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Implications of financialisation for sustainability

Giampaolo Gabbi

Elisa Ticci

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Implications of financialisation for sustainability

Authors: Giampaolo Gabbi¹, Elisa Ticci²

Author affiliations: ¹University of Siena and SDA Bocconi Banking and Insurance Department²; University of Siena.

Abstract: Over the last thirty years, the progressive advance of the financial systems process has accelerated for the second time since the Industrial Revolution. During this phase of financialisation, financial logic has played a significant role in the economic decisions taken by all institutional elements: financial and non-financial corporations, governments and households. Usually given negative connotations, the notion of financialisation as 'excessive' growth in finance, however, remains elusive and vague in operational implication terms. This paper will first discuss the various features, manifestations and processes which this second financialisation process encompasses before reviewing the literature on its implications by distinguishing its effects on endogenous sustainability - namely on the functioning of financial systems - from its effects on the social and economic spheres: productive investments, human capital, distribution, resilience and exposure to shocks and systemic risks. Finally, our critical survey will focus on a recent heated debate on the role of financialisation in shaping the incentives for environmental protection and in restructuring the interests and power equilibrium between different stakeholders on the uses – current, future and speculative – of environmental goods and services.

Keywords: financialisation, sustainability.

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Contact details: Elisa Ticci, Department of Economics and Statistics, University of Siena
ticci4@unisi.it

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1. Introduction

In the introduction to *Financialisation and the World Economy*, one of the most prominent contributions on financialisation, Epstein (2005: 3) defines financialisation as “the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies”. This fairly broad definition encompasses various expressions of the phenomenon: changes within financial systems, within non-financial sectors and activities, alterations in the distribution of economic and political power between capital and labour and across population and social groups at both national and transnational levels. Some authors have stressed the political economic meaning of financialisation. Blackburn (2006: 39) defines financialisation “as the growing and systemic power of finance and financial engineering” and Palley (2007: 2) as “a process whereby financial markets, financial institutions, and financial elites gain greater influence over economic policy and economic outcomes”. Others use more descriptive definitions. Krippner (2005: 174), for instance, refers to financialisation as “a pattern of accumulation in which profits accrue primarily through financial channels rather than through trade and commodity production”. A widespread expansion of trade in all dimensions (across space, time, degrees of tangibility, divisibility, excludability, rivalry, measurability of goods and services) seems to be the basis of financialisation. Growth in access to, availability of and variety in financial instruments is both stimulated by and functional to this expansion of these possibilities since it increases both means and opportunities for the exchange of capital assets and risks. With the help of new technologies, financial systems now allow almost any type of financial asset, financial liability and equity instrument, capital package or structured product to be bought and sold. This evolution has implicitly culminated in the consolidation of a specific notion of economic agents in which the logic of finance permeates all economic choices. Firms are increasingly seen as bundles of tradable assets, what Crotty (2005) defines as the ‘financial’ or ‘portfolio’ notion of non-financial businesses or Tomaskovic-Devey and Lin (2011: 545) as ‘the finance conception of the firm’. Households are regarded as groups of people who jointly engage in a preferred consumption pattern by purchasing credit and implementing investment decisions. Stockammer (2012: 46) summarises this process arguing that “actors increasingly perceive themselves like financial institutions manipulating their balance sheets, as if they were managing a portfolio of assets”.

The purpose of this brief overview of the definitions of financialisation is to underline that this concept refers to a range of different phenomena and is used in reference to specific financial system developments as well as interpretative notions concerning the overall reproduction of productive factors and the services and goods system. The elusive nature of this concept, however, can lead to divergence in understanding of what financialisation is all about and what it is responsible for. This paper reviews the theoretical and empirical literature on the recent financialisation phase (from the late 1970s onwards), namely the Second Financialisation, in advanced economies with the aim of disentangling its diverse nuances and implications. By providing an overview of the 'state-of-the-art' in the academic literature, this paper identifies the main findings and knowledge gaps in research on the nexus between financialisation and sustainability in the economic, social and environmental spheres. The rest of the paper is organised as follows: section 2 discusses the principal manifestations and key features of the Second Financialisation phase; section 3 reviews the existing literature on its implications for financial markets, non-financial businesses, households and the environment and section 4 is the conclusion.

2. A closer look at expressions of financialisation.

The last thirty years have witnessed the growing importance of the financial sector which has been measured by a significant increase in its contribution to income, profits and added value such as higher stock market capitalisation to GDP ratio growth rate and in general a rapid increase in the value of financial transactions as compared to industrial sectors (Orhangazi, 2008; Fine, 2011; Onaran et al. 2011; Kus, 2012; Greenwood and Scharfstein, 2013; Müller, 2013). This impressive growth of finance has affected the macro-economic structures of several countries. At the same time, international financial liberalisation and capital account liberalisation, namely the reduction of banking sector industry entry barriers and international capital liberalisation, have led to a considerable expansion in global financial markets as well as an increase in their international mobility as compared to that of other production factors. However, financial systems have not simply grown in scale but their pervasiveness and influence on interactions with the real sector have also increased. This section will examine this phenomenon by offering an overview of second financialisation's main expressions and processes while the sections which follow will discuss their implications for sustainability in detail.

2.1 Financialisation and the increase in financial market complexity

The recent expansion of the financial sector at the national and global levels has been accompanied by significant changes within the financial sector itself. The evolution of financial systems, in particular, has been characterised by: (i) a proliferation and expansion of various types of financial assets and innovations (securitisation, collateralised debt obligations and other derivatives) associated with a growth in the share of financial assets managed professionally (Greenwood and Scharfstein, 2013); (ii) development of the 'shadow banking' system¹ and the growing importance of non-banking financial institutions (investment funds, pension funds, insurance companies, hedge funds)²; (iii) a shift from a 'retain and hold' to a 'buy and sell on' (Anderesson et al. 2012) or 'originate-and-distribute' banking model, namely a shift from traditional banking generating income from the interest differential between deposit and loan rates to a model in which banks do not hold the loans they originate but transfer risks by repackaging and securitising them; (iv) a progressive weakening of the distinction between commercial and investment banking.

For some scholars financialisation has modified the core functions of the financial system and the nature of its relationship with non-financial units. Financial institutions are seen as increasingly detached from the real productive sector: it has been observed that financial markets have been evolving as "a growth industry in [their] own right" (Engelen, 2003:1367) in which capitals switch from the primary, secondary or tertiary circuit to the quaternary circuit of capital serving and facilitating trade in money, credit, securities and derivatives rather than real markets (Aalbers, 2008). A similar progressive process of separation has occurred in the relationship between financial systems, on one hand, and regulatory and supervisory authorities on the other. Financialisation has been fostered by an increasing reliance on financial market self-regulation mechanisms. Self-regulation is a quality control mechanism that is commonly applied to financial markets. The players in these markets generally form a Self-Regulated Organisation (SRO) staffed by some of their own members. In the securities industry, for instance, many SROs, such as the National Association of Securities Dealers (NASD) and the National Stock and Commodity Exchanges (e.g., the NYSE) have imposed exchange related industry rules. Market self-regulation has had a wide-ranging impact on financial intermediary rule systems by means of lobbying with implications for both definition of the rules and supervisory body behaviour.

2.2 Financialisation of non-financial businesses

Financialisation of non-financial corporations (NFCs) has occurred by means of two main transformations. Firstly, financialisation has strengthened a proprietary view of firms and the corporate governance model based on maximising shareholder value (Lazonick and O'Sullivan, 2000; Feng et al., 2001; Froud et al., 2000; Engelen, 2002; Müller, 2013), i.e. the objective of predominantly pursuing shareholders' interests through payment of high dividends and sustaining firms' share prices (Faulconbridge and Muzio, 2009) and ensuring shareholder returns which outperform the cost of capital. This process has also been facilitated by the introduction of performance-related pay schemes and stock options meant to obtain a stricter alignment between managers' and shareholders' objectives (Lazonick and O'Sullivan, 2000; Stockhammer, 2004). Secondly, NFCs are increasingly active on financial markets both in terms of interest payments, dividends and share buybacks and of earnings from financial operations. Transfers of resources from productive uses to financial payments have grown over the last thirty years: the share of resources used by NFCs to pay interest grew considerably in the 1980s due to high interest rates (see Crotty, 2005 on US), but in several cases, even in successive low interest rate periods, it remained at levels above those of the 1950s and 1960s (see Alvarez, 2012, on France). At the same time, NFCs increasingly invest in financial assets and receive financial incomes (Orhangazi, 2008), develop financial activities (Baud and Durand, 2012) and offer financial services (Milberg and Winkler, 2010). Over the 1991-2007 period, for instance, in OECD countries NFCs saw a considerable rise in corporate net lending which reflected both a fall in corporate investment and an increase in corporate saving (André et al. 2007). As a result OECD NFCs turned into net lenders in the second part of this period.

2.3 Financialisation of household decisions and basic needs

Financial market transformations, coupled with privatisation processes, pension reforms and the general and continuous shrinking of the state's role as provider of [life-cycle] and basic services (education, health, sanitation, social protection) have led to greater household engagement in financial markets and the penetration of financial systems into daily life. Households are more frequently involved in financial operations (Lapavistas, 2011) and their wealth and income are increasingly dependent on financial fluctuations and financial markets via a range of channels:

- a. provision of household credit through mortgages and consumer loans has grown over the last three decades;
- b. the role of households as financial asset holders has grown: in several OECD countries overall, from the 1980s to the years prior to the 2007-2008 crisis, the stock of household financial assets relative to GDP grew considerably and changes in composition reveal fewer households opting for traditional forms of savings such as deposits and a growing interest in riskier instruments such as equities, derivatives and insurance technical reserves. In particular, a steady increase in investment in institutionalised assets (pension funds, life insurance and mutual funds) was a feature common to several countries prior to the crisis (De Bonis et al. 2013; Lapavistas and Powell, 2013);
- c. the connection between global financial markets and basic needs and capabilities services and goods markets has strengthened. Bayliss et al. (2013) have underlined two telling examples: the mortgage-backed securities system has created a direct nexus between financial vagaries and housing while privatisation has transformed several public services, such as water, into private assets whose service provision is influenced by shareholders' interests and asset pricing by financial markets. Similarly, as O'Neill has observed (2013), financialisation of transport, energy and communication infrastructure has targeted financial performance as the priority of these industries.

2.4 Financialisation of commodity markets and natural resources

The increasing role played by financial motives, financial markets and financial actors in commodity markets and the use of natural resources is strictly intertwined with other ongoing processes, namely privatisation, commodification and marketization of natural resources and ecosystem services. The definition of financialisation of commodities and natural resources we will put forward in this paper encompasses two main elements:

- a. a rise in financial investment in commodities and composite commodity indexes (i.e. the Standard & Poor Goldman Sachs Commodity Index, the Dow Jones – Union Bank of Switzerland Commodity Index), structured products on commodity indexes, in futures and options on commodities and in OTC commodity derivatives (UNCTAD, 2011) to diversify financial portfolios;

- b. a growth in environmental finance defined as “all market-based instruments designed to deliver environmental quality and transfer environmental risk” (Labatt and White, 2002).

3. The financialisation and sustainability nexus

3.1 The implications of financialisation for financial systems

A number of authors have underlined that the prevailing structure of the financial system in modern economies revolves around the banking and capital market subsystems. Some countries (Germany, Japan, France, Italy, Spain) have a stronger banking orientation while other financial systems (US and UK) are more market oriented. (Amable, 2003; Demirgüç-Kunt and Levine, 1999; Levine, 2000; Ergungor, 2002).

Gerschenkron (1962) has argued that the historical market-directed drive has also affected financial systems which were mainly bank credit orientated. Observing the nature of the different business lines and their regulatory constraints, we can distinguish between financial intermediaries mainly focused on credit and monetary functions and those mainly oriented towards investments (table 1). Commercial and retail banks are formally regulated and supervised by national or international bodies. The same functions can be performed by unregulated firms (shadow banking) making regulatory arbitrage possible.

The case of investment banking is more complicated. In many European countries, where such banks have only developed in recent decades, they are formally regulated. In the US, they are either unregulated or self-regulated.

Table 1: Financial subsystems and regulatory constraints

	Regulated and Supervised	Unregulated or self-regulated
Credit & Monetary functions	Commercial and Retail Banks	Shadow Banks
Investment Functions	Investment Banks and other financial firms (Europe)	Investment Banks (US)

The financialisation and sustainability within the financial system issue affects all these subsystems. The processes these subsystem follow can help in financialisation design via three different channels:

- financialisation through interbank indebtedness;
- financialisation through securitisation, derivatives and other financial innovations;
- financialisation through hedge, private equity and other unregulated funds.

3.1.1 Financialisation through interbank indebtedness

Since the late 1980s commercial and retail banks have largely followed the German organisational universal banking model and become more market oriented for at least two reasons: (i) the maturity mismatch needed either a stronger liquidity buffer or higher dependence on the interbank market; (ii) trading opportunities were exploited by means of considerable exposure in proprietary trading portfolios.

Within the banking system, large-scale deposit and debt flows are traded in the interbank markets where interest rates are transmitted to the term structure and affect the borrowing rate. In normal times, interbank markets are some of the most liquid in the financial sector and the financial literature has historically devoted relatively little attention to the interbank market as a result of the short-term nature of exchanged deposits (Gabbi et al., 2013). Banks have accepted non-collateralised loans when counterparties were considered safe and sound enough and liquidity risk has been perceived as marginal due to the central bank role as last resort lender. A number of enquiries into the interbank markets microstructure have shed light on their fragility even before the crisis suggesting that growing financialisation brought about stronger interconnections driving the credit system towards a dangerous 'fault line'. For instance, the evolution of the network topology of the European interbank market shows that liquidity and credit exposure made the interbank market extremely weak (Lori et al., 2008).

In addition, the interbank market over-reacted to the 2007-2008 financial crisis further revealing its fragility and its asymmetric and biased behaviour in favour of the largest banks: liquidity in the interbank market has considerably dried up, even for short maturities, and an increasing dispersion in the credit conditions of different banks has emerged. The weakness of interbank markets contributes to explaining the liquidity crunch the crisis led to. On the demand side, a possible explanation for the crunch suggested by Cassola et al. (2010) was adverse selection with banks preferring not to reveal their liquidity needs as these could lead



to credit rationing and switching from a highly transparent electronic market to more opaque over-the-counter trade. At the same time, an increasing number of studies have analysed how the financial crisis has affected the credit conditions of banks in the interbank market. Angelini et al. (2009) show that rates paid by banks prior to the crisis depended on bank size with larger banks getting better rates. During the crisis, borrower creditworthiness, measured by rating and capitalisation, increased in importance and scale with larger banks still experiencing better borrowing conditions both before and after the Lehman collapse. Nonetheless the main determinant of increasing spread appears to be an overall increase in risk aversion.

In brief, existing enquiries into the evolution of interbank markets during the Second Financialisation period before and after the 2007-2008 financial crisis have detected a number of fragilities in their functioning.

3.1.2 *Financialisation through securitisation, derivatives and other financial innovations*

Another way to extend financialisation is through financial innovations which originate both in credit markets and in financial environments. Their development has weakened financial structures considerably and the agents involved often apply unsustainable leverage ratios and hyper-speculative exposures. Some financial innovations have eased network enlargement and weakened links. The credit market often observes credit risk transfer (CRT) from originators to other portfolios especially to save capital for further loans. Many transfer techniques are used for this purpose (Bedendo and Bruno, 2012): loan sales, credit derivatives and securitisation. Securitisations, in particular, could be considered network facilitators whose purpose is to transfer credit and financial exposure to third parties. The 'opportunity' to sell illiquid assets in financial markets has been considered a way of saving capital, minimising credit losses, generating liquidity and accelerating decisions affecting bank size preferring 'buying strategies' over 'making' ones. Securitisation had a significant catalysing effect on the financial crisis by encouraging excessive household debt while contributing to the rapidity and intensity of its transmission. This phenomenon greatly reduced incentives to the units securitising assets to review their value and the risk involved in holding them. The systemic consequences of securitisation, considered benign *ex ante* by supervisory authorities ('the market knows better'), proved devastating *ex post* ('no one knows'). In particular, the ensuing discharge of banks' responsibilities encouraged the excessive leverage that was a crucial precondition to the crisis (Fisher, 1933, Minsky, 1982,

and many recent contributions). Securitisation also increased as a consequence of banks' regulatory arbitrage to reduce the capital absorbed by credit risk transferring loan/mortgage exposure from the banking book to the trading book (Minton, Sanders, Strahan, 2004; Panetta and Pozzolo, 2010).

From the point of view of propagation, the growing importance of securitisation-based structured finance in the balance sheets of economic units increased the rapidity and strength of contagion generating generalised balance sheet recession (Koo, 2011). In particular, within such an environment, agents playing a role within the securitisation process may suffer a lack of liquidity because of the complexity of fire sell assets (Basel Committee on Banking Supervision, 2008) and consequent increases in the exposure of the economic units to systemic risk. The evolution of financialisation by securitisation is closely linked to the dimension of risk as well as to the way risk is managed by rating agencies. Critical analyses made by various institutions and authors (Crotty and Epstein, 2009; IMF, 2009; Crotty, 2009) reveal that the greater the success of credit transfer solutions the higher the information distortion and the greater the complexity of the new financial instruments and the rapid dissemination of securitisation evolved as the role of investment banks and financial institutions grew and commercial banks began to play the role of financial investors.

While securitisation and other credit transfer techniques generate a link between credit and the financial market, derivatives ease financialisation with underlying assets whose nature can be financial (interest rates, currency and equity derivatives), credit (credit default swaps) or real (commodity derivatives).

Derivatives were originally issued to hedge risk exposure, particularly for industrial purposes. In general, given the volatility of exchange rates, interest rates and commodity prices over the past few decades, many firms have come to realise that they have significant exposure to these risk factors. The widespread use of derivative mechanisms in today's foreign exchange, interest rate and commodity markets confirms that many firms have decided that they must manage the uncertainty due to unexpected fluctuations (Smith, 1995). The positive role of derivatives in hedging the exposure to different types of risk is confirmed by theoretical and empirical studies which were carried out in past decades to provide rationales and evidence on the determinants of corporate hedging. Smith et al. (1985) and Fenn et al. (1997) have made available a comprehensive overview of economic motivations for hedging ranging from tax optimisation to cash flow reduction and financial distress cost minimisation to stakeholder risk-aversion. Tax motives emerge from Smith and Stulz's core study (1985)

which shows that derivative hedging reduces pre-tax firm value variability therefore increasing forecast post-tax firm value due to the convexity of the tax-schedule. Empirical evidence by Graham and Rogers (2002) supports this conclusion finding that derivative usage increases debt ratio levels by an average of 3%, which in turn leads to a higher tax shield which increases after tax firm value by an average of 1.1%. The reduced variability of cash flows given by hedging can lower the probability of default and subsequent bankruptcy costs, increasing firm value (Smith and Stulz, 1985). Moreover, as it increases non-default outcomes, derivative usage increases the stakes in which equity holders are the residual claimants, which, in turn, decreases incentives for equity holders to under-invest (Bessembinder, 1991).

Within the pecking order theory framework (Myers, 1984), firms avoiding external funds in their capital structure (either too costly or unavailable) see hedging as an important instrument capable of smoothing out cash-flows to meet future funding needs (Froot, Schaffstein and Stein, 1993). This result is confirmed by the Geczy et al. empirical study (1997) which shows that companies with higher quick ratios (a proxy for immediate funds availability) are less likely to hedge whilst companies with higher growth opportunities are more likely to hedge thus suggesting that derivative usage increases the availability of internal funds especially in presence of financial constraints.

Finally, systematic use of securitisation and derivatives leads to commercial and retail banks increasing their market orientation aptitude and makes them *de facto* investment banks, increasing incentives to reduce loss protection both reducing capital absorption and increasing the size of market speculative exposure.

3.1.3 *Financialisation through hedge, private equity and other unregulated funds*

A third subsystem in which financialisation affects endogenous sustainability is shadow banking, a term originally introduced by McCulley (2007), which focuses mainly on nonbank financial institutions engaging in maturity transformation. Shadow banks work in similar ways to commercial banks when raising short-term funds within the money markets to invest in assets with longer maturities. But because they are not subject to traditional bank regulation, they cannot borrow in an emergency from their central banks and cannot cover their deposits with an insurance scheme.

A broader definition of shadow banks, suggested by the Financial Stability Board (FSB), includes all unregulated (or less regulated than commercial banks) organisations and those

which engage in maturity transformation, liquidity transformation, leveraging their financial structure and transferring the credit risk. Thus defined shadow banks include broker-dealers, money market mutual funds and hedge funds.

Sustainability issues arose during the recent global financial crisis when investors became sceptical about the fair value of these longer-term assets and withdrew their funds. To repay these investors, shadow banks had to 'fire sell' assets. The impact of these decisions is market value collapse, forcing other shadow banking entities to replicate this strategy creating further financial stability uncertainties. At the peak of the crisis, so many investors withdrew or would not roll over their funds that many financial institutions ran into serious difficulty. Some shadow banks were controlled by commercial banks and were bailed out by their stronger bank parent.

Doubts about shadow banking sustainability and that of the financial system as a whole are based on their reduced asset disclosure requirements, unclear governance and interconnections with banks, the fact that they have virtually no loss-absorbing capital or cash for redemptions and lack access to formal liquidity support to help prevent fire sales.

In 2012, the FSB conducted a second 'global' monitoring exercise to examine all nonbank credit intermediation in 25 jurisdictions and the euro area which was mandated by a group of 20 major advanced and emerging market economies. The results are approximate because a catch-all category of 'other financial institutions' was used but they do show that the U.S. shadow banking system is still the largest. The FSB exercise does not gauge the risks that shadow banking poses to the financial system. The FSB also does not measure the amount of debt used to purchase assets, the degree to which the system can amplify problems or the channels through which problems move from one sector to another. Banking supervisors are examining the exposure of traditional banks to shadow banks and trying to contain it through capital and liquidity regulations.

An issue which may have been generated by the rules introduced by Basel 2.5 for trading books (which particularly stressed value-at-risk and incremental risk charge) is that many banks decided to sell part of their books to un-regulated or under-regulated financial entities. Hanson, Kashyap and Stein (2011) argue that the regulatory decision to enhance capital requirements for banks may trigger regulatory arbitrage encouraging large scale relocation of banking activities to the shadow banking system. Therefore, since many shadow banking entities are either lightly regulated or outside the purview of regulators, the authorities are contemplating expanding the scope of information reporting and regulation.

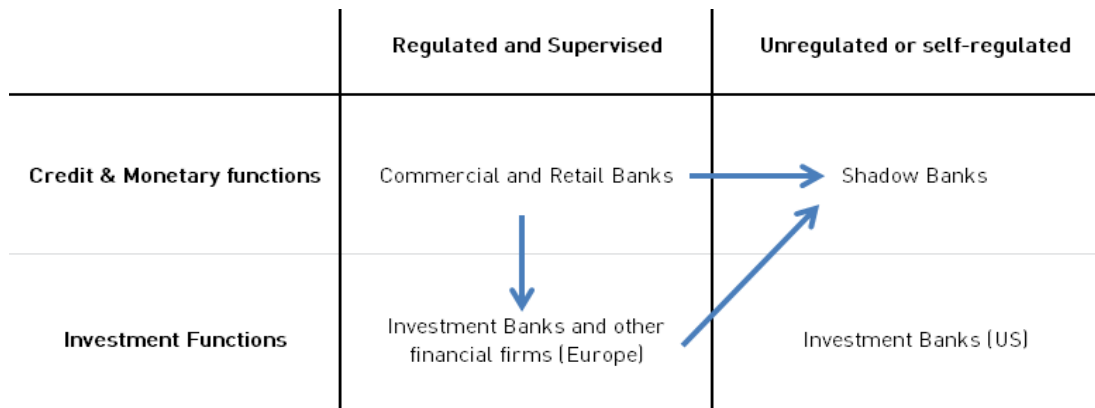
Although the link between regulation and financial innovation is not new, since the Basel agreement was implemented the regulatory arbitrage issue has attracted a great deal of fresh attention. Stein (2010) highlights the circumvention of capital and other regulatory requirements as some of the main forces behind securitisation. Acharya, Schnabl and Suarez (2013) show empirically that regulatory arbitrage played a critical role in the recent phenomenal growth of shadow banking.

Even in the presence of recent heated debates on how to regulate financial markets, formal studies on regulatory arbitrage and its link with shadow banking are still few and far between. An exception is Plantin (2012) who argues that “relaxing capital requirements for traditional banks so as to shrink shadow activity may be more desirable than tightening them.”

Shadow banking rationalisation complements other explanations focusing on the risk-sharing characteristics of securitisation. Gennaioli, Shleifer and Vishny (2013) have shown that an increase in investor wealth drives securitisation. This also leads to fragility because banks become interconnected and more exposed to systemic risk. Gorton and Metrick (2010) have structured their arguments in favour of shadow banking regulation around the idea that securitisation arose because it appeared to the agents involved that it could reduce failure risk with diversification effects. Ricks (2010) has also proposed extending the public insurance safety net to shadow banking to reduce its fragility. However, as Adrian and Ashcraft (2012) have extensively documented, regulation has persistently failed to stabilise shadow banking supporting the rationale that shadow banking is intrinsically unsustainable. In order to reduce regulatory costs and by-pass banking supervision, over the last decade commercial banks have progressively transferred part of their books to unregulated financial institutions. The interconnection between commercial and shadow banks is affecting financial system sustainability by enhancing the contagion effect.

In conclusion, the three processes described have significantly increased the financial fragility of banking institutions often as a result of regulatory incentives or arbitrages. Table 2 shows the processes involved.

Table 2: Financial subsystems and regulatory constraints



3.2 Implications of financialisation for non-financial businesses.

The theoretical literature has studied the implications of financialisation for non-financial firms at both macroeconomic and microeconomic levels. Until the 2007-2008 crisis, the prevailing view saw the expansion of finance as beneficial for economic growth and real business activities. Financial systems perform a set of financial services that are expected to serve economic objectives and promote value added creation in the real economy. Financial systems provide: (i) payment services which are crucial for daily business activities; (ii) insurance and risk-pooling services which are designed to reduce businesses' exposure to risk and (iii) intermediation services which are designed to facilitate real investments and efficient capital allocation by matching providers and users of funds. Financial systems can reduce hedging risks and increase the solvency capacity of non-financial firms. Scholarly work on the positive role of finance for economic performance includes the seminal contribution by Schumpeter (1911) which dates back to more than a century ago and later cross-country studies by King and Levine (1993) and Rajan and Zingales (1998). Shareholder value orientation and increases in the intensity and complexity of the financial system over the last 20-30 years were expected to improve economic efficiency and business performance, while the use of derivatives to hedge risks was expected to have multiple benefits for non-financial firms. Agency theorists considering managers as agents and shareholders as principals have argued that shareholder value orientation, pay-performance sensitivity and incentive alignment between managers and shareholders provide managers with incentives to pursue the best possible economic performance measured by return rates

on corporate stock (Jensen and Meckling, 1976; Jensen and Murphy, 1990; Fama and Jensen, 1983; Sundaram and Inkpen, 2004). Turner (2010: 13) has pointed out that, according to the proponents of financial market deepening, “complex securitisation increased the extent to which assets offered to investors could be tailored to their specific preferences for specific combinations of risk/return and liquidity”. Moreover, Greenwold and Scharfstein (2013) have argued that professional asset management, lowering corporate capital costs, is likely to benefit young firms. This view is in line with the empirical analysis by Fama and French (2004) which found that weaker firms and companies with longer-term expected payoffs increased their access to public equity financing. Fama and French argue that this change can be associated with a reduction in information and trading costs in line with the efficient-market theory. It is worth underlining, however, that other interpretations are possible. The decline in the cost of equity capital in this period for new firms could also be considered the result of overly optimistic expectations consistent with behavioural finance theory.

Where NFCs are concerned, debate is under way on the role played by portfolio investors buying stocks within their financial portfolios for the purpose of asset diversification. Since hedging the expected volatility and correlation impact is expected to be lessened, diversification rationales may be distorted.

Despite the numerous expected benefits involved in the development and sophistication of financial markets, over the last ten years criticism of the implications for non-financial businesses of what has been increasingly considered the excessive growth of finance has started to mount. The negative effects of financialisation on the long-term economic sustainability of firms has become increasingly evident. At micro-economic level, one of the most widely investigated effects of these transformations is their impact on business investment behaviour. In addition to developments in real and labour markets and to the reduced role of governments as regulators and suppliers of public services, growing operations in financial markets and changes in power relations among stakeholders in favour of managers and shareholders compared to workers³ (Aglietta 1999; Dallery, 2009; Duménil and Lévy, 2011) have led to changes in objectives and investment decision constraints. As we saw in section 2.2, increased financial profit opportunities *vis-à-vis* real investment and tighter relationships between shareholder and manager interests can direct resources from real and productive to financial investment. Financial investment becomes an increasingly attractive and accessible alternative compared to real investment especially in uncertain

times or markets characterised by high risks, low profit margins and stagnant demand. Moreover, short-term and reversible investments best meet shareholders' preferences for today's profitability compared to tomorrow's profitability (Dallery, 2009) and for profits as opposed to growth (Stockhammer, 2004) while at the same time allowing for a 'wait and see' strategy which is preferable in an uncertain business environment (Baud and Durand, 2012). Finally, as noted by Rappaport (2005), managers' concern to safeguard their reputations and remuneration by sustaining company stock prices and dividends have fed a sort of 'short-term performance obsession'. Option-based incentives are more valuable at higher levels of risk and for short-term returns. In other words, by influencing management's incentives and risk aversion shareholder value orientation is likely to push CEOs in the direction of short-term and financial investment and operations. Looking at the US, Lazonick and O'Sullivan (2000) have claimed that the consolidation of shareholder value orientation led to a shift from 'retain and invest' to 'downsize and distribute' in investment behaviour. The models proposed by Dallery (2009), based on Post-Keynesian theory of the firm, refer to this argument showing that reinforcing shareholders' power has a theoretically positive impact on real capital accumulation only under very restrictive conditions. The empirical evidence largely confirms the hypothesis of an overall negative link between increasing profit opportunities through financial operations and real capital accumulation. Demir's econometric study (2009a) on all publicly traded industrial firms in Argentina, Mexico and Turkey, for instance, has found that, in the early 1990s to early 2000s period the rising gap between return rates on financial assets and return rates on long-term fixed investments depressed new fixed investment spending and had a positive and significant effect on financial assets to aggregate capital ratio. In other words, the profitability of financial investment significantly affected the portfolio allocation decisions of real sector firms in these countries by diverting spending from real to financial investment. Moreover, in Turkey, the share of financial investments in total assets is found to reduce the negative effects of macroeconomic uncertainty on the profitability of manufacturing firms (Demir, 2009b), i.e. financial operations can be used as a strategy to sustain profits in conditions of reduced productive profit margins. Orhangazi (2008) has found similar firm-level results by analysing a panel of US NFCs over the 1973-2003 period. His estimates suggest that increased financial pay-out ratios have a negative effect on real investment and, for large firms, a rise in past financial investments is not used to sustain current real investments but rather financial income and profits significantly depress them. According to these findings, therefore, the financialisation of US NFCs, especially large

businesses, has had a negative impact on real investment. Similarly, evidence collected by Bauer et al. (2008) suggests a negative relationship between investor-sensitive corporate governance and company capital expenditure. Finally, Blundell-Wignall and Roulet (2013), using a panel of more than 4,000 global companies over the 1997-2011 period, have found that high equity costs and low borrowing rates boost buybacks and dividend payments while reducing long-term capital expenditure, i.e. investment. In other words, in a context in which financialisation and public intervention is sustaining the gap between interest rates and equity costs “companies [...] are keeping their capital expenditure contained, and they are taking advantage of cheap corporate borrowing rates to issue debt and build up cash flow” (p. 14). Other studies have analysed the relationship between financialisation and real investment in NFCs by using macroeconomic data. Stockhammer (2004) has attempted to test the hypothesis that the change in management priorities due to financialisation (measured by the share of interest and NFC dividend income) reduced real investment propensity in the 1960s-1990s period. His results are not fully conclusive but indicate that in Germany, one of the least financialised economies in the period considered, the gross business capital stock growth rate was driven by profit shares, capital and capacity utilisation costs while in the US, the most financialised country, rentier income was the only significant variable across different specifications with negative indicators. In addition to the econometric evidence, the possibility that a greater involvement by NFCs in financial operations can crowd out real investment is mirrored by increases in repurchasing or buyback of shares which can drain NFCs funds documented for the US and Europe (Crotty, 2005; Lazonick, 2013; Blundell-Wignall and Roulet, 2013). Between 1997 and 2012, for instance, cash dividends paid and buybacks rose from about 1% to more than 2% and more than 3% of sales in OECD and US companies respectively in the MSCI global index (Blundell-Wignall and Roulet, 2013).

The effects of financialisation on investment behaviour present further connected implications for the sustainability and competitiveness of non-financial firms. A shift from long to short term performance and from real to financial assets diverting resources from investment in long-term profitability, such as research and development expenditure, undermines firms' competitiveness and productivity. In a critical and historical overview of the US corporation business model, for example, and analysing their changes in innovative strategies, top executive compensation and allocation of profits, Lazonick (2010, 2012, 2013) has convincingly concluded that the growing influence of the stock market on corporate resource allocation, due to the increasing stock-based compensations of top executives, has produced

three main perverse consequences. It has encouraged manipulation of stock prices producing financial instability, reduced investments in innovation, job creation and quality delivery and consequently, eroded the competitiveness of the industrial sector making the whole economic system more fragile.

Evidence of the negative impact of financialisation on innovation is not limited to the US economy. When analysing a sample of Korea's NFCs in the 1994-2009 period, Seo et al. (2012), for instance, found that, after the 1997–98 Asian financial crisis, increased dividend payments and stock buybacks were associated with a decline in R&D investment. This vicious spiral towards a contraction of productivity in the real sector might be further accentuated if, as argued by Kedrosky and Stangler (2011: 9), financialisation has “a suppressive effect on potential entrepreneurship by draining away human capital”, especially highly qualified workers, due to the overexpansion of gain opportunities in the financial sector and the surge in top financial managers⁴.

Another concern about efficiency costs and the implications of financialisation on the sustainability of NFCs relates to a potential mitigation of the market's ability to select the most competitive firms. Financialisation can contribute to non-competitive firms surviving because they can rely on financial investment to maintain and sustain profit rates despite increasing market instability, risks and global cost competition (Orhangazi, 2011).

It is not only firms' use of funds which financialisation affects but also their sources. According to Palley (2007), financialisation appears to have boosted firms' leverage and level of indebtedness through a range of channels: (i) shareholder value orientation and the increasing gap between cost of debt and the cost of equity which creates incentives to issue debt (and withdraw equity⁵); (ii) financial innovation and engineering and asset price inflation which enhances NFC collateral capacity; (iii) a lowering of credit standards which eases firms' access to borrowing. While access to credit can be seen as beneficial for firms' performance and activity, over-indebtedness can be a source of fragility and unsustainability. Andersson et al. (2012) have recently underlined this argument observing that in the financialised UK and US economies, firms (and also households) are increasingly able to generate wealth recapitalisation ahead of their surplus capacity. Moreover, “this capitalisation process becomes self-sustaining and increasingly decoupled from cash/earnings extraction capacity” (Andersson et al., 2012, p. 86). The authors, recalling Minskyian dynamics, observe that this process can induce firms to turn from hedged into speculative and Ponzi units and the entire

business system might thus become more vulnerable to financial perturbations and prone to crisis.

In conclusion, financialisation can help non-financial firms sustain performance and profit rates and survive in competitive markets with expansionary effects including for extended periods. However, it introduces distortive incentives and creates fragility. High and unsustainable levels of leverage, short-term orientation, distortions in hedging policy, in risk and asset management and biased trade-offs between financial and real investments can expose the real economy to deep crises, as demonstrated by the current Great Recession, reducing recovery capacity and driving the real economy in an unsustainable economic direction in the long term.

3.3 The implications of financialisation for households and social classes

Human and financial capital are sources of income and productive inputs which intrinsically vary in degree and freedom of mobility, accumulation limits and concentration. The next section will look at how financialisation influences household behaviour and welfare in a number of different dimensions which largely relate to changes in the relationship and equilibrium between human and financial capital.

3.3.1 Income distribution

Over the past three decades, both the Gini coefficient and the income gap between the richest and poorest 10% have grown⁶ in most OECD countries, despite a great deal of cross-country variety in levels of inequality and the size of such increases. Inequality and financialisation trends have been linked by several scholars (Lazonick and Sullivan, 2000; Palley, 2007 among others). More recently, Stiglitz (2012: 36) has argued that financialisation is “responsible both for increasing inequality and increasing fragility”. Using data from 20 OECD countries over the 1995-2007 period, Kus (2012) has found that, after controlling for a set of standard explanations of income distribution, a number of financialisation indicators⁷ are positively and strongly associated with income inequality. We were not able to find other econometric studies on the relationship between financialisation and income inequality, but a number of considerations are consistent with the view that financialisation exacerbates income concentration.

Firstly, financialisation affects manager incentives as well as the rate of return on financial capital, on labour and skill premium. The incomes of middle-class and blue-collar workers are likely to deteriorate since the expansion of finance, increased reliance on financial earnings and the search for short-term profits can occur at the expense of production, real investments, labour costs and long-term productivity (see section above). Secondly, growing profit opportunities in financial markets can influence inequality through changes in political and economic power distribution which can push policies and institutional settings closer to the interests of rentiers and financial operators. According to Duménil and Lévy (2005: 25), for example, in the US in the late 1970s “finance took over the state and institutions of the Keynesian compromise”. Other authors have gone to the extent of embedding political economy considerations directly into the definition of financialisation. Blackburn (2006: 39), for example, defines financialisation “as the growing and systemic power of finance and financial engineering” and Palley (2007: 2) as “a process whereby financial markets, financial institutions, and financial elites gain greater influence over economic policy and economic outcomes”. In addition, existing literature has dealt with three main topics which can also shed light on the relationship between income inequality and financialisation:

- i. a number of studies (see next sections) have analysed the impact of financialisation on other inequality dimensions affecting income distribution, namely inequality of labour income and functional distribution of income. As labour income is usually the most important source of household income, its dispersion contributes to explaining trends in income inequality. Moreover, to the extent that capital and labour are not equally distributed across population, a change in functional distribution translates into a change in income distribution;
- ii. a growing body of studies has looked into the distributive consequences of international capital mobility and capital account liberalisation which can be considered to be the pillars of the international dimension of financialisation. Capital account liberalisation (CAL) potentially affects income inequality through a range of channels. Firstly, CAL can improve the capacity of financially-constrained firms to borrow from international markets. The consequent reduction in cost of capital and technological transfer through capital markets can boost real investments and economic growth and, indirectly, employment creation and poverty reduction. The empirical evidence on the nexus between CAL and economic growth, however, is still mixed (Hulten and Webber, 2010). Secondly, the benefits of capital liberalisation tend

not to be homogeneously distributed across firms and industries. Small firms, for instance, might be unable to fully take advantage of foreign bank entry (Gormley, 2010). Capital inflows are likely to prefer sectors which exhibit higher rates of return, short-term profitability and speculative earnings (such as FIRE sectors). Thirdly, CAL increases firms' access to foreign capital. Consequently, demand for skilled than for unskilled workers since complementarity of capital for skilled labour is usually greater than for unskilled labour. This, in turn, widens wage inequality. Using industry-level data for 23 industrialised countries from 1975 to 2005, for example, Larrain (2013) has found that capital account openness increased wage inequality. Similarly, by examining 58 episodes of major capital account reform in 17 advanced economies, Furceri, Jaumotte and Loungani (2014) have shown that, on average, capital account liberalisation is followed by a 1 and 5 percentage point increase in Gini coefficients after one and five years respectively. Based on datasets for 18 Latin American countries for 1977-98, Beherman et al. (2007) have shown that capital account liberalisation increased urban wage disparities. The evidence provided by Jaumotte et al. (2013), using a panel of 51 countries over the 1981-2003 period, has also suggested that financial globalisation, and in particular inward FDI stock to GDP, is associated with higher inequality;

- iii. another channel by means of which financialisation affects income inequality is its effects on financial fragility (see section 3.3.4). Macroeconomic volatility and economic crises in general have a disproportionately adverse impact on poor and less well-off households (Lustig 2002, Agenor 2002; Laursen and Mahajan 2005). By increasing exposure to exogenous or endogenous shocks, financialisation can produce regressive effects⁸.

The next sections discuss this literature in depth.

3.3.2 *Labour income inequality*

Financial and trade globalisation, the changing role of investors and changes in incentive management of non-financial firms, in combination with trade union marginalisation, skill-biased technological change and regulatory reforms, have affected business employment and salary strategies in several countries. While it is not easy to disentangle the effects of these intertwined processes, it is widely acknowledged that financialisation has been accompanied by a surge in top management pay and a rise in financial sector salaries as

compared to other sectors. Several studies have monitored disparities in employee earnings in the financialisation period (since the 1980s) in the US economy: Mishel et al. (2007 cited in Palley, 2007) have reported that CEO remuneration grew exponentially at rates of 38 to 262 times that of average worker pay between 1979 and 2005. A boom in the pay of the top five executive posts at S&P 500 companies from the 1990s to the 2000s has been documented by Bebchuck and Grinstein (2005). Similarly, Tomaskovic-Devey and Lin (2011) have estimated that in the US financial sector pay rose from levels in line with average overall pay prior to 1980 to about 60 percent higher than the rest of the economy by 2000. Moreover, they have shown that in the securities, commodities and investment industry earnings exploded probably because of commission-based systems of payment which allow “great earnings benefits from the increased volume and velocity of investment activity” (Tomaskovic-Devey and Lin, 2011: 549). The size of this surge in financial and top management pay has prompted doubts about the consistency of this trend with a proportional rise in skill intensity, labour productivity and risk. Indeed, Arestis et al. (2013) has found that in the US individuals working in managerial and financial occupations have been paid a wage premium over the last three-four decades. Philippon and Reshef (2012) not only confirm the existence of a finance wage premium but also document that it has increased over time. They calculate that “workers in finance earned the same education-adjusted wages as other workers until 1990, but by 2006 the premium was 50% on average” (Philippon and Reshef, 2012: 1605). This wage gap is even more pronounced for top decile earners and, in particular, for executives. Interestingly, Philippon and Reshef have also shown that excess financial sector pay as compared to the rest of the private sector cannot be fully explained by a rise in earnings, risks and changes in the size distribution of firms. This indirectly suggests that the unexplained excess wages could represent a form of rent⁹. Other contributions have examined whether indicators of financialisation are statistically significant determinants of earnings dispersion. Lin and Tomaskovic-Devey (2011), for instance, analysing US data at the industry level in the period 1970-2008, have found that the increased dependence of non-financial and non-agricultural private firms on financial income¹⁰ has a significant and positive impact on top executive pay and on earnings dispersion among employees and exerts a negative impact on labour’s share of income¹¹. Similar results have also been obtained by Van Arnum and Naples (2013). Another interesting study that links the financialisation process and top executive pay has been provided by Shin’s analysis (2012) of data on CEO compensation in 290 large non-financial US firms in the 1996–2006 period. His study shows

that firms in line with shareholder value orientation to a greater extent, namely those which adopt monitoring mechanisms and incentive compensation plans, are likely to pay their executives more. Shin's explanation for these results is that conformity to shareholder value mandates enhances CEO reputation and legitimacy, and consequently their pay, regardless of their product market performance. From this perspective, shareholder value orientation induces perverse incentives leading to loss in efficiency and regressive outcomes.

Even more worrisome is the fact that this process of labour earnings polarisation through financialisation may be self-reinforcing. The expansion of financial investments and, in particular, of professional asset management and of stock-based and commission-based pay has created rent opportunities which can be better exploited in less regulated financial systems. This encourages a demand for more financialised economies and less regulated financial markets. At the same time, regulatory authorities may progressively weaken. Philippon and Reshef (2012: 1606), referring to the US economy in the 2000s, have observed, for instance, that it became impossible "for regulators to attract and retain highly skilled financial workers because they could not compete with private sector wages".

3.3.3 *Functional distribution*

Since the 1980s many advanced economies have experienced a decline in labour's share of income¹². At the same time, several studies document a rise in the so-called rentier income share and a shift in profit distribution in favour of rentiers, certain differences in the definitions of rentier¹³ income notwithstanding (Epstein and Jayadev, 2005, on OECD countries from the 1960s to the 1990s; Onarn et al., 2011 on the USA in the 1960-2007 period). By encouraging the growth of return rates on bond, stocks and other financial assets, financialisation increases rentier income and capital gains. Moreover, shareholder value orientation and the dominance of short-term performance can reduce management incentives to look after and meet worker interests while increasing earnings opportunities via financial operations tending to partially detach profits and real investments. Rises in real wages and employment expansion usually clash with other manager and shareholder objectives: curbing costs, distribution of dividends and sustaining stock prices. The potentially negative effect of financialisation on labour share and workers' pay is clearly illustrated in Lin and Tomaskovic-Devey (2011: 24) which, in reference to the financialisation of the US economy, has argued that

“the increasing reliance on earnings through financial channels restructured the social relations and the income dynamics in the non-finance sector. Substituting production and sales investment with financial investment decoupled the generation of surplus from production, strengthening owners' and elite workers' negotiating power relative to other workers. In addition, the financial conception of the firm reduced the commitment to production in the career strategies of CEOs, further marginalizing labor's role in U.S. corporations. The result was a structural and cultural exclusion of the general workforce from revenue generating and compensation setting processes”.

The impact of financialisation on labour income can also operate through less visible channels. Baud and Durand (2012: 258), for instance, have documented that financialisation processes can also affect bargaining power, as well as the distribution of profits and wealth, between different firms' stakeholders through 'financialisation of operations', namely a change in financial relationships among stakeholders that occurs when financial objectives supplement operational objectives. By providing qualitative evidence on the strategies of leading retailers, indeed, they conclude that financialisation has allowed retailers to use 'forced funds' for their accounts by accumulating growing stocks of liabilities towards workers (and state and suppliers too). Theoretical contributions based on the Kaleckian approach have tried to model the main channels through which the process of financialisation can affect functional distribution. Hein (2013) illustrates and develops this by discussing two main factors that can influence labour income share which are likely to be influenced by financialisation processes, namely the sectoral composition of the economy and mark-up pricing. Firstly, a change in sectoral output composition in favour of the financial sector - a key feature of financialisation processes - implies a rise in high profit share sectors and, consequently a decrease in wage shares. Secondly, various types of overhead costs (such as dividend and interest payments, management salaries, labour costs) and profit claims and target return of different stakeholders can affect mark ups (Lavoie 2002, Hein and Van Treeck, 2010, Dallery and van Treeck 2011). Financialisation increases, intensifies and strengthens the bargaining power of claims by top executives and by 'rentiers' who receive dividends and interest payments. This generates a rise in mark-up pricing and a decline in labour's income share. All these elements and arguments can explain why a number of empirical studies have detected negative financialisation effects for a range of indicators on wage shares (Alvarez, 2012 on France; Dühaupt 2013, on a sample of 13 OECD countries; Lin and Tomaskovic-Devey, 2011 on the US).

To conclude, the literature on functional distribution of income has provided several explanations of labour's declining share. Some of these do not directly relate to financialisation (technological and productivity changes and migration flows, trade liberalisation), others are elements which have contributed to financialisation (monetary and fiscal policies, deregulation of labour markets); others are intrinsic elements of financialisation. Thus, further study on the extent to which the effects of financialisation combine and interact with these processes is required but growing evidence suggests that financialisation has produced a change in functional distribution to the detriment of labour income share and in favour of rentier incomes.

3.3.4 Consumption smoothing, vulnerability and coping strategies

Modern finance theory argues that household participation in the financial market increases consumption smoothing and risk diversification capacity. In this sense by allowing a rise in household indebtedness and hedging capacity, financialisation performs a social function since it improves household need satisfaction and ability to cushion exogenous shocks. However, as noted by Barba and Pivetti (2009), the theoretical framework of life cycle and the permanent income hypotheses of mainstream theories, based on the assumption of perfect rationality and foresight in agents' maximising behaviour, tends to exclude the possibility of unsustainable household debt trajectories. This hypothetical scenario strongly grounded in mainstream theory, however, contrasts sharply with the real experiences of recent years. Financialisation actually seems rather to encourage household indebtedness, consumption expenditure and housing investment above sustainable levels, namely ahead of earning capacity (Onarn et al., 2011; Andersson et al. 2012; Greenwood and Scharfstein, 2013). Financial innovation and mechanisms, deterioration in creditworthiness standards and financial deregulation have allowed an increased leverage and accessibility to credit households with poor credit ratings too. In addition, financial and housing asset price inflation generates a wealth effect which can motivate an expansion of private consumption through indebtedness. All these factors can increase household living standards. Onarn et al. (2011), for instance, when analysing US quarterly data for the 1960–2007 period, found that an increase in housing wealth had a strong expansionary effect on consumption. At the same time, household living conditions are more linked to financial fluctuations and exposed to financial shocks. A high degree of leverage of economic units (households, banks or firms) amplifies risks of contagion and facilitates the transmission and extension of financial volatility

to households and firms as was recently shown by the 2007-2008 financial crisis. This risk is particularly significant in the light of the fact that, as we saw in section 3.1, financialisation also introduces some elements of unsustainability and volatility into financial systems and also that capital account liberalisation can increase exposure to capital inflow booms and sudden stops, especially in low and middle income countries. The evidence collected by Prasad et al. (2007: 464) on the effects of financial globalisation in developing countries, indeed, suggests that countries in the early stages of financial integration have been exposed to significant higher output and consumption volatility risks. Moreover, some of the effects of financialisation have been identified as recurrent characteristics of past financial crises. Claessens et al. 2013, examining a wide variety of financial crises (banking, balance-of-payments, and sovereign debt crises), have observed that typical pre-crisis patterns include asset price bubbles, rapid, prolonged and large-scale expansions in credit, deterioration in lending standards, risky financial intermediary liability structures, poor regulation and supervision of domestic financial systems and underestimation of systemic risks. Based on this evidence, it might be argued that financialisation is a source of increased vulnerability to financial crises which generally produce major and persistent adverse effects on average living standards and on distribution as demonstrated by the ongoing Great Recession. Negative effects on employment and poverty and welfare status are visible to all and recent data (OECD, 2013) has in fact shown that in OECD countries inequality in income from work and capital (excluding welfare state interventions) increased more between 2007 and 2010 than in the previous twelve years.

3.4 The implications of financialisation for environmental sustainability

The academic literature has largely overlooked the environmental dimension of financialisation, but initial observations can be drawn by discussing the potential environmental effects of some of the features of financialisation processes examined in the previous sections. Firstly, financial investment opportunities and incentives to search for long-term and short-term and high returns in financialised economies is likely to crowd out funds, resources, competencies and investment for green projects and for sustainable activities whose benefits are usually uncertain and require medium-long time frames. A shrinking in investment planning horizons, in particular, is likely to divert financial resources from environmental and conservation programmes or from R&D expenditure for eco-innovations whose benefits are long term. On the other hand, the borrowing wave that was observable

during the expansionary period of financialisation in several countries (i.e. prior to the 2007-2008 financial crisis) might have benefited from green projects by reducing financial barriers to green investment. This effect, however, is not automatic. Financial constraints are not the only obstacles to green investment which usually also faces simultaneous market policy, institutional and information barriers. Policy support, on the other hand, seems to be a crucial investment driver for green projects.

Finally, financialisation impacts on the use and conservation of environmental resources through its effects on pricing and the assignment of economic value to natural resources. This happens through two main processes: financialisation of commodities and the development of mechanisms and systems assigning financial value to ecosystem services and resources.

3.4.1 The financialisation of commodities

Over recent years, commodity price movements have been dominated by global food and energy shocks combined with upwards trends. Food and commodity prices can have important social and environmental consequences since they can influence investment in nature-based sectors. The 2007-2008 and 2010-2011 food and energy price shocks, for instance, generated serious poverty and distributive impacts which may also have triggered a rush for natural resources for both productive and speculative purposes. An emblematic case study of the nexus between energy, food price shocks and the environment is so-called land grabbing¹⁴, i.e. the wave of large scale land acquisitions that several developing countries have been experiencing since the late 2000s and which is raising equity and sustainability concerns. Indeed, a report of the High Level Panel of Experts on Food Security and Nutrition commissioned by the UN Committee on World Food Security concluded that “large scale investment is damaging the food security, incomes, livelihoods and environment for local people” (HLPE 2011: 8). Understanding the role of financialisation in shaping international food and commodity price dynamics is, therefore, a necessary step in the analysis of its social and environmental repercussions. The so-called financialisation of the commodities market observed in the 2000s denotes two main related processes. Fattouh et al. (2013: 12) have described the financialisation of the oil market as a growing interest and the involvement of financial investors outside the oil industry in commodity futures markets and as “the increasing acceptance of oil derivatives as a financial asset by a wide range of market participants including hedge funds, pension funds, insurance companies, and retail



investors". UNCTAD (2011) and Tang and Xiong (2012) have stressed the importance of growing commodity index investment and the development of synthetic indexes which track returns on weighted commodity baskets. These trends are expected to increase price co-movements of commodities and to expand the role of financial factors in determining the price of each commodity compared to supply and demand. For these reasons, financialisation and speculation on commodity prices have been discussed as possible determinants of energy and food price spikes and price co-movements but there is no consensus on the extent and degree of their effects. Fattouh et al. (2013), for instance, have argued that the view that speculation and financialisation in the oil market fuelled oil spot prices after 2003 is not supported by existing findings. Similarly, Irwin and Sanderds (2012) have suggested that there is little evidence that passive index investment caused a massive bubble in commodity futures prices. By contrast, Gilbert (2010) has identified the marked and significant impact of index-based investment in agricultural futures in explaining the 2007-2008 food price spike. At the same time, Tadesse et al. (in press), analysing the wheat, maize and soybeans markets, have found that price shocks are explained by demand and supply but also by two factors linked to financialisation, namely the food, energy and financial market nexus and by speculation. In line with this view, estimates provided by Henderson et al. (2012) indicate that financial institutions' behaviour and demand for commodity exposure have a significant effect on price formation in the commodities futures markets. At the same time, Silvennoinen and Thorp (2013) have found that since the early 2000s (when commodity financialisation began) integration of commodity futures and stock markets have into several major equity markets became more marked (US, German, French, UK and Japanese) and that increases in volatility and financial traders' short-term open interest have raised futures returns volatility for many commodities. The expansion of financial trading in commodity markets has been accompanied by a rise in the correlation between oil and agricultural prices and the correlation between commodity futures returns and conventional stock and bond returns has increased. This implies that, in the financialisation period, shocks may be transmitted more easily (and therefore amplified) across different agricultural and natural resources commodities and between commodity and conventional financial assets.

In brief, there is growing evidence to support the theory that financial motives significantly contribute to price movements and price shocks in natural commodities, food and energy. This implicitly calls for intervention to enhance surveillance and regulation of financial investors participating in commodity markets. The measures suggested by UNCTAD (2011),

for instance, move in this direction: improved transparency and position limits in commodity futures exchanges and OTC markets, transaction taxation and requirements to hold positions for a minimum amount of time. These proposals can be supplemented by bans on naked (speculative) commodity derivatives, as has already been experienced for credit default swaps. Whilst debate on the impact of these forms of regulation, especially when not coordinated between supra-national regulators, is still under way, it could reduce the speculative impact on commodity prices. We would argue that the need to reduce speculation and regulate the commodity futures market in order to limit commodity price shock risks should not divert attention from the role of fundamentals (such as increasing demand for raw materials), namely from more challenging agendas requiring greater effort for less environmentally intensive consumption and production at the global level.

3.4.2 The financialisation of environmental services

The emerging monetisation of nature and the increasing role played by finance in valuing the environment are embedded into the institutional framework of neoliberalism and market environmentalism which have risen to prominence since the late 1980s (Gómez-Baggethun and Ruiz Pérez, 2011). These processes have occurred within commodity and financial markets which trade nature-based financial assets and mechanisms but also within the decision-making processes of banks and financial institutions and of non-financial firms. Over the last 15 years a number of measures have been proposed and implemented with the aim of increasing the alignment between financial and economic decisions and the 'value' of natural resources and environmental services. International institutions and organisations have launched several initiatives (the United Nations Environment Programme Finance Initiative, UNEP/BASE Sustainable Energy Finance Initiative, Global Sustainable Investment Alliance, FSinsight) to promote the direct engagement of the finance sector in sustainability action. A complete overview of these initiatives goes beyond the scope of this paper¹⁵ but an emblematic example is the Natural Capital Declaration signed in 2012 at the Rio 20+ Conference by the CEOs of 39 major financial institutes which voluntarily committed to "integrate natural capital considerations into loans, equity, fixed income and insurance products". At the same time, the search for corporate sustainability measurement and reporting criteria has grown (see Ernst & Young's survey, 2011). The Economics of Ecosystem and Biodiversity (TEEB) for Business Coalition is working to introduce and spread standardised methods for natural capital accounting and reporting in business. Bloomberg

has already collected ESG data from 4,100 companies from 52 countries. More than 700 institutional investors take part in the Carbon Disclosure Project which asks 2,400 of the world's largest companies to voluntarily measure and disclose their environmental data. Most of these initiatives are based on voluntary agreements and participation. Their effective implementation, therefore, is an open issue and there is a substantial lack of systematic evaluation of their environmental effects. In other cases, pricing signals for environmental services are based on more mandatory government interventions such as market-based environmental policies. Examples include cap-and-trade schemes for carbon dioxide (CO₂) or sulphur dioxide emissions which, in turn, have given rise to a proliferation of environmental markets and exchanges (the European Climate Exchange, the Chicago Climate Exchange and the Chicago Climate Futures Exchange) and related carbon derivatives. There are few available figures on the ways in which carbon is rapidly becoming a financial instrument: in 2011, European Union Allowances (EUAs) sold in the primary market (US\$1.7 billion) accounted for slightly over 1% of total EUA market value while EUA futures (US\$130.8 billion) and options on EUAs (US\$14.2 billion) represented approximately 88% and 10%, respectively, of total EUA transaction values (World Bank 2012). Financialisation is also a critical precondition for green offset markets (Fairhead et al. 2012) which are further examples of action to price nature. There are now several biodiversity offset and compensation programmes which have stimulated the opening of a number of platforms and information clearinghouses for transactions for environmental market-based mechanisms and for biodiversity offsetting and compensation banking (see for example, Speciesbanking.com and Mission Markets Earth). A recent report (Madsen et al., 2011) has found 45 existing compensatory mitigation programmes and 1,100 mitigation banks worldwide. A recent frontier of integration of sustainability considerations into finance and business activities through a system of environmental pricing is also represented by new environment-linked financial products and indexes such as the carbon-index-linked corporate bonds launched by JPMorgan in 2007. In 2008, Credit Suisse was the first bank to go as far as to launch a 'carbon structured product' which bundled together carbon credits from 25 different offset projects¹⁶, while over recent years proposals for new financial instruments which might help raise capital for green investments and environmental conservation projects have been put forward: Mandel et al. (2010) have proposed the creation of 'biodiversity derivatives'¹⁷, while Mainelli and Onstwedder are promoting index linked carbon bonds¹⁸. Sullivan (2013) has referred to this process as the "financialisation of environmental

conservation”¹⁹. In brief, in the era of financialisation, markets for environmental transactions are rapidly growing and financial markets have progressively assimilated new environmental services and natural resources. But what are the effects of these initiatives?

Let's start with cap-and-trade schemes for CO₂. The European Commission has placed great emphasis on EU ETS as the largest and most cost-effective tool for cutting greenhouse gas emissions, but the case for its impact on investment in low-carbon technologies is not equally strong. Most existing empirical evidence has found that the effects of EU ETS on technological innovation are limited or moderate (for a review see Borghesi et al. 2012). The role of other initiatives for evaluating the environment through financial mechanisms is even more debatable. The dispute around the financialisation of nature or natural capital accounting (depending on the preferred – negative or positive – connotation) was illustrated in a telling way during the recent *World Forum on Natural Capital*²⁰ and its counter-forum *Nature is not for Sale*²¹. The proponents of a more in-depth inclusion of finance in environmental protection and management of natural resources support the idea that the monetisation of nature can increase the visibility of nature, environmental services and the benefits of environmental protection. Pricing environmental resources (natural capital assets, environmental risks and environmental free-access or public goods and services) can mobilise financial resources and business practices towards investment in environmental conservation and towards the incorporation of sustainability principles into economic and financial activities and decisions. In other words, giving a monetary value to nature is expected to transform hidden costs, risks, services and wealth capacity into financial returns, gain opportunities²², risk or cost reductions, or, as recently stated in a UNEP-FI report, into ‘material for financial institutions’ (Mulder et al. 2013: 5). This message is clearly emphasised in the portal of the Carbon Disclosure Project (www.cdp.org) which reports that “climate change, water scarcity, flooding, pollution and deforestation present material risks and opportunities to investors”. These sanguine arguments, however, fall apart when the second-round effects are also taken into account. This process can also open up new environmental threats and adverse effects on equity and environmental justice because of two main intrinsic and unavoidable failures and iniquities in evaluating nature within the financial and economic realms. Firstly, the monetisation of environmental goods and services can amplify their exposure to market vagaries, volatility and failures driving prices far from fundamentals. In the light of the ongoing crisis, reliance on financial markets to ensure a ‘proper’ pricing of natural capital and to avoid shocks is questionable at the very least. Secondly, financialisation

is conducive to attempts to safeguard nature through a commodification of its resources, services and perceived value, but the complexity of ecosystems cannot be narrowed down, compressed and summarised into a single metric or service. Whatever the ethical issues involved, this 'synthesis' process is technically impossible since natural ecosystems provide multiple and indivisible services. In a certain sense, even if it were theoretically desirable, the monetisation of ecosystem services would in any case be unfeasible and incomplete, and therefore it would leave certain environmental services as 'orphans' with no incentives to protect them. The result is likely to be overexploitation or deterioration of those environmental values, services and resources which are not included in economic and financial measurement systems. This 'selective' and 'incomplete' financialisation process is also likely to generate adverse social effects on population groups whose livelihoods are linked to these environmental services. A perverse paradox might emerge from this: in the name of a legitimated defence of nature, new forms of dispossession may arise. Sullivan (2012) has observed that monetisation of nature can create new economic rents which encourage a rush for appropriation of value rents. Fairhead et al, (2012: 254) have referred to this 'green grabbing' as a process by which new "valuations of nature are legitimising and incentivising new appropriations and multiplying them". Paton and Bryant (2012: 98) take a similar stance pointing out that Clean Development Mechanism (CDM)²³ projects are generating negative social and ecological impacts and arguing that "[M]arket principles are thereby extended to the environment in a *very limited way*, based on properties required for trading [...] *Broader* social and ecological factors are not priced or covered" (emphasis added). Reviewing the literature on payments for ecosystem services (PES) and examples from carbon sequestration, watershed, protection and biodiversity conservation services, Kosoy and Corbera (2010) have concluded that the monetary valuation of ecosystem services denies their multiplicity and complexity and creates power asymmetries because it does not take into account the actual availability and use of ecosystem services across time, geographical areas and population groups. Similarly, when focusing on the increased involvement of private equity funds and development finance institutions in nature-based sectors in Africa, Bracking (2012: 271) has observed that "financiers have wrought a dissociated, incomplete and partial valorisation of the non-human world". In a recent review of the literature on implementation, theoretical and practical problems of biodiversity offsetting Bull et al. (2013) have reached similar conclusions.



In conclusion, the debate is divided between those wanting more finance and those wanting to remove finance from environmental protection initiatives. The discussion on this topic is deeply polarised between two opposing positions based on different theoretical, conceptual and, in some cases, ethical arguments. Integrating natural capital into financial products and services is seen as a way to value nature more and better or, conversely, as a way to impose a profit-oriented notion of nature at the expense of distributive, ethical and sustainable logics. We believe that the sceptical view is based on stronger theoretical arguments though further systematic empirical evidence, currently scarce, is needed to solve this dilemma.

4. Conclusions

This paper has discussed the main features and expressions of financialisation acceleration since the 1980s and its implications for sustainability relying on an extensive review of the literature. Financialisation generates effects which can create long-term trends (such as those on functional income distribution) but also potentially vary in different periods of economic growth, slowdown and recession (i.e. effects on consumption growth) encompassing a range of different processes and involving all components of the economy (FCs, NFCs, government institutions and households). Interpreting the implications of financialisation for sustainability, therefore, requires a methodologically diverse and empirical dual-track approach which combines different methods of enquiry. Historical contributions allow long-term trends, long-waves in the evolution of financial systems and different stages in financialisation to be identified. At the same time, theoretical models enrich the discussion of all possible channels of transmission and interaction. Moreover, they can contribute to interpretations of the empirical evidence which might lead to apparently contradictory conclusions: financialisation can generate simultaneous multiple effects and opposite impacts across different economic phases. In financialised economies, households can finance increasing levels of expenditure despite stagnant wages and firms can sustain profits in the face of growing competition. However fragile and vulnerable, times of prosperity can last for several years before collapsing as the Great Recession has recently shown. However, high levels of indebtedness amplify the real effects of a financial crisis and hinder subsequent economic recovery. Palley's model (2009: 49-50), which considers different stages of financialisation, clearly shows these changing implications: "the process of financialisation is long-running and expansionary in the early and middle stages" but then it constrains

consumption and investment “through de-leveraging and debt service payments”. This historical and theoretical approach can also help take into account the cross over effects between financial systems and the economy as well as between the role of finance and public intervention. As Orhangazi (2011: 3) has noted, “[F]inance was shaped by and in turn shaped the rest of the economy and in this process played a contradictory role by sometimes providing solutions to the problems in the economy while at other times contributing to their creation or exacerbation”. Evidence-based work also plays an important part in verifying the effects specific features of financialisation have had on the ground and how and whether other casual paths interact with processes fostered by financialisation. Empirical research would be best advised to follow two parallel but consistent lines of research: descriptive and broad analysis comparing the overall evolution of financialisation with general patterns in the socio-economic and environmental realms, and in-depth evidence of the single causal interactions which can operate simultaneously either in a mutually-reinforcing or in a counteracting way.

In referring to this methodological approach, this paper mainly draws on theoretical and empirical literature on the characteristics of recent financialisation phases and is complementary to the first chapter which includes historical analyses of this phenomenon and history of economic thought contributions.

We have discussed a range of channels of interaction and sustainability dimensions. Several studies suggest that Second Financialisation has brought fragilities and systemic risks to financial systems undermining their sustainability. Financialisation would also appear to generate sources of non-sustainability in the non-financial sector and in interactions between financial and non-financial units. We have identified a set of developments associated with financialisation which promote a short-term orientation in investment decisions and governance, reduce incentives for productive real investments and induce excessive financial leverage. All these processes tend to generate risks to the overall competitiveness of economic systems but also regressive distributive effects. The debate on the nexus between financialisation and environmental sustainability is more controversial. We have shown that the discussion around this topic is deeply polarised between two opposing positions while the empirical evidence is actually quite limited. However, important concerns for global social justice and environmental sustainability are evident. Increasing evidence is consistent with the notion that financialisation played a significant role in recent price shocks in the food and energy markets while the wave of speculative investment in natural resources is likely to

generate perverse environmental and social impacts. Moreover, the so-called financialisation of environmental conservation tends to enhance the financial value of environmental resources but it is selective: not all stakeholders have the same opportunities and not all uses and values of natural resources and services have been accounted for. This mechanism brings new risks and challenges to those environmental services and their users which are excluded by official systems of natural capital monetisation and accounting.

¹ Pozsar, Adrian, Ashcraft, and Boesky (2010) define shadow banks as “financial intermediaries that conduct maturity, credit, and liquidity transformation without explicit access to central bank liquidity or public sector credit guarantees”.

² Greenwood and Scharfstein (2013) have shown that in the US the contribution of the securities industry to financial sector growth from the 1980s to the 2000s was substantially greater than that of the credit intermediation industry.

³ By analysing neoliberalism under U. S. financial hegemony in the period from the late 1970s to the current crisis, Duménil and Lévy (2011: 87) have observed that “the alliance between the managerial and the capitalist classes was substituted for the previous alliance between the managerial and the popular classes”.

⁴ The link between financialisation and misallocation of talents in the economy, however, is not fully confirmed by the recent analysis of MIT B.A. graduates by Shu (2013) which finds that graduate schools and finance compete for students with the highest academic talent but that students choosing between these two different careers are not fully comparable.

⁵ On this mechanism, see also Blundell-Wignall and Roulet (2013).

⁶ For more detail about trends in distribution of personal income and their possible drivers see OECD (2011 and 2013).

⁷ Kus elaborates a financialisation indicator aggregating total value of stock traded on the stock market exchange as a percentage of GDP, bank income before tax as a percentage of GDP and securities under bank assets.

⁸ For a recent and detailed discussion on the channels through which economic fluctuations and crises affect inequality and also on the role of inequality as a cause of crises, see Stiglitz (2012).

⁹ The social costs of these excessive wages can be particularly relevant if, as argued by Greenwood and Scharfstein (2013), professional asset management has not ensured a more accurate monitoring and search for information. Indeed, evidence provided by Bai, Philippon, and Savov (2012) shows that the information content of market prices has not increased since 1960.

¹⁰ Measured by financial receipts (which include interest, dividends and capital gains) as a share of the revenue generated from the selling of goods and services.

¹¹ The ratio of compensation to the sum of compensation and gross operating surplus.

¹² For an overview on trends in labour income share see Hein (2013).

¹³ In Epstein and Jayadev (2005) rentier income includes the profits earned by financial firms and interest income of non-financial non-government resident units, while it excludes the

dividends of NFCs. Onarn et al. (2011) instead define the share of rentier income of NFCs as net interest and dividend payments to total profits.

¹⁴ For a brief overview of the drivers of this phenomenon see von Braun and Meinzen-Dick (2009).

¹⁵ For an overview on initiatives related to interventions for better 'green accounting' see Sullivan (2013).

¹⁶ For details see <http://www.fern.org/pt-br/node/5247>.

¹⁷ The idea is that "governments issue modified derivatives contracts to sell species' extinction risk to market investors and stakeholder" (p. 44 cited in Sullivan 2013).

¹⁸ http://www.ecosystemmarketplace.com/pages/dynamic/article.page.php?page_id=6658.

¹⁹ Sullivan defines "financialisation of environmental conservation" as "1. the turning of financiers to conservation parameters as a new frontier for investment, and 2. the rewriting of conservation practice and nonhuman worlds in terms of banking and financial categories (2013, p. 198).

²⁰ Simon Milne, CEO of Scottish Wildlife Trust, the conference institution organiser maintained that "Ultimately nature is priceless. But it is not valueless. The urgent challenge facing us in the next decade is to more fully understand this value, and the critical services nature provides to our economy and society" (<http://www.naturalcapitalforum.com/>).

²¹ The Declaration on Biodiversity Offsetting promoted by The Forum on Natural Commons, which organised the counter-forum, states that "Past cases of biodiversity offsetting shows how it opens up natural resources to further exploitation, and undermines communities' rights to be able to manage and protect the natural commons" (<http://naturenotforsale.org/declaration/>).

²² See, for example, the case of wetland mitigation banking described in Bayon (2008).

²³ The CDM is a mechanism which allows emission-reduction projects in developing countries to earn certified emission reduction (CER) credits. These CERs can be traded and sold, and used by industrialized countries to meet a part of their emission reduction targets under the Kyoto Protocol (<http://cdm.unfccc.int/about/index.html>).

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THE ABSTRACT OF THE PROJECT IS:

The research programme will integrate diverse levels, methods and disciplinary traditions with the aim of developing a comprehensive policy agenda for changing the role of the financial system to help achieve a future which is sustainable in environmental, social and economic terms. The programme involves an integrated and balanced consortium involving partners from 14 countries that has unsurpassed experience of deploying diverse perspectives both within economics and across disciplines inclusive of economics. The programme is distinctively pluralistic, and aims to forge alliances across the social sciences, so as to understand how finance can better serve economic, social and environmental needs. The central issues addressed are the ways in which the growth and performance of economies in the last 30 years have been dependent on the characteristics of the processes of financialisation; how has financialisation impacted on the achievement of specific economic, social, and environmental objectives?; the nature of the relationship between financialisation and the sustainability of the financial system, economic development and the environment?; the lessons to be drawn from the crisis about the nature and impacts of financialisation? ; what are the requisites of a financial system able to support a process of sustainable development, broadly conceived?

THE PARTNERS IN THE CONSORTIUM ARE:

Participant Number	Participant organisation name	Country
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