The Great Financial Crisis and a Pluralistic Way Forward in Thinking about Financial Markets

This research project first began to take shape in 2005, i.e. before the 2007-2008 crisis broke loose. Since 2007 financial markets and the thinking about financial markets have profoundly changed. One may think that because of these changes, parts of the analysis in this dissertation have become obsolete. This is not the case. Rather, the relevance of many of the points made, is emphasized by the events that have unrolled since the ignition by the subprime crisis in 2007.

This chapter is by no means an exhaustive and comprehensive account of the crisis and its consequences for theory and practice of financial markets, but deals with some aspects of the crisis which relate to the preceding chapters. Subsequently suggestions are made which could improve the conversation on financial markets[1].

1 And there are even more alternative approaches such as fractal finance, evolutionary finance, bubble theory and so forth. See Pistorius (2015).

6.1 INTRODUCTION

> "Of all the economic bubbles that have been pricked, few have burst more spectacularly than the reputation of economics itself"[121].

As a result of the crisis much criticism has been hurled towards the science of economics, both from inside the profession[122] as from outside. Economists haven't been able to soundly analyse fundamental developments. Their theories and the assumption used were lacking. Like the bankers themselves and their supervisors and regulators, economists have missed what prolific dangers and risks were creeping into the financial system.

The criticisms concern both academic economic knowledge as well as the use of that knowledge by policymakers and practitioners in the financial sector. Critical analysis has been done both by academics and non-academics such as journalists and policy makers. The fact that a broader audience has raised an interest in financial markets may actually be a positive to take away from the crisis, but the general perspective from the general public on finance as a business, but also as an academic discipline has undoubtedly deteriorated (Zingales, 2015).

Lo (2012) provides a useful overview of 21 books by academics, journalists and others where various aspects of the crisis are highlighted. And since then many more analyses have appeared. Examining the various narratives and the evidence presented, he concludes there is not one comprehensive account and that one should be careful and precise in analysing the stories presented.

6.2 VARIOUS CRITICISMS

It is useful to distinguish between various criticisms. Saying that macroeconomic models do not predict well is a very different claim from stating that pricing in financial markets is not proper. Roughly speaking, a distinction can be made between criticisms aimed at macroeconomics and critiques on financial economics. Regarding the former, it is a well-known fact that most macroeconomic models that were used for policy purposes were Dynamic Stochastic General Equilibrium (DSGE) type models. These models focus on the real economy and leave out what happens in the financial sector. Implicitly it is either assumed that financial markets work so perfectly that fall-out to the real economy is not an issue, or that events in financial markets are inherently irrelevant and have no bearing on the real economy. For instance so-called asset inflation – rising prices in asset categories, think

121 The Economist, July 18 2009, section titled "What went wrong with economics".
122 See for instance Paul Krugman's op-ed piece in The New York Times Magazine, September 2 2009.

stocks, commodities or real estate– did not enter as a factor in most policy models. Generally price stability in the real economy, of goods and services, was the core target for policy makers. As long as expansive monetary policy, which has characterized most of the time period leading up to the crisis, did not translate in inflation in the real economy, it was not considered a problem. Thus a situation with moderate economic growth and stable inflation, once known as the ”Goldilocks” scenario, was deemed possible. In such a situation there is no reason or incentive for policymakers to consider a more restrictive course of action. Rising prices of financial assets and the accompanying rise of debts to finance those assets did not enter the policymaking equation. Thus speculative bubbles could develop unimpeded. This was precisely what happened in the US housing market. The flood of funds resulted in diminishing returns and rising asset prices. In the quest for profitable opportunities credit standards were loosened, in particular for mortgages. In combination with rising housing prices this ultimately resulted in the subprime crisis in 2007, which proved to be the catalyst for the great financial crisis in 2008.

Parallel to the barrier in policy making between the real economy and the financial sector, there has been a growing disjunction between economics and finance, as discussed and illustrated in chapter two. The crisis has painfully revealed the undesirability of this situation, both in the area of theorizing and where it policy making concerns, and only underscores the need for a broader, more inclusive approach to financial markets.

Financial economics has received its share of critique as well. Advances in finance have enabled certain markets to develop, a point examined in chapter five. The prolific rise of derivatives markets and markets for complex structured products has been fuelled to a large extent by theoretical progress in valuation models for such products.

These models, and/or the assumptions in those models are wrong, is the critique. Throughout the preceding chapters (in particular chapters four and five) the issue and peculiarities of models and theories being “right” and “wrong”, of truth and falsehood, were extensively discussed. Concluded was that one should be careful and precise in what exactly the truth claim is. Regarding assumptions, it is accepted that assumptions are made for reasons and that false assumptions do not necessarily invalidate a model or theory. Nevertheless suspicion and criticisms persist. A prominent example is the assumption used in many pricing models that markets function properly. In other words, some form of the Efficient Market Hypothesis is assumed. In the eyes of many this assumption has been clearly proven false: how else to explain the colossal bubbles that developed? Indeed the crisis has shown that financial markets and participants in those markets can err spectacularly in their valuation assessments. It is beyond doubt that speculative bubbles have formed, for instance in the American housing market in 2006, as illustrated for instance by Shiller (2008). But that does

not necessarily imply that these markets do not function properly: it has been shown that bubbles can develop in a framework where rationality is assumed (Blanchard and Watson, 1982). Also, the degree of (ir)rationality that agents exhibit or information asymmetry does not necessarily explain the formation of bubbles, as suggested by Shiller and Akerlof (2009). In conclusion and in line with the preceding chapter: the problem is not so much that the models and theories have failed but rather but that the truth claims of these models has too easily been taken for granted. Rather, the limitations of these models, in particular some key assumptions were neglected.

In chapter four it was discussed that the market process is a tentative process where various opinions, based on discovery and learning, come together. The result of that process is a price. That price, the market price, is an estimate of future events. These future events are shrouded in uncertainty (of the Knightian kind) because economic processes remain in essence social processes which are not subject to iron laws, unlike phenomena studied by natural sciences. So markets can get it massively wrong, but it will correct itself at some point by discovery and learning, or so it is assumed. That appears to be what indeed happened in the market for structured products, consisting of securitized mortgages (CDO's, etc.) according to Gorton (2010): the market was slow in catching up with reality. The market's inability to correctly assess developments may have been due to the complex nature of the products involved, resulting in a lack of transparency to market participants, supervisory bodies and regulators. When the market finally got it in 2007 the landing would be hard and painful.

This lack of transparency is a different issue than a question which has also been raised: whether certain financial products and practices in financial markets have any usefulness and legitimacy at all. Some have suggested that the whole process of packaging mortgages into securities and subsequent slicing up and repackaging of these securities into products such as CDO's (called the originate-to-distribute model) is kind of a Ponzi scheme designed to con less sophisticated investors and arising from information asymmetry (Akerlof & Shiller, 2009). One should keep in mind, however that the securitization process (and the products resulting from it) is actually a device which helps both buyers and sellers accomplish their desired risk-return profiles. If anything, it is the pricing and risk perception of these products that went wrong. Structured products such as CDO's offered a significantly higher projected return than other bonds with similar credit ratings. However, the losses arising from these products were not only incurred by buyers but also by sellers, typically investment banks, who kept parts of these products on their own balance sheets and held a stock of loans to be repackaged later. This so-called warehousing was responsible for some of the most staggering losses at individual financial institutions which participated in that business. That would

imply a general lack of knowledge, unawareness, ignorance and transparency on both sides of the market, rather than information asymmetry that is exploited by one side[123].

This also raises the question who within the practice of the markets truly believed in market efficiency. Lo (2011) makes the interesting remark that those who adhere to market efficiency should have been less likely misled by this pricing inconsistency. Lo's point is that the Efficient Market Hypothesis does not imply that any price in the market is right. Rather, it is deemed unlikely or impossible that similar products, such as bonds with similar credit ratings, consistently display very different prices.

The key question then becomes, not if we should get rid of certain markets or products, but how to improve the market process and limit the damage of corrections. An example is the existence of so-called Over-the-counter (OTC) markets where parties deal directly with each other instead of trading on a regulated marketplace like a stock exchange with central clearing and settlement. OTC markets are less transparent and more susceptible to counterparty and concentration risks[124][125].

The danger surrounding the Efficient Market Hypothesis is not so much if it is true or false but rather its indiscriminate and careless use as an assumption. The EMH pertains to a different degree to the market for mutual funds than to a market in some OTC tailor-made exotic structured product. The former is a market which is transparent, liquid and filled with plenty of agents on both the supply and demand sides so market power is fragmented. Valuation is relatively straightforward and the pricing process is transparent. The latter is a market where information is complex, therefore pricing is not easily comprehensible. Only a few can provide such a product. Moreover, it is not a uniform product which can make it harder to trade away or hedge when conditions should warrant that. In the latter case the conditions required for an efficient market are clearly less satisfied than in the former case: more market concentration, more complexity and therefore less transparency and a lesser degree of atomistic agents.

123 One could include stupidity. In July 2007, when the liquidity crisis was already underway. former Citicorp CEO Chuck Prince told the Financial Times that global liquidity was enormous and only a significant disruptive event could create difficulty: "As long as the music is playing, you've got to get up and dance," he said. At that time he added: "We're still dancing". Those words would come back to haunt Prince: in the aftermath of the fall of Lehman Brothers, Citicorp needed two capital injections from the government totaling $45 billion and received government backing for loans and securities, worth more than $300 billion at the time.

124 The market for Credit Default Swaps (CDS) was such an OTC market. It turned out that an enormous amount of the risk in the CDS market was concentrated within one party, the US insurer AIG. This made AIG too big to fail: if AIG would not have been rescued, it would have caused potentially fatal damage to a number of other institutions which had entered into deals with AIG as counterparty and may have triggered chain reactions in other markets.

125 Many of the dangers and frailties that could be present in OTC markets have been adressed by new regulation.

In chapter 1 three basic principles for a proper market were identified. Legitimacy: what is traded on a market should be acceptable to society and have some kind of usefulness. Transparency: the process of price formation should be transparent and the information equally accessible to all participants. Liquidity: a market needs sufficient potential supply and demand interest to function properly. In the crisis the lack of transparency led to stalling liquidity in some parts of the markets in August 2007 which subsequently infected the entire financial system, culminating in the fall of Lehman Brothers in September 2008. Already in August 2007 Caballero and Krishnamurty wrote:

> Uncertainty –that is, a rise in unknown and immeasurable risk rather than the measurable risk that the financial sector specializes in managing– is at the heart of the recent liquidity crisis. The financial instruments and derivative structures underpinning the recent growth in credit markets are complex. Because of the rapid proliferation of these instruments, market participants cannot refer to a historical record to measure how these financial structures will behave during a time of stress. These two factors, complexity and lack of history, are the preconditions for rampant uncertainty.

In such a situation, the principles for a proper market are violated and the chances of market failure become higher. In the Austrian terms, discussed in chapter four: the market process of entrepreneurial discovery is more complicated and hindered in the latter case. Entrepreneurs have difficulty in choosing their actions, will become more tentative in an uncertain environment and an equilibrating move will take more time. The focus should then be on how to improve the functioning of that market because the degree of efficiency is the result of the particular market process and not a given in itself[126].

Criticism has also been directed at valuation models and risk management tools which have their origins in mainstream financial economics. For instance the Value-at-Risk (VaR) methodology that was and is widely used in risk management. VaR-models use historical data to calculate profit and loss projections for particular statistical significance intervals. If an improbable event takes place that falls outside the statistical range, the impact can be devastating if risk managers have uniquely relied on VaR analysis. Some of the happenings during the great financial crisis were clearly such so-called tail events where risk managers ignored uncertainty of the Knightian kind. The fall of Lehman Brothers is the prime example. In the past there always had been an orderly solution when an important financial institution ran into trouble, for example Bear Stearns in the spring of 2008 and hedge fund

126 "Improving the market process" is by no means unambiguous. For instance, when physical floor trading of securities is replaced by screen-based electronic trading, in general pricing improves and transaction costs go down. However, trading algorithms are typically top-secret so transparency may be deemed less. In addition, electronic trading can carry systemic risks.

LTCM in 1998. It was deemed inconceivable that an institution like Lehman would be allowed to go bankrupt.

Another example of the impossible happening was the stalling and drying-up of certain markets. For instance the repo market, a crucial marketplace for bank funding, had always been extremely liquid. It was beyond belief for the players in those markets that such a market simply stopped functioning. When it did, a number of banks ran into big troubles. The danger of a tail event is not so much the event itself but its surprise effect. If no one expects such an event or everyone deems it too improbable, no one will be prepared when it comes and the impact can be devastating. Quality stress testing can help to identify the type of low probability-high impact events that escape regular (statistical) analysis but need to be addressed anyway. If dykes are designed to contain floods in 99.99% of all cases, the impact of the 0.01% chance may justify even higher dykes.

If we follow the idea of the market as a process, outlined in chapter four, it would be recommendable if more attention would be paid on the robustness of the system: how a system copes with a shock/crisis is perhaps an even more vital question than the all-out prevention of all possible shocks and crises. For if radical uncertainty is acknowledged as part of the economic world, it becomes simply impossible to foresee all possible potential major disturbances.

In chapter two it was shown that much of current finance research consists of empirical analysis of historical data. While this type of analysis may yield valuable insights, there are dangers in focusing too much on the facts of the past. A statistical relation is not the same as a causal relation. The tag "past results are no guarantee for future performance" is usually attached to any advertisement for a financial investment. In 1998 LTCM ran into trouble when prices of various assets started deviating from their statistically solid historical relations as a result from turbulence in the markets stemming from the Asia and Russia crises. The correlations that were crucial for LTCM's arbitrage strategies changed, resulting in huge losses. Something similar played a role in the great financial crisis. Valuation and risk of complex structured products such as CDO's depend to a large extent on the correlations between the various parts that comprise such a structured product. Estimates of these correlations were based on rather limited historical data and turned out to be quite different in both number and nature[127].

Again the question can be asked if these models were wrong then? In chapter five this issue of "false" theories and models was directly dealt with in regard to option pricing theory. It

127 See Salmon, F., Recipe for Disaster: The Formula That Killed Wall Street, Wired Magazine 17-03, 2009. See also MacKenzie and Spears (2014).

is argued there that it is not the theory itself but rather an important assumption that is the cause for the anomaly. It is similar here: the value of a structured product depends on the correlations of its comprising parts. The determination and nature of that correlation is a whole different story. If particular assumptions surrounding a theory fail, the theory using those assumptions can become inappropriate though not necessarily wrong.

Perhaps the most fundamental disappointment for the general public is that economists have not been able to predict the great storm that would descend upon the world. Somehow it appears to be expected from economists to warn the public in time. The public might have been led astray by Milton Friedman's famous article (Friedman, 1953) which can be read as to say that economic theories should be judged by their ability to predict[128]. But prediction is not be equated with forecasting. Prediction is claiming that if x happens, y (and perhaps z) will happen. If we raise the money supply above production growth, inflation will pop up, perhaps later translating in unemployment. Forecasting is saying what stocks are going to perform well; a complex issue depending on many variables[129]. As evidenced by the analysis in chapter three, economists, even the very best and most highly respected, are not extraordinarily good at this. At least they do not appear to fare better than others in the investment industry who may not have an economic background or a fantastic academic resume. So in a sense the predictive powers of economists should not be overestimated.

Of course there have been economists who saw the crisis coming or who claim to have seen it coming. But that raises an additional question: why were these visionaries not heard? Apparently their stories were not persuasive enough to convince colleagues, policy makers and politicians, supervisors and regulators, bankers or the public at large. How credible would such claims be anyway? It would appear almost impossible to perfectly predict timing and scale of a highly complex phenomenon like the great financial crisis. That is not to say that economists are useless in this regard. Rather than predicting events they can point out possible outcomes and consequences of actions. They can signal important developments and potential risks. The challenge then becomes getting these signals taken seriously, in particular when they come from beyond one's own particular economic conversation or school of thought. Above all, economist can learn from the past, from the crisis, and perhaps open up a bit beyond their own niche area of expertise. For instance by paying more attention to the practice of the real world, but also to other approaches and disciplines.

The crisis has indeed ignited discussion within the discipline of economics. All too often these discussions take the shape of an ideological battle between various schools of thought,

128 How Friedman's article should be or can be interpreted, see Mäki, 2009.

129 Pistorius (2015) makes a slightly different but similar distinction between prediction and profitable prediction.

in particular so-called "saltwater" versus "freshwater" economists[130]. All the differences of opinion on the working of markets, rational behavior of agents, effectiveness of economic policy and the like are raised. In truth both camps share some of the deficiencies that have played a role. As Dow (2012) remarks, both the New Classical and the New Keynesian school treated the real economy and money-and-prices separately, thus neglecting asset inflation and leaving the formation of speculative bubbles unimpeded[131]. Instead of fighting wars of the past, a constructive future-oriented approach aimed at dealing with a globalized and financialized world might serve better. This is especially true for macroeconomics where for a long time both sides have underestimated and misjudged the importance and impact of financial markets, both in itself and in relation to the real economy. In finance some of the most ground-breaking advances have actually been combined saltwater-freshwater products: Merton Miller from Chicago and Francesco Modigliani from MIT on capital structure, Eugene Fama from Chicago and Paul Samuelson from MIT on efficient markets, William Sharpe and John Lintner on asset pricing, Myron Scholes from Chicago, Robert C. Merton from MIT and Fischer Black who worked at both institutions, on derivatives pricing.

Finance has room for some critical reflection of its own as well. Financial economist Andrew Lo (2012) points out that the crisis has touched upon basic tenets of financial economics. That doesn't so much concern particular theories but rather the general self-image of the field:

> Many of us like to think of financial economics as a science, but complex events like the financial crisis suggest that this conceit may be more wishful thinking than reality.

Lo mentions complexity and human behavior as crucial factors why analyzing a financial crisis is different from analyzing an airplane crash. The causal chain is not as clearly identifiable. Whereas the number of potential factors is limited in a plane crash (say: weather, pilot skill/human error, material defects), financial markets are thoroughly global and influenced by an abundance of factors. The point is that finance may very well be a science, but that it is in any case a social science. The outcomes are the result of complex interactions on all kinds of levels and may not always be predictable.

Chicago economist Luigi Zingales, in his capacity as president of the American Finance Association (AFA), has weighed in on finance in relation to society in his 2015 presidential address. Essentially being pro-markets but not pro-business in its current inception[132],

130 See for instance The Economist, Economists debates: Keynesian principles, March 18, 2009 and the feud between Paul Krugman and John Cochrane.

131 Although the Post Keynesian ideas of Hyman P. Minsky, in particular his Financial Instability Hypothesis, have attracted considerable renewed attention in macroeconomics.

132 See Zingales, 2012, for a far more elaborate exposition of his viewpoints.

Zingales is very critical on both the practice of finance and banking and the academic field in his confronting article titled "Presidential Address: Does finance benefit society?". While he basically is of the opinion that finance "fosters growth, promotes entrepreneurship, favors education, alleviates poverty and reduces inequality", defending finance as contributing to general welfare has lost credibility, he warns. Moreover, this loss of credibility has provoked not only legislation and regulation (well-intended but often misguided) but also even more lobbying from the financial sector with more undesirable consequences. Academic scholars have a role to play in preventing escalation of a vicious circle. Listing a host of excesses in the financial sector (mis-selling, manipulation, fraud), academics should be less agnostic and more critical about what benefits society and what does not. In addition, they should be more careful in advertendly or inadvertendly aligning themselves with other stakeholders in the financial sector: not only with businesses but also with regulators as well as policy-makers. Instead they have a duty to publicly voice and educate what is good and what is bad in terms of products, market structure, regulation, policy, etc., according to Zingales.

What could be other ways forward then for thinking and dealing with the phenomenon of financial markets? In chapter four it was argued that explanations from different schools of thought that may appear irreconcilable at first sight need not always be rival but can be complimentary if one examines the particular claims carefully enough. That leaves room for a more pluralistic approach. The crisis actually has spawned initiatives in that direction.

6.3 GEORGE SOROS: REFLEXIVITY AND THE INSTITUTE FOR NEW ECONOMIC THINKING

The crisis has brought attention to the ideas of investment billionaire, philanthropist and philosopher George Soros. Fueled by his rich experience in the markets and inspired by his LSE education with Karl Popper as his tutor, Soros (1997, 2013) has developed a framework which, he believes, not only applies to financial markets but also to the social sciences in general and economics in particular. The framework hinges on two concepts: fallibility and reflexivity:

> My conceptual framework is built on two relatively simple propositions. The first is that in situations that have thinking participants, the participants' views of the world never perfectly correspond to the actual state of affairs. People can gain knowledge of individual facts, but when it comes to formulating theories or forming an overall view, their perspective is bound to be either biased or inconsistent or both. That is the principle of fallibility (Soros, 2013).

> The second proposition is that these imperfect views can influence the situation to which they relate through the actions of the participants. For example, if investors believe that markets are efficient then that belief will change the way they invest, which in turn will change the nature of the markets in which they are participating (though not necessarily making them more efficient). That is the principle of reflexivity (ibid.).

Both concepts share familiarity with concepts and ideas which have been treated in earlier chapters, in particular chapters four and five. Soros explicitly espouses Frank Knight's distinction between calculable risk and (radical) uncertainty (see also Frydman & Goldberg, 2013). According to Soros (2013) "it is fallibility that is the key source of Knightian uncertainty in human affairs"[133].

Regarding reflexivity Soros distinguishes between a cognitive and a manipulative function in the thinking of agents. The cognitive function is a passive one, observing the world while the manipulative function is active, intervening in the world. When both function are active they interfere with each other and the outcome becomes sketchy:

> Consequently, the cognitive function cannot produce all the knowledge agents need to make decisions; they have to act on the basis of imperfect understanding. While the manipulative function can make an impact on the world, outcomes are unlikely to correspond to expectations. There is bound to be some slippage between intentions and actions, and further slippage between actions and outcomes. Since agents base their decisions on inadequate knowledge, their actions are liable to have unintended consequences. This means that reflexivity introduces an element of uncertainty both into the agents' view of the world and into the world in which they participate (Soros, 2013).

The way Soros looks at agency, based on fallibility and reflexivity and explicitly including Knightian uncertainty, clearly shares affinity with the picture of agency that was painted in chapter four, inspired by Austrian market process theory. Indeed several authors have noted similarities between the ideas of Soros and members of the Austrian school, in particular Hayek (Caldwell, 2014, Bronk, 2014).

But there are also links with the concept of performativity, as treated in chapter five. Soros (2013) writes that "in social systems fallible human beings are not merely scientific observers but also active participants in the system themselves. That is what makes social systems reflexive". Bronk (2013), referring to Soros (1997), comes to the conclusion that reflexivity amongst other things also implies that there is two-way interaction between science and real-

133 One could perhaps also argue that it is the other way around: Knightian uncertainty being a cause for fallibility.

ity. Put differently: there are feedback loops between science and reality. Which is precisely the point of the performativity thesis (see also Hands, 2014).

So far so good but what is the upshot of Soros' ideas? In his own words: "What makes my propositions interesting is that they contradict some of the basic tenets of economic theory" (2013). Soros thinks that reflexivity, in combination with fallibility, gives rise to self-reinforcing feedback loops which lead to disequilibrium. For Soros market prices do not accurately reflect fundamental value and agents' views of the world are never perfectly aligned. Equilibrium is the exception rather than the rule; Soros sees this standard economic assumption as an extreme and limiting case (Bronk 2013). Because neoclassical economics, in particular Rational Expectations and the Efficient Market Hypothesis, cannot deal with reflexivity, there is a need for a new economic paradigm, according to Soros.

Implicitly, and maybe fueled by the 2007-2008 crisis, Soros appears to have either the opinion that disequilibrium is undesirable or he shares some form of the radical subjectivist view of Lachmann and Schackle which were mentioned in chapter four. That is the idea that the amount of ignorance is so great that it puts coordination beyond reach, which renders the concept of equilibrium useless. Soros indeed appears to hold that fallibility is quite omnipresent and universal.

With regard to equilibrium in chapter four it was suggested to take a step back from it because it is somewhat of a disputable concept in the context of financial markets where supply and demand continuously clear. It was also suggested to decouple the notion of market efficiency from the concept of equilibrium, in the light of the dynamic market process which actually takes place in the market. In other words, disequilibrium need not be an insurmountable problem. Like myself, other authors, while being interested in the concept of reflexivity have also questioned Soros' conclusion about equilibrium and neoclassical economics. Guala (2014) agrees the importance of reflexivity, but think that his critique of mainstream economics is mistaken. Features of reflexivity can be built into neoclassical models. The challenge is practical, rather than conceptual. There is no deep flaw in economic theory that prevents it from capturing the essential features of "negative" and "positive feedback loops", he concludes. Bronk (2013) reaches a similar conclusion. He finds Soros' view of (nearly) universal fallibility similarly unconvincing as the rational utility maximizer from neoclassical economics. Bronk also takes issue with the stance he perceives in Soros that performative effects have a priori negative effects. He concludes that Soros should acknowledge that both neoclassical economics and his own theory capture certain important but partial truths about markets. I couldn't have put it better myself.

The perceived need for a new economic paradigm, led Soros to co-founding the Institute for New Economic Thinking (INET). The goal of INET is:

> Founded in the wake of the financial crisis in 2009, the Institute for New Economic Thinking (INET) is a nonpartisan, nonprofit organization devoted to developing and sharing the ideas that can repair our broken economy and create a more equal, prosperous, and just society.

The advisory and governing boards are composed of a blend of economists and other social scientists, bankers, investment managers and journalists.

The idea behind INET is interesting and the reasons for its inception are valid. However, the assumptions underlying the idea do not appear to be free of preconceptions:

> We have seen all too clearly how free market fundamentalism, fiscal austerity, financialization and corporate influence in politics have endangered economies, communities, and the planet as a whole.
>
> Left to their own devices, academic, governmental, and corporate institutions will continue to cling to outmoded economic models, out of fear that new ideas would undermine their own financial advantage.
>
> We work to guide the field away from economic orthodoxy so that it can free itself of inertia and past failures.

Mentioned as one of the key principles is that heterodox models that pose alternatives to the neoclassical orthodoxy are essential to understanding the economy and promoting a vibrant intellectual pluralism[134]. As such it would appear that INET is more of a thinktank which advocates heterodoxy rather than a champion of pluralism. Where it concerns the value of alternative explanations, be it orthodox or heterodox, the proof of the pudding is in the eating. In chapter three this was somewhat tested for behavioral and neoclassical finance. And in chapter five it was shown that the sociological angle is valuable, but not so much as to fully discredit the orthodoxy. When a plurality of theories applies to a subject matter, there is no reason why orthodoxy should or could not be one of those. In addition, as Davis (2012) has pointed out, the orthodoxy in economics is not necessary static:

134 Other key principles mentioned are that economists and their ideas should be independent from powerful interests, attention for complexity and uncertainty, inequality and distribution, history, diversity, multidisciplinary learning.

> This core-periphery framework, however, is a dynamic one, and as the history of economic thought demonstrates what counts as core and periphery research programs has changed over the history of the discipline, thus implying that the identity of the discipline as associated with its core research programs also changes over time.

That applies to finance as well, I believe. As I argued in chapter two, finance has changed and evolved dramatically over time. The core being qualitative, institutionalist just after the war. The development of the major finance theories, which can be considered as originally work in the periphery, gave rise to a new formalistic quantitative core. And behavioral finance is a prime example of research development in the periphery culminating in becoming part of the core.

6.4 CRITICAL FINANCE REVIEW

In chapter two the methodology of finance was analysed by means of categorizing subject and approach in the two leading finance journals: the Journal of Finance and the Journal of Financial Economics. One of the findings was the dominance of empirical contributions, in particular statistical data analysis. However, it was noted that since the crisis there appeared to be some signs of more variety within the empirical work. An interesting development in this regard has been the inception in 2012 of a new journal: the Critical Finance Review (CFR). Founder and editor-in chief, UCLA finance scholar Ivo Welch, wanted to create a journal unlike others: with room for controversy and critique (Welch, 2012). In the CFR typically some well-known, established part of knowledge is critically reviewed while the original authors get the opportunity to reply in that same issue. Another form of critique is that in the CFR regularly replication checks of older papers are done to see if the results still hold up.

In addition, Welch wants to create space for less usual but important topics, such as social issues, climate change and demographics. Examples are "The Housing Wealth Effect: The Crucial Roles of Demographics, Wealth Distribution and Wealth Shares" (Charles Calomiris, Longhofer and Miles, 2013) and "Obesity and Household Financial Distress" (Guthrie and Sokolovsky, 2017).

While the CFR is still a very young journal, it is already well-regarded within the field and it has a top ten position amongst finance journals where it concerns impact. Top-level scholars, such as Fama and French, Shiller, Campbell, Lo, Roll and many others have written contributions. The approach in the CFR remains deeply empirical, like it is in the Journal

of Finance and the Journal of Financial Economics[135]. Welch himself has said that one of his goals is to change the incentives for finance writers. By creating his new outlet he wants to offer an alternative for the established journals in which scholars do not have to follow the traditional mould of the particular established journal. But we could also speak of an attempt to change and add to the conversation in finance. The conversation is changed because the critique and reply model (a conversation in itself) provides a much more direct dialogue than can be accomplished by the traditional leading journals with lengthy processes and time periods to publish. And the conversation can be augmented if scholars take the opportunity to publish about less usual subjects which, in the words of Welch (2012), are critical in the meaning of importance.

6.5 INSTITUTIONALISM IN FINANCE

In chapter two the transition from finance as a descriptive, non-mathematic endeavor to a quantitative, formalistic discipline was described. The former being labelled "institutional finance". In his 2007 book Peter Bernstein (2007) identified a group of scholars within the orthodoxy of finance whom he labels "institutionalists". By using the phrase "institutionalist" he meant a focus on the end-users of financial markets: firms seeking capital, pension funds, insurers, social security agencies and individuals who need to manage their consumption and savings over time. In the context of financial markets I would add that an institutional perspective also entails dealing with a variety of aspects which impinge on the functioning of financial markets. Financial markets do not exist just for the sake of playing the game of making and losing money. They do exist to deal with the problem of inter-temporal consumption decisions, or in other words: to cope with time, risk, and uncertainty. In a financial marketplace which is increasingly globally connected and high-tech this ultimate raison d'état should not be forgotten.

For markets to function properly, the institutional structure needs to be right, either by design or by evolution. To repeat Rajan and Zingales (2003: "markets cannot flourish without the very visible hand of the government, which is needed to set up and maintain the infrastructure". In other words, unregulated markets are by no means always preferable to regulated markets, and vice versa. Rajan, Zingales and others with a Chicago School background have also always been quite critical on lobbying and other efforts by special interests to influence policy makers and thus alter the competitive environment. They share this viewpoint with institutionalists like J.K. Galbraith. The extensive and successful lobbying by

135 Only a limited number of issues has been published so far. An analysis, as was performed in chapter 2 for the Journal of Finance and the Journal of Financial Economics, would be a bit premature.

the financial sector for deregulation in the years leading up to the crisis is well-documented and mentioned as one of the underlying causes for the 2007-2008 crisis.

While regulation is an obvious part of the story, the Austrian perspective on the market process, treated in chapter four, can be regarded as institutional as well. To acknowledge that institutions matter, implies that the well-functioning of capital markets is not solely a matter of letting market forces run wild. The interests of the end-users of financial markets need to be taken into account and safeguarded. This may be done in a number of ways: regulation obviously springs to mind, but we can also think about, for instance, education and the creation of stimuli to use the full spectrum of products that financial markets have to offer.

Agency theory, which can be regarded as partly neoclassical, partly (new) institutional economics, is also relevant, most notably where it concerns the problem of moral hazard. During the crisis failing banks were bailed out by central banks and governments for the sake of stability of the financial system and the economy in general, effectively creating a put option under the activities of those banks, which was largely ultimately paid for with the tax-payer's money. No banker will admit that they counted on the guarantees that governments provided at the peak of the crisis to bail them out. Or that they advertently or inadvertently took on more risk than they would have without counting on some kind of safety net. But many of them were bailed out in a collaboration of the sector itself with government and regulators with the taxpayers largely footing the bill. Another consequence of the crisis and bail-out was a reshuffle of the sector where a few dominant market participants got even more dominant, thus reducing competition in the market and perhaps increasing lobbying strength.

There has also been a lot of attention for the compensation of executives: performance-related compensation can misalign the interests of executives and shareholders (and other stakeholders). Finally, in the context of financial markets a similar problem within organizations pops up: payment of professional traders and money managers is also highly performance-linked and usually based on a short time horizon. In all these cases incentives are present to take on extra risk, which might not be prudent. These are all agency-related issues.

According to Bernstein (2007) finance scholars such as Robert Shiller, Andrew Lo and Robert Merton belong to the institutionalist category. The common denominator of their work is that they take financial markets beyond the narrow realm of the markets themselves to real-world problems such as pensions and retirement and housing. Shiller, for instance, has occupied himself with the housing market in the 2005 version of his bestseller "Irrational Exuberance". This has led to construction of the Case-Shiller index: an indicator for the housing market which permits people to keep track of the housing market and potentially

deal with the risks and uncertainties that are presented in that context. In his 2012 book "Finance and the Good Society" Shiller expands his argumentation further to use finance and financial markets for the good of society with regard to insurance, pensions, college savings, and so forth.

Likewise Merton, with Fischer Black and Myron Scholes one of the originators of option pricing theory, has occupied himself with lifecycle finance and products and markets that relate to pensions and retirement (Merton and Bodie, 2005). Financial innovation for Merton means better solutions for the end-users of financial markets. Merton and Bodie point out that transaction costs are extremely relevant to actual financial markets and products. That is another typical institutional notion, expressing the idea that the existence of these markets and products hinges on trying to minimize transaction costs.

Lo is concerned with a variety of issues that surround financial markets, such as market structure, regulation and risk management. One could add the late Stephen Ross who consulted on smart compensation schemes for executives, based on his expertise in agency theory and options. What is interesting is that the reputation of these scholars originates in their work in the narrow realm of financial markets: market efficiency and asset pricing. Also note that the "institutionalist" label runs across the behavioral-neoclassical demarcation: Ross was a champion of neoclassical finance while Shiller is considered a premier behavioral/ Keynesian economist in the first place.

6.6 NEW INSTITUTIONAL FINANCE

If we accept that a plurality of partial explanations applies to financial markets, rather than one grand theory, some kind of umbrella concept might be useful. Perhaps we could speak of new institutional finance.

The obvious similarity of this phrase with new institutional economics is no coincidence. In his 2000 discussion article on new institutional economics Oliver Williamson recommends that, by lack of or awaiting a unified grand theory, we should accept pluralism. Furthermore, Williamson situates new institutional economics closer to the orthodoxy than old institutional economics. New institutional economics adds to the orthodoxy rather than replacing it. That corresponds to the ideas which have been suggested in the previous chapters, in particular in chapter four: there can be room for other explanations next to the (neoclassical) hardcore.

Finance remains essentially and above all a social science. Williamson (2000) identifies four levels of social analysis:

- Level 1: informal institutions , such as customs, traditions, norms, religion, ethics;
- Level 2: formal institutions, such as property rights and other macro legal and political arrangements;
- Level 3: governance, such as firms and other forms of organization;
- Level 4: resource allocation, e.g. the market.

Higher levels pose constraints on the lower levels, while there is also feedback from lower levels to higher levels. Perhaps the spirit and inspiration of Williamson's scheme (though certainly not identical) can be useful for framing a new institutional finance. The emergence, and existence of financial markets and the basic functions these markets perform can be regarded as a level 1 issues. Level 2 is about market structure. It is constituted by the conditions which affect and influence the well-functioning of financial markets: legitimacy, transparency, liquidity and the according legal boundaries and relevant policy-making, governance and supervision. Level 3 is the market itself, primarily but not exclusively the domain of neoclassical finance. The behavioral and psychological angle constitutes level 4: the micro motives of individual agents. The Austrian market process theory is an example of a feedback loop, in this case between level 4 to level 3. Reflexive and performative aspects can play on all levels.

6.7 FINALLY

I have argued that it can be worthwhile to employ various perspectives when studying and analyzing phenomena in financial markets: social-institutional, economical, psychological, and so forth. Within the economic frame neoclassical finance is the dominant approach, though not the only one. As has been shown finance has pluralistic characteristics. It has evolved from a field with a descriptive, qualitative approach into a quantitative discipline that emphasizes rigor and (mostly statistical) testing. Finance became one of the poster boys of neoclassical economics, a testing ground for its methods and theories. But it would be well served to not forget about those pluralistic origins and keep an open stance to novel approaches. Even while the neoclassical core still forms a solid fundament, new ideas may be profitable. Not in the monetary sense, because making money in the markets is not easy, but there can be value in, for instance, an enhanced picture of agency in financial markets (using behavioral insights amongst others), in descriptive accounts of how arbitrage works (using Austrian market processes and other approaches emphasizing discovery, learning, evolution and adaptation). And there may be much more to gain in a more heterodox finance using approaches such as bubble finance, fractal finance, political finance, neurofinance ,

Keynesian inspired finance, as well as innovations from the practice. Most of these ideas can be empirically tested. Financial markets have been the proving ground for a number of neoclassical concepts (Harrison, 1997) but they can function in a similar way for other approaches, as has happened already for behavioral economics.

Earlier the possibilities of reconciliation of seemingly rival economic schools of thought and disciplines, on a methodological level but perhaps also on an ideological level, were discussed (see also Davis, 2019a). I suggested that the differences and disagreements, polarized as they may appear at first sight, could actually be bridged to some extent, at least in finance. The result is a realist-grounded pluralism: a plurality of theories (and methods) which deliver partial and approximate explanations (see Mäki, 2005, Marchionni, 2005). These explanations are not universal, but work local and contextual, on particular aspects of and in specific cases within the broader phenomenon of financial markets.