

**FINANCIAL SERVICES, ECONOMIC NEEDS  
AND GLOBAL FINANCIAL ARCHITECTURE:  
A BACKGROUND PAPER**

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Prepared for the

**Global Ecumenical Conference on a  
New International Financial Architecture,**  
Guarulhos. Brazil, 30 September to 4 October 2012

**A joint initiative of the  
World Council of Churches,  
World Communion of Reformed Churches and  
Council for World Mission**

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## Contents

<b>I. Setting the stage and focusing the spotlight.....</b>	<b>1</b>
Ethical but also structural failure .....	3
The havoc caused by the financial crisis .....	6
<b>II. The most common financial institutions and services .....</b>	<b>8</b>
Core banking: the public utility .....	8
Long-term lending and equity investment .....	10
Savings and investment mechanisms .....	11
Pension funds and insurance companies .....	14
Private versus public financial services.....	16
<b>III. Essential public oversight of the system .....</b>	<b>18</b>
The nature of risk in financial firms .....	18
Protecting the banking sector from itself.....	19
Regulation of investment banking, brokerage activities and securities markets.....	20
Let banks be banks, and nothing more .....	22
Financial crisis policy.....	23
<b>IV. Derivatives and “shadow banking” .....</b>	<b>27</b>
Foreign exchange markets .....	28
Commodity markets .....	31
Stock market derivatives .....	32
Credit default swaps .....	33
How should derivatives be regulated?.....	35
<b>V. Coherent and responsible international policy: the financial “architecture” .....</b>	<b>39</b>
A new IMF with new governance arrangements .....	39
Reviving the concept of an international reserve currency.....	40
A sovereign debt resolution mechanism.....	41
Inadequacy of the G20 .....	41
A global governance body.....	42
<b>Annex. The US mortgage fiasco: an instructive case.....</b>	<b>44</b>
<b>References.....</b>	<b>47</b>

## **I. Setting the stage and focusing the spotlight**

Whether or not one ever doubted it, we indeed have a global financial system. It links a set of banks and financial markets around the world and impacts countries big and small, albeit in different ways and to different degrees. Its centres are in Europe and the United States, with sub-centres in Japan, Hong Kong, Singapore and the Gulf countries, drawing as well on a number of “off-shore” centres, whether in developing or developed countries, where transactions can be disguised or hidden, as from national tax collectors. It includes several large national markets of regional importance, such as in South Africa and Brazil. Virtually all countries have become attached to this global system to some degree, as national financial systems have become increasingly integrated into the global system. If one is interested in the economic and social impact of the financial industry in one’s own country, whichever country that might be, one needs to understand the basics of the global system that this paper will try to describe, as well as the one at home.

In other words, this paper will review what economic functions are needed from finance in a market economy, the risks to the economy associated with these activities, and which activities are potentially so dangerous they should not be permitted. The paper tries to explain why each piece of the system must be regulated in one way or another, how it has not been done effectively in the world’s financial centres, and thus in what directions to look when considering how to improve the system. The conclusion is that the financial structures in the developed countries have mostly been rescued but not yet repaired. The aim of repair should be to make the provision of essential financial services safe, effective and fair. In developed, as in developing countries, governments need to be actively involved, in certain cases providing services directly and otherwise imposing regulations, monitoring and enforcing their implementation, and punishing violators.

It is expected that most potential readers of this paper will not have the time to delve into all the details that are presented below. The paper is denoted a “background paper” precisely to indicate that it seeks to make available to the curious an introduction to a set of fundamental if often esoteric and sometimes even dangerous financial instruments and institutions, and help distinguish the economically useful and essential from the more dangerous ones. The story of the US housing finance fiasco is told in some detail in an annex to illustrate what can happen when regulation fails its responsibilities. Finally, global governance imperatives are outlined that follow from acknowledging the need for more effectively coordinating financial regulations and policies internationally.

A set of pointers toward policy reform emerge from the discussion. Some of them refer to current policy debates governments are having and some are reforms for the future when more of a political consensus emerges. However, the reforms that are not yet “on the table” should not be discounted. Politics is not linear. Interest in a seemingly distant reform can unexpectedly begin to gather momentum and can grow exponentially.

A menu of such reforms could start with the following:

***Serve the “real” economy***

- Protect core banking services by prohibiting commercial banks from engaging in proprietary trading and other high-risk activities, such as selling or buying “credit default swaps.”
- Break up banks that are “too big to fail,” including by forcing such banks to divest non-bank financial services businesses.
- Strengthen prudential regulation, including by requiring an adequate capital base for banks, and strengthen oversight capacity.
- Provide fully reliable, confidence-inspiring deposit insurance systems to discourage bank runs.
- Cooperate internationally to set and enforce position limits on traders on all formal exchanges to limit commodity price volatility.
- Permit trade in financial products only if they have standardized contracts and trade on formal exchanges with central clearing.
- Extend strong prudential oversight over “shadow banking” activities of any bank, investment bank or brokerage firm by requiring licenses and regulatory standards (such as capital backing) to sell or buy regulation-approved non-bank financial instruments.

***Serve the people***

- Protect retail customers by disallowing dangerous and unfair financial practices.
- Promote financial literacy through full disclosure and education.
- Boost access of the poor to basic financial services through either direct public provision (e.g., postal savings) or socially oriented financial service providers (e.g., credit unions).
- Strengthen the social protection floor through public programmes (e.g., unemployment insurance, health care).
- Assess the likely impact of a new financial instrument before it is sold to the public, considering whether the innovation serves a purpose that society supports or not.
- Introduce a financial transaction tax to more fairly mobilize tax revenues for financial rescues and to fund global social needs.

***Coherent and responsible international guidance***

- Replace the Group of 20 with a Global Economic Coordination Council of government leaders selected to represent regional constituencies to oversee the global economy and its trade and financial systems.
- As an interim step, create an informal forum to bring representatives of governments, multilateral institutions, private sector and civil society together to build consensus on financial policy reforms that serve society.
- Create a comprehensive, fair and transparent sovereign debt restructuring mechanism.
- Recreate the International Monetary Fund as a democratic and transparent forum for international financial stability, and equitable and sustained development.
- Ultimately replace the dollar-based international monetary system with one based on an international currency, such as the SDR.

## Ethical but also structural failure

A former hedge fund manager who is serving a 22 year prison sentence for a Ponzi scheme was quoted as saying, “Everyone cheats. I’m not a liar. I became a liar.”<sup>2</sup> The hedge fund manager is right. He was not born cheating, but it seems he was unable to resist the temptations in the financial industry. Perhaps the opportunities were just too many and too attractive. Perhaps he believed that cheating was acceptable in finance, because, as he said, “everyone” does it. He operated his fraud for a decade, took advantage of some of the “most respected investors on Wall Street,” and his scheme was only revealed when his firm collapsed. Regulators in the United States had examined his firm six months before the collapse and did not see anything wrong.

He was assuredly a “bad apple,” but it increasingly appears that much of that harvest is spoiled fruit. Consider Friday, 13 July 2012, admittedly an unlucky numbered day in many countries. On that day, the first page of the business section of *The New York Times* contained six stories, five of which were about illegal or inappropriate financial behaviour.<sup>3</sup> While disturbing numbers of people appear to have crossed the line into illegal activities, many more stay just within what is permitted or seek to move the boundary or skirt responsibility or take advantage of complexities in the system for personal profit. Financial innovators have gone from merely over confident to baldly arrogant in creating Frankenstein-monster securities they did not themselves fully understand, but that the investor community eagerly bought up. Until the crash, the innovative bankers on Wall Street and the City of London were called the “Masters of the Universe” and they apparently believed it. The attitude seems to be, if everybody does it, why not me too? The recent increased efforts of legal authorities in the United States and Great Britain to investigate financial crimes is thus a welcome sign, although one must wait to see how many cases lead to prosecutions, let alone convictions, fines and jail time.

What we have seen in finance seems only a sample, albeit large, of a wider phenomenon, namely, that the general sense of social responsibility on which societies depend has weakened. Many people seem to feel either that their actions have no impact on others or they do not care. Somehow, greed has been unshackled, especially among the rich. This is beyond self interest and it is not sustainable. That greed has become a more socially accepted concept troubles religious

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<sup>2</sup> As quoted in Andrew Ross Sorkin, “A con man who lives between truth and fiction,” *The New York Times*, 26 June 2012, p. B1.

<sup>3</sup> First, the largest European financial institution, HSBC, announced that its senior officials would apologize for the extensive money laundering for terrorists and narcotics operations that it failed its obligation to observe and halt at its US bank, for which it was expected to incur a fine of up to \$1 billion; second, following the attempted suicide of the founder of investment and trading firm Peregrine Financial Group, regulators found that \$215 million in customer funds were missing (the firm filed for bankruptcy); third, Timothy Geithner, US Treasury Secretary, acknowledged that in 2008, when he headed the New York Federal Reserve Bank, he had discovered “fundamental problems” with how an international benchmark interest rate, LIBOR (London Interbank Offer Rate), was set and suggested to his British counterpart how regulators might reform the process, although he apparently did not make clear that fraud had been uncovered; fourth, the city of San Bernadino, California authorized a declaration of bankruptcy, the third municipality to do so this year in California, which was attributed to “fiscal mismanagement” albeit in part owing to inability to raise tax revenues (a result of statewide irresponsible voter decisions), disappointing pension fund earnings and rising expenditures; and fifth, US authorities reported they were more optimistic about increased cooperation with Chinese counterparts in investigating the reliability of audits by Chinese accounting firms after a wave of Chinese corporate frauds, which apparently harmed American and other foreign investors.

and ethical thinkers.<sup>4</sup> It also underlines the concerns that led to the call for the present conference.

Nevertheless, it is important to stress that the problems in finance go beyond the “bad apples,” however many there are. As this paper shall argue, even a world of honest financial executives can cause havoc to their own and the world economy unless their fondness for acting in risky ways is prevented from endangering the financial services that are essential to modern economies. No less than Adam Smith (1776, p. 713) warned us about this over 200 years ago:

“[For the banking trade to] depart upon any occasion from [strict routine] in consequence of some flattering speculation of extraordinary gain, is almost always extremely dangerous....”<sup>5</sup>

Nik Wallenda walked across Niagara Falls, between Canada and the United States on a high wire on 15 June 2012. No one was endangered except Nik Wallenda (he made it). That is the way financial risk should also operate, but this is far from how it actually operates.

Equally problematical is the heavy borrowing that financial institutions and investors undertake to enable taking greater financial bets. When a highly “leveraged” investor (one who has borrowed heavily) profits on his trades, he can make large profits; but when he loses, he can cause bankruptcy for his investors or his firm, and possibly that of their creditors. In 2008, such losses were poised to cascade through the financial system in the United States and Europe, and harm investors from other countries who had entrusted their funds to the world’s major financial institutions. And in this catastrophe lay a source of immense power for the banks. As a modern economy cannot operate without basic financial services, the banking system had to be protected from its own follies, no matter the potentially great cost to taxpayers.<sup>6</sup>

In addition, national politicians in some countries have given disproportionate weight in public policies to what they believe would please financial executives, at least in part out of fear of negative investor views on government finances and thus on interest rates on government bonds. This fear has a certain basis, as many bondholders have extremely short time horizons and will quickly sell bonds of countries on which they begin to have doubts or if they suspect other bondholders will start to develop doubts. This makes bond prices and hence the yield investors receive from holding bonds quite variable. This only matters to the government when it comes time to sell new bonds, but it typically does this frequently, as maturing bonds will be replaced and new budget deficits have to be financed. The problem in such a short-term investor focus is it leads to excessive austerity to convince bondholders not to fear that the government might have difficulty making the next payment, even though this policy may also undermine the ability to make payments further down the road.<sup>7</sup>

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<sup>4</sup> See, for example, the effort to conceptualize a “greed line” to define a limit to morally acceptable wealth accumulation to parallel the “poverty line” of unacceptable material deprivation in Taylor (2011) and other articles in the same issue of *The Ecumenical Review*.

<sup>5</sup> Andrew Cornford dug out this quote in his letter to the *Financial Times*, 4 July 2012.

<sup>6</sup> Actually, the system has to be protected, not individual banks or bank executives. Although some of the latter fell, one may say that too many survived the crisis, indeed, with their wealth intact.

<sup>7</sup> In Europe, in particular, unsustainably high interest rates on the bonds of some governments are attributed to bond market belief that national policies are insufficiently austere. But investors also understand that government debt-

Voters are infuriated, however, not only by the degree of austerity but also by the content of fiscal and monetary policies, which have protected the interests of creditors, especially the large financial institutions. Not only have governments failed to relieve the crises of the debtors—most notably “underwater” home owners—they have also been unable to collect adequate taxes from the rich. Meanwhile, financial industry lobbyists have focused on weakening or turning aside efforts to strengthen financial market regulation in the developed countries. The great concentrations of wealth in the financial sector have empowered the leaders of the industry to protect their interests from encroachment, even against the interests of also rich if less organized investors and investor agents in pension and mutual funds. The public interest suffers. Excessive accumulations of wealth in finance and other economic sectors are distorting political processes and democracy. There is unfortunate truth in the American humorist Will Roger’s remark, “We have the best Congress money can buy.”

Two senses of fairness are needed to hold modern societies together. One is the sense that the *operation* of the political, economic and social system is basically fair, that people who abuse their authority or opportunities are the exception, not the rule, and that abusers of society’s standards will be caught and punished. The concern expressed above about financial executive behaviour suggests that the world is failing this sense of fairness. The second sense of fairness is that the material *outcome* meets society’s standard for an acceptable sharing of its benefits. The much commented widening of inequality in income and wealth within and between countries, especially since the 1980s (OECD, 2011, chapter 4), challenges the second sense. This is not sustainable.

And yet, the organized opposition to the finance-friendly policies in Europe, America or elsewhere in the world is far from a mass movement. This may stem from two factors. First is that people seem to have little confidence in the views of politicians, whether those in power or in the opposition. That is a healthy scepticism, but it will not solve problems. Second, it seems that the average man or woman in the street does not understand the complex financial system that is the source of the crisis. What do people do if they do not understand the system and do not trust the people whose hands are guiding the ship? Most people do nothing but try to cope at the personal and family level.

Some people, however, organize themselves in ill-informed and extremist groups, such as the Tea Party in the United States and ultra-nationalist and anti-immigrant movements in the US and Europe. They serve as pawns of the very economic interests that have twisted the system. They have often also been misled into advocating for policy changes that would worsen their own difficulties. But other groups of people have also formed themselves to explicitly confront the power structures that rule them, ranging from the Arab Spring movements to overthrow dictators that was propelled by widespread unemployment and poverty, to the “Occupy” movements in the United States and similar movements in Europe and elsewhere. Thus far, the “occupiers” have mainly protested an economic and financial system that too easily tolerates dominance by the rich (the “1 %”) and by the private and official institutions they control. This is

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servicing capacity rises when incomes and hence tax revenues rise. Austerity directly reduces income and consumption and that discourages private investment as sales are weak. Indeed, European interest rates recede when “bailout” financing for governments is announced. The reason seems twofold. First, funds will be available to make the next interest payment. Second, the need to further contract the economy and postpone recovery is reduced, at least temporarily.

valuable but, unlike the Arab Spring, it has not yet been able to mobilize the broad mass of people.

The time is ripe to take the next step from the widespread sense of disaffection that “Occupy” and similar movements exposed to advocacy for structural reform. Leadership may come from whoever has the most compelling vision of how the world could work better, whoever gets their message out more effectively to the world at large, and whoever is most effective in mobilizing people to confront the status quo. One impediment to elaborating such a vision is the complexity of the financial system itself, which confuses political leaders as well as the common man and woman. That complexity works to the advantage of the status quo. The essence of the solution is to make the system simpler. It is thus necessary to try to understand more clearly how it works, which parts are essential and which should be curtailed because they are too dangerous.

### **The havoc caused by the financial crisis**

When the collapse came in the latter months of 2008, there could no longer be any controversy about whether the global financial system was working well or poorly. The weakened state of financial regulation in major financial centres created the conditions for a global financial crisis. Difficulties that had emerged in mortgage financing in 2007 in the world’s largest economy, the United States, grew into a national financial crisis in 2008 and not only brought economic activity there to a virtual halt, but in much of the world as well, owing to the interwoven international financial markets and banking relationships around the world. All of a sudden, developed country businesses could not get credit; households were losing their homes; supposedly solid financial institutions were closing; financing for developing country exports and imports suddenly became scarce. By 2009, per capita output was declining in 95 countries, 33 of them developed and 52 of them developing economies, of which 19 were in Africa and 17 in Latin America (United Nations, 2011, p. 9). Output of the world as a whole was estimated to have fallen 2 per cent in 2009 (despite the still strongly growing economies of China and India) and world trade was estimated to have contracted by about 11 per cent (*ibid.*, p. 5). From 2007 to 2009, at least 30 million jobs were lost worldwide (*ibid.*, p. 10).

It is now four years later and trillions of dollars and euros (and billions of pounds Sterling) have been used to rescue the financial institutions that have been at the centre of the crisis. Little was done for the mass of people with unsupportable debts and it is not surprising that consumers have been unwilling to resume spending above the bare necessities, when that was even possible. Global unemployment remains dangerously high, putting grave social stresses on the families of unemployed workers and dimming the prospects of youth that have yet to find their first job.

The developed countries have not helped themselves. They may be divided into three groups. The first included those deemed to have currently unsustainable public debt situations, whether owing to conventional overspending and under taxing over many years as in Greece or resulting from government efforts to deal with the collapse of multiple banks (e.g., Ireland and Spain). Second, were countries that feared unsustainability was around the corner and either adopted severe austerity (United Kingdom) or allowed their fiscal stimulus to expire prematurely (United States). And third were countries that feared becoming the solution to other countries

problems (especially Germany). The net effect was to remove counter-crisis policies prematurely. The Nobel laureate and *New York Times* correspondent Paul Krugman and others have called this romance with austerity a belief in “the confidence fairy”: if we sufficiently starve the public sector (and the public services it provides, mainly to lower-income people), the private sector will judge government to be acting responsibly, which somehow encourages private investment that takes us out of the austere conditions.<sup>8</sup> This makes no sense. Without strong sales prospects, employers do not hire and businesses do not expand.

In fact, the global economic situation is not nearly enough improved. World output and trade are growing again, but slowly. Output recovery has been quickest and most sustained in developing countries although one should not celebrate this development too quickly (see Akyüz, 2012). Indeed, austerity policies have also been embraced by developing countries, reversing the counter-cyclical fiscal expansions many of them undertook when the crisis first spread around the globe, in many cases leaving government social expenditures below pre-crisis levels (Ortiz, Chai and Cummins, 2012).

While the developing countries largely escaped crises in their own financial sectors this time, they were still rocked by their trade and financial linkages to the countries that were in financial crisis. In addition, although exporters of petroleum, food crops and other commodities have benefited from surges in their international prices, importers of these products suffered. This is a special worry for low-income food-importing countries where hunger is always near. Indeed, a central problem in both the global commodity and emerging economy financial markets is volatility: exuberance is followed by disappointment, buying by selling. Developing countries remain vulnerable to renewed instability in the developed countries.

Moreover, the large increase in the global pool of funds that was generated by monetary policy in the United States and elsewhere to save domestic financial sectors has sent money rushing around the planet looking for profitable opportunities that investors no longer saw at home. This brought a surge of speculative financial inflows to a number of emerging markets, some of which imposed taxes on the inflows to discourage them. While developing countries have been impacted by such developed country policies, they have no input into their formulation. They need a venue at which to voice such concerns.

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<sup>8</sup> The argument is that investors lose confidence in the debt-servicing ability of governments when they see that the large government deficits that arose from the counter-crisis fiscal expansions are not getting smaller fast enough and thus force interest rates higher in expectation of future inflation and slow economic growth. This argument is tempered in the United States by the fact that the government can still borrow at virtually zero interest. It is instead said now that someday investors will lose confidence in US Government securities, just not yet.

## II. The most common financial institutions and services

The financial sector of developed countries is often viewed as a universal model, even if the model is not yet fully developed in the financial systems of all developing countries, especially low-income countries. That model is meant to smoothly move funds from people and entities that have more than they intend to use at the moment to people and entities that have less than they need or desire, and to do it in such a way that economically productive and socially desirable activities are undertaken. This “financial intermediation” function is provided through certain core financial services, namely, credit, savings, payments and insurance. There are many ways in which the intermediation takes place and financial innovators repeatedly invent new ones. Each of the ways can be done more or less effectively, efficiently and fairly. This section of the paper discusses the major institutions and markets (holding aside the derivatives industry for more in-depth treatment later). Each one discussed here can contribute to the intermediation function. Each has also been misused.

### Core banking: the public utility

The first essential service that a financial system performs is to operate a nation’s payments system, which is the way that firms, the public sector and in developed countries most households pay for goods and services purchased.<sup>9</sup> Most payments involve transactions between so-called **commercial banks** in which economic actors hold accounts (or they hold accounts in savings banks or other non-bank financial institutions that, in turn, work through commercial banks). Customers instruct their bank through a cheque or electronic instruction to transfer funds from their account to another account to effect a payment. Some transactions take place outside the banking system using cash, but even in those cases, at least in developed countries, most people at some point draw the cash from a bank account and deposit cash into a bank account where the funds are safe. Clearly, effecting payments through banks, especially for large payments, is more convenient and safer than handling cash.

Payments across borders are a step more complicated as currencies must be exchanged, which again usually involves a financial institution rather than a personal cash-for-cash transaction, especially for large payments. Indeed, even relatively small payments, such as remittances from workers in a foreign country to family members at home, are increasingly made through financial institutions of one type or another.

For the payments function to operate smoothly, each bank has to have confidence in the

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<sup>9</sup> While most of the world’s enterprises are “banked” and about 91 per cent of households in developed countries, less than half of households in the rest of the world are “banked” (have an account at a bank, credit union or other financial institution), ranging from 50 per cent in eastern Europe and central Asia to 12 per cent in sub-Saharan Africa (data for 2009; for country and regional details, see CGAP, 2010). Moreover, even in some heavily-banked countries, a substantial share of transactions may be in cash to avoid creating financial records that could be used to collect taxes on “underground” activities. In Spain such activities were officially estimated to represent about 20% of gross domestic product, making them an obvious target for the government as it sought to raise tax revenues in order to deliver on its promised austerity budget (*The New York Times*, 14 April 2012, p. B3). This said, even 10 years ago 92% of people in Spain had some form of bank account (Peachy and Roe, 2006, p. 31).

financial reliability of the banks with which it deals and in the system for transferring funds from bank to bank.<sup>10</sup> Banks must believe that claims for payment made in each direction will be honoured and promptly paid. During the depths of the 2008 financial crisis, this trust evaporated in the United States and Europe, as continued operation of certain financial institutions that had failed became uncertain and it was not clear if more would fail, including some major commercial banks. The urgency of governments and central banks in the United States, the United Kingdom, Ireland, and elsewhere to address this uncertainty with bailout funds or nationalization measures for troubled banks reflected this fear that the payments system would cease functioning, which would seriously impair the credit function of banks (see below) and that virtually all economic activity would come to a halt, not only in the countries in which the failed banks operated, but also in the countries in which the counterparties in specific transactions or partners in multiple transactions operated. One of the major purposes of official regulation of banks had been precisely to prevent that scenario from happening. This was one obviously colossal regulatory failure.

A second essential service of a financial system is to provide short-term credit to operate businesses and the government. Most of this activity is undertaken by banks, although as we will see later, the unregulated “shadow” banking system now accounts for a significant share and that worries regulators. Businesses require credit to advance wages and pay for inputs before receiving revenue from sales. Also, governments may receive tax revenues in quarterly surges but they have to make expenditures smoothly during each quarter, and as a result will borrow short-term, as by issuing treasury bills (T-bills) in anticipation of tax revenues. Banks typically are happy to buy and hold these government debts, as they need to maintain a supply of highly-liquid short-term assets to balance against normal withdrawals from their short-term liabilities (variously called their “current account” or “sight” or “demand” deposits). As customers are free to make withdrawals at any moment, banks need assets they can convert into cash easily and “government paper” is usually the most liquid asset in any financial market. Indeed, banks borrow short term from each other, pledging treasury bills as collateral, an even simpler transaction than actually selling T-bills, or they enter into repurchase agreements (“repos”) with other banks in which they notionally sell their T-bills and promise to repurchase them at a specified time, which could be the following day.<sup>11</sup>

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<sup>10</sup> The banks generally rely on central institutions to clear their payments and keep track of the millions of individual interbank transactions every day. This function is variously provided by an independent clearing house or may be operated by a central bank, and internationally it operates by agreement among central banks and increasingly through a single institution, the CLS Bank (operating the Continuous Linked Settlement system), with messages about individual transactions transferred through the “SWIFT” system (Society for Worldwide Interbank Financial Telecommunication). Central banks of the major financial centre countries adopt common standards and monitor the functioning of the payments system through the Committee on Payments and Settlement Systems, comprising participants from 25 central banks that meet at the Bank for International Settlements in Basle, Switzerland. Together, these institutions make up the central “plumbing” of the international financial system.

<sup>11</sup> A further reason to lose confidence in the major banks came to light in late June 2012, when Barclays Bank admitted to lying about the short-term interest rates it reported it would have to pay on such interbank loans in London. It was widely expected at the time that other major banks would be charged with reporting false data. The data from individual banks are important as they are averaged each day to create the London Interbank Offer Rate (LIBOR) for different maturities of loans in different currencies (e.g., euros borrowed for six months, or overnight dollars). LIBOR serves as a benchmark for interest rates in many different types of transactions in the London and global financial markets. It has served as a benchmark because the market thought it honestly reflected market conditions.

Banks and bank-like institutions are also the source of funds lent to individuals on a revolving basis through so-called credit cards. The cards are mostly used to make purchases from merchants, but can also be used to borrow funds directly from the issuing bank (“cash advance”). Users are required to make at least a minimum payment monthly and pay interest on the outstanding balance at annual rates that can range from reasonable to outrageous. Indeed, a major financial sector reform imperative in some countries has been not only to oversee the business practices of credit card issuers but also to effectively inform users of the financial obligations they might incur when they use the cards.

### **Long-term lending and equity investment**

A third essential service of the financial system is to extend longer-term credits, ranging from bank loans to purchase new industrial or farm equipment to mortgages to finance purchase of houses to government bond issues to pay for large infrastructure projects, such as bridges or dams. It also includes government borrowing to cover a shortfall of tax revenues needed to pay for expenditures, as when a “counter-cyclical” fiscal stimulus is undertaken to fight off an economic recession. While banks and bank-like financial institutions provide much of this financing from their own funds (deposits), large amounts of funds are raised directly from the issuance and sale of bonds and equity shares on securities markets.<sup>12</sup> The comparable service for the government is provided by a group of these institutions that the government designates as its “primary dealers,” as they are the initial sellers of the bonds to investors.

The financial institution designing a security earns a fee for the service, which is the traditional revenue basis of the business, usually denoted an **investment or merchant bank**. Investment banks not only help firms or governments design securities issues, but they also typically advise firms on financial strategies, as in financing a merger or buyout of another firm. Commercial banks may also help firms design and initially sell (“underwrite”) different types of securities, although their basic business is to arrange loans and mortgages (more on mortgage finance in the annex). In fact, US commercial banks have offered full investment banking services only since the late 1990s as a result of a wave of financial deregulation.<sup>13</sup> Until then it had been prohibited by the Glass-Steagall Act of 1933, which had been based on the experience of commercial banks in the US financial crash of 1929.

A different tradition to that of the US separation of investment and commercial banking lay in the so-called **universal banks** of Europe (originating in nineteenth century Germany), which spread to Japan and other Asian countries. Investment banking in the universal bank tradition included holding equity investments in enterprises, often taking a seat on the boards of

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<sup>12</sup> Shareholders have a different relationship to a firm than bondholders. The latter have extended loans that have to be repaid according to the bond contract. Holders of “common” shares formally own the company and receive as dividends a portion of the after-tax and after-debt servicing profits of the firm. As owners of the corporation, they also vote on major company decisions, such as who serves on the board of directors, whether to accept to merge with another firm, or whether to do business in apartheid South Africa, to take a famous case of “shareholder activism.” Different rights of shareholders may be specified for different classes of equity shares.

<sup>13</sup> While smaller commercial banks (“community banks”), savings banks, building societies (“savings and loan associations”) and credit unions are also significant providers of medium-term and long-term credit, including mortgages, not to mention short-term credit and payments services, they are not usually licensed to provide the investment banking and brokerage functions in which large-scale commercial banks—the ones usually deemed “too big to fail”—routinely engage.

corporations in which the banks had invested as well as arranging loans and securities as needed by the enterprises. This was a different financing model than primarily arranging and selling securities for a stream of unrelated clients. However, by the late twentieth century the intense banking/corporate relationships of universal banks, especially in Asia, became more of a hindrance than an efficient means of financial intermediation and less attractive to corporate clients that could increasingly raise funds outside their financial group.

Countries differ in how much credit activity is mediated directly through banks and how much through securities markets, as well as in how short or long term the loans that are given and the range of securities issued. The essential—at least traditional—difference is that banks lend the funds that depositors and other investors have placed with them and investment banks help firms issue securities that will directly match savers with borrowers in a financial market. In some countries, such as the United States, large corporations may be more likely to issue short-term securities rather than borrow large amounts directly from banks, as in Europe. On the other hand, in Europe banks may tend to organize more long-term lending, such as “project financing” for public utility investments (e.g., electric power plants, water works), which would more likely entail financing through securities in the United States. However, today the lines of business of the different institutions increasingly overlap in an increasingly global financial marketplace.

There is a certain risk in a financial house helping a company issue securities, as the “underwriting” institution carries the new securities on its books until it sells them to the market. However, the risk is usually not long lasting (unless the market for the securities is very disappointing). While it is in the essence of investment banking to devise securities to sell into the market, it is also clear from recent history that this function got out of hand with the creation of complex “derivative” instruments (to be discussed in more detail in a subsequent section). Some of them disconnected the essential link between finance and actual capital formation in the economy, while adding huge risks to the financial system. This is one problem that regulation increasingly needs to address.

Another problem arises from the fact that it is not in the essence of investment or commercial banking that the bank trades securities for its own account, although investment banks have traditionally done it as a side business. However, in recent decades it has become a major business of commercial banks, investment banks and brokerage firms (to be discussed below). Indeed, European-style universal banks have also diversified into the same securities writing and trading businesses. For all of them, it was highly profitable, until it wasn't. It was always a risky business. Post crisis, it is again becoming quite profitable and is still risky. Taxpayers are at risk should new bailouts be required. Policy needs to protect the core operations of these institutions and sharply limit the risky ones that contribute little, if anything, to social and economic well being, while risking global financial instability, a point that will be elaborated later.

### **Savings and investment mechanisms**

A fourth essential financial service is the savings counterpart to the credit that the financial system provides. The financial sector offers a range of saving and investment opportunities for firms and individuals that have funds in excess of current needs or are being put aside for longer term goals (weddings, funerals, children's education, retirement). Banks and

financial institutions that are like banks (credit unions, building societies and savings banks) are meant to provide safe and convenient places to hold such surplus funds. Both to protect the savings of depositors and to discourage depositors from fleeing a bank that might be weak but salvageable, deposits in deposit-taking institutions up to a specified maximum are now commonly insured by the government or a government-operated insurance agency. The quid pro quo is that the institutions must submit to regulatory oversight (let alone pay premiums for government insurance of the institutions). Nevertheless, to be convincing to depositors, the insurance fund must command sufficient resources and one of the current difficulties in Europe is that not all of the deposit guarantee facilities operated by individual European governments appear to be large enough to convince depositors that their funds will be safe in a financial crisis (e.g., deposits have fled Greek and Spanish banks).

For most people of modest means, banks and bank-like financial institutions are the central places to accumulate and hold personal savings (but see pension funds below). An additional service is provided to institutions and people of greater means by **brokerage firms**, which specialize in helping clients buy and sell securities in order to increase the value of their “investment portfolio” and hence their wealth. Traditionally, only the employees of brokers that are members of a financial exchange can meet on the floor of the exchange to buy and sell multiple lots of securities. The restriction has been important both to limit the number of bodies on the floor of the exchange and to assure a seller of a security of the reliability of the buyer (and vice versa), in particular, that a payment will follow from the buyer and shares will be transferred by the seller. These firms also advise people and institutions with funds to invest. Although face-to-face trading and trading over telephone calls in some specialized markets are still common, human traders are increasingly being replaced by high-speed electronic platforms that match buy and sell orders.

While the major customers of brokerage houses have traditionally been large institutional investors (e.g., insurance companies, pension funds, foundation or university endowments ) as well as rich individuals, the industry now also serves investors of modest means by offering shares in so-called **mutual funds**, which invest in a portfolio of securities that individuals without great wealth could not match on their own.<sup>14</sup> Among the mutual funds that the financial industry invented was one type that loosened the dominance of banks and other depository institutions over retail deposits. This is the so-called **money market mutual fund**, which emulates a savings deposit at a bank in that it has a fixed value (one dollar per share) but pays higher interest than banks, albeit generally limiting the number and size of retail withdrawals per month. These mutual funds have no government guarantee, unlike a bank deposit, but the risks have usually been deemed small, as they are issued by regulated securities companies and are invested in diversified and large pools of short-term credits, such as **commercial paper** issued

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<sup>14</sup> Customers are asked to believe that the managers of their mutual fund are particularly gifted at picking securities for the portfolio, adding and subtracting them over time to maximize returns for the mutual fund investor given how much risk the investor is comfortable with; the portfolio manager is paid according to how many clients his security-picking reputation brings to the firm. However, some firms also offer fixed portfolios, such as comprising all the stocks in the Dow-Jones Industrial Index, a US stock index, the argument being that over the long run “stock pickers” have no special talent, only longer or shorter runs of luck, and that a diversified fixed portfolio of securities will perform just as well in the long run as the actively managed fund, without paying a high salary to the portfolio manager. Investment companies heavily market both types of mutual funds. In all cases, investors bear the risk if the securities in the portfolio perform poorly.

by large corporations and banks or government securities. In other words, the financial sector developed an alternative way to convert short-term savings into short-term credit, which has been the primary function of commercial banks. With far less regulation than commercial banks, this alternative system forms an important part of the aforementioned “shadow banking” system. The money market funds heavily depend on investor confidence in their soundness, which was not challenged until the 2008 crisis. For the future, investors in them should be discouraged from confusing them with banks.<sup>15</sup>

The financial industry has also given birth to so-called **hedge funds**. These are a special type of mutual fund in which a limited group of wealthy shareholders pool their funds with a manager who undertakes quite risky investment strategies on their collective behalf. More recently, pension funds, charitable foundations and university endowments that were looking for higher earnings than traditional investment strategies provided have placed a portion of their assets in hedge funds. Though this amount is often small as a proportion of total assets, under 5%, it can still represent several billion dollars for large funds.

Although the word “hedge” in finance signifies a transaction to reduce risk, these funds would borrow large amounts of money to heavily leverage their security-purchasing capacity beyond what they could buy with only the investors’ shares in the funds. As was seen in the near-bankruptcy of a US hedge fund called Long Term Capital Management in 1998, a highly leveraged strategy of bets on price changes in riskless US government securities could bring down the firm when prices of the securities did not move as theory predicted. That episode also temporarily brought the US government securities market to a virtual halt, underlining how dangerous these lightly regulated firms could become. That case brought about a regulatory change to limit how much banks could lend to hedge funds (United States, 1999), but the funds themselves have remained lightly regulated. The reason is two-fold: (1) the intended customers of the funds are deemed sophisticated enough to understand the risks they accept in investing with the hedge funds so that consumer protection limitations are not necessary and (2) limiting hedge fund access to credit was thought to remove their systemic risk. Indeed, the funds have largely been held innocent in the recent financial crisis, although they were apparently hungry customers for the toxic securities that the investment banking community created in the run up to the crisis.<sup>16</sup>

While a hedge fund pools resources for mainly speculative short-term investing, another kind of fund pools resources of a group of investors for longer-term investing. These are **private equity firms**, which will purchase the equity shares of an existing firm with the aim of

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<sup>15</sup> One way to convince investors that money market funds are not like bank deposits would be to “break the buck.” That is, the firms issuing them currently promise to maintain the share price at one dollar per share, which they did until one US fund reduced its share price below one dollar in 2008 owing to losses on its investments when Lehman Brothers went bankrupt. The US government then provided a \$50 billion line of credit to other money market funds to shore up confidence and in 2010 adopted certain reforms to better convince investors that the funds could deliver on their promise. In fact, investors should bear the risk of fluctuating share values, as they do in all other mutual funds. An alternative could be to convert the fund companies into banks and regulate them like banks. Instead, far weaker reforms are under consideration (see IOSCO, 2012).

<sup>16</sup> In addition, many of the funds “put up the gates” and did not allow investors to withdraw their funds, and banks did not call back their lines of credit to the hedge funds, which would have driven many of them into bankruptcy and left the banks holding even more “toxic” assets.

accumulating a majority stake in the firm and taking an active management role.<sup>17</sup> In this regard, they differ from mutual funds that purchase shares as purely financial holdings in a portfolio of shares. The equity purchase is often highly leveraged, as in a hedge fund, but with funds borrowed in the name of the target company that is being purchased (a “leveraged buyout”), in which case the new management faces the challenge to become profitable enough to repay the debt and make good profits for the new owners (i.e., the shareholders in the private equity firm). The thinking is that the new management will be more successful than the old, which may indeed be the case, although firing workers, breaking union contracts and pension obligations may surely help as well. Usually, the private equity firm intends to make the takeover target profitable enough to sell to another buyer or “take public” through an “initial public offering” (IPO) of shares, and then invest its profits in another target firm. Sometimes private equity firms succeed in “turning around” a company and making it quite profitable and sometimes they run it into the ground. A quite sensitive social concern about private equity firms is the extent to which the new owners “rescue” a firm on the backs of the workers and communities in which the firm has operated, currently highlighted by controversies in the United States over the experience of Mitt Romney, the Republican candidate for US President who created and led one such firm, Bain Capital.

A special type of private equity firm that epitomizes the romance of the entrepreneur is the **venture capital firm**, which specializes in investing in small, high-risk and often high-technology “start ups” that it can help grow and develop until it can issue their IPOs, at which point the venture capitalist exits with profits from the sale. While some of the “ventures” turn out to be highly profitable, many others fail. The “wins” offset the “losses”. Both private equity and venture capitalists in the United States and United Kingdom are allowed by law to cheat their fellow taxpayers by treating their share of profits from investments (denoted “carried interest”) as a long-term capital gain, which is taxed at a substantially lower rate than “ordinary” income. The function, especially of venture capitalists, is nevertheless a valuable one and in some countries is carried out by government or government-sponsored authorities to promote innovation.<sup>18</sup>

### **Pension funds and insurance companies**

The financial sector typically contains two additional types of firms that have large volumes of funds to place in financial markets, pension funds and insurance companies. **Pension funds** help individuals save for retirement through contracts to save regularly, usually complementing regular payments by employers. Pension funds receive savings payments over a long period from clients, building to a substantial lump sum to convert to an “annuity” at retirement, which is a financial contract that pays the client a particular amount per year for the rest of his or her life or for a preset number of years. Traditionally, pensions have been structured so that the payments over the employee’s working life would build to a target sum sufficient to provide a promised retirement income, usually based on years of service and salary (often as a fraction of the earnings in the last few years before retirement). It has been the responsibility of the pension fund manager to invest the savings wisely and to arrange with the employer that

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<sup>17</sup> In fact, the aim is usually to purchase enough of the shares to be able to control enough shareholder votes to change from a company whose shares are publicly traded to one that is privately held (hence the name “private equity fund”).

<sup>18</sup> For a survey of venture capital in developing and transition economies, see United Nations (1999), chapter VIII.

sufficient payments are made into the fund over time to meet the promised retirement benefits.

In recent decades, however, these “defined benefit” plans have increasingly been replaced by “defined contribution” plans, in which the employee and employer pay into a pension fund, as before, but the size of the annuity that can be arranged at retirement depends on the earnings of the savings. The risk that the lump sum at retirement is too small to pay for an adequate retirement annuity is here born by the employee alone. The employee is usually offered a selection of options for investing his savings through his working life, including a range of mutual funds that offer different combinations of targeted risk and return (greater expected return at greater risk of a disappointing return). The customer must hope that he makes the most propitious selection. Indeed, he may take risks he cannot afford in order to try to boost the earnings of his pension account. Suffice it to say that millions of middle-income people in the United States discovered after the financial crash of 2008-2009 that they could not afford to retire as planned as their “nest egg” had been reduced by a third or more (depending on how much of it was invested in stocks).<sup>19</sup>

A fifth essential financial service is insurance, wherein an **insurance company** pays a promised sum on the occurrence of a specified event (e.g., fire, death, sickness). The insured pays a periodic “premium” for this service. Insurance can operate as a private business when the probability of the risk being insured against can be reliably estimated and is predictable (such as life insurance based on mortality tables), and when the number of clients is large enough that a reasonable premium charged to the insured will cover the cost of running the firm and paying the expected number of claims, while also being able to meet an unlikely but possibly higher number of insurance claims based on the probability tables. However, this also means that most people over the age of 75 are unlikely to want to pay what a life insurance company would charge for coverage given the high probability of death.

In short, private insurance will cover some risks but not all, indicating that government has an essential role to play in providing a social protection floor, including helping victims of catastrophes, like earthquakes, tsunamis or hurricanes, but also either directly covering or subsidizing private coverage of low-income or high-risk (e.g., HIV positive) populations or high-risk situations (e.g., flood insurance on a flood plain).

Finally, it may be noted that insurance companies, like other financial institutions, entered into higher risk activities as regulatory restraints were relaxed, in some cases with disastrous results, as exemplified by the need for the US government takeover of American International Group (AIG) which could not cover the obligations in the derivative securities it had written. Not surprisingly, like deposit-taking financial institutions, pension funds and insurance companies have traditionally been heavily regulated, albeit usually by different government authorities than banks. In each case, a primary concern is that the future payments promised by the financial institution will be fully and promptly provided, which requires firstly that the firm offering the pension or insurance contract not become insolvent. In this regard, for example, pension funds not only must keep specified reserves against losses, but also are

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<sup>19</sup> Of course, the biggest pension “fund” in most countries is the government-run social security system, which need not operate on either private pension model, but can be an inter-generational transfer using taxes paid by the working population to pay for the pensions of retirees.

restricted in the kinds of risk they are allowed to take when investing the premiums placed with them (e.g., being restricted to purchase only bonds rated “investment grade” by one of the major bond rating agencies, such as Standard & Poors).

### **Private versus public financial services**

These five essential services—payments, short-term credit, long-term lending and equity issuance, savings and insurance—are typically provided all over the world by private companies. One consequence is that not all potential market segments are served or they may be served poorly by unscrupulous firms.<sup>20</sup> In general, mainstream financial firms do not view the poor as attractive customers, for which reason public or other non-profit institutions typically provide whatever financial services poor people and their enterprises are able to obtain.<sup>21</sup>

Moreover, it has increasingly been appreciated that middle-income as well as poor households need protection from what can only be called unethical practices by financial service providers. Practices have ranged from banks not informing customers of fees and charges for some of their services (credit cards being a prime example) to unethical investment advisors working in what are known as “boiler rooms,” in which high-pressure salesmen push high-risk securities onto unsuspecting small investors (drawn from a “sucker list”) and then “churn” the account by encouraging frequent trading to increase fees. The problem extends as well to financial institutions that work with real estate companies to sell houses financed with mortgages that buyers cannot afford. Many of these abuses came into the public eye, in particular, in the United States, in the wake of the financial crisis.

It is indicative of the incentives built into the private financial structure that while outrage about financial abuses revealed in the crisis encouraged consumer advocates to push for strengthened consumer protection, the financial industry saw it as a threat to their profits and it has fought back vigorously, weakening the attempted transition to a more transparent, robust, accountable and fair financial system. Indeed, in the United States a tremendous fight was necessary to create the Consumer Financial Protection Bureau as a single consumer-oriented focal point in the US Government for restricting unfair, deceptive and abusive financial practices and helping inform consumers (as through clear labelling of financial products and promoting financial literacy). Once created by law in 2010, another fight was needed to start the agency operating. Its director was only appointed in January 2012. But establishing such a regulatory entity should be as uncontroversial as looking to government to certify food safety or new pharmaceuticals. In some economic sectors, the cost of *caveat emptor* (buyer beware) is simply too high to let people discover the problems on their own.

And yet, the battle continues even in the United States, as certain financial practices that had earlier been outlawed will now again be permitted under the cynically named “JOBS” Act (“Jumpstart Our Business Startups”) of April 2012, which reduces information filing

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<sup>20</sup> For example, one recent controversy about for-profit microfinance lending in Andhra Pradesh, India concerned whether or to what degree private microfinance banks had taken advantage of poor clients, which had been made especially poignant by a rash of farmer suicides in 2010 (see Reed, 2011).

<sup>21</sup> In addition, in some countries, including Brazil and India, banking regulations include a requirement that banks set aside a certain proportion of their lending for specific social or economic purposes, which can include making financial services available to the poor.

requirements by small firms seeking investor financing and relieves other restrictions, making “boiler rooms” again a promising if still unscrupulous business (Sorkin, 2012). The most disappointing fact is that the JOBS Act was adopted by huge majorities in both houses of the US Congress and was strongly supported by the President, which is probably less indicative of any theory of economic regulation being followed in Washington than of the power of financial institution leaders as donors to political candidates in a US election year.

One may thus ask if there is a potential counterweight to regulatory “capture” by the financial industry in market economies, in particular at retail level. In fact, there are examples in some countries of financial institutions that reformers might wish to study. They include non-profit or “double bottom line” institutions that seek to cover their costs with revenues while also providing socially oriented financial services. They can provide an alternative to and even compete with the private financial sector. They include some large, even central, public institutions, including the incompletely privatised Japanese postal savings bank and insurance company, which by some indicators has been identified as the largest financial institution in the world (Scher and Yoshino, 2004). There are state-owned banks in some countries, in some cases operating alongside private institutions, including commercial banks, national savings banks, regional banks serving savings banks and non-bank customers (*Landesbanken* in Germany), government-run provident funds and national development banks. There are also numerous not-for-profit institutions, such as the Spanish *cajas de ahorros* (savings banks) that were created in the 19<sup>th</sup> century as privately supported charitable institutions to provide savings services to the working class whose funds were transferred to the *Montes de Piedad* (state-run pawn shops) which lent to the poor; later the *cajas* directly financed low-income housing and, as they evolved through the Franco and then the democratic regimes, the corporate goal became to generate profits to devote to social programmes (Comín, 2007). There are also numerous directly client-owned institutions, such as savings and credit cooperatives and credit unions, and numerous microfinance institutions established by non-governmental organizations (NGOs), some small and some huge, including BRAC, an innovative, Bangladeshi-based, highly diversified and now multi-country institution that is also the world’s largest NGO, with about 120,000 employees.

For the most part, the public and non-profit financial institutions seek to fill a niche, rather than provide a nation’s first-line financial services. Moreover, managers and staff of a number of these alternative institutions have been embroiled in scandals that are as anti-social as in the private sector. Some of the institutions have also taken on risks that exceed their basic mandates, for which they have paid with insolvency.<sup>22</sup> One must thus be as aware of the potential for “government failure” as much as “market failure.” Nevertheless, one might well listen to the frustrated voices that are beginning to question whether the financial status quo is inevitable, perhaps most dramatically in the “Occupy Wall Street” movement. Indeed, there is nascent emerging interest in revisiting public banking as an alternative and more socially responsible financial model.<sup>23</sup>

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<sup>22</sup> This includes the case of “Fannie Mae” and “Freddie Mac” noted in the annex in the context of the US housing finance crisis. In addition, three out of the 11 German *Landesbanken* had to be bailed out after taking substantial losses from investing in risky US mortgage-backed securities, which led to reduced retail lending by the savings banks that were their part-owners (Puri, Rocholl and Steffen, 2011).

<sup>23</sup> Thus, a first “Public Banking in America” conference was held in Philadelphia on 27-28 April 2012, organized by a new Public Banking Institute (<http://publicbankinginstitute.org/>), founded in January 2011.

### **III. Essential public oversight of the system**

The potential attractiveness of alternatives notwithstanding, the financial sector in most countries is for all intents and purposes in the domain of the private sector, especially when involving large-scale institutions and international activity. But it is universally recognized—especially post crisis—that finance requires closer regulation and supervision. The reason is not simply that the industry plunged the world into economic crisis in 2008, but that there is something inherent in the nature of the financial business that must be addressed by policy.

#### **The nature of risk in financial firms**

The general presumption in market economies is that businesses and customers can carry out their relationships without any public intervention. That presumption does not extend to financial services, especially banking, for two reasons. First, banking services are too important to the functioning of the economy to be allowed to periodically seize up, as they did regularly in the 19<sup>th</sup> century.<sup>24</sup> Second, banks periodically expose themselves to excessive risk and failure. The reason is inherent in the nature of a financial transaction. When one buys a pair of shoes, one can examine the shoes and decide their quality and value. When one lends money, one cannot be sure if the money will be repaid; unlike the purchase of shoes, the transaction is completed in the uncertain future, creating what is called the “asymmetric information” problem.<sup>25</sup> Financial institutions have strategies to reduce the risks from asymmetric information, such as demanding collateral for loans or consulting a client’s credit score from a third party “credit bureau,” but they cannot eliminate it. Risk is thus inherent and the more risk the more a bank can charge for use of its funds and the more the bank can pay its executives, giving an incentive for excessive risk taking.

Risk per se is not bad. The corporate form of business organization adds an incentive to take more risks than would an individual proprietorship or a partnership, where the owners are liable for all the obligations of the enterprise. A corporation, in contrast, is a legal person and its owners (the shareholders) can at most lose their investment in the firm (their shares can become worthless). Their personal assets are immune from being attached for repayment of the corporation’s debts. Managers may own shares in their own company, but rarely more than a small percent of them. They thus have an opportunity to take risks in order to boost profits while facing limited losses (mainly their jobs and personal share holding) if the company fails.

The encouragement of risk taking through the corporate form of organization has proved valuable to the economic development of countries, except in the financial sector where risk is at the centre of the business and the incentive to overdo it is strong. Financial institutions operate in

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<sup>24</sup> For example, there were banking panics in the United States in 1814, 1819, 1837, 1839, 1857, 1861, 1873, 1884, 1890, 1893, and 1896 (Eugene White, presentation at “The Federal Reserve in the 21<sup>st</sup> Century,” Federal Reserve Bank of New York, 7-8 January 2009).

<sup>25</sup> A second classic instance of asymmetric information is when a buyer does not know possibly for months if he has bought a “lemon” when purchasing a used car. The Nobel Prize in Economic Sciences was awarded in 2001 to three economists for developing various theoretical aspects of this asymmetric information insight, namely Joseph Stiglitz (financial markets), George Akerlof (market for “lemons”) and Michael Spence (on “signals,” that are believed to overcome lack of information, such as what a college degree tells a prospective employer about a job candidate).

the world of probabilities. The more risky the loans or investments they make, the greater the *expected* profit, but also the more danger of being undermined by a string of failures. As financial institutions handle other people's money, their penchant for risk taking and possible losses has had to be contained by regulation, in particular by "prudential" regulation aimed to reduce the risk of default from excessive risk, but also by "market" regulation to raise confidence that the operation of securities markets is fair, or at least transparent.

### **Protecting the banking sector from itself**

Bank regulators have long focused on the need for prudential restrictions on the riskiness of banks. They thus limit the types of transactions banks may undertake and require that the financial companies that own them have sufficient capital to cover losses under most situations. And here is the heart of the recent regulatory failure: (1) restrictions on the allowed financial activities were relaxed and banks worked around the prohibitions that existed, as by creating semi-independent subsidiaries and "special purpose vehicles" to undertake activities that they were prohibited from showing on their regulated "banking book;" and (2) banks, or at least the largest ones, succeeded in convincing the regulatory establishment that they themselves could best determine how much capital they needed to hold in reserve against losses according to esoteric formulas that, we can now say with confidence, were not reliable. In particular, the models ignored the possibility that extremely unlikely but financially catastrophic events might occur.

This loosening of regulatory control occurred not only in the United States and the United Kingdom, where faith in the "rational market" was extreme (see Fox, 2009), but it also became the accepted wisdom for regulating large banks globally. In particular, excessive faith in banking judgement was embodied in a 2004 revision ("Basel II") of a 1988 set of recommended standards that were adopted by the Basel Committee on Banking Supervision, an international committee of bank regulators from 27 financially important economies that meet on a regular basis at the Bank for International Settlements (BIS) in Basle, Switzerland. Basle Committee recommendations have become the global standard for banking regulation, embraced by many developing as well as developed countries. Since the crisis, the Basle Committee has issued further revisions of its standards ("Basel II.5" and "Basel III"), meant to dial back some of the regulatory relaxation (Walter, 2011). In fact, initial strengthening proposals were watered down and implementation has been delayed by banking industry lobbyists. Indeed, the approach maintained in Basel III of timidly increasing the equity backing for highly leveraged banks was met with strong criticism by 20 of the world's most prominent professors of finance.<sup>26</sup>

The banks' defence was that stricter regulations would mean less lending and fewer credit innovations, harming economic growth. But growth based on excessive risk taking, which financial institutions worsened when they leveraged their own funds with excessive borrowing, is precisely what brought the world economy to its knees in 2008. The world does not need more of this, especially from its banks. Thus, even if Basel III is not as strong as might be desired, it warrants implementation as a first step. Indeed, tougher international regulatory standards for "systemically important financial institutions" are being devised by the Financial Stability Board,

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<sup>26</sup> A letter to this effect from Anat Admati and 19 others was published in the *Financial Times*, 9 November 2010.

a committee of the major economy finance ministers, central bank governors and regulators.<sup>27</sup> It is working on possible requirements for additional capital backing (in part a response to the kind of concern expressed by the professors noted above and other commentators) and to establish procedures to “resolve insolvencies” (deal with bankruptcy) of such “too-big-to-fail” institutions (Financial Stability Board, 2011).

Even if regulatory reform is successful, conservatively-managed banks will still operate in an inherently risky environment and may experience “liquidity” difficulties (a cut-off of access to credit from other private sources), which in turn could provoke a loss of confidence of depositors who could rush to remove their funds. Governments have thus had a second strategy besides regulation to keep the core banking system operating. Indeed, one could say the second strategy is the quid pro quo for forcing banks to be regulated closely. One part of the strategy is deposit insurance, noted earlier, to reduce the threat of a run on the bank (which can happen anyway). A second part of that strategy is to provide public emergency liquidity by allowing banks to borrow from the central bank, which is sometimes therefore called the “lender of last resort.” Borrowing from the central bank must usually be against a pledge of good collateral, such as government bonds or notes.<sup>28</sup>

Governments also need a policy to deal with banks that became insolvent, not just illiquid. When an individual bank appears destined for bankruptcy, the authorities will usually try to find another bank to take it over or find new investors to add funds and fresh management. If this fails, the government puts the bank into “receivership” (also called “conservatorship” in the United States), with a view to saving what can be saved or winding up the institution.<sup>29</sup> The process moves quicker than the usual corporate bankruptcy. The government will seek to keep the essential activities of the bank in operation until its future is resolved because of the social, economic and financial disruption a bank failure can cause. Also, over time depositors will withdraw whatever funds they can from the bank despite the guarantees, which would raise the ultimate cost of the bankruptcy workout. Thus, timely intervention is important (somewhat different concerns predominate when the problem is not an individual bank but system wide, as will be discussed later).

### **Regulation of investment banking, brokerage activities and securities markets**

While regulation of commercial banks has long involved detailed prudential oversight in

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<sup>27</sup> The FSB brings together central bank governors, finance ministers and chief financial regulators of 24 financial centre countries, 6 key international institutions and 6 international financial standard-setting bodies. It is serviced by the Bank for International Settlements in Basle.

<sup>28</sup> An important and different function of the central bank is to manage the level of credit in the economy as a whole. The central bank adds to or subtracts funds from the banks in a “counter-cyclical” policy to lean against the normal boom and bust behaviour of a market economy, e.g., adding money to the banking system in times of recession so as to lower interest rates and encourage the banks to expand lending to private customers. In this case, the funds are not targeted to individual banks. Of course, putting funds in the hands of banks does not mean they will lend it if businesses are reluctant to borrow owing to poor economic prospects, a continuing problem in the austerity-driven macroeconomic environment of the developed countries, as noted at the outset of this paper.

<sup>29</sup> In the United States, the practice of the Federal Deposit Insurance Corporation (FDIC) is to take over a failed bank after the close of work on a Friday and reopen it as a government-controlled institution on Monday, so as to minimize the economic disruption of the bank failure (for a video of how the FDIC takes over a failed bank, see [http://www.cbsnews.com/2100-18560\\_162-4848047.html](http://www.cbsnews.com/2100-18560_162-4848047.html)).

order to prevent banking crises, regulation of the investment banking and brokerage community has been less intense, a view that needed to be revisited post-2008. Traditionally, the main effort in regulating investment banks and the associated financial markets on which securities are traded has been to prevent firms from abusing the rules of the system and thus maintain its smooth functioning. Large numbers of traders are needed to make a securities market liquid, which is why the market managers must give convincing assurances that the game is not fixed (prices reflect the demand and supply of multiple buyers and sellers) and that the market is not prone to collapse (so it will be available when investors decide to sell their securities). Investors must feel confident that the markets are transparent and fair. Thus, for example, before any company's shares are publicly traded, regulators require that managers provide the public with standard and reliable information about their firm. Also, "insider trading" is prohibited, which involves an investor trading on information that is not publicly available.

In addition, investors are allowed to borrow money to invest on the market (buying "on margin"), pledging the securities as collateral. But if prices fall in the market, the value of the collateral falls and the buyer must either add collateral or pay off the debt or default. If this happens to a small investor, it is of no consequence; but if it happens simultaneously to a large share of market "players", it threatens the market. To make that less likely, regulators restrict the amount of "leverage" allowed in margin buying. In other words, financial market regulators are not opposed to risk taking, but they have sought to prevent it from disrupting the market (or the entire financial system).

While the market participants thus have a strong interest in effective regulation (including self-regulation by the managers of specific markets, such as the New York Stock Exchange), individual participants have a strong incentive to game the system, making strong vigilance in monitoring and enforcement essential, as well as strong market regulations per se. This is the reason that prominent and supremely wealthy investors are sometimes sent to jail for many years in the United States and other countries when found guilty of insider trading or other market abuses.

Investment banks, per se, were not traditionally viewed as high-risk institutions because of the nature of their core business and because they were run as partnerships in which the partners own wealth was at stake. However, they have increasingly transformed themselves into corporations selling shares to the public, which led them to systematically take on greater risks, even too much risk (Hill and Painter, 2010). The primary source of their new riskiness (and that of commercial banks) is not the traditional business of investment banking but the realization that they could raise their *expected* profits by speculating with their own—but especially also with borrowed—funds. This own-account investing, called "proprietary trading," has been especially prominent in markets for certain types of derivative securities, which will be discussed below.

The point is that with the large variety of derivative and short-term securities issued and held by investment banks and several "too-big-to-fail" commercial banks that also operate in this space, a lightly-regulated "shadow banking system" arose in the major financial market economies and this shadow banking system was the principal site of the financial crisis. It provided a variety of alternatives to bank deposits and loans to financial and non-financial companies (and households, in the form of money market mutual funds), but absent the financial

safety net and regulation of banking activities. Indeed, estimated net shadow banking liabilities in the United States peaked at about 50% *more* than total US banking liabilities in 2007, the year before the financial crisis erupted (Pozsar and others, 2012, p. 8). Not surprisingly, it quickly became clear in the United States in the autumn of 2008 after Lehman Brothers was allowed to fail that the major providers of shadow banking instruments had to be added to the group of institutions eligible for emergency central bank support if the financial rescue was going to be successful. Goldman Sachs and Morgan Stanley were thus quickly converted into commercial bank holding companies.

### **Let banks be banks, and nothing more**

Rather than welcome investment banks into the protected status of commercial banks, many experts, prominently including the former Chairman of the Board of Governors of the US Federal Reserve System, Paul Volker, have called for reinstating the principle of separation of investment banking services from protected commercial banking services (e.g., see Group of 30, 2009). In fact, the crisis was not seen so much in the traditional investment banking activities but in the trading of securities on their own account, the aforementioned proprietary trading.

To protect the financial system and the taxpayer, in other words, the United States and other financial centre countries should put a protective fence around “boring banking” within which commercial banks convert deposits into loans, run the payments system and provide traditional derivatives that support the “real” (non-financial) economy, such as forward foreign exchange contracts (discussed later). In effect, this means that the “too-big-to-fail” commercial banks should split off their inessential, if sometimes highly profitable but risky, non-bank financial activities and there should be no presumption that the central banks would rescue the successor businesses that carried on those activities. This would shrink the major banks, reducing the risk that they could start a systemic collapse with its ensuing burden on taxpayers. Indeed, the argument for breaking up the biggest banks is not only economic; it is also political, as the banks use the threat of systemic consequences of their collapse to distort policy making in their favour (Johnson and Kwak, 2010).

The “Volker Rule” proposed for the United States has an honourable history, as it reflects the aforementioned Glass-Steagall Act, a successful policy response to the financial crisis that had precipitated the Great Depression. The central concern was to remove the risks of investment banking from the institutions that provided core banking functions. The prohibition was gradually eroded until it was finally eliminated completely in 1999. The banks thus re-entered the higher risk side of the industry and the investment banks, in turn, diversified their securities-based businesses into creating lucrative derivatives that emulated commercial banking. Both types of institutions took what with hindsight were extremely risky “exposures” in the securities markets. Together, the financial instruments these institutions created and traded blossomed into the shadow banking system that brought the global economy to its knees, and they can do it again.<sup>30</sup>

A step in the direction of the Volker Rule is being taken in the United States through the

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<sup>30</sup> An indicator that banks are still exposed to unnecessary risk is the estimated \$6 billion loss that JP Morgan Chase acknowledged in May 2012, which had resulted from the trades of a single employee known as the “London whale.”

Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 and something in the same spirit was contained in the proposal of the Independent Commission on Banking of the United Kingdom (2011, chapter 3) to “ring fence” retail services of banks. However, as the tough negotiations to create “Dodd-Frank” showed, the industry fight back led to an immensely complex and convoluted piece of US legislation and the struggle between the reformers and the banks continued in 2012 in drafting the implementing regulations. The process in the UK seems deliberate to a fault, as legislation is promised by 2015, for implementation by 2019. The intention remains to split investment from retail banking, in that deposits up to some limit would have to be kept in the ring-fenced part of a bank but that it would have more freedom to play with the money held in larger deposits of “high net worth individuals” (United Kingdom, 2012, p. 17). The outcome is thus still uncertain. It should not be.

### **Financial crisis policy**

A different policy approach is needed to address a systemic crisis than was described above for dealing with illiquidity and insolvency of individual banks. The fear in 2008 was that enough financial institutions might cease operations to bring virtually all economic activity to a halt. Thus, when several large banks were teetering on the brink of insolvency several countries, large and small, took dramatic steps. We should learn from these experiences.

In Ireland, the rescue began in September 2008 when the government officially guaranteed repayment of the bonds (as well as deposits) that had been issued by its banks to finance property development. Confidence in the banks had dissipated as Ireland’s housing boom collapsed. The government mistook a solvency problem for a liquidity problem and only postponed what with hindsight can be said to have been inevitable. By 2009 it was clear that the government would have to honour that guarantee and would have to borrow the funds to do so, raising that year’s government deficit to 32% of gross domestic product (GDP), an outlandishly high level. By 2010 it was also clear that no private investors would take over or invest in the banks and so the banks had to issue new equity shares to the government, giving the banks a stronger capital backing while making the government the largest shareholder. The government thus came to own the banks and their debts. Government debt, which had declined over a decade to under 25% of GDP in 2007, reached 108% of GDP in 2011 (IMF, 2012, p. 23). The draconian government austerity policy that Ireland is still suffering through is a direct consequence of trying to fully pay off the creditors of the failed banks.

When Iceland’s banks failed in October 2008, the government stepped in as well, albeit in a more limited but nevertheless costly way. It sought to maintain essential banking services by reconfiguring the domestic operations of its failed banks into new banks backed with public equity. The loans that the failed banks had raised abroad were not paid, as the banks went into receivership; in fact, the government could not have covered them with Iceland’s limited resources.<sup>31</sup> As a result, the cost of the bank defaults was shared between bank creditors, shareholders and taxpayers. In fact, combining the write-offs of government loans to the failed

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<sup>31</sup> The foreign credits included deposit accounts in foreign branches of one of the banks, marketed as “Icesave”. The British and Dutch deposit insurance funds compensated their “Icesave” depositors and asked Iceland to cover their outlays. The Icelandic people voted against accepting any responsibility for the losses incurred at that bank and the complainants have taken the matter to an intergovernmental European court (for additional details, see Baldursson, 2011).

banks and loans to the central bank that were written off plus the capital funding of the new domestic banks and an equity infusion for the central bank, the government expended the equivalent of 24% of GDP in 2008 and another 15% in 2009 (IMF, 2011, p. 12). Government debt rose from 29% of GDP in 2007 to about 100% in 2011 (*ibid.*, p. 64). Thus, while Iceland's approach to its banking crisis had a similar impact on the government finances as Ireland's, greater losses were imposed on the creditors, especially foreign ones. However, coupled with other favourable policies, Iceland's economy has recovered better than Ireland's.<sup>32</sup>

The United States followed a third approach by which it poured huge amounts of liquidity into the financial system as private liquidity dried up. In addition to major Federal Reserve lending to commercial banks, the Fed created several special loan facilities for non-traditional customers,<sup>33</sup> while the government legislated the special \$700 billion Troubled Asset Relief Program (TARP).<sup>34</sup> The US Government did not put any major banks into conservatorship, but it did take over three important non-bank financial institutions, the aforementioned insurance giant AIG and two semi-private housing finance institutions, the Federal National Mortgage Association ("Fannie Mae") and the Federal Home Loan Mortgage Corporation ("Freddie Mac").<sup>35</sup> As noted earlier, the US allowed certain important investment banks to suddenly transform themselves into commercial bank holding companies so that they became eligible to receive Fed loans (underlining recognition of how disastrous the decision had been to let investment bank Lehman Brothers go bankrupt in September 2008). Borrowers from the Fed and the TARP received their loans on terms far easier than available from the private sector (indeed, nothing was available from the private sector), and thus there was a considerable subsidy. The US government also had to bear the risk that the loans would not be repaid. The judgement was that failure of the big financial houses would be too horrible to contemplate and so they were bailed out.

"Too big to fail" presented a serious and costly demand on US policy makers. In June 2008, the US Federal Reserve System held about \$900 billion in financial assets (mainly US government bonds). In March 2012, it held about \$2.9 *trillion* in assets, more than three times more. The initial surge came as part of the immediate response to the crisis in the last quarter of 2008, mentioned above, mainly in the form of emergency lending to various segments of the US

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<sup>32</sup> To be fair, Iceland had two options not available to Ireland, whose currency is the euro. Iceland devalued the krona, which provided a stimulus to its exports and import-competing industries, and it imposed capital controls on foreign currency payments which stopped the haemorrhaging outflow of funds in the depth of the crisis (IMF, 2011, especially p. 14).

<sup>33</sup> The Fed established special facilities to lend to primary dealers in US government securities (imagine if there were suddenly no underwriters of new US government debt) and to maintain operations in the "shadow banking system" (described above in the text and featured in the following section); it set up facilities to lend directly to money market mutual funds and to buy commercial paper from money market funds when they faced heavy withdrawals that threatened their solvency; it also established a facility to directly purchase commercial paper, as the market for these securities had virtually evaporated and it created another facility to lend money to holders of "asset-backed securities," which are derivatives (which will be discussed in the following section) whose underlying assets could be student loans, credit card debt and so on, the point being that the holders of those assets were suddenly not able to sell them owing to the disappearance of buyer interest. The Fed facilities were all created in October-November 2008; most lasted about a year and the last was closed in mid-2010 (see <http://www.federalreserve.gov/monetarypolicy/bst.htm>).

<sup>34</sup> For a complete list of activities, including loans to individual troubled banks, see United States (2011), table 1 and pp. 12-14.

<sup>35</sup> The latter two institutions will feature in the annex story of the US housing finance crisis.

financial sector. Those loans have since been paid back, but they have been more than replaced by additional Fed loans to banks, collateralised with securities. It is clear from this figure that the US banking system is not yet in a position to unwind its debt to the Fed.<sup>36</sup>

Similarly across the Atlantic, if at smaller scale, the Bank of England had held about £100 billion in assets in the summer of 2008, which jumped to almost £250 billion by the end of the year and was about £330 billion in March 2012.<sup>37</sup> The holdings of the European Central Bank (ECB) rose to more than €3 trillion in March 2012, following €500 billion in new loans that had just been extended to euro-area banks. Pre-crisis holdings had been under €1.5 trillion, rising to €2 trillion by the end of 2008, but not beginning to accelerate toward €3 trillion until late in 2011, when policy to support the area's banking system was boosted.<sup>38</sup> It should be clear that these key monetary authorities have mobilized a huge effort to rescue their self-destructing banking systems.

While the huge bailout funds have not yet been repaid and although certain of the largest banks are still in need of official support, one would have to say that as of 2012 in the United States and the United Kingdom, if not yet across all of the European continent, the initial *financial* crisis—not the crises of unemployment and distressed homeowners—has significantly eased. The overall bank rescue policy succeeded in restoring sufficient confidence in the financial system for it to begin to resume its normal functioning (although the austere UK fiscal policy has delayed its economic recovery even more than the timid US fiscal stimulus).

That was, however, only the first stage of the crisis recovery policy. A second stage has been a policy to push the banks to build up their equity capital which serves as a reserve against losses. The US Government thus ran “stress tests” on each major bank to prove how well or poorly it would fare under various adverse scenarios, leading to directives to raise their capital backing to specified levels by specified dates. Similar rescue and stress-test policies were undertaken in the European Union, although the latter were considered to have been less demanding in not paying sufficient attention to bank exposure to certain sovereign debts. The European financial system was left less than robust.<sup>39</sup> Although boosted by the official credit infusions in December 2011 and February 2012, as note above, and although the banks have sold off some of their holdings of the weaker sovereign bonds of certain European governments, they still have large holdings and other high risk loans and securities on their books. While default on the sovereign bonds is officially not expected, the patience of the citizens of Spain, Portugal, Ireland and Italy with enforced austerity and hardship to repay bondholders is not limitless. A “debt strike” by any of the major EU governments, would seriously erode confidence in European banks. In short, the situation remains fragile. Neither European banks nor European

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<sup>36</sup> As of 28 March 2012, the US Federal Reserve System held \$2.6 trillion of securities, most of which were issued by the US Government or its agencies, but \$837 billion were mortgage-backed securities (Federal Reserve Bank of New York at [http://www.newyorkfed.org/markets/soma/sysopen\\_accholdings.html](http://www.newyorkfed.org/markets/soma/sysopen_accholdings.html), accessed 2 April 2012). Other data cited is from the Board of Governors of the Federal Reserve System, at [http://www.federalreserve.gov/monetarypolicy/bst\\_recenttrends.htm](http://www.federalreserve.gov/monetarypolicy/bst_recenttrends.htm), accessed 5 April 2012),

<sup>37</sup> Bank of England data at <http://www.bankofengland.co.uk/markets/Pages/balancesheet/default.aspx>, accessed 5 April 2012.

<sup>38</sup> Data are consolidated figures for the European System of Central Banks, including national central bank asset holdings; data of the European Central Bank are as per [http://www.cumber.com/content/misc/G4\\_Charts.pdf](http://www.cumber.com/content/misc/G4_Charts.pdf), accessed 5 April 2012.

<sup>39</sup> In fact, the Belgian bank Dexia collapsed in October 2011, just a few months after passing its European stress test.

countries are out of danger yet.

This means that the governments of the major financial centre countries might again face a huge demand for emergency bailout resources. It is not obvious that parliaments in an austerity mood and with bailouts of banks decidedly unpopular would agree to approve such funds. Central banks have already provided massive funds, as noted above, and could do more, but the conservative “anti-inflation hawks” who fear raising the amount of money in circulation would surely object strongly to additional massive increases in central bank lending to banks. A different source of funds for a banking rescue would be needed, for which reason a proposal that civil society advocates had been recommending for years, the financial transaction tax (FTT), suddenly got the attention of previously deaf finance ministers. Gordon Brown, at the time Prime Minister of the United Kingdom, proposed such a tax in November 2009 and the Group of 20 asked the International Monetary Fund (IMF) to propose how the financial sector could make “a fair and substantial contribution” to public revenues, post crisis (United Nations, 2012, pp. 45-48). While some G20 members opposed any new tax on the financial sector, including the successor British Prime Minister, David Cameron, France and other European countries have taken up the idea of the FTT, which at the time of writing in July 2012 may be nearing formal agreement among a group of EU members. It may be hoped that if and when it is adopted that a portion of the revenues will be set aside for development and anti-poverty purposes as called for by the civil society campaigns. It would be a pity if the efforts to mobilize additional resources for development of the governments that are members of the Leading Group on Innovative Financing for Development were crushed by the exigencies of the financial crisis.

In fact, if a new European banking crisis erupts in the next few years, the primary sources of funds will not be governments but their monetary institutions, first of all the ECB, but also short-term loans (“swap lines”) from the central banks of other developed and emerging market countries and monies that can be mobilized or created by the IMF, as had been the case in 2008-9 (see below). The Icelandic solution of acknowledging widespread bank failure can only work if the banks are not “too big to fail,” i.e., if they do not threaten systemic crises in Europe or globally. But even the Icelandic approach was very costly. In both small and large economies, the greatest need is to first unwind and then prevent the future build up of the kind of huge speculative positions that brought down the banks of Ireland, Iceland and Spain and a number of financial institutions in other European countries and the United States. What we need besides the resources to bail out banks that are too risky to survive is a world without such banks.

And yet, the bankers themselves do not evidence a changed sentiment toward risk; nor have they shown reticence to award themselves impressive bonuses for their self-assessed risk-taking prowess. Indeed, having been rescued once, the banks, their managers and their shareholders have every reason to believe they would be rescued again, despite what policy makers say (and legislate). The “moral hazard” remains: governments will again have to bail out the biggest banks. To quote a *New York Times* editorial of 6 April 2012, “Banks always win: if regulators keep letting them off the hook, why should they change their behaviour?” This is a serious flaw in the current policy environment.

#### IV. Derivatives and “shadow banking”

Most financial derivatives are economically useful innovations, but they can be—and have been—a source of economic instability and financial crises. Derivative securities fix a price for later purchase or sale or offer opportunities to buy or sell at a later time or swap obligations of one sort for another, or make a payment depending on how another financial asset performs. It turns out that trading derivatives can substitute for cash transactions and provides short-term credit and savings vehicles. Coupled with other financial market innovations, such as commercial paper and money market mutual funds mentioned earlier, a wide range of financial services are being provided. As they offered an alternative to banks but were not regulated like banks, these services and their providers have been called the “shadow banking” system, as noted earlier. As the world learned in 2008, the shadow banking system could bring down the real banking system.

The global size of derivative markets is almost beyond comprehension. The larger of the two components of the derivatives market is made up of “over-the-counter” (OTC) derivatives that are designed by financial institutions for individual clients. Although some of the derivative contracts are relatively standardized (e.g., a contract to deliver a specified amount of a specified foreign currency to a client at a specified future date), many contracts are fully customized for a client’s specific needs. The contracts themselves can be traded, but not on organized securities markets. The OTC markets are thus fairly opaque, although central banks in major financial centres have been collecting data on them from financial institutions in their domains, which the Bank for International Settlements has been compiling. It finds that OTC contracts outstanding in June 2011 covered \$708 *trillion* in assets. The contracts offered to change the payment streams or insure payment in one way or another on: \$65 trillion of pending foreign exchange transactions, \$554 trillion of debts on which interest payment streams are altered,<sup>40</sup> \$7 trillion of equity securities, \$3 trillion in a variety of commodities transactions, \$32 trillion of debt securities that might default, and \$47 trillion of bets on unidentified assets.

The second component of the market involves the trading of standardized contracts on formal exchanges (Chicago Board of Trade, London Metals Exchange, and so on). For example, instead of an OTC contract to deliver foreign currency at a chosen date, a customer could buy a standard “futures” contract that promised to deliver, say, £60,000 on 30 June 2012 at a price fixed when the contract was written, say 30 March. That contract can be held or sold at a price that will fluctuate in the market up to the date of maturity. The other standard type of traded contract entails paying for the “option” to buy or sell, say, a security by (or on) a certain date.<sup>41</sup> Futures and options are written on “underlying” commodities, currencies, credits and securities, especially shares of publicly traded stocks. The BIS has been collecting data on exchange-traded

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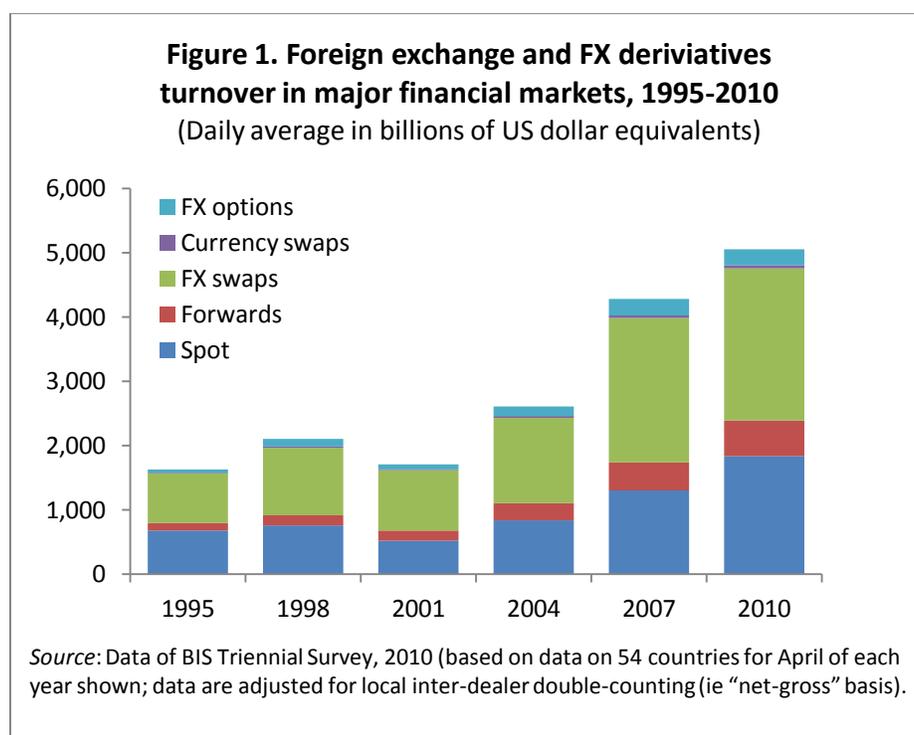
<sup>40</sup> A borrower who has arranged a fixed interest rate loan may decide after market conditions change that he prefers to pay a variable interest rate, in which a fixed “spread” is added to a fluctuating base rate such as LIBOR. Or a borrower may want to lock in a fixed rate if he thinks the floating rate will rise. Indeed, banks may frequently alter their own interest obligations and revenue streams according to changes in their overall portfolios of assets and liabilities (for additional information, see Fleming and others, 2012).

<sup>41</sup> Futures contracts can be closed out before the maturity date, which in fact is the standard practice, especially in commodity trading so that a financial speculator would not take ownership of, say, several railroad cars full of orange juice.

derivatives and reports that in June 2011 contracts were outstanding on \$83 *trillion* of “notional principal,” of which \$30 trillion were in futures and \$53 trillion in options. Trading on formal exchanges is thus very much the junior partner in the derivatives business.

### Foreign exchange markets

A traditional and generally useful financial derivative is the forward contract in foreign exchange. An importer that is expecting delivery of goods may know he has to make a payment in foreign currency in one week or in 1, 2, 3 or 6 months or even a year and can either wait until then to buy the currency or he can arrange today with his bank to buy it on the day needed at a price set today, thus removing uncertainty about what the exchange rate will be later. Exporters and other bank customers (and banks themselves) will need to sell foreign exchange at known future dates and may also want to lock in the exchange rate today. Banks will tailor these forward contracts in foreign exchange to meet customers’ specific needs. A variation on the forward contract is the foreign exchange swap, in which it is agreed to exchange two currencies at a set price on one date (e.g., today) and to reverse the exchange at a later date also at a pre-set price. A bank accommodating the foreign exchange need of the importer above might enter into this type of transaction so that at the time of the future settlement, the bank is back to holding essentially the same currencies as it started with. As may be seen in figure 1, these swaps are the most prevalent type of transactions.<sup>42</sup> In addition to the OTC contracts, standardized “futures” and options contracts are sold on securities markets in the largest financial systems, which have the advantage of being transparent and competitive, as all the trades are publicly known.



<sup>42</sup> The currency swaps shown in figure 1, a small share of the total, involve exchanging the currency for payment of interest on a fixed or floating interest rate debt over a specified period.

The derivatives market usually works smoothly for businesses and banks, as suggested by the fact that they are heavily used. The data in figure 1 are for average *daily* transactions for the month (April) in which a triennial bank survey is undertaken. For example, in 2010, the most recent year for which comprehensive data are available, “spot” transactions (which settle overnight or in one to two days) accounted for \$1.8 trillion; the rest of the \$5 trillion in foreign exchange market turnover were derivatives (see figure 1). In fact, as may also be seen in the figure, more of the monumental growth in foreign exchange trading since 1995 has been accounted for by derivatives than spot purchases.

However, foreign exchange derivatives can also aggravate financial instability. One such threat arises when profit opportunities arise from particular interest and exchange rate patterns among countries. One example is the “carry trade” in which an investor borrows in a low-interest country, converts the currency into that of a high-interest country and temporarily invests there, intending to convert back later into the low-interest currency and repay the loan.<sup>43</sup> The investor may lose his profit if the exchange rate of the high-interest currency depreciates against that of the low-interest currency, or profit more if the exchange rate appreciates. The investor is speculating, as exchange rates can change in unpredictable ways on a daily basis and the cost of unwinding the investor’s position will depend on the exchange rate at that final moment. Often, an investor can profit from the carry trade without speculating, depending on the forward exchange rate. That is, the investor can buy the low-interest currency forward with the high-interest currency (or use an option or swap) and thus know what his profit will be when his high-interest security matures, which is then called “covered interest arbitrage.”<sup>44</sup> Most significant, however, is that the carry trade can add substantial and volatile short-term international financial flows to those of normal business activities.

Speculators can also add to international financial flows when there is strong reason to believe that a currency will be devalued. A resident can make a bet on that actually happening by purchasing foreign currency for future delivery using a forward or a swap or taking an option to buy with the expectation that he may sell the foreign currency after the devaluation for a profit measured in home currency. A foreign speculator can take a mirror image bet to sell the domestic currency forward and expect to be able to buy it for delivery at the due date for less foreign exchange. The advantage of using the forward market for this transaction is that underlying cash does not change hands until the settlement date. Both types of transaction raise the demand for forward foreign currency, raising its price, which will put additional pressure on the spot price. Investors can also speculate directly through the spot market, adding further financial outflows. The game begins with a belief that the exchange rate has become unsustainable and ends with an actual devaluation, usually by more than the final new price that is attained after the speculators leave the field.

Policies against such speculation have not focused on specific financial instruments,

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<sup>43</sup> In fact, one can engage in speculative carry trade without direct borrowing or purchase of securities by asking one’s bank or broker to buy the high-interest currency using the low-interest currency (in effect, borrowing the low-interest one). The bank/broker will pay the investor’s account the interest differential between the two currencies.

<sup>44</sup> In theory, the arbitrage opportunity will be temporary as enough investors will make the same investment, driving up the forward exchange rate, eating away at the gains from the interest differential, ultimately removing the profit opportunity. In reality, many factors combine to determine forward as well as spot exchange rates and thus the profit opportunity can remain open for some time.

which are left to provide services to all potential customers, but on altering the incentives to speculate against a currency in the first place, or just accepting to live with the volatility. There are thus essentially three types of policies to manage the foreign exchange market.

A first approach, long recommended by developed countries, is for policy makers to “float” the currency so that its value changes daily according to the changing demand and supply in the market, in which case pressure for large-scale devaluation does not build up. It is as if steam escapes from a pipe over time rather than have it suddenly burst under extreme pressure. This requires that exporters and importers live with volatility and thus uncertainty about the exchange rate. Usually, exporters and importers can hedge their risks through the forward market, as described above, albeit paying a fee for the forward or swap or futures contract. Nevertheless, economic shocks—whether originating at home or abroad or just the psychological contagion effect on investors of something happening elsewhere—can cause high volatility in financial flows and substantial exchange rate movements, which negatively impact trade and economic growth. Most developing countries, as a result, are reluctant to adopt this approach.

The traditional alternative has been to impose administrative exchange control and require that permission be given for making short-term financial movements into and out of the country, as has been the practice in China, India and other countries (joined by Iceland as part of its crisis-recovery policy since October 2008). In countries with strong institutions, it is possible to reduce speculation by tying the hands of the speculators, although corporations making payments across borders can still speculate by advancing or delaying their regular payments, and controls can be evaded with derivative instruments bought and sold away from the country’s borders. In countries with weaker controls, “black markets” can serve a large percentage of the market. In any case, administrative control itself has a cost in time and paperwork (and opportunities for graft in some countries), although many countries think the cost is worthwhile in order to stabilize movements of the exchange rate around an “equilibrium” level that balances “real economy” supply and demand.

Another alternative allows free movement of funds into and out of the country but seeks to temper exchange rate movements with financial disincentives. In this approach, a tax is imposed on short-term financial inflows so that excessive entry of funds is discouraged when the country is “hot” and thus fewer funds leave in a rush or bet on devaluation when market sentiment sours.<sup>45</sup> Governments that use this type of policy need to view it as a complement to central bank monetary policy, such as to lower interest rates when policy makers want to deter inflows. The problem, however, is that countries usually become attractive to international investors when they are growing strongly, which is generally the worst time to reduce interest rates. The solution under this approach seems to be some combination of financial capital controls, monetary accommodation and accepting an exchange rate appreciation. Indeed, the degree to which such financial capital controls facilitate exchange rate management has been much debated. For over a decade the major developed economies and the IMF have opposed developing countries implementing them, although the Fund has become more eclectic about these policies in recent years. In fact, few developing countries feel secure enough to allow their exchange rate to fluctuate freely, so that capital controls of either an administrative or financial

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<sup>45</sup> A variation on this approach would impose a small tax on capital inflows and outflows in normal times, but with a trigger mechanism to add a prohibitive surcharge when the currency was under speculative attack (see Spahn, 1996).

sort is the more common practice in these countries.

Finally, financial capital controls as discussed here should be distinguished from proposals to place a tiny tax on every foreign exchange transaction, called the currency transaction tax (CTT), which is a special form of the FTT noted earlier. The primary aim of CTT advocates in civil society is to mobilize funds for development while not deterring traditional transactions. However, it appears that even a tiny CTT would discourage a relatively new and dangerous phenomenon, “high-frequency trading,” wherein computer algorithms buy and sell currencies at lightning speed, which can unhinge exchange rate management (Markets Committee, 2011). Thus, even a tiny CTT could have a positive impact on stability in the foreign exchange market.

### **Commodity markets**

A number of other derivative securities are economically useful but can have adverse economic effects. One such that is in the public eye again with the rise and then quick fall in international petroleum prices in 2012 is derivatives on commodities, which include such products as wheat, coffee, pork bellies, and orange juice, as well as petroleum. In “normal” times, petroleum futures, for example, help refiners and producers plan their cash flows and product deliveries. But speculation on the impact of a threatened international embargo of oil exports from Iran beginning in July 2012 may have been the factor that in early 2012 drove oil prices higher than they would be otherwise. As the rise in oil prices filtered down to the prices of consumer products, the speculation raised the threat of a return to recession in the weak US and European economies. By mid-year, however, the actual weakness in demand in those economies brought oil prices back down sharply. Food prices are also influenced by derivatives trading. While farmers and millers, for example, will hedge their wheat prices to better plan their businesses, purely financial speculators joined in buying and selling wheat and other derivatives. In 2012, disappointing supply forecasts in the face of continued strong demand has pushed up food prices. Evidence from the last large swing in food prices, which peaked in 2008, indicates that speculation accentuated the movement of these prices (UNCTAD, 2011) and could be doing so again.

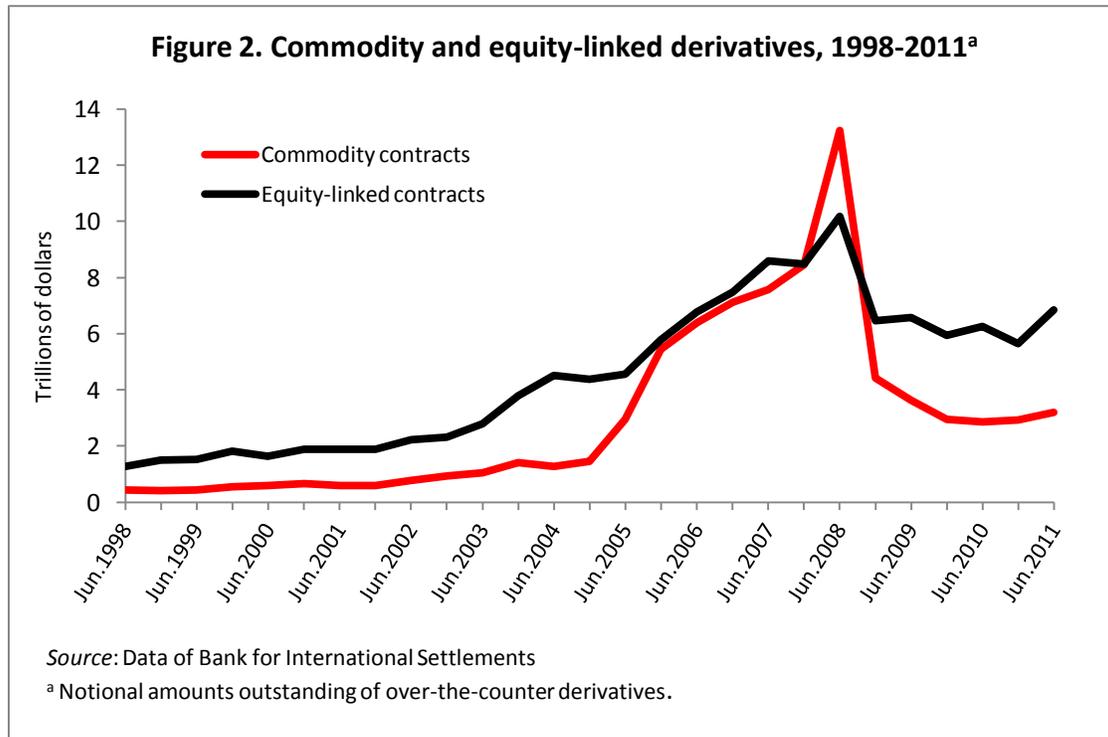
Thus, another financial instrument to facilitate “hedging” by legitimate sellers and purchasers *ipso facto* creates opportunities for speculation by others in the market. The speculators are not interested in taking possession of the oil or wheat or hog bellies or orange juice, but purely in profiting on a financial transaction. In fact, the commodities derivative market is huge. The OTC market alone had contracts outstanding covering almost \$13 trillion worth of commodities at its peak in June 2008. The speculative aspect of the market may be seen in the collapse in commodity derivatives soon after the 2008 price peak (figure 2).<sup>46</sup>

In general, commodity speculators are tolerated because they add liquidity to the market, even if they make underlying prices more volatile. The policy question is whether they essentially take over some of the markets. The role of regulation is to try to preserve the good and limit the bad. As in the case of policy to limit exchange rate volatility, proposals to limit

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<sup>46</sup> Data at the time of writing were not available past mid-2011 and thus do not reflect the mentioned developments in 2012.

commodity price speculation have not focused on the specific exchange-traded or OTC instruments (except to bring the latter into the open and place them under regulatory limits). In this case, the main focus has been on the speculators per se, as in seeking limits to the size of their bets, usually stated as putting limits on the “positions” that they take. However, the financial industry is fighting the tougher regulation. In particular, although the US Dodd-Frank law of 2010 mentioned above called for setting speculative position limits, the Commodities Futures Trading Commission (CFTC), which is charged with setting the limits, has not been able to complete its work two years later.<sup>47</sup> Position limits are under consideration in the European Union as well.



### Stock market derivatives

The comparable derivatives markets for shares of stock include options to buy or sell at a future date (“puts” to sell and “calls” to buy), and are more about pure speculation on stock market prices than reducing uncertainty in essential “real” economic activities. There are trillions of dollars in these transactions as well (figure 2).

Generally, policy makers do not express alarm about fluctuations in stock market prices, knowing how volatile they are and how little they correlate with real economic activity. Stock prices are allowed to change as market sentiment changes, with a partial exception in recognition

<sup>47</sup> The CFTC has long set position limits for a few agricultural commodities. The new law seeks federal position limits on 28 commodities, in the energy, metals and additional agricultural commodity sectors and will pertain to OTC as well as exchange traded derivatives (as per <http://www.cftc.gov/LawRegulation/DoddFrankAct/index.htm>, accessed 27 April 2012). For additional detail on tightening regulation and a proposal to rethink price stabilization schemes of the 1970s such as buffer stocks, see UNCTAD (2011), pp. 52-53.

of the reality of panics; for example, the New York Stock Exchange will suspend trading in individual company shares that fall beyond a specified amount during a day's trading, expecting that panic selling will not resume after emotions cool.

Nevertheless, some financial institutions, which usually strongly oppose any interference with financial markets, apparently lobbied intensively to halt one type of speculation during the worst days of the financial crisis, namely "shorting" their stock. An investor can purchase a put option to sell a stock at a future date for a price contracted today based on the current situation which, the speculator believes, is overoptimistic. His intention is to buy the stock at a lower price when the option matures and transfer it to the buyer, hence profiting. If the price has fallen as expected, he wins and if the price is higher he loses.<sup>48</sup>

In September 2008, when there was tremendous pressure on the stock markets in the United States and England after the failure of Lehman Brothers, investors began heavily shorting the shares of financial institutions. The shorts were clearly signalling lack of market confidence in the financial institutions. To calm the market for the publicly traded financial company shares, the British and US Governments, joined by 18 other countries, temporarily prohibited their short selling (Beber and Pagano, 2011). With a similar concern, in August 2011 in the midst of a general loss of confidence in their financial institutions, Belgium, France, Italy and Spain temporarily prohibited short selling of the shares of their banks, also aiming to moderate the fall in the price of the shares. Bank managers apparently felt in both sets of cases that the speculators were unfairly targeting their firms, driving down their share prices to unrealistically low valuations. As creditors are reluctant to lend to firms that the market is signalling have lost considerable value, the plunging prices of financial institution shares were felt to be aggravating the financial crisis. In fact, the market was right as the financial firms were in trouble.

### **Credit default swaps**

While the previously discussed derivatives were invented to smooth real economic activity or just bet on stock prices, credit default swaps (CDSs) were invented to get around a regulatory restraint on banks. If such an origin was not promising, the experience has been even worse from a public policy standpoint. And yet, the market for these instruments still provides a type of insurance on over \$30 trillion of credits (as of June 2011), which assuredly exceeds the value of the particular credits that are covered; i.e., it is not required that one owns a security to purchase a CDS on its demise.

The incentive to create the CDS lay in the limit on how much banks may have outstanding in loans, based on the size of their equity capital cushion. Since the limit is based on a calculation that weights each of the bank's loans by its risk classification, if a risky loan can be turned into a low-risk loan, it will count less in the calculation (or even zero if classified as risk free) and the bank will be able to lend out more money on which to earn profits without raising

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<sup>48</sup> If the price is higher, the speculator could decide not to buy and deliver the stock, a practice that is usually legal and happens, especially in times of high volatility. "Failure to deliver" happens more frequently when there are "naked shorts," as opposed to first requiring the speculator to borrow the shares, as from his broker, and then sell them on the spot market and promise to return them to the broker on a specified future date after buying them at the anticipated lower price. If he fails to complete this transaction, he forfeits his collateral on the original loan of the shares. For this reason, some markets generally prohibit "naked shorts" while allowing shorting of borrowed shares.

more capital. One way to reduce the risk of an asset is to insure it. If the bank could buy an insurance policy that paid off if the covered credit defaulted, it would reduce the risk of holding that loan. Indeed, there are specialized insurance companies in the United States, known as “monoline insurers,” that will write insurance policies on bond issues, usually for municipalities. The bond issuer pays a fee for the “wrap” because with it the bond gets a higher rating and the municipality can sell its bond at a higher price which enables it to pay a lower interest rate. This is not what the banks were looking for when they created CDSs. Monolines actually assess the creditworthiness of the issuer before wrapping a bond (although they got caught in the 2008 crisis as well). The banks wanted something less intrusive.

Rather, they—JP Morgan was the first—created a contract that would pay them if a borrower defaulted within a set time period (usually 5 years) on a loan issued by the bank and in exchange the bank would pay the insurer a periodic fee. In effect, they separated the risk from the loan and sold the risk to the insuring investor. They just needed investors to take the bet who could make a large payout in the unlikely event of default.<sup>49</sup> It was also quickly realized that by providing insurance on a loan or bond, a CDS also provided a kind of hedge, which is to say, it reduces the risk from holding the underlying asset. CDSs have indeed come to be viewed as a way to hedge investor exposure, not only to the insured security, but also other assets that were independent of the underlying security but had similar risk characteristics (e.g., a supplier of pencils to the Greek government could hedge its risk of non-payment for its pencils with a CDS on Greek government bonds).

However, CDSs are very imperfect hedges as they pay off after a significant delay<sup>50</sup>. A typical hedge against, say, incurring a loss in paying a bill in foreign currency after a decline in the exchange rate would be to hold an asset in that currency that would mature at the same time as the bill had to be paid. Assuming the securities and payments cleared smoothly, there would be virtually no gap between them, whereas there can be a gap of weeks in collecting on a CDS after default, meaning that the insured needs additional liquidity to cover the gap.

Indeed, we may conclude that a significant part of the CDS market is not seeking a hedge but speculating, as the volume of CDSs on well-known securities well exceeds the volume outstanding of those securities. This is possible because a CDS buyer need not own the underlying security to collect if it defaults. It is a pure gamble on the prospect that the issuer of the bond will default.

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<sup>49</sup> Initially, if a borrower defaulted, the insured bank would transfer ownership of the defaulted loan to the insurer. CDSs also were written on marketable bonds, the main instrument today, and the same transfer to the insurer would take place on default. As there was a chance that the bond (or loan) was not worthless (e.g., a bankruptcy court could award the bondholder a percentage of the face value of the bond), the insurer was not expected to pay the insured the full face value of the bond, but the face value minus the expected recovery value of the defaulted bond. This net gain of the insured, called the “cash settlement value”, depended on something that would not be observed for a long time, as bankruptcy is often a drawn out process. Instead of waiting, the bond’s value is determined in a special one-time auction in which a sample of holders of the defaulted bond offers it for sale to other investors. The price at which the bond settles is taken as the market expectation of the final recovery value. Today, defaulted bonds no longer are exchanged, but the cash settlement value is still determined in the same way. For example, the auction to determine the cash settlement value of the defaulted Greek bonds (see box) was held on 19 March 2012, resulting in a price of 21.5 cents on the euro (<http://creditfixings.com/CreditEventAuctions/results.jsp?ticker=GREECE>). This meant the payout was 78.5 cents on the euro.

<sup>50</sup> They also do not return the full face value (see previous footnote).

Another drawback in CDSs is that the buyer of the CDS should want to be confident that the “counterparty” on the other end of the contract can in fact cover the loss in the event of default. The counterparty, however, is not a regulated insurance company and there is no public tracking of how many CDS contracts the insurer has outstanding and thus no indication of whether it can cover its potential insurance claims. And, even when the writer of a CDS is an insurance company, the credit default swaps business is run outside the regulated insurance business, as was the case with AIG, the huge American insurer that was taken over by the US Government during the crisis. In fact, financial institutions were issuing CDSs on other financial institutions, so that in a systemic crisis affecting financial institutions across the board, counterparties would not be able to pay, which is the story of 2008.

Moreover, CDSs create unconventional incentives for investors in the underlying instruments when those instruments become “impaired.” Usually, a bondholder will hope the issuer makes every effort to avoid default and stay current on its debt servicing obligations, especially when worsening economic difficulties convince the market of a growing likelihood of insolvency and the bonds thus trade at an increasing discount from face value. However, a bondholder with a CDS on the bond might prefer that the borrower default, as he would then collect the insurance payment, which would far exceed the market price of the bond before default. This creates complications, as was seen in the 2012 debt restructuring for Greece (see box).

Despite these questionable features of CDSs, the market for them boomed. A decade after CDSs were first created in the mid-1990s, they were nominally covering over \$6 trillion of credits (figure 3). At the peak, in December 2007, \$58 trillion in loans and bonds of various types were covered by CDSs. Some were written on individual credits and some were written on “multiple names” as would be held in a portfolio of credits, which could be an actual collection of loans that some bank wanted to insure or just a notional portfolio. Then the financial crisis came and many sellers of CDSs could not cover all the obligations they had assumed. Despite this experience, use of the instrument has been growing again. This probably reflected the fact that government bailouts of the biggest issuers prevented potential losses from counterparty failure in several cases, as governments sought to protect the banks that had bought the “protection.” Also, the net CDS position of some of the big banks entailed far less exposure than their gross position indicated (i.e., they held contracts as insured as well as insurer).

### **How should derivatives be regulated?**

It should be clear that the global derivatives market extends from routine financial instruments that are useful hedges for firms in the non-financial sector to exotic and complicated instruments that mainly serve to help financial investors take speculative positions on a range of securities and events. The general argument in favour of the speculative players is that they add liquidity to hedging markets, as for foreign exchange, interest rates, commodities and default protection. They shift risk from those who want less of it to those willing to hold more of it, and presumably they have specialized expertise for assessing risk in the specific derivatives traded. The vast size of the market also indicates there is a demand for what the speculators are offering.

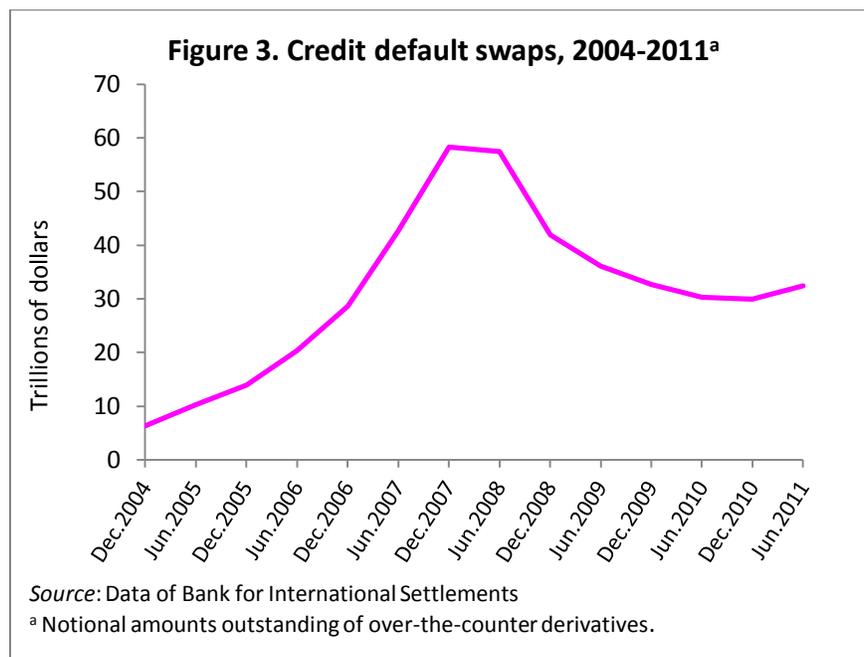
### The Greek debt swap and the CDS market

The existence of CDSs on bonds of the Greek government led to a distorted process for reducing Greece's debt. In the final settlement in March 2012, bondholders took a loss of 75% of the face value of the bonds. Bondholders with CDS protection would have had little incentive to accept such a debt exchange offer if they understood the alternative to be CDS payment once Greece was declared in default. Thus a great effort was made to depict the bond exchange as a "voluntary" restructuring of the debt, in which case payments to the CDS holders would not be triggered. In fact, a first request to find Greece in default was denied on 1 March by the arbiter of the question, the International Swaps and Derivatives Association (ISDA, a trade association with over 815 members in 58 countries). Then, on the morning of 9 March, Greece announced it had received almost 86% voluntary participation in the exchange, which allowed it to invoke a recently legislated feature of the bonds that had been issued under Greek law. The feature, called a "collective action clause" (CAC), allowed the Government to impose the bond exchange on the remaining holders of its domestic law bonds. With that, ISDA declared on the same day that a "credit event" had occurred because invoking the CAC diminished the legal rights of bondholders.

In the end, 97% of Greek bondholders took the debt exchange offer. About \$3 billion in CDSs were outstanding and had to be settled, down from over \$9 billion in November 2009, reflecting the reduced belief that investors would be able to collect on them (Pollack, 2012). The CDSs settled smoothly, as did the bond swap itself.

Nevertheless, prices of the restructured Greek bonds were soon trading at a discount, meaning that even after the bondholders' "haircut" (loss) the market feared that Greece remained insolvent (as of mid-August, the yield on benchmark 10-year Greek government bonds was about 25%, as per [www.bloomberg.com](http://www.bloomberg.com), accessed 20 August 2012). Moreover, saying that an actual default and debt workout was a "voluntary" exchange in order to prevent recognizing a "debt event" has set an uncertain precedent. Banks that issued CDSs on a debtor as large as Spain or Italy would clearly want any debt restructuring to be deemed a voluntary exchange to prevent having to make large payouts.

This is not a good way to undertake sovereign debt restructuring. It is not transparent. It is not timely. And it apparently requires multiple iterations before a country is finally solvent (see below on a proposed alternative, a sovereign insolvency regime).



However, there are important downsides. The markets are lightly regulated and so there is reason to ask if all those willing to take on the risks are actually able to meet the possible calls for payouts. The inter-linkages among the large financial institutions adds a systemic dimension in that if one institution cannot meet its counterparty obligations and defaults, the losses it imposes on its partners may bankrupt them as well, which could threaten other institutions for which they serve as a counterparty and so on, threatening a systemic breakdown. This fear was not abstract in the autumn of 2008 in the United States and Europe. Moreover, investors in derivative instruments can be prone to herd behaviour so that individual derivative markets can be subject to panics and “runs,” collapsing leveraged positions and disrupting markets. Nothing exists in these markets to dissuade or discourage a run, like the government-supplied deposit insurance that can calm bank depositors or the circuit breaker that stops panicked trading on the New York Stock Exchange.

It is also increasingly being realized that the fundamental assumption on which financial institutions price their derivative offerings is wrong. That assumption is that the derivatives float above the underlying assets, as it were, and do not affect their market prices. As discussed above, experience from commodity markets, credit default swaps and elsewhere indicate this is not the case. For believers in “efficient markets” theory, this is an anomaly that needs to be addressed; moreover, there is evidence that these markets move underlying securities prices away from “equilibrium” (e.g., see Subramanyan and others (2012) on the effect of CDSs on corporate bankruptcies).

There is a further problem in that the large pool of liquidity in the derivatives markets is largely outside the banking system. Even if banks create many of the instruments and even if there is increasing regulation of their “trading book,” they are only a part of the market, which thus operates largely outside the scope of monetary policy. Moreover, the financial institutions that are issuing and trading the derivatives are usually highly leveraged and thus susceptible to collapse if their trades go the “wrong” way and they have to absorb large losses. Central banks have direct influence only over the banks in the banking system. Central banks, for example, can only indirectly and thus not assuredly drain liquidity from the “shadow” banking system when inflationary pressures build.

Thus, for both “macroprudential” (economy-wide) reasons and “microprudential” reasons (affecting individual firms, the financial sector and specific sectors, like food and energy), the derivative markets warrant far stronger regulation. In fact, the Group of 20 (G20) is working to strengthen oversight of the sector and has asked the aforementioned Financial Stability Board (FSB) to undertake the technical work on this and other areas of international regulatory reform. The principal thrust of the FSB’s derivatives work is to bring more transparency to the OTC markets, as by listing contracts on central repositories, trading contracts on exchanges or electronic platforms where they would be recorded, and centrally settling the trades. Other initiatives would raise the capital backing required of banks arranging non-centrally cleared contracts and setting new limits for borrowing “on margin” to purchase contracts. Besides stricter indirect regulation of the system through banking regulations, the G20 is investigating direct regulation possibilities, as well as harmonizing different national accounting practices for

financial institutions.<sup>51</sup>

These reforms may improve the functioning of individual OTC markets, but they do not begin to address whether some of the securities should be prohibited, restricted, left alone or encouraged. For example, there was nothing in the discussion above of CDSs that recommends them. Nor are guidelines being developed that might dissuade financial innovators from devising economically and socially unhelpful products. Regulators also need to prevent “regulatory arbitrage” by observing efforts of financial innovators to use loopholes to skirt important prudential restrictions. In this light, the most sensible policy would be to set simple rules to define the simple kinds of securities that financial institutions would be allowed to issue and trade, while keeping banks in particular away from the business of creating and trading opaque and risky derivatives (see Johnson and Stiglitz, 2012). As noted earlier, both to protect banks from self-destructing and to facilitate effective central bank monetary management, a policy of returning banks to their core banking functions (“boring banking”) has much to recommend it.

Moreover, there are good proposals to better align the incentives of individual securities traders and senior bank executives with the long-run interests of their firms, let alone with the needs of the economy at large, as by tying compensation to longer term rather than short-term trading performance, not to mention having pay bonuses reward business success and not failure. Similarly, there are proposals to require investment banks to retain a portion of the higher risk securities they create and sell (have “skin in the game”) so they would not be immune from losses if the securities did not perform well.<sup>52</sup>

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<sup>51</sup> Among the questions is how to value securities held by a financial firm, including securities that do not trade regularly. One accounting principle, for example, is that securities should be valued at their current market price. But how does one “mark to market” when the asset is not actively traded and thus has no market price? And would it send helpful or misleading signals to management of, say, an insurance company with long-term liabilities to have to mark volatile securities holdings to market on a daily basis (United Nations, 2009, paragraph 60)?

<sup>52</sup> These and other proposals to strengthen official oversight of financial institutions and markets in light of the financial crisis may be found in the “Volker” and “Stiglitz reports”, prepared respectively by the Group of 30, a group of senior officials and former officials from developed and emerging economy financial sectors (Group of 30, 2009) and the Commission of Experts appointed by the President of the United Nations General Assembly (United Nations, 2009, chapter 3).

## **V. Coherent and responsible international policy: the financial “architecture”**

Regulation of financial services is everywhere a national and sometimes a sub-national responsibility.<sup>53</sup> However, financial services in different countries have become so interrelated that national policy makers have increasingly promoted common regulatory standards across countries. In addition, as noted earlier, governments need to complement financial regulation with policies for providing emergency liquidity and for resolving insolvent financial institutions when necessary. When the authorities in major financial centre countries (or in a regional grouping of countries, such as “ASEAN+3”<sup>54</sup>) need to quickly deploy a large amount of official liquidity to counter a crisis in their banking systems, cooperation among their central banks can be very useful. This is often pre-arranged by creating bilateral “swap lines,” which are promises to make immediate short-term loans of official foreign exchange reserves to each other when needed. And yet, universal institutions and policies are also necessary.

### **A new IMF with new governance arrangements**

Important in this context, especially for countries not at the centre of the international economy and less likely to be candidates for mutual assistance agreements with reserve currency countries, is the International Monetary Fund. However, while membership in IMF gives a country automatic access to a relatively small amount of funds, the substantial loans that IMF is empowered to make usually come with policy conditions that can be arduous and even misguided, as in “pro-cyclical” demands for austerity in a recession. Often structural policy changes have also been specified, as on trade policy or in reducing the economic role of the public sector, which go beyond what is needed for the macroeconomic adjustment that is the Fund’s mandate and expertise (Buirra, 2003). While some “conditionality” is probably inescapable, if only because the Fund, like any lender, is expected to perform “due diligence” on the borrower to convince itself the loan will be repaid, the basic IMF lending model of requiring policy conditions as a quid pro quo for funds, pits the Fund as the adversary of the borrower. Policy conditions are thus concessions the government makes to get the money, which is not a promising way to build national ownership and effective implementation of Fund proposals. And as the conditions are typically negotiated behind closed doors between a stressed national finance ministry and Fund staff, national social imperatives need not be addressed at all, even if the political leaders at IMF headquarters establish positive general policy guidelines, as on maintaining an effective social protection floor. Probably only a significantly reformed governance of the institution can force that change.

The proposal here, however, is not to further empower the IMF as it exists today, but to recreate it for a multi-polar world that increases the priority of equitable and sustainable development, along with financial stability. A new governance structure would be needed to guide policy at the new IMF, one without the US veto over major decisions and without the overrepresentation of developed countries. Governance would need altering as well in the

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<sup>53</sup> For example, in the United States, banks are regulated at national and state levels, while insurance regulation is a state responsibility.

<sup>54</sup> Member states of the Association of Southeast Asian Nations plus China, Japan and the Republic of Korea, cooperating under the Chiang Mai Initiative.

committees that set international policy standards in banking and other financial regulations.<sup>55</sup> Moreover, just as the financial industry excessively influences national regulatory authorities and policy makers, it seems to carry this influence into the international arena as well and that needs curtailing. Despite being highly technical, those committees need to consider the views of all relevant stakeholders at early as well as late stages of policy development, not only the views of the financial sector objects of their oversight.<sup>56</sup>

### **Reviving the concept of an international reserve currency**

In the 1960s, IMF created a multilateral reserve asset called the “special drawing right” (SDR) to supplement government holdings of foreign currencies and gold as reserves. The IMF membership created SDRs in 1970-1972 and 1979-1981, although the amounts were never more than a small fraction of country reserves. Nothing followed, however, until 2009, as Fund members, in particular, the largest one, the United States, which has a veto over such decisions, could not agree. Then, as part of the counter-crisis effort, IMF created \$250 billion of SDRs and finally was able to implement a \$33 billion issue that had been pending since 1997, as it had required US Congressional approval.<sup>57</sup>

What is especially interesting about the SDR is that it was supposed to become the principle international reserve asset, eventually replacing the US dollar and the few other reserve currencies. This was attractive for two reasons. First, it would have put the global supply of reserve assets potentially under international policy guidance, rather than depend on policy making in one or a few countries, and secondly, the “seigniorage” that accrues to countries whose national currencies are used as reserves could instead be captured for international use.<sup>58</sup> Although no SDRs have been issued since 2009, the question again arises of whether IMF might steadily emit them and whether they might come to serve increasingly over time as the principal reserve asset in a newly multi-polar world. There is much to recommend this view. If not the SDR per se, some other composite multi-currency reserve asset could be devised.

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<sup>55</sup> Most of these committees, which reach decisions by consensus, are currently clustered around and serviced by the Bank for International Settlements, including the Global Economy Meeting of the BIS which seats 31 and the two committees mentioned earlier in this paper on payment and settlement systems and on banking supervision. In addition, the BIS hosts the International Association of Insurance Supervisors, made up of regulators and supervisors from 190 jurisdictions. Also important is the International Organization of Securities Commissions, based in Madrid, which has 115 ordinary member authorities, 11 associate members and 77 affiliated members. In an effort to bring coherence to these different, highly technical bodies, these committees and organizations also participate in the Financial Stability Board, which as noted earlier has 24 member governments (mainly G20 countries), 6 key international institutions and 6 international financial standard-setting bodies. It is also serviced by the BIS.

<sup>56</sup> To be fair, the committees generally post proposed regulatory changes for comments, which the committees take into account. Civil society can join with others in submitting views. However, a means might also be devised to invite such views at an earlier stage of deliberations on the prospective regulatory reforms.

<sup>57</sup> The 1997 SDR allocation broke with the standard practice of issuing SDRs in proportion to IMF shareholding and thus entailed an amendment to the Fund’s Articles of Agreement, which in the United States required legislative ratification.

<sup>58</sup> A country whose currency serves as an international reserve asset can have a perpetual balance-of-payments deficit, because foreign central banks will want to keep accumulating that currency. If the seigniorage were captured by IMF, it would open the possibility of using it for development cooperation (United Nations, 2012, pp. 31-35).

## A sovereign debt resolution mechanism

Multiple examples can be cited of protracted and inappropriate workouts from sovereign insolvencies, most recently highlighted by the continuing difficulties in Greece even after the very large “haircut” taken by its private bondholders (recall the box above). Unlike in court-supervised corporate insolvencies guided by national bankruptcy laws, sovereign insolvencies are resolved on an ad hoc basis and very much reflect the political interests and exigencies of the major creditors and the sovereign debtor. Efforts have been made at various points for over a century to establish an international debt workout process, but thus far to no avail.<sup>59</sup>

Processes for sovereign debt workouts that sought to be comprehensive were set up by the Paris Club, a group of developed country government creditors (representing a steadily diminishing share of sovereign loans) and by the Bretton Woods institutions for the heavily indebted poor countries (a process that is nearing completion and termination). And yet, some governments, various civil society organizations and even certain voices within the investor community (Haley, 2012) remain interested in pursuing the idea of establishing an international mechanism that would be comprehensive, fair, timely and that would position governments post-crisis in a similar situation to that of corporations emerging from bankruptcy that are said to have been given a “fresh start” (analysis and proposals are elaborated in Herman, Ocampo and Spiegel, 2010).

## Inadequacy of the G20

When the G20 heads of state first met in Washington, D.C. in November 2008 to respond to the global financial collapse, they set in motion a two-track process of recovery and reform. The latter embodied a host of discussions on banking and financial market regulations, some aspects of which have been touched on above. The recovery track began with a coordinated fiscal stimulus by G20 countries to overcome the crisis-driven global collapse of private demand, but also included boosting multilateral rescue funds for governments, principally of developing economies, primarily by adding to the resources of IMF and the international development banks. Thus, at its next meeting in April 2009 in London, the G20 approved mobilizing \$1.1 *trillion* in additional resources for official support. The Group of 20 had started life in 1999 as a technical discussion forum for finance ministers from “systemically important” developed and developing countries about how to strengthen international financial oversight and policy reform in the wake of the Asian and Russian financial crises of the preceding years. By transforming the G20 into a summit meeting of political leaders, the major powers in effect added new partners to the Group of 8, which had operated as an informal “executive committee” of the world economy.<sup>60</sup> Some people thought this would redirect policy making towards a more inclusive

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<sup>59</sup> The first appears to have been the 1907 Hague Convention Respecting the Limitation of the Employment of Force in the Recovery of Contract Debts, which promoted a debt arbitration process instead of the practice of governments of bondholders sending “gunboats” to collect on their behalf. Efforts that did not lead to agreements include the 1933 Pan American Conference in Montevideo, the Bretton Woods Conference of 1944 that created the IMF and World Bank (Heilienier, 2008), as well as discussions at the United Nations Conference on Trade and Development in the 1970s and at the IMF in 2002-3 (Herman, Ocampo and Spiegel, 2010, pp. 240-241 and chapter 12).

<sup>60</sup> The Group of 8 comprised Canada, France, Germany, Italy, Japan, Russia, the United Kingdom and the United States. The additional countries in the G20 are Argentina, Australia, Brazil, China, Republic of Korea, India, Indonesia, Mexico, Saudi Arabia, South Africa, and Turkey, plus the European Union.

interpretation of the “global” interest. Although a number of emerging economies now have a seat at the table of power, there seems no change in the pro-financial sector thrust of regulatory policy or in international cooperation more generally.<sup>61</sup>

Moreover, although the G20 has broadened its mandate to include certain development and social issues, it seems to keep social and development concerns away from the financial ones. Indeed, the Mexican hosts of the Los Cabos G20 Summit that took place on 18-19 June 2012 ran two separate sets of preparations: a “financial track” mainly prepared by finance ministries and a “Sherpas’ track,” which seemed to fall under foreign ministries (topics in 2012 included employment, food security, development, corruption, tourism and multilateral trade). Only the heads of state themselves could merge these tracks, although it seems they simply endorsed the recommendations of each track, rather than integrate them.<sup>62</sup>

The argument for making the G20 the principal forum for addressing critical economic and financial policy matters is that the economies of this group of countries account for the overwhelming majority of world output and trade, not to mention international financial flows. So, in that sense it is inclusive, while limiting the size of the meetings so as to reach consensus more easily. However, there are two shortcomings with that argument. One is that the views and interests of the 173 other countries in the world also merit consideration, as all the world’s wisdom was not poured into only 20 countries, regardless of how large and powerful they might be. The other is that it stands to reason that superior policy will result when all relevant stakeholders have an opportunity to influence policy development. Although the G20 chairs have made efforts to consult with civil society on behalf of the other members of the Group, there is no effective dialogue *within* the preparatory processes. Meanwhile, financial industry lobbyists have their own channels of access. Formally, policy development takes place behind closed doors among a small number of participating governments and international institutions. Judging from the narrow range of views incorporated into the 2011 G20 policy conclusions on development (Herman, 2011a), it seems that the forum suffers from “inbreeding” and would benefit from more open and inclusive deliberations.

### **A global governance body**

If the self-appointed G20 does not include enough countries or points of view, is there an alternative? One forum for broad political debate on the major international economic and financial reform issues is the United Nations General Assembly and its subsidiary bodies. Indeed, heads of state and foreign ministers address the United Nations annually if not more frequently. However, in truth, this forum has been unwieldy and many have been frustrated by it. As a result, there is a variety of proposals to create structures that fall somewhere between the formality and inclusiveness of the General Assembly and the exclusive and private club of the G20.

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<sup>61</sup> When words are included in communiqués that reflect emerging economy views, they do not seem to entail actual political commitment. For example, the G20 agreed, as in its Toronto Summit Declaration on 27 June 2010, to “build on our earlier commitment to open, transparent and merit-based selection processes for the heads and senior leadership of all the [international financial institutions]” (paragraph 30). But in 2011 another European was selected to head IMF and in 2012 another American to head the World Bank, making clear that the longstanding informal agreement among the developed countries on how they would choose the institution leaders had not been disturbed.

<sup>62</sup> For additional details, see the webpage of the Mexican hosts at [www.g20.org](http://www.g20.org).

In one such proposal, the “Stiglitz Commission” called for a Global Economic Coordination Council (GECC) at the United Nations to promote coherent and effective policymaking on global economic, social and environmental issues. Because it would need to be relatively small but representative, the Commission proposed selecting government participants through a constituency system, as is the practice at IMF and the World Bank, where countries form themselves into groups (which in fact range from one to 22 member countries) and elect one of their own to represent the interests of the group. Representatives of the major international institutions would also participate in the GECC (United Nations, 2009, p. 91).

Other proposals have imagined a more far-reaching change. For example, one proposal is to create a limited-size Global Council that would operate under the guidance of an inclusive Global Governance Assembly. Responsibilities of the Council would include responding to complex economic emergencies and addressing inconsistencies in the policies of a second tier of self-governing specialized international agencies. The Council would have 15 members, including large states elected for 10-year terms and small states elected for 2-year terms. Super majorities (above 50%) would be required to adopt certain decisions and in any case losing minorities would have the ability to appeal to the Global Assembly (Herman, 2011, pp. 96-97).

While the second proposal is far beyond ambitious in today’s global political environment, informal variations on the first proposal have already been discussed in the United Nations, where some countries see the benefit of a multistakeholder discussion forum to bring together representatives of governments, international institutions, business and civil society, for informal, serious and frank exchanges on specific policy matters such as have been discussed in this paper.<sup>63</sup> This had been the model for the successful UN Financing for Development process, which at least temporarily helped identify and build political momentum toward a new consensus on economic and financial policies at the summit meeting in Monterrey, Mexico in 2002 (Herman, 2008). Experimentation with informal and participatory forums should not be beyond what diplomats and politicians might consider, especially if they were to feel stronger political pressure from citizens to go beyond business as usual.

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<sup>63</sup> See, in particular, “Background paper prepared by Eduardo Gálvez, Deputy Permanent Representative of Chile to the United Nations” in United Nations (2011a), pp. 131-137.

## **Annex. The US mortgage fiasco: an instructive case**

The global financial crisis began in the US housing finance market. There were housing price bubbles in other countries that burst and caused financial stress, for example, in Ireland and Spain, but we focus here on the US story. It illuminates especially well the need to be alert to when financial innovation separates what is profitable from what is socially beneficial.

Traditionally, commercial banks and specialized financial institutions like savings banks provided most of the housing finance in the United States, where owning a single-family home has been a widely held and attainable objective for the broad “middle” class. The financial institutions took in deposits from low and middle-income savers and lent out the funds to other low and middle-income households in the form of mortgages, say, for 20 or 30 years on which the borrower made regular payments of principal and interest on what was thereby a declining balance until the house was free of any bank claim in the final year. The house itself served as collateral for the loan. Originally, the interest rate was fixed for the life of the loan. A loan officer from the bank making the loan investigated the creditworthiness of the borrower, made the decision to lend according to the bank’s criteria for risk, set charges that the borrower would have to pay, and then monitored repayment over the life of the loan. The bank had an incentive to accurately assess the borrower’s credit carrying capacity, as it was lending money whose earnings were going to pay the interest on its savings deposits.

There was a certain risk in this business, as individual borrowers could lose their jobs and repayment ability, but unless the factory closed in a one-factory town, the risk of a wave in borrower arrears was fairly small. However, a different problem arose for the mortgage lending institutions after inflation surged in the 1970s. The US Federal Reserve began the 1980s by attacking the inflation by sharply limiting the growth of money and credit, which sent interest rates skyrocketing. Investment banks and brokerage houses began to market mutual funds that invested in newly high-interest securities, including US treasury bonds. Money market funds were introduced that promised the saver no risk of fluctuation in the value of their shares. Savings institutions could not offer higher interest rates under their regulations (as low interest on savings made possible low mortgage rates) and they began to lose customers to the alternative savings opportunities, especially the money market mutual funds.

In light of the flight of depositors, the mortgage-based institutions sought and received permission to offer higher interest deposits in 1982. To a degree this helped stem the outflow of deposits, but now the banks had to pay out more in interest on deposits than they were taking in from their mortgages. Many of the savings institutions then sought higher earnings through higher risk investments, an unwise strategy, and by 1995 half the US savings and loan banks had to be closed down (Curry and Shibus, 2000, p. 26).

The original model of financial intermediation from savers’ short-term deposits to borrowers’ long-term fixed-rate mortgages could not survive once the market created the alternative of a lightly regulated “shadow” banking service in the form of money market funds, taking advantage of the new high-interest environment. In response, savings institutions created mortgages whose interest payments would fluctuate with the interest rates perforce paid to depositors. But the variable interest rate mortgage was not the only solution.

The other solution involved a mechanism that was used—and then abused—to allow banks to obtain funds to issue new mortgages by selling their existing mortgages. While the bank would no longer receive the interest on the mortgages it sold, it would receive cash for the sale of the mortgage to an investor. Originally, the mortgages were purchased by certain semi-public housing finance agencies, the Federal National Mortgage Association (“Fannie Mae”) and the Federal Home Loan Mortgage Corporation (“Freddie Mac”), which in turn pooled them into groups and issued bonds that paid interest to the bondholders funded by the interest paid by the mortgages in the group. To be included, the mortgages had to be approved and insured by a government agency, mostly by the Federal Housing Administration (FHA), an agency that had been established in the 1930s to promote home ownership by middle-class households.

So far, so good, at least in so far as the securitization created attractive, low-risk, mortgage-backed securities. Besides including only insured mortgages, investors believed the securities themselves had an implicit government guarantee from the quasi-public issuing agencies. Also, housing prices had been on a long upward trend, so buyers of mortgage-backed securities could feel confident that mortgage holders would strive to stay current on their obligations because houses were an important and steadily rising part of household wealth. There could be jumps or disruptions in the cash flow to the security issuer, as when homeowners sold their homes and settled their mortgage or when homeowners defaulted, but a small number of these events in a large diversified pool of mortgages would not be disruptive. The securities were eagerly purchased by investors seeking to add to their revenues at moderate risk.

However, this new securitization process changed banks from being investors relying on the mortgages to provide interest income to becoming mortgage writers whose income derived from the prices at which they could sell their mortgages to aggregators who created mortgage-backed securities. The volume of mortgages treated this way was also limited, however, by the requirement that the mortgages had to meet FHA standards. But nothing prevented Wall Street from creating additional mortgage-backed securities that were not restricted to these standards.<sup>64</sup>

The Wall Street firms boosted yield on the securities they created by including riskier mortgages and the mortgage-issuing banks accommodated the Wall Street demand to feed it more mortgages by relaxing their requirements on borrowers. Wall Street firms also invented a way to claim that even a security backed by a diverse pool, including high-risk mortgages, could be divided up into low, medium and high-risk parts. In contrast to the standard “pass-through participation” in which an investor receives a pro-rata share of the funds paid by mortgage borrowers, Wall Street invented a security called a “collateralised mortgage obligation,” which divided the shares in the security according to differentiated priority for payment from the mortgage revenues received by the security manager. Those who had the first priority claim were told they had a AAA security, those with second priority had a somewhat lower rated investment (but received more interest income) and so on down to “junk” bond status. The assumption was that at most a few of the mortgages in a given pool underlying a security would default at any one time (and that housing prices would keep increasing). We know that is not how it turned out. Moreover, other financial institutions wrote credit default swaps on these securities, so that investors in them believed they had insurance to reduce the risk in the more risky Wall Street

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<sup>64</sup> Fannie Mae and Freddie Mac followed Wall Street down this path, which is a good part of the reason they are insolvent today.

creations.

The securities became very popular domestically and with European, Chinese and other foreign investors, as they seemed to offer low risk but relative high yield. Investors should know that combination is unlikely but there was a mood of confidence in the wisdom of Wall Street. Indeed, Wall Street firms also started issuing securities that were backed by pools of mortgage-backed securities, making the actual income-producing assets two steps away from the investor, doubling the opacity, on top of which, banks sold CDSs on the risks in them. It should be clear that investors could not disentangle the layers of securitization and assess the actual risk. Neither could the rating agencies which nevertheless gave ratings to the securities, quite optimistic ones in hindsight.

Meanwhile, the mortgage issuers did poorer and poorer jobs of “due diligence” in feeding mortgages to the firms issuing new securities. In the late stages of the “boom,” mortgage writing firms were offering “NINJA” loans (loans to people with “no income, no job, no assets”) and—we now know—the banks also did very sloppy paperwork. In the end, borrowers often did not know who owned their mortgage and the securities issuers could not trace and prove ownership of individual mortgages. Once housing prices started to fall, homeowners lost some of their incentive to stay current on their mortgages. With the onset of the recession, they also lost ability to stay current.

At that point, it became clear that investors who had bought the securities had little idea of the riskiness of their purchases. Many of the securities had been rated highly by bond rating agencies, when with hindsight it is clear the rating agencies did not understand the complicated financial engineering that had gone into structuring the securities. Perhaps they did not want to understand, as rating the securities had become a highly profitable business for them. The same might be said for the investors buying the securities, especially if insured with a CDS. When the housing bubble burst in 2007, however, holders of the securities realized they owned “toxic” assets and sold heavily. Banks had written many of the CDSs. They also had created or took equity stakes in the “special purpose vehicles” that issued the securities. Thus, when the securities stopped performing and defaulted, the banks were stuck with the losses.<sup>65</sup> The rest is history.

The lesson to draw from this experience is that the presumption that the financial industry should be left free to create any new securities their financial engineers think of is naïve. In an industry that requires regulation from top to bottom, albeit in differing intensities, some authority should assess the likely impact of a new security, considering for example the changes in incentives it might create, the ability of even sophisticated investors to understand the security and whether the innovation serves a purpose that society supports. In this context, the “Stiglitz Commission” proposed that governments consider establishing financial products safety commissions (or add related responsibilities to their financial regulators) to assess both whether a proposed innovation might be harmful to consumers as well as whether it posed systemic risks (United Nations, 2009, p. 62).

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<sup>65</sup> Apparently, some banks sought to remove these investments from their balance sheets by selling their ownership stakes to hedge funds that then used them as collateral for loans from the banks, and so if the hedge fund defaulted on its borrowing the equity stake would return to the bank and its balance sheet, meaning the bank had not actually cleaned its books of them.

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