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# Contemporary Capitalism as a New Monetary Economy of Production: The Logic of Conventions, M&A, and LBOs

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**Abstract** The main changes of new capitalism concern mainly two spheres: the new technological paradigm and valorization process and the importance of finance. The main feature of the prevailing finance-led growth regime during the first decade of new millennium is then presented. In this perspective, particular attention is given to the analysis of the evolution and the logic characterizing mergers and acquisitions and leverage buyouts. After describing the main features of the contemporary accumulation paradigm, we therefore proceed to the reformulation of the schemes of monetary circuit by taking into account the structural changes induced by contemporary capitalism.

**Keywords:** merger and acquisitions, monetary economy of production, crisis, financial convention, finance-led growth regime

## 1. INTRODUCTION

The structural changes occurred from the seventh decade of the twentieth century have substantially modified the capitalistic organization of society, both at the national and the international level. The analysis of these upheavals is fundamental in order to understand the long-term processes which have caused the financial crisis of 2007, and

the Great Recession that followed. We propose to take into account two fundamental dimensions: the first is related to the evolution of productive processes and the affirmation of a new technological paradigm based on semiconductors and information & communication technologies (ICT). The second dimension refers to the process of financialization and to the new, more pervasive, role played by financial markets.

The literature inspired by Schumpeter's work has demonstrated that the emergence of successive clusters of radical innovations throughout the history of capitalism has been generally accompanied by a period of turbulence on financial markets. During the "installation" period of what Carlota Perez (2009) called an emergent "techno-economic paradigm," the success of innovators induces a shift in agents' behaviors. Such a shift increases their willingness to assume risky and speculative positions, in a way similar to how Minsky's "financial instability hypothesis" describes the endogenous switch from "Hedge" to "Speculative" and "Ponzi" finance. This modification, in turn, triggers a self-feeding inflationary process on financial markets, and a consequent decoupling between real and financial economy, eventually resulting in a major financial collapse.

The analysis of the interdependence of technological evolution and financialization has also been at the core of the literature inspired by the French Regulation School (Aglietta, 1979, 2008; Boyer, 2000) and by the theorists of Cognitive Capitalism (Colletis & Paulré 2008; Corsani et al., 2001; Fumagalli & Vercellone, 2007; Moulier-Boutang, 2007; Vercellone, 2003, 2007). According to these authors, a new accumulation regime and a new kind of valorization process has emerged from the ashes of the Fordist–Taylorist paradigm, which dominated the postwar period. Between the economic crisis of the 1970s and the late 1990s, the productive structure in developed countries has been characterized by the emergence and diffusion of highly flexible forms of production. The organizational revolution that occurred within the productive sphere has been pursued through the introduction of the new information technologies.

In the meanwhile, a new regime of accumulation, apparently devoid of a stable mode of regulation and centered on financial valorization, has been consolidating. The conditions imposed by financial markets in order to increase shareholders' value ranged from fostering downsizing, to reengineering, outsourcing, and promoting Merger & Acquisitions (M&A) activity.

This contribution aims at emphasizing the links which relate technological evolution and financialization. Through this interaction, in fact, it is possible to explain the debt accumulation which eventually led to the crisis of 2007. After a brief discussion about the main features of Contemporary Capitalism (CC)—compared to Fordist capitalism—as they emerge from the contributions elaborated by the French Regulation School and by Cognitive Capitalism theorists (Section 2), we focus on two important issues, partly overlooked by scholars:

1. In order to explain the evolution of the accumulation regime during the last 35 years, we have to consider—beside those aspects related to technology and the production processes—how “conventions” or “collective beliefs” (Orléan, 2008) concerning financial markets have guided and sustained capitalists’ investment choices. Consequently, particular attention is paid to the analysis of the twofold role played by “conventions” (throughout the 1990s and the first decade of the new millennium) in fostering the transformation of production processes and corporate organization models, as well as in promoting the financialization process (Section 2.1).
2. The main feature of the prevailing finance-led growth regime during the first decade of the new millennium is then presented, focusing on the evolution and the logic characterizing M&A and leverage buyouts (LBOs) (Section 3). On the one hand, this aspect is interesting in order to identify the elements of continuity and discontinuity between the crisis of the new economy and the crisis of 2007. On the other hand, the logic and conditions underlying LBO is in many respects paradigmatic, as it helps to show some of the most relevant mechanisms of the finance-led accumulation process established during the years before the 2007 crisis.

In the last part of the paper (Section 3.3), we try to sketch out some guidelines in order to formalize CC as a new kind of monetary economy of production. In particular, we argue for the need to provide a reformulation of the traditional schemes developed in the context of the monetary circuit theory (Graziani, 2003) in order to address the new and more pervasive role played by financial markets.

## 2. THE MAIN FEATURES OF CC

The Fordist–Taylorist paradigm should be seen not only as an organizational form of production processes (the assembly line, the factory system, the use of growing stocks of physical capital, and the automation of production processes), but also as a set of economic and social conventions that guided production in its generality. Indeed, the technological and organizational changes resulting from the adoption of Taylorist production systems would not have been enough, by themselves, to give rise to a long-lasting and stable growth regime. Following the French Regulation School, we should thus consider the “institutional forms” that define and govern the regulatory modality of an accumulation paradigm. The “mode of regulation” is one of the most relevant notions developed by the regulation theory: it represents the connection of institutional forms, social networks, and norms (either explicit or implicit) which assure the reproducibility of a regime of

accumulation. It also accounts for the actual patterns of social relations, as well as for the conflictual or cooperative relations among the most relevant social groups (Jessop, 1990). According to another perspective, the notion of “regime of accumulation” has been defined as “a systematic mode of dividing and reallocating the social product, which achieves over a long period a certain match between the transformation of the conditions of production (volume of capital employed, distribution among the branches, and norms of production) and transformation in the conditions of final consumption (norms of consumption of wage workers and other social classes, collective expenditures, etc.)” (Lipietz, 1986, p. 15).

According to this perspective, we can schematically summarize the main features of the prevailing accumulation regime during the 1950–1970 period as follows: the parallel growth of productivity and wages due to well-established collective bargaining procedures; a productive structure centered on durable goods of mass consumption, that in turn justified a stable and growing path of investment in physical capital, a financial and monetary system in which central banks and governments jointly acted both in defining public policies and in exercising a tight control over commercial bank activity; the negligibility of financial markets, compared to commercial banking, in providing funding to nonfinancial firms; and very significant State intervention aiming at pursuing full employment.

This set of social conventions and public policies gave rise to the postwar golden age, ensuring stable conditions for capital accumulation. Some of the dynamics mobilized to explain the crisis of this system are the following: the saturation of the markets for durable goods; the growing international instability and the crisis of the international monetary system of Bretton Woods; and the emergence of new managerial costs associated with the increasing size and complexity of the companies. To these arguments, we must add two further tendencies which acted together and eventually tightened the rate of profit: the first tendency is the productivity slowdown connected to the depletion of innovative possibilities within the technological paradigm at the basis of Fordism, and the consequent difficulty of pursuing productivity gains in a context of growing demand for products diversification. The second tendency is connected, on the one hand, to the growing workers’ contestation of the Taylorist factory regime and, on the other hand, to the progressive rise of labor costs, both direct (through the strengthening of wage indexation) and indirect (due to the expansion of the welfare state).

The crisis of the Fordist model, however, does not determine the direct transition to a new “mode of regulation.” The 1970s represent a transition phase that marks the passage from a highly intensive accumulation regime, centered on the productivity gains achieved through innovation, to an extensive accumulation

affected by a stagnant productivity dynamics. In this transitional phase, certain tendencies are developed in response to the crisis which marked the definitive end of the institutional forms that characterized the regulation of capitalism during the previous decades. First, there is the decomposition of the Fordist wage relation. In a context of increasing pressure exercised by wages on the rate of profit, it became essential to counter the growth of trade union power. Therefore, in all countries, policies and reforms were promoted to enhance the decentralization of bargaining at the enterprise level, the individualization of labor relations (according to the specific skills and tasks of the workforce), and the abolition of the wage indexation to inflation and productivity gains.

Wage moderation began to spread everywhere while the inequality in income distribution between high-skilled labor (white collars) and low-killed (blue collars) progressively increased, giving rise to what Boyer (2004) defined a “classification” struggle within the wage earners class. *These transformations of the labor relations go hand in hand with a profound change in the enterprise organizational structure*, to a large extent made possible by the early diffusion of ICT. A first tendency is the segmentation of production processes on an increasingly wide geographical scale, and the outsourcing of all those functions not specifically related to the company’s core business (e.g., cleaning, logistics, maintenance, marketing, and quality control).

Another breakthrough affecting the organization of production processes was represented by the diffusion, started in the early 1980s, of “flexible” manufacturing technologies, based on the nascent computer technology and on semiconductors, allowing to solve the tradeoff between automation and differentiation. This process goes together with the spread of new organizational forms of production temporality (e.g., zero stocks, just in time, and continuous flow) aimed at reducing warehouse costs and risks.

The opening of an increasing number of sectors to international competition tended to result in a further exacerbation of wage moderation, especially by eroding the foundations of the self-centered circuit “production-income-demand” (Mouhoud, 2006). The pressure exerted by the growing international competition and the collapse of the national framework of “protected” competition, indeed, prevented the possibility of a recomposition of the wage relation, because wages are no longer considered as a component of effective demand, but only as a cost undermining international competitiveness.

Finally, while in the Fordist–Keynesian period governments and central banks were jointly committed to support expansionary policies, by the mid-1970s the orientation of these policies became highly restrictive in all industrialized countries.

At the same time, the deregulation of financial markets favored the process of financialization of the economy according to three guidelines. The first was to encourage the participation of households in financial markets through the introduction of defined contribution plans and pension funds, as well as through the liberalization of brokerage fees which facilitated the entry of new brokerage firms. The second concerned the financing of companies: in the presence of augmenting interest rates, they began to increasingly resort to the issue of securities on the stock market, rather than to bank credit. The last line of development of the financialization process concerned the public finances: frightened by the risk of inflation, governments were increasingly reluctant to finance their deficits by issuing currency. Indeed, in many countries, it began to spread the idea of the need for a legal separation between Treasury and the Central Bank, in order to prevent politicians to monetize public deficits (Capie, Goodhart, & Schnadt 1994). The need to finance deficits by issuing public debt securities on financial markets had two effects: on the one hand, it led governments to encourage their development; on the other hand, it increased the State dependence on financial dynamics and on investors' appetite. Precisely, the need to satisfy these appetites, in order to induce investors to subscribe the debt securities without having to pay excessive yields, imposed the adoption of austerity measures. The progressive diffusion of these policies in turn prevented the State both to fulfill its function in supporting economic growth and employment, and to act as "guarantor of the social compromise" between capital and labor through the welfare state.

At a first sight, thus, the financialization process can be interpreted as an attempt to provide a new, viable "regulation mode" based on the idea that the revenues generated in the financial markets could replace the institutions that were behind the compromise between capital and labor. Namely, the Fordist wage relation and the welfare state.

However, to fully understand the process of financialization, we must also take into account the technological dynamics that have characterized the last two decades of the twentieth century, and the momentous impact that the emergence of linguistic & computational technologies has exerted on the mechanisms of value creation and extraction. Fumagalli (2007) and Míguez (2011) analyzed in details the role played by the knowledge/power relation in the development of the division of labor within the new ICT-based technological paradigm. In CC, labor has become more and more knowledge-based as workers are required to be able to react facing new or unexpected situations, to interact with complex computerized systems, to find new solutions or develop new ideas, to work in team and to construct and manage affective relationships with stakeholders, and so on. Innovative dynamics, that in industrial capitalism were fundamentally relegated in R&D departments, now increasingly rely on learning economies arising in



productive/executives units, and even beyond the boundaries of the enterprise (Nieto, 2003). This trend has also been recognized by the OECD: in a research paper based on data taken from the OECD ANBERD database, it is shown that “a significant aspect of the restructuring of business R&D has been a conscious attempt on behalf of many firms to open up their R&D systems to integrate them better with external sources of technology. The objective of this approach is to increase the flow of ideas through the company, both to make researchers aware of external developments of interest to the firm and to speed subsequent innovation processes” (OECD, 2001, p. 7).

Indeed, the dynamic of productivity is more and more based on the exploitation of new kinds of “learning economies”: beside the notion of learning by doing *à la* Arrow (related to the direct production activity), other kinds of learning economies appeared, related to consumption, to communication processes inside and outside the enterprise, and to the socio-institutional context.

The priority of firms’ investment strategies has thus switched toward investment in innovation, knowledge accumulation (learning and human capital), and branding.<sup>1</sup>

The decision by firms about where to locate economic activities becomes a fundamental competitive variable, as it is increasingly driven by the search for institutional, cultural, and social conditions which would allow them to better develop their competencies, and to enhance their learning capabilities and their technological base (Mouhoud, 2006).

Firms’ possibility to successfully compete on international markets thus comes to fundamentally depend on their ability to mobilize and control these resources, to appropriate the economic value of a socially spread innovation chain, to enhance their technological base, and to build good relationships with their stakeholders, as well as a “sense of community” among them (Kramer, Jenkins, & Katz, 2007). Intellectual property rights and brand strategies become two powerful tools in order to achieve these objectives as these intangible assets are recognized by the public of investors as a unique, forward-looking indicator of corporate value.

This raises the question of how the economic value of a firm, whose assets are represented by patents and brands, can be assessed. In CC, the task of determining

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<sup>1</sup> As many researchers have shown, even the value of the consumption of physical goods rests more and more on their ability to stimulate desires, to construct a sense of identity and membership, and to broadcast symbolic meanings. So these are typical “signic” goods (see Antinucci, 2002). Similarly, Arvidsson (2007) argued that the logic governing value creation through brand management strategies represents a paradigmatic example of the dominating value-logic in informational capitalism. Such value-logic finds its origin in the ability to appropriate and commodify a socially produced immaterial externality consisting of several forms of knowledge, culture, imaginaries which arise autonomously from society. Arvidsson suggested that this logic can be applied to a range of other socialized production processes, from the “ethically conscious” company to the contemporary “participatory online economy”, or Web 2.0.

this value is more and more assigned to financial markets: patents and brands value is indeed reflected by stocks prices. Fumagalli and Lucarelli (2011b, p. 56) showed how the market value of the S&P 500 companies has progressively deviated from their book value during the last three decades: while in 1975 the share of tangible assets accounted in firms' balance sheet over intangibles constituted more than 80% of the companies' market capitalization, this share has continuously dropped until today, as it now accounts for only the 20%.<sup>2</sup>

The dynamism of the US economy during the 1990s in the areas of ICTs and biotechnologies was complementary to the spread of new types of financial markets specializing in the commodification of intellectual property rights (IPR) which allowed new kinds of ICT firms (typically in deficit but holding a stock of IPRs) following unprecedented business models to be promoted on financial markets, even if they did not match the requirements for being accepted on traditional Stock Exchanges. The Nasdaq itself was born from a combination of technological opportunities, related to digital technologies, and the need for a market to trade shares of companies that did not satisfy the standards of financial strength required to be admitted on the traditional New York Stock Exchange. For the first time, the stock of intangible capital, explicitly separated from traditional fixed tangible capital, became relevant from a financial point of view so that innovative firms, with a low tangible endowment but a great stock of ideas and technological skills, finally found their own explicitly addressed financial market. The complementarity between financial markets and IPRs was thus at the heart of the new economy (Orsi & Coriat, 2003).

The joint development of technological boom and financialization can be synthetically appreciated by comparing the evolution of the following indices: (1) the average rate of depreciation of the US Corporations; (2) the capital commitments to US venture capital; and (3) the increasing relevance of mergers and acquisition.

The first index shows a large diffusion of new ICTs. In fact, Kliman (2011, pp. 140–143) showed that the rise of the rate of depreciation is entirely attributable to the ICT revolution:

the average rate of depreciation, which had been constant in the 1950s, rose rapidly between 1960 and 2000, from about 7 percent to about 11 percent. During the same period, of course, businesses' use of information-processing equipment and software (IPE&S) increased phenomenally, rising from less than 5 percent of their fixed assets to more than 18 percent. Since most IPE&S depreciates far more rapidly than do other fixed assets, this caused the average rate of depreciation to rise.

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<sup>2</sup> Data are from Federal Reserve Board and quoted in Fumagalli and Lucarelli (2011b, p. 57).

The second index accounts for the increasing relevance of a new modality of innovation financing, which generated a shift from intermediate to market financing that redistributed risk taking from banks to institutional investors (Fumagalli & Lucarelli, 2011b, pp. 57–59).

Finally, as discussed in more detail later, the third index highlights the amount of financial debt affecting firms who decided to exercise a control over new technologies implemented by potential competitors, avoiding the long period required to develop such technologies internally and the intrinsic uncertainty affecting R&D investments.

Table A1 in the Appendix shows a clear correlation among the three indices. In particular, they all reach their maximum value in 2000, then drop in 2001.

## 2.1. From convention to convention

A convention is more than a “scenario of reference.” As suggested by Orléan (2008), we must go further and analyze conventions also in their function of providing a set of specific criteria providing a pragmatic basis for the valuation of companies on stock markets. This function was particularly relevant during the “New Economy Convention,” where new forms of valuation appeared:

... faced with the difficulty of accounting for stock market prices solely on the criterion of profits, as most “dot.com” businesses were loss-making, a new basis for making estimates appeared, in the form of “value per user.” So the potential number of subscribers, visitors or customers was adopted as the strategic variable, supposed to enable the level of value creation to be assessed. (Orléan, 2008, p. 325)

The synergy between financial instruments and technological innovations is the factor explaining the rapid expansion of the so-called new economy in the early 1990s. In the second half of the 1990s, the idea of a digitalized society, with liberating effects on the realms of work and life, became a convention (see e.g., Stiglitz, 2004). Whether true or false, there is no doubt that this convention fostered processes of actual transformation of the world.

In the meanwhile, the promotion of reforms such as the law on pension funds in the USA, allowing workers to invest a share of their holding in risky assets, and the repeal of the Glass-Steagall Act in 1999, mobilized an enormous amount of previously idle liquidity, allowing financial markets to promote hundreds of new firms which were in deficit but deemed “high potential” in view of their intangible assets (Orsi & Coriat, 2003). Between 1994 and 1996, young firms collectively increased their net stock issues by nearly 200% and then again by nearly 265% between 1998 and 2000 (see Brown, Fazzari, & Petersen, 2009). In 2000, net stock issues by young firms in the seven high-tech industries were so large that they

accounted for nearly half of net issues in the entire economy. The faith in new technologies and the emergence of the *Internet convention* (Orléan, 2004, 2008) increased the availability of external equity finance, thus promoting asset inflation. On the other hand, the increasing value of stocks lowered the cost of equity finance, thus encouraging firms to issue more stocks. The ICT-related securities went from 8% of the total in 1987 to 16% in 2000, corresponding to 35% of total market capitalization and 60% of the turnover. This shows that the intensification of trade in financial markets was significantly biased toward ICT-related stocks, with investors engaged in the purchase and resale of many of the same technology stocks. The high turnover values, together with the observed decoupling between actual earnings and stock prices, reveal a change in investors' preference as they were increasingly willing to trade in securities that, although not actually yielding any dividend, allowed them to realize huge capital gains. At the paroxysm of the boom, it was possible for a promising dot.com to raise a significant amount of money through an initial public offering (IPO) of its stock, even though it never was profitable—or, in some cases, it never earned any revenue whatsoever. The number of IPOs in ICT had continuously increased since the second half of the 1970s: in the 1976–1980 period there were less than 100 ICT-related IPOs; between 1991 and 1995 they were risen to nearly 1,000; and between 1995 and 2000 their number literally exploded getting close to 2,000 (corresponding to a share between 40% and 60% of the total).

*The valuation of financial markets began to depend on the organizational change, geared toward favoring innovative and relatively autonomous forms of cooperation between workers. The dynamism of the organizational change became by itself a new modality of valorization of productive capital on the stock market.* However, the dark side of the stock markets euphoria of the New Economy during the late 1990s was represented by the dramatic fall of wages and increased employment instability, in line with the new financial norm that, in order to inflate stocks value, encouraged extreme organizational innovations, such as downsizing, reengineering, outsourcing, and M&A processes. The logic underlying M&A deals, carried out mainly through leveraged buyouts, was twofold: on the one hand, they represented a powerful tool for a company to take the control over technologies, skills, and know-how of other potential competitors, avoiding the long period required to develop them internally and the intrinsic uncertainty affecting R&D investments. On the other hand, they strengthened the firm market power, also through the direct acquisition of potentially bothersome competitors. These aspects played a crucial role, for example, during the 1990s wave of M&A in the computer and software industry. On the other hand, M&A were undertaken in order to realize capital gains on the stock market. First, M&A largely benefit the shareholders of the acquired firm: indeed the buyers usually pay a premium on the prevailing market

price at the date of the deal, usually between 20% and 30% (see e.g., Andrade, Mitchel, & Stafford, 2001). Secondly, the final goal of the going-private transaction is usually to come back to the marketplace, after a certain period in which the buyer realizes what is known as the “repackaging” of the acquired firm; that is, after having achieved a radical reconfiguring of the firm’s organizational structure. For these investments to be remunerative, the stocks price of the second issue has to be significantly higher than the purchasing price paid at the date of the acquisition announcement. This of course requires that financial markets remain liquid and do not incur in a generalized shortage of demand for securities. But since these processes of corporate restructuring and the austerity standards imposed by financial markets to the welfare state resulted in a further exacerbation of wage moderation, this dynamic contains in itself the seeds of the crisis.

The March 2000 crisis marked the shift to a new phase of the financialization process. The crisis resulted in losses of 40% in the Dow Jones, 50% in *Standard & Poor’s*, and 80% in the NASDAQ. As Perez (2009) pointed out, in the 5 years after the dot.com burst, the number of IPOs in ICTs shrank to a level even inferior to that of 1980s. Interestingly, the number of financial sector IPOs, which reached a peak in the period 1991–1996 (with more than 900 IPOs), remained stable even after the collapse of the NASDAQ. In 2003, financial firms accounted for 60% of total IPOs in the US stock market.<sup>3</sup> This suggested that the process of financialization continued without being extensively affected by the burst of the Internet bubble. The losses were mainly confined to NASDAQ, while the other markets took only a little time to recover.

According to Marazzi (2010), the market recovery begun in 2003 and marked the transition to a “China convention.” In such a convention, the valorization process rested on the outsourcing of business functions toward developing countries, characterized by high exploitation rates of labor and environment, without any shift in the dominant technological paradigm. The increasing Chinese exports, characterized by low prices, especially toward Western countries, have favored the stabilization of inflation rates and the decrease of real interest rates. The enormous amount of liquidity coming from Asian countries—who have been reinvesting their export surplus in advanced economies—contributed in a substantial way to the easing of credit access. Chinese surplus in turn started to finance the USA internal and external deficit. Stock markets have been able to recover after the Internet convention crisis and to provide liquidity to speculative activity, also thanks to the increasing indebtedness of American and Western families, which was necessary to maintain the living standards of the previous decade (see Cynamon & Fazzari, 2008).

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<sup>3</sup> Data are from Thomson One Banker and Thomson Datastream and quoted in Perez (2009).

Since 2001, under the guidance of Greenspan, the FED literally flooded the markets with liquidity, by lowering real discount rates to even negative levels (Asensio, 2011). The activism of the State in pushing its intervention on the economic system via an aggressive expansionary monetary policy was actually unprecedented. As noted by Stiglitz (2007), such a strategy worked, but in a way fundamentally different from the normal functioning of monetary policy, because the greater indebtedness induced by low interest rates was not matched by more productive assets, due to the over-investment experienced during the 1990s. This “easy liquidity” pushed economic agents to go into unreasonable debt. On the one hand, this was motivated by the hope of taking advantage of the discrepancy between the low interest rate and the relatively high financial returns. On the other hand, the incredible low levels of nominal interest rates fed the real estate bubble, already begun during the new economy boom. In turn, the increasing value of houses, used as collateral to obtain further credit, allowed American households to finance their consumption (compensating for the continuous decrease of real wages) by going into huge deficits. The final result of these policies was a massive transfer of corporate risk onto households in order to save company profitability (Aglietta & Rebérioux, 2005). Indeed, the financial boom has a twofold result: on the one hand, the positive dynamics of shareholder values favored the increase in aggregate consumption; on the other hand, due to the unequal allocation of financial instruments, it led to a distorted income distribution that may affect the system’s reproduction conditions (Aglietta, 2006). In this way, the incumbent financial crisis was frozen, postponed, and dramatically enhanced.

### 3. A FINANCE-LED GROWTH REGIME

The new digital technologies did not only “ask” for new ways of financing. In a sense, they also “allowed” the experimentation of unprecedented financial practices. The digitalization of financial markets and the improvement in computational capability of computers permitted to manage very complex transactions and contracts. The flourishing of derivatives and other complex financial instruments would not have been possible without the aid of new information technologies. At the same time, the possibility of moving almost instantaneously enormous amount of capital across countries, granted by the digitalization of financial transactions, was indeed a necessary (although not sufficient) condition for the creation of a truly global financial market.

But the ICT contribution to the financialization process was not limited to having provided a new technological infrastructure for the capital market. Indeed,

the rapid diffusion of more and more sophisticated instruments was accompanied by a huge evolution in portfolio management techniques, relying more and more on the development of a new software for evaluating the riskiness of financial investments. Modern Portfolio Theories, derived from Capital Asset Pricing Model (for which Sharpe, Miller and Markowitz were awarded with the Nobel prize in 1990), and Black–Scholes–Merton Model (awarded with the Nobel prize in 1997 too), by exploiting the ever-growing computational capabilities of information technologies, became the fundamental tool for institutional investors. These theories pretended to eliminate portfolio-specific (“nonsystematic”) risk through sophisticated hedging techniques based on asset diversification. The idea that financial markets had become definitely stable, thanks to a successful combination of theory and information technology, began to spread both among financial operators and the authorities in charge of activity regulation. An army of engineers, physicists, and mathematicians was drafted by the big investment banks to develop complex algorithms for risk management and for creating new derivative instruments that were supposed to bring real-world financial markets increasingly closer to the idea of “complete markets.” Financial engineering during the late 1990s and the first decade of the 2000s led to the greatest surge of financial innovations in the history of capitalism.

It is worth stressing that the power of financial capital depends on its ability to impose a general criterion to evaluate securities and to feed financial returns. Markets thus move through successive waves of conventions. From Internet convention to China and real estate conventions, maybe the most relevant example of mental models originated in the last two decades. Each one has produced a movement of the public opinion that has inflated the capitalization of financial markets by diverting investment toward the related financial securities, such as the stocks of dot.com new-born firms, or the derivative instruments collecting mortgages, and has promoted and rewarded organizational changes (such as the delocalization/outsourcing of productive facilities/functions toward emerging countries). Notice that conventions do not require to be matched and justified by the evolution of real economy. Conventions are market trends originated within the community of investors according to a logic of self-referential rationality that gives rise to a self-fulfilling prophecy.

In a sense, the technological revolution brought about by ICTs has actually produced not one, but two conventions on financial markets: the first one—embodied by the myth of the Internet economy—was responsible for the dot.com bubble and has found its end in the NASDAQ collapse of 2001. The second was based on the presumed ability of financial markets to generate prosperity in a continuous and autonomous way, thanks to the successful combination of modern techniques of financial analysis and information technologies. The latter



overlapped with the former, it was not affected, but rather strengthened after 2001 and was validated by the behavior of government and monetary institutions.

While the Internet convention was directly related to the diffusion of a cluster of radical innovations, the new millennium convention was centered on the presumption that it was possible to achieve a stable path of economic growth through a sort of financial multiplier (Krugman, 2008; Fumagalli & Lucarelli, 2011a), in which changes in the asset prices are transmitted to the real economy through their effects on the balance sheets of highly leveraged financial institutions. This mechanism was based on the exploitation of the wealth effects generated by capital asset inflation realized through leverage strategies. In turn, the adoption of these strategies by the banking sector and institutional investors was considered relatively safe thanks to the enhanced computational ability by banks and to the diffusion of sophisticated financial instruments capable of distribute, diversifying, and reducing systematic risks.

The use of leverage involved first American households, in order to sustain consumption and investment in real estate. Secondly, it concerned private equity funds that were responsible for the explosion of M&A deals realized through LBOs. While the first aspect has been largely studied in the aftermath of the 2007 financial crisis, the latter has been largely neglected. However, we believe that the analysis of the dynamics of M&As and LBOs during the last decades not only helps to highlight elements of continuity as well as discontinuity between the crisis of the new economy and the crisis of 2007, but also provides some interesting insights about the paradigmatic aspects of the finance-led regulation model that has dominated the beginning of the new millennium.

During the 1990s, financial operators began to use the term “leveraged loan” as a means to distinguish relatively safe corporate loans from high-yield, riskier loans, in a period where the vast majority of loans were unrated and held by banks in their balance sheet.

The issue of a leveraged loan, similarly to that of high-yield bonds, implies an “arranger bank” to work with the issuer to design the debt issue, including total amount, division into tranches, and nonprice terms of each tranche. The arranger is then responsible for finding investors: this sale process is called “syndication.”

At the turn of the century, leveraged finance market has experienced a tremendous growth, pulled by LBOs deals, dominated by private equity transactions, thus acquiring a growing weight in the global financial system. The rise of leveraged loans, however, dates back to the 1980s. Before that decade, LBOs were a very rare case. The worldwide number and value of LBO started to increase dramatically since the early 1980s and peaked by the end of the decade with about 600 LBOs approximately accounting for a value of \$200 billion. As shown by Gaughan (2007), the average LBO transaction increased from \$39.42



million in 1981 to \$137.45 million in 1987. However, leverage buyouts still accounted only for 7% of the total number of M&A (21.3% of the total value).

After the fall in the early 1990s, the worldwide LBOs value started to rise again reaching a new relative peak in 2000 while the increase in the number of LBO was even more marked, reaching in the same year an absolute peak. Nevertheless, it must be stressed that while in this new peak the number of deals was approximately double compared to that of 1988, the total value was only half. The wave of mergers that occurred in the second half of the 1990s was indeed characterized by a large number of relatively small LBOs, while mega-LBOs were a relatively rare case. The main reason for this lies in the fact that the M&A activities during the 1990s were mainly focused on young companies, generally small, operating in the emerging technological sectors. Despite an upward trend in leverage buyouts, in particular in the euphoric phase of financial markets, the majority of the M&A deals were funded through venture capital or by using internal resources, and the main strategic goal was the acquisition of the technological skills and know-how embedded in these firms.

The number and value of LBOs then shrank during the 2001–2002 recession. However, by 2004, both M&A and LBO volume started to rise tremendously. The 2004–2007 triennium was the most robust LBO period in history, and 2007 marked a new absolute peak in worldwide LBOs volumes. This rise was simply astonishing in terms of their overall value: in the new 2007 peak this was approximately four times the value of worldwide LBOs in the 1988 absolute peak and just eight times that of the 2000 relative peak.

In the frenzied triennium before the financial crisis, while LBO transactions value rose sharply both in Europe and in the USA, the growth in the USA was shocking, as their value increased from approximately \$80 billion in 2004 to nearly \$400 billion in 2006, and again in 2007 (Gaughan, 2007).

The reason for this LBO boom can be found in the combination of an apparently very robust economy, with low corporate rate default rates (supported by the favorable global macroeconomic backdrop), a rising stock market (stimulating investors risk appetite), and a housing-market bubble, along with strong corporate cash flows, low interest rates, and borrower-friendly terms of loan, which made the cost of debt financing for debt-laden LBOs unusually inexpensive. Equity and debt capital was very readily available. Beside this “context elements,” the major changes that occurred in the credit market structure, in particular regarding high-yield and leveraged loans, played a central role in the diffusion of leveraged finance. A first change refers to investors’ profile: institutional investors have progressively replaced banks as the main investors. This shift was favored by the emergence of collateralized debt obligations/ collateralized loan obligations (CLOs), the growing ratings coverage of loans

(attracting institutional investors), the increased secondary market trading of leveraged loans, and finally by the shift in banks business model from “buy and hold” to “originate to distribute” (OTD). This latter model was basically based on the idea that it was possible to disperse the risk associated to big loans by segmenting and distributing them across the public. Banks were thus allowed to pool and securitize their loans, selling them to many investors, thus deleting the loans from their balance sheets and transferring the risk to buyers. This possibility has definitively resulted in a lessening of the screening, selection, and monitoring criteria applied by banks to borrowers.

It is worth noting that the 2003–2007 M&A boom was substantially fueled by private equity firms (see Kaplan & Strömberg, 2008). The private equity market, which was relatively unknown during the 1980s, has continuously gained importance in global financial markets during the last two decades, in particular in the leveraged finance market. In 2006, there were approximately 2,700 private equity funds, accounting for 25% of global M&A activity, 50% of leveraged loan volume, and 33% of high-yield bond market. The growing importance of private equity funds, compared to banks, finds its roots in the waves of financial innovations occurred at the turn of the century. Until that time, the market for leveraged loans was relatively small and dominated by banks: as loans were privately placed, the barriers to entry for nonbank and retail investors, mainly in the form of information gathering and screening technology, were high. The development of securitization products, particularly CLOs, and the emergence of the OTD business model, as they significantly eroded these barriers, have increased the influence of nonbank investors.

The task of private equity firms is fundamentally to collect funds from various large investors to invest them in equity positions in companies. When they purchase the totality of the outstanding equity of a public company, these investments are known as “going-private” transactions. The acquisition can be realized through the use of the investment capital owned by the private equity fund or, more frequently, through a leverage buyout strategy, allowing to amplify positive returns from the deal. The newly acquired target’s operating cash flow can then be used to pay interests and eventually to de-leverage, that is to pay off a share of the leveraged loan principal.

In the majority of LBO-backed M&As, the final goal of the buyer is to “repackage” the company and then offer it back to the market in an IPO. For his/her operation to be successful, the company must appreciate in value; that is, its market capitalization after the second IPO should be higher than that at the going-private date. A portion of the company’s appreciation can be used to further pay-off the balance of the leveraged loan, while the rest is returned to investors as capital gains on their investment.

The previous arguments clearly show how the growth of financial markets was the *conditio sine qua non* for keeping the balance sheet of banks and institutional investors in balance. This mechanism fairly worked during the capital asset inflation period between 2003 and 2007, but then collapsed along with the housing bubble and the first effects of the subprime mortgage crisis. The credit crunch that followed the crisis gave rise to a vicious circle as it undermined the dynamics of stocks prices. This not only affected those firms which had undertaken M&As, but also the arranger banks as the inevitable contraction in demand for leveraged loans revealed their substantial exposure to warehouse risk. “Warehouse risk” refers to the risk of a worsening in the market condition between the commitment and the distribution date, making it difficult to repackage and distribute a block of debt at previously expected prices.<sup>4</sup> The arranger bank must thus bear the losses associated with a reduction in the price of the debt in order to distribute it, or otherwise it can decide to hold the debt on its balance sheet (resulting in an involuntary expansion of the bank’s balance sheet). In June 2007, the realization of the warehouse risk resulted in a loss of \$400 billion by major banks, mainly related to debt arranged for funding LBOs that were scheduled to close during the second half of the year. In addition, the sudden drop in demand for loans from CLO vehicles, which was responsible for approximately half of leveraged loans demand, accentuated banks’ difficulties in selling “warehoused” assets. At end of that year, private-sector estimates put undistributed leveraged loans and high-yield bonds on banks’ balance sheets at \$230 billion.<sup>5</sup>

In turn, the worsening of banks’ balance sheet fed the vicious circle by exacerbating the already under way credit squeeze: a combination of weak economic performance and the tightening of financing conditions has increased refinancing risks, in particular for highly leveraged firms. US corporate default rates, that had been stable for several years after the 2000 crisis, literally exploded in the period 2008–2009, with 285 defaults recorded. Despite the overall number of defaults was lower compared to the 2001–2002 period, it is worth noting that the amount of outstanding debt defaulting was considerably higher (approximately \$850 billion against \$280 billion), thus testifying the high leveraged profile of defaulting companies.<sup>6</sup>

The case of LBOs and M&As dynamics during the first decade of the twenty-first century is paradigmatic.

First, it highlights the role played by financial innovations (such as CLOs) and new business models undertaken by financial institutions (e.g., from buy-and-hold to

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4 In the case of leveraged loans, warehouse risk is primarily rooted in firm-commitment underwritings.

5 Data are taken from the Committee on the Global Financial System (2008).

6 Also in this case, data are taken from the Committee on the Global Financial System (2008).

originate-and-distribute)—which in the new financial convention pretended to have definitively stabilized financial markets, thanks to the improved computational and monitoring capabilities achieved through ICTs—in spreading and feeding the systemic risk.

On the other hand, it shows the key mechanisms underlying the functioning of the finance-led regime which dominated the last decade, in which the high, or rather terrific, recourse to leverage was no longer justified by real investment strategies, but was definitively addressed to sustain shareholders value and financial returns. This growth regime asked to flood financial market with constantly increasing liquidity and was inherently based on a redistribution of wealth from low-income to high-income equity holders. This in turn could work only inasmuch as corporate revenues were sustained through the rising indebtedness of households, backed by the ever-rising value of real estates due to the housing bubble.

In order to better understand this fundamental logic, it could be useful to formalize it in the monetary circuit theory perspective, which aims at identifying and coherently describe the reproduction conditions of the economic system, concerning both its real and monetary dimensions.

### 3.1. The classic schemes of the monetary circuit

The monetary circuit conceives of the capitalist economy as a monetary economy of production. This immediately raises the problem of explaining how money is created and introduced into the system. In modern economies, money is created by the banking sector which grants credit to firms in order to set up the production process and to finance investment. Hence, the function of selecting firms' investment projects played by the banking sector and its decision about the overall amount of credit to grant in each period are crucial to determine the final equilibrium of the system. As a consequence, the amount of money—in particular of credit money—not only concurs to determine the level of output produced in each period, but also affects the distribution of income because economic agents have different access to credit money, according to the social class they belong to. Definitely, money is never neutral.

In the traditional version of the monetary circuit scheme (Graziani, 1984),<sup>7</sup> three classes (bankers, capitalists, and workers) and two productive sectors (of consumption and investment goods) are considered.

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<sup>7</sup> Outside Italy, the circuit theory has attracted particular interest especially in France, where it was developed by three main groups of scholars: the so-called Dijon school, headed by Bernard Schmitt (Rossi, 2006); the group headed by Alain Parguez, strictly connected to French-Canadian authors; and the group of Bordeaux, mostly active during the 1980s, geared around the figure of François Poulon.

In each period, the circuit opens with the injection by the banking sector, under the form of credit, of the means of payments used by capitalists to buy the means of production and anticipate wages. Credit money is endogenous as it enters the economic process as a consequence of entrepreneurial demand. When the demand for credit coming from firms increases, banks accommodate it by creating new means of payment. However, the dependence of money supply from demand for credit is not passive as it depends on the monetary policy and the section and rationing criteria in force in the banking sector.

The second logical phase of the monetary circuit is represented by the production process that firms undertake after having used the anticipated money to hire labor and buy productive factors. This highlights two important features of the monetary circuit approach: (i) the adoption of the classical concept of capital as a “monetary advance,” allowing the production process to start, which in turn gives rise to the well-known result that loans make deposits; and (ii) the inequality among economic agents, stemming from the functional distinction between those who are allowed to access credit and those who are not. This discrimination reflects the functional class stratification of capitalist society and establishes the monopoly of managers and entrepreneurs on the key decisions regarding the management of firms, and the subordinated role of wage earners.

The monetary circuit then closes with the sale of products on the market and the repayment of loans to the banking sector. For the monetary circuit to restart, at this final stage, firms must be able to pay off not only the loans granted by banks, but also the interests accrued over the period.<sup>8</sup> Although this can happen by chance, there are no automatic endogenous mechanisms ensuring that all the necessary conditions are met.

Besides selling their goods, firms can try to recover liquidity also by issuing equities (e.g., stocks and bonds). Notice, however, that the costs related to the issuing of securities does not necessarily represent a true expenditure for the firms sector taken as a whole. Indeed, the liquidity paid in the form of interests or dividends constitutes an income for the holders of securities, and thus—at least partially—it comes back to firms as purchases of consumer goods or subscriptions of new securities issued by enterprises. In the extreme case in which this income effect does not induce any increase in the demand for liquid balance (i.e., bank deposits), firms would then be allowed to pay any desired level of interests on the

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<sup>8</sup> Here, we do not want to enter in the “paradox of monetary profits” problem. However, for the sake of completeness, it is appropriate to briefly summarize this issue: even assuming that wage earners spend all their income, the maximum amount of money that firms, taken as a whole, can earn at the end of each period is necessary equal to the initial amount of credit granted by the banking sector. This raises the problem of the monetary realization of interests and profits. This theoretical drawback has been originally identified by Augusto Graziani in the early 1980s. For a more detailed discussion, see Realfonzo (2006) and Fumagalli and Lucarelli (2008).

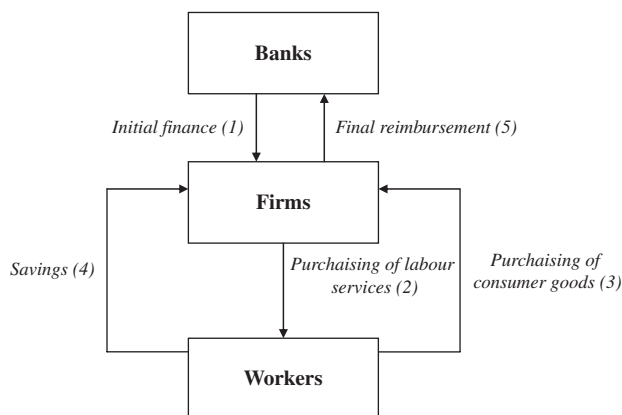


Figure 1: The monetary circuit: a closed economy with no state sector

securities they issue. Therefore, this seems to suggest that the fundamental constraint to firms' activity is related to the monetary conditions established by the banking sector.

It is possible to shed light on the sequential structure of the monetary circuit approach by referring to the following scheme (Figure 1). In this context, we consider a closed economy with no state sector and in which the corporate sector is assumed without distinguishing between consumption and investment goods<sup>9</sup>:

1. Banks lend money to firms (initial finance).
2. Firms pay wages to their employees (purchasing of labor services) and produce those goods which workers will consume.
3. Workers purchase the goods produced by firms.
4. Firms issue equities to attract workers' savings.
5. Firms can pay back their debt to the banks.

If we add to the scheme the state sector (not considering taxes for the sake of explanatory simplicity), we have a situation in which the system can benefit from an additional quantity of money through the monetization of public debt. This helps in overcoming some difficulties which can emerge within the circuit (e.g., those due to a decrease in the demand of goods and/or to a hoarding of savings). In fact, in Figure 2, public debt serves as a financial cover for public works, so that workers' monetary resources increase. As a consequence, both the consumption of goods and the savings utilized to purchase equities can increase. This is a typical situation in the Fordist–Taylorist paradigm, which can be

<sup>9</sup> Figure 1 represents a slight revision of the scheme originally proposed by Realforzo (2006, p. 107).

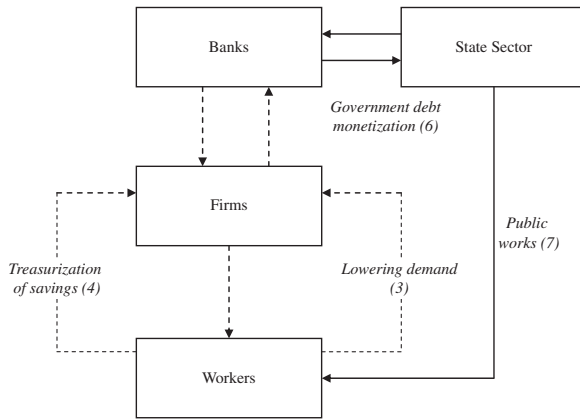


Figure 2: The monetary circuit: a closed economy where state sector intervenes to facilitate the closure of the monetary circuit. The broken lines indicate that the exchanges between social groups are less intense

sequentially rendered as follows:

1. Banks lend money to firms (initial finance).
2. Firms pay wages to their employees (purchasing of labor services) and produce those goods which workers will consume.
3. Workers only partially buy the goods produced by firms.
4. Firms issue equities to attract workers' savings, but such attraction is not sufficient.
5. Firms cannot entirely pay back their debt to the banks.
6. The state issue Treasury bonds which are purchased by the Central Bank (for the sake of simplicity, our scheme considers the Central Bank as internal to the banking system).
7. The state pays wages to workers employed in public works.
8. The workers purchase the previously unsold goods produced by firms.
9. Workers' savings are utilized to purchase equities issued by firms.
10. Firms can eventually pay back their debt to the banks.

### 3.2. Financial market in the traditional circuit scheme

Financial markets—in the traditional circuit framework—are relevant only in the closure of the monetary circuit, allowing to recover the liquidity not collected through the sale of goods. Hence, financial markets could simply not operate if

money were not previously injected through the credit market by the banking sector, the only one which is able to “create money ex-nihilo.”

In the circuitist perspective, the financialization process and the increasing weight of finance cannot be explained as a mere consequence of a pretended fall in entrepreneurship spirit, or a shift in agents’ preferences and risk aversion.

To the contrary, according to the circuitists, the tendency to privilege financial placements over productive investments must be explained by making reference to the evolution of the balance sheets structure of firms and banks. Indeed, for finance to increase its weight as compared to production, two additional “structural” conditions are needed:

- (a) A first condition is the presence of firms having earned profits not only in kind (which would only be a case of self-financed investment) but in the form of money. [ . . . ] A considerable increase in financial activity to the detriment of real production can only take place in the presence of disequilibria in the balance sheets of single agents: for instance when whole groups of firms suffer conspicuous losses while other groups earns corresponding profits; or in the presence of a considerable government deficit. [ . . . ] A typical case of such disequilibria is the case of government deficit creating corresponding profits in the private sector.
- (b) A second condition is also necessary, namely that agents in debt towards the banks be prepared to obtain loans from agents endowed with liquid holdings, thus replacing bank debt by debt towards other agents. This can easily happen when the government tries to finance its own deficit by issuing new securities. The same can happen whenever a credit squeeze occurs and firms having financial problems, and unable to get the required amount of credit from a bank, try to take advantage of liquidity holdings existing in the non-banking sector. It is after all a well known consequence of a credit squeeze that a reduction in the money stock, or in its rate of growth, gives rise to an increase in the velocity of circulation. (Graziani, 2003, pp. 157–158)

The increasing weight of the financial sector was thus explained as a byproduct of a high government deficit coupled with a credit squeeze.

### 3.3. Sketching out new schemes for a financial economy of production

The arguments proposed in the previous section, and in particular the analysis of the paradigmatic mechanisms underlying the M&A activity financed through leveraged loans, seem to suggest the necessity of revising the traditional schemes



of the monetary circuit in the light of the more pervasive role played by financial markets, in particular in the opening and closure phases of the circuit.

A first set of general considerations regards the injection channels of money that we find at the opening of the finance-led monetary circuit. Since the 1990s, in particular since the emergence of the “Internet convention,” financial markets has started to play a key role in creating virtual money, by now completely dematerialized—digitalized and subjected to the evolution of conventional and trust mechanisms on financial markets. In the new context, the monetary policy appeared to be more and more dependent on the dynamics of financial markets, and it was mainly addressed to support the creation of positive capital gains, recognized as a new engine of economic growth.<sup>10</sup> At the same time, the institutional channels for money creation seem to have become less important than in the past as an active policy tool, while also the public injection of money through deficit spending policies has been strongly reduced. Public-sector deficits seem to have played a subordinate role in accommodating the dynamics on stock exchange prices.

Let us assume, for the sake of simplicity, we are in a closed economy. In the opening phase of the monetary circuit, we now have a new channel of money creation, beside the credit channel: the financial market. Indeed, as suggested by Marazzi (2008), shares can be conceived as an embryonic partial form of currency, even if they are not accepted as a universal instrument of exchange, that is they still cannot be used to purchase consumer goods.<sup>11</sup>

A second aspect regards the increasing relevance of M&As carried out in the form of LBOs. This type of activity reflects a radical change in the determinants of the demand for bank credit by nonfinancial corporations, no longer justified by the need for financing of production and real investment, but rather geared toward supporting the values for shareholders. In the USA, since long time, productive and technological investments of the enterprises listed on the stock exchange (capital expenditure) have been financed by 98% with internal resources, such as undistributed profits, whereas bank loans are asked to realize M&As and stocks buybacks (and in some cases even to pay dividends and interests).

10 If we look at the FED balance sheet, we can observe that the direct creation of money reached the minimum level in the 2007 just before the crisis: total assets were about \$880 billion (6.2% of total USA Gross National Product), of which about 90% were Treasury Securities and only 10% was ascribable to the creation of private credit money. This fact seems to confirm the progressive shrinking of FED role in creating money. At the end of 2008, the FED total assets reached the level of \$2,109 billion (14.8% of USA GNP), 48% represented by credit money creation (\$1,001 billion).

11 Already in 1999, Orlèan had pointed out that the question of whether this form would achieve maturity was fundamental as this would have constituted a radical change in the principle of sovereignty. Indeed, under a qualitative analysis profile, the relative movement of the monetary creation space from the sphere of the central bank to the sphere of financial markets involves a change in the very nature of sovereignty. When bank liquidity creation is prominent, the sovereignty of the nation State is affirmed. When, instead, financial liquidity creation is the priority, it is the sovereignty of the current financial convention which is affirmed.

Nonfinancial firms thus go into debt with the banking sector in order to realize LBOs. The purpose of such operation is to take possession of the technologies and know-how of the acquired firms, which would otherwise be difficult to achieve in the short term. The buyer is interested in these resources not only *per se*, but inasmuch as they entail an increase in the stock value of the enterprise itself, as stocks prices reflect the conventional value of firms' intangibles, as we pointed out in the section dedicated to the new economy. In a context of effervescence of financial markets, as the one experienced during the Internet convention or the 2003–2007 period, the sharp increase in stocks' value, while reducing the leverage ratio (computed as the debt-to-equity ratio) of the acquired firms, allows to pay off (after capital gains are realized in the second IPO) the debts previously contracted from the banking system. The realization of capital gains is the condition for creating such a virtuous circle, thus requiring a continuous inflow of liquidity to financial markets.

A second group of considerations regards the closure of the circuit. Consumption and the demand regime are directly affected by financialization. In order to avoid a demand crisis in the long-lasting context of wage deflation, two interdependent conditions are required: the first condition is represented by households' easy access to credit, and the second condition is to compensate income losses with the wealth effect stimulated by capital gains. These two aspects are interrelated as the credit money injected by granting loans to over-indebted households ultimately results in more liquidity supplied on financial markets, feeding stocks prices. On the other hand, the extension of capitalists' and high-income workers' consumption financed through inflating assets allows the rise of a sort of financial multiplier of real economy, acting as a perverse and highly unstable reformulation of the deficit spending multiplier characterizing the Fordist and Keynesian period.<sup>12</sup> Indeed, as the distribution of financial assets among the population is significantly distortive and uneven, and given that the operation of this financial multiplier ultimately rests on an increasing polarization of income and wealth in order to sustain financial assets value, the reproduction conditions of the circuit are necessarily unstable in the medium term. Necessarily, the final result is an ever-growing debt by households, which dramatically increases their risk of insolvency.

It is possible to shed light on the sequential structure of the new monetary circuit approach by referring to the following scheme (Figure 3).

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12 Over the 1992–2001 period, the USA experienced the most extensive and longest growth ever seen in the history of capitalism (110 months)—3 months longer than the growth registered in Kennedy's time. The average annual growth rate has been between 3.5% and 4%, virtually twofold higher than the European growth. On the threshold of the year 2000, 60% of American families had invested their savings in the stock exchange through shares directly owned or purchased through pension funds and common investment funds. In 1989, the percentage was not higher than 30%.

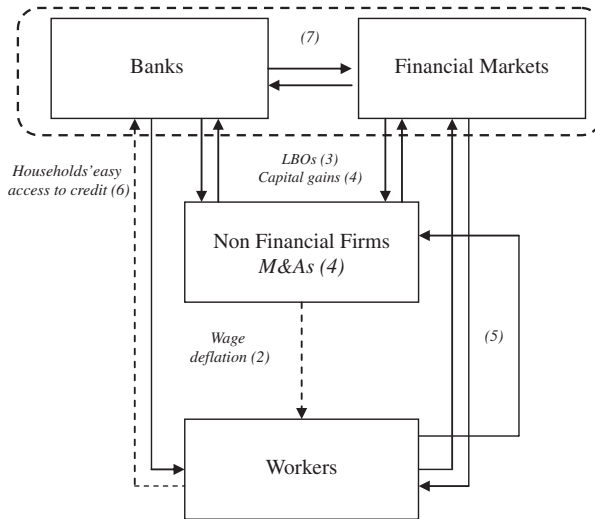


Figure 3: The new monetary circuit. The broken lines indicate that the exchanges between social groups are less intense

1. Banks lend money to firms (initial finance).
2. During the “Internet convention” firms use also private equity funds (especially venture capital funds) to increase the flow of investment. Those monetary flows utilized to pay workers’ wages (purchasing of labor services)—and to produce goods these workers will consume—become less decisive.
3. A part of nonfinancial firms go into debt with the banking sector in order to realize LBOs. Such operations presuppose a relationship between nonfinancial firms and financial markets (see Passarella, 2010; Seccareccia, 2012).
4. Capital gains pay off the debts previously accrued from the banking system, and possibly amass profits to be returned or to be used as self-funding. Capital gains facilitate a new access to bank loans by developing strategies for the financing of investment in innovative activities or for M&As.
5. Wage earners allocate their income for either consumption or saving.
6. To avoid a crisis of effective demand, wage deregulation is compensated for by the wealth effect reflected in the overall financial returns. If the wealth effects generated by capital gains fail to be spread, the increased access to credit is used to sustain consumption. The final result may be an increase in the risk of debt insolvency.
7. Banks enter the financial markets by placing derivatives and other financial instruments.

#### 4. PRELIMINARY CONCLUSIONS

We showed how the transformation of production processes related to the ICT revolution, the growing importance of intangibles, and the emergence of a Knowledge Based Economy, has fostered the evolution of financial markets while providing them with a new role in the valorization process. Indeed, stock markets represents one of the fundamental places where the inherent economic value of “strategic” intangibles—such as patents, know-how, technological capabilities, and relational skills—is fixed. This value, being assigned by the community of investors operating on financial markets, is inherently conventional.

Conventions constitute a key interpretative category to analyze the evolution of financial markets in relation to changes occurred in the economic and social context. By imposing themselves over the heterogeneity and fragmentation of individual beliefs, conventions become the dominant opinion and their criteria are accepted as the reference norm in all economic fields. Regardless of the fact that the set of beliefs and the world-views on which the convention is based are right or wrong, there is no question that this exerts a fundamental impact on reality, affecting consumption and investment (both real and financial) behaviors, and orienting institutional interventions. The paper in particular focused on the relationship between the emergence of an ICT-based technological paradigm and the conventions arising during the 1990s and during the first decade of the new millennium. While in the former the link between the new technologies and the faith in the birth of a “new economy” was explicit, in the latter this link remained hidden. Instead, the paper showed that the widespread confidence in the stability of financial markets and in their ability to ensure a sustainable growth regime was intimately related to the diffusion of new management techniques and new financial instruments, which were made possible by the exponential growth of computing potential and of information/data management ability characterizing ICTs.

Subsequently, we have highlighted from a different perspective two major reversals that characterized the advanced capitalist economies under the pressure of the financialization process. The first is the growing role played by financial markets compared to banks, as providers of funds to finance real investment activity. The second concerns the subordination of the State to financial markets, to which is delegated the ultimate judgment on public policies. This subordination is at least twofold, as it regards both the progressive contraction of the welfare state—mirrored by the rise and diffusion of private social security forms, such as pension funds—and the contraction of the State space of intervention through the fiscal and monetary policy, whose final aim becomes that of ensuring the optimal condition for the expansion of financial markets. While Central Banks’ control over the supply of money has progressively become negligible, an increase in the liquidity

of financial assets (depending on the volume of trading and the amount of monetary resources drawn by financial markets) allows them to act as quasi-money.

For financial markets to be able to support phases of expansion and real growth, the financial base must constantly increase. In other words, it is necessary that the share of global wealth redirected toward financial markets continually grows. The paper showed how this possibility definitively requires the aggregate level of indebtedness to grow indefinitely. Therefore, the “excess of speculation” argument called to explain the crisis as the consequence of some managers’, bankers’, and investors’ greed is simply a nonsense, which deviated the attention from the true structural causes of this crisis.

The paper, besides considering the role of households’ debt in the generation of the crisis, also provided a detailed discussion of another kind of debt, affecting firms who decided to realize mergers and acquisition in the form of leverage buyouts. This analysis is particular interesting since M&As represent, on the one hand, a powerful strategy to acquire in a relative short period the intangible assets of other firms, whose value is reflected in the acquired firm market capitalization. On the other hand, LBOs possess the features of a speculative activity, being fundamentally addressed to maximize financial returns in a short period of time. In many respects, LBOs are paradigmatic of the logic underlying the accumulation regime during the last 20 years.

The paper thus aimed at providing a discursive treatment of the main aspects of the evolution process of capitalist economies during the last decades, addressing the evolution of productive structures and the financialization process in a unifying, coherent perspective. From a theoretical standpoint, these major changes ask for a profound revision of the traditional schemes of the monetary circuit theory toward the definition of a financial circuit theory, which is able to better represent the current financial economy of production. The present work is a first step in this direction. However, there is still a great deal of work to do. Such work refers to both the empirical analysis and the formalization in a coherent analytical model of the qualitative theory sketched in this paper. This work today is made more urgent by the fact that the distortive mechanisms identified in the paper are still at work. The inadequacy of the dominant analytical tools in economics has led to a misinterpretation of the deep causes of the crisis which turned in the inadequacy of the policy interventions realized to face it.

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## Appendix

Table A1: Coevolution Between Technological Evolution And Financialization, 1992–2001

Year	Rate of depreciation, US corporations (%)	Capital commitments to US venture funds (\$ billions)	Worldwide M&A	
			Number of deals	(\$ billions)
1992	9.7	5,278	13,234	346.44424321
1993	9.8	3,967	15,221	414.6370023
1994	10	8,958	17,411	553.7366548
1995	10.2	9,860	19,632	830.5882353
1996	10.5	11,849	23,984	1184.517766
1997	10.7	19,775	25,929	1436.054422
1998	10.9	30,038	30,128	2325.391499
1999	11.2	55,662	32,257	2403.72737
2000	11.3	104,521	38,754	3528.387097
2001	11.1	38,917	30,648	2258.191585

*Sources:* For the rate of depreciation, Kliman (2011, p. 141). For the capital commitments to US venture funds, National Venture Capital Association, 2010, [http://growthandjustice.typepad.com/files/nvca\\_2010\\_yearbook.pdf](http://growthandjustice.typepad.com/files/nvca_2010_yearbook.pdf), p. 20. For the worldwid M&A, Buelens, 2008.

*Notes:* Depreciation=gross investment in fixed assets–net investment in fixed assets, valued at historical costs. Net investment in fixed assets, valued at historical cost = change in the net stock of fixed assets, valued at historical cost, between the start and end of the year. The rate of depreciation is expressed at historical cost as the percentage of historical cost of fixed assets. The original data used to compute the rate are taken from National Income and Product Accounts, published by the US Bureau of Economic Analysis. Bulens 2008 statistics are based on the last version of DG ECFIN's *Mergers and Acquisition Note*, which is available at the following URL: [http://ec.europa.eu/economy\\_finance/analysis\\_structural\\_reforms/product\\_markets8864\\_en.htm](http://ec.europa.eu/economy_finance/analysis_structural_reforms/product_markets8864_en.htm). Both venture capital and M&A statistics are based on data originally provided by Thomson Financial Services.