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Article

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TRADE IMBALANCES – CAUSES, CONSEQUENCES AND POLICY MEASURES: IFO'S STATEMENT FOR THE CAMDESSUS COMMISSION¹

HANS-WERNER SINN,
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TIMO WOLLMERSHÄUSER*

Excessive capital flows resulting from nonexistent public and private debt constraints due to a lack of regulation, prudence and liability have been the major causes of trade imbalances in recent years. A period of soft budget constraints had driven some countries into an overheated boom and others into a slump, channelling capital and goods from the latter to the former. To rebalance the world economy, a system of tighter budget constraints with stricter and better banking supervision, more extensive liability and narrower public debt limits is needed. For that purpose we advocate an internationally accepted three-step crisis mechanism to be applied when countries face liquidity and/or solvency crises. Furthermore, we suggest a regulatory framework for the banking sector that goes beyond Basel III. The accompanying surveillance should be headed by a superordinate regulatory body – the IMF or the BIS – endowed with the right to issue directives to the subordinate regional or national agencies. Only a well-designed, comprehensive regulatory framework, which is implemented worldwide, can instil more prudence in capital markets and thus prevent excessive capital flows and trade imbalances.

Growing imbalances and bursting debt bubbles

The world financial crisis that had first seemed to culminate in 2008 regained new momentum in Europe in 2010, triggering a public debt crisis. In 2008, the world was forced to implement public bank rescue programs amounting to 4,900 billion euros and Keynesian

recovery programs of about 1,000 billion euros. These policies stabilized the banking system and helped the world economy to get back on its feet. World industrial output, which had declined by 12 percent by February 2009, has by now returned to its pre-crisis level and even surpassed it. World GDP growth, which was – 0.6 percent in 2009, rose to 4.8 percent in 2010. The slump was V-shaped, with recovery occurring faster than had been expected at the time.

However, the recovery is uneven, and the world divided. While the BRIC countries have regained their old momentum, US growth has been driven largely by excessive deficit spending. The US budget deficit in 2010 was 10.7 percent of GDP, raising the debt-to-GDP ratio to 90 percent by the end of the year.

Similarly, the economies of Europe's south and western periphery, from Greece through Spain to Ireland, are shrinking and suffering from a sovereign debt crisis and a dearth of domestic investment, while Germany is recovering quickly, with a record growth of 3.7 percent in 2010. More than half of Germany's growth was fuelled by domestic investment demand, and only about a quarter came from foreign trade (Carstensen *et al.* 2010).

These imbalances are largely due to the bursting of debt bubbles in those countries that were huge capital importers in the past. Figure 1 shows the average current account balances over the five years to 2009 which, leaving aside negligible currency flows, are identical to the respective capital flows.

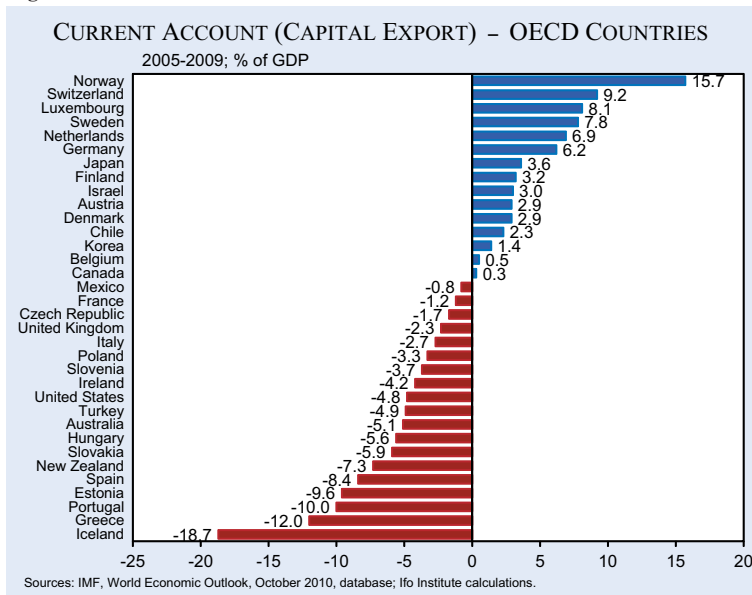
The chart shows that while a number of countries have had huge capital imports, the GIPS countries in particular (Greece, Ireland, Portugal and Spain) were among the outliers. Although the crisis in Europe is



* Ifo Institute for Economic Research.

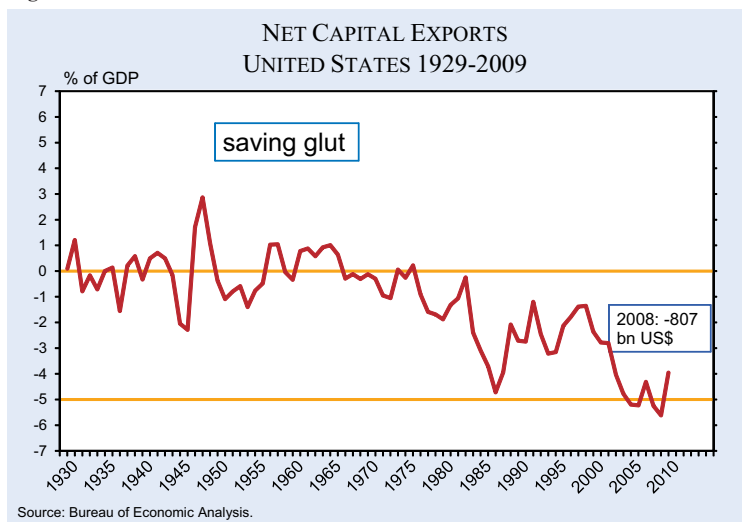
¹ Officially known as the *Palais-Royal Initiative*, it consists of a group convened by Michel Camdessus, Alexandre Lamfalussy and Tommaso Padoa-Schioppa, and also comprising Sergey Aleksashenko, Hamad Al Sayari, Jack T. Boorman, Andrew Crockett, Guillermo de la Dehesa, Arminio Fraga, Toyoo Gyohten, Xiaolian Hu, André Icard, Horst Koehler, Guillermo Ortiz, Maria Ramos, Y. Venugopal Reddy, Edwin M. Truman, and Paul A. Volcker. The group submitted a report to the G20 called "Reform of the International Monetary System: A Cooperative Approach for the Twenty-First Century," to which the present statement contributed, on 19 February 2011.

Figure 1



not identical to that in the United States, there are some similarities, and these crises will have long-lasting implications for the Western world, as budget constraints in the previously booming countries will be tightened for many years to come. Budget constraints will tighten because capital will shy away from these countries, reflecting investors' profound change in their assessment of country risk. Investing in Greek bonds or US mortgage-backed securities is no longer seen as attractive, since the fear of default or an inflation-cum-depreciation strategy dwarfs all promised returns.

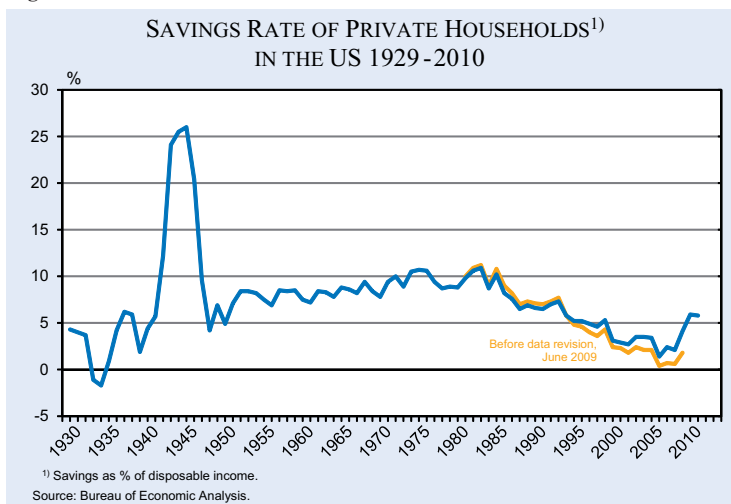
Figure 2



The US current account deficit

As Figure 2 shows, the US current account deficit, or net capital imports for that matter, started to surge around 1975. Since then the deficit has experienced a cyclical movement, culminating at about 5 percent of GDP in the years before the crisis.

Figure 3



While it was popular in the United States to make a global savings glut responsible for the US current account deficit and capital imports (Bernanke 2005), the true reason was a collapse of the US savings rate. As Figure 3 shows, US households had virtually stopped saving in the period before the crisis. It is true that the data revision of June 2009, due to a change in statistical categories, retroactively improved the numbers a bit, but even with this revision the savings rate declined to 1.4 percent in 2005. If households stop saving while firms need loans to finance their investment and the government needs to cover a budget deficit, importing capital becomes unavoidable.

The reason for the lack of savings in the United States can be traced to various developments that led to the subprime crisis.²

- The Community Reinvestment Act of Presidents Carter and Clinton had obliged banks to extend cheap loans to low-income people to fight *red lining*, which was feared to result in the spreading of slums.
- The non-recourse nature of US mortgage loans had induced households to gamble on increasing house prices by overborrowing. Households knew that in the case of an adverse development with stalling or even declining house prices, which would place their homes ‘under water’, they could get rid of their debt by returning the houses, including the mortgage debt, to the banks.
- Banks gambled along with the households on increasing house prices, knowing that, if things went sour, they would only be liable to the extent of their very low equity capital or could even hope to be bailed out by the government.
- The reform of US investment bank regulation in 2004 dismantled debt constraints and enabled investment banks to leverage their equity enormously.
- Brokers and banks securitized and sold their claims by issuing non-recourse securities, thereby shifting the risks onto other shoulders, often located in foreign countries.

These points have in common that the lack of private debt constraints and liability led to excessive borrowing from foreign countries to permit a living standard in the United States that could not be sustained with the country’s own means. As the triple-A rated mortgage-backed securities (MBS) and the collateralized debt obligations (CDOs) based on them promised high and safe rates of return, they could successfully be sold to foreign investors on a large scale. The largest purchasers were British and German banks that in the aftermath of the crisis have faced write-off losses on such assets on the order of 290 billion dollars.³

Due to the lack of accountability in the US financial system and a dubious role of the rating agencies that had been unable or unwilling to warn off buyers of US securities, the United States enjoyed a period of ‘soft budget constraints’, to use a phrase which Hungarian economist Janós Kornai had once used to

predict the fall of Communism (Kornai 1980). The soft budget constraints fed a boom in the real-estate market that translated to the rest of the economy via increasing building investment and consumption by both construction workers and homeowners who enjoyed capital gains on real-estate property. The boom went along with rapid income growth and correspondingly strongly rising imports, leading to the current account deficit shown above.

As the housing boom fuelled expectations of steadily increasing house prices and triggered speculation among homeowners and firms as described above, the boom developed into a bubble that ultimately burst. Prices of family homes declined by one-third from their peak. Among the most dramatic implications of this bursting bubble was the obliteration of the US mortgage securitization market. Whereas in 2006 the annual new issues of MBS and CDOs based on them amounted to 1,900 billion dollars, by 2009 that figure had collapsed by 95 percent, to 85 billion dollars.⁴ And 95 percent of US mortgages had been financed by three state-owned enterprises, Fannie Mae, Freddie Mac and Ginnie Mae.⁵

The counterpart of the US current account deficit were surpluses in China, Japan and Germany. While the Chinese surplus can be attributed to ongoing interventions by the central bank aimed at keeping the renminbi undervalued, enabling it to buy US government bonds with the resulting current account surplus, the Japanese and German surpluses resulted from market reactions. Relative to the high rates of return that investors hoped to earn in the United States, both countries no longer seemed attractive locations for investment, and in fact, as is shown in Figure 4, the net investment shares in NDP of these two countries were extremely low in the last one-and-a-half decades. Germany even had the lowest net investment share of all OECD countries.

The European imbalances

The reasons for the low German rate of net investment were

- i) the loss of foreign investment as a result of declining relative competitiveness after the collapse of the Iron Curtain, which had brought substantial low-wage competition to Germany’s doorstep, and

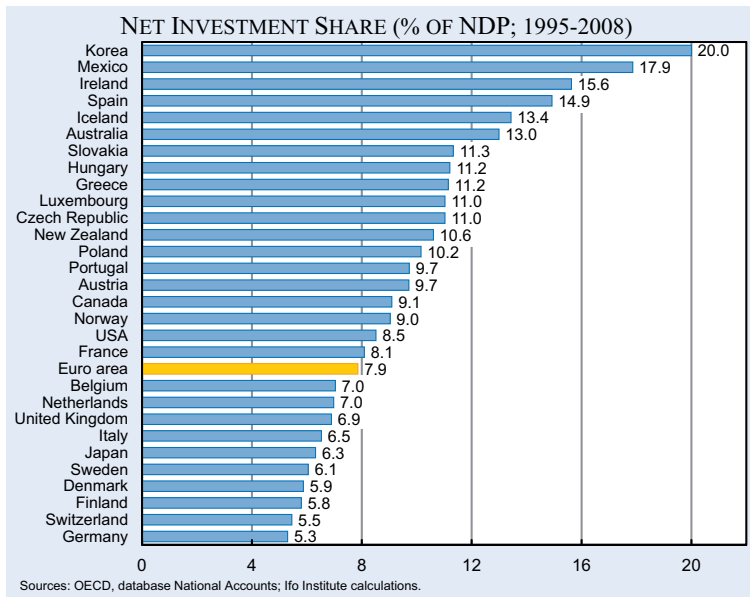
² For a detailed analysis, see Sinn (2010a).

³ See Sinn (2010a), Chapter 8, esp. Table 8.1.

⁴ See IMF (2010), Figure 2.1 on p. 59.

⁵ See Krainer (2009), Figure 3.

Figure 4



ii) the euro, which had levelled the playing field in Europe's capital markets and had equalized lending conditions.

The latter turned out to be a particularly problematic effect for the eurozone, because it resulted in excessive capital inflows fuelling extremely rapid growth and ultimate overheating in the countries on Europe's south and western periphery, the above mentioned GIPS countries (Greece, Ireland, Portugal and Spain). Whereas in 1995 substantial interest spreads had prevailed in Europe, on the order of 5 percentage points and more between Spain, Italy and Portugal on the one hand and Germany on the other, the firm announcement of a

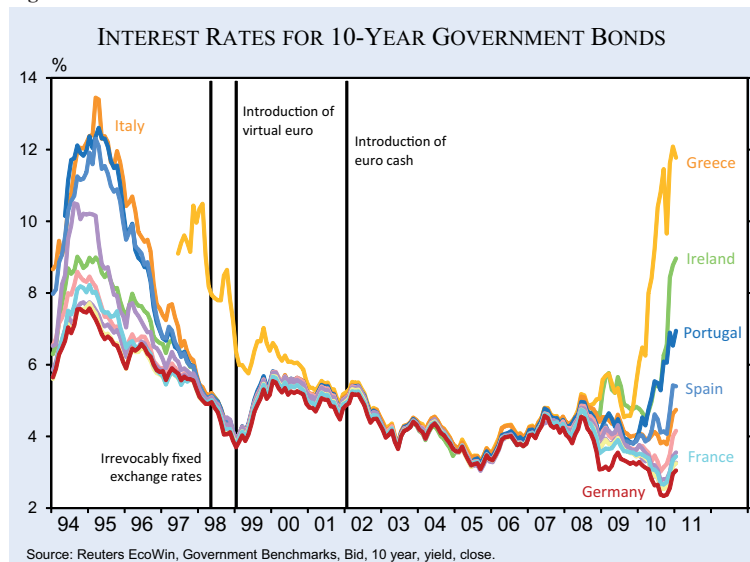
of a sudden fixed-interest loans became available at rates nearly as low as those hitherto available solely in Germany. The result was a building boom that ultimately developed into a bubble. Like in the United States, people borrowed to invest in new housing, and banks often lent sums that exceeded the value of the house. Construction workers were in high demand and wages increased, transmitting the impulse to the whole economy via a rapidly increasing consumption demand. Capital gains made real-estate owners richer and induced them to undertake further investments leveraged with additional funds borrowed from the banking system. The rising incomes raised imports, and the increasing price level undermined the competitiveness of the domestic economy, hurting

common currency had resulted in a rapid convergence of interest rates from 1995 through 1997. This is shown in Figure 5 for long-term government bonds; a similar pattern was shown by private debt of various maturities.

But not only was there a convergence of interest rates. What is more, for the first time the euro established long-term capital markets in the GIPS countries. Before the euro, twenty-year mortgage loans with fixed interest rates had simply not been available. Interest rates were variable and extremely high. With the introduction of the euro, all

ing exports. The results were the current account deficits shown in Figure 1.

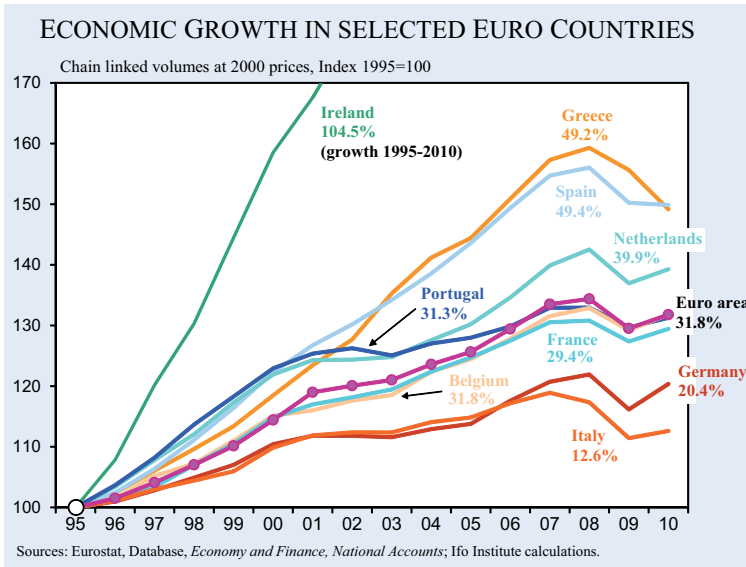
Figure 5



Conversely, an economic slump engulfed Germany because domestic investment, which offered low rates of return, no longer seemed attractive.⁶ As shown in Figure 4, Germany's net investment share fell to the lowest level of all OECD countries. As a result, the growth rate, which had been very high in the 1970s and 1980s and even in the early years

⁶ For an early formal analysis and prediction of these developments, see Sinn and Koll (2000).

Figure 6



after unification, fell to the second-lowest level in Europe (regardless of how Europe is defined, if necessary even including Russia). This is shown for a subset of the European countries in Figure 6.

In the past few years, Germany was the world's second-largest capital exporter after China. From 2002 to 2010, Germany had exported two thirds of its aggregate savings, some 1,050 billion euros altogether. Only one-third was invested at home in factories, equipment, construction, roads, public buildings and the like. In recent years German net capital exports peaked just below 200 billion euros annually, while the net capital imports of the GIPS countries peaked at about the same figure.

The German slump resulted in mass unemployment that peaked around 2005 and forced the German government to carry out painful labour market reforms that deeply split German society and even brought down a German government. Due to the lack of growth in general and investment demand in particular, the scope for wage and price increases any was low, resulting in Germany having the lowest inflation rate of all euro countries since 1995, as shown in Figure 7. Germany depreciated by 18 percent in real trade-weighted terms relative to the other eurozone countries.

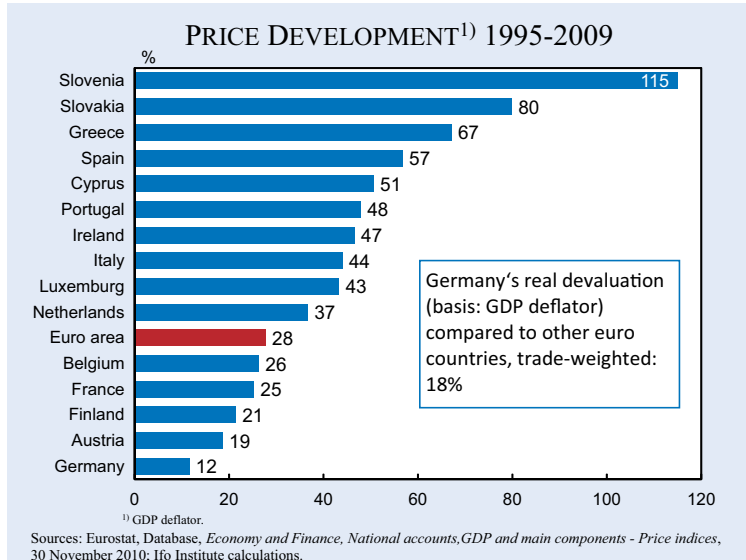
The low rate of income growth dampened German imports, while the low prices stimulated German exports, both translating into a huge current account surplus. Thus, Germany's current account surplus resulted from the country's weakness rather than being a sign of particular strength, as has sometimes been argued.

Germany did grow strongly in 2010, however, in the aftermath of the European debt crisis. This growth resulted from the new risk perception pervading capital markets, German banks and insurance companies in particu-

lar. As these institutions no longer dared to channel German savings abroad and now instead seek safe German customers, German real investment demand turned out extremely dynamic in 2010, explaining most of the expected 3.7 percent growth rate.

Intra-European capital flows could have been mitigated, had German banks shown more prudent investment behaviour. After all, four-fifths of German net capital exports were in the form of financial capital flows rather than direct investment. However, for various reasons, these banks shut their eyes to the potential sovereign state risk. One of these reasons was that they expected their clients to be bailed out by the community of states should a particular European state run into trouble. Another was a deficiency in the

Figure 7



Basel system, under which banks did not have to impose any risk weights on government bonds and thus did not need equity against holding such bonds. In fact, the Basel system had virtually imposed no constraints on banks lending to governments. This was a major reason why capital flows had been so excessive in Europe in recent years and why the European sovereign debt crisis eventually had to erupt.

The lesson: trade imbalances resulted from capital flows

Capital flows and trade flows are two sides of the same coin. They are determined simultaneously in world markets. Sometimes capital flows dominate, sometimes trade flows do. But, apart from minor currency movements, a current account deficit is always identical to a capital import and a current account surplus is always identical to a capital export.

Within a business cycle context, trade flows tend to dominate capital flows. Capital flows endogenously adjust to accommodate whatever the respective trade imbalances require. If a country enters a boom, it imports more, its current account turns negative, and capital will be imported to finance the additional imports. The import demand in turn triggers a boom in the exporting countries. The countries move in the same direction, their GDPs are positively correlated.

However, in a long-term, structural perspective, capital flows often dominate the trade flows. This definitely has been the case in Europe since the euro was introduced, and in the United States following the Community Reinvestment Act and the deregulation of the banking sector. Excessive capital imports implied soft budget constraints in the United States and the GIPS countries, which boosted the respective domestic economies and triggered additional goods imports. Conversely, capital-exporting Germany (like Japan) exhibited extremely low net investment rates, a fact that drove this country into a slump with low wage and price increases, dampening imports and fuelling exports. When capital flows predominate trade flows, the countries' movements are negatively correlated. The country receiving the capital flows booms, while the country from which the capital originates slumps.

Only the current account surplus of China is a somewhat different matter, insofar as the decision to amass an export surplus and to export capital was jointly

made by central planning authorities and executed by way of fixing the renminbi at an artificially low rate.

It follows from this that, except for China which needs a political approach, the clue for reducing the global economic imbalances is to impose tighter debt discipline throughout the world.

It would definitely be wrong to induce countries to adopt Keynesian demand policies to change the trade balances. Trade imbalances that have built up over a decade or more certainly do not result from Keynesian imbalances that could be remedied with such tools. And it would be utter nonsense to impose trade restrictions to bring the imbalances down. This would be curing the symptoms rather than the causes of the disease.

The trade imbalances can also not be fought with traditional exchange rate policies. After all, the trade deficits also arose in the United States that has flexible exchange rates, and in the GIPS countries, which even share the same currency. Since the trade imbalances resulted from flaws in the microeconomic incentive structures resulting from a lack of accountability and loose budget constraints as described above, they can only be reduced with policy measures that change these incentive structures.

Limiting unsustainable capital flows

While the last decade was characterized by a strong belief in the self-regulation of markets, the crisis has clearly shown that more prudence and liability is needed in the financial system, which requires a better, globally coordinated regulatory framework. With globally integrated financial markets, a national course of action has outlived its purpose. The regulatory framework should aim at preventing excessive capital flows not by capital controls but by strengthening the liability principle, which is one of the fundamental principles of the market economy.

To be specific, the answer lies in re-imposing the market discipline of credit interest spreads and equity risk premia so as to avoid both overheating and moral hazard. But as long as the present policy of bailing out insolvent banks and countries persists, the discipline is stymied. The idea of joint liability and the corresponding socialization of creditors' or shareholders' losses perpetuate the imbalances in foreign trade and capital flows.

Our proposals for re-constructing the international monetary system can be grouped into various components.⁷

First, a crisis mechanism has to be devised that takes effect when a sovereign debtor faces a liquidity crisis or threatens to become insolvent. An appropriate system of support would provide liquidity assistance by the community of states only for a limited period of time and in limited amounts, and would then be followed by an insolvency procedure that conditions further financial assistance on a well-defined participation of the creditors. The potential capital loss leads to proper pricing of the various risks, thereby inducing investors to choose more cautious strategies and debtors to be more reluctant in taking on debt. Thus, bankruptcy is less likely to occur in the first place and, in case of a crisis, a panic-driven intensification is prevented because of the assistance by the community of states.

Second, more demanding equity regulation of the banking sector is needed to foster prudence among investors and to protect against the occurrence of housing and asset price bubbles that could overheat the economy and result in excessive capital flows. The better the equity endowment of the banking system, the less need there is for a bail-out of banks and countries, the lower the incentive to gamble, and the smaller the probability of bubbles forming. Basel III took a step in the right direction but it did not go far enough.

Third, a crisis mechanism is needed that takes effect when a bank is threatened by impending insolvency. A higher equity requirement by itself would not help if a bank must be shut down as soon as its equity falls below this requirement (regulation paradox) and will therefore be rescued by the government sector with gifts such as subsidies for bad banks, excessively low central bank rates or other measures that involve a resource transfer to the bank's shareholders. To make sure that the shareholders bear the risk they are supposed to bear, while systemically relevant banks are rescued nonetheless, new equity should be provided not as gifts but in exchange for stock. For that purpose private or public rescue funds should be set up that, if necessary, become co-owners of endangered banks.

Fourth, a precondition for a worldwide application of the Basel framework is the harmonization of accounting rules. These rules should not allow the netting out of certain assets and liabilities from the balance sheet as in the accounting system used in the United States, nor should they suffer from the multipliers implicit in the mark-to-market or fair-value principle.

Fifth, governments should strictly regulate the riskiest investment activities such as multi-stage securitization (like mortgage-backed securities or collateralized debt obligations) or credit default swaps, in order to eliminate practices that lack any economic function but can have destabilizing effects on the economy. Again, much more equity is required for such operations to make sure that the investors are able to bear the risk they incur and cannot exploit the privilege of limited liability by simply shifting the potential losses onto others while they themselves collect the gains.

Sixth, financial supervision should also apply to rating agencies, given the unfortunate role such agencies played in the recent crisis, as well as to hedge funds, private equity companies and special-purpose vehicles, which sometimes undertake extremely risky transactions without having to back them with capital.

Seventh, a multi-level supervisory system should monitor compliance with the regulatory framework described above. Since all major banks engage in cross-border activities, a merely national approach is inappropriate. Instead, a superordinate supervisory agency, designed according to a harmonized organizational plan, should preside over regional and national agencies. The IMF is a potential candidate for such a superordinate agency.

In the following these aspects are described in more detail.

Sovereign debt: a credible crisis mechanism

To solve debt crises of countries, clear and credible rules are important to guide investors' behaviour and avoid *ad-hoc* measures by politicians that are costly and prone to misconception.

While in theory no-bailout rules lead to a proper pricing of risks and a cautious choice of investment strategies, in practice they are not credible and thus fail to deploy their incentive effects. They are not credible because investors can expect systemically relevant

⁷ See Sinn (2010a, 2010b and 2010c), and Sinn and Carstensen (2010).

countries to get financial assistance in order to prevent domino effects. This was clearly shown by the European Union when it created the European Financial Stabilisation Mechanism (EFSM) in May 2010 despite the no-bailout rule as laid down in Article 125 of the Union Treaty. Thus, any crisis mechanism aimed at providing effective help to endangered countries and avoiding panics without becoming full-coverage insurance against insolvency must stipulate credible rescue measures that force investors to bear part of the costs. The mechanism needs to be established beforehand.

When countries cannot meet their obligations to their creditors, other states should and would often provide rescue funds. On a world-wide scale this help is organized by the IMF. Within the eurozone, the funds are provided by the community of eurozone countries.

We envisage a three-step procedure for a credible crisis mechanism.

Step 1: At the start of a crisis the presumption is always that the country faces a mere liquidity crisis because of dysfunctional markets. To fight the liquidity crisis the community of states can provide liquidity help in the form of senior short-term interest-bearing loans, assuming that the respective country will be able to again meet its obligations in due course. The loans should be endowed with a country-specific rate of interest, substantially above the average interest rate of other countries with similar debt characteristics or equal to the average interest rate of other countries if covered bonds collateralized with privatizable state property are provided in exchange. The loans should be limited to the amount needed to replace the outstanding debt for two consecutive years plus a budget deficit of up to 3 percent of GDP. The liquidity help is not provided for more than two years, since that period should be enough to carry out the fiscal reforms necessary to convince private creditors to continue lending funds to the country.

Step 2: If a country is unable to reassure its creditors after the two-year period, it obviously does not face a mere liquidity crisis but is threatened by insolvency. To prevent full insolvency, i.e. the default of the country's entire debt, first a procedure applies that serves the function of a breakwater structure to forestall a default, which allows for a piecemeal solution to the problem by dealing only with the maturity of the debt

coming due.⁸ For that purpose, it is necessary for the outstanding debt to have been previously endowed with collective action clauses (CAC). Today, all creditors of a country can normally call in their debts if a country negotiates a debt moratorium with only some of them. The new clauses, which from now on should be included in all debt contracts of all countries belonging to the IMF and the EU, for that matter, would specify that in the case of impending insolvency the respective country can negotiate a debt moratorium with the subset of creditors whose claims are coming due, and that it suffices if a qualified majority of them agrees to a moratorium. Given the collective action clauses, the country then negotiates a haircut with the respective creditors. Such haircut follows the market discount on the nominal value of the debt, as materialized during the previous three months, but is constrained by lower and upper limits, say 20 percent and 50 percent. The reduced value of the debt is then exchanged by the country for new debt instruments, so-called replacement bonds that are partially, say at 80 percent, guaranteed by the community of states. This breakwater procedure gives the respective country another chance to get back on its feet and serves as an intermediate step to solve a crisis that falls between a mere liquidity crisis and a full insolvency crisis.

Step 3: If the country proves unable to service the replacement bonds or has accumulated a stock of replacement bonds exceeding a certain percentage of its GDP, say 30 percent, it has to declare full insolvency. In this case a debt rescheduling programme, involving substantial and unlimited haircuts for the outstanding debt and/or the interest it bears, needs to be negotiated with all creditors.

In steps 1 and 2, all help coming from the community of states is contingent on compliance with the conditions set forth by a rescue programme worked out between the country in question and the community of states, the IMF or the EU. Such a programme, which effectively places the budget of the country threatened by illiquidity or insolvency under external supervision, is aimed at overhauling the state's finances and includes reforms aimed at fostering economic growth.

Our crisis mechanism is basically a partial coverage insurance contract against insolvency. It fully insures against a mere liquidity crisis, but since by its very definition such a crisis cannot go on forever, it places its main emphasis on the intermediate case of impending insolvency, which might also be called a more serious

⁸ The breakwater procedure was developed in Sinn and Carstensen (2010).

liquidity crisis. We believe that this plan avoids a panic-fuelled intensification of a liquidity crisis. Panic can emerge in financial markets when investors fear that their losses will exceed all limits, and it can lead to a chain reaction that infects other countries. Yet, a well-defined haircut instils the necessary caution in investment decisions because the risk of losing at least part of one's capital is essential for stoking investors' prudence, and it minimizes the risk of bankruptcy in the first place. The potential capital loss causes investors to demand higher interest premia to cover the idiosyncratic country risks. Borrowers will also be more circumspect in taking on debt, further reducing the danger of a solvency crisis.

On 28 November 2010, the eurozone's finance ministers agreed on the main features of a permanent crisis resolution mechanism that is to replace the EFSM in mid-2013. The agreements are compatible with the specifications outlined above. They do include the issuance of new government bonds furnished with collective action clauses, and they also foresee collective action clauses. These clauses could be formulated such that they allow for a case-by-case participation of private creditors as explained above.

Once the new rules are in place, there is no further need for the European Central Bank to buy sovereign bonds, especially those with an inferior rating. Acting as a lender of last resort, the ECB launched an unlimited government bond-purchasing programme in May 2010, spending about 70 billion euros in such purchases so far. Should a sovereign insolvency occur, the European taxpayers will have to bear the cost. The ECB has already announced that it will have to double its capital. These problematic and highly disputed actions of the ECB should be ruled out in the future as they would undermine the crisis procedure specified above.

Under no circumstances should Europe take measures to socialize the public debt explicitly or implicitly by avoiding the haircut specified in the second or third steps above. Eurobonds, which have recently been proposed by some EU countries, would be a particularly dangerous recipe for maximizing the moral hazard in terms of excessive lending and borrowing operations. Such bonds, as well as an extension of liquidity help under Step 1 in the above procedure, would reinstate the forces that in the past have led to excessive capital flows between countries. They would again lead to overheated growth in Europe's south and western periphery and perpetuate the stagnation

in its core, with the obvious implications for trade imbalances pointed out above. This would only lay the foundation for even bigger future debacles in the global financial system.

Regulating the banking sector

(a) Basel IV

By far the most important regulatory measure for banks is to require larger amounts of equity to underlie their operations. A larger equity buffer enhances stability in case of a crisis and, what is more, it encourages more prudence in dealing with risk in the first place because it increases the shareholders' actual liability. At the November G20 Summit in Seoul the heads of government agreed the Basel III framework that will apply from 2013 and will be gradually implemented by 2019. This framework raises the mandatory reserves in relation to the sum of the risk-weighted assets (Tier 1 capital) from 4 to 8.5 percent by 2019.

The most important step in the Basel III agreement is that banks will be required to hold Tier 1 equity of at least 3 percent of their entire balance sheet, implying a leverage ratio of 33. For the first time banks will have to hold equity for positions with zero-risk weight like government bonds, even though formally the zero-risk weight for government bonds has been maintained.

As was argued above, the zero-risk weight for government bonds, which implied that banks needed no equity capital to hold against them, was one of the main drivers of the European sovereign debt crisis. It explains why banks were overexposed to government bonds and why markets did not provide proper interest surcharges on the bonds of countries with a lower probability of repayment, which in turn implied that the effective, mathematically expected rates of interest for such countries were below those of the safer countries and induced excessive borrowing, excessive capital imports and excessively large trade imbalances.

Although Basel III substantially increases the capital requirements, it is still not strict enough, since during the financial crisis many banks suffered far greater losses than the size of the buffer now required. Big international banks like Wachovia, Washington Mutual, Fannie Mae, Freddie Mae and German IKB all experienced write-off losses during this crisis in the double-digit percentage range relative to the size of

their balance sheets. Thus, even the new Basel III framework offers insufficient protection against future crises.

In a new Basel IV framework the system of risk weights should generally assign higher risk weights to investment in securities than to loans to companies. Under the present Basel system, banks need 2.5 times as much capital even for loans to well-managed businesses as they must hold for structured US securities. This is flawed insofar as loans made to individual borrowers should generally be considered safer than investing in anonymous non-recourse securities that do not imply a title against the issuing institution but only against the collateral it provides. In addition, government securities should generally receive risk weights, the weights being strongly differentiated according to the specific rating of the respective countries. It would furthermore be advisable to increase the leverage ratio significantly above the 3 percent foreseen in the Basel III system.

(b) A crisis mechanism for banks

As explained above, a mere increase in the required equity constraint would be insufficient to induce prudent behaviour because of the regulation paradox. If the supervisory agency threatens to shut down a bank whose equity has fallen below this constraint, and if, therefore, the government or the central bank steps in to bail out this bank, banks will always have an incentive to gamble, privatizing the upside risk and socializing the downside risk. To eliminate this incentive, a credible bail-out procedure has to make sure that troubled banks do not receive gifts but equity in exchange for shares of stock. This would make sure that the existing shareholders bear the banks' losses while the bank can continue to operate. The bank is rescued, but not its shareholders.

For that purpose, a rescue fund needs to be established beforehand with the banks' own contributions. If a bank suffers from an equity loss that endangers its banking licence and if it is unable to plug the loss by issuing new shares in the market, as the market is dysfunctional, the fund would become a temporary co-owner, selling its shares when the market will have returned to normality. Should the fund's endowment prove to be insufficient, the government would have to step in to become a temporary co-owner, as was the case in the current crisis in the United States, Britain and elsewhere. However,

this would clearly be an inferior solution to the private fund partaking of the ownership.

(c) Accounting rules

An important prerequisite for a worldwide application of the Basel system and one of the most important tasks of the G20 is the harmonization of accounting rules. Currently there is a confusing variety of such rules. In Europe, for example, there are many national accounting systems that are only gradually being replaced by the common *IFRS* system endorsed by the European Commission and controlled by a London-based accounting institution, the *IASB*. The United States, in contrast, uses *US GAAP* as formulated and controlled by another accounting institution, the *FASB*. *IFRS* and *US GAAP* have the same origins and are largely based on the same basic principles. However, *US GAAP* allows banks to net out certain assets and liabilities from their balance sheets which then do not fall under the minimum capital requirements.

Furthermore, both accounting systems suffer from the pro-cyclicality of the mark-to-market or fair value principle. According to this principle, the assets of the bank are valued at current market values, while the loans raised by them are usually booked at face values. Thus the size of profits and the accounting equity are subject to large fluctuations. In an economic upswing, when all asset prices are rising, high profits are shown even if no money is coming in, while in downturn phases accounting losses may be reported, although banks are actually performing well. As a consequence, a bank that in good times adjusts its equity to the minimum capital ratio by distributing dividends or repurchasing its own stocks will be confronted with deficient equity in a downswing and be forced to limit its lending, thereby hurting real investment and intensifying the downswing.

In contrast, a harmonized accounting system could be based on the lowest-value principle. This principle was established first under French Finance Minister Colbert and it was used, for example, in Germany after the reforms of 1884 that followed the Great Panic of 1873, which had been largely caused by the application of the mark-to-market principle. Instead of continuously adjusting the valuation of the assets to changing market prices, the principle says that a company must always choose the most cautious valuation method to protect its creditors. Accordingly, after comparing the market value and the acquisition

cost of an asset, the lower of the two ought to be used for accounting purposes.

Applying the lowest-value principle implies that banks and other companies tend to have hidden reserves in their books that serve as a buffer in turbulent times. The stability of the German financial system before the IFRS was introduced could be largely explained by the application of this principle.

(d) Limiting risky business activities

Governments should strictly limit risky business activities. The most risky ones should be prohibited for commercial banks altogether. In order to increase transparency and protect savers, commercial banks should be banned from owning private equity firms, hedge funds, or special-purpose vehicles, as was the case in the United States until 1999 under the Glass-Steagall Act.

A complete separation of investment and commercial banks along the provisions of the Glass-Steagall Act, however, would go too far. It would not only undermine the European banking system, which has never had such a separation. What is more, it could aggravate a financial crisis by making the banking system more dependent on the functioning of the interbank market. When commercial banks can no longer purchase stocks, bonds, or debentures, they would have to channel a correspondingly larger fraction of the savings they collect from households to ultimate real investors via the investment banks. This would make the system vulnerable to a confidence crisis such as the one triggered by the demise of Lehman Brothers, which implies a breakdown of the interbank market. The channel from savings to real investment could be more easily interrupted if commercial and investment banks were fully separated, and hence the economy would be more unstable.

Short sales should be banned entirely because short sellers, by trading huge quantities of borrowed assets, effectively use market power to move the market, which leads to economic inefficiency and welfare losses. Unlike forward speculation, which tends to stabilize asset prices, short sales destabilize them.

The market of non-recourse claims should be strictly regulated in order to achieve transparency, accountability, and liability. Non-recourse loans to homeowners, which are common in the United States but forbidden in Europe, should be eliminated to ensure

that homeowners remain responsible for the repayment of their loans and exhibit more prudent and restrictive borrowing behaviour. Had US loans been of the recourse type, the housing bubble, the resulting capital imports and the US trade deficit would all have been milder or avoided altogether.

Multi-stage securitization beyond simple collateralized debt obligations (CDOs) should be prohibited. Even at the first CDO stage, it is extremely difficult for the buyer to determine the probability of repayment and to find out against whom he is actually acquiring claims. Multiple securitizations beyond that just make the system opaque without enhancing its risk consolidation capacity. Every institution that securitizes claims should moreover be obliged to keep a certain fraction of the securities, at least 20 percent, in its own books. This rule would induce the participating banks or brokers to be much more cautious in selecting the parties they are lending to. They would be more careful in selecting the mortgage claims on which they base the CDOs they issue.

Investors in financial markets could be encouraged to avoid non-recourse securitization entirely by developing an international market of covered mortgage bonds along European patterns. Covered mortgage bonds are not only secured by the collateralized properties, but represent legal claims against the issuing banks, providing maximum incentives for avoiding unproductive risks. After the wholesale collapse of the US mortgage securitization market, this could be an instrument to re-establish trust.

There is an urgent need for prudence-fostering regulation of the market for credit default swaps (CDSs). As this market has not been subject to any regulation, it has turned into a gambling casino that has become so huge that the world economy would be severely hit should this market collapse some day. Originally, CDSs were guarantees granted by one bank to another bank as insurance against losses. As such, they fulfilled an important economic function by distributing the risk of a real investment onto several shoulders. However, over time credit default swaps all too often mutated into mere bets on the demise of firms or on other events that do not directly affect the contracting parties. In addition to high equity/asset ratio requirements, an international supervisory body should be set up to register and examine the various existing hedging contracts. At the very least, the contracting parties must be able to prove that the insurance buyer has an insurable interest in the sense that the buyer

would suffer from a true loss that exceeds or equals the contracted indemnification payment.

(e) Extending the set of regulated institutions

It is of great importance to close the current gaps in financial supervision. This does not only concern the market for credit default swaps as explained above, but also entities that banks create to run big risks off their balance sheets, in particular special-purpose vehicles in Europe and hedge funds that are more common in the Anglo-Saxon countries. These institutions undertake extremely risky transactions with huge leverage and minimum capital input, as they are not subject to any supervision. These financial entities, whether owned by banks or independent, must be subjected to the Basel system and back their transactions with capital. This applies to all hedge funds and not only those being considered as 'systemically relevant' as agreed on at the London G20 Summit in April 2009.

The same level of international supervision should apply to rating agencies. The institutional conditions in the rating market are unacceptable from the point of view of bank customers and of European competitors of American banks. Therefore, a regulatory system should be drafted that ensures that the criteria according to which the rating agencies determine their rating categories will be completely transparent. Furthermore, the rating agencies must no longer be involved in the structuring of the securities they are rating. As this was an important part of their business in the past, the corresponding business divisions should be managed as independent service companies. And finally, while the service companies can continue to be paid by the sellers of financial products, the rating agencies themselves could be financed by the buyers and/or the government, given the public goods nature of their services.

(f) Supervising banking supervision

In order to monitor compliance with the regulatory framework, international institutions like the International Monetary Fund or the Bank for International Settlements should be assigned the responsibilities of a superordinate regulatory agency. This agency would stand at the apex of a hierarchy of supervisory bodies and give directives to be followed by the subordinate institutions. In the EU, the next level down would be occupied by a common European agency, endowed with the right to issue

directives to the national agencies. The latter, finally, could be either central banks or independent supervisory agencies that are designed in accordance with a uniform organization chart and are responsible for the supervision of individual banks.

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