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Introduction

1. The autumn of 2008

In mid-July 2007 the global credit markets came to a standstill. On the face of it, the continuous decline in the US housing market and the over-expansion of US and European banks in the US market for sub-prime mortgages led them to accumulate serious and mostly hidden losses. Mounting losses gave rise to a crisis of confidence where no bank would lend money to any other regardless of its credit standing. At the same time, the flows of capital to the global market for structured credit products all but disappeared. Gradually, the liquidity problems encountered by US and European banks were transformed into solvency problems due to their high leverage and low capitalization escalating the confidence crisis. In the process, bank problems became so deep as to develop into a full-blown financial crisis, the worst the world had seen since 1929.

Although an event of unprecedented severity, the Global Financial Crisis(GFC) had rather 'humble' beginnings. The first ominous episode was the collapse of a medium-size mortgage provider in the UK, Northern Rock.[1] It was followed by the collapse of the fifth biggest US investment bank, Bear Stearns, in March 2008, which became the subject of a quasi-compulsory takeover by JP Morgan. However, while the clouds of the unprecedented storm were gathering, most bankers and policy-makers still believed that the crisis would be contained. Then in the space of few weeks from early September (when the collapse of Fannie Mae and Freddie Mac was followed by Lehman Brother's failure) to early October 2008, the global financial system teetered on the brink of collapse on a daily basis.[2] It was rescued at a huge cost to US and European taxpayers and

[1] The Run on the Rock, (House of Commons, Treasury Committee, Fifth Report of Session 2007–08, 24 January 2008).

[2] I provide a concise overview of the events of autumn 2008 in Chapter 2, Section 6.2. For an authoritative timeline of the events leading to the GFC and its aftermath from the eruption of the sub-prime mortgage crisis in March 2007, see Council of Foreign Relations,

bail-outs gave rise to a heated debate in most parts of the world, although, in the conditions prevailing at the time, they seemed the only sensible option available. The bail-outs of the autumn of 2008 were followed by a global economic recession that was felt mostly in the developed world.

2. Why the GFC was not prevented?

The GFC was not the first truly global financial crisis, that 'dubious' honour belongs to the 1929 crisis, and it is not going to be the last, but it was the biggest to date. The questions raised by the GFC permeated all levels and spheres of the global policy debate, touching on the politics, economics and legal/regulatory infrastructure underpinning global finance. Arguably, some of these questions have already been settled. One example is the set of new regulations and market infrastructures that are currently being introduced to deal with Over the Counter (OTC) derivatives trading and the risks associated with it. Other important questions, such as the issue of how to tackle best the 'too-big-to-fail' institution and moral hazard attached to its operation, are still being debated. The body of so-called soft law rules or standards comprising international financial regulation and the structures of the international financial architecture, mostly comprising Transnational Regulatory Networks (TRNs), clearly failed to predict or prevent the crisis. The reasons for this failure vary but two things are clear about pre-GFC international regulatory arrangements: their over-reliance on private sector input and lack of even a rudimentary institutional infrastructure to handle cross-border crises were contributing factors both in building up the conditions that led to the GFC and in exacerbating its consequences. But these observations do not tell the full story.

In the two decades preceding the GFC, a host of deregulation and other market-oriented policies, including monetary policies, inspired by the then unstoppable neo-liberal consensus, were pursued in an environment of relentless market innovation and technological advancement. The combination of these factors led to a gigantic expansion of global markets, a number of which – most critically the OTC derivatives market and

'Timeline: Global Economy in Crisis', available at www.cfr.org/economics/timeline-global-economy-crisis/p18709. See also Mauro F. Guillén, 'The Global Economic & Financial Crisis:A Timeline', The Lauder Institute, Wharton School, University of Pennsylvania, available at lauder.wharton.upenn.edu/pages/pdf/Chronology_Economic_Financial_Crisis.pdf. See also Hank Paulson, *On the Brink* (New York: Hachette Books, 2010).

the shadow banking sector – were not subject to any kind of regulatory oversight. It is not surprising that, when malevolent forces in the formal banking sector, namely, excessive credit expansion to unsuitable borrowers, combined with unregulated market activities that concealed excessive leverage in the shadow banking sector and with interconnectedness, arising from largely opaque transactions in the OTC derivatives markets, the wave of destruction became unstoppable. This combination was also largely responsible for the severity of the crisis.

Although regulatory inertia was to a large extent influenced by the neoliberal consensus and, to a certain extent, by 'capture', this is in many ways a very crude explanation of market and regulatory myopia. Therefore, not in order to discard those interpretations but rather to overhaul and shed light on them, it is worth re-examining the main forces that, alongside trade liberalization, shaped the development of global financial markets more than any other: *the financial revolution*. This is defined here as the sum of three contemporary developments: open markets due to liberalization; technological advancements in communications and computing power; and financial innovation. The concurrent emergence of these three seemingly independent developments radically transformed the global marketplace and sealed its fate. The utilization of the three elements of the financial revolution not only generated mega-profits but also colossal amounts of well concealed tiny risks that, if combined with other risks of equally low probability, could bring financial devastation. I provide an analytical examination of the causes of the GFC in Chapter 3.

Even a first reading of the empirical and theoretical studies discussed in Chapter 3 show that the unpredictable combination of all those low probability risks was made possible because of financial innovation and the existence of fast moving and open global markets. I argue in this book that, while a small number of insiders had a fairly good understanding of financial innovation and its possible interaction with the other forces of financial revolution and time-old (and little explained) characteristics of financial markets, such as herding, in most cases policymakers, regulators and even senior bankers preferred to live in a state of 'blissful ignorance'. They did so either because the new developments exceeded their cognitive capacities or because they preferred to take the easy route of merely watching rising market prices and widespread euphoria and not delving deeper, trying to understand what was truly pushing the unprecedented price rises in most global asset markets.

Misunderstanding a major knowledge revolution, as recent financial innovations should be held to be, is nothing new. Not only do communities of experts tend to be confused as to the actual epistemological properties of new knowledge/technology, but economists have also traditionally under-estimated its value.[3] Therefore, the possibility of financial innovation (perceived here as a knowledge revolution) being used as a benevolent force to achieve global welfare objectives should not be discarded. On the contrary, proper research/knowledge structures with a global reach should be built to help policy-makers and possibly the markets to gain a better understanding of the properties (and risks) of financial innovation[4] and of the financial revolution in general in order to manage them in a way that would not endanger financial stability and would even facilitate the achievement of other global welfare objectives.

3. Why is finance so important?

3.1 Overview

The financial system provides a large number of critical functions (analytically discussed in Chapter 2) which are inextricably linked with the welfare of modern economies and day-to-day life. To mention but a few, financial markets allow private and public actors to fund their consumption and investment needs by means of bank loans or finance provided by the capital markets, a mechanism that would not have been so readily available in the absence of well functioning markets. The reason is that the financial system provides investors, through market prices, with a reliable criterion of value. The interplay of supply and demand allows price formation (discovery) through the filtering out of trader's heterogeneous expectations as well as the dissemination of privately held market information. In principle, financial markets, through the provision of a price discovery mechanism, facilitate the efficient allocation of scarce resources, using savers', and investors' funds most efficiently.

The financial system protects, through the use of futures markets, producers and consumers of physical commodities and traders and users of financial assets from adverse price movements. In addition, there is a very strong (mutual causation) link between financial system development

[3] See for an overview of relevant studies and explanations, Yong J. Yoon, 'Science, Scientific Institutions, and Economic Progress', George Mason University Working Paper in Economics No. 10–36, 3 November 2010, available at papers.ssrn.com/sol3/papers.cfm?abstract_id=1702675.

[4] Cf. John Gerard Ruggie, 'International Responses to Technology: Concepts and Trends' (1975) 29 *International Organization* 557.

and economic growth (and possibly poverty eradication), an aspect of financial markets that is extensively discussed in Chapter 2.

The principal financial institutions that tend to have a cross-border presence are: (1) commercial banks; (2) investment banks; (3) savings banks and credit unions, also called thrift institutions; (4) insurance companies; (5) private pension funds; (6) specialized finance companies which deal either with consumer or commercial loans; and (7) investment funds, including mutual funds, money market funds, hedge funds and sovereign wealth funds, which mainly invest their government's disposable wealth accumulated through trade surpluses. All financial institutions perform some of the functions listed above, but only commercial banks perform all of them.

The traditional banking system has three actors: savers, borrowers and banks and provides credit intermediation through the 'recycling' of savers' deposits into loans. Credit intermediation involves credit, maturity and liquidity transformation, since it generally uses highly liquid short-term deposits to provide, in principle, illiquid long term loans. More specifically, in a modern economy, banks provide three critical services that foster economic development:

(1) they ameliorate the information problems between fund providers, such as depositors and investors, and borrowers or securities issuers by monitoring the latter and ensuring a proper use of the providers' funds;
(2) they provide inter-temporal smoothing of risk that cannot be diversified at a given point in time as well as insurance to savers against unexpected consumption shocks; and
(3) they provide payments infrastructure.[5]

For these reasons the sound and safe operation of banks is of strategic importance not only in fostering economic development but also in ensuring social and economic stability. If savers are confident about the safety and sound operation of the formal banking sector, they will avoid channelling their savings to the informal banking sector, which is highly inefficient and is sometimes operated by criminal syndicates. Accordingly, the sound and safe operation of a competitive banking system ensures interested firms can access bank finance at reasonable market-based interest rates, allowing them to implement investment plans that are dependent on such financing and avoid over-borrowing.

[5] Franklin Allen and Elena Carletti, 'The Role of Banks in Financial Systems', March 2008, available at fic.wharton.upenn.edu/fic/papers/08/0819.pdf.

Similar principles relate to the workings of capital markets, where investor confidence in the operation of the price formation mechanism is paramount to the proper allocation of resources performed by those markets. Investor confidence boosts liquidity, one of the main ingredients of capital markets, but it is normally withdrawn when markets malfunction or are ridden with abuse, whether in the form of fraud, insider dealing or market manipulation.

3.2 *Should finance be regulated?*

Arguably, the most important and sensitive function of financial markets is efficient allocation of resources. Yet this is a fragile mechanism and may easily be disturbed by exogenous and endogenous shocks/distortions or may not perform properly due to market failures. In addition, because of maturity mismatches between their assets and liabilities, and the risk of contagion due to information asymmetries, banks are vulnerable to runs and represent a serious source of systemic risk. Hence the need for extensive regulations which broadly intend to:[6]

(1) preserve the confidence of the providers of finance (whether this means depositors and other creditors or investors) and of consumers of financial services in the function, processes and efficient outcomes of financial markets;
(2) remedy market failures (e.g., disclosure and market integrity regulations); and
(3) protect the financial system from unforeseen but likely shocks such as bank runs (e.g., deposit insurance and capital adequacy regulations).

It follows that one of the main justifications of financial regulation is that the multitude of externalities and failures finance providers and users encounter have such a large impact on the real economy that financial sector institutions should be tightly regulated to make them more resilient and their liquidity has to be subsidized through central bank support.

Securing the sound, safe and efficient operation of the banking system is no easy business. In fact it may be impossible to totally eliminate financial crises and bank failures, although financial systems have over the years

[6] See Charles Goodhart, Philipp Hartmann, David T. Llewellyn, Liliana Rojas-Suarez and Steven Weisbrod, *Financial Regulation, Why, How, and Where Now?* (London: Routledge, 1998); Ross Cranston, *Principles of Banking Law* (Oxford University Press, 2nd edn, 2002), Chapter 3; Emilios Avgouleas, *The Mechanics and Regulation of Market Abuse – A Legal and Economic Analysis* (Oxford University Press, 2005), Chapter 5.

been increasingly subject to strict government regulations attempting to prevent bank collapses, which may trigger contagion through generalized lack of confidence. Any given body of rules that is trying to create and preserve a sound and safe banking system must address four concerns:

(1) ensure the efficient and effective operation of banks, since due to the *principal/agent* problem savers do not know the true quality of the management that operates the bank with which they have trusted their savings;
(2) ensure that banks have adequate financial resources either to avoid a *failure* or to compensate their depositors and other creditors properly;
(3) devise a public system of regulations and supervisory techniques which ensure that, in the event of a bank failure, any depositor's run is effectively averted/contained and does not lead to a systemic crisis and the collapse of the banking system due to *contagion*; and
(4) ensure that the financial system is not used to facilitate *criminal activities* and, especially, to legalize the proceeds of crime (money laundering).

While national public authorities might find it easy to build regulatory systems that try to achieve these goals and end up pursuing them with moderate success, they are bound to find it impossible to deal with cross-border contagion and loss of confidence stemming from it in an era of global markets. As a result, a number of formal and informal international bodies, such as the International Monetary Fund (IMF), the European Union (EU), the Group of 20 most developed countrie(G-20), and the Basel Committee on Banking Supervision (BCBS), and a number of other Transnational Regulatory Networks (TRNs) have produced multiple sets of financial standards and regulations that intend to secure the sound and safe operation of international banks and other parts of global financial markets.[7] Where the sources of these rules are TRNs, they normally become binding either through national implementation or EU legislation.

During the 1990s, as finance became increasingly global, so did financial crises. Following the Mexican and Asian financial crises, a set of new arrangements was put in place to meet the needs of global finance, the 'New International Financial Architecture' (NIFA). In essence, these reforms amounted to little more than establishing another TRN, the

[7] See, for more extensive analysis, Chapter 4 of this book and Rosa Lastra, *Legal Foundations of International Monetary Stability* (Oxford University Press, 2006), Part III.

Financial Stability Forum (FSF), to co-ordinate the disparate soft law networks. At the same time, a system of voluntary monitoring through the Financial Sector Assessment Program (FSAP)[8] meant that, for the first time, international standard setting would be supported by a rudimentary review process. Yet NIFA structures proved entirely unsuitable to regulate properly the financial revolution and address the challenges this created. In fact, Basel capital standards, which were one of the central parts of NIFA, proved to be terribly flawed. They were very pro-cyclical and fostered regulatory arbitrage that allowed regulated banks to resort to highly leveraged shadow banking activities, which proved a very significant and well concealed source of systemic risk. Indeed, the total absence of any kind of institutional capacity in the field of crisis management and bank cross-border resolution meant that NIFA soft law structures were rendered irrelevant during the GFC.[9]

In the middle of the current crisis, two significant changes have taken place in the edifice of the international financial architecture. The first has been the emergence of the G-20 heads of state level as the predominant body for the co-ordination of international policy responses to the GFC and the second the reconstitution of the FSF that was renamed as the Financial Stability Board (FSB).[10] The FSB is increasingly taking a leadership role in international micro-prudential supervision matters.

4. The post-2008 reforms

It is not surprising that the GFC triggered a frenetic period of reform in an attempt to mend the broken arms of domestic and global finance and restore its functions. In the UK, the FSA will be abolished to be replaced by two new regulators, one responsible for prudential supervision (Prudential Regulation Authority) and one for investor protection and market conduct (Financial Conduct Authority). There will also be a new Financial Policy Committee in the Bank of England, which will be the macro-prudential supervisor having primary responsibility for maintaining financial stability.[11]

[8] See IMF, 'Factsheet- The Financial Sector Assessment Program (FSAP)', 23 March 2011, available at www.imf.org/external/np/exr/facts/fsap.htm.

[9] See Chapters 3 and 5 below.

[10] See also Joseph J. Norton, '"NIFA-II" or "Bretton Woods- II"?: The G-20 (Leaders) Summit Process on Managing Global Financial Markets and The World Economy – Quo Vadis?', (2010) 11 *Journal of Banking Regulation* 261–301.

[11] The UK Treasury intends thus to adopt a 'twin peaks plus' approach to financial supervision. See HM Treasury, A New Approach to Financial Regulation: The Blue Print for Reform (Cm 8083, July 2011).

Switzerland, which is not an EU member but came close to a systemic crisis due to the problems experienced by its two biggest banks (UBS and Credit Suisse), also restructured its system of financial supervision moving in a direction opposite to that in which the UK Treasury intends to move. Since January 2009 a single authority, the Financial Markets Authority (FINMA), has held responsibility for both prudential and investor/consumer protection regulation, succeeding the Swiss Federal Banking Commission and other sectoral regulators. The Swiss National Bank has retained responsibility for the stability of the financial system.[12]

In the US and the EU, legislators have brought about sweeping changes as regards the regulation, supervision and resolution of large banks and other Systemically Important Financial Institutions (SIFIs), OTC derivatives trading and ratings production by the credit rating agencies (CRAs). In addition, the BCBS has produced a radically upgraded capital framework for banks.

After a period of gestation and amid mutual recriminations between Democrats and Republicans as to who is to blame for the collapse of Wall Street, the US Senate approved the massive Dodd–Frank Act in July 2010. The Act brings about significant reforms (analytically discussed in Chapters 6 and 7) as regards the structure of systemic risk supervision in the US, with the establishment of the Financial System Oversight Council (FSOC) and expansion of the Federal Reserve Board's (FRBs) supervisory remit to insurance companies and other non-bank financial institutions that, in the opinion of the new macro-prudential supervisor, are systemically important. It also regulates the activities of commercial banks and introduces a strict regime for the standardization of OTC derivatives and centralization of trading and settlement of trades. Another very important reform Dodd–Frank has introduced is the establishment of a new special resolution regime (the Orderly Liquidation Authority or OLA) for SIFIs, whether banks or non-bank financial institutions. These will have to go through compulsory liquidation if they enter the scheme.

The pace of reform has been relentless in the EU as well and at least as wide ranging as in the US. The EU's reliance on a supervisory model that was centred on national supervisors proved to be very ineffective. Three major problems were identified. First, there was a marked lack of any framework for the monitoring of systemic risk on a pan-European basis. Second, 'home country control' proved problematic and exposed

[12] See Swiss Financial Market Supervisory Authority Act (FINMASA) (effective 1 January 2009).

the gaps in cross-border supervision of banking groups. Third, the unco-ordinated bank rescues highlighted the lack of pan-European structures for cross-border crisis management. Since these gaps in financial supervision called for a radical rethinking of regulatory structures in the EU, the Commission mandated a High-Level Group chaired by Jacques de Larosière to make recommendations on how to strengthen European supervisory arrangements and improve investor/consumer/depositor/taxpayer protection. The High-Level Group, in its final report of 25 February 2009 (the 'de Larosière Report'),[13] suggested reforms to the structure of financial supervision in the EU and consistent implementation of harmonized rules. Thus, the structure and processes of financial regulation in the EU have undergone very significant transformation, as a result of which:

(1) the newly established European Systemic Risk Board (ESRB) has become the European macro-prudential supervisor, although it has no formal standing in EU law;
(2) the principles of minimum harmonization and mutual recognition have largely disappeared, since the standard setting competence of the new European Supervisory Authorities (ESAs) makes them the central pillars and channels of maximum harmonization; and
(3) certain aspects of the supervision of cross-border groups have (implicitly) shifted from home country control to transnational supervisory structures comprising, essentially, supervisory colleges[14] and the new ESAs.

In addition, the EU has proposed or enacted legislation to bring credit rating agencies under the direct supervision of the new European Securities and Markets Authority (ESMA), to regulate hedge fund managers and to encourage OTC derivatives standardization and centralization of clearing and settlement.

[13] The de Larosière Report is available at ec.europa.eu/internal_market/finances/docs/de_larosiere_report_en.pdf.

[14] Directive 2009/111/EC of 16 September 2009 amending Directives 2006/48/EC, 2006/49/EC and 2007/64/EC as regards banks affiliated to central institutions, certain own funds items, large exposures, supervisory arrangements, and crisis management OJ L 302/97 17 November 2009. This Directive maintains that the supervisory powers of national competent authorities are not diluted, Recital 6. However, given the powers of Colleges and of the ESAs, and the authority Colleges may establish over systemically important branches, this claim looks maximalist. See new Art. 42a of Directive 2006/48/EC inserted by means of Art. 1 of Directive 2009/111/EC.