Speculation and Sovereign Debt – An Insidious Interaction

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Introduction

Four years after the financial crisis and near financial collapse of 2008, the world economy again faces the prospect of a deepening economic crisis. The precipitating event is the spreading financial contagion from the sovereign debt and banking crisis in Europe over the summer. “For the first time since October 2008” – the IMF wrote in September 2011 – “risks to global financial stability have increased” (IMF 2011a).

As the sovereign debt crisis in Europe intensifies and threatens to engulf the economies and banking systems of many European countries – Greece, Ireland, Portugal, Italy, Spain and now France – and beyond, the issue of financial gambling and speculation and its impact on stability, growth and employment in the real economy once again takes centre stage. Why are interest rates on some forms of European sovereign debt, so high and volatile? Why are equity prices in private banks so sensitive to rumours and so variable from day-to-day? Why are funding interest rate spreads that European banks face so high and variable? What role do the credit ratings agencies play in promoting volatility and contagion? And, last but not least, are global financial conglomerates that have become too-big-to-fail a symptom or a cause of the current crisis?

In OECD countries 50% more people were unemployed in 2010 than in 2007 while globally 84 million more people now live in extreme poverty than before the crisis, most of them in developing countries. For G20 countries alone, OECD and ILO estimates suggest that 110 million jobs must be created by 2015 to return to pre-crisis employment rates – 22 million jobs per year.

It would be simplistic to blame financial speculators alone for the global crisis. Free capital flows, low interest rates – the “great moderation” – and surplus liquidity contributed to global imbalances within and between regions. And financial speculators took advantage of that. In the broad sense of the term, financial speculation led to a speculative bubble in the US, it led to the creation of dangerous leverage and interconnections among financial firms, it diverted investment from real productive investment and itself contributed to massive inequality within societies. But the root causes also relate to broader problems in the underlying real economies.

The crisis exposed the un-sustainability of the model of growth that has prevailed. Growing inequality in the US and many countries has been linked by the 2009 UN Commission of Experts, chaired by Joseph Stiglitz, to the deficiencies in global aggregate demand that in turn were and are at the centre of the current crisis (ETUI, ITUC & TUAC 2011). As in the 1920s and the Great Depression, rising inequalities combined with financial de-regulation and the erosion of bargaining power of the middle and lower income classes across industrialised economies (Kumhof & Rancière 2010).

If the global economy is today on the edge of a double dip recession it is also because of the failure of the global governance system and the way governments, and the G20 in particular, have managed the crisis. The coordinated and inclusive approach to economic recovery measures that prevailed in 2009 was replaced by competitive and premature exit as governments, under pressure from bond markets, moved to fiscal consolidation, through cuts in public expenditures, wages, pensions and social programmes. In June 2010, Global Unions

warned the G20 that "this risks tipping the global economy back into recession with catastrophic results" (Global Unions 2010).

Financial speculation was a cause of the crisis. It triggered the initial shock in April 2007 through derivatives markets – what was then the 'subprime' credit crunch – and has been an accelerant ever since, with the continuing large scale presence of shadow banking and large financial conglomerates, both of which, this paper argues, are the main agents of financial speculation today.

The purpose of this paper is to provide a definition of financial speculation, identify the main sources of speculation – the markets, forms of trading and financial institutions that foster speculative behaviour – and to assess how the sovereign bond markets and the state of the public finances are being affected, notably in the light of the current Euro debt crisis. The overarching question is what kinds of policies and regulatory reforms would be needed to reduce speculation and its impact and to limit the financial forces which are pushing our economies into destructive crises.

The rise of financial speculation

Providing a stable definition of financial speculation is a complex task. And measuring the size and impact of financial speculation is even more challenging, partly due to the lack of data which is itself a corollary of the lack of regulation and supervision of the financial market. But what is clear is that the scale of global financial trading cannot be explained by the needs of the productive real sector:

- Global foreign exchange transactions are many times greater than GDP or international trade and were 20% higher in April 2010 (USD4tr in daily turnover) than in April 2007 (USD3.3tr). This 20% growth in transactions post-crisis cannot be explained by the state of global international trade during that period.

- Similarly there is a growing disconnect between trading flows in derivatives and flows in the underlying assets that derivatives are supposed to be tied to. In notional amounts, the total value of over-the-counter (OTC) derivatives was equivalent to 2.6 times world GDP in 1998 and rose to 9 times world GDP in 2010. As a point of comparison, global primary financial assets (listed equity, debt securities and bank assets) have remained in the range of 1.5-2 times world GDP throughout the period 1998-2010.

- The number of derivatives contracts on commodity exchanges used to grow modestly, from 10 to 15 million contracts between 1993 and 2004. But since 2005 it has exploded, including post-crisis, reaching 65 million in 2010. That too cannot be explained by the growth of the underlying commodities markets.

Foreign exchange markets, OTC and exchange traded derivatives, traded equity and GDP world wide in 2007

								OTC derivatives			
	"Traditional" foreign exchange markets										
		a	b	c	d						
In USD Bn, 2010 *(and % change since 2007)*	**Foreign exchange transactions** (a+b)	Spot transactions	Forex Derivatives	Interest Rate	Other OTCs (equity, commodity & credit)	*of which CDS*	*of which CDS on sovereign bonds*	**All OTC derivatives** (b+c+d)	**Exchange traded derivatives**	**Exchange traded equity**	**World GDP (current USD)**
Daily average trading *(April)*	3981 *(+19.8%)*	1490 *(+48.3%)*								252 *(-37.6%)*	
Notional amounts outstanding *(June)*			62933 *(+9.3%)*	478093 *(+25.4%)*	41629 *(-39.6%)*	31057 *(-31.3%)*	2392 ***(+60.5%)***	582655 *(+14.7)*	75941 *(-20.1%)*		
Gross market values *(June)*			3158 *(+95.8%)*	18508 *(+175%)*	3007 *(+8.4%)*	1694 *(+120.6%)*		24673 *(+121.9%)*			
											63049 *(+13%)*

Derivative Securities: Financial contracts such as forwards, futures, options and swaps whose values depend on the values of other asset prices, such as exchange rates, interest rates or stock prices.

Forward contracts: Forward contracts represent agreements for delayed delivery of financial instruments or commodities in which the buyer agrees to purchase and the seller agrees to deliver, at a specified future date, a specified instrument or commodity at a specified price or yield. Forward contracts are generally not traded on organised exchanges and their contractual terms are not standardised.

Options: Option contracts convey either the right or the obligation, depending upon whether the reporting institution is the purchaser or the writer, respectively, to buy or sell a financial instrument or commodity at a specified price up to a specified future date.

Swaps: Swaps are transactions in which two parties agree to exchange payment streams based on a specified notional amount for a specified period.

Source: BIS 2010a&b, World Federation of Exchange, World Bank

Short term 'directional' and leveraged bets that are guided by noise trading

According to the narrow, most common definition, speculation is the placement of a bet on the short term changes in prices of a commodity or a financial asset. The bet can be that the price will rise (taking a long position) or fall (taking a short position) in the short term. The amount of money to be gained (or lost) can increase by taking out more borrowing (leverage) is taken out to make the bet. Financial speculation is closely associated with arbitrage trading strategies. Arbitrage exploits short-term pricing inefficiencies by simultaneously buying and selling a security at two different prices in two different markets. To the extent that this arbitrage involves bets, even in the short run, it is a form of speculation.

The key point about making a bet on short term changes in prices is that a speculator will rely on the expectations and bets that *others* are making in the market place, much more than on an assessment of the underlying long-term value of the asset. Some economists refer to this as "noise trading". Keynes likened it to a gamble on a beauty contest in which people win, not by guessing which contestant is more beautiful, but by guessing who the others will guess is more beautiful, who in turn are guessing the guesses of others….

Driving asset prices (and risk) away from the (real economy's) fundamentals

Speculation is self-feeding, leading to more speculation and making hedging and risk management for real economy purposes more difficult by creating more uncertainty. Asset prices are driven by fear and rumour rather than by rational assessment of underlying factors. By moving asset prices away from their likely real values , either through short term volatility or long term swings ('bubbles'), speculation increases the probability that risk will be shifted to taxpayers and workers – the ones to bear the burden should a new crisis be precipitated.

Speculation of this type can be destructive because of the levels of systemic risks and interconnectedness of the financial sector. If speculation is connected with long chains of bets and interconnections among financial institutions, then the financial impacts of the bets "gone wrong" made by one institution can spread through many institutions. If very large, this can lead to economy-wide disruptions and to pressure for taxpayer bailout. As noted by Blundell-Wignall & Paul Atkinson (2011) of the OECD,

> *"When one party to a derivatives transaction makes a huge gain, another institution is making a huge loss – and that loss (if marked to market transparently) may cause a financial firm to fail. Systemic financial stability risk rises, because derivatives both raise leverage and require each participant in the chain of counterparties to be able to perform their obligations in order for others to be able to perform their own. In this way derivatives raise systemic risk, without adding any new equity or debt capital for the economy".*

Similar speculation is now exacerbating the sovereign debt crisis in Europe from Greece to Spain, Italy and other countries, the risk being spread through interconnected banking and shadow banking systems.

A broader approach to speculation: any financial activity that does not contribute to increases in income or sustainable wealth of the real economy

Speculation can also be defined more broadly as any socially unproductive financial activity. Substantial resources devoted to the financial sector and the high incomes and profits generated divert wealth away from other sectors of the economy, or even destroy wealth in other sectors in the process. Under such a broad definition, speculation encompasses all activities for which the social utility to the real economy is close to zero – it is not limited to nor necessarily involves speculating on short term changes in asset prices. And as Keynes emphasized, when speculation of this type is widespread and dominates enterpreneurship, then society's resources are not likely to be well invested. Keynes (1936) noted that this type of investing can make asset prices highly variable, can lead to asset bubbles that are self reinforcing, and can lead to financial crashes when sentiment changes:

> *"Speculators may do no harm as bubbles on a steady stream of enterprise. But the position is serious when enterprise becomes the bubble on a whirlpool of speculation. When the capital development of a country becomes a by-product of the activities of a casino, the job is likely to be ill-done. The measure of success attained by Wall Street, regarded as an institution of which the proper social purpose is to direct new investment into the most profitable channels in terms of future yield, cannot be claimed as one of the outstanding triumphs of laissez-faire capitalism"*.

The term 'financial innovation' is central to the broader definition of speculation. Financially 'innovative' transactions that are motivated by regulatory arbitrage or by tax arbitrage do not necessarily qualify as purely speculative trading individually, but would do so on an aggregate level. An investor lending to a company that engages in real estate speculation might not himself be taking a speculative bet (if, for example, his return is guaranteed) but the overall financial project lacks social benefit. To take a powerful contemporary example, packaging highly risky sub-prime mortgages into collateral debt obligations (CDOs) and selling them for a fee is not speculative – because the fee is guaranteed – but the activity is not socially useful if it leads to a real estate bubble that crashes.

From an institutional perspective, financial speculation is associated with the rise of global financial conglomerates and the associated shadow banking system. Credit rating agencies also played a destructive role, especially when making their incomes on fees. Rating mortgages AAA for a fee when they are clearly highly risky is not socially useful, even if it is not speculative in the narrow sense of placing a price directional bet.

Financial Innovation and derivatives

Certain financiers and economists justify the large incomes accruing to financial institutions and object to financial regulation on the grounds that financial innovation is highly socially productive. They argue that structured products – collateral debt obligations and asset back securities – and derivatives – futures, forwards, options, and swaps – rank among those innovative products which aim to manage risks or to stabilize incomes associated with an underlying financial asset – bank credit, listed bond and equity, currency, commodity, etc.

But derivatives simply shift risk; they do not eliminate aggregate risk. Examples include a bank or a hedge fund exploiting differences of tax treatment of debt and equity or a bank

trading a derivative to reduce artificially the 'riskiness' of securities and thereby bypass prudential regulatory requirements. Some economists, including Paul Volcker, have questioned the social value of many financial innovations. Crotty and Epstein (2009) use previous studies to calculate the number and percentage of innovations that are at least partly motivated by tax and accounting arbitrage and/or regulatory arbitrage. Their estimates reveal that – at a minimum – roughly one-third of these financial "innovations" is motivated by these factors, rather than by efficiency improvements.

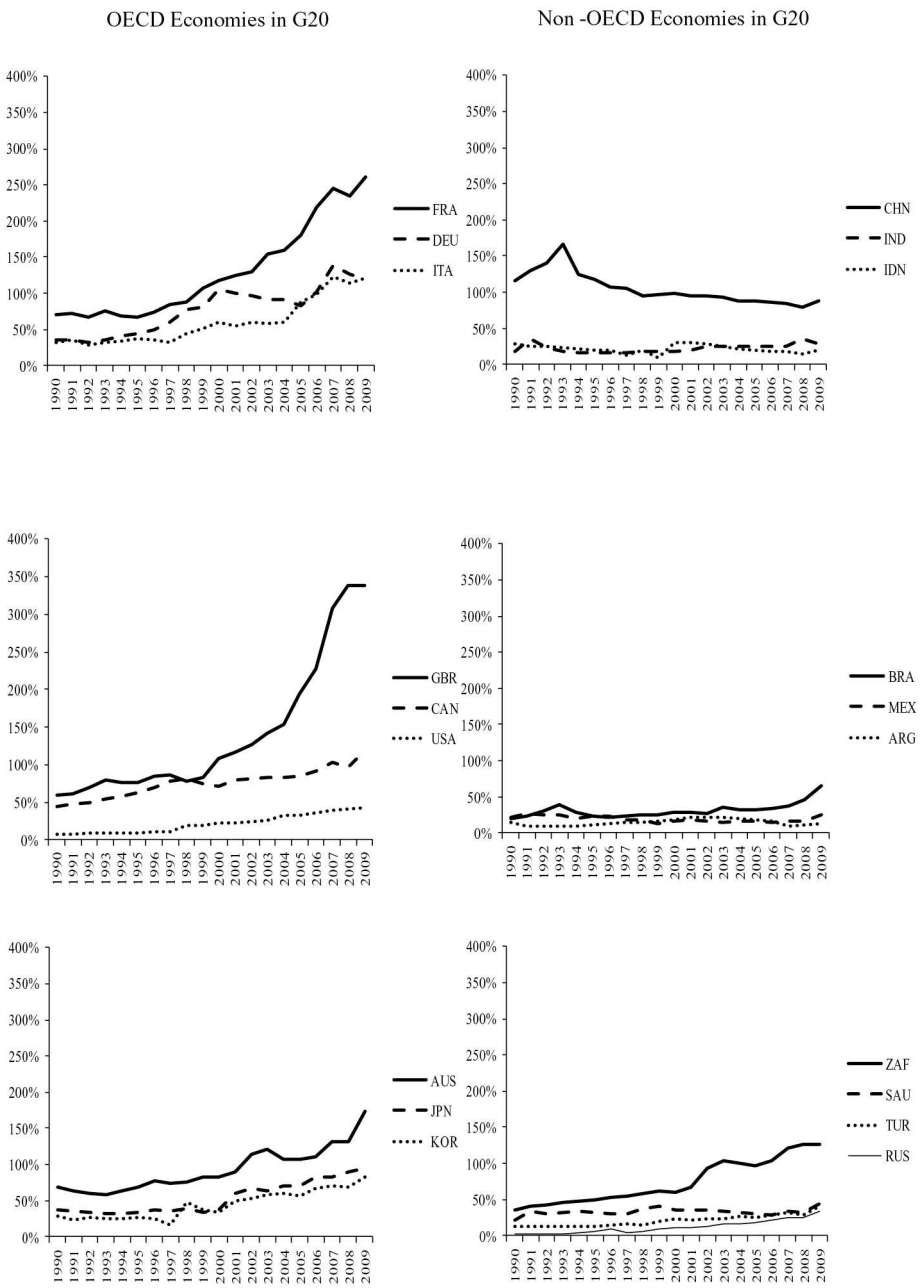
The rise of global complex financial conglomerates

So far we have approached financial speculation through a market, product and transaction perspective. But who sits behind the trading desk? Who sells derivatives and structured products with the intent or knowledge that they will be traded for purely speculative purposes? In short what are the institutional foundations that underpin speculation? A brief overview of how financial markets are structured leaves no doubt about who pulls the levers: large financial conglomerates which by their size, international coverage and complexity have become systemically important – those that are from a taxpayer point of view 'too-big-to-fail' (TBTF): AIG, Merrill Lynch, Lehman Brothers in 2008, Bear Stearns in 2007.

In all major OECD economies, assets held by the three largest banks as a share of GDP rose significantly in the run up to the crisis, and have continued to do so post-crisis. On the whole, this is specific to OECD economies (large emerging economy members of the G20 do not show a similar pattern with the notable exception of South Africa). The number of banks controlling ¾ of foreign exchange turnover decreased both before and after 2007 in most OECD economies. A similar process of concentration is taking place in all segments of the derivatives markets. For example while in 1998 30 banks dominated the foreign exchange forward rate market and 14 the options market, in 2001 these markets were dominated by 14 and 10 firms respectively. In the fast growing market for Exchange Traded Funds (ETF, see section below), early movers such as State Street and Black Rock are now being overshadowed by the global financial conglomerates.

The rise of TBTF groups and their move to more speculative behaviour is closely associated with the changing business model of banks. Historically, commercial retail banking – financing the real economy through deposits and loans to households and non-financial companies – was separated from investment banking – speculative, volatile, but highly remunerating financial services including corporate finance, brokerage and trading, research and analysis. Following waves of de-regulation – in the US the gradual removal of the Glass-Steagall Act – large banks have amalgamated both retail and investment banking activities, and also in some case expanded to include insurance activities.

Total assets of the largest three banks as a share of GDP



Source: OECD 2011a

During the 1990s, the corporate governance and business model of large OECD banks shifted from a "creditor culture" – that of traditional loans-&-deposits activities – to an "equity culture" – one led by shareholder value maximisation. The shift was not neutral in the ways banks would manage risk (Blundell-Wignall, et. al. 2009). Banks diversified their activities and moved into high risk, but also highly rewarding, investment banking and trading activities. This concentration of wealth created a concentration of power and also made governments and economies more vulnerable to their risky and speculative behaviour. And this is what happened with Lehman Brothers, Merrill Lynch, Bear Stearns, Northern Rock and AIG in 2008. According to the former IMF chief economist Simon Johnson, "The big

banks at the heart of our financial system blew themselves up. […] No one forced the banks to take on so much risk" (Johnson 2011). According to the IMF the frequency of distress (defined as a full year of negative return, reception of government support through capital injection, or transfer of assets) in 2007-2009 was 67% higher for investment banks and for banks cumulating investment and retail banking than for retail banks alone (IMF 2011b). For the OECD (2011a), "It can be argued on competition grounds that the oligopolistic structure of banking likely contributed to the financial crisis".

The rise of Shadow Banking and Pools of Capital

There has been increased attention to the role of the "shadow banking" system in the generation of speculative, and more broadly unproductive, financial activity (Pozsar, et. al., 2010; Pozsar, 2011). The size of the resources available to the shadow banking system is not known with any precision – they include the set of relatively unregulated financial institutions such as hedge funds, private equity firms, and related financial pools of funds, as well as off-balance sheet banking activities, including structured products, such as asset backed commercial papers that are sold using special investment vehicles. Pozsar has estimated these funds to be nearly USD4tr. They are provided by pension funds, insurance funds, non-financial corporations, wealthy individuals and others. Some of these funds are held off-balance sheet or in investment vehicles by commercial and investment banks and brokers themselves. These are the pools of capital available for financial investment, including speculative investment.

Shadow banking is of concern because it includes activities that would normally fall under banking supervision such as maturity/liquidity transformation and credit intermediation, but it itself is not subject to proper regulation and supervision. For the Financial Stability Board (FSB) (2011a) shadow banking raises "systemic risk concerns, in particular by, leverage and flawed credit risk transfer". Because it is outside the regular banking system, shadow banking is an open door to all forms of regulatory arbitrage. It undermines bank, insurance, asset management, and securities regulation and leads to a build-up of additional leverage and risks in the system. The use by large banks of off-balance sheet transactions and derivatives trading to evade international banking prudential regulation – the "Basel II" and in the future "Basel III" regulatory regimes – are raised as key concerns both by the FSB (2011a) and the OECD (2011a).

Unlike TBTF groups, the rise of shadow banking is not limited to OECD economies. Emerging countries are also affected. In China, for example, there is an increasing gap in the statistics between credit flows on one hand and the balance sheet of regulated banks on the other, which points to significant growth in shadow banking, hard to measure by official statistics.

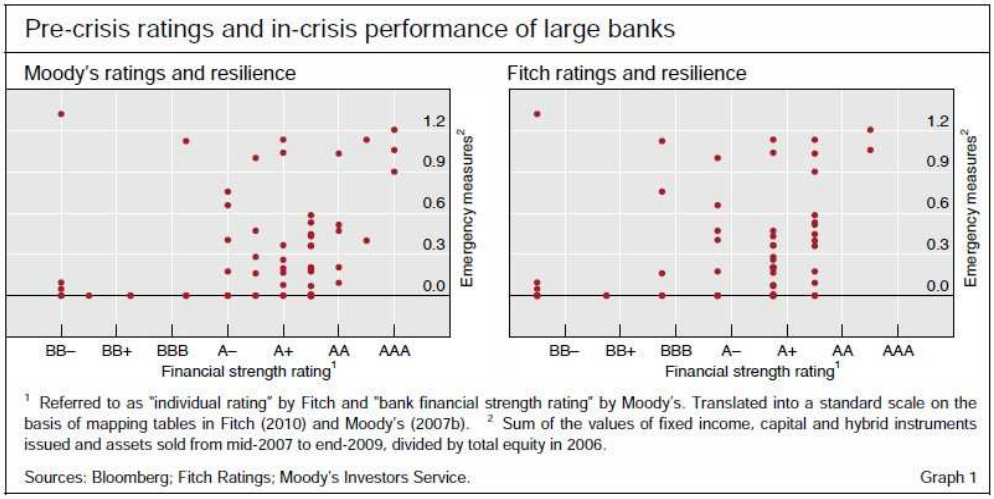
The complicity of rating agencies in the 2008 crisis

The three credit rating agencies (CRAs) that currently form a global oligopoly – Moody's, Standard & Poor's and Fitch – are widely understood to have played a controversial role in the run-up to the crisis. Their ratings are pro-cyclical – they are over-optimistic during growth cycles and over-pessimistic during downturns – and are used as a basis for speculation. Until the 1970s, the business model was investor-based: ratings were paid for by

investors for a fee. Being remunerated by investors, not by issuers, the agencies were protected from any undue influence from the issuer. That changed in the 1970s when CRAs shifted to the issuer-pays model to boost their profits. But this model came at the cost of much greater exposure to conflicts of interest: financial institutions pay for their own ratings.

The ratings inflation that took place prior to the crisis – and hence the pro-cyclicality of the CRA business models – is well documented (see White 2010). The OECD (2011a) sees evidence of "significant ratings grade inflation" that took place prior to the crisis through "systematic departures" from technical valuation models as agencies made "discretionary upward adjustments in ratings in efforts to retain or capture business". Comparing the rating grades attributed mid-2007 to large banks by Moody's and Fitch with the scale of the banks' reliance on "emergency measures" taken post-crisis (including sales of assets and government sponsored support), the BIS (2011a) finds a positive relationship. As shown in the charts below, the higher the rating grade pre-crisis, the bigger was the level of government support and emergency sales post-crisis! The BIS analysis also reveals important inconsistencies pre- and post-crisis between the three leading rating agencies. Only 8% of the banks were rated similarly by the agencies mid-2007. For 33% of these banks, the three ratings were spanning by two notches or more.

Comparison between rating grades of 60 large banks pre-crisis and scale of emergency measures taken post-crisis



Source: BIS 2011a

New forms of financial speculation post-crisis

In sum, in its narrow sense, financial speculation is a short term directional bet on the price movement of an asset that is leveraged through borrowing (so the gains can be potentially huge as can the losses) and guided by 'noise trading' (guessing what other traders are guessing, not by objectively verifiable economic indicators, or 'market fundamentals'). Financial speculation raises the systemic risks because it is often associated with high degrees of borrowing, often leads to interconnections among multiple financial institutions, often in different jurisdictions, and leads to the mis-pricing of risks and hence the misallocation of assets through short term volatility or long term swings in asset prices (i.e., speculative bubbles). Accordingly, it diverts valuable resources – financial, political and human resources

– away from productive investment in the real economy and wealth creation in society. It is fuelled by de-regulation, financial "innovation" and the growing concentration of assets and financial power – as seen in the rise of large financial conglomerates – and rating agencies with significant conflicts of interest.

In its broader sense, speculation is financial activity that does not contribute to income or sustainable wealth in the real economy and thus uses up resources in socially unproductive financial activities. At its worst, it is financial activity that actually destroys income and wealth.

There is no definitive "black list" of markets, institutions or trading strategies that together would capture the concept of financial speculation. This is because financial speculation is a moving target. It reinvents itself. Being short term driven and over-inclined to exploit any form of arbitrage, speculative behaviour can take multiple forms and adjust quasi-instantly to market movements and changes in taxation and regulation. The following four examples are typical: three forms relate to trading strategies – carry trade, high frequency trading and naked short selling – and one to a fast growing set of products – exchange traded funds (ETF).

Carry trade

Carry trade involves borrowing low cost currencies and investing in currencies carrying high interest rates with low exchange rate volatility between the two – for example borrowing in Japanese Yen and investing in Brazilian Real. If the standard theories of efficient markets were true, then this type of investment would not be profitable because the impact of the higher interest rate on expected profits would be offset by the expectation that the currency would depreciate. But this does not seem to happen: large amounts of speculative investments flow into high interest rate currencies, and then flow out again when the currency is expected to decline. These carry trade flows can create major macroeconomic management problems for ministries of finance and central banks and lead to mis-priced exchange rates.

Measuring the impact of carry trade is difficult to achieve. There are no direct data on the size because for the most part they take place off-balance sheet and hence fuel the shadow banking sector.

The carry trade lost much of its attraction, however, following the 2008 crisis and the rise in exchange rate volatility. But carry trades have once again become important as interest rate differentials have grown and as the liquidity available to speculators has increased. Many countries, especially in the developing world, are now adopting capital management techniques – including restrictions on capital flows – to try to discourage the carry trade.

Exchange Traded Funds

Four years after the 2007 'sub-prime' crisis, the market for securitisation of debt – Asset Backed Securities (ABS), including Residential and Commercial Mortgage Backed Securities (RMBS & CMBS), and Collateral Debt Obligations (CDOs) – has still not recovered. The volume of issuance in the EU and the US fell considerably after 2008 and what is left is almost entirely reliant on government-backed purchase programmes – Freddie Mac, Fannie

Mae and Ginnie Mae in the US, the European Central Bank in Europe (Blommestein et. al. 2011).

While private structured products which are not backed by government have completely disappeared from the market, trading in Exchange Traded Funds (ETF) has exploded post-crisis. In a low interest rate environment, institutional investors, not least workers' pension funds, are now more than ever in the "search for yields" and ETF *prima facie* offer the ideal risk profile and return.

Like collateralised debt, ETFs are lightly regulated investment vehicles that pool a diverse range of asset classes into one fund. As such it allows investors to access illiquid markets – such as real estate – that otherwise would not be possible because of prudential regulation of liquidity and market risks (Basel II, Solvency II, pension funding rules, etc.). According to the FSB (2011b), ETFs have grown at an average of 40% a year over the past decade. The assets under the management of ETFs were valued at USD1.2tr. And just like CDOs, the market for ETFs started with relatively simple products (funds pooling different listed equities) but has gradually moved into more complex and opaque synthetic ETFs ("ETFs of ETFs" which are reminiscent of the sub-prime era "CDOs of CDOs" or "CDO²"). In Europe in particular, synthetic ETFs represent close to half of the market. The recent "rogue trader" at UBS was making bets using ETFs. For FT commentator Gilian Tett, "ETF growth in the past three years [looks] extraordinarily similar to the CDOs charts back in 2005"[3]. For OECD experts (2011a) "The equity derivatives business generally, and ETFs in particular, have all the early requirements for a bubble to develop".

High Frequency Trading

Automatic electronic trading and brokering – or computer generated "algorithmic trading" – have become widespread across organised exchanges, in foreign exchange transactions and listed equity among others. Much algorithmic trading is benign, in so far as it is limited to routine low impact transactions. That is not the case, however, for the fastest growing form of algorithmic trading, High Frequency Trading (HFT). HFT consists of executing frequent but small trades in milliseconds to make profits from incremental price movements in a given listed security (market making) and/or exploiting differences in pricing between two separate trading venues (arbitrage). Trading decisions are not taken by human beings but by computer generated algorithms. Positions (effective ownership of the security) are held for just seconds or fractions of a second. The daily portfolio turnover is exceptionally high. HFT is thus the most extreme form of "short term" investment: not only is effective ownership held for just a fraction of a second, but the overall "investment" in the market is flat by the end of the trading day. As with all lightly regulated financial activities, data on HFT are scarce and incomplete. It is estimated that HFT accounted for circa 25% of spot foreign exchange transactions worldwide in 2010 (King & Rime 2010), 56% of US equity trading (up from 21% in 2005), and 38% of European equity trading (up from 9% in 2007) (IOSCO 2011).

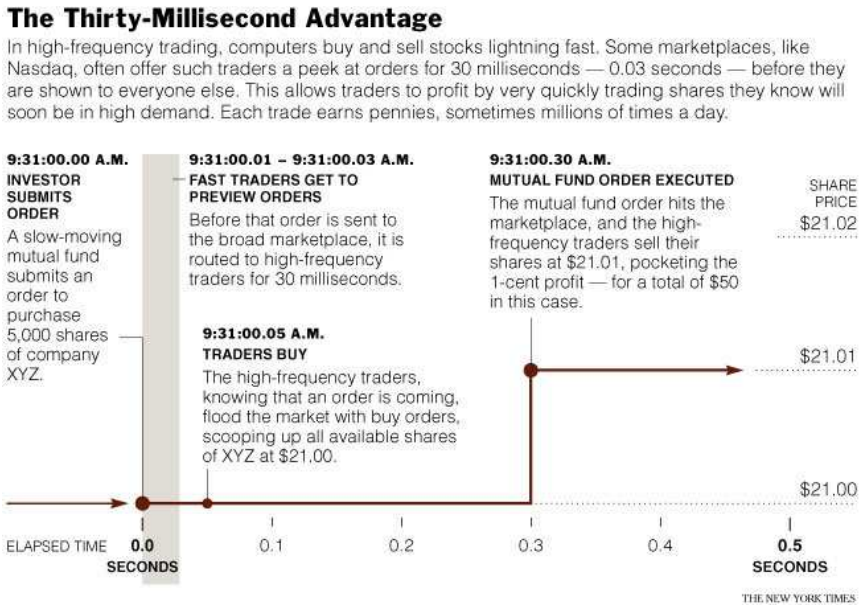
Proponents of HFT argue that it adds liquidity to the market and that some of its trading strategies – such as arbitrage – help improve price transparency and reduce market imperfections. That view is not, however, shared by the experts at the International Organization of Securities Commissions (IOSCO, representing stock exchange authorities

[3] "This $2bn mess has uncanny historical echoes", ft.com, 15 September 2011.

worldwide) for whom HFT poses a number of risks to the efficiency of markets, their "fairness and integrity" and financial stability. The "very short term nature […] coupled with the risk of high speed, high volume trading algorithms might move the market prices away from fundamental values" and "impair the price discovery process" (IOSCO 2011). HFT may also amplify transmission of shocks across markets and asset classes which, according to IOSCO could potentially increase "the speed at which a systemic crisis could develop". These risks materialised when HFT algorithms contributed to the May 2010 "Flash Crash", which saw the Dow Jones index lose 5% of its value in less than 5 minutes. Following a human error in a single large selling order on the S&P500, HFT computers started panicking and in turn started aggressively selling.

Importantly, regulators are concerned that the confidence of institutional investors, including pension funds, is being undermined as a result of the fear of being "gamed" by the "low-latency" trading of HFT (i.e., high speed execution of orders). Given the importance of "low latency" trading, computers need to be located inside the trading venues where they operate, so that they receive market information before others (including orders and executions), so making a profit: "shaving" one millisecond off every trade could be worth $100 million a year to a large HFT firm[4]. IOSCO also questions whether HFT offers new opportunity for "engaging in abusive practices on a larger scale than would have previously been possible", citing various forms of trading abuses: "momentum ignition", "quote-stuffing", "spoofing" and "layering". This could push traditional investors to "withdraw" from the regulated trading venues and place their orders in non-regulated venues and trading platforms housed within financial groups, hence creating "dark pools" of liquidity outside the scrutiny of supervisory authorities (IOSCO 2011).

<u>High frequency trading (HFT) – the "millisecond advantage" over traditional investors</u>



Source: Schulmeister 2011 & http://www.nytimes.com/2009/07/24/business/24trading.html

[4] "Wall Street's secret advantage: High-speed trading", The Week, 28 June 2010. http://theweek.com/article/index/204396/wall-streets-secret-advantage-high-speed-trading

Short selling and naked Credit Default Swaps

Similar to credit rating agencies, the credit default swaps (CDS) markets have been shown to mis-price risk in a pro-cyclical fashion, and to have contributed to speculative financial behaviour that amplifies the up and down swings of financial asset prices.

In essence a CDS is a type of insurance: a buyer of CDS is taking out insurance against the risk of default of a given loan and the seller is taking on the risk in exchange for a fee. Yet the CDS markets performed very poorly in measuring risks of large banks prior to the crisis. BIS (2011a) research shows that the 60 large banks' CDS spreads in 2007 were negatively correlated with the scale of emergency support received post-crisis. The lower the price of the CDS insurance pre-crisis, the higher the emergency support post-crisis.

The problem with such market-based credit default rating systems is that CDS markets (for example the CDS on Greek 10 year government bonds) do not necessarily reflect the actual risk of default of the underlying asset (the risk of default of the Greek government). They can either overestimate or underestimate the risk of default. Various market forces are at play. At the outset CDS markets, as is the case for any other market, demand a "risk premium" (or an "excess return") above the objectively determined risk level of the underlying asset. This means that, by definition, CDS overestimate credit default risk, although such overestimate is difficult to measure.

More fundamentally however, CDS markets are subject to external market forces that have no connection with the underlying asset. An example would be a sudden 'risk aversion' or a 'rush to safety' by markets that follows a particular triggering event. For the IMF (2010a) the prices of insuring against sovereign default via CDS markets "depend on the global level of risk aversion in addition to the actual probability of default of the sovereign". Global risk aversion, the IMF argues, "has likely weighed on the price of sovereign protection, without implying any relation to higher default probabilities".

A case in point is the sudden downgrading of US sovereign debt by Standard & Poor's in August 2011. In theory the downgrading would have increased the risk default of the US government as perceived by the market, thereby increasing the yield on the US government bonds which in turn would have raised US debt servicing. But that is not what happened. It is in fact the opposite that happened: following the downgrading, the 10-year US T-bond actually fell to a record low 2% mid-August. This is because the US downgrading triggered market turmoil which prompted a global rush to safety assets, to which category US bonds belong. Accordingly the immediate impact of the downgrading of the US government bonds was a decrease in its cost of borrowing.

The flip side of the coin is that market 'risk aversion' – while benefiting some sovereign currencies (the US in the above case) – can destabilise the debt market of other sovereign currencies, as seen in the case of the Mediterranean European countries. For OECD and IMF experts (Blommestein et. al., 2010) the "uninformed or irrational" behaviour of CDS markets can have a "self-feeding" function in the deterioration of the crisis leading to "a self-fulfilling negative outcome". The OECD and the IMF do not elaborate however on the causes of such irrational behaviour.

Other observers however have linked such a "self-fulfilling negative outcome" to the highly speculative trading strategy of selling short on naked CDS. Naked CDS is when a trader takes

out insurance (the CDS) on an underlying asset that they do not own. Selling short happens when a trader borrows (for a fee) a given security, sells it with the expectation that its price will fall, buys it back at a lower price and returns it to the lender. The combination of the two – naked CDS and short selling – has nothing to do with insurance. It is a bet – pure speculation:

- Traders buy 'long' CDS of a given bond say, Greek government bonds;
- at the same time traders sell short the underlying asset; traders 'borrow' Greek government bonds – say, from pension funds which earn a fee in return – and then 'sell' the Greek bonds;
- the short selling pushes the prices down of the Greek bonds which in turn increases the risk of default as perceived by the CDS market;
- accordingly the value of the CDS on the Greek bonds increases;
- Traders complete the short selling: they buy back the Greek bonds they had borrowed and then sold, and return them to their original owners (in this case, a group of pension funds).

Traders then make a double profit: one on the rise of the CDS (buying long), the other on the decrease of the Greek bonds (selling short).

The downward spiral is amplified by the credit rating agencies, which follow rather than lead. There is clearly an incentive for coordinated manipulation. The probability of default is not independent of the cost of borrowing – hence there may be self-fulfilling expectations driving down the price of the asset lower and lower. This is one of the processes affecting sovereign debt and bank equity in Europe currently.

The sovereign bond markets

Government debt across OECD economies has been soaring since 2008. By the end of 2011 total OECD central government debt is expected to reach USD33.4tr (EUR22.2tr or 71.7% of GDP), while general government debt (i.e., central, local and other public liabilities) should reach 100% of GDP. Compared with 2007, total OECD government debt will rise by 30% GDP points by 2012. The number of OECD countries with over 100% GDP debt levels will increase from 3 before the crisis to 8 in the coming decade, while the number of countries with debt levels above 80% GDP is expected to more than double (OECD 2010a).

Under pressure to finance the bail-out of banks that were near insolvency, as well as the stimulus packages that followed, issuance conditions worsened for government treasuries in 2009. Governments issued more short term debt than usual (i.e. treasury bills, or "T-bills" whose maturity is below 12 months, typically 3 months) as compared to long term debt (treasury bonds, or "T-bonds" whose maturity often is 10 years). The share of foreign holding in total government debt has also been increasing.

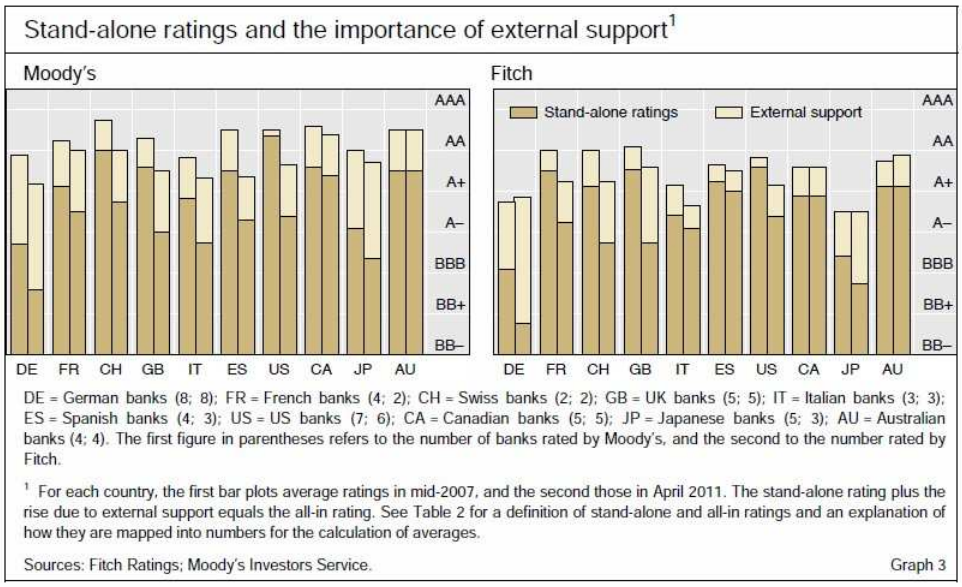
Increasing reliance on short term borrowing and/or on foreign capital is typically viewed by the markets as resulting in increased vulnerability, because it exposes governments to higher levels of market risks, be it interest rate or foreign exchange risks. This creates incentives and opportunities for more speculation by the market that are related to sovereign debt issues.

Intertwining between government and banks' liabilities

The 2008 crisis and the taxpayer financed government interventions in the banking and insurance sector that followed exposed the extent to which risks and liabilities of government finance and the banking sector have become greatly intertwined. Governments delivered various forms of direct support to bankers, and guarantees on financial assets and transactions. According to the IMF (2011c) of the USD1722bn in direct government support to banks (capital injections and asset purchases), just USD452bn have been recovered, with USD1270bn still outstanding. Between October 2008 and December 2010, government guarantees have been provided to over 200 banks headquartered in 20 OECD economies, issuing close to €1tr in bonds – circa 5% of GDP of the countries concerned. There are no plans to phase out these government-sponsored support schemes any time soon.

In addition to these explicit guarantees on bonds, governments also provide "implicit" guarantees in the form of the belief of the market that governments will bail out the banking sector if needed in the future, just as they did in 2008-2009. A proxy measurement of this implicit government support to the large banks is the gap between their "stand-alone rating" by credit agencies – which accounts for the bank's specific credit risk – and their "all-in-rating" – which adds the likelihood of government support to the standalone rating. While even all-in-ratings of large banks have declined since 2007, BIS analysis (2011a) finds that the decline would have been much larger had it not been for the increase in implicit government support post-crisis: as shown in the chart below, stand-alone ratings decreased in bigger proportions than all-in ratings. In the case of the US and UK, implicit government guarantees lifted the rating grades of the US and UK banks by one to two notches in 2010. In the same vein, the currently A+ rated German banks would fall to the BB+ "junk bonds" category, were it not for the implicit backing of the German government.

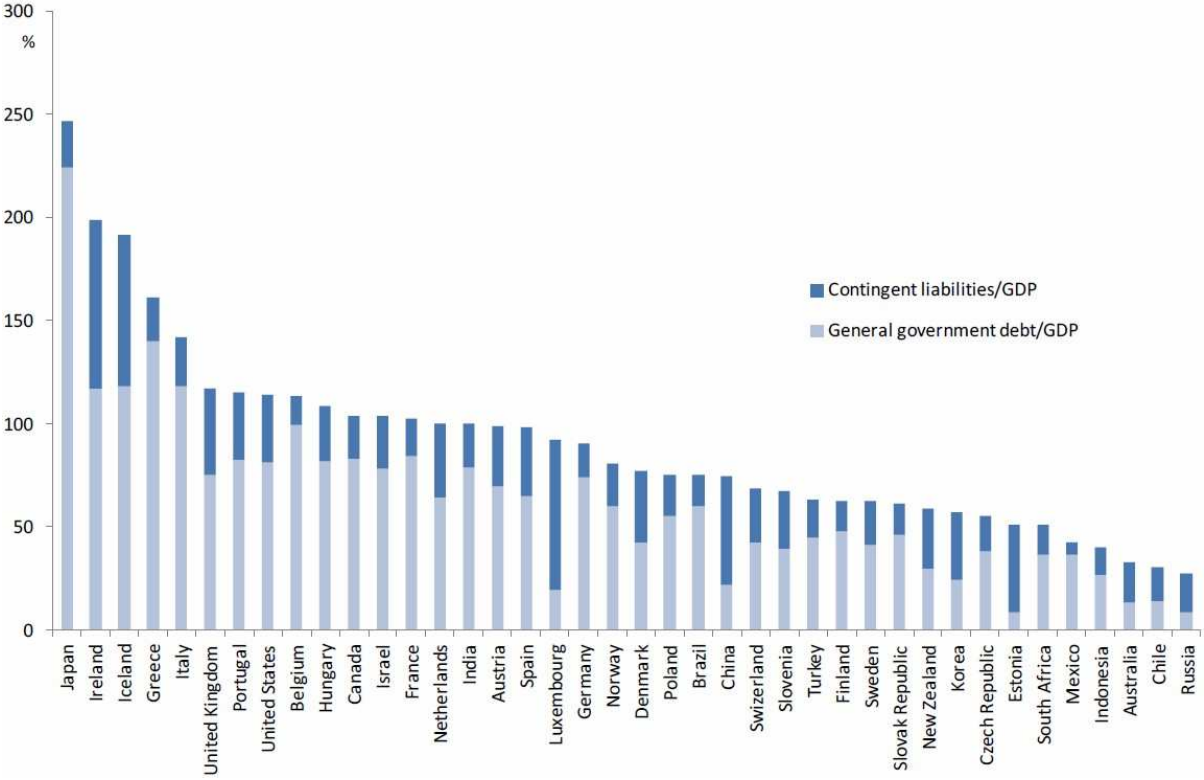
<u>Stand-alone ratings of large banks and external support by governments 2007-2010</u>



Source: BIS 2011a

If anything, this shows that not only has implicit government, and hence taxpayer, support for banks increased post-crisis, but it has in fact become a *sine qua non* condition to the sustainability of a number of them. Considering that implicit government support has also expanded significantly for medium-sized and smaller banks, one can legitimately claim that the banking sector as a whole is heavily subsidised by taxpayers. This impression is supported when one looks at governments' balance sheets. On average the contingent liabilities – e.g., explicit and implicit guarantees – to which governments are exposed and which are factored into their sovereign ratings are equivalent to 20-30% GDP for OECD economies. In Luxembourg, China, Ireland and Iceland they account for over 50% of GDP.

Contingent liabilities and general government debt in GDP % in OECD & emerging economies in 2010



Source: Kim & Schich 2011

The vicious circle

Clearly the situation becomes exacerbated for governments that are tied by a monetary union, as is the case of the Euro countries, and are subject to the speculative attacks of the financial markets Governments lose their capacity to issue debt as they no longer have in a currency they control alone, and become hostage to sudden changes in market "sentiments", "risk appetite", rumours, with knock-on effects on government access to external finance. This is especially problematic because these debts are being held by large, concentrated banking institutions so that the sovereign debt crisis also leads to a banking crisis. Destructive speculation is exacerbated by credit default swaps – including naked swaps – that allow bets against sovereign debt and banks, and have been worsened by opaque instruments such as exchange traded funds (ETFs) that are lightly regulated and poorly understood. These instruments and sources of speculation are creating contagion and pushing countries and banks into liquidity crises that could become solvency crises (De Grauwe 2011).

What results from the above developments – speculative behaviour as a moving target that adapts and adjusts instantly to market and regulatory change, the rise of global financial conglomerates that coexist with shadow banking, and the increasing intertwining between government and banking finance – is a chain reaction in the sequencing of the crisis and the interaction between financial speculation and sovereign debt:

- Step 1: Pre-crisis and as a result of years of de-regulation and lax supervision, governments let large banks grow and diversify their activities to the point where they had become too big to fail or to be adequately governed or supervised. Governments also let shadow banks, market infrastructure and trading grow without proper supervision;

- Step 2: The combination of the two – the creation of large financial conglomerates and the deregulation of markets and trading venues –fed new forms of speculative behaviour, pre and post crisis;

- Step 3: The financial crisis in 2008 prompted a global economic and social recession. In response governments needed to implement economic stimulus programme which were financed by unprecedented increases in public debt. A massive transfer of debt, and hence of risk and liabilities from creditors to governments and taxpayers then occurred: the losses generated by the banking sector and global financial conglomerates in particular were taken over through various channels by governments and taxpayers – and ultimately citizens;

- Step 4: Because that transfer was not conditioned to any proper degree on re-regulation or restructuring of the financial sector – there were "no strings attached" to the bailing out of the bankers – the cost of financial speculation in effect is being internalised on the governments' balance sheets. That cost can be measured by the size of government "contingent liabilities", which is calculated by agencies as an addition to their public debt and negatively affects their sovereign ratings;

- Step 5: Government and private banking finance has become closely intertwined. As government policy turns to austerity measures, the recovery has become ever more fragile and uncertain. Speculative attacks continue due to governments' failure to eliminate through regulation the vehicles of financial speculation that caused the 2007-2008 crisis in the first place. As sovereign ratings are downgraded country by country, the crisis has been transformed into a sovereign debt crisis and the highly interconnected banking sector is subject to renewed stress. This adds further pressure on the government balance sheet through inflated contingent liabilities.

What regulatory policy response?

In a world ruled by robust and efficient international governance systems, collective intelligence would have led governments to cooperate in response to the above sequencing of the crisis since 2007. They would have collectivised the risks each of them are facing individually and they would have accelerated financial reforms to choke off the sources of financial speculation.

But that is not what happened.

The G20 (in-)Action Plan

In response to the financial crisis in 2008, governments created the G20 forum at Head-of-State level which first met in November 2008. G20 "Recommendations for Strengthening Financial Stability" were adopted in London in April 2009 and it is they that drive the regulatory reform agenda. In the US, the crisis led to a parallel though connected regulatory reform process which culminated with the adoption of the Dodd-Frank Act in July 2010.

Much has been learned about the causes of the recent financial crisis and the role of speculation, narrowly and broadly defined, in causing it. And indeed with the G20 and through the Dodd-Frank process a detailed and in some areas robust financial reform agenda has been developed. While the reform process (if implemented) might well stabilise and keep afloat the current financial system – at least for the time being – there is no ambition to tackle the speculative forces that triggered the crisis in 2007 and in 2008.

Part of the problem is that the G20 agenda and the Dodd-Frank implementation have become bogged down by extremely strong lobbying efforts on the part of financial actors and their allies in politics, or have come second to the immediate management of the economic crisis by governments. Actual reforms have been implemented very slowly, or they have been pushed aside altogether. Divisions between regulators in Europe and the US have also contributed to the slow implementation of reform. The financial crisis itself has been used as an argument to delay reform, on the grounds that it will push an already vulnerable financial system over the edge.

As the G20 process evolved the level of ambition decreased. The London Summit in April 2009 may be remembered as a historic moment with great potential that was wasted subsequently when, meeting in Toronto in June 2010, G20 Leaders turned to austerity measures and at the same time rejected any bold reform of the financial sector. As a result, there is very little emerging from official bodies that is likely to stem speculation any time soon unless policies markedly change.

The main regulatory reform initiatives that were taken in the US and in Europe, the regions most affected by the financial crisis, in response to the G20 Action Plan were as follows:

- In the US, financial reforms were passed in a single legislative act, the Dodd-Frank Act in July 2010. But the passage of the Act itself left key aspects of rule making and implementation open, to be determined by a complex rule making process over several years. Overall, on paper, the Dodd-Frank goes beyond what is being proposed in Europe in many respects, but currently the implementation of its provisions is being stalled and undermined by political forces and financial lobbying in the U.S.
- Europe does not have any equivalent to Dodd-Frank. Here the reform process is taking place through separate channels.[5] And unlike the US, several of the EU regulatory

[5] EU initiatives include:
- The on-going review of the Markets in Financial Instruments Directive (MiFID) including transparency and reporting to regulators of derivatives trading, incentives for trading on organised exchanges.
- A proposal of European Market Infrastructures Regulation (EMIR), covering OTC derivatives trading through CCPs and registration with trade repositories.

reform initiatives are still pending. On the positive side, many of them are to be passed as "regulations", not as "directives" which means that, once agreed, their implementation should be swifter and leave less room for national exception.

Regulation of OTC derivatives

In September 2009, G20 Leaders meeting in Pittsburgh made three fundamental commitments regarding the OTC derivatives markets[6]:

- All standardised OTC derivative contracts should be traded on exchanges or electronic trading platforms, and cleared through "central counterparties" (CCPs) by end-2012 at the latest. CCPs are supposed to increase security against counterparty default risk (the risk that the party on the opposite side of the trade does not fulfil its obligations);
- OTC derivative contracts should be reported to trade repositories;
- Non-standardised, non-centrally cleared contracts should be subject to higher capital requirements.

Dodd-Frank and the above EU directives and regulations are broadly similar in their requirements. However, and as noted above, the Act has yet to be implemented by the regulatory authorities. In a stock taking report on OTC markets issued in April 2011 the FSB concluded that "many jurisdictions have yet to make key decisions" regarding OTC derivatives regulations, and that among those that had take action, "difference in approaches are emerging". And indeed divergence exists between the EU and the US regarding CCP clearing and capital requirements.

The G20 Action Plan does not go much beyond registration and clearing of OTC derivatives. In particular, restricting trading through position limits and bans on short selling is not part of the G20 programme. In Europe however, the European Commission has circulated a proposal of regulation to restrict naked short selling on CDS, including restriction on sovereign CDS in times of market stress. Currently in the EU, each national authority has its own rules and powers in connection with short selling. In August 2011 several continental European authorities enforced a ban on short selling - measures that were symbolic to a large extent as they could not extend to cross border trading from jurisdictions not banning such practices. While the European Parliament has adopted a welcome aggressive stance against short selling, the European Council is currently supporting a much watered down version of the Commission's proposal.

Taxing financial transactions

Taxing financial transactions is a direct way to reduce speculative trading (and raise revenue). Despite the support of a growing number of G20 countries, UN agencies and the late change of position by the IMF, the proposal of creating a Financial Transaction Tax (FTT) has never been addressed by the G20 nor the FSB. But at the European level, there is a strong

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- A proposal of Regulation on Short Selling and certain aspects of Credit Default Swaps
- The review of the Market Abuse Directive (MAD) empowering national regulators to fix position limits and creating categories of traders in the commodity derivatives market;
- The fourth review of the Capital Requirement Directive (CRD IV) including new capital requirements for non-CCP cleared OTC transactions.

[6] These commitments were fleshed out into 21 FSB 21 recommendations in October 2009 (FSB 2009a).

likelihood that an FTT will move forward, and this may have some impact on overall speculation in the market.

The recent shift of position by the European Commission on the FTT – now ranking among its strongest supporters – is welcome. The EC would suggest, for the Eurozone, a 0.1% tax on equity and bond trading and 0.01% on derivatives. The low percentage on derivatives would suggest that the EC is set for a revenue generating approach with minimal impact on trading volumes.

Credit Rating Agencies

The Dodd-Frank Act strengthens the accountability and transparency requirements for the ten currently registered "Nationally Recognized Statistical Rating Organizations (NRSROs)". Provisions include rules to prevent conflicts of interest, issuers of structured products from choosing the rating agencies, including through a random process. Transparency of the methodologies used for the rating and reporting requirements are also strengthened under the SEC jurisdictions. In addition, in principle, the Act makes it easier for some lawsuits to be brought against CRAs. The Dodd-Frank provision calls on the SEC to create a ratings oversight board with investor representatives in the majority. This board will choose a rating agency to conduct the initial evaluation of each new set of structured finance products. Securities issuers would not be allowed to participate in the assignment of raters, and the assignments would be based on an evaluation of accuracy of ratings over time. In addition, under this approach, the SEC will have an Office of Credit Ratings with the authority to write rules and levy fines. Investors will now be able to recover damages in private anti-fraud actions brought against rating agencies for gross negligence in the rating. (See Epstein and Pollin, 2011). However, it is not clear that this provision of the Dodd-Frank Act will be implemented since, in an attempt to bury it, financial lobbyists were able to subject it first to a study and possible alteration before implementation.

In Europe, a new EU Regulation on CRA came into force in 2011 and is broadly in line with Dodd-Frank although there is divergence on some aspects such as reducing reliance on CRAs. As welcome as they may be, there is little doubt that the oligopoly created by the largest three CRAs, controlling 90% of the global market, will only be partially affected by these reforms.

Dealing with global financial conglomerates

What to do about global financial conglomerates that are too-big-to-fail has been a central policy issue of the G20 process ever since the first crisis summit in November 2008. Work is underway to reinforce "resolution authority" which would allow government appointed authorities to pre-emptively take control of a G-SIFI that has become no longer viable in order to prevent costly bail out and contagion effects in the financial system. However, the more central question of whether the very existence of TBTF groups is at all desirable has gradually been eliminated from the FSB and G20 process.

In April 2010, the FSB recommended that members consider imposing limits on the complexity and size of financial groups. But these limits have not been implemented. In Basel III and similar capital regulation in the US, provisions require higher capital

requirements for large complex financial organizations, but critics question whether even these higher capital standards will be enough to discourage dangerous activity.

Limits to size and complexity

In addition to capital standards, there is a patchwork of other regulations, particularly within Dodd-Frank, to deal with risky and speculative behaviour: these include the Volcker Rule, to limit proprietary trading and bank investment in hedge and private equity funds; limits on cross holdings of debt among financial institutions; and the designation of financially significant institutions that would subject institutions to closer regulation and possible limitations on speculative and risky activities. (Epstein and Pollin, 2011; D'Arista and Epstein, 2011).

There is no equivalent to the Volcker rule in Europe. In fact, at EU-level there is no regulation that would require or even encourage segregation of investment banking from retail banking, nor are there any plans to adopt "swaps push-out" rules whereby resolution and government assistance would specifically exclude or be highly restricted with respect to derivatives trading. Some member states are moving ahead however. In the UK, the "Vickers Commission" has released proposals to "ringfence" investment banking operations through separate boards of directors and higher capital ratios than those foreseen by the FSB for too-big-to-fail groups. But both types of activities could exist within the same financial conglomerate, so it is not at all clear that this ring fencing addresses the too big to fail problem. Would the government really be less likely to bail out an investment bank if it were closely tied into the foreign exchange markets and derivatives markets – with all the systemic risks involved – even if it were not closely tied to its own retail bank?

Taxing banks' balance sheets

Another area that has not seen much progress since the early stage of the G20 process is that of specific taxation on the balance sheet of TBTF groups. In April 2010 the IMF proposed the creation of a Financial Stability Contribution (FSC) which would apply to the balance sheet liabilities of large financial institutions (at least large banks, perhaps insurance groups as well) and would be calibrated to the degree of riskiness of their liabilities. Such an FSC, the IMF argued, could help reduce group-wide leverage and risk profile. But this has now been dropped. President Obama's proposal of a Financial Crisis Responsibility fee (FCR) was made in January 2010, but it was dropped from the Dodd- Frank Bill.

Corporate governance of banks

Despite the fact that the crisis exposed major failures in the governance of large banks, not least the incompetence and irresponsibility of many boards of directors in monitoring and assessing group-wide risk management (OECD 2010b), nothing or very little has been acted upon at national levels. The European Commission has launched a broad consultation on the role of institutional investors and on risk management by banks, but to date no tangible regulatory reforms is foreseen. Dodd-Frank however sets new requirements on disclosure of CEO pay (as a ratio of average workers' pay) and the SEC is considering facilitating

shareholders' access to the Annual General Meeting of shareholders, a long due reform to promote responsible shareholder activism in the US.

Concluding remarks and recommendations

Financial speculation, especially in its broader sense, contributed to the economic crisis by contributing to massive asset bubbles and by creating a massive network of leverage and complex, opaque interconnections among financial institutions that unravelled in unpredicted ways when the bubble burst. Moreover, speculation has been an accelerant to the crisis ever since, with the persistence of shadow banking and large financial conglomerates. Financial speculation is a moving target. It reinvents itself. It takes multiple forms and adjusts instantly to market movements and changes in regulations.

Clearly the way out of the crisis will require much broader policy, and a shift in paradigm in the way economic policy and financial regulation are to be conceived. It will require more robust and efficient international governance systems that help collectivise and effectively mitigate systemic risks than those that are currently in place, not least within Europe. In that context this paper is concerned with the kind of policies and regulatory reforms that would be needed to reduce speculation and its impact and to limit the financial forces which are pushing our economies into destructive crises. For financial reform to address the problem of speculation in both its narrow and broader forms, a three-tier response is suggested to:

Limit de-stabilizing short term bets by financial traders that disrupt the efficient functioning of financial markets, and threaten to drive financial actors and institutions into liquidity or solvency crisis.

Key regulatory reforms would include:

- The creation of a financial transaction tax would go a long way in curbing short term speculative trading, including high frequency trading;
- Requiring all forms of derivatives trading to shift to organised exchanges; while taxation and prudential rules applying to the remaining over-the-counter trading should be set at prohibitive levels;
- Putting restrictions on trading strategies, including a ban on naked short selling.

Limit the destructive risk taking by large financial firms that places them at risk, and through their high degree of leverage and interconnections to other sectors and institutions in the economy, places the whole economy at risk.

This leads to the destructive situations in which tax payers are either forced to bail out the banks, or risk bank insolvencies leading to a broader economic crisis that costs them their jobs and their savings. Key regulatory reforms would include:

- Splitting large financial conglomerates through mandatory separation of commercial and investment banking activities – a return to a modernized version of the US Glass-Steagall Act regime – through strict competition rules so that no financial firms can create oligopolistic situations. As a transitory measure, outright nationalisation of large financial conglomerates could be an efficient way to restructure the financial sector;
- Reforming the corporate governance of banks so that risk management and remuneration are aligned with long term financial stability interests and re-balance stakeholders' interests in favour of better protection of creditors and of workers in the company;

- Preventing leaks from the regular to the shadow banking systems, by chocking the latter through regulation including: (i) prohibitive prudential rules and taxation regimes on off-balance sheet trading of asset back securities (such as CDOs), (ii) alignment of hedge funds, exchange traded funds and other private pools of capital with standard asset management regulation, and (iii) extending the current international cooperation on offshore financial centres beyond tax evasion concerns to include tax and regulatory arbitrage;
- Proceeding with a gradual phasing out of all government guarantees that currently benefit the banking sector by creating – or expanding – industry-funded insurance schemes which could be financed by the IMF-proposed financial stability contribution (FSC) and a financial activity tax (FAT);
- Forcing credit rating agencies to shift their business model back to an investor-pay model, which could be done by pooling investors' fees into a single fund per industry and increasing their legal liability, developing competition through the creation of public agencies, and reducing reliance on CRAs in banking and public finance prudential regimes.

And, perhaps, most difficult of all, actions must be taken to:

Re-orientate financial institutions and markets away from risky and destructive activities toward those that contribute to investment in productivity enhancing technologies, provide good well paying and meaningful jobs, and provide capital and insurance facilities to improve the operations of the economy for people.

Clearly no single list of specific regulatory reforms would satisfy this broader objective because it entails no less than reversing the balance of power between democratically elected governments and the financial markets. Areas for policy action would include:

- Diversifying the financial sector through a larger array of public and cooperative financial institutions can provide socially productive financial activities, including: public banks, cooperative banks and insurance companies. A challenging component of this revival will be an institutional framework to prevent such financial institutions from engaging in the same kinds of speculative investments and, in some cases, corrupt practices that have been so destructive in the private financial sector. Regarding cross-border flows, introducing or reinforcing existing capital control measures could be considered;

- Designing mechanisms, including through progressive taxation, to better align the pay of financiers with their contribution to society: in the United States especially, and in other countries as well, the compensation of financial actors is much higher than that in many other professions and is not aligned with the social risks and costs that finance imposes on the rest of society (Crotty, 2011);

- Protecting financial reform processes from regulatory capture. Financial regulatory reforms must involve citizens and should not be left in the hands of technicians or given political elites, themselves under influence of bankers and their traders. There is a need across G20 economies to reform the way political parties are financed so as to protect democratic systems against vested interests of the financial sector. Giving civil society more voice in the policies of the private financial institutions would increase the weight of the interests of the public in financial behaviour;

- Changing the measurement of growth. Away from traditional GDP measuring we new a new growth indicator that takes better account of social and inequality factors. For Stiglitz, Sen and Fitoussi “part of the reason why the crisis took many by such surprise is that the “measurement” systems we use to assess and monitor economic performance failed”. (Fitoussi et. al 2009).

The reform agenda being debated and, to some extent implemented in the U.S. and Europe partly address the first two issues: limiting destructive speculation and reducing the risks associated with too-big-to-fail banks. As we have seen however, the reform agenda on these fronts is moving very slowly if not actually stalling. But even worse, there has been no attempt to confront the broader problem: to what extent is the financial sector really serving the needs of democracies, of working families, of productive businesses and of governments; and how does the financial sector have to be restructured. It is time to get the financial governance and restructuring debate back at the centre of the political agenda, at the same time as efforts must be redoubled to achieve the rigorous implementation of Dodd-Frank and the G-20 financial reform agenda.

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