THE PRESENT CRISIS
A trump for a renewed political economy

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Abstract

The new classical macroeconomics and mathematical finance have both failed to anticipate the present crisis or explain why the present crisis is so severe. This is because they only considered pure market economies devoid of institutions and without concern for historical and structural transformations in contemporary economies. This opens the door to a political economy analysis of the transformations in socio-political alliances since the demise of the Fordist growth regime. The shift toward market based financial systems, financial liberalization, and globalization, gave unprecedented power to international financiers and has led to the current economic and financial crisis. Controlling finance requires resolute action by public authorities and the pressure of citizen social movements. Financial re-regulation is closely related to the relative bargaining power of nation-states and international finance. International comparisons (e.g., North American and German capitalisms) suggest that this is a possible path.

Keywords: Financial crisis – financial liberalization – Political alliance – Political economy – Power of finance – Régulation Theory

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1. INTRODUCTION

The mid-2000s were an occasion to celebrate economic dynamism and stability on one hand, and the achievements of economics on the other hand.

The US economy was experiencing fast non-inflationary growth, the so-called Great Moderation that was supposed to result from the benefits of financial innovation, a new style for economic policy and the maturation of a new wave of Schumpeterian entrepreneurs. The vicious circle of under-development had been overcome in some emerging economies through adhesion to market principles, free international trade and their acceptance of foreign direct investment. For instance, the success of China in alleviating poverty was frequently attributed to the benefits of marketization, even if many western analysts still complained about the excessive role of the state. Latin American countries found a new growth strategy after painfully learning of the cost of past economic and financial crises. World trade let them build prosperity by exporting primary commodities, the price of which was booming. Growth was slower in the European Union, but the tenth anniversary of the Euro was an occasion to celebrate the stability brought by the single currency.

A similar optimism prevailed in the fields of economic theory and mathematical finance. After the demise of Keynesian thinking, new classical macroeconomics was built upon a Walrasian model and two basic hypotheses: the representative agent and rational expectations. New Keynesians brought back the hypothesis of price and wage rigidity. A new synthesis was celebrated as the near end of the macroeconomics research agenda, with only details and minor extensions to be added (Blanchard, 2009). Mathematical finance claimed that its scientific advances contributed to this remarkable macroeconomic stabilization. Statistical techniques detected regularities in complex stochastic processes and led to new financial instruments, whose pricing followed the Black-Scholes theory of options. These financial products were highly profitable and delivered an unprecedented favorable trade-off between return and risk. People were convinced that financial risks could be mastered. The confidence of quants was in line with the pride of new macroeconomists.

This was a quite severe misunderstanding! Analysts neglected a succession of financial troubles that began with the unexpected collapse of the Wall Street stock market on December 1987, now attributed to the prevalence of computer trading. The Long-Term Capital Management (LTCM) bankruptcy showed the inadequacy of conventional statistical methods for capturing risk distribution, but this potential crisis was quickly overcome by central bank intervention. The Enron scandal was another step in the unfolding problems of a virtual economy built upon the trading of derivatives, with vanishing links to underlying assets and the real economy. Finally, the collapse of Bear Stearns showed that these failures were not mere accidents but were early warnings of a structural and systemic crisis in a finance-led economy (Boyer, 2008). The catastrophic consequences of the Lehman Brothers bankruptcy were nevertheless unexpected; it was seen as an event could only happen every one or two centuries. Statements by Alan Greenspan after the financial collapse expressed great surprise that this could happen.

A similar perplexity was expressed by macroeconomists. In the standard Dynamic Stochastic General Equilibrium models (DSGE) only large and unexpected negative productivity shocks could explain a deep recession (Minford, 2009). As one macroeconomist declared:

> "*I believe that during the last financial crisis, macroeconomists (and I include myself among them) failed the country, and indeed the world. In September 2008, central bankers were in desperate need of a*

> *playbook that offered a systematic plan of attack to deal with fast-evolving circumstances. Macroeconomists should have been able to provide that playbook. It could not. Of course, from a longer view, macroeconomists let policymakers down much earlier, because they did not provide policymakers with rules to avoid the circumstances that led to the global financial meltdown*" (Kocherlatoka, 2010).

It is thus important to understand the poor performance of macro theory, and to investigate the process by which the Keynesian revolution was abandoned and replaced by the new classical synthesis. This has been done in another article (Boyer, 2013). The present one proposes an alternative along the line of a renewed political economy and an updating of *régulation* theory (Boyer & Saillard, 2001). It puts forward an historical, institutionally grounded analysis of the successive growth regimes in the US economy since World War II, emphasizing the shift from one accumulation regime to another. This approach should not be confused with regulation analyses since its objectives, methodology and results have no relation whatsoever.

Section 2 describes the unprecedented compromise between capital and labor in the immediate post-war period that was eroded by international competition and then destroyed by the financialization of the US economy. Section 3 diagnoses the perverse incentives in the financial system that led to the Lehman Brothers debacle. The paper then focuses on the power of finance, as an important cause of the present crisis and the inability of policy makers to diagnose our problems and implement a strategy to propel the economy away from the double dip recession of 2008 to 2012. It is an invitation to search for a structural source for the domination of finance and for reconfiguring the basic institutions of American capitalism.

Do countervailing powers exist and can they be mobilized to restore the viability of the real economy and the financial system? Are democratic principles limited to the political sphere or can they play a role in the organization of the national and international economy? We argue that a rejuvenation of Keynesian principles is welcome, but the more urgent task is to adopt Karl Polanyi's conception of the embededness of money and finance in contemporary society. We conclude by discussing various strategies for changing the respective bargaining power of citizens, governments and financiers; and by pointing out a new research agenda-- studying the dominance of Wall Street.

2. 1945-2012: THE TRANSFORMATION OF SOCIO-POLITICAL ALLIANCES IN THE US

A-historical and a-institutional macro theory must be replaced by a more comprehensive approach that captures the transformation of modern economies since World War II. It was the purpose of French *Régulation* Theory to launch such a research program through a long-run analysis of American capitalism and then French capitalism (Aglietta, 1982; Boyer & Mistral, 1982). The initial framework was then extended to other developed and developing economies and has found a provisional synthesis (Boyer & Saillard, 2001).

2.1 – Accumulation regimes and hegemonic blocks

The starting point of the analysis is the notion of capitalism as a specific mode of production operating in most industrialized economies. In this socio-economic regime, two basic social relations govern economic adjustments: on one side, market relations imply the competition of any economic entity with others; on the other side the capital-labor relation combines the subordination of wage earners to the directives of managers, and a market transaction concerning remuneration of wage-earners (Boyer, 2007). The interaction between these two social relations triggers the process of accumulation. If one adopts this framework, the core phenomenon to explain is how such an unbalanced process can deliver viable accumulation regimes.

Historical long-term analyses of American and French capitalism suggest that market competition had to be organized, and recurring social and political conflicts over capital-labor relations converged towards an institutionalization of the wage-labor nexus at the end of the 1950s (Juillard, 1993; Juillard & Boyer, 2001). The viability of an accumulation regime is thus largely related to the compatibility between a form of competition, a configuration for the wage-labor nexus but also the monetary and financial regimes, and finally the nature of the integration of the national economy into the world system. These are the core institutional forms that shape any contemporary economy. How do these regimes emerge? Many processes might play a role. By chance the various institutional forms might turn out to be compatible, or, a long-term process of trial and error can take place and explain their co-evolution. Last, but not least, the two World Wars seem to have played a key role in the synchronization of forms of competition and wage-labor nexus, along with state interventions in matters of monetary, fiscal and welfare policies. The loss of legitimacy and destruction of previous institutional order made the emergence of a new configuration easier (Boyer & Orlean, 1992).

Yet another hypothesis has been fruitful for understanding the post-war American accumulation regime. It builds upon the interpretation by Antonio Gramsci (1949) of the structuring of the working class in the era of mass production and on a related theory of the state. The concept of hegemonic block helps understand how and why seemingly disconnected institutional forms can turn out to be compatible or even complementary. This does not mean that any hegemonic block is able to shape economic processes and sustain its power, but this is the visible hand by which some accumulation regimes and the related *régulation* modes may emerge. Some earlier research using *régulation theory* mobilized this Gramscian inspiration to analyze the post-war period (Lipietz, 1985). More recently, international comparisons pointed out the fruitfulness of this concept to understand the diversity of capitalism (Palombarini, 2001; Amable, 2004; Amable & Palombarini, 2005). The dominant social block might differ from one nation-state to another; for instance, between US and Germany (Amable et al., 1997) or between France and Italy (Amable et al., 2012).

This is an interesting framework for studying the succession of accumulation regimes, their formation, maturation and ultimate breaking down.

2.2 – The 1960s: A de facto compromise between managers and wage-earners

The dramatic episodes of the interwar period led, after the Second World War, to a rather surprisingly efficient institutional configuration (figure 1): wage-earners in the manufacturing sector and managers made an implicit but powerful social block that oriented economic activity as well as society-wide values. This was a novelty with respect to the traditional configuration of manager--worker relations (Roe, 1994). Workers accepted scientific work organization in exchange for wage increases based on the growth of consumer prices and productivity. Highly regulated and segmented banking systems directed credit to investment and consumption. The Bretton Woods system stabilized international relations. Finally, state intervention took account of the need for countercyclical monetary and fiscal policies in line with the Keynesian revolution.

This system lasted from the end World War II to 1971. The Fordist capital-labor compromise led to near full employment, high profits, and cumulative improvements in living standards. Many thought this regime would last forever. In the 1970s and 1980s unions and leftist parties dreamed about restoring this model. They believed that it was challenged and eroded only by the reemergence of laissez-faire theory and policy. Actually, deep structural factors had been working against a strong position for labor (Boyer, 2005).

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2.3 – The 1980s: The internationalization of American capitalism, challenged by dynamic competitors

When domestic markets appeared too limited to capture the increasing returns to scale at the core of modern productive systems, firms became integrated into the world market. This was the first strike against the Fordist compromise. Wages were now set according to world markets and employment had to react to volatile exports (rather than stable domestic consumption). Work organization adjusted to this new environment. Just in time, total quality, remuneration in relation to performance, all demonstrate this structural shift. In theoretical terms, foreign competition disciplined labor. When export-led strategies were adopted by New Industrializing Countries, the "iron law" of capitalism made an impressive comeback (figure 2).

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With the opening of the world economy, manufacturing workers experienced stagnating and even declining real wages. They partially recovered purchasing power due to price moderation. As China became the manufacturer of the world and triggered de-industrialization in the developed countries, it (partially) sustained the living standards of the "working poor" by lowering the prices of durable goods. People might lose from foreign competition as *workers* but they would gain as *consumers*. This new political and institutional configuration is at odds with Fordism and leads to a new accumulation regime, one exemplified by Walmart. Operating in the retail sector, it is built upon the complementarity between a strong integration into world production networks, segmentation and individualization of the wage-labor nexus, and greater competition at the domestic and international level.

In this new regime, the majority of wage-earners have been expelled from the dominant block and reintroduced only as consumers. Long-term wage stagnation means that American living standards can only be sustained by greater labor market participation by family members, working more hours (Schor, 1993), and greater reliance on credit (Guttmann & Plihon, 2010).

2.4 – The 1990s: the rise of financialization sets the tune

But globalization is not the only factor working against the bargaining power of labor. As financial regulations were removed, the power of financiers took off. Financial innovations in the US (such as pension funds, derivatives, swaps and securitization), and their diffusion to many countries, gave financiers great power in allocating capital while searching for higher rates of returns, which rose from 5% in the 1960s to nearly 16% in the 2000s.

This gives rise to a paradox. Shareholder value was supposed to discipline managers. *De facto*, it divorces them from labor, as evidenced by the multiplication of stock-options and the explosion of the remuneration of CEOs and high-level managers. The consequences of this are drastic: if profits are below market expectations, managers feel they need to shed labor, restructure plants and get wage concessions. The financial system becomes dominant, imposing its logic on labor, welfare systems and the state because it enjoys an unchallenged mobility (figure 3).

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This new configuration lies far from Fordism, where high profits were the consequence of synchronizing mass-production and mass-consumption, and finance played a subordinate role. Since the 1990s, financial expectations and the hope for unlimited wealth governed the allocation of capital to the real economy and can explain macroeconomic dynamics. These structural changes work against labor, the more so the more complete the adoption of a finance-led strategy. In this way, labor is excluded from the dominant social block.

Actually, wage-earners have multiple and possibly contradictory objectives. For instance, with pension reform, each worker now considers his/her financial wealth in addition to his/her current remuneration. If wage austerity promotes higher profits, the surge of the stock market might be such that individuals perceive an improvement in their economic status, go to the bank and get credit to buy durable goods, cars and houses that they could not afford with direct wages. In other words, finance redesigns the various interests of workers. A new accumulation regime emerges with none of the properties of the Fordist era (Boyer, 2000). In the 2000s, wage earners in the US, UK, Ireland and Iceland transformed themselves into typical Ponzi speculators--buying a house they could not afford with their income, but hoping to resell at an inflated price. This was not the case for the German capitalism despite equivalent pressures at the international level (Höpner, 2005).

2.5 – The diverging interests of managers and wage-earners

Many studies have cast doubt on the contribution of managers to better performance by American corporations (Plihon, 2002; Bebchuk & Fried, 2003). Given these results, their remuneration should have increased modestly. To the contrary, there was an unprecedented boom in their total remuneration (Graph 1). Back in the early 1970s, the average compensation of top 100 CEOs was around $1.3 million (in 1999$), whereas the average salary was around $40,000. Since 1975, average salaries stagnated but the average compensation of top 100 CEOs increased continuously, reaching $40 million in 1999 (Piketty & Saez, 2003). CEO compensation increased again after 1995, the beginning of the financial bubble in the US.

----- Insert Graph 1 ----

These figures seem to confirm a shift in the dominant US social block. Benefiting from the competitive threat exerted by foreign competition, and still more from the consequences of financialization on corporate governance, US CEOs no longer considered themselves the elite of permanent wage-earners. In Germany and Japan, CEOs continue to see themselves as the upper strata of wage-earners. This is not the case in the US, where they are part of a *de facto* alliance with financiers, who were supposed to control them in the name of shareholder value (see figure 8).

3. THREE INTERRELATED SOURCES OF THE PRESENT STRUCTURAL CRISIS

Transformation of finance is the key to understanding the origins and the unfolding of the recent recession. Three processes interact and reinforce one another to create a systemic and structural crisis. The financial innovations associated with subprime mortgages were meant to compensate for the stagnation of real income received by the poorer fraction of the US population and the low interest rate was largely the consequence of massive savings inflows from Asian countries.

3.1 – The 2000s: The epoch of social inequalities and economic instability

During the Fordist epoch, collective bargaining had overcome the competitive pressure exerted by labor markets. The nominal wage was set to anticipate productivity increases, indexed with respect to consumer prices. Consequently, the hierarchy of remunerations was far more restricted than during the interwar period and was kept nearly constant. After the 1970s, the capital-labor accord ended and a variety of processes such as decentralization, segmentation and individual labor contracts ensued. This led to a differentiation of the remunerations among wage-earners.

The opening of the world economy contributed to this. So did the rise of finance. Several different mechanisms were at work. First, enforcement of shareholder values calls for a fast adjustment of labor costs and a downward adjustment of remunerations. Second, managers and wage-earners in the high-tech and financial sectors have access to profit sharing through the valuation of their firm on the stock market. As in the past, financial liberalization has been associated with a rapid concentration of wealth (Phillips, 2003). Under the combined impact of internationalization and financialization, the concentration of incomes held by the top 10% of US households reached the same very high levels in the mid-2000s as those observed just before the 1929 stock market crash (Moss,2010). The contrast with the post WWII era is striking (Graph 2).

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Likewise, bank failures are increasing because product and labor market deregulation, extended to finance, lead to instability in the financial system (Minsky, 1982a, 1982b). Widening inequality and financial fragility appear related, especially when one notes that the permanent increase of household debt relative to GDP has allowed consumption to grow according to past trends despite falling real incomes (Boyer, 2008).

3.2 – The autonomization of perverse incentives within the financial system

Modern financial theories and sophisticated methods for evaluating risk were alleged to have reduced the frequency and severity of financial crises. Furthermore, central bankers supposedly learned from their past mistakes, which converted the October 1929 Wall Street crash into a cumulative and deflationary depression. As such, one understands the "shocked disbelief" expressed by Alan Greenspan, stressing the exceptional feature of the contemporary crisis that should have occurred only one time each century. On one side, the securitization that was supposed to diffuse and reduce risk led to deterioration in the quality of the underlying financial assets. On the other side, the fast reaction of the Fed and other central banks, in providing abundant liquidity to failing investment banks and insurance companies, would be sufficient to stop the vicious circle of asset depreciation and serial bankruptcies.

By contrast, those familiar with the history of financial crises since Tulipmania (Kindleberger, 1978; Garber, 2000; Reinhart & Rogoff, 2009), and the successive financial disruptions associated with financial liberalization and innovation, anticipated the current financial crisis.

The October 19, 1987 Wall Street Crash showed the destabilizing nature of computerized routines that synchronize trading strategies. The collapse of LTCM was a second warning. It showed that modern statistical techniques of risk management associated with high leverage cannot cope with unexpected events. The Enron scandal arose from the concentration (within a single corporation) of the market for energy derivatives after intense lobbying to prevent regulation or surveillance. The bank run against Northern Rock demonstrated that mixing conventional mortgage credit with an intensive use of bonds might generate financial fragility, affecting the whole economic system. As many economists pointed out, in the process of adopting fair value accounting principles, the danger was that an accounting accelerator would exacerbate the financial accelerator typical of all major financial crises.

US authorities interpreted these events as accidents, explained by greed, irrationality, lack of transparency, or irresponsibility on the part of CEOs and CFOs. The Sarbanes-Oxley Act was supposed to control opportunistic behavior associated with financialization. The success of Alan Greenspan's new monetary policy allowed low nominal and real interest rates; excess liquidity encouraged speculation on the stock market, real estate and natural resources. Central bankers understood that erroneous monetary policy led to the Great Depression and that it was necessary to provide liquidity to traders after a market crash in order to prevent another depression (figure 4).

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The "shocked disbelief" by the former Fed governor stemmed from a firm conviction that financial markets were self-equilibrating, and that financial firms had the interest, information and tools to overcome any financial crisis. Unfortunately, this was a drastic over-simplification of our complex crisis.

Financial innovation has generated a pyramid of derivatives, swaps, options, insurance contracts, derivatives of derivatives that have been very profitable for the financial system. When the underlying financial instruments run into problems, the US financial system becomes paralyzed. Mark to market exacerbates the capital losses, whereas mark to model becomes obsolete when the model disregards possible crises. As a result, the sub-prime derivative market freezes and affects inter-bank credit and credit to the real economy. This shows the limits to the dominant strategy of the 2000s-- de-connecting financial flows from risk taking. Irresponsible credit contracts end up with financiers unable to value their highly sophisticated derivatives. They can no longer respond to the basic question of a market economy: "who owes what to whom?" The novelty of this microeconomic origin to the blocking of financial system explains why unlimited access to central bank liquidity and TARP failed to restore confidence. In a sense, the quasi-nationalization associated with recapitalizatng banks was a last resort response to this violation of the core principle of a market/monetary economy (figure 5).

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From March 2007 to September 2008, asset deflation was contained within the financial system. But since October 2008, the damage has filtered through to the real economy. Household consumption, profits for non-financial corporations and employment all fell. This second round of the structural crisis affects the core of the US growth regime operating since the mid-80s: its dynamism was linked to financial innovations giving households access to credit in the context of moderate real income growth. Foreclosures, and reappraisal of credit risk, contract the amount of credit granted to US households, leading to a severe and continued recession.

3.3 – Structural imbalance in the world economy: the US/China disequilibrium

After the Lehman Brothers bankruptcy, economists recognized that numerous mechanisms played a role in generating the crisis; but they disagreed about which factors were more important. Some pointed to *domestic factors* that shaped the American bubble: "Excess liquidity, income polarization, conflicts between financial and productive capital, lack of appropriate regulation, asymmetric information, principal-agent dilemmas and bounded rationality" (Palma, 2009, p. **xxx**). Others thought that the novelty of the present period lied in *the opening of the American* *economy:* "Global imbalances have had an important causal role not at the international level, in the form of currency recycling, but at the domestic level, in the form of credit recycling to the agents spending more than their income, who are the other end of the external deficit. The breakdown occurred in the credit recycling mechanism" (Wade, 2009, p. **xxx**). Yet others stressed *technological factors* as the underlying cause of the internet mania and real estate bubble: "Such major boom and bust episodes are endogenous to the way market economy evolves and assimilates successive technological revolutions" (Perez, 2009, p. **xxx**). A possible synthesis would be to design a general *complex system* analysis, in which these diverse mechanisms generate a rich dynamic with contrasted time scales: from the microsecond of some financial transactions to quarter-century-long technological and organizational changes.

In any case, the opening of the American economy to Asian imports and flows of capital has played a significant role in disconnecting the interest rate from the domestic factors that previously determined their level. Whereas conventional macroeconomics continues to deal with quasi-closed economies, even the US is now dependent upon the rest of the world, mainly Asia and Europe. Two unbalanced accumulation regimes, the US and China, have proven to be largely complementary: excess consumption in one and abundant savings in the other, specialization in frontier technologies in one and mass produced standard final products in the other. This structural interdependency also explains the severe and fast diffusion of the recession following the Lehman Brothers debacle. These macroeconomic international disequilibria have to be addressed to mitigate the present crisis (figure 6).

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3.4 – The boom of the early 2000s: the largely unintended outcome of liberalization

In retrospect, it is interesting to go back to the dilemma that policymakers faced in the late 1960s: how to respond to competing and incompatible social demands in the context of a new epoch of slow growth. The answer was not the post-industrial service economy but the rise of finance (Krippner, 2011). A series of reforms ensued, leading to the deregulation of banking, the creation of a mortgage credit market with securitization, and the promotion of financial globalization. Ultimately, an erratic trial and error process began with the monetarist comeback following the Keynesian revolution, and converged toward the transparency principle of the Alan Greenspan era: "the Federal Reserve (Fed) follows the financial markets' lead much more than it governs them". Thus, responsibility for harsh and unpopular decisions was transferred to the seemingly natural and objective forces of the market.

The contemporary domination of finance over the American economy is thus largely the unexpected outcome of successive political decisions, made from the 1960s to the 2000s, that were supposed to overcome the dilemma of increasingly incompatible social demands. The delegation of decisions to markets was supposed to strengthen anonymous constraints on the allocation of scarce capital; however, this move ultimately led to an unprecedented change, since domestic financial innovations (such as the mixing of securitization and subprime low-quality loans) and globalization induced an explosion of credit that reconciled the previously incompatible demands of homeowners, consumers, industrial firms and financiers. This new regime lasted for two decades, but was unsustainable in the long run. This is a suggestive political economy interpretation of the underlying structural factors leading to the financial turmoil that began in September 2008 (Krippner, 2011).

3.5 – The unfolding of the crisis: Three Irving Fisher's debt-deflation processes and the return to Keynesian crisis management

The credit-led boom ended when an increasing number of households were unable to pay their mortgages and foreclosures increased throughout the US. This started three deflationary processes that froze the US financial system.

First, households were expecting a continuous rise in housing prices. When this process ended and households could not refinance their mortgages, payment arrears developed, inducing a decline in real estate prices. This is a contemporary example of the debt-deflation theory of depressions (Fisher, 1933); households, unable to re-pay their loans, provoke distress sales, increasing the burden of their debt in real terms.

The pernicious role of securitization then takes its toll. Mortgage-backed securities lose their value and falling home prices falsifies the hypothesis of geographic risk diversification. Financial entities holding these derivatives experience large losses relative to their capital. The large concentration of this business explains the collapse of Lehman Brothers.

Since many financial entities and banks bought a lot of these financial products, their valuation on the stock market is violently downgraded. Their managers become dramatically risk-adverse and nearly stop granting credit, even to their best clients. Deflation is now transmitted to the product and labor markets. This looks like the 1929-1932 crisis, but fortunately central bankers and have governments learned that restricting credit and public deficits under such circumstances would mean a collapse of the economy, with the risk of depression transmitted to the world economy (figure 7).

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In this context, the economics of Keynes again became attractive. It justified deficit spending and central banks serving as the lender of last resort. The recession was quickly stopped but the recovery was slow and job creation was weak. Large imbalances on the balance sheet of financial entities usually take a decade or more to eliminate; the excesses credit that piled up during the bubbles years is not easy to eliminate, as evidenced by Japan (Koo, 2009). We are far away from a typical business cycle since the US economy is experiencing a systemic financial crisis; its accumulation regime faces a structural block that can no longer be credit led. The whole institutional configuration is as stake.

4. THE 2008-2012 MUDDLING THROUGH: STILL THE DOMINATION OF FINANCE

The bankruptcy of Lehman Brothers triggered dramatic fears about the possible collapse of American capitalism. Some politicians declared that such a crisis was an opportunity to redesign failed financial and economic institutions. Clearly, finance had a huge responsibility in the genesis of the crisis. Surprisingly, progress towards re-regulating finance has been quite modest. It is important to investigate why this is so.

4.1 – Still the alliance of financiers and managers under shareholder value

Since the mid-1980s, financial liberalization, the multiplicity of financial innovations, and their diffusion from the US to the rest of the world, have drastically changed the conception of corporate governance and the conduct of economic policy (Jensen & Meckling, 1976). The conventional wisdom holds that the joint stock corporations in the manufacturing and service sectors have submitted to the demands of institutional investors. The power of these new actors derives from financial deregulation, and the mobility of capital entitles them to ask for new rules of the game—a higher rate of return on invested capital and conformity of actual profits to previous forecasts and financial analysts expectations. In the US, and to some extent in the UK, a finance-led growth regime has replaced the Fordist regime; but not in countries such as Germany or Japan (Boyer, 2000). In spite of this divergence in national growth regimes, the ideal of shareholder value has been spreading all over the globe.

The fad (promoted by financiers) of providing corporate executives with stock options, which was supported by experts in corporate finance (Jensen & Murphy, 1990), has realigned the interests of shareholders and managers. Cleverly, and without admitting it openly, managers have used the demand by institutional investors to redesign their own compensation. On top of their wage, many forms of remuneration linked to profit and stock market valuation have increased the total income of CEOs (Piketty & Saez, 2003) (graph 1). Top executives have been practicing the art of judo: converting the pressure of the financial community into a countermove that benefits them and erodes the bargaining power of wage earners.

It is important to stress again that beneath the tyranny of investors is an implicit alliance between *managers* and *investors*. Wage earners must comply with a new wave of labor market deregulation (figure 8). For instance, workers have to bear more risk to stabilize the rate of return for the corporation and keep their jobs. The wage-labor nexus itself is transformed and finance reaps large gains. First of all, the shift from pay-as-you-go pension schemes to funded pensions generates a huge inflow of saving into the stock market (Montagne, 2003). This propels a finance-led growth regime in the US. Second, to compensate for modest wage increases, workers accept various forms of profit sharing, even one's that require they hold corporate shares.

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Overall, managers have been reorienting their alliances, affecting macroeconomic patterns (*régulation* modes), income inequality and even economic policy. This alliance has not changed during the crisis: one observes a recovery of financial and non-financial profits at the cost of job-destruction and wage concession by workers. Nevertheless this does not seem sufficient to engineer an endogenous recovery.

4.2 – The Pyrrhic victory of finance

This analysis of the institutional and legal factors shaping both the bubble years and the crisis period exhibits a paradox: the devices proposed by financiers and accepted by public authorities are blocking our way out of the crisis. To see the resilience of the power of finance, one has to remember that the same managers and traders who invented dangerous securities were not fired but maintained in their jobs because they were the only ones with the expertise to undo the mess they created. This pattern is quite general (figure 9).

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Successful lobbying by Wall Street prevented the regulation of highly profitable derivatives invented by quants. Authorities in charge of financial oversight did not gather the relevant information. When the crisis burst, attempts by the US Treasury to organize a market for failed derivatives failed because only the suppliers had the relevant information. Similarly, adoption of fair-value accounting was a clear victory for financiers. When mark to market is impossible, the system allows each firm to invent a model and price the specific idiosyncratic asset. Consequently, the opacity of the valuation process creates a remarkable control over profits. In addition, when a large financial firm like Lehman Brothers fails it creates a general distrust about each firm's valuation of assets. Since nobody knows who owes what to whom, and whether debts can be repaid, the financial system freezes. The emergency solution is unlimited access to Federal Reserve liquidity, but the informational gap remains.

Many other examples could be given. For instance short selling was a favorite tool of Wall Street banks to optimize profits. When the same technique was used by hedge funds and others actors against them, this strategy led to lower stock market valuation for most Wall Street investment banks. These investment banks were outside the supervision of the Fed and adopted high leverage ratios. This was a source of extra profits in the boom period but caused huge losses in the downturn. More generally, most of the devices that were asked for by investment banks had a detrimental impact on their ability to weather the economic crisis. When the US Treasury required them to adhere to its bailout plan, access to the Fed prevented them from going bankrupt. But few conditions were attached to this public intervention. In contrast, the auto industry bailout required a drastic restructuring plan, and CEOs stepped down. This is anecdotal but rather convincing evidence of the power acquired by financiers compared to manufacturers.

4.3 – The informational gap between financiers and public authorities explains the difficulties in re-regulating finance

The Dodd-Frank Wall Street Reform and Consumer Protection Act was the political response to the past excesses of finance. It seeks to prevent a repeat of the subprime crisis. Nevertheless, the power of finance is shaping its implementation. Wall Street is working to slowdown or block the detailed regulations required by each part of the Act. Again, the fact that the quants know better than regulators the subtleties of the new financial instruments limits the power of control by public authorities. Furthermore, finance can play regulatory systems across the world against each other and argue that it was and still is an important competitive asset for the US economy. In this respect, competition between Wall Street and London prevents a return to post-war regulations, as each of the two world financial centers has interests in adopting lighter controls than its competitor.

Investment banks are now convinced that the Fed will be the lender of last resort. This creates an incentive to prolong risky strategies that yield short-term profits but externalize the risk to weaker actors. Furthermore, the crisis increased concentration within the financial sector. Firms are too big and too interconnected to fail, especially if governments can mobilize taxpayers for the next bailing out, an hypothesis far from evident (see figure 17). Consequently, not only does the remuneration system continue in the financial system, it also induces excessive risk taking. The fallacy of the Black and Scholes valuation model has been intellectually recognized, but Benoit Mandelbrot's approach (Mandelbrot & Hudson, 2008) has not yet become the new orthodoxy in mathematical finance, probably because the conventional approach is such a profit-making endeavor (MacKenzie & Millo, 2003; MacKenzie, 2008). In any case, the mark-to-model approach prevails at the level of each financial entity, without any clear assessment of the relevance of related models (figure 10).

----- Insert Figure 10 ----

Last but not least, the central bank is maintaining near zero interest rates, hoping to boost recovery in the credit market. But as household de-leveraging continues (Koo, 2009, Adam & Vines, 2009) and a radical uncertainty hinders productive investments by firms, rational portfolio management is privileging Treasury bonds and the search for new and exotic speculative assets. This was precisely the configuration that led to the Internet and subprime bubbles.

5. Where does the power of finance come from?

The unfinished financial regulation and the possible emergence of new speculative bubbles call for investigating the sources of power acquired by financiers, not only in the US and UK, but also in Europe. Is international finance leading to the Euro crisis (Boyer, 2012)? Traditionally, the issue of power has concerned only the political sphere, but political economy stresses that power relations shape the economy (Roe, 2004). The surprising resilience of the power of finance is another reason to explore this issue. So too is a need to escape the present crisis (Boyer, 2011).

5.1 – The specificity of capital markets with respect to bank-based financial systems

In the post-World War II growth regime, financing the economy relied heavily on bank credit, which was controlled by public authorities. The development of financial markets tipped the oversight of credit from the public sector to private actors. A major shift in power has occurred.

Power relations are already present in lending relationships. Banks refuse credit when they estimate that the probability of non-completion of the corresponding project is too high. Credit rationing expresses the power that banks exert over borrowers. Nevertheless, the two partners are bound by a medium-long term contract that they can free themselves of by either loan repayment or bankruptcy. If an unforeseen event occurs, it is not possible for credit relationships to adapt instantly. For example, facing repayment difficulties, banks may require the bankruptcy of the borrower, or grant a deferment of payment after having discussed and negotiated a recovery plan. Voice may prevail over exit, to use the distinction of Albert Hirschman (1977).

5.2 – The sources of power of direct finance: flexibility, opportunism, reactivity

Funding through financial markets increases the power of finance over other economic agents in three ways.

First, at any time, the owner of a security may sell it on the market. This is the intrinsic *flexibility* of contemporary finance.

This versatility allows *opportunistic behavior*, which can overcome any long-term commitment. Combined, these two properties allow the simultaneous use of exit and voice on financial markets, quite a privilege compared with the credit relations. If the market for an asset is deep and liquid, investors can threaten to sell their shares if managers do not revise the strategy of the firm to meet financial performance targets. Thus, investment funds weigh on the organizational choices and strategies of large firms. Since they can sell at any time, they benefit from the freedom to sell and buy, or from long-term strategy of the firm. In contemporary capitalism, liquidity and control go hand in hand (Lordon, 2002).

Direct financing introduces a third change-- *extreme responsiveness to new information and greater uncertainty*. On financial markets supply and demand must always be balanced; any new innovation or information is immediately incorporated into the valuation of assets. This is not the case for other markets. For product markets, expectation errors are reflected by changes in inventories; and for labor markets, contracts cover several periods and unemployment becomes the adjusting variable. Clearly, the strategies of finance can preempt other agents' choices-- another expression of its power.

These are the structural roots of the power of finance; they express themselves more or less strongly depending on the existing regulatory system.

5.3 – Globalization and liberalization reinforce this power

The three mechanisms noted above are not enough to cause a major financial crisis. Actually, they were present in an attenuated form during the immediate postwar period. They become critical for macroeconomic dynamics when institutional change enhances their extension and intensity.

Creation of the Eurodollar market in London marked the emergence of the power of finance. This was the consequence of a strategy by large US firms to circumvent domestic financial regulations they considered too restrictive. The ability to delocalize gives a bonus to the private sector compared to public authorities limited to a given territory, but it also gives a bonus to finance over productive capital. Two decades later, most governments have liberalized their domestic financial markets to attract worldwide capital. This has had two effects. On the one hand, it encourages specialization by Wall Street and London in financial intermediation and innovation. On the other hand, it reduces the bargaining power of nation-states concerning the taxation of capital and profit because a threat to relocate and the attractiveness of purely financial gains become credible.

A second process relates to reconciling the relative merits of public intervention and markets in terms of growth and efficiency in resource allocation. The containment of the Fordist regime, and reduced effectiveness of policies to stabilize the economy, delivered seemingly convincing arguments for liberalizing product, labor and finance markets. Many constraints on the financial system were lifted; private innovations prospered, and were not subject to regulation, because of prevailing beliefs in the effectiveness of private initiative and self-regulating markets. Finance benefited greatly from this shift. The state lost key policy instruments that prevented speculative booms and a repetition of the 1929 crisis.

Delegating the management of financial stability to the private sector was enhanced when the Glass-Steagall Act, which separated commercial banking from investment banks, was repealed in 1999. US authorities believed that financial institutions would assess the risks they take and would develop reliable models to avoid bankruptcy. In addition, the high-tech products arising from the financial deregulation (options, swaps, securitization, and insurance against default) promoted self-regulation with almost no government interference. During the 2000s, many players in these markets thought that they could create their own liquidity, thus reducing their dependence on central banks. But when the wave of real estate speculation turned sour, the freezing of most markets revealed that the currency printed by central banks was the ultimate source of liquidity. After an initial moment of panic, finance reasserted its power. Financiers astutely pushed the principle of "Too big to fail"; another bankruptcy equivalent to Lehman Brothers would lead to the collapse of the system. As a result, the US Treasury and the Fed could not refuse to help investment banks as well as commercial banks. In the name of restoring a key part of capitalist economies (i.e., confidence in the stability of the payment system), public authorities bailed out large financial entities that recklessly speculated and demonstrated great incompetence.

5.4 – The unsustainable pressures upon productive capital accumulation

The power of finance has become dysfunctional with respect to the recovery of accumulation, growth, and employment. Actually, in the long run, the profits from finance come from the success of productive capital. The paradox is that the relentless search for financial gains hurts the dynamism of the real economy.

Instant financial transactions neglect the *inertia* in productive entrepreneurial endeavors. Non-financial firms cannot reorganize quickly, as required by financiers, a point made by Keynes in *The General Theory* (1936).

The charm of financial markets is reversibility: an asset price that has been skyrocketing might collapse as quickly as it went up. Unfortunately, the underlying industrial project is frequently *irreversible* because the return on a productive investment is obtained in the medium-long term. Bankruptcy is the cost of this irreversibility.

The international network of finance gives a *global reach* to the optimization of the rate of return, while most non-financial activities are *localized*, even within the world value chain. This asymmetry hinders the ability of local firms and governments to design survival strategies.

All the previous features of finance give a large premium to *competition and opportunism*. Conversely, in the domain of production and innovation, the division of labor calls for some degree of *collaboration and cooperation*. Until now the dynamism of capitalism, and the prosperity it has brought, came from the compatibility of the monetary and financial system with this catalyst for growth (table 1).

----- Insert here Table 1 ------

These discrepancies between finance and productive capital manifest themselves in the fact that a profit recovery has taken place in the US since 2010 but not a recovery of accumulation. The rate of return on relatively safe financial assets remains superior to the rate of profit in most industries.

6. RE-EMBEDDING FINANCE INTO MODERN SOCIETIES

The domination of finance over contemporary economies and societies has been detrimental to social cohesion and macroeconomic stability. The inability of the present remedies to propel a return to growth and job creation calls for an aggiornamento of the regulations governing finance. The task is not to return to the optimality of financial markets but to design more resilient systems. Of course, this topic is highly technical, but the main difficulties are mainly political. Can national governments and international institutions regain control over world finance?

6.1 – After the Minsky moment, the epoch of Polanyi?

If one abandons the naïve view of markets as self-organizing and self-equilibrating, the basic hypothesis to start with is the instability of finance in the absence of any control by public authorities. Any innovation potentially creates a speculative bubble that ends by bursting, with large costs in terms of slow growth, high unemployment and large contributions to rescue banks. By contrast, the period immediately following the Second World War shows that banking crises nearly disappear in developed economies under the aegis of institutional devices that control the risks taken by the financial sector, while maintaining efficiency in the allocation of capital, high growth and high profit rates (Reinhart & Rogoff, 2009).

This means that the polity may organize the economy in any way that simultaneously balances political forces and delivers a dynamic adjustment of economic activity. This is the central message of Karl Polanyi (1946) and given a modern twist by some régulationists (Amable & Palombarini, 2005). Thus the dynamics of contemporary society can be analyzed as the continuous interaction between the economic and political spheres. This raises the issue of the nature of democracy (Tilly, 2007). The reaction of the state to citizen demands on one hand, and effective decisions and public interventions on the other hand, may define the degree of democracy (figure 11).

---- Insert here figure 11 -----

This is part of the research agenda of *Régulation Theory*. Along the time dimension, it is possible to link the nature and style of public intervention to accumulation regimes (Theret, 2001). Across the geographical dimension, interdependence between polity and economy explains the diversity of capitalism: dominated by markets, intermediated by state interventions, organized by large corporations, or negotiated capitalism in social democratic countries (Amable et al., 1997; Amable, 2003). The domination of finance is unequal across these various configurations. This means that national communities can reshape the institutional forms of capitalism. Today, social control over the financial regime seems the crucial issue.

6.2 – A political economy approach to the re-regulation of finance

The history of economic doctrines, as well of major crises, suggests the existence of long waves. A generation suffers from an economic collapse due to the unleashing of market forces; then regulations and institutions develop to prevent a repeat of such dramatic episodes. This is at first successful but leads to a new crisis that tends to be attributed to excessive regulation, setting in motion a laissez-faire regime that eventually creates its own structural crisis.

It is not surprising then that the subprime crisis is commonly interpreted as the revenge of interventionists. Since Milton Friedman was wrong about the stabilizing nature of speculation, John Maynard Keynes must have been right. Unfortunately, thing are not that simple. On one hand, Keynesians stress the need for re-regulation of finance, drawing from economic history, and theorizing that full employment requires public intervention. On the other hand, a vocal minority of experts and policymakers argue that the public guarantees granted to Freddie Mac and Fannie Mae created moral hazard problems that led to more speculation. Let us privatize them and this episode will not repeat itself.

These two opposite positions share a common false premise-- the state and markets are alternative and exclusive coordination mechanisms. This view disregards the lessons of financial history: the Golden Age engendered stable and fast growth along with collective control over finance. Similarly, it misrepresents the involvement of Freddie and Fannie in the subprime crisis: it was their attempt to mimic the private sector that exacerbated the speculative bubble. Last but not least, AIG, a totally private entity, nearly collapsed and was quasi-nationalized for excessive risk taking. The causality here is clear: from financial crisis to public intervention (and not the reverse).

De facto, adequate regulations are necessary for the viability of markets, especially financial markets, where promises to pay are uncertain and require some form of "convention" (Orlean, 1989). The misleading struggle between defenders of markets and proponents of state intervention should be replaced by a search for relevant complementarities between these two coordinating mechanisms. Between the mythical pure market economy and the caricature of a centrally planned exists a spectrum of *mixed economies* with a complex architecture of institutional arrangements (Hollingsworth & Boyer, 1997).

The challenge presented by the subprime crisis is the following: in what direction will mixed economies evolve? Several paths are open (figure 12). The likelihood of each re-regulation scenario depends on the ability to build a political alliance or hegemonic block in favor of set of measures. If finance is assessed to possess a competitive advantage in some country, it might be difficult to intervene there and only macro interventions will play a role. In societies where an industrialist compromise still prevails, more ambitious plans can be contemplated.

---- Insert here: Figure 12 ----

6.3 – Arms-length macro control of finance

This proposal derives from two important premises. First, instability is a structural feature of finance that deals with uncertainty as well as risk. Furthermore the entrenched power of contemporary financiers makes it difficult for any government to interfere directly with finance. This does not mean that public authorities are powerless to prevent crises; they may adopt strong *anti-cyclical* and *anti-speculation* policies that reduce the risk of a major economic crisis generated within the realm of finance (figure 13).

On top of existing regulations for each entity and asset, the state should design *macro prudential regulation*. A special agency should conduct stress tests about the resilience of the whole financial system in response to the diffusion of speculation, a bubble bursting, and adverse macroeconomic shocks. Facing a risk of financial collapse, this agency should have the right to increase capital requirements at the early stages of a speculative boom, however unpopular it might be among financiers. This involves nothing more than converting the stress tests made after the subprime crisis into a permanent exercise and complementing the international regulations of Basel I and II with national tools.

---- Insert here Figure 13 ----

Of course, *monetary policy* has a role to play also. When there is an acceleration of asset prices not explained by rising real rates of return, the short-term interest rate should be raised, accompanied by a statement of the type: "the economy is entering into a speculative bubble with x % probability; if this diagnosis is confirmed by next data it will orient the future decisions about interest rate and refinancing of banks". If authorities fear triggering a recession by issuing a false alarm, the central bank may continue to target consumer price inflation, but it should increase the reserve ratio of banks to remove the excessive liquidity that may trigger an asset bubble. Furthermore, these reserve coefficients could be differentiated to penalize speculative activities but not the financing of productive investment.

The third pillar of this macroeconomic approach concerns fiscal policy. In the US system, the deduction of mortgage interest generates a bias toward credit and against saving. This may imperil macro stability when households become "Ponzi speculators". This was a cause of the subprime crisis and points to a needed reform of the tax system: eliminate interest payment deduction and increase marginal tax rates for financial earnings that exceed some threshold for normal rate of return in the rest of the economy. This would also help reduce the public deficits expected after a costly bailout of finance. Another needed change is that public policies should be given more of an counter-cyclical Keynesian bias.

To sum-up this paradigm brings back state intervention without directly interfering with the incentives, tools and objectives of finance. This does not mean that powerful actors would easily accept such a drastic reversal of the policies of the last two decades. Hence why not reform the very internal sources of financial instability?

6.4 – Reconfiguring Wall Street from inside

One cornerstone of this second approach relates to the *reform of remuneration* received by finance. Sellers of mortgage credit should be paid according to reimbursement flows, thus taking into account the risk of default. Similarly, stock options should be banned since they move away from a direct measure of the contribution to the performance of the firm and promote excessive risk taking (figure 14). This seems far better than arbitrarily capping financier remuneration without redesigning incentives.

This approach also calls for reappraising *fair value accounting*. Accounting practices contributed to the bubble and the collapse of many banks, since they introduced another acceleration mechanism on top of the well-known financial accelerator. Furthermore, it is meaningless to distribute virtual profits that would only be generated if the firm stopped its productive activities and sold its assets (at current price). It is time to return to the conventional measure of profit as value creation, and adopt a modern version of historical costs. Similarly it is important to forbid Structured Investment Vehicles and other accounting tricks that hide losses and costs, and report inflated and invented profits. It is time to learn the lesson of the Enron scandal: the fraud conformed to general principles of American accounting!

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The failure of risk assessment by conventional models of modern mathematical finance calls for ending firm specific evaluation, and employing a new generation of risk-assessment models that would correct their shortcomings: recognizing the greater probability of extreme events, the endogeneity of bubbles, and the need to anticipate a possible freezing of markets. Financiers should not be entitled to build their own version of new generation models: some certification, hence standardization, is necessary. Risk assessment at the micro level is too serious to be left to overconfident quants and their opportunistic use by top financial sector managers.

Finally, the growing interdependence between commercial banks and investment banks calls for an *integrated regulation* of the whole financial system. As Wall Street entities have been incorporated into holding banks, they benefit from the same access to deposit insurance, liquidity from the central bank, and credit from the Treasury. So, they have to comply with the same reporting rules, surveillance mechanisms, transparency and security for the public.

To be frank, this is easier to propose than to actually implement, since it assumes a drastic shift in the power of national governments with respect to international finance. Thus a third strategy might be suggested.

6.5 – The enforcement by the State of finance as a public utility

We previously focused on finance and its relation to public intervention. Nevertheless the deep and long-lasting economic crisis resulting from the collapse of the US financial system calls for a wider analysis (Boyer, 2008). Was not the subprime invention a trick to overcome the long-term stagnation of real income received by the less privileged fraction of the population? Has not the global 2008-2009 recession shown us that the international system has changed as a result of opening most economies to trade, direct investment and finance? This is an invitation to shift from a micro approach to *regulation* to a macro analysis of the role of different financial systems in the dynamism and resilience of growth regimes; i.e., *régulation* in the French meaning (Boyer & Saillard, 2001).

The profit motive has had some responsibility for the succession of financial crises and the power acquired by finance with liberalization and globalization has induced predatory strategies from high finance. In a sense, this is a Polanyi-type crisis; the commodification of finance has led to the collapse of its fundamental pillar-- trust. A totally different conception of finance could emerge; banks and other entities would be delegated to manage a public service-- access to credit and money (Lordon, 2009). Their governance structures would give voice to each stakeholder (credit holder, depositor, wage-earner, citizen, communities and state), thus mitigating the dominance of the profit motive (figure 15).

Credit should no longer be a substitute for low and stagnating incomes. The power of labor at the firm level should be strengthened, either by reforming the governance of non-financial firms, or by public control of capital remuneration. Last but not least, weaker worker bargaining power results from the pressure of foreign competition, the high mobility of capital and the productive overcapacity associated with the entry of China, India and other emerging countries into the world economy. Disciplining international competition by interregional negotiations would open a new phase of internationalization, better accepted by workers and citizens than the present system of large interdependence without clear collective rules (Lordon, 2009).

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6.6 – Normalizing finance by an *ex ante* public control over innovations

This addresses one cause of the subprime crisis: *laissez-faire* applied to finance induced a wave of innovations so powerful that they destabilized the whole economic system. In other domains, public authorities designed rules to prevent innovations from imposing negative externalities on the rest of the society. This is the case for medicine, air transport, equipment, work organization, construction.

It took nearly two centuries to design and implement regulations preventing the bank runs that used to threaten the market economy. *Mutatis mutandis*, the present task of public authorities is to invent rules and mechanisms to prevent the collapse of modern financial systems under the unexpected feedback of a bunch of powerful but potentially dangerous innovations, such as securitization and complex derivatives (Boyer, 2008). The task is to do for investment banks what has been done for commercial banks (figure 16).

----- Insert here Figure 16 ----

How do we prevent a repetition of the 2008 collapse? First, it has to be recognized that granting credit to people unable to repay their loan was a highly profitable idea only because securitization shifted the risk to less informed agents. Regulators should have forbidden such myopic risk transfer. When they did, for example in Spain, real estate bubbles were not prevented but no toxic derivatives worsened the crisis when asset prices fell. Second, subprime holders were betting on a continual rise in real estate prices. They became "Ponzi speculators", and it is well known that such a scheme will burst with a probability of one. The governments that maintained strict rules concerning mortgage credit, such as Canada and Germany, did not experience the same problems as the US.

Consequently a third regulatory paradigm would focus on financial innovations and propose *ex ante* certification of new instruments, standardization of a limited variety of these instruments, organization of clearing houses with mutualization of risk, real time access by regulatory agencies to the full information generated by deep and liquid markets, and interdiction to prevent selling Over the Counter Products to badly informed agents.

In sum, the purpose is to embed into any new financial instrument the requirement of transparency, and develop explicit mechanisms that would prevent systemic instability. This had been achieved for commercial banks, but not for investment banks. One might be surprised that concern for social control over financial innovation comes so late. Under the pretext that innovation lies in the private sector and must therefore be favored, is it reasonable to exclude public control over the conditions and consequences of these innovations? A brief comparison of different types of innovation refutes this hypothesis (table 2).

---- Insert here Table 2 ----

In every domain, there are rules governing innovation. Scientists share the methods common to their discipline, and in certain cases must respect a deontology imposed by society. Technical innovation is vigorous and multiform, but the corresponding product or process cannot be brought onto the market or put into practice unless it satisfies safety standards defined by the collectivity. We do not wait for a growing number of accidents to occur before imposing these standards on the design process. This is no obstacle to economic dynamism. Likewise, the law forbids certain contracts (which might be mutually beneficial) and transactions involving goods that are considered to be of a non-commercial nature. Organizational inventiveness is reduced in favor of greater social acceptability of innovations or, more generally, the prevailing ethics of society. The domain of health exemplifies the multiplicity of state interventions governing access to the medical profession, approval for drugs, daily medical practice, etc. The transition from innovation to market gets slowed down and made more expensive; yet the dynamism of the biotech industries cannot be denied.

The near total freedom of financiers to invent financial instruments of mass destruction is quite exceptional, evidence of the exorbitant power held by finance over society. One admires the care which any airplane accident is investigated-- to ascertain its causes and then implement new security procedures that will prevent a repetition of the same accident. In the domain of finance, beginning with Tulipmania, dangerous innovations have triggered recurrent crises that have been socially and economically costly (Kindleberger, 1978). Public authorities have learned how to prevent banking crises, but not yet how to prevent financial crisis (Boyer et al., 2004). In the US and UK, special commissions investigating the origins of the recent crisis came to no consensus and no measures to reform financial systems have been implemented.

7. Re-regulation … before or after the next financial crisis?

In the fall of 2012, a new global financial crisis arose. Will international finance destroy the Eurozone and the Euro? Does the complexity of contemporary finance call for a return to the Gold Standard, as some Republicans propose for the US? Can China's central bank save a banking system overwhelmed by bad loans after a dramatic deceleration of growth in reaction to a creeping international crisis? Policymakers should be wise enough to take into account these threats. Actually, we observe a battle between a new recession that exacerbates international and domestic imbalances, and painful deliberations over a new regulatory system for finance.

7.1 – Is a smooth transition towards financial re-regulation possible?

Since the early 1980s, the process of opening the world economy has been continuous. Nevertheless, a series of seemingly minor and sometimes silent transformations (Jullien, 2003) have led to a new accumulation regime, one that is finance-led (Amable, 2003, pp. 66-73). This shift from one mode of *régulation* to another can be explained by the fact that new possibilities were opened to finance without initially hurting the interests of other social groups, who were unaware of the long-term consequences of this move for them.

The task of financial re-regulation is made more difficult because most governments have to refinance their public debt through international financiers. Therefore, the theory of organizational and institutional complementarity suggests reducing the power of finance-- first by taxing capital flows, then by promoting codetermination at the level of the firm and redesigning the tax system to align the rate of return of financial and productive capital. This is a rather unorthodox strategy, similar to that proposed earlier (figure 15). Again, the flexibility and global reach of finance make this strategy difficult to implement (table 3).

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7.2 – The danger of a new and dramatic financial collapse

Why have most capitalist economies muddled through for such a long period after the demise of Fordism? Probably because new *régulation* modes inherited from the Second World War have mediated the severity of the adjustments required. Two lost decades in Japan, and the French trajectory, show the limits of these "wait and see" strategies. The present analysis points out that the financial liberalization, initiated in the 1980s, is now destroying its conditions of existence. After a period of easy credit for states, firms and households, the absence of an accumulation recovery in the US and Europe make it impossible to continue these policies. Financiers, by speculating against weak European state, are likely to create a configuration where governments will be unable to bail them out. Finance looks like a snake biting is own tail; capitalists (Rajan & Zingales, 2003) and financiers (Boyer, 2011) have to be saved from their perilous strategies (figure 17).

---- Insert here: Figure 17 ----

The day of reckoning for finance-led accumulation might well be approaching.

8. CONCLUSION

The main lessons of the present article can be summarized as follows.

1. Conventional theories did not anticipate and cannot retrospectively explain why the years 2008-2012 are not a simple recession, but the end of an epoch for American capitalism. This failure has its roots first in the reduction of capitalism to a series of markets, devoid of any institution, and second in the confusion of short-run macroeconomic adjustments with long-run structural transformations in social relations, production paradigms and styles of economic policy. This intellectual failure opens an avenue for a renewed political economy and for *Régulation Theory* as part of this process.

2. The US is the center of the action that has taken place, and then exported to the rest of the world. Three major factors interacted to generate the crisis. First, the demise of the post-war capital accord was triggered by international competition and finance-led growth replacing the Fordist mass-production/mass-consumption regime. Widening income inequality has

introduced a structural disequilibrium in the contemporary accumulation regime. The fast growth of credit to households has been a compensatory mechanism, while the financial sector has been able to get rid of most public controls and collective regulations. A set of perverse incentives generated by the securitization model have eroded a basic relation of capitalism-- the responsibility of creditors in the contract of lending. That is why this crisis is systemic and not only structural. Third, unbalanced US growth, built upon an excess of credit, was made possible by excess savings in Asia, especially China. The US financial collapse is a turning point for the world economy, and it might well be the start of another major crisis, that of the Euro-zone. Even Chinese export-led growth is under strain.

3. The events of September 2008 to September 2012 have led to a slow and partial recovery. No full recovery has taken place because the financial entities that shaped regulation and economic policy for their interests (light regulation, fair value accounting, and short selling) have externalized the costs of the financial crisis to the state and therefore the taxpayers. With skyrocketing public debt and popular protests against bailing out Wall Street, such a security valve is no longer available. The re-regulation of finance has proven quite difficult due to the complexity and privacy of relevant information, as well as the financial innovations and mobility that hinder political deliberations and decisions.

4. This extraordinary power given to finance has a dual origin. On one side, the progressive shift in the US from a bank centered to a financial market system has allowed a greater disconnect of finance from productive investment. The liquidity of stock markets allows the development of aggressive strategies in defense of the rate of return to capital: extreme flexibility, opportunism and relentless optimization give finance great power over the generation of profits in the productive sector. On the other side, liberalization has allowed finance to dominate non-financial activities and national economic policies. The origin of the present crisis is the power of finance over contemporary society.

5. This can be reversed since many capitalist countries operate according to an industrialist compromise between managers and wage-earners, and their governments try to keep international finance from destabilizing the domestic economy. Germany is a good example of how finance does not need to dominate the rest of the economy completely. The Nordic countries give us an example of an efficient strategy for overcoming a major financial crisis: resilient payment system and financial stability are regarded as public goods, too fundamental to be left to vagaries of financiers. But this calls for and unprecedented aggiornamento of democratic principles and their effective implementation in the economy, not just in the political sphere. The next decades might well be inspired more by Karl Polanyi than by John Maynard Keynes.

6. Controlling finance is not a simple technocratic exercise but an expression of the ability of the state and civil society to discipline a powerful interest group that has been delegated to manage a crucial public good. There are as many solutions as different power distributions across nation-states. One rather demanding reform would apply to radical financial innovations the same public control over other domains of social and economic activity. Nevertheless, the most ambitious proposal is to control financial systems with a new social contract that would put strict conditions on the private management of credit and finance. At the other extreme, governments, if they are not lobbied by financial vested interests, can use monetary policy, differential taxation and reserve and prudential ratios imposed on banks to prevent recurring imbalances and speculative bubbles generated within finance from triggering a major economic, social and political crisis.

7. These results suggest a new research agenda: putting in historical perspective the formation and evolution of the American elite since World War II. This agenda would explain the dominance of Wall Street in the US. Mixing hints from C. Wright Mills and the techniques of social network analysis, it would define a stimulating program for a new generation of political economists.

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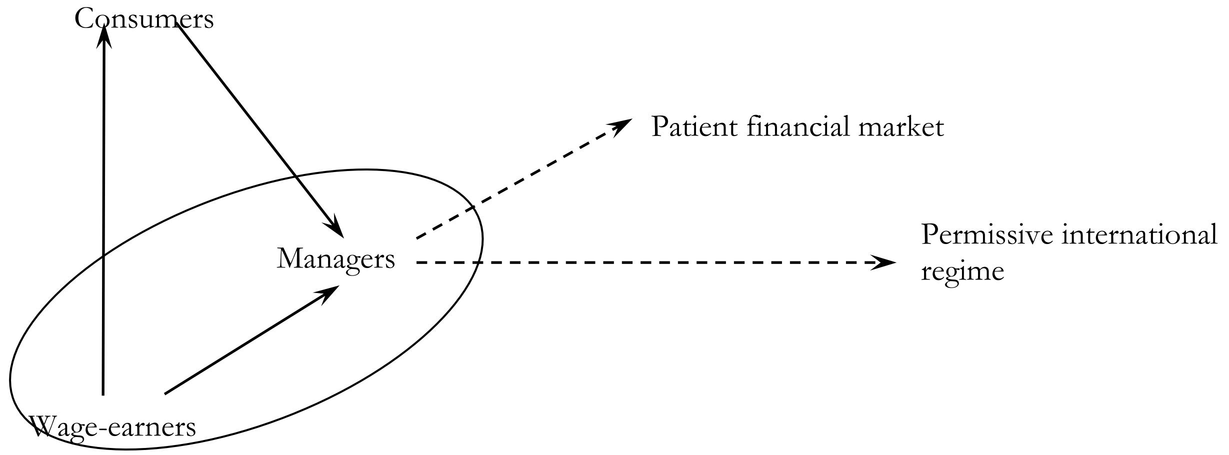
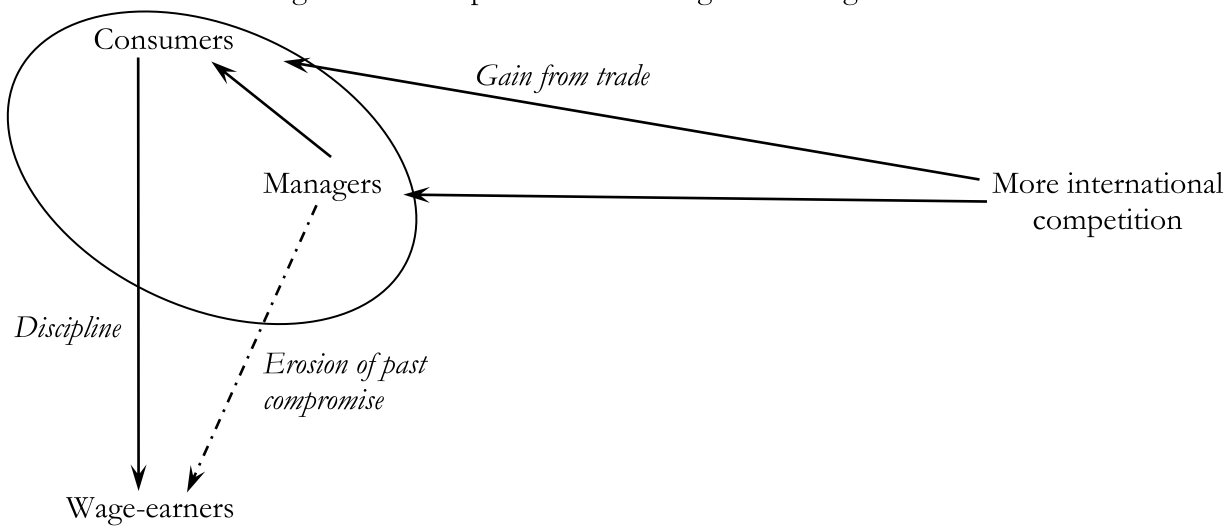
Figure 1 – Patient financial market and permissive international regime



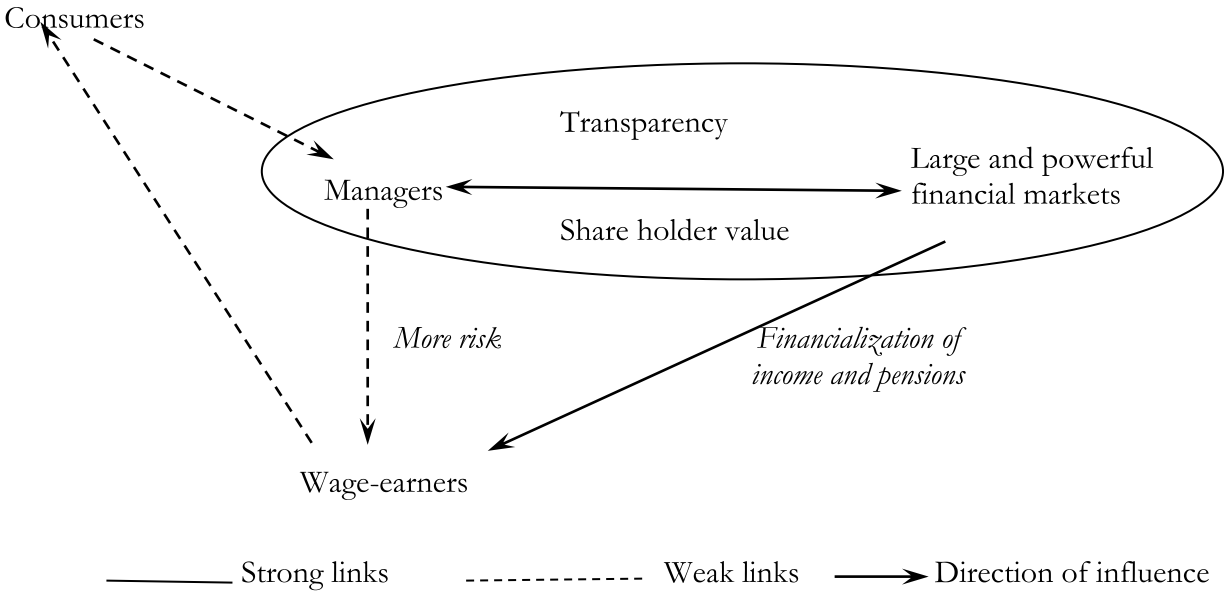
Strong links Weak links Direction of influence

Figure 2 – The split between managers and wage-earners

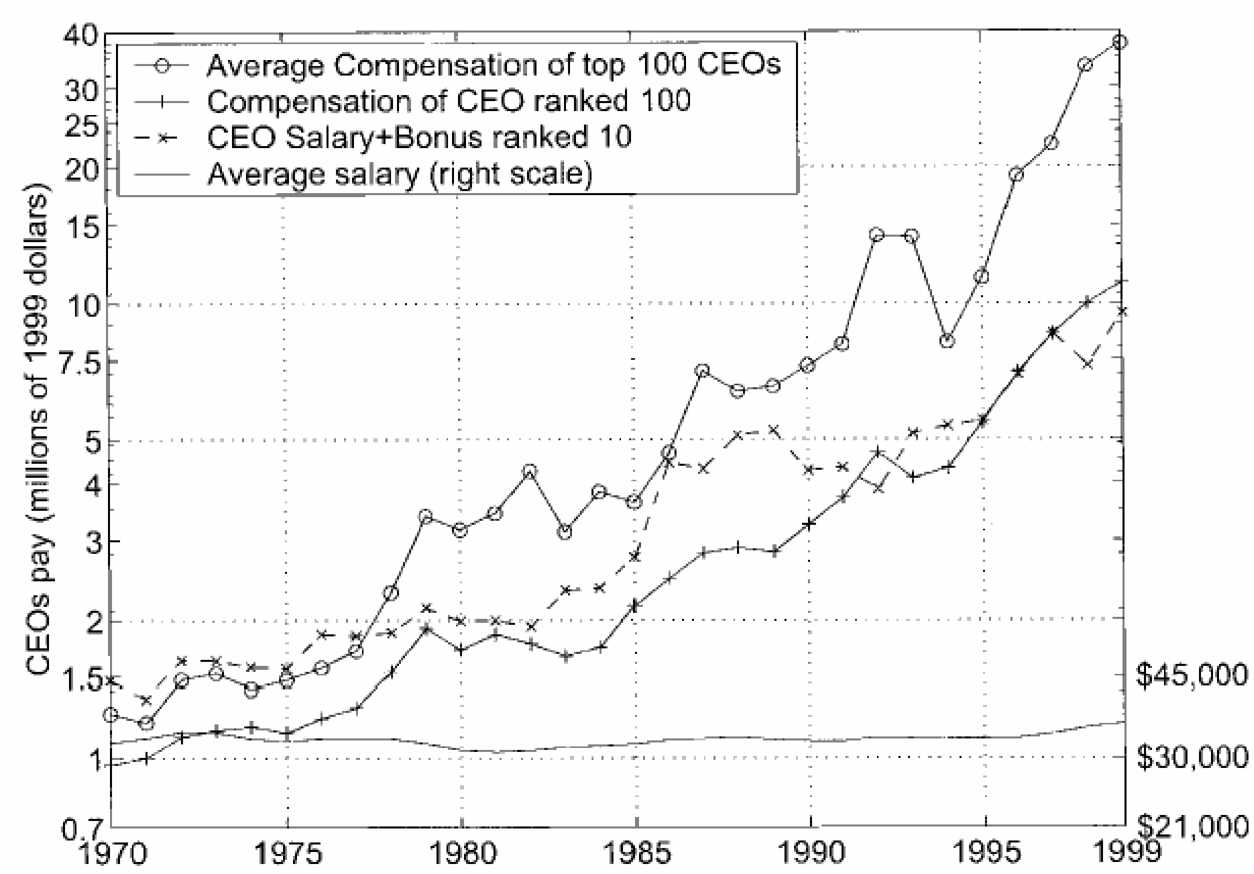


Strong links Weak links Direction of influence

Figure 3 – The *ex-post* alliance of investors and managers

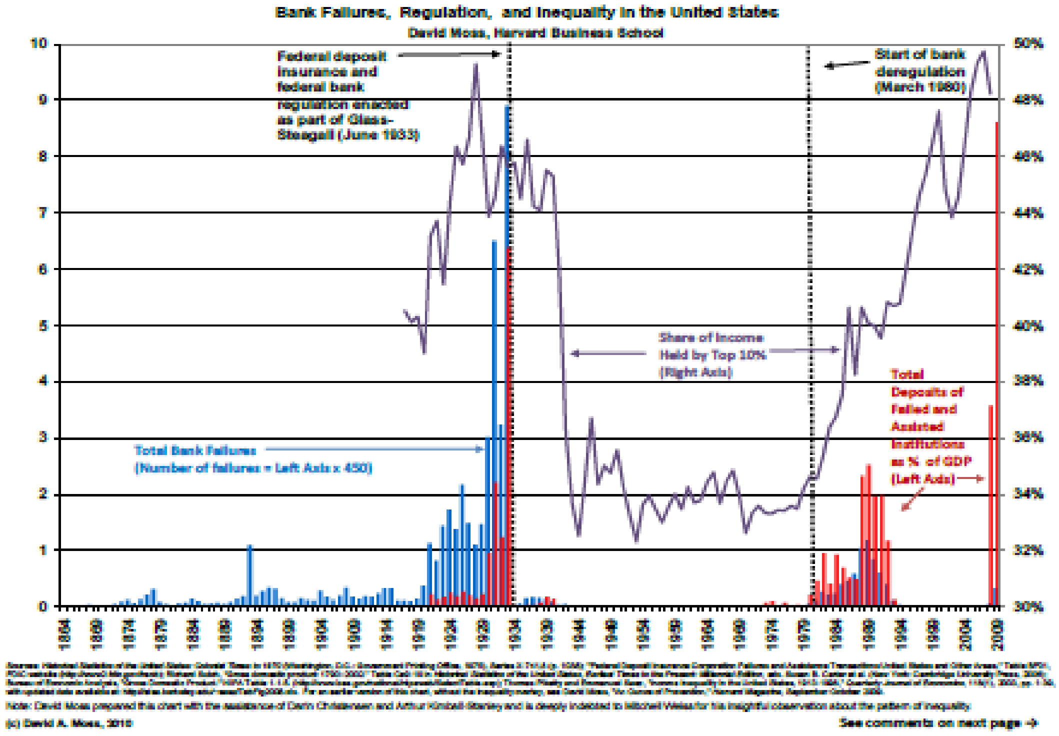


Graph 1 – The widening gap between CEO and average wage-earners remunerations



Source: Piketty & Saez, 2003, p. 33, figure 11.

Graph 2 – Banks failures, Regulation and Inequality in the United States



Source: David Moss (2010) Comments on Bank Failure/Regulation/Inequality Chart, August

Figure 4 – The spill-over of all the destabilizing mechanisms not corrected during the previous crises.

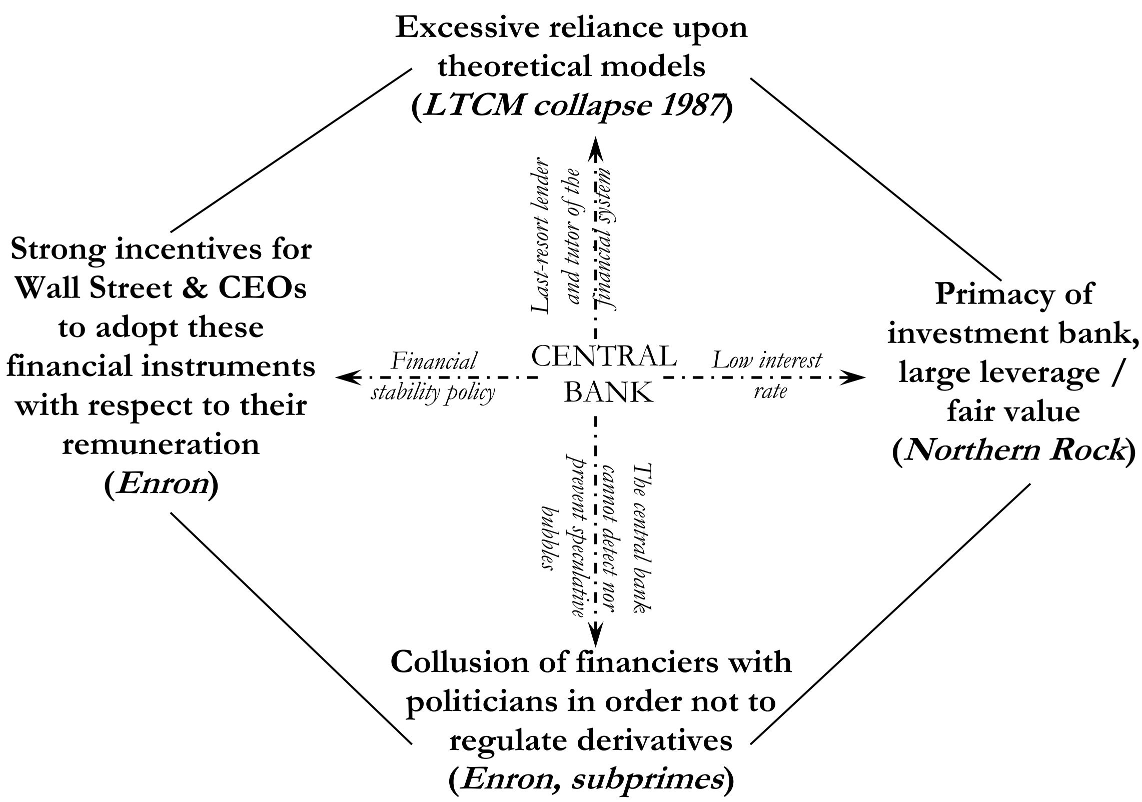


Figure 5 – The dangers of securitization materialized: the dilution of the responsibility in the credit contract

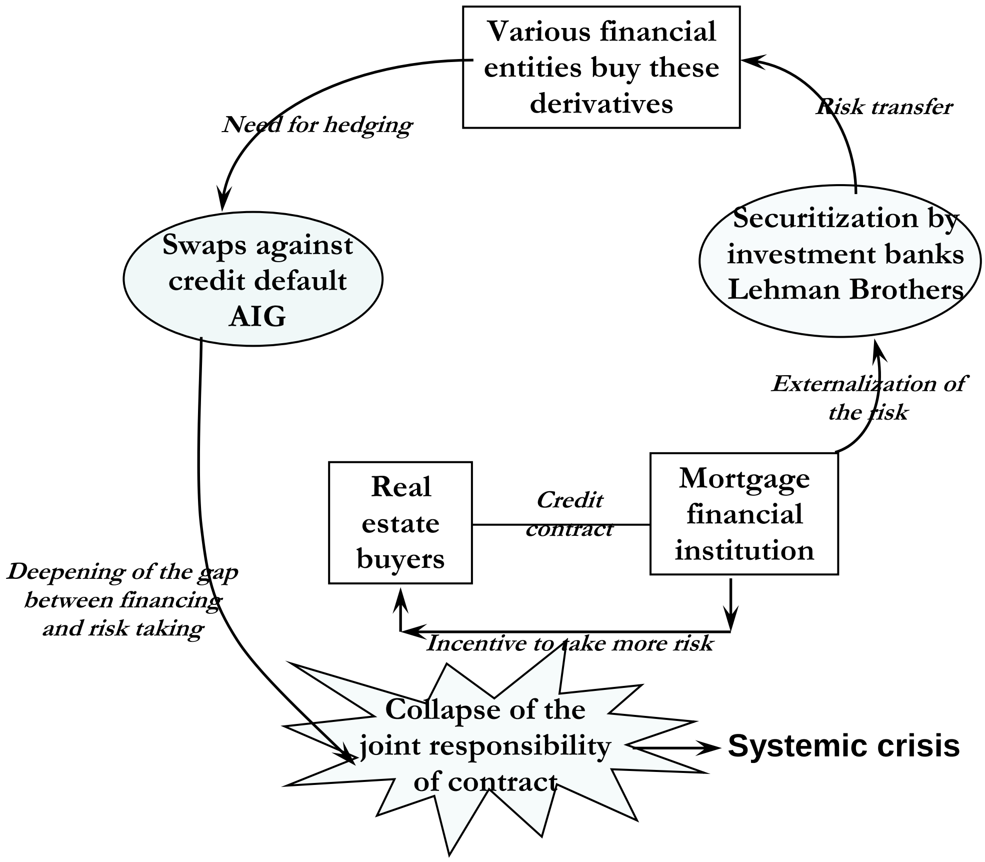
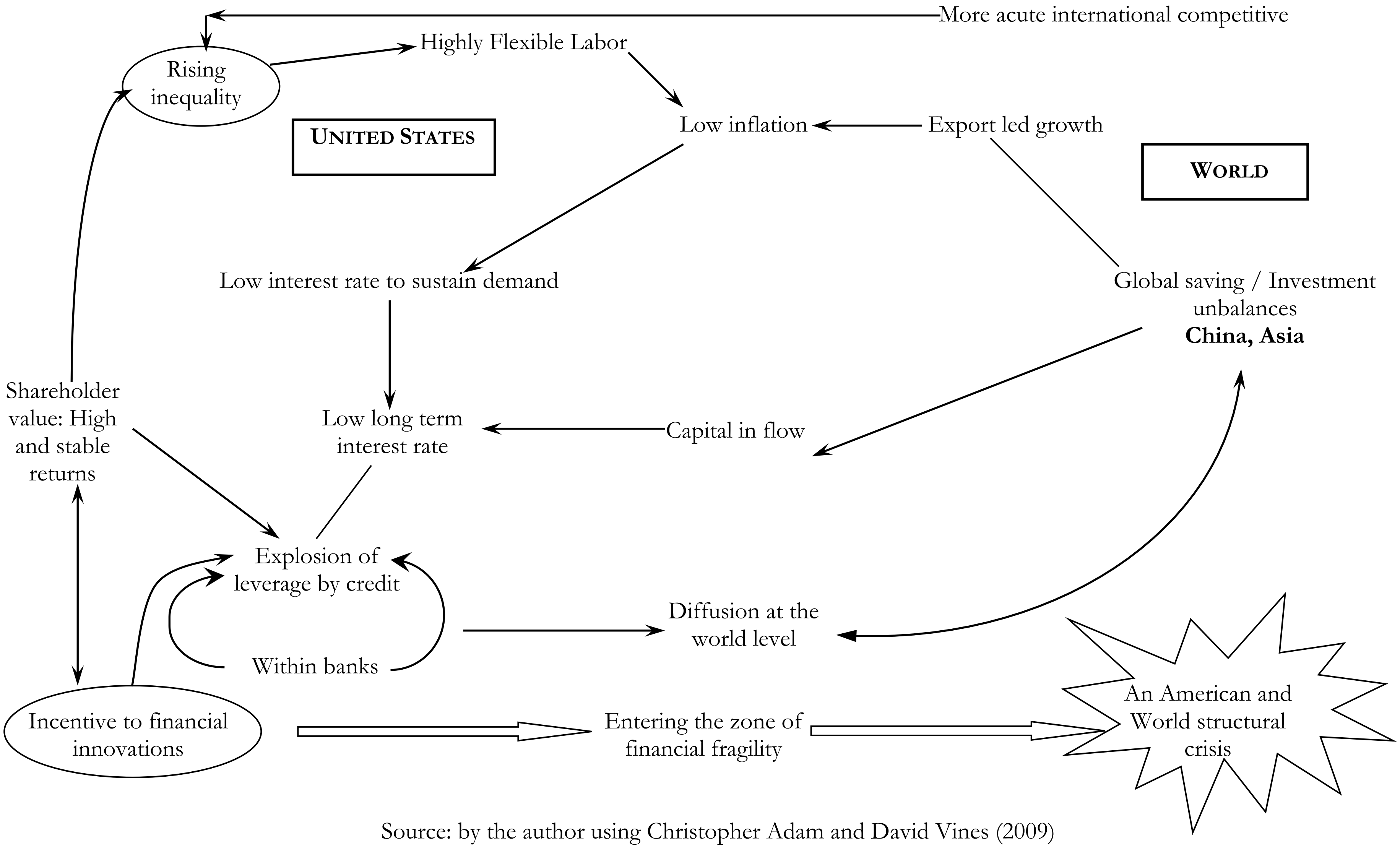


Figure 6 – The complexity of the present crisis: finance, inequalities, international interdependence



Source: by the author using Christopher Adam and David Vines (2009)

Figure 7 – Three self-reinforcing debt deflation-depression spill over along Irving FISHER's model stopped by a Keynesian countervailing program

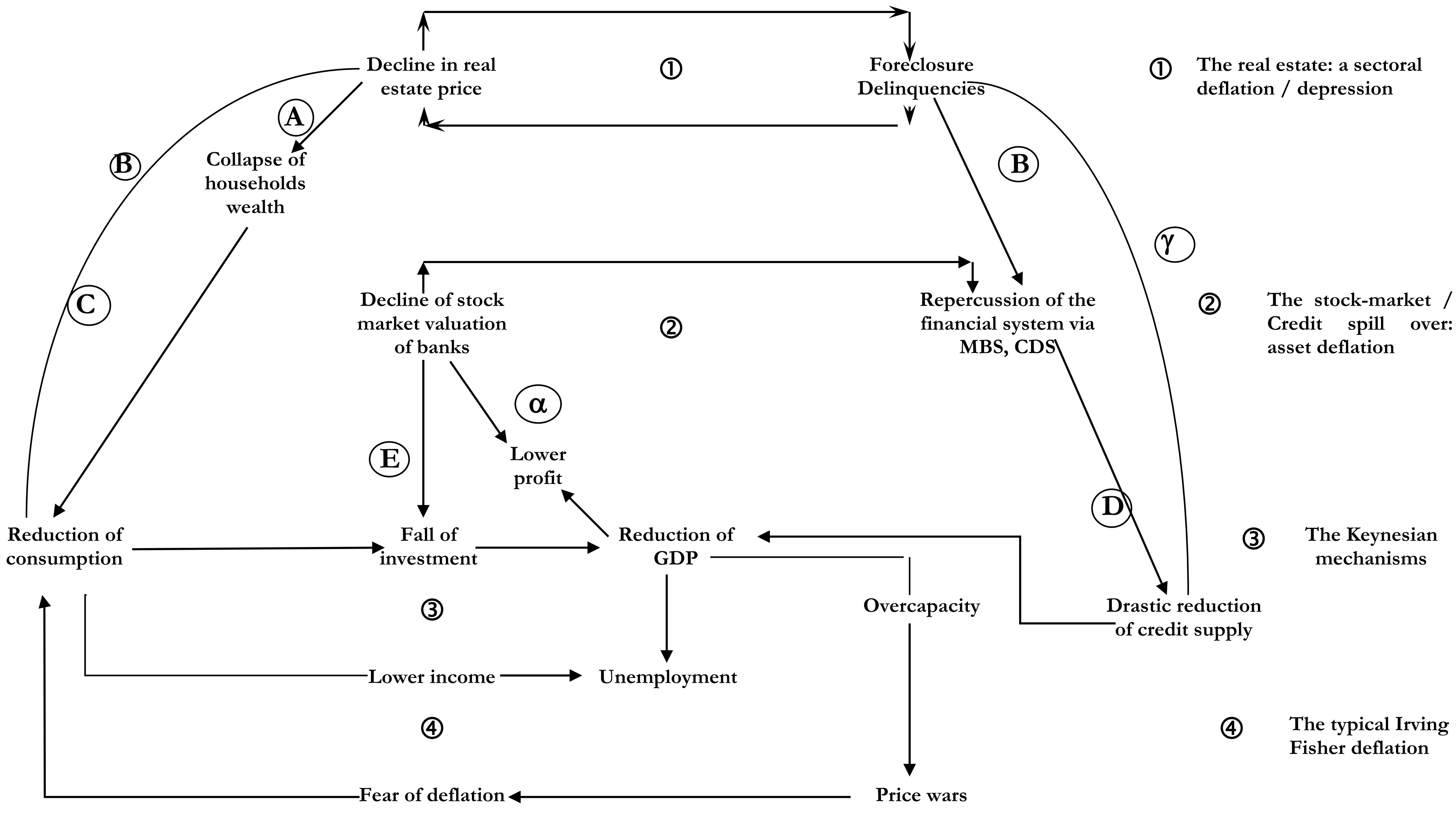


Figure 8 – Shareholder value: the gap between the rhetoric and the practice

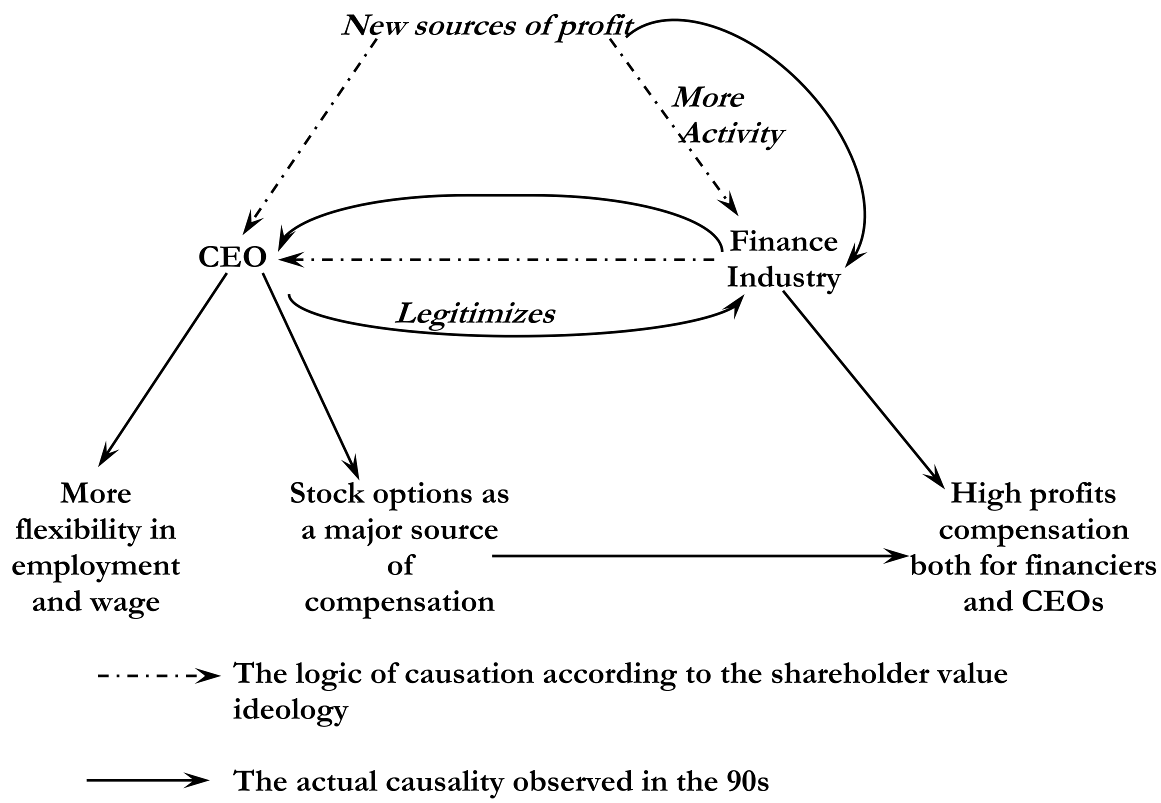


Figure 9 – The hegemony of finance is the origins of both boom and bust: a return of dialectics?

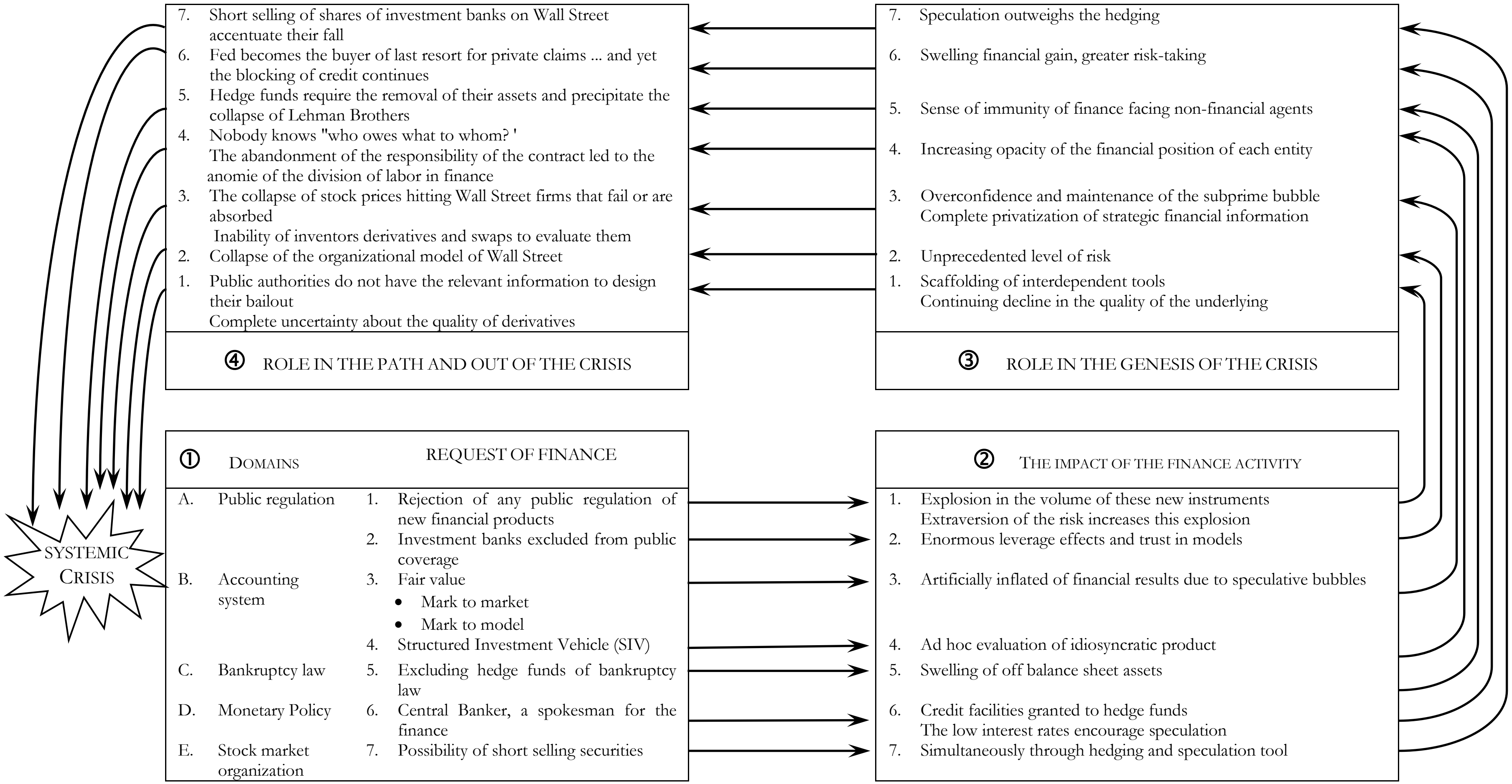


Figure 10 – The Dodd-Frank Act: still the dangerous complementarity of perverse mechanisms

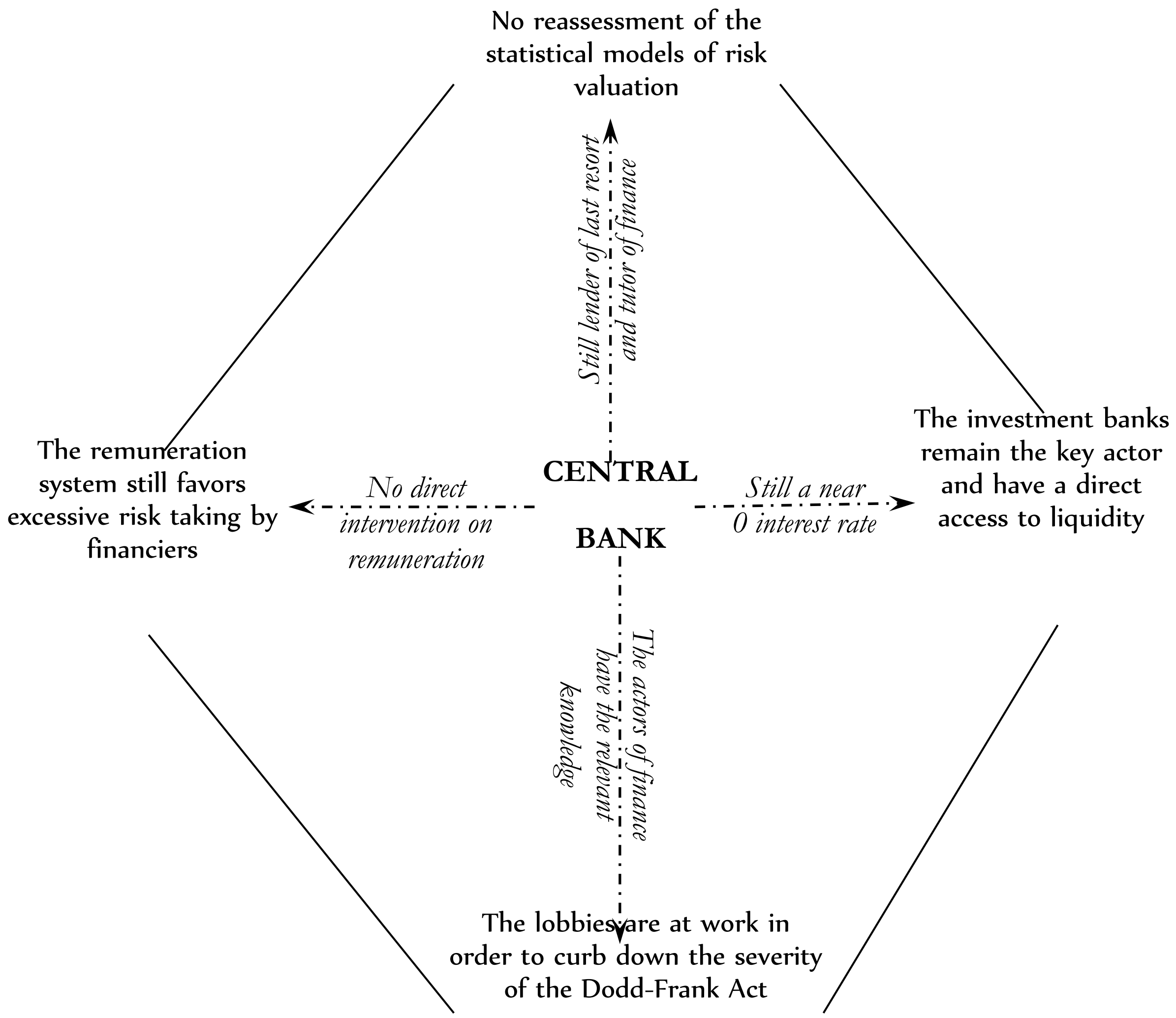


Table 1 – The two logics of finance and productive capital: nowadays more conflicting than complementary

LOGIC / CONSEQUENCES	FINANCE	PRODUCTIVE CAPITAL
TIME	Instantaneity	Built in inertia
ADJUSTMENT TO SHOCKS	Reversibility	Irreversibility
GEOGRAPHICAL DISTRIBUTION	Global reach	Localized activity
TYPICAL BEHAVIOR	Premium to opportunism	Premium to cooperation

Figure 11 – The interactions between the political and economic spheres

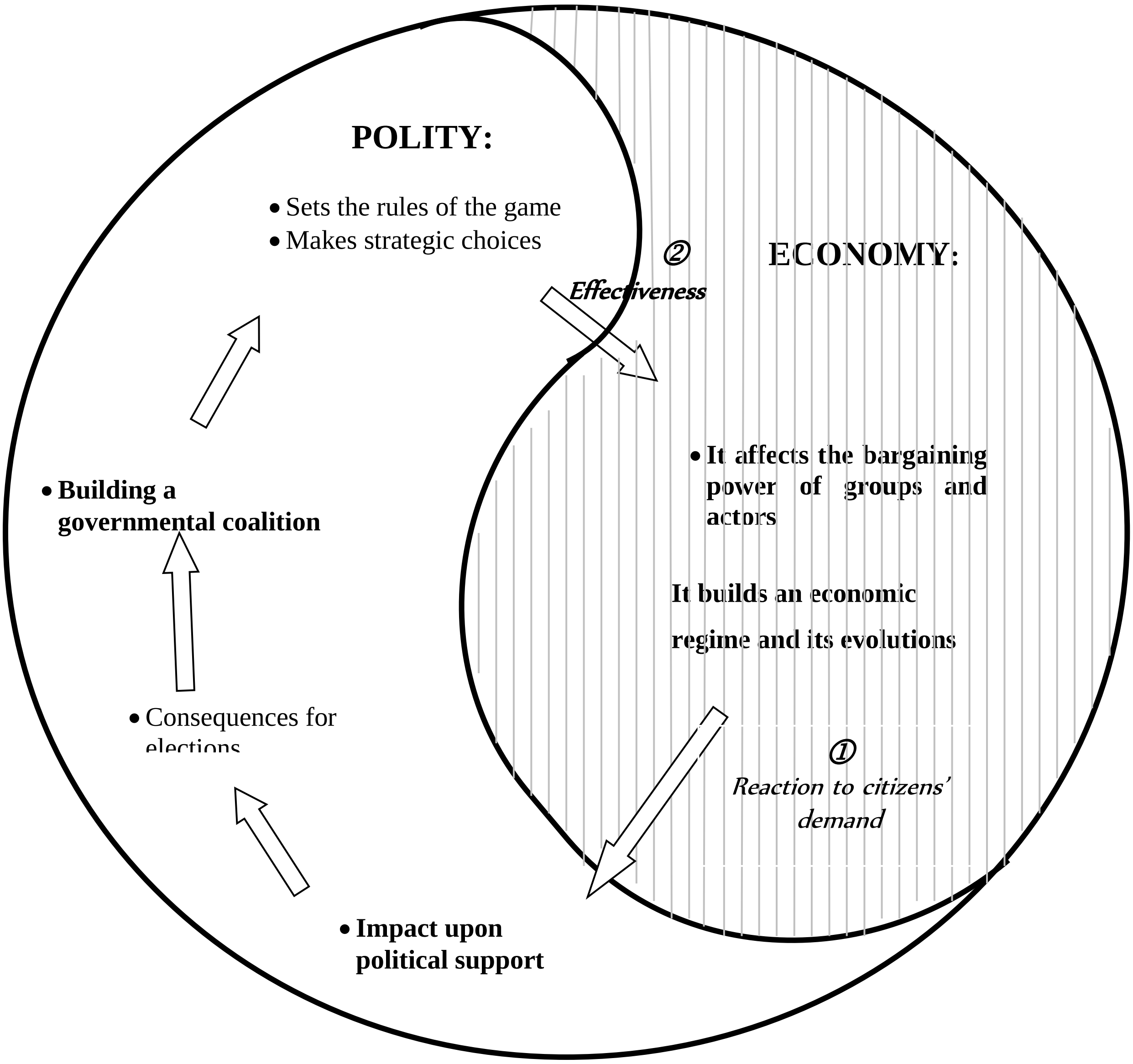


Figure 12 - A synoptic presentation of alternative re-regulation strategies

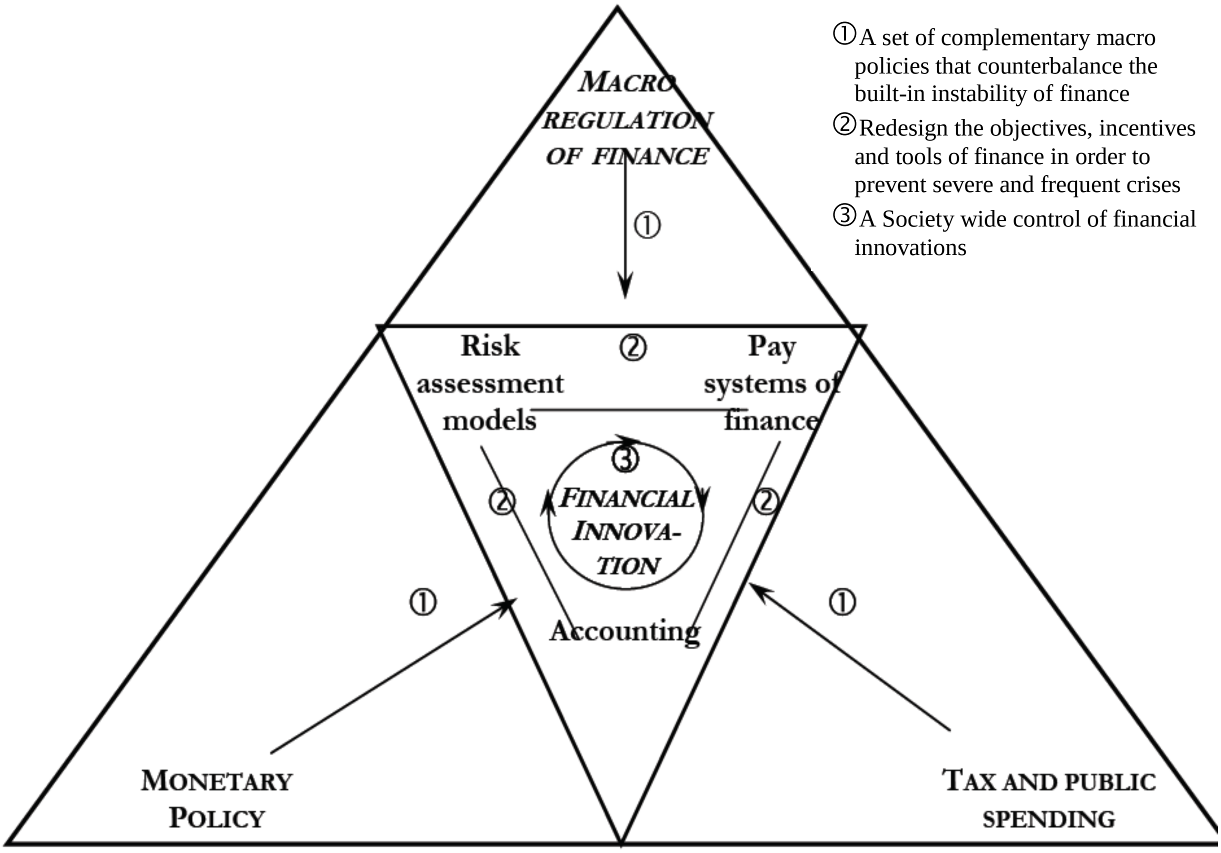


Figure 13 - Prevent that a financial crisis might trigger any major economic crisis by typically macroeconomic tools and regulations

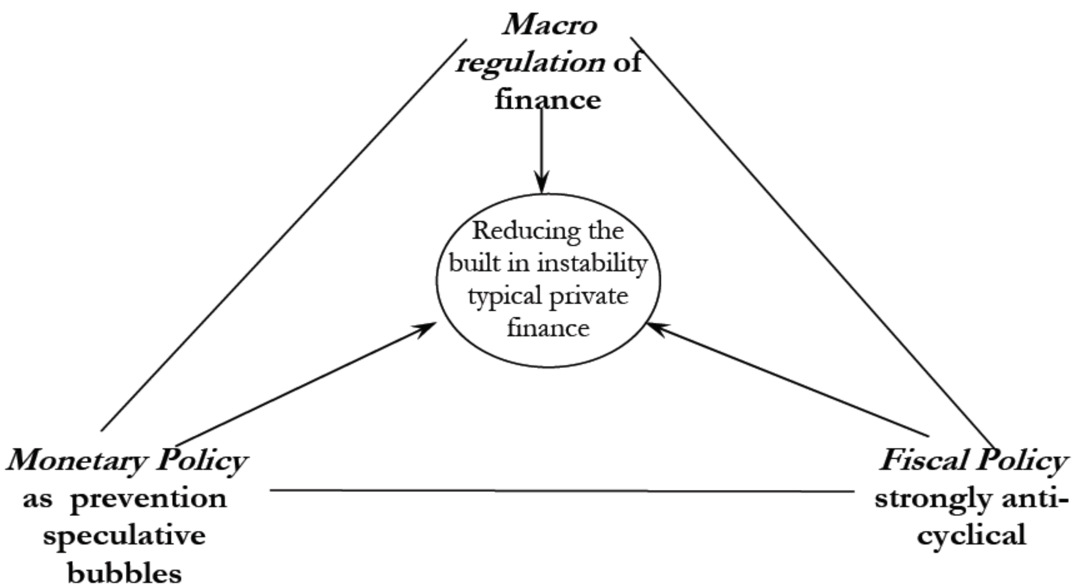


Figure 14 – Realigning incentives and internal organizations of finance in order to prevent the repetition of speculative bubbles

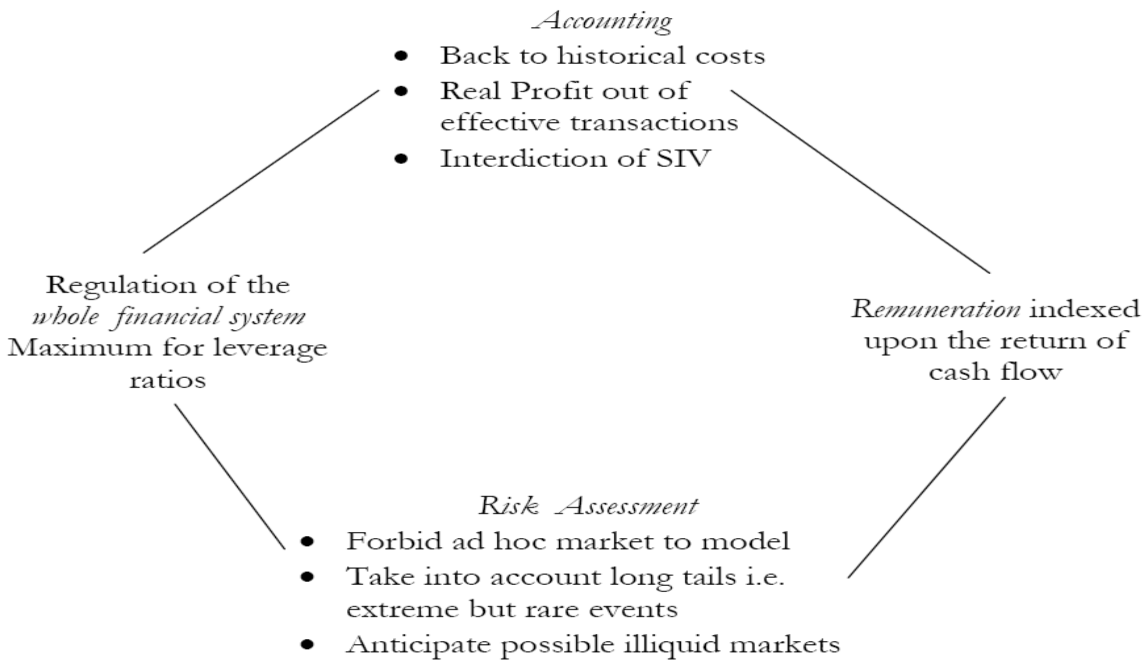


Figure 15 – A complete re-institutionalization of finance and labor

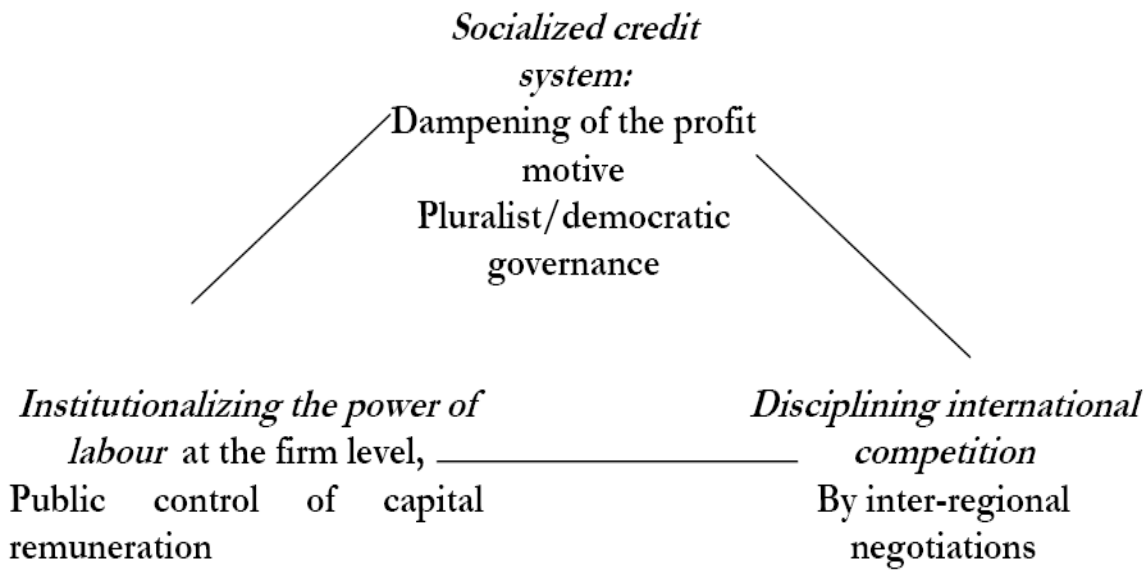


Figure 16 – Collective control of financial private innovations, highly profitable but that are powerful enough to destabilize the whole economy

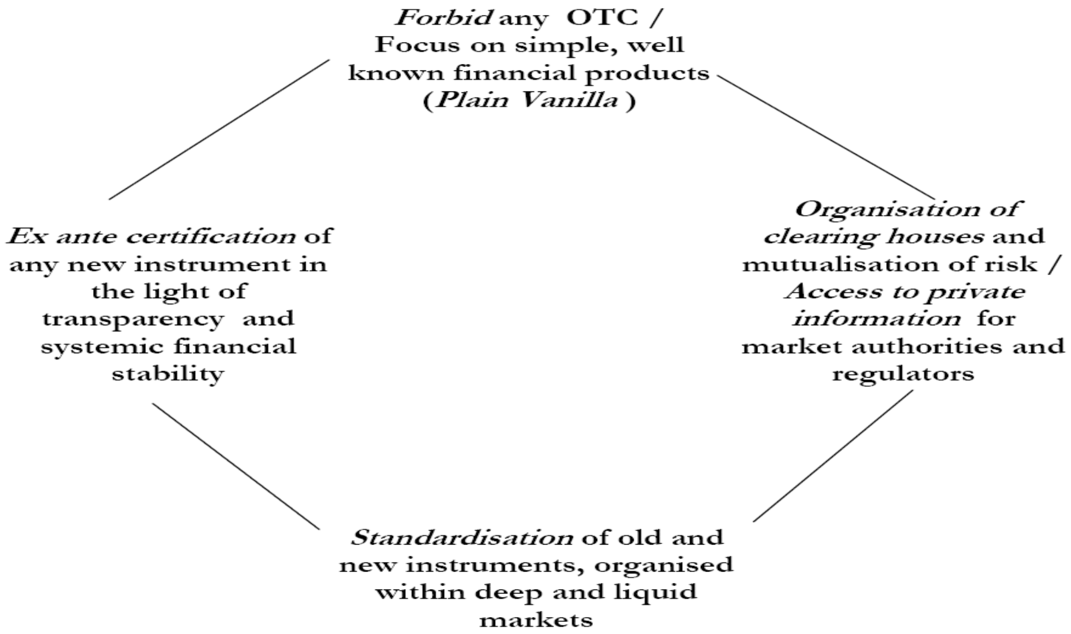


Table 2 – Most innovations are regulated collectively: why not finance?

Innovation	Type of control
Scientific	• Methodology specific to each discipline • Deontology
Technical	• Multiple safety standards, prior to marketing • Quality certification by agencies
Organizational	• Banning of certain forms of organization (forced labor) • … and transactions (organs)
Institutional	• Political control • Control by law, citizenship
Finance	
Traditional products	• Rules governing issuing, disclosure of information, prevention of insider trading, accounting
New products	• None, to begin with
Health	• *Ex ante* on the effects of drugs • *Ex ante via* professional specialization • Deontology • Public approval of care establishments

Table 3 – A sequence of policies allowing the recovery of the control of collectivities over finance

CHANGES / INSTITUTIONAL FORMS	INITIAL SITUATION	PARTIAL / LOCAL CHANGE	REACTION TO INITIAL CHANGE	SECOND WAVE OF REACTION	CHANGING THE DOMINANT BLOC	READJUSTMENT OF ALL: DOMINANT BLOC AND INSTITUTIONAL CONFIGURATION
Financial regime	Liberalized and dominant	Liberalized and dominant	Political space for re-regulation	Re-articulation of finance with the society	Standard return on capital financial	Reinserted into the economy
International integration	Opening in all directions	Brake on international capital mobility	The exchange rate reflects the structural competitiveness	International integration maintaining social cohesion	Negotiation of international integration	$\boxed{\text{Multi-polar international regime negotiated}}$
Wage labor nexus	Financialized	Financialized	Attenuation of competitive pressures	De facto Strengthening the bargaining power of employees	Recognition of the power of employees in the firm	Institutionalization by the right of employees in the firm
Dominant groups	Alliance enterprises / Finance	Alliance enterprises / Finance	Erosion of the hegemonic bloc under the action of the State	Weakening of finance	Exclusion of finance from the alliance	New alliance enterprises / employees / State
Dominated group	Employees / State	Employees / State	Employees	Employees	Finance	Finance

Source: Built using the analytical framework of Bruno Amable (2003), p. 66 to 73 concerning the process that led to the domination of finance.

Figure 17 – The ultimate consequences of liberalization are nowadays threatening the viability of contemporary financial systems