital inflows than those that impose capital controls and manage their currencies tightly.

Within the group of advanced countries, the euro area has arguably the most vulnerable situation and the weakest outlook due to the triple crises of balance of payments, banking and sovereign of some of its members. A weaker euro would help a lot to stabilise the situation. The euro's external REER has weakened about 13 percent since December 2007 and is now close to the historical average of the last one and a half decades (Figure 1), yet a further sizeable depreciation would be essential (Darvas, 2012b). It would help the extra-euro export of the troubled southern euro-members, but would help Germany and other stronger countries even more due to their larger tradable sectors. That in turn would boost inflation and wage increases in Germany, thereby helping the intra-euro adjustment of the real exchange rates and lessening the need for price and wage deflation in southern Europe. It is difficult to achieve deflation, but a deflation would also worsen both private and public debt sustainability. In order to achieve a weaker euro, the European Central Bank should only to what other major central banks, such as the Federal Reserve, the Bank of England and the Bank of Japan have done: a more accommodative monetary policy stance by a sizeable quantitative easing and more interest rate cuts accompanied by a commitment to keep the rates low for a longer period.

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Towards further liberalisation of the capital account in China

Mansoo Jee, KIF

SUMMARY: In China, discussions on capital account liberalisation have recently intensified. The Chinese government plans to gradually liberalise certain capital account items in the areas in which there is sufficient demand from the real economy and areas with relatively low investment risk, while maintaining tight regulation/supervision over the other items of the capital account and the financial sector. In response, Korean financial institutions need to establish strategies that will enable them to take part in this change, especially in the areas expected to undergo capital account liberalisation in the early stage.

Discussions on capital account liberalisation in China made significant headway in 2012, and various moves will be made in this direction to further open the capital account. China became one of the International Monetary Fund's Article 8 countries in December 1996, making its current account fully convertible. After its accession to the World Trade Organisation in 2001, China partially opened its financial market, including commercial banks, while maintaining strict control over cross-border FX flows on the capital account.

However, the efforts to liberalise the FX market were suspended for years with the onset of the global financial crisis. Then, in January 2012, Zhou Xiaochuan, then the governor of the People's Bank of China (PBOC), said that China would not refuse to make its currency increasingly convertible on the capital account. Following this, the PBOC's Financial Survey and Statistics Bureau published a report in February 2012[1], in which it presented both short- and long-term roadmaps for capital account liberalisation; the report also drew parallels with the experiences of other countries, and acknowledged that the time was ripe to accelerate liberalisation of the capital account.

The State Administration of Foreign Exchange (SAFE) announced a plan to *"liberalise the capital account in an orderly manner"* in a press release; top officials, including Xie Ping, Vice President of the China Investment Corporation (CIC) and Guo Shuqing, Chairman of the China Securities Regulatory Commission (CSRC) and a strong candidate for the next governorship of the PBOC, repeatedly emphasised the need for, and the im-

1 See http://www.pbc.gov.cn /image_public/UserFiles/diaochatongjisi/upload/File/ (in Chinese).

portance of, such moves. In September 2012, the PBOC published the 12th Five-year Plan to Enhance and Reform Financial Industry jointly with three major financial supervisory authorities and the SAFE, which set out the order and principles of capital account liberalisation and emphasised coordination with financial market liberalisation and internationalisation of the renminbi.

China seems keen on capital account liberalisation amid soaring overseas investment by Chinese businesses and financial institutions, and the quickening pace of the renminbi's internationalisation in the wake of the global financial crisis. Between 2007 and 2011, China's ODI (outward direct investment) almost tripled from US$ 26.5 billion to US$ 74.6 billion (Table 1). And the government acknowledged that capital account liberalisation would be a prerequisite for internationalisation of the renminbi, and would also facilitate the implementation of the New Development Strategy to shift the focus of the growth strategy from exports to domestic demand over the mid-to-long term.

Moving towards capital account liberalisation, the Chinese government emphasises a step-by-step approach to minimise FX market instability. Currently (Table 2), China completely bans transaction in four out of 40 items on the capital account (by IMF criteria) including foreigners' issuance and trading of derivatives within China; it partially allows 14 items including investment by Qualified Domestic Institutional Investor (QDII) and Qualified Foreign Institutional Investor (QFII). The country plans to gradually liberalise the capital account, lifting restrictions item-by-item.

Meanwhile, the 12th Five-year Financial Plan mapped out plans to a) start with deregulation of direct investment; b) expand convertibility in equity market through liberalisation of domestic capital markets and foreign stock investment; c) ease regulation

Table 1: China's ODI (US$ billions)

	2007	2008	2009	2010	2011
Total ODI	26.5	55.9	56.5	68.8	74.6
Financial investment	1.7	14.1	8.7	8.6	6.1

Source: Ministry of Commerce (MOFCOM)

Table 2: Capital account liberalisation in China (as of 2011)

Status	Unconvertible	Strictly restricted	Partially restricted	Fully convertible	Total
No. of item	4	22	14	0	40

Source: PBOC

and reform the supervisory system on overseas borrowing; and d) gradually allow individuals' transactions on the capital account.

Additionally, the PBOC introduced both short- and long-term road maps to ensure sufficient demand from the real economy, and to start with capital account liberalisation in areas with fewer risks. Easing regulation on direct investment would be a short-term task (1~3 years), and deregulating commercial finance with relatively less risk would be a mid-term task (3~5 years). In the asset market (real estate, equity and bond), a long-term task will be implemented over five to ten years by first liberalising bond issuance and parceling-out, and allowing non-residents' domestic transactions.

The Chinese government sees that poor external debt management was largely responsible for the financial and fiscal crises in East Asia and the euro area. Thus, it is likely to maintain close supervision over external debts. Various control/supervisory measures will be maintained over in- and outflows of convertible FX, and the government will intervene in case of market shocks or if excessive short-term, speculative capital inflows are detected.

Against this background, Korea should make efforts to share its experiences with China, and establish strategies to deal with the advancing capital account liberalisation in China. Both countries are extensively analysing related experiences, and sharing information would help to enhance bilateral financial cooperation, and better foresee the movements of the Chinese capital market. Korean financial institutions should pay closer attention to the areas of early capital account liberalisation (eg FDI and trade finance) that will have immediate impact on the market, and should explore how to respond to the forthcoming changes.

Competition policy trends in South Korea

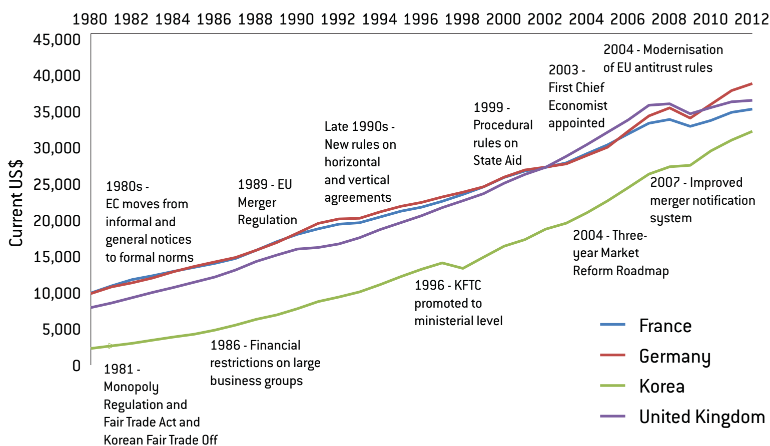
Marco Antonielli and Mario Mariniello, Bruegel

ECONOMISTS OFTEN TALK about a strong correlation between market development and enforcement of competition policy rules. That is not surprising: competition policy aims at removing obstacles to economic activity, such as barriers to market entry, and it encourages new businesses to challenge incumbent players' market power. Economic theory suggests that this dynamic brings about an increase in total production. It also suggests that the pressure from competition can trigger a 'Darwinian selection', so that firms are forced to be as efficient as possible if they want to survive in the market. This generally means lower production costs, higher quality and lower prices paid by consumers. Conversely, in specific circumstances, excessive competitive pressure may reduce incentives to invest (reducing profit expectations); and therefore, slow down the growth pace.

In more general terms, the increase in the complexity of the economy would require more regulation, in order to guarantee that companies compete on a level playing field and the optimal rewards for efficient investments are provided.

Figure 1 compares the evolution of the three main economies within the European Union: Germany, France and the United Kingdom, with South Korea's economy in the 1980-2010 period. The graph shows that as market economies have developed and

Figure 1: Progress in competition policy and GDP per capita levels (PPP), selected countries



Source: IMF World Economic Outlook

grown, competition policy rules have also evolved, with merger control and antitrust enforcement being refined over time. For Europe, national competition laws and authorities were harmonised under European Union coordination. 'Anti-monopoly' principles were originally set out in the Treaty of Rome of 1957 but the effective application of these rules only dates back to the 1980s[1]. In this period, competition policy mostly served to abolish barriers between member states and the creation of the single market. The European Commission replaced informal notices with formal norms and exemptions blocks lists. Subsequently, the major steps were the adoption of the Merger Regulation in 1989 (competences transferred to cthe Commission from national authorities and major attention shifting towards consumer welfare), new rules on horizontal and vertical agreements in the late 1990s (which permitted the most harmful ones to be focused on), the introduction of State Aid procedural rules in 1999, the first appointment of a Chief Economist in 2003 (meaning that economic analysis became crucial in assessing how mergers or cartels hamper competition in practice), and finally the modernisation of EU antitrust rules (aimed at reforming governance also with respect to national authorities).

In South Korea competition law and policy has progressed substantially in the past 30 years. The Monopoly Regulation and Fair Trade ACT (MRFTA) were adopted in 1981, but were successfully enforced by the competition authority, the Korean Fair Trade Commission (KFTC), only after 1997. The Korean economy of the 1970s was dominated by public intervention, and competition was restricted as large business groups emerged. Shielding growing companies from competition might have proved successful, particularly when business was still in its infancy. However, the lack of competition was accompanied by a number of significant drawbacks, namely corruption, irregularities in market functioning and inefficiency of the internal organisation of large business groups[2].

Corrections were later introduced. In 1986 restrictions on cross-shareholding between affiliates of the same group, ceilings on equity investments and restrictions on debt guarantees were imposed[3]. The 1990s were marked by increasing independence of the KFTC as the sole institution in charge of enforcing the MRFTA: in 1996 the KFTC became an agency at Ministerial level, but with limited governmental control. Particularly

1 National authorities were already enforcing their own competition laws, with differences in application.

2 *Annual Report 2011*, Korean Fair Trade Commission.

3 Since then, the regulation and oversight of large business enterprises, especially relating to ther governance and ownership structures, has become one of the most significant functions performed by the KFTC (OECD, 2004).

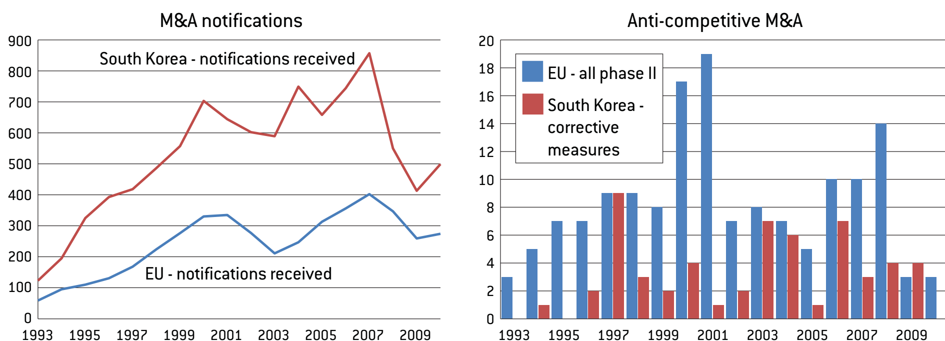
relevant during this period were improvements to competition-restricting regulations, the prohibition of anti-competitive mergers of any size, the introduction of a leniency programme and the new substantive test for dominant position and merger assessment based on market concentration. Competition law enforcement benefited from this legislative wave. In more recent times, the KFTC put in place the *'Three-year Market Reform Roadmap'* which included an increase in the upper limit for fines and a reward programme to encourage the reporting of violations. In 2009 the merger notification system was revised.

Competition law enforcement in the last 20 years – a graphical overview

Mergers and acquisitions

Figure 2 compares EU and South Korea merger activity in the last 20 years. Panel (a) shows that the number of annual M&A notifications to the respective authorities has been broadly increasing since 1993. The difference in the absolute number is explained by the fact that only mergers above the EU threshold (most importantly, the aggregate world-wide turnover of the undertakings concerned exceeding €5 billion) are notified to the European Commission (smaller mergers are dealt with at national level). The fall observed for notifications between 2007 and 2009 reflects the economic crisis in Europe and South Korea and a reduction in the total turnover of merged enterprises triggering the obligation to notify the KFTC in South Korea. Panel (b) compares the number of mergers for which a deeper investigation was deemed necessary to identify and possibly correct potential anti-competitive effects within the two jurisdictions. In the case of the EU, these are the ones that could not be cleared in phase I, and therefore include phase II, phase II with commitments and prohibitions; similarly, in

Figure 2: M&A activity in South Korea and the EU



Source: Statistical Yearbook 2010 and Annual Reports of the KFTC; European Commission competition statistics.

the Korean jurisdiction, corrective measures are issued to rectify the proved anti-competitive effects and can imply divestments in favour of third parties or prohibitions[4]. During the period 1993-2000 in South Korea, out of 3200 notifications, 21 corrective measures were issued, while in the period 2001-2010 out of 6305 notifications, 35 corrective measures were issued.

South Korea merger law is substantially different to EU merger regulation. Within the EU, mergers are assessed through a balancing exercise: anti-competitive effects (such as incentives to increase prices) are compared to pro-competitive effects (such cost savings). If, ultimately, the net-effect on consumers is negative (that is: consumers should expect a welfare loss due to the merger) then the merger is blocked, unless effective remedies can be implemented. In South Korea, instead, efficiencies that do not accrue to the harmed consumers can be taken into account in the final assessment. Within the concept of 'enhancing-efficiency effects', the contribution to employment, regional economic development and stable supply of energy and other 'nation-wide efficiencies' are taken into account. Also, the rise of a global competitor is taken into account when assessing a merger: *"often large mergers may be efficient, especially if markets are international in scope"* (OECD 2004).

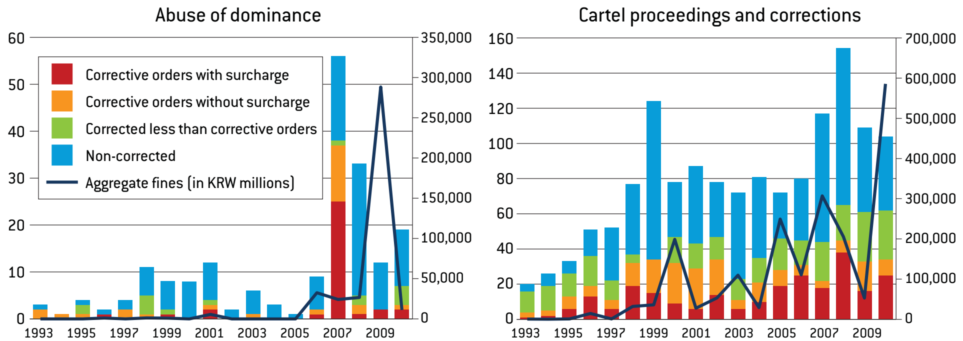
Antitrust

Figure 3 shows the pattern over time of antitrust enforcement in South Korea. In the left panel, the total number of investigations with respect to abuse of dominant position is shown by the vertical bars. The blue line displays the aggregate fines imposed by the KFTC for violations in this field. A breakdown of investigations into the types of correction imposed by the KFTC is shown by the different colours of the bars: a corrective order is issued when serious anti-competitive and harmful features are detected and can imply structural or behavioural remedies as well as surcharges, ie fines; other types of corrections include warnings, voluntary corrections and references to the prosecutor's office (in Figure 3, they are labelled as corrected without corrective orders); all investigations leading to clearance with no commitment are labelled as non-corrected.

As can be seen, both the number of investigations and fines were low before the second half of the 2000s. The peak in investigations and number of fines observed in 2007 reflects the many cases of abuse of market dominance by multiple system operators. In 2009, the KFTC fined Qualcomm for KRW 273 billion (approximately €154 million at

4 In the KFTC's statistics, it is not possible to distinguish prohibitions from approvals with remedies.

Figure 3: Antitrust enforcement in South Korea



Source: KFTC Statistical Yearbook 2010.

the time) for its conduct in the mobile communication market, which explains the spike in aggregate fines for that year.

The right panel shows the number of investigations and aggregate fines with respect to improper concerted acts, including cartels. As the figure shows, the KFTC has increased its enforcement activity in recent years. Substantial fines have been issued since 2000. An increasing number of cartel investigations have been carried out.

Under the Clean Market Project, in 2001 the KFTC started to target the possible emergence of cartels in the recently deregulated service sector[5] and it applied corrective measures in 33 industries by 2005[6]. More recently, in 2011 the KFTC successfully discovered a cartel of LCD screens manufacturers, including Samsung and LG, two of the largest business groups in Korea. In that case, the KFTC imposed a total fine of KRW 194 billion (approximately €121 million, at the time)[7].

KFTC has had a good record on stopping harmful horizontal agreements (OECD, 2004): between the coming into force of the law in 1981 and 1997, the KFTC issued 74 corrective orders of which 30 were with surcharge; but from 1997 to 2010, it issued 386 corrective orders, of which 220 were with a surcharge (141 only from 2005).

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5 From OECD (2004).
6 From *Annual Report 2012*.
7 From the official press release.

The rise of Asia in science (part II)

Reinhilde Veugelers, Bruegel and KULeuven

The implications of Asia's scientific rise

A previous article in this newsletter (issue 3, December 2012) demonstrated how selected Asian governments have come to view science as integral to economic growth, and have consequently taken steps to develop their science infrastructures. This holds most for China, but is also true for Korea, Taiwan and Singapore. The rise of new emerging science powerhouses in Asia provokes the question of what the impact will be on science. In particular, does a shift of scientific power to Asia mean that the flows of scientific talent from east to west will dry up, and are Asian scientific centres new cooperation partners in science for the west?

Shifting patterns in international mobility of students and scholars

The rise of Asia's scientific power has provoked western concern that the flow of foreign talent from Asia will slow. United States universities in particular import much of their scientific talent from abroad, particularly from Asia, and are worried about continuing to be able to fill their research centres with imported brains. This concern, however, is not justified by the data. Overall, the evidence shows that the international mobility of (Asian) scientific talent continues to increase.

Most of the post-2002 increase in US natural sciences and engineering (NS&E) doctorate production reflects degrees awarded to foreigners. Foreign nationals have earned more than half of US NS&E doctorates since 2006. The China-US flow is by far the most important. China's share of the PhD degrees awarded by US institutions to foreigners continues to grow, being almost one third of all 'foreign' PhDs in the US in 2007 (Table 1). India's share is 12 percent. South Korea's share is 10 percent of all

Table 1: All non-US recipients of US PhDs by home country, all fields

	Share of total (%)		Plans to stay (%)	
	1996-99	2004-07	1996-99	2004-07
China	26	31	93	91
India	12	12	90	89
South Korea	9	10	50	69
Europe	14	14	71	75

Source: NSF, S&E 2008/2010

foreign NS&E PhDs awarded in the US.

The rise in Asia's own production of PhDs (as the previous article in this newsletter documented) thus does not seem to be stopping the flows of students from Asia to the US for PhD training. Similar trends are also observed in the flow of Asian post-doctorate students to the US (Veugelers, 2010; Stephan, 2012). On the contrary, the rise in own tertiary degrees awarded in Asia seems to have provided an even bigger and better pool of talent for US PhD programmes.

This evidence suggests that Asian countries are building their science and technology capacity in natural sciences and engineering by sending their best students to the best training ground in the world – the US – in the hope of bringing them home once they have acquired state-of-the-art scientific knowledge. But these return rates do not yet show up in the data.

Table 1 does not show high return rates of students after they have obtained a PhD degree in the US. On the contrary, Asian stay rates remain very high, significantly higher than EU stay rates. Chinese and Indian PhD students record the highest stay rates, and this has only marginally decreased over time. South Korean students have a higher probability of returning after their PhD compared to other Asian countries, but this (immediate) return rate has also declined over time. The increase in Asia's own scientific capability therefore does not seem to have led to a greater propensity of Asian PhDs to return from the US, certainly not immediately upon graduation. Return rates at later stages of the researcher's career may be on the rise, but there are no systematic statistics on this (Stephan, 2012).

The presence of foreign PhD students in the EU is less well systematically recorded. The imperfect evidence shows that the PhD student populations of EU countries have fewer foreigners compared to the US, and the geographic sources of foreign PhD students are different, with a less strong Asian presence, and geographic, cultural and historical links being more important[1].

1 The pattern of foreign PhDs in the EU is completely different from the US. First, there are fewer foreign PhDs in the EU: other-EU represent 5 percent of doctoral candidates, extra-EU represents 17 percent, spread between Asia, Africa and Latin America. The major destination country is the UK (for Asia), France (for Africa) and Spain (for Latin America). Source: IPTS (2007).

Shifting international scientific collaboration towards Asian partners?

Does the rise of new emerging science powerhouses in Asia provide new cooperation partners for scientists in the US and Europe?

Table 2 shows trends in scientific collaboration with China, South Korea and Taiwan. The biggest partner for all three countries is not surprisingly the US. There is also more co-publishing by Chinese, South Korean and Taiwanese researchers with other Asian countries. For South Korea, Japan and China are the most important country partners for international scientific collaboration, after the US. While the US and Japan are decreasing in share, China is a fast riser as a partner for Korea. European countries are low and even decreasing in terms of their research collaboration with Korea.

That the US comes as first partner should be no surprise, given that it is also the world's number one producer of science. To account for unequal country sizes, an International Collaboration Index is calculated in Table 3. A number greater than 1 represents a more significant than expected co-publication pairing, with expectations based on the partnering country's share of total world scientific publications.

Table 3 shows a marked difference between the US and EU countries (France, Germany, UK) in scientific collaboration with rising Asian scientific powerhouses. US collaboration with the Asian rising stars (China, South Korea, Taiwan) is not only important in absolute terms (see Table 2), but it also more significant than expected given the partners scientific size (Table 3), reflecting an intense collaboration between these pairs of countries, although the intensity of collaboration has somewhat decreased over time. Also, with Taiwan and China, US international collaboration is above par. The high flow of Asian students to the US for their training is certainly correlated with this more intense international collaboration between host and home economies. This contrasts markedly with European countries. European countries, lacking the same intensity of flows of Asian students, are also below par in their scientific collaborations with China, South Korea and Taiwan. The increasing European integration with the European Research Area stimulating intra-EU cooperation, may have diverted attention from extra-EU collaboration (Veugelers, 2010).

While China's bilateral scientific relationship with European countries may not yet be on par with its rising scientific power, its relationships with other Asian countries are above par, illustrating intense regional intra-Asian collaboration. Above-par levels of Chinese collaboration can be found with Japan, South Korea, Singapore, and Taiwan. An

Table 2: Partners for internationally coauthored science and engineering articles, by selected Asian country: 1995,2010

Country and year	World	US	France	Germany	UK	China	India	Japan	Singapore	S. Korea	Taiwan	Russia
China												
1995	2,914	0.382	0.065	109	121		0.016	0.142	0.014	0.023	0.025	0.023
2010	24,164	0.452	0.054	0.084	0.094		0.015	0.103	0.049	0.045	0.033	0.017
South Korea												
1995	1,283	0.64	0.058	0.081	0.065	0.052	0.025	0.238	0.003		0.018	0.08
2010	8,064	0.538	0.052	0.076	0.071	0.134	0.069	0.158	0.019		0.032	0.036
Taiwan												
1995	1,013	0.732	0.028	0.034	0.038	0.071	0.019	0.097	0.015	0.023		0.025
2010	4,032	0.512	0.058	0.076	0.084	0.196	0.056	0.148	0.027	0.063		0.044

Source: On the basis of NSF, S&E indicators 2012. Note: The 'world' column reports the number of international co-published articles; the other columns report countries' share in total international co-published articles.

Table 3: Index of international collaboration of Asian countries

Country and year	US	France	Germany	UK	China	India	Japan	Singapore	S. Korea	Taiwan	Russia
China											
1995	0.83	0.42	0.59	0.66		0.81	1.49	3.18	1.42	1.93	0.34
2010	1.05	0.39	0.44	0.5		0.46	1.26	2.64	1.03	1.5	0.46
South Korea											
1995	1.39	0.38	0.44	0.35	1.42	1.25	2.49	0.69		1.4	1.14
2010	1.25	0.38	0.41	0.38	1.03	2.12	1.94	1.05		1.45	0.98
Taiwan											
1995	1.59	0.18	0.18	0.2	1.93	0.94	1.01	3.26	1.4		0.35
2010	1.19	0.42	0.4	0.45	1.5	1.71	1.81	1.44	1.45		1.20

Source: On the basis of NSF, S&E indicators 2012. Note: An index of international collaboration corrects for the effects of unequal size of countries' research establishments. Values above 1 indicate a higher-than-expected incidence of collaboration.

exception is China and India, which have a rate of collaboration that is below par and which has diminished noticeably. Chinese-Russian collaboration is also below par.

South Korea's international collaboration with other Asian counties is above par. It is also well connected to India and Russia. Korean collaboration with European countries is underdeveloped.

Concluding remarks

With the rise of new emerging scientific powerhouses in Asia, the question arises of what the impact will be on science and economic growth. In this contribution, we have only looked at the impact of the globalisation of science on the scientific process itself. Although fears are mounting in the US that their open model for building scientific power is ending, for the moment the US-Asia connection remains strong, as reflected in the flow of scientific talent and international scientific collaboration. With its more inward-looking perspective, Europe seems to have been bypassed by the Asian scientific rise. At least, the below-par European-Asian scientific collaboration seems to show this. The rise of Asian countries as scientific powerhouses is accompanied by increasing intra-Asian research collaboration.

But the impact of this shifting geography in science will extend beyond science. It will also have implications on the geography of innovation, as the innovative capacity of Asian scientific powerhouses will grow, and as large innovating companies from the west start to locate their research and development activities closer to the new Asian scientific and economic powerhouses. The changing geography of innovation is discussed in more detail in Veugelers (2013).

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The implications of a weakening yen*

Zsolt Darvas, Bruegel

Summary: The recent trend of the weakening Japanese yen reflects a major policy shift in Japan, following the formation of the government of prime minister Shinzo Abe. While the speed of yen depreciation has been rather fast, the depreciation has not yet even corrected the yen's appreciation since the global financial crisis erupted. The new inflation target, two percent per year, is not extraordinary. Therefore, the talks about 'currency wars' are not justified. The desperate economic situation of Japan warranted a new policy approach, but there are concerns about the effectiveness of the new policy mix. In the coming quarters, both the euro and the Korean won are expected to appreciate, which could increase concerns that the exports of euro-area and Korean companies will be weakened. In particular, it will make it much more difficult for southern European countries to correct their external imbalances.

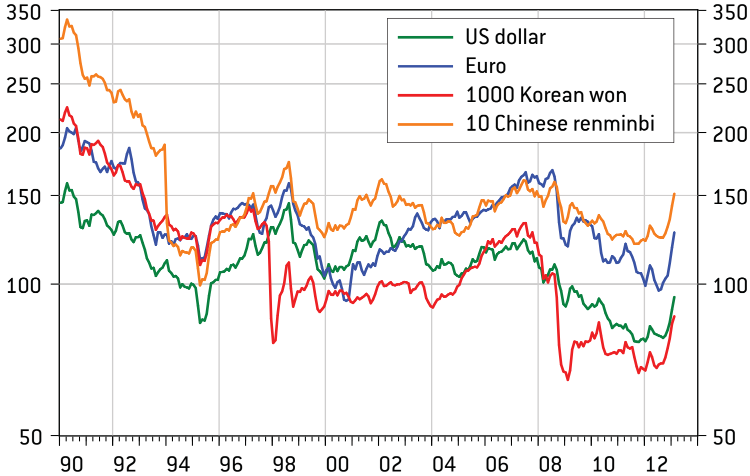
Recently-elected Japanese prime minister Shinzo Abe has declared war on deflation, using the heavy armament of fiscal stimulus and monetary easing. His moves have given rise to much controversy, prompting disapproval from policymakers in Europe, Korea and even from China. Indeed, the speed of the yen's fall was remarkable: by mid-February 2013, the USD/JPY exchange rate jumped to 94, shedding about 21 percent from 78 in September 2012. During the same period, the decline against the euro was 26 percent from the rate of 100 to 127, and 24 percent against the Korean from the rate 0.070 to 0.086.

But before claiming that Japan has entered a 'currency war', ie an attempt to artificially depreciate the yen in order to foster exports at the expense of trading partners, one has to put into perspective the exchange rate level of the yen. Compared to the pre-crisis period, the 12 February 2013 yen exchange rates were still stronger in nominal terms: between 2004-07 the average rate against the US dollar was 113, against the euro 145, and against the won 0.113. The yen appreciated abruptly after the collapse of Lehman Brothers (Figure 1) and while the recent depreciation was sharp, it has not yet corrected the preceding appreciation.

Certainly, the real effective exchange rate (REER), which is calculated against several trading partners, and which controls for the differences in inflation, matters more than the nominal rate. Since the cumulative change in the consumer price level was a mere

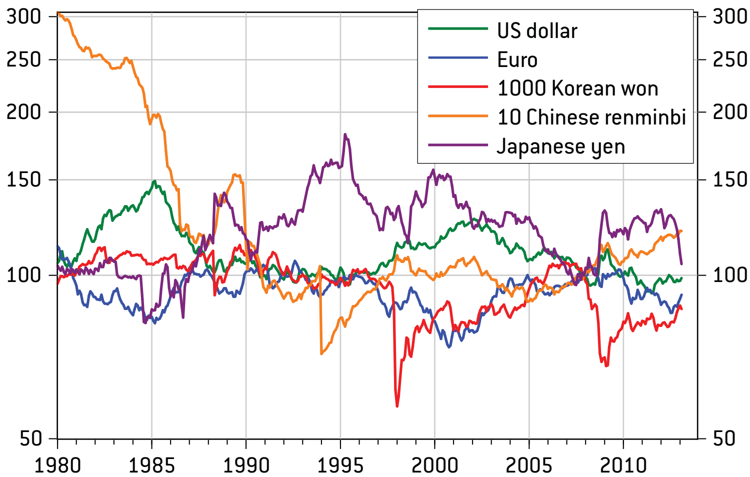
* This article builds on Park (2012) and Darvas (2013).

Figure 1: Japanese yen exchange rates, Jan 1990-12 Feb 2013



Note: monthly averages up to January 2013; the 12 February 2013 rates for February 2013. A lower value indicates a stronger yen.

Figure 2: CPI-based real effective exchange rates, January 1980-February 2013 (December 2007=100)



Note: the source for January 1995-February 2013 is the updated dataset of Darvas (2012a). I projected the not-yet-available consumer price index data by assuming that the 12-month inflation rate has remained unchanged since the latest available observation. The monthly average exchange rate data for February 2013 is calculated using the actual daily data for 1-11 February 2013 and by assuming that the nominal exchange rates remain unchanged at their 11 February 2013 values till the end of the month. In the pre-1995 period, the OECD's REER for the US, Euro area, Japan and Korea, and the IMF's REER for China are chained backward. A lower value indicates a weaker domestic currency.

half percent from 1992-2012 in Japan, but 63 percent in the U.S and 106 percent in Korea, there is a major difference between nominal and real exchange rate changes for Japan. Figure 2 shows consumer prices index-based REER developments from 1980 to February 2013. While the most recent value of the Japanese REER is about 14 percent below the average of the past 33 years, the US dollar is also below its historical average by 11 percent, the Korean won by 9 percent and the Chinese renminbi by 7 percent. Only the euro is almost at the historical average (1 percent below the average). And the historical average is not the best benchmark: economic theory predicts real effective appreciation in countries that grow faster than their trading partners, such as Korea and China. Conversely, countries that do not catch-up or even fall behind, such as Japan and the euro area, should see a gradual fall in their real exchange rates.

Therefore, by mid-February 2013, the recent depreciation of the yen largely corrected an earlier over-valuation and therefore talks about a ‘currency war’ are not justified.

There were some good reasons for a change in Japan's macroeconomic policies. The economy has hardly grown during the past two decades: cumulative real economic growth in Japan was just 22 percent from 1990 to 2012. In contrast, China grew by 761 percent during the same period, Korea by 201 percent. Even the euro area (39 percent), the United Kingdom (57 percent) and the United States (69 percent) significantly outperformed Japan.

Also, in September 2012, Japan’s current account recorded deficits on a seasonally-adjusted basis for the first time since the oil shock of March 1981. While this may be temporary due to the impact of the territorial spats with China and the spike in imports due to a release of the new iPhone 5 model, the trend is nevertheless worrying. In the longer run, an ageing Japanese population is expected to put pressure on current account deficits and weaken the yen, even if elderly people sell their overseas assets and bring their receipts back to Japan, which would slow the downward pressure on the yen (see Park, 2012).

Therefore, a change in policies was justified, though there are questions about the suitability of the full package. On the monetary front, the new government put pressure on the Bank of Japan (BoJ) to increase the inflation target, which it actually did: in January 2013 the BoJ raised its inflation target from 1 percent to 2 percent. There was much criticism of this pressure from the government, shaming it for exercising undue political influence over the central bank. However, it is the legitimate right of national governments to define the target of the central bank and what is crucial is to respect the operational independence of the central bank. This was respected and a 2 percent in-

flation target can hardly be assessed as outrageous: in fact, 2 percent inflation is generally regarded as a suitable measure of price stability in advanced countries.

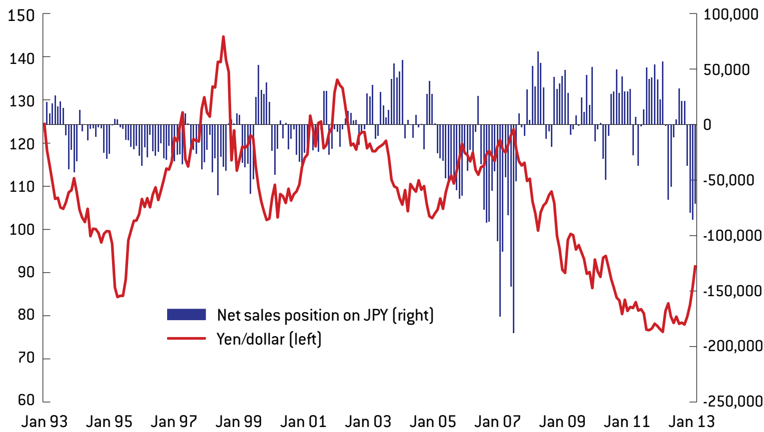
So far, the Bank of Japan has remained reasonably cautious concerning the deployment of new tools: nothing new was announced for 2013, and the potentially 'open ended' new asset purchases that will start in 2014 would lead to less than one-third of the increase in BoJ asset holdings in 2014 compared to 2013. Also, this 'open ended' 2014 programme largely concentrates on short-term treasury bills, which are to expire shortly. This is the reason why several commentators question the potential for reaching the new inflation target in the near future (excepting a temporary rise in inflation due to the scheduled increase in value added taxes). Certainly, while the incumbent BoJ Governor Mr Shirakawa may be reluctant on significant monetary easing, his term expires this April, and those of his two deputies run out in March. With these changes to the guard, the policy stance of the BoJ Policy Committee may change markedly and more significant monetary stimulus may come.

While I assess positively the decision on the increase of the inflation target and also the recent correction of previous significant over-valuation of the yen, the intended fiscal policy measures raise more questions. Japan's gross public debt was 237 percent of GDP in 2012, while the net debt was 135 percent of GDP, and another round of fiscal stimulus may increase these ratios further, even if nominal GDP growth speeds up due to monetary measures. So far the Japanese government has not faced problems over new borrowing, which continues to carry ultra-low interest rates, but this may not be the case forever and therefore fiscal policy measures should be cautious.

Monetary policy measures in Japan, but also in other advanced countries, have an impact on emerging countries. If the central banks of major economies adopt expansionary monetary policies and global financial markets become more stable as a result, yen-carry trade (Darvas and Park, 2012) might be revitalised, backed by ample liquidities and ultra-low interest rates in Japan. Recently, net sales positions on JPY/USD futures at the Chicago Board of Trade increased to the highest amount since the global financial crisis (Figure 3), hinting at a future growth in yen-carry trade and not just relative to the dollar, but also relative to the currencies of emerging countries. If the US economy recovers faster than expected this year, the interest rates will rise and the depreciation of the yen might be more significant than the current outlook.

If the Japanese yen weakens while the Korean won strengthens, Korean companies' export conditions might take an unfavourable turn, or in other words, the advantage

Figure 3: Net Sales Position on JPY and JPY/USD Exchange Rate, January 1993-January 2013



Source: Bloomberg. Note: Non-commercial yen net sales position on JPY/USD futures at CBOT.

they had since the Lehman Brothers collapse will disappear (Figure 1). A combination of a stronger won and a weaker yen would undermine the export conditions of Korean businesses. Japanese firms have gone through extensive reforms to survive the strong currency, and their aggressive exports based on advanced technologies and overseas relocation of production could damage Korean firms. On the other hand, the weakening yen would relieve the debt burden of borrowers who took out loans in yen.

Japanese monetary policy may also have repercussions on the adjustment in southern European countries. While the European Central Bank resists calls for further interest rate cuts and quantitative easing, other major central banks, including the BoJ, take this route and thereby the euro could appreciate further. A stronger euro would weaken the already fragile European economic recovery, but even more importantly, it would make the adjustment of external imbalances of southern euro-area members extremely difficult, if not impossible, as I argued in Darvas (2012b).

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Conference report:
The eurozone crisis and its impact on the global economy

The second Bruegel-KIF Conference on '*The eurozone crisis and its impact on the global economy*' was hosted by KIF in Seoul on 16 January 2013. The conference, attended by more than 100 participants, featured three sessions, after four introductory contributions and speeches.

Introductory remarks and the keynote speech

In his initial remarks, Korea Institute of Finance President **Chang-Hyun Yun** welcomed the speakers and participants and emphasised that in order to restore the credibility of the euro area, more cohesive rules and cooperation are required through more integration and better economic governance; he added that the Asian economies also need to be prepared for economic shocks to secure the stability of their own financial systems and to foster economic and financial reform to maintain their economic growth. The Asian economies should also look at finding areas for regional cooperation, such as currency swaps, regional monetary funds, and/or financial market integration.

Bruegel Deputy Director **Guntram B. Wolff** highlighted Bruegel's increasing focus on Asia, whereby more research efforts will be devoted to studies focusing on Asia-related issues, a number of conferences will be organised by Bruegel in Asian countries and four visiting fellows from Asian countries will work at Bruegel on various topics. Concerning European issues, he highlighted the major importance of the upcoming Italian elections in February 2013 and the European Banking Union initiative, which is the most important project since the introduction of the euro. He also stressed that Asia is at a crossroads due to the changes in leadership in China, Japan and Korea.

EU Ambassador **Tomas Kozlowski** underlined the importance of the EU-Korea trade and economic relations, including the recently agreed free trade agreement, which is the deepest and most comprehensive trade agreement the EU ever entered into with a third country. He stressed that while the Korean media focused on the euro crisis in a critical way, business people made more objective assessments. He was convinced that while the EU had had two difficult years, the worst of the crisis is over.

First Vice Minister **Je-Yoon Shin** stressed that 2012 was the year of stresses: the intensification of the euro-area crisis till the summer, the decline in China's economic growth rate and the uncertainty about the US fiscal cliff. Global economic uncertainty recently has eased and there are signs of recovery, but he warned against complacency, because many risk factors remained, including the US fiscal challenges, the uncertainties about the euro-area crisis, and an acceleration of a currency war. Both fiscal and monetary policies face mounting challenges, and measures taken in advanced economies have major spillover effects on emerging countries. G20 leaders and the

CONFERENCE PROGRAMME

9:30-9:50 **Opening remarks**
Chang Hyun Yun, President, Korea Institute of Finance; **Guntram B. Wolff**, Deputy Director, Bruegel; **Tomasz Kozlowski**, Ambassador and Head of Delegation of the European Union to the Republic of Korea

9:50-10:00 **Keynote Speech: Risk factors and Policy challenges for the Global Economy**
Je Yoon Shin, First Vice Minister, Ministry of Strategy and Finance

10:00-12:00 **Session 1: Anatomy of the Eurozone Crisis (Why did it happen?)**
Chair: **Jung Sik Kim**, Professor, Economics Department, Yonsei University
Speakers: **Joon Ho Hahm**, Professor/Director, Center for International Studies, Yonsei University; **Myong H wal Lee**, Senior Research Fellow/Director, Korea Institute of Finance; **Benedicta Marzinotto**, Research Fellow, Bruegel; **Stephanie Riso**, Head of Unit, Fiscal Policy and Surveillance, DG ECFIN, European Commission

13:00 15:00 **Session 2: Analysis of the Responses to the Eurozone Crisis (What has been done?)**
Chair: **Guntram B. Wolff**, Deputy Director, Bruegel
Speakers: **Zsolt Darvas**, Research Fellow, Bruegel; **Mansoo Jee**, Research Fellow, Korea Institute of Finance; **Jaewoo Lee**, Chief Korea Economist, Bank of America Merrill Lynch; **Bart Oosterveld**, Managing Director, Head of Sovereign Risk Group, Moody's Investors Service

15:15 17:15 **Session 3: The Future of European and Asian Economies after the Eurozone Crisis (What to do going forward?)**
Chair: **Gongpil Choi**, Senior Advisor, Korea Institute of Finance
Speakers: **Bon Sung Gu**, Senior Research Fellow/Director, Korea Institute of Finance; **John Junggun Oh**, Professor, Economics Department, Korea University; **Guntram B. Wolff**, Deputy Director, Bruegel

17:15 17:25 **Closing Remarks by Guntram B. Wolff**, Deputy Director, Bruegel

IMF have recognised that the capital flow management measures could be appropriate policy responses to high and volatile capital flows, and the current OECD *Codes of Liberalisation* should be revised to be more permissive for the adoption of macro-prudential measures.

Session 1: Anatomy of the Eurozone Crisis (summary prepared by SeungEun Baek, intern, KIF)

Why did it happen?

Considering the complexity of the situation in each country of the euro area, it is very difficult to pin down a single initiator of the overall euro-area crisis. In retrospect, the banking sector gradually became fragile and in a number of member states macroeconomic stability eroded since the introduction of the single currency regime in 1999, while the fiscal accounts did not improve sufficiently. When the sudden wave of global financial crisis hit the global economy in 2008, the euro area was hit hard, but started to recover in 2009. But the Greek crisis started to escalate in early 2010, which brought to the fore more fundamental problems of the euro area, instigating spill-over effects into the greater euro area. In this session, speakers summarised the state of affairs prior to the euro-area crisis according to four different aspects, analysed how each economic, financial, fiscal and policy factor contributed to the deepening of the crisis one after another and simultaneously at times, and finally discussed policy directions for the way forward.

Macroeconomic aspect

With the disappearance of exchange rate risk after the introduction of the euro, persistent macroeconomic imbalances started to build up, partly due to the rapid convergence of interest rates to the German rate. The interest rate drop in peripheral countries of the euro area fuelled demand for goods and housing, which directed most of the overly-optimistic foreign capital flow into non-tradable sectors, such as the real estate market, and contributed to too-fast wage increases compared to productivity changes. The resulting housing bubbles and credit booms and sectoral reallocation toward construction were extremely blatant in Ireland and Spain. As a result, unsustainable growth driven by external borrowings and rising unit labour costs in the absence of serious labour productivity reforms worsened the imbalance problems. Nevertheless, due to the lack of political appetite to correct such imbalances and lack of valid mechanisms to react under the single currency regime, peripheral euro-area countries became extremely vulnerable to external shocks.

Financial aspect

With the absence of market discipline, cheap borrowing costs induced a dramatic accumulation of private debts in countries such as Ireland. In addition to this, over-enthusiastic financial institutions, and their weak funding structures, fuelled insolvency problems. By relying too much on non-core wholesale sources, the composition of the risk-weighted assets in banks grew overtime. Also, the increased inter-connectedness among European banks made euro-area countries more susceptible to the spillovers from the crisis. Also, following the adoption of the single currency, short-term cross-border capital flows spiked, while more sound and stable foreign direct investment increased only slightly. In retrospect, the quality (nature) of capital flows mattered even more than their size.

Fiscal aspect

The 'Stability and Growth Pact', the cornerstone of the EU's pre-crisis fiscal architecture, which aimed at keeping budget deficits below three percent of GDP and public debt below 60 percent of GDP, clearly failed before the crisis. In practice, not much emphasis was put on the debt criterion, and thereby in Greece and Italy public debt was close to 100 percent of GDP when the crisis erupted. Also, no emphasis was put on assessing the risks in fiscal accounts, such as a high share of tax revenues coming from the booming real-estate sector. Also, with the coordinated countercyclical expansionary fiscal policies adopted in 2009 and financial restructuring processes, the public accounts of peripheral euro-area countries were seriously undermined.

Policy aspect

On top of the overall economic, financial, and fiscal imbalances, the lack of integrated policy coordination, supervision and surveillance systems exacerbated the sovereign debt crisis. Also, unlike the previous Asian and Latin American crises in the late 1990s, there were limited policy options because under the single currency regime, the alternative mechanisms such as currency devaluation and fiscal transfers were unavailable.

Policy measures and the way forward

In efforts to reduce macroeconomic imbalances and strengthen fiscal soundness, EU introduced various frameworks, such as the Six-Pack, Euro-plus pact, Fiscal Compact, to reform economic governance and enhance coordination of budgetary process. While

all of these enhance monitoring of budgetary and economic policies and surveillance systems for member countries, and empower them with tools to single out problems, speakers agreed that full completion of the banking union and addressing the external imbalances problem are prerequisites for the better functioning of the monetary union. There was however a debate about the need for more fiscal transfers.

Session 2: Analysis of the Responses to the Eurozone Crisis (What has been done?) (summary prepared by Yujung Hong, intern, KIF)

Introductory remarks

Since the outbreak of the euro crisis in late 2009, various measures have been adopted such as conditional lending to distressed sovereigns, unlimited European Central Bank liquidity support to banks and some support to sovereign bond markets, various reforms to the governance of the euro area. At the country level, ambitious structural reforms have started. To some extent, labour-cost divergences narrowed within the euro area, and intra-euro current account divergences started to shrink. And yet the current policy mix has proved insufficient to restore pre-crisis investor confidence. As a result, there were increasing calls for further institutional changes, more fiscal harmonisation, common debt issuance and so on. In this session, speakers analysed how the euro area has responded to the triple crisis of balance of payments, banking and sovereign debt, and comparisons were drawn with the US responses to the global financial crisis. Also, the changing relationship between China and the euro area was highlighted, largely driven by internal transformation of the Chinese economy.

Risks and policy targets

Major risks in resolving the euro-zone crisis were identified in four categories: 1) macroeconomic risks (macroeconomic imbalances and weak competitiveness in some countries); 2) bank risks (still fragile banks and increasing fragmentation of banking); 3) sovereign risk (high budget deficits in some countries at a time of weak growth prospects); and 4) political implementation risks. To tackle these issues, policymakers are now seeking more fiscal harmonisation and a banking union, while a higher level of fiscal integration is not on the table at the moment. Institutional changes in these directions may take several years to design and implement. For the banking union, beyond the centralisation of supervision and resolution, a proper agreement on fiscal burden sharing would be essential. A first step toward this end would be allowing the European Stability Mechanism (ESM) to recapitalise banks directly once a common

banking supervision framework is set up, as was envisioned in the euro-area summit conclusions of June 2012.

European reforms in light of US measures

Meanwhile, the ECB's long term refinancing operations (LTROs), which provided banks ample liquidity at a very low interest rate, which some of these banks used to purchase Euro-area government bonds, and the announcement of outright monetary transactions (OMTs), which may lead to unlimited purchase of government bonds on the secondary market of those sovereigns that comply with the requirements of a financial assistance programme, have been effective in pulling down CDS spreads of sovereigns, banks and non-financial corporations. Thereby, these ECB measures were effective in reducing the risk of an imminent euro-area breakup. Furthermore, many pacts were made such as the Six-pack, Euro-plus pact, Fiscal Compact and the Two-pack aiming for stronger fiscal rules, institutions and sanctions. The Macroeconomic Imbalances Procedure (MIP) was also put in place, which aims to correct the current divergences among EU member states and prevent such divergences occurring in the future. Despite these efforts, the euro area has suffered more severely than the US, an epicentre of the current crisis. There are several reasons for this: the US took swift action on rigorous stress tests of banks and bank restructuring, engaged in fiscal expansion to support the deleveraging private sector, and vast monetary stimulus. In comparison, bank stress tests were ill designed and bank restructuring progressed slowly, after an initially coordinated fiscal stimulus, there was a strong focus on fiscal consolidation even in those countries that had ample fiscal space, and in general the European economy is less flexible than the US, there is less cross-country adjustment capacity, and much weaker centralised executive power. Moreover, the euro did not depreciate sufficiently, which makes the adjustment of southern European imbalances difficult. The fear of member countries' exit from the currency union confounded the problem. Yet the very weak growth performance of the euro-area economy, and in particular, the social suffering in southern Europe, suggest that the measures agreed so far may not be sufficient to drive the euro area out of the current crisis.

The impact on China

The sovereign debt woes in Europe have affected its relationship with China, and the change has also intensified due to internal transformation of the Chinese economy. Hoping to address the growing problem of income inequality and external demand instability, China has implemented the New Development Strategy. The new strategy

aims to boost domestic demand driven by private consumption and ODI (Outward Direct Investment). As a result, the trade balance between the two economies has shifted over the years, and in 2012, China recorded trade deficits against Europe. China has also become a net investor in Europe, actively engaging in merger and acquisition (M&A) deals to buy momentarily devaluated European firms. Main target countries include France, Germany and Sweden, and target industries are shifting from automobile, energy, materials to technology and consumer brands.

Session 3: The Future of European and Asian Economies after the Eurozone Crisis (What to do going forward?) (summary prepared by Haina Lee, Manager, Research Strategy & External Affairs Division, KIF)

Introductory remarks

In the preceding session, participants had broad discussions on the future of the euro area, steps to follow towards a banking/fiscal union, and eventually, to a more integrated and better functioning economy. EU member states' efforts for structural reform and institutional change will be faced with many barriers along the way because of markedly different macroeconomic, financial and fiscal conditions among member states. Whatever measures are adopted, sacrifice to some extent would be inevitable. For example, a kind of fiscal burden sharing would not only involve efforts to ameliorate support-providing countries, but it will also be important to persuade people of recipient countries of the need of austerity and reforms. This underscores the importance of political resolution in pursuing greater integration in the area.

Europe vs East Asia

In discussions, parallels were drawn between the sovereign debt woes in Europe and comparable experiences in East Asia, as well as the impact/implication of the current crisis on East Asian countries. East Asia has done well in the past few years, in stark contrast to what transpired in many of the advanced countries. However, there is no reason to be complacent; they should strengthen internal capacity by promoting intra-regional trade, investment and financial cooperation. In the wake of the global financial crisis, East Asian countries have made vigorous efforts to monitor and stabilise cross-border capital flows (eg macro-prudential measures in Korea) to contain risks of capital flight. This could be a useful reference for the euro area.

The euro area has made impressive progress to date, getting closer to the resolution of

the crisis; as a group, it is firmly set upon the path towards a greater integration. However, participants generally shared a view that the prospect of restoring solid, robust growth in Europe remains bleak.

Institutional change

The euro-area member states have agreed on having a common banking sector supervisor, and have set up the Single Supervisor Mechanism (SSM) accordingly, which is expected to soon be operational. The operation of the SSM is expected to sever pernicious links between sovereigns and banks by better quality supervision, yet the link will be fully broken only if the European Banking Union will enable direct bank recapitalisation. However, it would take time, and the future tasks of establishing a common resolution mechanism, a common fiscal backstop to the banking union, and ultimately, a single deposit insurance scheme, would be harder to accomplish. For example, it will be difficult to define the resolution mechanism, both technically and politically, as it implies empowering an authority to distribute losses among member countries, shut off banks and lay off employees.

Nonetheless, efforts are well underway to mend severely fragmented financial markets in the region and better coordinate banking governance. This, too, would be a complicated task due to the divergent governance structures of European banks (eg close community ties of small-sized German banks, which is hard to find or replicate elsewhere). Another barrier to banking/fiscal integration would be persistent pressure from national regulators to ringfence and protect their banking groups.

Structural reform

Efforts for internal devaluation and convergence of expenditure have been undertaken in the region through wage/price cuts primarily in the public sector, and product and labour market reforms to foster flexibility. Such measures would help correct macroeconomic imbalances and enhance competitiveness of the economy. Fiscal reforms included broadened tax base and cut social spending such as pension benefits. The reform would be a long and painful process, but a critical one, not only to resolve the present woes but also to deter recurrence of crises in the future by avoiding boom-bust-cycles, especially in areas prone to asset bubbles like construction.

Underlying these debates are complex social factors that will transform the euro area in the coming years. For example, aging population is a widespread phenomenon

across the globe, and Europe is at a quite advanced stage in this regard. As people live longer and work longer, not only does the burden of social expenditure increase, but also the younger generations should struggle harder to secure job, often creating inter-generational tension. This is an irrevocable trend and measures should be sought to ease the transition and maintain vitality of the economy.
To successfully implement structural reforms and institutional changes, it will also be vital to ensure democratic legitimacy and accountability along the way to build a stronger and more resilient community.

East Asia in the picture

The latest financial crisis has brought about a significant power shift in the global community. Combined together, the gross domestic product of China, Japan and Korea exceeded that of Europe in 2010, the first time in nearly 200 years. Still, their trade balance with the euro area has worsened, partly because China is strategically making a transition from the world's workshop to a power market. East Asian countries are at a critical juncture when they can envision the future of the regional economy, and they have to strengthen internal capacities and promote intra-regional investment to replace FDI to some degree, thus reducing exposure to the outside. Countries in the region should enhance cooperation and work on designing Asian convergence criteria.

EU-Korea Economic Exchange