Enhanced Funds Seeking Higher Returns

Szabolcs Szikszai and Tamás Badics
Enhanced Funds Seeking Higher Returns

Szabolcs Szikszai and Tamás Badics

Affiliations of authors: University of Pannonia (Department of Economics), Veszprém, Hungary

Abstract: In this report we discuss the factors driving the growth of the global financial sector that are considered by many authors (e.g. Toporowski, 1999 and Orhangazi, 2008) to have precipitated the financial crisis of 2007-2008. Our analysis focuses on the behavior of the different types of financial as well as non-financial companies that financed the global expansion of financial assets. First, we find that investors of hedge funds and private equity funds lacked clear guidance on the expected performance due to the lack of transparency of operation and because conventional risk-return measures have proven to be inapplicable. Furthermore, it is also likely that hedge funds drastically decreased liquidity in certain markets during the crisis as they rushed to cash in on their assets. On the other hand, most of their investors were institutional investors, which prepared for potential losses and the collapse of hedge funds during the crisis did not shake the financial system. We also demonstrate the important role of NFCs in the process of financialisation of the economy. We point out that, as a result of a change in NFCs’ relationship with financial markets following 1980, financial assets held by non-financial corporations increased relative to the value of their real assets. This micro-based process of financialisation was triggered by a shift in corporate governance norms towards maximizing shareholder value as well as NFCs’ drive to compensate for falling rates of return in the real sector. The increased interconnectedness of the financial and the corporate sector also seems to explain why the crisis of the
financial sector inevitably led to a full-fledged economic crisis. Finally, we show that the active proprietary trading of the leading US investment banks was also an important element in the buildup of risks in the financial system preceding the crisis.

**Key words:** financial crisis, regulation, insurance fund, hedge fund, mutual fund, pension fund, private equity fund, wealth fund, investment bank, proprietary trading, financialization, share buyback

**Date of publication as FESSUD Working Paper:** June, 2014

**Journal of Economic Literature classification** G010, G220, G230, G240, G310, G320

**Contact details:** Dr Szikszai Szabolcs, Associate Professor, Department of Economics, University of Pannonia, Veszprém, Hungary.

Email: szikszaisz@gtk.uni-pannon.hu

**Acknowledgments:**
The research leading to these results has received funding from the European Union Seventh Framework Programme (FP7/2007-2013) for research, technological development and demonstration under grant agreement n° 266800.

[add any other acknowledgement, e.g. others who contributed to work, commented on paper]

**Website:** www.fessud.eu
1. Introduction .................................................................................................................. 5

2. Asset Management ........................................................................................................ 10
   2.1 Literature Review .............................................................................................. 10
   2.2 Empirical Evidence ........................................................................................... 13
      2.2.1 Conventional funds ................................................................................... 14
      2.2.2 Alternative funds ...................................................................................... 34
      2.2.3 Private wealth funds .................................................................................. 56
   2.3 Regulatory Steps ................................................................................................. 60
      2.3.1 Insurance funds .......................................................................................... 60
      2.3.2 Hedge funds and private equity funds ......................................................... 60
      2.3.3 Sovereign wealth funds .............................................................................. 61

3. Non-financial companies ............................................................................................ 63
   3.1 Literature Review ................................................................................................. 63
      3.1.1 Financialisation and non-financial companies ............................................. 63
      3.1.2 The effects of portfolio income and payments to the financial market .......... 66
      3.1.3 Share buybacks ......................................................................................... 68
   3.2 Empirical Evidence ............................................................................................... 71
      3.2.1 Financial assets ........................................................................................... 71
      3.2.2 Share buybacks ......................................................................................... 73

4. Proprietary Trading ....................................................................................................... 74
   4.1 Literature Review ................................................................................................. 74
   4.2 Empirical Evidence ............................................................................................... 75
   4.3 Regulatory Steps ................................................................................................. 78

5. Conclusions ................................................................................................................ 79

References ....................................................................................................................... 81
1. Introduction

The gap between the value of financial assets and GDP opened worldwide after 1980 and increased until 2007, the eve of the global financial crisis. Figure 1 shows that the expansion of the financial sector was very explicit in the United States where the ratio of financial assets to GDP rose from 194% in 1980 to 442% in 2007.

**Figure 1**

US financial assets as a percentage of US GDP, 1885–2008

Source: Roxburgh et al. (2009).

Among financial assets, the value of equities and private debt increased the most, parallel with the expansion of capital markets and the growing financing need of financial and non-financial corporations. Having grown at a compounded annual growth rate (CAGR) of 7.6% between 1990 and 2008, the global value of financial...
assets peaked in 2007 at 194 trillion dollars and reached a stunning 343% of global GDP (figure 2).
Although the growth of the financial sector vis-à-vis the real sector has been a global phenomenon, figure 3 shows that financialization\(^1\) played out differently across the various geographical regions of the world. In 2008, most deposits, bonds and equities were held in the US (31%), the Eurozone (24%) and Japan (15%), which, combined with the United Kingdom (5%), accounted for three-quarters of the global financial sector. The CAGR of financial assets between 1990 and 2008, however, was the fastest in emerging regions such as Russia (45%), Eastern Europe (24%), China (24%) and Latin America (22%). Although the financial sectors of emerging economies grew more dynamically in the pre-crisis era, the financial depth of these economies in 2008 was relatively lower than that of developed economies. The size of the financial sector as a percentage of GDP was the highest in Japan (533%) and

\(^1\) This term was introduced in Epstein (2005) and is explained later in greater length. On a basic level, financialisation refers to the growth in size of the financial sector relative to the real sector.
the US (392%) and the lowest in Russia (68%) and Eastern Europe (99%). We also find great divergence across regions in the components of financial depth. For example, while bank deposits are the predominant type of assets in emerging economies, large bond markets are the characteristic of developed economies.

**Figure 3**


<table>
<thead>
<tr>
<th>Total</th>
<th>54.9</th>
<th>4.7</th>
<th>42</th>
<th>8.6</th>
<th>1.1</th>
<th>1.5</th>
<th>26.2</th>
<th>12</th>
<th>2</th>
<th>3.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of GDP</td>
<td>392%</td>
<td>119%</td>
<td>314%</td>
<td>326%</td>
<td>68%</td>
<td>99%</td>
<td>533%</td>
<td>278%</td>
<td>162%</td>
<td>232%</td>
</tr>
<tr>
<td>CAGR</td>
<td>7.6%</td>
<td>22.0%</td>
<td>8.4%</td>
<td>9.3%</td>
<td>45.2%</td>
<td>24.3%</td>
<td>2.4%</td>
<td>24.2%</td>
<td>18.7%</td>
<td>19.6%</td>
</tr>
</tbody>
</table>

Source: Roxburgh et al. (2009).

In this report we discuss the factors driving the growth of the global financial sector that are considered by many authors (e.g. Toporowski, 1999 and Orhangazi, 2008) to have precipitated the financial crisis of 2007-2008. Our analysis focuses on the funding side of the sector, that is, the behavior of the different types of financial institutions that financed the global expansion of financial assets. The discussion is divided into three chapters. In chapter 2, we deal with the rapid growth of highly-leveraged financial institutions such as hedge funds and private equity funds.
and the growth of institutional investors, especially mutual funds and pension funds. In chapter 3, we discuss the accumulation of financial assets by non-financial companies and non-financial companies’ use of profits to finance share buy-backs. Finally, in chapter 4, we elaborate on the aggressive expansion of investment banks’ proprietary trading. We begin each chapter with a literature review, continue with a presentation of relevant empirical evidence and finish with a brief discussion of recent regulatory measures that have been proposed and enacted by policymakers to deal with the problems caused by these factors in the financial system.
2. Asset Management

2.1 Literature Review

Among the different types of funds, the contribution of hedge funds to the expansion of the financial sector vis-à-vis the real sector and their role in precipitating the financial crisis of 2007-2008 provokes the most discussion among economists. The recent insider trading scandals and fast proliferation of hedge funds, their active trading policy\(^2\), the lack of transparency of their operation and the fact that they were the main holders of collateralized debt obligations (CDOs) before the crisis\(^3\), have sparked enormous interest in hedge funds and their role in the financial crisis from academics, policymakers and regulators alike.

The most important question concerning hedge funds is whether and to what extent they pose systemic risk to the financial system. Stulz (2007) specifies four types of risk associated with hedge funds. These are risks to investors, risks to financial institutions, liquidity risk and volatility risk\(^4\). According to Stulz (2007), these risks are usually exaggerated. As for the first type of risks, since the clients of hedge funds are wealthy and savvy investors the financial losses of these investors have no serious additional social cost. Risks posed to financial institutions also tend to be exaggerated. As this kind of risk is not an immediate and exclusive consequence of the existence of hedge funds themselves but also that of the investment policy of banks, it can be reduced by regulation. Dixon et al. (2012), investigating the extent to which hedge funds’ failures and losses contributed to the worsening of the financial

\(^2\) Although the value of their assets under management (AUM) is small relative to global AUM, hedge funds represented more than 40% of market turnover of several types of assets before the financial crisis (Blundell-Wignall, 2007).

\(^3\) At the end of 2006 hedge funds held about 47% of all CDOs while banks held only 25% (Palaskes et al., 2013).

\(^4\) Dixon et al. (2012) classify systemic risk as channels through which these risks affect the financial system. These channels are the credit channel and the market channel.
crisis, point out that prime brokers and other creditors of hedge funds had learned from the failure of LTCM and required adequate margin and collateral from hedge funds to protect themselves against hedge fund losses. Liquidity risk arises, when hedge funds are forced to sell highly specialized assets (e.g. CDOs) that have few buyers and sellers. In this case, the withdrawal of capital from these markets may cause liquidity to disappear. Finally, one of the main concerns surrounding hedge funds’ operation is related to volatility risk. As many studies point out, owing to their large share in market turnover, hedge funds’ trading activity can increase the volatility of stock prices. Although historical examples suggest the existence of this effect, some of the authors argue that this argument is impossible to justify (Palaskes et al., 2013). Stulz (2007) even argues that in some cases hedge funds helped to stabilize markets by taking long positions, as it happened during the stock market crash of 1987. A comprehensive report on hedge funds’ history and their role in recent crises is provided by Mallaby (2010). As an argument against the regulation of hedge funds, he points out that about five thousand hedge funds went out of business between 2000 and 2009 without threatening the stability of the financial system or causing significant losses to taxpayers (see also Dixon et al., 2012). He also claims that governments should encourage ‘small-enough-to-fail’ hedge funds.

Considering that the regulation of the financial system has changed significantly in recent years, many researchers claim that hedge funds, owing to their small size and the self-regulation of markets do not pose serious risk to the financial sector and question their negative role in recent crises (Dixon et al., 2012; Palaskes et al., 2013). Palaskes et al. (2013) even argues that hedge funds improve the operation of financial markets in many ways. First, as they are sellers and buyers of a series of non-traditional assets, their activity contributes to the liquidity of these markets. Second, because hedge funds try to exploit arbitrage possibilities, they improve the

---

5 Because hedge funds trade in derivative markets, in the case of an adverse shock margin call requirements often force them to sell securities at distressed prices to raise cash, which can increase the volatility of asset prices.

6 See, for example, the role of Quantum Fund in the depreciation of the British pound sterling.
efficiency of the market and reduce volatility (see also Blundell-Wignall, 2007). Finally, hedge funds directly or indirectly take part in business transactions such as takeovers, mergers and the realization of new business plans, which may contribute to economic growth. On the other hand, Stulz (2007) warns against overestimating the extent to which hedge funds make markets efficient. He argues that a large system shock can indeed force hedge funds to withdraw their liquidity from the market, which may amplify the effect of the adverse shock.

Although the debate on the role of hedge funds is yet ongoing, it seems from the above discussion that most economists do not see the increased activity of hedge funds in global financial markets as a factor that contributed to the outbreak of the financial crisis.
2.2 Empirical Evidence

As shown in figure 4, the assets of the global fund management industry consist of:
- conventional funds (pension funds, mutual funds and insurance companies);
- alternative funds (hedge funds, private equity funds, exchange traded funds and sovereign wealth funds); and
- private wealth funds, about a third of which was incorporated in other forms of investment management.

**Figure 4**
Global conventional, alternative, HNWI assets under management (trillion US dollars), 2010

*High net worth individuals with over 1 million US dollar investable assets.
**Around one-third of HNWI wealth is incorporated in conventional assets.
2.2.1 Conventional funds

Figure 4 shows that conventional funds of the global asset management industry totaled a record 79.3 trillion dollars at the end of 2010, 6% up on the peak three years earlier. Pension assets accounted for 29.9 trillion dollars, with a further 24.7 trillion dollars invested in mutual funds and 24.6 trillion dollars in insurance funds. Figure 5 also indicates that global conventional assets grew by a CAGR of 14.7% between 2002 and 2007, which is considerably higher than the CAGR of nominal GDP (9.6%) in the same period. 2007 was clearly the peak year, which was only surpassed in 2010.

This empirical evidence suggests that global conventional assets grew fast leading up to the crisis. The financial crisis set back their growth rate but did not break the overall pattern of dynamic growth. Figure 5 shows that in 2008 alone global conventional fund assets fell by 16.7% just to increase back by 13% in 2009 and by 9.5% in 2010. Figure 6 demonstrates that the relative value of conventional funds peaked in 2007 at 134% of global GDP, from which it fell sharply in 2008, to 101%, just to edge back to 126% by 2010.

The US was by far the largest source of conventional funds under management in 2010 with nearly a half of the world total. It was followed by the UK with 8% and Japan and France with 7.5% and 6% respectively. Rankings based on sources of assets understate the UK’s position due to the substantial value of funds managed there on behalf of overseas clients. Taking these into account, funds managed in the UK are by far the largest in Europe. Of the largest countries, the UK has the highest ratio of invested funds as a percent of GDP (257%), followed by the US (224%), Switzerland (211%) and Netherlands (203%), while the global average was 115% in 2010.
The Asia-Pacific region has shown the strongest growth in recent years. Many fund management firms have shown an increased interest in countries such as China and India as they offer huge potential for growth. Institutional clients account for the majority of funds under management. There are substantial variations, however, between countries in the institutional to retail ratio. In France for example, the retail sector accounted for more than a half of funds. On the other hand, institutional investors were the biggest source of funds in the US, UK and Japan.

**Figure 5**

Global conventional assets under management (trillion US dollars), 2000–2010

Figure 6
Conventional funds as percentage of global GDP,
2004–2010

2.2.1.1 Mutual funds

As can be seen in figure 7, mutual funds’ assets increased by a CAGR of 14.7% between 1991 and 2007. It is also apparent from the figure that the rate of growth in the pre-crisis period was higher than average, at 18.8% between 2002 and 2007, which indicates a relatively fast buildup of these assets leading up to the crisis to a level that was first reached again in 2011. The most prosperous period of the mutual fund industry more or less coincided with the period of the long US stock exchange boom prior to the dot com debacle, that is, the beginning period of financialisation. In 1982 there were only 857 mutual funds in the US, and in 2001 their number were 8,305 (see ICI [2013]). Shiller (2000) notes that, at the end of the 1990s there were more funds listed on the New York Stock Exchange than stocks.

Figure 8 attests that the mutual funds industry is concentrated to only a few countries. The US was by far the biggest source of funds with more than a half of the world’s total mutual funds’ assets. Other important centers for mutual funds include the UK, France, Luxembourg, Australia, Italy and Japan.
Figure 7

Global mutual funds’ assets under management (trillion US dollars) and number of funds, 1991–2011

Source: ICI (2012).
Figure 8
Global mutual fund assets by region (percentage shares),
1998–2011

![Graph showing global mutual fund assets by region from 1998 to 2011](image)

Source: ICI (2012), own calculation.

2.2.1.2 Pension funds

Global pension assets overall have nearly doubled over the past decade, their CAGR was 14% between 2002 and 2007. After a sharp drop of 17% in 2008 due to the meltdown in equity markets, their value exceeded pre-crisis level in 2010 and rose further by 3% to 30.9 trillion dollars in 2011 (figure 9).

Although pension funds’ assets continue to grow figure 10 shows that liabilities escalate, as well. The Towers Watson’s asset liability index stood at 75 in 2011, which is higher than the trough of 68 in 2008 but suggests that the pre-crisis range of 80-90 remains unattainable. This means the value of assets relative to liabilities in 2011 was 17% lower than in 2007 before the financial crisis and 25% less than in 1998, the base year for the index. The size of liabilities poses a major challenge to
the funding of defined benefit (DB) pension schemes globally. For example, the aggregate deficit of companies in the FTSE Global 100 index was estimated by Lane Clark and Peacock at 290 billion euros in 2011. This is in part related to increasing life expectancy in major developed economies.

Pension assets of 29.1 trillion dollars in 30 OECD countries accounted for 96% of the global total at the end of 2010. According to figure 11, the global pension funds market is still dominated by the US, which accounts for 58% of assets. The next largest markets are the UK with 10% of assets, Canada (7%), Japan (5%) and Australia and the Netherlands (each 4%). The relative level of pension funds’ assets is also higher in developed than in emerging countries. At the end of 2010 pension fund assets exceeded 100% of national income in Denmark, the US, the Netherlands, Canada and Switzerland. Assets between 50% and 100% of GDP have been accumulated in seven countries: Australia, the UK, Finland, Chile, Sweden, Singapore and South Africa. By contrast, pension assets account for less than 10% of GDP in some other European countries, such as France and Spain. The large value of assets accumulated in the market leading countries over many decades means that these countries have been and will remain the dominant source of funds for years to come.

Having said that, figure 11 shows the slow but steady gain in market share of emerging economies - and Australia - at the expense of developed economies, especially the US, over the past decade. Amongst emerging economies pension assets in Brazil were the largest in 2011, at 301 billion dollars. Other emerging economies with assets between 100 and 200 million dollars include South Africa, South Korea, Mexico and Chile.

The global market of pension funds consist of the following main categories of funds:
autonomous pension funds invested in occupational pensions in 33 countries: 19.2 trillion dollars, 66% of the global assets;
- pension insurance contracts operated by life and pension insurance companies in 14 countries: 3.9 trillion dollars, 13% of assets;
- investment companies’ managed funds in seven countries: 2.7 trillion dollars, 9% of assets;
- book reserves in three countries: pension reserves or provisions in the balance sheet of the sponsoring company: 0.2 trillion dollars, less than 1% of global assets;
- banks’ managed funds in six countries: 0.6 trillion dollars, 2% of assets;
- other funds in three countries: 2.5 trillion dollars, 8% of assets; and
- assets of 35 non-OECD countries: 0.95 trillion dollars, 3% of assets.

While autonomous pension funds remain the primary focus of investment in Anglo-Saxon countries – the US, the UK, Canada, Australia, the Netherlands – and Japan, they remain scarce in other large countries of Western Europe: Germany, France and Italy. Pension insurance policies are also an important source of funds, accounting for the majority of pension assets in Denmark, Sweden and France, and for 15% in the US and the UK. Assets in retirement products, other than pension funds and pension insurance, make up nearly half of assets in Canada and a quarter in the US (Towers Watson, 2011).

As shown in Figure 12, for the last 16 years, equities, bonds and cash allocations of pension funds across the selected OECD countries have all decreased while assets in alternative areas increased from 5% to 20%. The share of assets invested in bonds fell only slightly over this period, thanks to a rebound from a low pre-crisis level, while the share invested in equities has declined gradually since 2005, triggered mainly by an increase in allocations to alternative investments. Nevertheless, the 80% share of conventional asset groups within pension funds’ portfolio continues to
be decisive. The case seems to be that, although pension funds have preferred to take a cautious, incremental approach to alternative investments, some of them have allocated considerable resources to alternative assets, reflecting their growing appetite for diversification. This process, however, is inhibited by a lack of transparency of alternative funds and the scarcity of long-term, robust performance data. The crisis also prompted pension funds to keep prudence in focus, reconsider their alternative investments (hedge funds, private equity, commodities, etc.) and strengthen their governance and risk controls.

Figure 13 shows pension funds’ net investment rate of return – the combination of the nominal performance of pension funds and inflation – across OECD countries in the period between 2002 and 2011. It is apparent that pension funds’ net gains, their average ranging from -1.5% in the US to 3.3% in Canada, vary substantially by year, by country of operation as well as by asset allocation strategy. It also appears that these real rates of return had not been excessive leading up to the financial crisis, except, perhaps, for Canada, where they averaged at 10.5% in the period of 2003-2006. Real returns were the lowest in all of the observed countries in the crisis year of 2008, owing mainly to the plunge in equity prices worldwide, although the impact was less felt in Germany where these funds invest mostly in bonds. After the crisis net annual returns seem to have come back to normal.

Figure 14 portrays pension funds’ returns for Germany, Japan, the UK and the US, based on hypothetical returns on an investment portfolio split 60%/40% between equities and government debt for 40 years ending in 1990, 2000 and 2010. The calculations use actual returns on equities (with dividends), government debt and the actual rate of inflation. Based on these calculations, a person that had accumulated savings for 40 years in such a pension scheme and retired at the end of 2010 would have received an average annual real rate of return of 2.8% in Japan, 4.2% in Germany, 4.4% in the United States and 5.8% in the United Kingdom. These
rates of return, in themselves, are also far from being excessive. If we compare them with real wage growth, however, the picture is slightly different. Real wages grew annually by an average of 0.6% in the United States, 0.7% in Germany, 1.2% in Japan and 2.1% in the United Kingdom in the same period, which shows that every unit of income saved in pension funds provided for a higher standard of living after retirement.
Figure 9
Global pension assets under management (trillion US dollars)
2001–2011

Source: OECD (2011a).
Figure 10

Pension fund assets, liabilities and asset/liability ratio for the 11 major economies (1998=100), 1998–2011

Figure 11

Global pension assets by country (percentage shares), 2001–2011

Source: OECD (2011b), own calculation.
Figure 12

Figure 13
Pension funds’ real average net annual returns in selected countries, 2002–2011

Source: OECD (2011b).
Figure 14
Hypothetical average annual real pension fund returns on a 60% equity/40% bond portfolio,
1950–2010

Source: OECD (2012).
2.2.1.3 Insurance funds

Figure 15 shows that insurance fund assets grew at a CAGR of 9.4% between 1995 and 2007, a relatively low figure compared to other fund types. Approximately four-fifths of the total was from long-term insurance policies and the remainder from general policies, such as health and property and casualty insurance. Over the past decade, insurance funds grew faster in Europe than in the US. Life companies’ funds also grew faster than non-life ones. US companies accounted for over a quarter of the total, followed by Japanese companies (16%) and UK and French companies (11% each), as seen in figure 16.

Insurers typically invest conservatively, focusing on highly-rated assets and a well-diversified portfolio, although US and UK insurers typically investing a larger proportion of their funds in equities than other developed countries. Subprime mortgage investments of insurance companies totaled around $80bn in 2008 or less than 1% of invested assets, which indicates that insurance funds had not taken excessive investment risks leading up to the crisis. Having said that, there is a clear break of the pre-crisis pattern of asset allocation trends after 2008 as the share of mortgage loans fell from 30% in 2008 to 10% in 2010, shown in figure 17.
Figure 15

Global insurance companies assets under management (billion US dollars), 1995–2010

Source: Swiss Re [2011].
Figure 16

Global insurance assets by country (percentage shares),
1999–2010

Source: Swiss Re (2011), own calculation.
Figure 17
Aggregate insurance fund (US, JAP, UK, FRA, GER) asset allocation, 2001–2010

Source: OECD (2011a), own calculation.
2.2.2 Alternative funds

2.2.2.1 Hedge funds
Assets under management of the global hedge funds industry grew dynamically at a CAGR of 29.3% between 1998 and 2007, when they peaked at 2,225 billion dollars (figure 18). 2007 also saw the peak in the number of hedge funds at 10,070. In 2011, both the value of global hedge fund assets and the number of firms were still below their 2007 peak values. The growth of hedge funds slowed down significantly as a result of the crisis and the subsequent cashing in on the funds’ assets as well as the reputational damage caused by the Madoff fraud in 2008. It is safe to say that amongst the many types of funds covered in this report, hedge funds suffered the greatest and most lasting blow from the financial crisis.

Hedge funds remain concentrated in the US where they manage 70% of global assets. Their main center is New York, where 42% of global hedge fund assets were managed in 2011. London, the second biggest center in the world and the main center in Europe, was estimated to have a global market share of 18% and a European market share of 85%. Asian players are less significant in comparison and their role is mostly confined to providing hedge funds with capital while most of these hedge funds are managed from the US or the UK. Interestingly, China only launched its first hedge fund in 2011 (TheCityUK, 2012a).

Market data reveal a trend of strengthening interconnectedness between hedge funds and institutional investors in the period of financialization. As a result of this trend, funds of hedge funds, pension funds and endowments have been the biggest source of capital for hedge funds since 2007. Figure 19 shows that the share of these institutional investors in total hedge fund assets grew from 19% in 1992 to 57% in 2007 and fell only slightly afterwards. More than a half of these institutional
This project has received funding from the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement no 266800

investors are US-based, followed by the UK (14%) and Switzerland (5%) (Hennessee, 2011).

Furthermore, figure 20 shows a cyclical pattern in global hedge fund leverage in the period between 1995 and 2011. The two peak years in terms of the exposure of hedge funds as a percentage of their assets under management were 1999, the eve of the dot com crisis, and 2007, the last year preceding the financial crisis of 2008. As data indicate, these values, as compared e.g. to investment banks, are relatively low. As Dixon et al. (2012) point out, leverage varies considerably across funds and, owing to the effect of outliers, average leverage level suggests that the typical hedge fund leverage is higher than its actual level.

TheCityUK (2012a) states that hedge funds saw an average return of 6.3% during the past decade. Figure 21 shows that the annualized rate of return of the Hennessee Hedge Fund Index, a widely accepted measure of hedge fund performance, was 11.43% in the period between 1987 and 2011, while the S&P 500 stock market index and the Barclays Aggregate Bond Index yielded a return of 7.02% and 6.87%, respectively, in the same period. Interestingly, although the Hennessee Hedge Fund Index outperformed both the stock and the bond index, the standard deviation of its rate of return was lower (11.28%) than that of the return on the S&P 500 index (17.36%), while the volatility of the bond index was the lowest (5.53%) (Hennessee, 2013).

2.2.2.1.1 Problems of measurement of hedge fund performance
As the previous paragraph suggests, hedge fund returns may be shown to be higher and their volatility lower than those of conventional funds over certain periods of

---

7 For example, Bear Stearns Hedge Fund was leveraged between 10 and 15 to 1 while LTCM was leveraged 25 to 1 (Dixon et al., 2012).
8 For further analysis of hedge fund leverage see Ang et al. (2010) and Dixon et al. (2012).
9 For further data on hedge funds’ performance using Credit Suisse Hedge Fund Index see Centre for Hedge Fund Research (2012) and Dixon et al. (2012).
time, making these funds appear an attractive investment. However, it is imperative to point out that some authors (e.g. Ackermann et al., 1999; Malkiel-Saha, 2005; Dichev-Yu, 2011; Griffin-Xu, 2009) call attention to the difficulties of assessing hedge fund performance. It is well documented that mutual fund indices usually contain upward biases such as survivorship bias and backfill bias. The fact that hedge funds are not required to report their results might enlarge these biases (Malkiel-Saha, 2005; Stulz, 2007; Dichev-Yu, 2011; Dixon et al., 2012). Furthermore, as the Investor Bulletin of the Securities and Exchange Commission warns investors, hedge funds usually hold illiquid assets that are difficult to value.

Contrary to mutual funds, hedge funds use derivatives and, thus, are not so exposed to market risk as mutual funds. However, as the cross-sectional variation in hedge fund returns is rather high (see Malkiel-Saha, 2005), past volatility is not such a good measure of risk inherent in their trading activity as it is for mutual funds. Stulz (2007) stresses that the trading strategies of hedge funds are much more similar to that of an insurance company selling earthquake insurance than to that of a mutual fund. As a result, although the volatility of hedge fund returns may be smaller than that of mutual funds, the probability of losing all assets is higher in the case of hedge funds. As a result, - as Carretta-Mattarocci (2007) and Borner (2004), amongst others, demonstrate - due to the fat tail property, the usual risk adjusted performance measure and modern portfolio theory are inapplicable to hedge funds. About the non-normality of hedge fund returns and alternative measures of risk adjusted performance see Brooks-Kat (2002), Malkiel-Saha (2005), and Eling (2006) and Kassberger-Kiesel (2006).

Dichev-Yu (2011) also distinguish between buy-and-hold fund returns and dollar-weighted investor returns\textsuperscript{10}. They investigate the returns for nearly 11,000 hedge

\textsuperscript{10} As for the concept of dollar weighted returns and its applications to mutual funds see Nesbitt (1995), Braverman et al. (2005) and Friesen-Sapp (2007). The dollar-weighted return takes into account the timing and magnitude of capital flows in and out of the fund, and calculates the internal
funds in 1980-2008, using the Lipper-TASS database and the Center for International Securities and Derivatives Markets database. They find that although the buy-and-hold return was 12.6%, larger than the S&P’s return of 10.9%, the dollar weighted return was only 6% over the period. They also mention that earlier empirical research indicates that the marginal return of investing in hedge funds is decreasing with the growth of the hedge fund industry, which is one of the main reasons for the gap between buy-and-hold and dollar weighted returns for the hedge funds\textsuperscript{11}. Another reason for the gap is the return chasing behavior of investors who base their fund purchase decisions on the prior performance of funds, which results in a negative correlation between returns and capital inflows (early articles discussing this for mutual funds are Ippolito (1992) and Sirri-Tufano (1993)).

Stulz (2007) has two further interesting observations regarding hedge funds’ performance. One is that, unlike the returns of mutual funds, hedge fund returns tend to show serial correlation. The other is that some hedge funds report higher returns in December than in other months of the year. According to Stulz (2007), this later phenomenon may be explained by the flexibility of hedge funds in valuing assets not traded on an exchange, that is, their ability to “massage” their reported return.

\textbf{Figure 18}

Global hedge funds’ assets under management (billion US dollars) and number of funds, 1949–2011

\textsuperscript{11} The mentioned effect of scale on performance is also observed for individual mutual funds and actively managed funds in Chen et al. (2004).
This project has received funding from the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement no 266800.

Figure 19

Global hedge funds by source of capital (percentage shares),
1992–2011

Figure 20

Global leverage of hedge funds (market exposure as a percentage of assets under management),
1995-2011

Figure 21
Global hedge funds average annual performance, 1987-2011

2.2.2.2 Private equity funds

As shown earlier, the value of private equity owned assets roughly equals that of financial assets managed by hedge funds. Figure 22 shows that private equity owned assets increased equally dynamically before the crisis, at a CAGR of 27.2% between 2003 and 2007, while the number of firms rose from 2560 to 3941. The growth of the sector moderated somewhat after the crisis and the consolidation within the industry even reduced the number of firms in 2011. Figure 23 shows that the value of global private equity investments peaked in 2006, just to fall back sharply, by 82%, between 2007 and 2009 and virtually stagnate afterwards. Figure 24 also demonstrates that, following a general trend of increasing leverage prior to 2007, funds across the globe underwent a post-crisis wave of deleveraging: equity contribution to leveraged buyouts rose from 33% to 51% between 2007 and 2009.

As can be seen in figure 25, buyouts accounted for the majority of private equity investments by value after 2001, while smaller scale venture capital investments gave the majority by number of transactions. Figure 26 presents the regional breakdown of private equity activity between 1998 and 2011. It is apparent from the chart that while the combined share of North American and European investments was above 80% until 2006, the share of North America dropped after the crisis both by the value of investments and by raised capital. The North American private equity market reacted rather sensitively to the unfolding signs of the financial crisis in 2007 when its share in global investments halved and continued to fall into 2008. The chart also shows that the global share of the Asia-Pacific region grew slightly over the investigated period as leveraged buyouts offer higher returns in this region. Nonetheless, the global private equity industry remains to be dominated by US based companies after the crisis, with 15 out of the largest 50 private equity firms headquartered in New York.
Private equity funds have gained popularity among investors since the 1980s as they have proven to generate higher average rates of return than publicly listed equities or bonds. Figure 27 shows that the annualized returns over the one- and five-year periods for private equity funds was higher across the one- and five-year periods to 31st December 2011 than for a selection of public indices. Rates over the three- and 10-year periods were second only to the MSCI Emerging market index. Preqin (2012), however, adds that comparisons made between private equity and public market indices should be treated with caution as, in lack of public markets, most private equity assets can be considered illiquid and the time horizon of savings in private equity funds is usually much longer than in the case of listed instruments.
Figure 22

Global private equity assets under management (billion US dollars) and number of private equity firms, 2003–2011

Source: Preqin [2012a].
Figure 23

Global raised, invested and divested private equity (billion US dollars),
2001–2011

Source: Preqin (2012a).
**Figure 24**

Loans for leveraged buyouts (billion US dollars) and global leverage (percentage) 2000–2010.

Figure 25

Global private equity investments by financing stage (percentage share),

2000–2011

Source: PwC.
Figure 26
Private equity invested and raised by region (percentage share), 1998–2011

Source: Preqin [2012a], own calculation.
Figure 27

Global private equity horizon IRRs vs. public indices, end of 2011

Source: Preqin [2012a].
2.2.2.3 **Sovereign wealth funds**
Sovereign wealth funds (SWFs) are special purpose investment funds owned by governments, created in most cases out of current account surpluses or other foreign currency transactions. Although SWFs have existed since the 1950s, the majority of these funds have been established since 2000 at a growing pace. Figure 29 shows that SWFs grew fast leading up to the crisis, by a CAGR of 21.4% between 2002 and 2007, and their number almost doubled in the same period. The value of assets owned by SWFs surpasses that of the assets of hedge funds or private equity firms, although it is still dwarfed by the size of conventional funds.

Thanks to the development and implementation of a list of best practices in 2008, called the Santiago Principles, the transparency of SWFs is gradually improving. TheCityUK (2012b) estimates that commodity funds, funded predominantly from oil revenue, make up more than half of all SWFs, while the rest are non-commodity funds, funded mainly from official foreign exchange reserves or pension reserves. Close to 40% of all SWF assets originate from Middle Eastern countries while European governments manage most of the remaining funds.

In the 2000s, non-commodity SWFs grew more dynamically than commodity SWFs, leading to the increasing share of the former. One of the main reasons for this is that some Asian countries, particularly China and Japan, increased their official foreign exchange reserves substantially (see figure 28), which amounted to 32% and 11%, respectively, of the global total by 2011.

SWFs are at liberty to formulate their investment strategies and, unlike conventional funds, are usually not confined to certain asset classes to choose from, as reflected in figure 30. Nevertheless, a clear distinction can be made between the investment strategies of commodity and non-commodity SWFs. Commodity SWFs prefer to invest for the long haul in foreign equity and alternative fund assets, followed by less
risky bonds and bank deposits. Having said that, the financial crisis made them more risk averse and increase their bond investments. At the same time, two-thirds of official foreign exchange reserves accumulated by non-commodity SWFs have been invested in assets denominated in US dollar, particularly US government bonds. This makes non-commodity SWFs an increasingly important source of liquidity in the global financial market (TheCityUK, 2012b).

**Figure 28**

Global current account imbalances (percentage of global GDP), 2001–2011

Figure 29

Global sovereign wealth funds’ assets under management (billion US dollars) and number of funds, 2002–2011

This project has received funding from the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement no 266800

**Figure 30**

Proportion of SWFs investing in each asset class (percentages), 2010–2011

Source: Preqin [2012b].
2.2.2.4 Exchange traded funds

The first exchange traded funds (ETFs) were launched in 1993 in the US and in 2000 in Europe by institutional investors. Although their still low share in all global fund assets makes ETFs a less significant category of alternative funds, their expansion, which slowed down only temporarily in 2008, has been impressive. The value of their assets rose by a CAGR of a stunning 40.9% between 2001 and 2007 and more than doubled since the crisis (figure 31).

ETFs are passively managed open-ended funds traded on exchanges at approximately the same price as the net asset value of their underlying assets, predominantly equity or bond indices and commodities. They are similar to mutual funds in the sense that both instruments help investors diversify their portfolios. However, one attraction of ETFs for investors is that, because most of them are index-tracking instruments, they are cheaper to operate than actively-managed mutual funds. Another big advantage is that they are traded continuously during normal exchange trading hours, while mutual funds trade only at the end of the day at the net asset value price.
Figure 31
Global ETF assets under management (billion US dollars) and number of products, 1997–2011

Source: BlackRock Investment Institute [2012].
2.2.3 Private wealth funds

According to Capgemini (2012), the value of funds managed on behalf of high net worth individuals (HNWIs) grew by a CAGR of 7.6% between 2002 and 2007 (see figure 32). Although the financial crisis erased one-fifth of global HNWI wealth in 2008, the value of funds surpassed the 2007 figure in 2010. While the US, Japan and Germany still have more HNWIs than the rest of the world combined and the majority of global HNWI wealth is still managed in developed regions, Latin America and Asia-Pacific have been gaining market share since 2005 (see figure 33). This trend was reinforced by the crisis: the population of HNWIs in Asia-Pacific (3.3 million) was already bigger than that of Europe and was second only to that of North America in 2010. Interestingly, while private wealth per HNWI is between 3.1 and 3.4 million dollars in North America, Europe and Asia and averages at 4.4 million in Africa and the Middle East, it is over 14 million dollars in Latin America. Capgemini (2012) estimates that Latin American HNWIs are four times as wealthy as the average. Figure 34 attests that while global HNWI funds increased their more risky equity holdings before the financial crisis, this trend reversed in 2007 when investments were steered increasingly to less risky assets including fixed income and cash.
Figure 32

Global private wealth funds’ assets under management (trillion US dollars) and number of HNWIs (million people), 1999–2011

Source: Becerra et al. [2012], Capgemini [2012].
Figure 33
Regional distribution of HNWI wealth,
2000–2011

Source: Capgemini (2012), own calculation.
Figure 34

Global asset allocation of HNWIs (percentages),
2002–2010

Source: Capgemini (2012).
2.3 Regulatory Steps

2.3.1 Insurance funds
The regulation of the insurance sector is undergoing significant changes in Europe. EU Directive 2009/138/EC, or the so called ‘Solvency II Directive’ is a fundamental review of 73/239/EEC of 1973, or the so called ‘Solvency I Directive’. Solvency II aims to unify the EU insurance market and enhance consumer protection and will cover authorization, corporate governance, supervisory reporting, public disclosure, risk assessment and management, and solvency and reserving. Its most important pillar sets out a new formula for calculating the solvency capital requirement (SCR) and the minimum capital requirement (MCR). Under the new rules to be introduced when the capital holding of an insurance company falls below SCR regulatory intervention will follow and when it breaches MCR its business might be suspended or terminated. Thus, Solvency II should make firm failure less likely and reduce the probability of consumer loss or market disruption.

According to estimates by the European Commission, the implementation of the new directive will cost European companies circa 2-3 billion euros over 5 years, which is one of the main reasons it is being criticized by US- (and UK-) owned insurance companies operating in Europe. The implementation date for Solvency II has now been postponed several times. The current expectation is that, following the transposition of the directive into national legislations, Solvency II requirements would apply to insurers after January 1, 2016 in all 27 European Union (EU) Member States plus three of the European Economic Area countries.

2.3.2 Hedge funds and private equity funds
The financial crisis of 2007-2008 brought with it stricter regulation of hedge funds and private equity funds both in the US and in Europe. Hedge funds were generally regarded as having amplified market volatility during the crisis through short-selling
transactions and selling shares as part of their deleveraging and redemptions. Therefore, the London summit of the G-20 countries in April 2009 established the Financial Stability Board, which encouraged a more comprehensive oversight of financial institutions, including that of hedge funds.

In the United States the Dodd-Frank Wall Street Reform and Consumer Protection Act, enacted on July 21, 2010, reformed the regulatory framework through increasing the transparency and liquidity of alternative funds. The most important measures in this act include new registration and disclosure requirements and the regulation of over-the-counter derivatives. In line with the Dodd-Frank Act, most private investment advisors of hedge funds and private equity funds are required to register with, periodically report data to and be available for inspection by the Securities and Exchange Commission. These measures provide US regulators and the Congress with insight into the trading positions, leverage, use of bridge financing and investments in financial institutions of these private funds and contribute to a better assessment of the systemic risks associated with their operation. Legislation in the EU shortly followed suit with the enactment of the Alternative Investment Fund Managers (AIFM) Directive on July 22, 2013, containing similar measures.

2.3.3 Sovereign wealth funds
Sovereign wealth funds have been criticized by some governments because of their limited disclosure and transparency and the politically sensitive nature of their operation. These funds have the resources to purchase controlling stakes in companies of national strategic importance and use these investments to pursue their own national goals. The International Working Group of Sovereign Wealth Funds (IWG) was formed in May 2008 with the purpose of addressing these concerns. In October 2008, IWG published the Santiago Principles, which is a set of 24 voluntary principles and practices to be applied by sovereign wealth funds (IWG, 2008). In April 2009, IWG established the International Forum of Sovereign Wealth Funds, a
voluntary group of SWFs meeting annually to promote the implementation of the Santiago Principles. On the other hand, OECD published guidance in 2008 on how recipient countries should conduct fair policies towards SWFs by avoiding protectionism and upholding transparent investment frameworks.
3. Non-financial companies

3.1 Literature Review

3.1.1 Financialisation and non-financial companies

In the last thirty years there have been essential changes in firms’ corporate governance, investment patterns of non-financial corporations (NFC) and in the relationship between NFCs and financial markets. In this chapter we discuss those changes which presumably are in close relation to the outbreak of the crisis of 2007-2008, and which may be deemed to be various forms of financialisation.

In the broad sense of the word, financialisation means “the increasing roles of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies” (Epstein, 2005). This definition of financialisation suggests that the process of financialisation can be measured in terms of macroeconomic variables such as the share of financial institutions’ profit within the total profit of the enterprises in the economy or the financial sector contribution to the total GDP of the country, increasing debt, etc.\(^\text{12}\).

As opposed to Epstein’s macroeconomic approach, other authors use this term in a much narrower sense and emphasize microeconomic or firm level changes which refer to qualitative rather than quantitative changes. These two approaches of financialisation, of course are not completely independent, as the microeconomic or firm level theories may serve as explanations for a series of macroeconomic changes.

---

\(^{12}\) For the exact evolution of the main indicators of this process see for example Epstein-Jayadev (2005), Duménil-Lévy (2005), Stockhammer (2004), Kotz (2010) and Palley (2007), for a review of the literature see also Till van Treeck (2009) and Palley (2007) and for the economic and social impact of the financialisation such as widening the income inequality and tepid economic growth see Palley (2007), Bebchuk-Grinstein (2005), Gordon-Dew-Becker (2007) and Mishel et al. (2007), for the connection between financialisaton and conventional economic theories such as the agent theory, Arrow-Debreu contingent market model, Tobin’s q-theory, etc. see Palley (2007).
phenomenon, such as the slowdown of real capital accumulation and that of economic growth.

One of the firm-level changes that have taken place in the last decades, which is commonly deemed to be one of the most important one from the point of view of both financialisation and the global financial crisis, is the gain in prominence of the shareholder value norm in corporate governance from the 1980s on. There are three underlying reasons that encourage managers to increase the value of the shares. One is the pressure of the ‘impatient financial market’, another is the share option remuneration of managers and the third is threat of hostile takeover. Crotty (2005) considers the fall in NFC profit rates owing to the intensive competition in the era of neoliberal globalization and impatient financial markets to be the main driving force behind the change in corporate governance.

Another important firm-level change is that, instead of investing in physical capital, NFCs try to raise their profit by increasingly engaging in financial operations. As a result, NFCs’ incomes from financial investments have been growing and the share of the income from real investment in total profit has been decreasing over the last thirty years. For example, Krippner (2005), in his definition of financialization, emphasizes that ‘profit accrues primarily through financial channels rather than through commodity production’; Epstein–Jayadev (2007) use ‘rentier income’ share of national income as an indicator of financialization; and refers to financialisation as all the changes that have taken place in the relationship of the NFC sector and financial markets. Having investigated the US economy between 1973 and 2003, Orhangazi (2008) concludes that there is a negative relationship between real investment and financialisation. Stockhammer (2004) also presents empirical

---

13 This firm level aspect of the financialisation is emphasized by e.g. Froud et al. (2000), Feng et al. (2001) and Stockhammer (2005-6), for the change in corporate governance and its role in the global financial crisis see Deakin (2010), and for a good review of the history and the concept of ‘shareholder value’ principle see Lazonick-O’Sullivan (2000) as well as Fligstein (1990), Holmstrom-Kaplan (2001) and Stockhammer (2004).
evidence on the link between financialisation and capital accumulation. The indirect connection between 'financialisation' and unemployment is also an important area of research, and there exist empirical results which quantify the impact of financialisation on unemployment (see González, 2011).
3.1.2 The effects of portfolio income and payments to the financial market

As mentioned, in the era of financialisation, the changes in managerial behavior are accompanied by changes in the relationship between NFCs and financial markets, and NFCs become more active in financial markets. As a result, in the last decades, there has been a shift from real investment to financial investment. In this subsection, we sum up the main changes in the wealth portfolio of these firms and overview the literature discussing this issue. Because data on the wealth portfolio of NFCs are not available for all countries, most of the literature deals with the United States. In fact, as IMF (2006) points out, among the G7 countries, only the United States, the UK and Italy can be characterized by an increasing accumulation of equity investments.

Krippner (2005) investigates the ratio of portfolio incomes to corporate cash flow for NFCs in the US from 1950 to 2001. His findings strengthen our expectations that at the beginning of the era of financialisation, the share of incomes from financial activity jumped relative to non-financial activity. Krippner (2005) emphasizes that the ratio was remarkably stable from 1950 to 1965 and peaked in 1988, when it was five times larger than it was in the 1950s. However, in spite of the fact that the most intense period of increase was the interval from 1978 to 1983, the steady increase of the ratio started already at the end of the 1960s. Orhangazi (2008), investigating the ratio of interest and dividend incomes to internal funds of NFCs in the US, finds similar tendencies over the investigated period. Orhangazi also points out that there has been a steady rise in the ratio of NFCs’ financial assets relative to their real assets between the early 1980s and the beginning of the 2000s. The ratio of financial assets to tangible assets rose from below 0.4 to around 1.1 during this period.

Krippner (2005) also investigates the share of portfolio incomes for manufacturing and non-manufacturing firm separately, and he finds that the increase was much more intense for the former group, which can be attributed to the decreased
profitability of productive enterprises due to labor militancy and intensified competition in the 1970s and to profitability becoming more volatile as of the second half of the 1980s. For this group of firms this ratio continued to rise in the 1990s and was around 0.95 in 2001. Krippner (2005) also emphasizes that portfolio income largely emanated from interest payments, which is a ‘surprising result’ and also serves as a strong argument against the view that financialisation can be accounted for by financial market development by itself.

Orhangazi (2008) investigates empirically the impact of financialisation on real investments in the US economy. He distinguishes two channels through which financialisation operates. Firstly, increased financial profit opportunities crowd out less profitable real investments. Secondly, the increased payments to financial markets in the form of interest and dividend payments and share buybacks decrease the available internal funds of the company, shorten the planning horizon of the management and increase uncertainty, which, in turn, also reduce the real investment (see also Duménil-Lévy, 2004 and Aglietta-Breton, 2001). Orhangazi also points out that firms often finance their share buybacks by borrowing, which, by increasing the indebtedness of the firm, can make it more difficult to obtain a loan to invest, and raising capital from the stock market may be contrary to the incentive to raise share prices.

Orhangazi emphasizes that the first channel is somewhat in contrast with the neoclassical investment theory. According to the ‘financing constraint hypothesis’, increased financial profits enable firms to accomplish real investments in the future. Orhangazi uses panel data from 1972 to 2003 for a large number of firm, and investigates the effect of financialisation on investment for various firm groups separately. Using the Arellano-Bond Generalized Method of Moments, he finds that the financial profit of large firms affects their investment negatively, which is aligned with the aforementioned financialisation theory. However, the result for small firms
underpins the financing constraint hypothesis. As for the second channel of financialisation, the results support the financialisation hypothesis for most of the groups of firms investigated, that is, payments to investors negatively affect real investments.

Although, the mentioned empirical firm level tests may suggest that there is a negative relationship between financialisation and growth, some authors emphasize that financial investments cannot substitute for investment in real capital on the macro level (see Tobin, 1997; Pete, 1999).

3.1.3 Share buybacks

As mentioned, one of the main channels of financialisation works through the increased payments to investors, which divert internal funds away from real investment. There are two ways to return funds to investors. Corporations either distribute the surplus cash to shareholders in the form of dividend or repurchase some of the shares issued. The era of financialisation has been marked by the continual increase of the share of buybacks in total payout to investors, due in part to a change in regulatory policy. Share repurchase of the companies in the S&P 500 as a percentage of total dividends rose from 10% to 113,6% between 1980 and 2005 (Mauboussin, 2006), but it was the period of 2004-2007 when repurchases surged in the US\textsuperscript{14}. Share repurchase has spread not only in the US but also in the EU. As ECB (2007) points out, the importance of the share repurchases increased in the EU prior to the financial crisis. Share repurchases are popular mainly in the United Kingdom, Switzerland and, in the decade prior to the crises, in Greece\textsuperscript{15}.

Beside the fact that share repurchase as payment to investors is an important factor in the channels of financialisation, it also has an important role in the understanding


\textsuperscript{15} For average rates of share repurchase in OECD countries over long periods, see Jauch (2012), and for the number of repurchase announcements in Europe between 1985 and 1988 and detailed repurchase data for UK between 1985 and 1998, see Rau-Vermaelen (2002).
of the concept of global savings glut, which is assumed to have contributed to the
financial crisis. As IMF (2006) and Jauch (2012) point out, although repurchases are
close substitutes for dividends, according to the definition of the system of national
accounts, share repurchases are part of corporate saving. This sheds some new
light on the role played by corporate savings in the global savings glut. Jauch (2012)
emphasizes that after Ben Bernanke introduced the notion of global savings glut in
2005 some authors – e.g. André et al. (2007) and IMF (2006) – emphasized the
increasing importance of the corporate sector’s savings in global capital supply.
However, calculating the adjusted saving rate by subtracting share repurchases
from official corporate saving, Jauch (2012) rejects the hypothesis of the corporate
savings glut.

There is a voluminous literature dealing with the issue of why corporations prefer
share repurchase to dividends. For details, among others, see Grullon-Michaely
(2002) and Mauboussin (2006). According to the most well-known argument,
differences in tax on capital gains and ordinary incomes provide an incentive for
corporations to substitute share repurchases for dividends. In spite of the fact that
the relative tax advantage of repurchase has decreased markedly during the last
decades, the flexibility of the share repurchase and the possibility of shareholders’
postponing the payment of tax creates an incentive for managers and shareholders
to choose share repurchase. Because managers are reluctant to change dividend
payments frequently, share repurchase provides a flexible instrument for
distributing cash to shareholders and enables firms to smooth dividend payments.
The seminal paper concerning dividend smoothing is Lintner (1956), which
introduced the partial adjustment model for dividend policy. This article indicated
that US companies tend to smooth their dividends and his findings were confirmed
later by, amongst others, Fama-Babiak (1968) and for the UK companies by
the speed of adjustment coefficient introduced by Lintner, finds that although the
total payout smoothing was declining, dividend smoothing was increasing over the period of 1955-2005 in the US. Some authors – e.g. Aivazian et al. (2003a, 2003b and 2006) and Al-Yahyae et al. (2011) – emphasize that dividend smoothing is pronounced mainly in well-developed financial markets, especially countries with a market based financial systems. Al-Yahyae et al. (2011), also using Lintner’s approach, indicate that firms in Oman, which is a less developed country with a bank based financial system, do not smooth their dividends, at all.

Grullon-Michaely (2002) also seeks to examine the evolution of share repurchase of US companies and the reasons behind the growing tendencies. They find that, according to aggregate data from Compustat, the share repurchase of companies as a percentage of total dividends has increased from 13.1 percent in 1980 to 113.1 percent in 2000. They establish that corporations have been substituting share repurchases for dividends. They point out that for firms that engaged in repurchase programs, the effect of a decrease in dividends on share price is not significantly different from zero, while for those firms that did not repurchase shares this effect was significantly negative. This finding indicates that corporations substitute share repurchases for dividends. Grullon-Michaely (2002) point out that the major impetus behind the shift from dividends to repurchase was provided by Rule 10b-18 being adopted in 1982 by the Securities and Exchange Commission, which warded off the threat of being charged with illegal market manipulation. They note that the aggregate amount of cash spent on share repurchases tripled about one year after the approval of the new regulation\(^\text{16}\).

Rau-Vermaelen (2002), investigating the motivations of share buybacks in the United Kingdom, gives detailed data on repurchases. They find that the overwhelming majority of the repurchases in Europe between 1985 and 1998 happened in the UK. Among the reasons behind this phenomenon they mention the following three. First,

\(^{16}\) For the evolution of the repurchases and dividends in the US see also Mauboussin (2006, 2012).
in some of the other European countries share repurchases are illegal. Second, some of the other tax systems discourage share repurchase. Third, in some countries companies do not have to disclose share repurchases. Finally, Rau-Vermaelen (2002) mention that the UK’s corporate culture is different from that of the continental Europe. While UK companies maximize shareholder value companies in continental Europe maximize value going to all the stakeholders. Furthermore, investigating the impact of tax changes over the sample period, they find that tax changes played a major role in the spread of share repurchases in the UK.

3.2 Empirical Evidence

3.2.1 Financial assets

Orhangazi (2008) demonstrates the existence of a link between financialization and capital accumulation. As can be seen in figure 35, NFCs were heavily investing in financial assets in the period leading up to the burst of the dotcom bubble in 2000 and then again in 2007-2009, while an increasing share of their income came in the form of financial profit. At the same time the rate of their real investment was relatively low and stagnating. Our literature review also suggests that financialization, that is, the increase of the value of financial assets had an adverse impact on the dynamics of capital accumulation.

Figure 35

US NFC financial assets as a percentage of tangible assets and interest plus dividend income as a percentage of internal funds, 1958–2011
Source: US Flow of Funds, BEA NIPA, own calculation.
3.2.2 Share buybacks

Figure 36 shows how NFCs in the US have used their funds over the past quarter century to finance capital expenditures, mergers and acquisitions (M&A), share buybacks, and dividend payments. From 1985 through 2011, roughly 55% of total corporate spending went to capital expenditures, spending on M&A accounted for 27%, and dividends and buybacks for the remaining 18%. However, while dividends remained relatively stable throughout the period, share buybacks started to accelerate after 2003 and peaked in 2007, just before the onset of the financial crisis. Although the crisis years of 2008 and 2009 saw the value of share repurchases fall to one-fifth, the downward trend reversed in 2010 and buybacks are, again, on the rise.

Figure 36
US NFC share buybacks compared (billion US dollars), 1985–2011

Source: Mauboussin (2012).
4. Proprietary Trading

4.1 Literature Review

In the financial literature the term proprietary trading means that banks, rather than trading on behalf of their customers, trade on the security market using their own funds to make profit. Because proprietary trading poses a serious risk to depositors, in many countries, regulators try to separate depository banks’ proprietary trading from other conventional banking activity. The most well-known example of this is the famous ‘Volcker Rule’ which is a part of the USA’s Reform and Consumer Protection Act, also known as the Dodd-Frank Act (to be discussed in section 4.3).

The best-known type of the conflicts of interest regarding proprietary trading is the so called ‘front-running’. An example of this is a trade, which is based on the information on a customers’ subsequent order. Another type of conflict of interest exploits information on a subsequent change in analyst recommendations\(^\text{17}\). A third type of conflict of interest arises when banks can buy a particular asset at different prices and allocate the asset with the most favorable price to its own portfolio and the ones with less favorable prices to their client’s portfolio (GAO, 2011). It is also observed that banks, in order to get rid of low performing assets, often transfer them to their retail investors (Fecht et al., 2013). Further research documents that investment banks’ analysts may bias their stock recommendations if the investment bank is in business relations with the issuer, e.g. in the case of an underwriter relationship (Lin-McNichols, 1998; Michaely-Womack, 1999; Dugar-Nathan, 1995; Charitou-Karamanou, 2011)\(^\text{18}\).

\(^{17}\) For the literature regarding investment banks’ abusing their private information (for example on impending recommendation revisions or mergers) to make profit by trading see Bodnaruk et al. (2009), Juergens-Lindsey (2009), Irvine et al. (2007) and Charitou-Karamanou (2011).

\(^{18}\) On the optimism of investment bank analysts and on analyst research biases, see Guan et al. (2012).
As a consequence of the reforms at the beginning of the 2000s, investment banks’ behavior slightly changed. Charitou-Karamanou (2011) investigate analyst recommendations made by the 10 banks sanctioned by the US Securities Exchanges Commission in April 2003 for a total of 11,590 stocks from the period between 1999 and 2007. They establish that in the period before the Global Research Analyst Settlement (GRAS) there was a strong relationship between the investments bank’s holdings in a stock and the recommendations of the banks’ analysts. They also stress that in the pre GRAS era analysts were prone to upgrade a stock if the investment bank was a lead underwriter for the stock, but this behavior was not significant after GRAS. Furthermore, they find that although GRAS was successful, some forms of trading ahead of recommendations continued to exist. Other authors call into question the efficacy of GRAS. Guan et al. (2012) argue that investment banks only shifted their activity from the investment banking business to commission trading which may reveal other types of biases in investment banking research\textsuperscript{19}.

4.2 Empirical Evidence

Because banks’ proprietary trading creates the possibility of large losses contributing to the growth of systemic risk, it is worth looking into banks’ proprietary trading activity. Therefore, we review, based on GAO (2011), the proprietary trading activity of the six largest \textsuperscript{20} US bank holding companies and the risks associated with these activities.

According to GAO (2011), the total combined revenue of the six bank holding companies from proprietary trading between the third quarter of 2006 and the fourth

\textsuperscript{19} On the effects of other regulations related to conflicts of interest, see also Barber et al. (2006), Chen-Chen (2009) and Guan et al. (2012).

\textsuperscript{20} Based on bank holdings’ report to Federal Reserve, the largest six banks holding companies accounted for 88 percent of total trading revenues of all bank holding companies in 2010. The list includes Bank of America Corporation, Citigroup Inc., The Goldman Sachs Group, Inc., JPMorgan Chase&Co., Morgan Stanley and Wells Fargo&Company.
quarter of 2010 was 15.6 billion dollars and the combined losses during the same period totaled 15.8 billion dollars, which resulted in a combined net loss of 221 million dollars. While combined revenues from stand-alone proprietary trading account for a relatively small proportion of the revenues from total trading, the bulk of the loss was made by the stand-alone proprietary trading desks (see figure 37). Furthermore, while net revenue from total trading activity is positive, accumulated revenues from stand-alone proprietary trading were exceeded by losses.

Out of the six bank holdings four made a profit and two made a loss from stand-alone proprietary trading in the investigated period. Interestingly, the combined stand-alone proprietary activities of the six companies were lossmaking from the third quarter of 2007 through the fourth quarter of 2008, except for the second quarter of 2008. As this period led up to and, to some extent, included the financial crisis, it raises the question whether the unfolding crisis was precipitated by the negative impact of these successive losses on the books of the six leading bank holding firms.
This project has received funding from the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement no 266800

Figure 37
Revenues from proprietary trading, all trading and all firm-wide activities at the 6 largest U.S. bank holding companies (billion US dollars), 2006–2010 (quarters)


GAO (2011) also investigates the risk adjusted revenues and losses for both stand-alone proprietary trading and all trading. It finds that, contrary to the non-adjusted case, risk adjusted losses made by the stand-alone proprietary trading desks, except from the fourth quarter of 2007, exceeded risk adjusted losses made from all trading activities. They also observed that the number of VaR breaks was 161 for all trading and the same number was 302 for stand-alone proprietary trading during the period investigated. GAO (2011) stresses that, according to the representatives of some of the bank holding companies, it was because the prices of traded assets were more volatile during the crucial periods than what their models predicted them to be.
4.3 Regulatory Steps

The aforementioned Volcker Rule prohibits proprietary trading for banks, but it allows them to engage in certain forms of trading activity such as hedging, asset management, trading in government securities, and certain types of market making. The Volcker Rule has two fundamental objectives. First, it serves to save deposit insurance funds and taxpayers from losses emanated from risky trading activity and aims to reduce the costs of bailing out banks considered “too big to fail”. Second, it seeks to reduce the potential conflicts of interest between banks and their customers. Implementing this act, however, has proven to be a challenge so far. For example, one of the major difficulties arise when regulators want to prevent firms from taking prohibited proprietary positions while conducting their permitted customer-trading activities (GAO, 2011).
5. Conclusions

Our analysis shows that there has been a dynamic buildup of financial assets prior to the financial crisis of 2007-2008, which was financed, in larger part, by conventional and, in smaller part, by alternative and private wealth funds. Although the size of alternative funds is still relatively small compared to conventional funds, both the aggressive growth of hedge funds and private equity funds leading up to the crisis and their sharp decline following the crisis were impressive and raised concerns among economists regarding the role of these institutions in precipitating the financial crisis. Especially hedge funds, whose activity was the most adversely affected by the crisis, were pinpointed as those financial institutions whose existence contributed immensely to increasing the general risk level within the financial sector and, thus, contributed to the outbreak of the crisis.

Our research findings are controversial. On the one hand, investors of hedge funds – and private equity funds – lacked clear guidance on the expected performance of these funds due to the lack of transparency of operation of these funds and because conventional risk-return measures have proven to be inapplicable. Furthermore, it is also likely that hedge funds drastically decreased liquidity in certain markets during the crisis as they rushed to cash in on their assets. On the other hand, most of their investors were institutional investors, which prepared for potential losses and the collapse of hedge funds during the crisis did not shake the financial system. Furthermore, hedge funds – and private equity firms – were sometimes the only traders in the markets for illiquid assets such as CDOs or delisted companies, which raised the importance of their role in making financial markets operate more efficiently. Notwithstanding the ongoing debate on the role of these funds in the financial system, regulators both in the US and in Europe decided to increase the transparency and liquidity of hedge funds and private equity funds through new
registration and disclosure requirements and the regulation of over-the-counter derivatives.

In our report, we also demonstrate the important role of NFCs in the process of financialisation of the economy. We point out that, as a result of a change in NFCs’ relationship with financial markets following 1980, financial assets held by non-financial corporations increased relative to the value of their real assets. This micro-based process of financialisation was triggered by a shift in corporate governance norms towards maximizing shareholder value as well as NFCs’ drive to compensate for falling rates of return in the real sector. Although the share of incomes from financial transactions increased within the total profit of NFCs, higher financial profits did not lead to more real investments. Instead, they appear to have decreased real investments further. The increased use of NFC funds to compensate shareholders in the form of share repurchases instead of dividends was another sign of NFCs’ financialization. Ultimately, these factors led to the shortening of the planning horizon of NFC managers and, in some cases, the increasing indebtedness of NFCs. The increased interconnectedness of the financial and the corporate sector also seems to explain why the crisis of the financial sector inevitably led to a full-fledged economic crisis.

Our study shows that the active proprietary trading of investment banks was also another important element in the buildup of risks in the financial system preceding the crisis. Our empirical research suggests that the fact that the combined stand-alone proprietary trading activities of the leading US investment banks were lossmaking in most of 2007 and 2008 may have accelerated the events of the financial crisis.
References


# Appendix

## Largest investment banks (AUM), 2010

<table>
<thead>
<tr>
<th>Domicile</th>
<th>bn US dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP Morgan</td>
<td>1219</td>
</tr>
<tr>
<td>Barclays</td>
<td>1379</td>
</tr>
<tr>
<td>Goldman Sachs</td>
<td>871</td>
</tr>
</tbody>
</table>

Source: Financial Times.

## Largest investment managers (AUM), 2010

<table>
<thead>
<tr>
<th>Domicile</th>
<th>bn US dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>BlackRock</td>
<td>3561</td>
</tr>
<tr>
<td>SSgA</td>
<td>2010</td>
</tr>
<tr>
<td>Allianz</td>
<td>2010</td>
</tr>
</tbody>
</table>

Source: Towers Watson.

## Largest US mutual fund companies (retail net assets), 2011

<table>
<thead>
<tr>
<th>Domicile</th>
<th>bn US dollars</th>
<th>Number of funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vanguard</td>
<td>1420</td>
<td>148</td>
</tr>
<tr>
<td>American Funds</td>
<td>914</td>
<td>42</td>
</tr>
<tr>
<td>Fidelity</td>
<td>858</td>
<td>352</td>
</tr>
</tbody>
</table>

Source: Morningstar.

## Largest US mutual funds (AUM), 2011

<table>
<thead>
<tr>
<th>Domicile</th>
<th>bn US dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIMCO Total Return</td>
<td>263</td>
</tr>
<tr>
<td>Vanguard Total Stock</td>
<td>190</td>
</tr>
<tr>
<td>American Funds Growth</td>
<td>115</td>
</tr>
</tbody>
</table>

Source: Thomson Reuters.

## Largest pension funds (assets), 2010

<table>
<thead>
<tr>
<th>Domicile</th>
<th>bn US dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Security Trust Fund</td>
<td>2609</td>
</tr>
<tr>
<td>Government Pension Fund</td>
<td>1313</td>
</tr>
<tr>
<td>Government Pension Fund</td>
<td>509</td>
</tr>
</tbody>
</table>

Source: OECD.

## Largest insurance companies (assets), 2011

<table>
<thead>
<tr>
<th>Domicile</th>
<th>bn US dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan Post</td>
<td>1258</td>
</tr>
</tbody>
</table>
This project has received funding from the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement no 266800.

<table>
<thead>
<tr>
<th>AXA</th>
<th>FRA</th>
<th>946</th>
<th>Allianz</th>
<th>GER</th>
<th>831</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source: Forbes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Largest reinsurers (gross written premiums), 2010**

<table>
<thead>
<tr>
<th>Domicile</th>
<th>bn US dollars</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Munich Re</td>
<td>GER</td>
<td>31</td>
</tr>
<tr>
<td>Swiss Re</td>
<td>SWI</td>
<td>25</td>
</tr>
<tr>
<td>Hannover Re</td>
<td>GER</td>
<td>15</td>
</tr>
</tbody>
</table>

Source: Swiss Re.

**Largest hedge fund firms (AUM), 2011**

<table>
<thead>
<tr>
<th>Domicile</th>
<th>bn US dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridgewater</td>
<td>US</td>
</tr>
<tr>
<td>Man Group</td>
<td>UK</td>
</tr>
<tr>
<td>JP Morgan</td>
<td>US</td>
</tr>
</tbody>
</table>

Source: Bloomberg.

**Largest funds of hedge funds (AUM), 2011**

<table>
<thead>
<tr>
<th>Domicile</th>
<th>bn US dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackstone Alternative</td>
<td>US</td>
</tr>
<tr>
<td>UBS Alternative</td>
<td>SWI</td>
</tr>
<tr>
<td>HBSC Alternative</td>
<td>UK</td>
</tr>
</tbody>
</table>

Source: Bloomberg.

**Largest private equity firms (5-year fundraising), 2011**

<table>
<thead>
<tr>
<th>Domicile</th>
<th>bn US dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPG</td>
<td>US</td>
</tr>
<tr>
<td>Blackstone</td>
<td>US</td>
</tr>
<tr>
<td>Kohlberg Kravis Roberts</td>
<td>US</td>
</tr>
</tbody>
</table>

Source: Preqin.

**Largest funds of funds private equity firms (10-year fundraising), 2011**

<table>
<thead>
<tr>
<th>Domicile</th>
<th>bn US dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>HarbourVest</td>
<td>US</td>
</tr>
<tr>
<td>Adams Street</td>
<td>US</td>
</tr>
<tr>
<td>Pantheon Ventures</td>
<td>UK</td>
</tr>
</tbody>
</table>

Source: Preqin.

**Largest SWF assets by country (AUM), 2011**

<table>
<thead>
<tr>
<th>Domicile</th>
<th>bn US dollars</th>
<th>Share</th>
<th>Origin</th>
<th>Number of SWFs</th>
</tr>
</thead>
</table>

91
<table>
<thead>
<tr>
<th>Country</th>
<th>Code</th>
<th>Value</th>
<th>Percentage</th>
<th>Industry</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>CHN</td>
<td>1483</td>
<td>31%</td>
<td>Non-commodity</td>
<td>4</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>UAE</td>
<td>812</td>
<td>17%</td>
<td>Oil</td>
<td>7</td>
</tr>
<tr>
<td>Norway</td>
<td>NOR</td>
<td>656</td>
<td>14%</td>
<td>Oil</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: SWFI.
### Largest SWFs (AUM), 2011

<table>
<thead>
<tr>
<th>Domicile</th>
<th>bn US dollars</th>
<th>Inception</th>
<th>Origin</th>
<th>Transparency</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOR</td>
<td>656</td>
<td>1990</td>
<td>Oil</td>
<td>100%</td>
</tr>
<tr>
<td>UAE</td>
<td>627</td>
<td>1976</td>
<td>Oil</td>
<td>50%</td>
</tr>
<tr>
<td>CHN</td>
<td>568</td>
<td>1997</td>
<td>Non-commodity</td>
<td>40%</td>
</tr>
</tbody>
</table>

Source: SWFI.

### Largest ETP providers (AUM), 2011

<table>
<thead>
<tr>
<th>Domicile</th>
<th>bn US dollars</th>
<th>Share</th>
<th>Number of ETPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>599</td>
<td>39%</td>
<td>504</td>
</tr>
<tr>
<td>US</td>
<td>270</td>
<td>18%</td>
<td>146</td>
</tr>
<tr>
<td>US</td>
<td>171</td>
<td>11%</td>
<td>75</td>
</tr>
</tbody>
</table>

Source: BlackRock.

### Largest ETPs (AUM), 2011

<table>
<thead>
<tr>
<th>Domicile</th>
<th>bn US dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>106</td>
</tr>
<tr>
<td>US</td>
<td>68</td>
</tr>
<tr>
<td>US</td>
<td>54</td>
</tr>
</tbody>
</table>

Source: BlackRock.

### Largest private banks (AUM), 2011

<table>
<thead>
<tr>
<th>Domicile</th>
<th>bn US dollars</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>1945</td>
<td>14%</td>
</tr>
<tr>
<td>US</td>
<td>1628</td>
<td>12%</td>
</tr>
<tr>
<td>SWI</td>
<td>1560</td>
<td>12%</td>
</tr>
</tbody>
</table>

Source: Scorpio Partnership.

### Largest derivatives exchanges (turnover), 2011

<table>
<thead>
<tr>
<th>Domicile</th>
<th>tr US dollars</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>1068</td>
<td>49%</td>
</tr>
<tr>
<td>US</td>
<td>684</td>
<td>32%</td>
</tr>
<tr>
<td>GER</td>
<td>150</td>
<td>7%</td>
</tr>
</tbody>
</table>

Source: BIS.
This project has received funding from the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement no 266800
Financialisation, Economy, Society and Sustainable Development (FESSUD) is a 10 million euro project largely funded by a near 8 million euro grant from the European Commission under Framework Programme 7 (contract number: 266800). The University of Leeds is the lead co-ordinator for the research project with a budget of over 2 million euros.

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:

<table>
<thead>
<tr>
<th>Participant Number</th>
<th>Participant organisation name</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Coordinator)</td>
<td>University of Leeds</td>
<td>UK</td>
</tr>
<tr>
<td>2</td>
<td>University of Siena</td>
<td>Italy</td>
</tr>
<tr>
<td>3</td>
<td>School of Oriental and African Studies</td>
<td>UK</td>
</tr>
<tr>
<td>4</td>
<td>Fondation Nationale des Sciences Politiques</td>
<td>France</td>
</tr>
<tr>
<td>5</td>
<td>Pour la Solidarite, Brussels</td>
<td>Belgium</td>
</tr>
<tr>
<td>6</td>
<td>Poznan University of Economics</td>
<td>Poland</td>
</tr>
<tr>
<td>7</td>
<td>Tallin University of Technology</td>
<td>Estonia</td>
</tr>
<tr>
<td>8</td>
<td>Berlin School of Economics and Law</td>
<td>Germany</td>
</tr>
<tr>
<td>9</td>
<td>Centre for Social Studies, University of Coimbra</td>
<td>Portugal</td>
</tr>
<tr>
<td>10</td>
<td>University of Pannonia, Veszprem</td>
<td>Hungary</td>
</tr>
<tr>
<td>11</td>
<td>National and Kapodistrian University of Athens</td>
<td>Greece</td>
</tr>
<tr>
<td>12</td>
<td>Middle East Technical University, Ankara</td>
<td>Turkey</td>
</tr>
<tr>
<td>13</td>
<td>Lund University</td>
<td>Sweden</td>
</tr>
<tr>
<td>14</td>
<td>University of Witwatersrand</td>
<td>South Africa</td>
</tr>
<tr>
<td>15</td>
<td>University of the Basque Country, Bilbao</td>
<td>Spain</td>
</tr>
</tbody>
</table>

The views expressed during the execution of the FESSUD project, in whatever form and or by whatever medium, are the sole responsibility of the authors. The European Union is not liable for any use that may be made of the information contained therein.

Published in Leeds, U.K. on behalf of the FESSUD project.