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The Tyranny of Average

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ABSTRACT

This study examines the systemic pressures that companies face in today's business landscape to follow a 'standard mode' in their operation. Research on the 'tyranny of average' extends and complements behavioural approaches to business action by investigating 1) the 'tyranny' as a formidable, collective force that takes the form of a powerful current and prompts companies to herd together; and 2) the 'average' as a set of standards and modes which act as prominent, salient clues to what is expected from companies. The study examines the *tyranny of average* in the context of financial institutions, and the 2008 crisis in credit and financial markets.

Keywords: Networks, standards, contagion, herd effects

INTRODUCTION

This study investigates the systemic pressures that companies face within their surrounding networks to follow a 'standard mode' in their operations, the companies' response to these pressures, and the effect of this pressure on business networks. A tyranny of average can be understood as peer group pressure to follow the crowd within business networks. I describe the term 'tyranny' as a formidable and collective force that takes the form of a powerful current and prompts companies to herd together; and the term 'average' as a set of standards and modes which act as prominent, salient clues to what is expected within business networks.

There are several forms the tyranny of average and, thus, several systemic pressures within business networks. The common denominator is that these pressures are forces that push a company towards an average that is common between companies. The term *tyranny of average* can be used to describe the often overlooked fact that average data do not provide any valuable insight into individual customers, relationships, products, benefits or risks. Similarly, average data does not reveal any information about the distribution of a data set. Indeed, the average customer, the average relationship or average benefit and average risk does not really exist. Nonetheless, it has become common to treat multiple counterparts, individual business relationships or individual products in the same way as in the usual market segmentation. In this study I examine the tyranny of average in the context of financial institutions and the 2008 crisis in credit and financial markets. The idea of 'average' as set of salient clues of what is expected within business networks is evidenced by the ever-present use of leverage in the context of financial assets. Leverage (L) is referred to as 'gearing' and may be expressed as a relative number that that has the value of assets (c) as a numerator and equity (e) as denominator (L=c/ e). Although leverage represents just one aspect of wider issues of

average, its use became a prominent standard that had significant consequences in the contemporary business landscape. Leveraging became a fashion that grew rapidly during a time of low interest rates. The higher the leverage, the higher was the return on equity; this ensued groups of actors to herd together. Households, companies, retail banks, investment banks, hedge funds, private equities and even governments followed the crowd in gearing up their operations. The existing institutional and regulatory framework, including taxation, promoted the prominence of this 'average'. Thus in the recent past, no actor of a financial institution would have survived if he had not geared up.

Phenomena such as the widespread use of leverage raise questions about the underlying reasons that force actors to succumb to the tyranny of average. We could assume that herd behaviour offers a kind of protection as it is considered to be safe when many actors repeatedly follow a mode of action. It appears that actors' readiness to succumb to the tyranny of average and follow the crowd in their surrounding networks will depend on a) expected returns (incentives), b) the reliability of expected returns (risks), and c) the way these returns are recognizable standards in business networks (salience). Questions remain about what constitutes the average, its impact and consequences. Previous research suggests that actors' representation of events in perception and memory consists of 'averages' which induce consistent patterns of errors (Anderson, 1981; Kahneman and Frederick, 2002). The unifying idea is that average values of features result in a systematic insensitivity to the magnitude of events, the speed at which events occur or the duration of events. Usually actors initiate their activities by drawing on focal points which are modular ways of mutually perceived expectations (Schelling, 1960; Sudgen 1995; Mouzas and Ford, 2007). Embedded in business networks, actors often translate collective expectations into group norms (Feldman, 1984; Heide and George, 1992; Choi, 1993; Blois and Ivens, 2007); they consider them as 'implicit or explicit rules of expected behaviour that embody actors' preferences' (Nee, 1998: 87). There is evidence that actors are influenced by the decisions of other actors, and this influence may be a first-order effect leading to perfect herding, in which a great number of actors act alike without any countervailing force (Bikhchandani et al.1992; Lux, 1995; Devenow and Welch, 1996; Hirshleifer et al. 2003; Kim and Nofsinger, 2005; Greve, 2009).

The investigated phenomenon of the *tyranny of average* raises questions about the implications of social and economic contagion in business networks. The historical evidence suggests that crises may occur because too many actors appear to make the same mistake (Mackay, 1841; Galbraith, 1954; Kindleberger, 1978). The current crisis in credit and wider financial markets demonstrates this once again. What can we learn from current experience of financial institutions? What are the consequences for companies and what are the network effects? The paper builds on the notion of the

tyranny of average, based on a case study research that started in June 2007 to examine real-world episodes involving financial institutions. Complementing existing behavioural approaches (Kahneman and Tversky, 1979; Kahneman, Slovic and Tversky, 1983; Kahneman and Lovallo, Thaler, 1985, 1993; Akerlof and Shiller, 2009), the present study draws attention to cognitive and motivational challenges that financial institutions and their stakeholders face. A behavioural approach to business action offers a more accurate picture of the actual behaviour of corporations and provides a better understanding of its source. This is relevant for policy-makers and may help corporations, governments and authorities to set limits and rules that mitigate excess. In the following, the paper defines the terms 'tyranny' and 'average', discusses the intellectual origins and prior research to identify relevant analytical tools, presents and analyses the UBS case, and discusses conclusions and implications for theory and practice.

INTELLECTUAL ORIGINS AND PREVIOUS RESEARCH

The terms 'tyranny' and 'average' are used in ordinary discourse with many different connotations. The term 'tyranny' usually denotes simply an imposing force; for example when one needs to follow a certain direction. At other times, however, it is used in its primary meaning implying a powerful coercion that exercises collective pressure that prompts others to herd together, akin to an irresistible and natural current. The term 'average' has the connotation of 'mean', 'normal' or 'standard'. Average is often used as a term to describe a set of standards and modes which act as prominent, salient clues to what is expected within a large and diverse population.

A world of standards, rules and principles

In today's world, 'averages' are ubiquitous. As Brunsson and Jacobsson (2000) put it, there are plenty of self-appointed experts and pressure groups who know what is best for everyone. Organizations such as the American National Standards Institute (ANSI), the British Standards Institute (BSI), Deutsches Institut fuer Normung (DIN), or the International Organization for Standardization (ISO) develop standards of any kind. For example, ISO 9000 comprises internationally agreed rules and principles of managing a corporation to gain the confidence of customers and markets (Furusten, 2000). Brunsson and Jacobsson (2000) differentiate between three kind of standards: a) standards about being something (e.g. what constitutes profit), b) standards for what we should do, e.g. quality and procedure standards and c) standards for what we should have, e.g. insurance, plans, qualifications, systems etc.

How are these rules and principles created? Previous research portrays organisations as complex systems embedded in society. Organizations, however, do not function as rational social machines

designed by managers; they are susceptible to rules and principles that come from their surrounding environment, albeit managers often take them for granted (Meyer and Rowan, 1977; DiMaggio and Powell, 1983). Similarly, interaction among managers or organizations is a complex process that does not occur in a vacuum. Interactions are also based on a set of rules and principles that guide actors' business behaviour (Mouzas and Ford, 2009). A historical distinction since the creation of the Roman Empire has been between mandatory rules (ius strictum) and yielding rules (ius dispositivum). In our times, this differentiation corresponds to the contemporary distinction between mandatory and default rules (Ayres & Gertner, 1989; Riley, 2000). In a similar way, Esser (1956) differentiates between 'Rule' (Norm) and 'Principle' (Grundsatz). The important point here is that continuous replication of existing practices within a large population leads to the development of principles which operate as 'optimization commands' over time (Dworkin, 1967). For this reason, rules and principles may limit the types of relationships in which today's companies are able to participate (Håkansson and Ford, 2002). They also increase the 'predictability' of group members' behaviour and give expression to a group's 'central values' (Feldman, 1984, p. 47). Often a set of rules and principles are not only common; they are also popular. For example, management fashions occur when many business actors behave in the same way at the same time (Abrahamson, 1996). Consider the introduction of zero-budgeting, lean manufacturing, efficient consumer research or the plethora of programmatic initiatives that blossom in many business networks (Mouzas and Araujo, 2000).

Expectations, preconceptions and errors

It appears that actors achieve much better coordination of their efforts when they are able to rely upon focal points (Schelling, 1960). Focal points are mutually perceived expectations, shared appreciations, preoccupations, obsessions or sensitivities. In other words, mutually perceived expectations provide "a focal point for each person's expectation of what the other expect him to expect to be expected to do" (Schelling, 1960, p. 57). In this way, a focal point is based upon the supporting logic of a historical precedent. It is sought through modal, rather than median or mean responses and channels actors' behaviour towards a particular *modal outcome* which is expected with confidence (Myerson, 2006; Janssen, 2006). The efficacy of focal points will depend on their degree of prominence or salience (Mehta, Starmer and Sugden (1994). Prominent bearings of what is expected from individual companies can be found in almost every part of the business life. Consider finance and accounting systems, due diligence and investment valuation, risk management systems, segmentation models, or even developments and trends in the marketplace.

The problem with focal points is that they may lead to preconceptions and errors when forming judgements (Kahneman and Tversky, 1979; Kahneman, Slovic and Tversky, 1983; Kahneman and Lovallo, 1993). For example, business actors can make judgements on the basis of rough heuristics, such as the rules of the thumb, and then adjust upwards or downwards. In this way, all decisions in our life can be framed as a gain or a loss relative to something (Kahneman and Tversky, 1979). The efficacy of these frames is higher when anchors, such as interest rates or yields, are supplemented by facts, data and information. But people usually underweight events that are probable compared with events are certain. For example, the longer the period since the occurrence of a past event, the lower the perceived probability that people assign to it. Similarly, most people would rather have a bird in the hand than two in the bush. Such behaviour does not only confirm actors' propensity to underestimate the past; it also leads to a systematically hyperbolic discounting of future (Laibson, 1997). Preconceptions and errors when making judgements are not limited to individual actors. Companies often take the financial markets' conjectures as fixed and certain; hence, they act with short time horizons inflating current bottom line results to boost current share prices (Stein, 1989). This mode is often imitated by other companies. Although companies are usually not in the position to fool financial markets, they are "trapped into behaving myopically" because markets use current earnings to make a forecast of the firm's value (Stein, 1989, p. 656).

Consider performance measures and bonus systems. Many performance measures, such as earnings per share or return on equity, are misused as focal points for corporate planning. The adequacy of these measures can be questioned because they are based on accrual accounting designed for ex-post external reporting (Pappaport, 1981, 1983). The role of companies, instead, is to assess the "relationship between today's investments and the magnitude and timing of uncertain future cash flows and not be influenced by arbitrary conventions that do not affect cash flow" (Pappaport, 1983, p. 36). These observations are in line with other studies that demonstrate the misuse of accounting measures of return to imply business performance (Fisher and McGowan, 1983).

Context, risk and average

Existing approaches to business segmentation are often carried out on the basis of a limited number of average descriptors to identify attractive customer segments and, thus, they provide an interpretation of the context in which a company is embedded. These approaches result in a formidable force on business actors to take a myopic view (Dyer *et al*, 1998; Millier, 2000) of the multiple complexities. Consequently, business actors assess indirect links in business networks in a static way and they ignore the inherent dynamism and volatility of existing and emerging preferences in business networks (Blocker and Flint, 2007). One possible explanation for approaching multiple

counterparts in the same way may be traced back to the inherent asymmetry of information between suppliers and customers. Usually customers know much more about their suppliers' performance in their particular relationship than suppliers know about their customers. Consider the relationship between a retail bank and a customer when a loan is negotiated or in the insurance markets the relationship between a provider of annuities and a customer in which the customer knows more than the insurance company about his chances of dying (Finkelstein and Poterba, 2004). Asymmetry of information is also evidenced in the contemporary phenomenon of securitisation in which credit risk is passed on other investors far away from the originators of an initial credit (Bryan, 1988). Building on a segmentation of business, contemporary systems of risk management operate by assigning average probabilities to future events or contingencies. For example, average probabilities of risk management models such as *Value at Risk* (Jorion, 2006), are often based on a relatively short period of observations. Haldane (2009) provides ample of evidence that during the period between October 1987 and August 2008, the distribution of key variables such as earnings, growth, or asset prices had much smaller variance and slimmer tails compared with a sample stretching back to the 17th century. Even if longer periods are applied, risk management models assume that, in a random sample, the full distribution of events is normal in shape. Hence, risk management systems underestimate the chance of low probability, high-impact contingencies (Mandelbrot, 1963; Taleb, 2007). Furthermore, they systematically fail to incorporate new or emerging risks ignoring interdependencies between individual contingencies. Relying on historical data, risk management systems identify a limited number of average risks and construe certainty too narrow; they miss the forest of uncertainty while dealing with few trees (Sims, 2001; Stulz, 2009). One explanation for the problem of risk management systems is that the notion of uncertainty (Duncan 1972; Downey, Hellriegel, and Slogum 1975) is not the same as risk. While risks can be identified and calculated stochastically by individual actors, uncertainty is an amorphous topology for which actors cannot assign any probabilities (Knight, 1921). Even in periods of perceived certainty, circumstances can dramatically change by unforeseen contingencies.

What is the actors' reaction to uncertainty? Actors may react to circumstances of uncertainty with inertia. Bazerman and Watkins (2004) developed a framework to describe and explain the persistent failure to act in time to prevent foreseeable catastrophes. This failure to act in time to prevent wide-spread disasters is not only evidenced in the emergence of financial crises but stretches to many other persistent problems such as the problem of climate change (Bazerman, 2008; Veal and Mouzas, 2007), or persistent failure to establish independent auditors or rating agencies (Bazerman and Watkins, 2004). It appears that communicating potential risks and acting in time is crucial (Walker, 2009; Stulz, 2009). Consider the case of JPMorgan Chase (Walker, 2009). The investment bank

division of JP Morgan Chase (JPMorgan) started a dialogue with its bank retailing division which was unusual for an industry characterised by low inter-organizational information sharing. In 2004, the exchange of data between the two divisions revealed that despite low interest rates, mortgage defaults were on the rise at retail level and that mortgage-backed securities sold to investment banks and then further to international investors contained a very thin margin which did not price a risk premium. Existing risk models and valuations from rating agencies such as Moody's and Standard and Poor's, however, were based on historical average data regarding mortgages and did not include new sources of risk. Based on this sharing of data between retail and investment divisions, JP Morgan Chase moved in 2005 against the herd of other investment banks, such as UBS or Lehman Brothers, and managed an exit from the mortgage-backed securities business.

Self-reinforcing herd effects and market volatility

Self-reinforcing herd effects and market volatility are frequent in risky environments (Kahneman and Lovallo, 1993; Lux, 1995; Devenow and Welch, 1996; Hirshleifer et al. 2003; Shiller, 1990, 2000; Kim and Nofsinger, 2005; Greve, 2009). Herd behaviour offers a kind of protection as it is considered to be safe when many actors repeatedly follow a mode. In this way, business action is not driven only by economic rationalities; it is also driven by animal spirits (Akerlof and Shiller, 2009) which may lead to excesses and manias followed by panics and crashes (Kindleberger, 1978). Even if companies are rationally self-interested, their actions are often determined by their relationships with investors or financial institutions and this interdependence may result in a self-reinforcing momentum. Such interdependence is evidenced in the relations between managers and investors (Clark, 2004; Martin, Casson and Nisar, 2007).

Previous research on investment banks activity emphasizes the general expectation within this industry to make deals; thus, investment banking is characterised as "revenue-driven business" (Eccles and Crane, 1988). The implication of this tendency is that during periods of economic growth, the concern is with revenue generation, for example through deal-making, and less with cost, complexity or risks. Amid growing product proliferation and increasing capital requirements to conduct complex deals, there is a loose and precarious linkage between revenues and profitability. The 'average' as a set of standards and prominent modes designed as means to direct people to achieve specified ends became ends in themselves. As Eccles and Crane (1988, p. 160) observe "people can become more concerned about affecting the measures reported than about accomplishing the ends that the systems attempt to measure". The bonus structure usually geared to revenue growth reinforces this tyranny. The implication is a 'game playing' characterised by a relentless manipulation of information to fabricate the averages pursued (Eccles and Crane, 1988). The role of

incentives but also coercion appears to be crucial. Investors, for example, through the board of directors can put pressure on financial institutions to act in a certain direction, reverse a decision or invest in specific areas, such as mortgage-backed securities. Similarly, financial institutions can force households or companies make certain decisions, such as buying houses or investing overseas, by extending or restricting credit lines (Dewatripont and Tirole, 1994; Martin, Casson and Nisar, 2007)

RESEARCH METHODS

The research activities in the area of financial institutions started in June 2007 with a 'prime pumping' project supported by Lancaster University. The initial purpose of this research was to improve our understanding of business practices in financial services. One of the first intriguing findings was the widespread use of a set of standards and modes such as gearing up operations, standardized forms of contracts, standard terms and conditions, ratings systems, league tables as well as valuation systems. This encouraged a further investigation of the uniformity of business action and the underlying reasons for the companies' need to follow a 'standard mode' in their operation. Specifically, the research aimed to improve our understanding of the systemic pressures that actors face within their surrounding networks, the actors' response to these pressures and the effect of this pressure on business networks.

Data Collection: By using case study research methods (Ragin and Becker, 1992; Halinen and Törnoos, 2005), I collected information about financial institutions and their stakeholders e.g. collaborating partners, significant customers, suppliers or financial authorities. In this way, the unit of observation was a network of financial institutions. A typical network is embedded in a regulatory framework and comprises a) investors and b) financial institutions (see figure 1). Data collection placed emphasis on obtaining archival records, reports prepared for investors, contemporary manifestations of agreements as well as conducting personal interviews with UBS, JPMorgan Chase, Deutsche Bank, Barclays Bank and HSBC in which informants were actively engaged and encouraged to become co-producers of knowledge. Data collection enabled the specified research objectives to be attained. The study of contemporary reports and agreements is a novel method to move beyond subjective views obtained through questionnaires and interviews and examine objectified inscriptions of management practices. Furthermore, 47 interviewees were identified in co-operation with key informants such as Portfolio Directors, Heads of Communications or the Directors of Investment and Product offices. The pool of interviewees was enriched and expanded through my participation in professional conferences such as the Brand Finance Conference at the London Stock Exchange and the Manufacturer-Retailer Congress. Interviewees included first-line employees and managers (such as customer advisers, product managers, investment analysts and

investment and pension consultants as well as heads of departments and corporate lawyers). All field observations (including impromptu chats and meetings) as well as manifestations were typed and logged shortly after they occurred into a self-devised field tracking system. Filed observations were classified, catalogued and entered into a "chronological events list" and served as a filter or index to the wider set of observations. This is crucial in the collection of primary data because it helps us carry out a closer examination and triangulation of the data and allows us to examine the prior and current context in which financial practices are enacted and sustained. I was also making periodic entries into a field diary to supplement the collection of more formal material about inter-organizational agreements gathered. These diary entries provided reflections on the research as a whole. I also collected electronic copies of reports, briefings, framework contracts and financial results published by financial institutions.

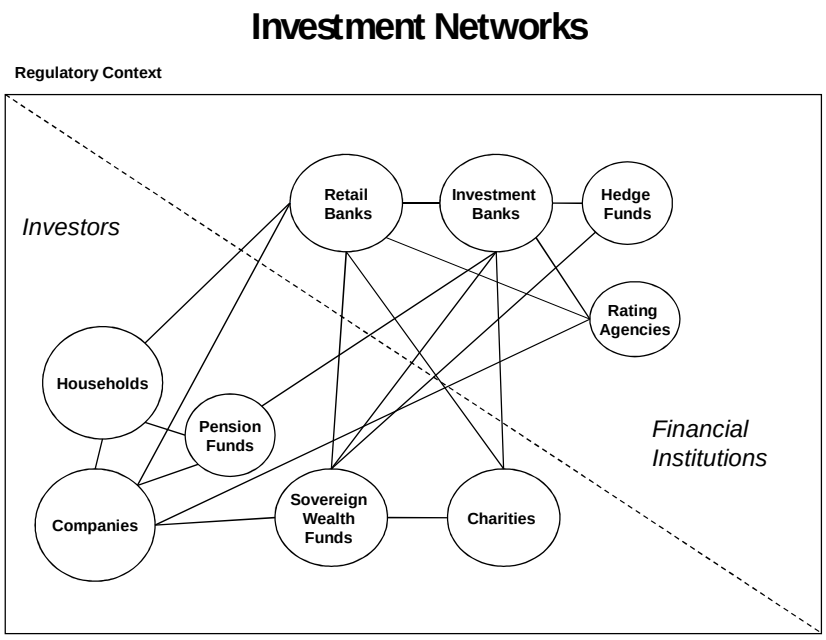
Data Analysis: In order to analyse the data in their local context, I took a network perspective on all field observations. By taking a network perspective, we recognize that every financial institution is at the nexus of many different constituencies and attempt to articulate 'inter-connectivity' to capture interdependence and dynamic processes of interaction among actors (Gnyawali and Madhavan 2001, Gulati et al., 2000, Stam and Elfring 2008). The analysis of empirical data involved critical examination, evaluation, categorization and recombination of findings to address a) the nature of 'tyranny of average', b) the way in which a collective pressure is exercised and the c) and consequences of herd behaviour. This effort encountered four major challenges, namely, the problem of boundaries, complexity, time and comparison (Halinen and Törnoos, 2005). Boundaries are arbitrary as relationships are interconnected throughout financial markets and, thus, it was not be possible to analyse the 'entire' financial system and all financial practices. For this reason, I focused on the inter-corporate connectivity related to one bundle of financial practices that emerged through gearing up operations. This includes households' mortgages, consumer and business credit, mortgage-backed securities and credit default obligations as well as brokerage facilities. The aim was to expose variance within this bundle of deal-making practices and evaluate, test and determine the extent to which existing knowledge claims do, or do not, truly represent or correspond to the real world. To do so, the analysis of data was facilitated by an analytical framework consisting of three conceptual dimensions a) focal points b) repeated exchange and c) recursive time for the study of financial practices. These dimensions are drawn from previous work within the IMP tradition (for an analysis of these see Mouzas and Ford, 2007). The primary goal in using this analytical framework is to link theoretical knowledge with empirical observations. This link was established through several cycles, moving between theoretical ideas and field observations. In the analysis of data, the corporate world of financial services was regarded as an open system in which events do not invariably follow

a determined pattern; instead, they are subject to mechanisms of acting. For this reason, I engaged in analytical experiments to identify the generality of mechanisms that produce the outcomes observed (Tsoukas, 1989). This analysis involved a relentless attention to temporal and spatial context (Pettigrew et al., 2001) as well as iterative examination of inscriptions of financial practices such as contracts, written protocols, e-mails, e-mail attachments and finally reports to shareholders.

THE CONTEXT OF FINANCIAL INSTITUTIONS

Understanding the context of this study requires an understanding of the role of different players and their inter-connectivity. The section below briefly describes the role of some of these players such as private households, retail banks, investment banks, hedge funds, rating agencies, companies, pension funds, sovereign wealth funds or charities (see figure 1). Actors may perform many different roles. Households, for example, are savers hence investors but also borrowers. Albeit artificial, we may draw a line between a) investors and b) financial institutions. This demarcation will help us to create a structure to understand the complexity of contextual conditioning.

Figure1: The Context of Financial Institutions



Investors

Investors such as households, companies, pension funds, sovereign wealth funds or charities are the providers of capital to be invested (Shiller, 1990; Clark, 2004; Martin, Casson and Nisar, 2007).

Households

Private households play a dual role as savers, who invest their money in bank accounts or other financial products such as shares and make provisions for their pensions, and borrowers who mortgage their houses, or take consumer credits e.g. via credits cards and loans. Households' investing behaviour is largely influenced by their employment level, income, consumption and interest rates. Over the last 15 years 1993-2008, there has been a relatively stable environment characterised by high employment levels, growing incomes, and low inflation. Consequently, interest rates have been kept to unprecedented low levels. Responding to periodic crises such as the bursting internet bubble in late 2000, the terrorist attack of September 11, 2001, and the recent crises in financial markets of 2008, the US central bank (Federal Reserve) cut the interest rates in a dramatic way from 6.5% in December 2000 to 1% in July 2003 and 0. 25% in January 2009. With some small deviations, the European Central Bank and other central banks in the world followed the same trend in interest rate policy. Central assumption behind all these continuous interest rate reduction was to encourage consumption, lower the cost of capital and boost liquidity. House ownership was encouraged and increased demand led to the double digit price increase in house prices (Shiller, 2008). With average savings at or close to zero in many countries, particularly the USA and the UK, households have been borrowing from financial institutions to live beyond their means. This is evidenced by the unprecedented rise of home equity withdrawals which in 2006 made up nearly 10% of households' disposable income. Households' behaviour may be traced back to their confidence that house prices would continue to rise in the future. Furthermore, empirical studies of inter-temporal choices of households indicate that the perceived value of future wealth (e.g. future consumption through saving) declines rapidly over the short run and then at a slower rate over the long run (Laibson, 1997; McClure et al, 2007). This pattern of households' behaviour encourages immediate gratification and the acceptance of future unforeseeable risks.

Companies

As the cost of capital became extremely low, companies excessively leveraged their businesses by financing their fixed assets and working capital requirements with debt. Increasing leverage has been encouraged by the tax system which allows debt interests to be tax deductable. This has resulted in an explosion of leveraged buyouts, consortia of leveraged investors and private equity funds. There has been a growing pressure on companies to enhance leverage and thus amplify the return on equity by selling off commercial properties such as real-estate and renting them back. Expectations and risks influence companies' investment decisions. Companies use their assets that comprise their equity and capital they borrow and expect to generate revenues. Assets, however, bear an opportunity

cost of capital (Modigliani and Miller, 1958). This is the weighted average cost of debt and equity of not investing in other business opportunities of similar systematic risk. Although the opportunity cost of equity capital varies from business to business, depending on risk, the cost of debt after July 2003 became extremely low. This contextual conditioning encouraged companies to enhance the leverage in return for incremental increases in returns.

Pension funds

Pension funds are independent legal entities which are set up by companies to invest pension contributions made on behalf of and by their employees for the exclusive purpose of providing future life assurance and pension benefits to those employees and their dependants. For this reason, pension funds are generally granted tax exempt status that places strict conditions on the benefits that can be provided as well as funding of the arrangements and any refunds of contributions to sponsoring employers. Pension funds usually invest in diversified portfolios of assets that may include cash, bonds, shares, commercial property and alternative investments, such as hedge funds, private equity, commodities, infrastructure, and derivative instruments. Pension funds are the most significant category of investor ahead of other funds such as sovereign wealth funds, hedge funds or private equity capital and they are among the most important shareholders of publicly listed and privately owned companies.

Sovereign Wealth Funds

Sovereign Wealth Funds include investments of sovereign nations such as China, Middle East Countries or European countries as well major private individual investors. Central bank reserves, for example, are usually not invested in diversified portfolios of assets; they are invested in perceived risk-free US government bonds, which in turn drives risk-free to historically low rates.

Charities

Charities are organizations set up for charitable, religious, social or philanthropic purposes. They are usually not a part of any statutory body, governing organization or local authority and they are required to use their operating profits for their organizations' charitable purposes.

Financial Institutions

Financial institutions such as banks, investment banks, insurance companies or pension funds play a significant role across many different business networks as they provide a vital link between creditors and borrowers.

Retail Banks

The fundamental function of retail banks is to transform usually short-term liabilities (e.g. households' savings deposits) into usually long-term assets (e.g. credit to firms or households in the form of bank loans, consumer credits or mortgages or equity holdings). Therefore, the actions of retail banks affect the aggregate investment as well as the liquidity of firms and households. It is important to note that in the case of a bank failure "all of these liabilities are senior to subordinated debt, which in turn is senior to equity" (Dewatripont and Tirole, 1994, p. 14). Following the bank crisis of the early 1930's, many retail banks had started to specialize, for example, as savings banks, commercial banks or investment banks. The underlying objective behind this specialisation was to segment the market and provide an offering that reduces the risk faced by depositors. However, the period from early 1980's to 2008 witnessed a growing trend towards de-specialization and deregulation that encouraged disintermediation, *allfinanz* in the sense of total finance offering as we as financial derivatives such as synthetic products, options or hedging. This liberalization of financial markets resulted in a significant concentration behind few global financial institutions. In general, large retail banks tend to 1) operate with lower operating margins (the difference in the interest between their assets and liabilities), 2) invest more abroad 3) operate more off-balance sheet activities and derivatives business (Dewatripont and Tirole, 1994). Growth was, therefore, considered as imperative. Retail banks started to develop teaser products by offering new customers credit with adjustable rate below the central bank's base rate for two years, concealing the higher interests that would follow. It was assumed that by the end of the initial two year period, the house prices would increase and the mortgage would be re-financed generating new fees. This effort was supported by mortgage brokers. For example, in USA 500,000 brokers were acting as intermediaries selling mortgages to households. They were paid a volume-based commission; hence, credit to households did not stay on their balance sheets. When households faced difficulties in making repayments, brokers sold them new, higher credits with lower interests that pay-off the initial credit. These types of credits became known in the industry as rolling loans. This practice became standard because of the continuous rise in property prices and falling interest rates. Similarly, retail banks re-packaged these loans into mortgage-backed securities and sold them to investment banks such as Goldman Sachs, JPMorgan, Lehman Brothers and UBS. In selling these loans as a mortgage backed securities to investment banks, retail banks booked one-off sum of profit, instead of relying on a future stream of revenues. It is important to note that retail banks have paid bonuses to bank managers based on the business volume and profits.

Investment banks

Investment banks operate their businesses in securities markets. Companies use securities markets to raise capital by giving in return voting rights over their actions (equity securities) or by promising a fixed schedule of future payments (debt securities). The role of investment banks is to facilitate the issuance of new securities by companies, for example by raising equity capital for companies via initial public offering or by issuing corporate bonds to fund companies' projects (for an comprehensive overview of investment bank activity, see Eccles and Crane, 1988; Morrison and Wilhelm, 2007). The core function of an investment bank is, hence, to create an "information marketplace" (Morrison and Wilhelm, 2007) that links investors and corporations. Over the last three decades, investment banking activity experienced exponential growth. This is mainly attributed to a) globalisation of business (e.g. the rise of business in Asia), b) information technology (e.g. computerisation and internet) c) mergers and acquisitions and d) financial innovations (e.g. derivatives, such as OTC- contracts to provide tailor-made solution to risk management problems (see Morgan, 2008). Over the last ten years between 1998 -2008, investment banks have been buying retail banks' mortgage-backed lending to households, mixing it together and selling it as fixed-income securities (collateralized debt obligations) to investors in Middle East, Europe and Asia. By doing so, they re-directed cash flows from millions of mortgages into tiered bonds with different risks and yields. The top tier, usually 80% of the bonds was sold with an AAA rating and 95% with an A or higher rating. The loss due to default rate was estimated by average market data at 6 % (Akerlof and Shiller, 2009). To cope with the inherent risk in these bonds, more synthetic products such as the Credit Default Swaps were created to provide insurance in case of a default. Because of lack of regulation in this area, it was possible for un-licensed companies such as hedge funds to enter the business and collect premiums creating the illusion that risk had been eliminated.

Rating Agencies

Rating agencies are independent institutions that assign credit ratings to issuers of securities (e.g. bonds) such as corporations, banks or governments by evaluating issuers' credit worthiness. The rating given, for example AAA, is based on average market data which reveal the risk of a security if it is hold to maturity. Because of the importance of assessing the probability of default of securities, many firms established ratings-based procedures that allowed investments only to financial institutions ranked above a certain rating. This created a systemic pro-cyclicality with self-reinforcing herd effects. Many investors misinterpret assigned credit ratings assuming that a rating reveals information regarding liquidity and business stability rather than information about credit risk. Ratings for structured credit (e.g. mortgage-backed securities) have been "far more volatile" and "far less robust predictors of future developments than ratings for single name securities which had existed for decades" (Turner, 2009, p. 77). Furthermore, there is an inherent conflict of interest for

rating agencies. Rating agencies have been asked to rate mortgage-backed securities as independent agencies. Rating agencies, however, have been paid fees by the issuers and not by investors, i.e. rating agencies have been paid by the same investment banks who sold mortgage-backed securities to other investors.

Hedge Funds

The first Hedge Fund in modern history emerged in 1949 when Alfred Winslow Jones implemented a an investment strategy that built on long position of undervalued shares and short positions of overvalued ones which enabled him to make a profit in all markets (Lhabitant, 2006). The hedge fund added leverage by using the revenues of short sales to finance long positions which amplified the total return on equity. In general, hedge funds are investment portfolios which seek high returns by taking positions on speculative opportunities. Structured as limited partnerships, hedge funds usually operate on a highly leveraged basis. As they invest in cash and derivatives markets securities for the benefit of other investors they have been regarded as major contributors to the flexibility of the financial system. The lack of transparency in their operations and absence of regulation, however, magnified their stigma as 'locusts' or 'de-stabilizers' of financial markets (Lhabitant, 2006).

Regulatory context

National or multinational regulators, e.g. governmental or non-governmental organisations, provide a framework of rules and principles and supervise financial institutions. These organizations include, for example, finance ministries, the Financial Services Authority (FSA) in the UK, the Securities and Exchange Commission (SEC) in the USA, Central Banks (e.g. US Federal Reserve, European Central Bank or Bank of England) and the Basel Committee on Banking Supervision. While finance ministries and central banks focused their attention on fiscal matters and interest rates respectively, the burden of regulating banks fell on organizations such as the FSA, the SEC and the Basel committee. The FSA and the SEC focused on a supervision case-by-case and assumed that financial institutions are self-regulated. Furthermore, supervision was usually restricted to retail banks and pension funds to ensure consumer protection and fair dealings. Consequently, investment banks, hedge funds and derivative business were left to a great extent unregulated.

EMPIRICAL STUDY: THE EVIDENCE FROM UBS

UBS as Switzerland's largest bank was the epitome of excellent wealth management. Founded on the solid performance of its two most significant ancestors, Union Bank of Switzerland and Swiss Bank Corporation, UBS was created in December 1997 laying a solid basis for a truly global, integrated

financial services firm. With this heritage, UBS was synonymous with Swiss virtues of prudential stability, discretion and risk aversion in financial services. Historically, UBS's prudent business policy reflected a modest return on equity of between 8% -12% per annum. Over the last decade, 1998-2008, major competitors started to expand rapidly in business scope and geographical coverage. It was a period of continuous economic growth accompanied by low inflation, low cost of capital, growth in the housing markets, particularly in USA and UK, rapid global expansion and significant advances in the area of telecommunications. In this context of continuous growth, other international banks such as Deutsche Bank or Goldman Sachs were delivering an average annual return on equity of between 20-25% per annum. In comparison, UBS lagged behind its competitors and, hence, the company was put under pressure by investors to climb the league tables. In 2002, UBS made it explicitly clear that the bank now focuses on four key performance targets, "designed to ensure that UBS delivers continually improving returns to its shareholders" (UBS 2002: p. 55):

-Achieve sustainable after-tax return on equity of 15-20%
-Aim double digit growth of earning per share across periods of varying market conditions
-Reduce UBS's cost/income ratio to a level that compares with best-in-class competitors
-Achieve a clear growth trend in net new money in private client business

UBS started to accelerate its expansion into investment banking. The push for growth was first concentrated on fixed income but moved quickly to new high yield areas such as structured credit and commodities. In order to accelerate growth in new emerging markets UBS bought in 2005 for $ 3.4 Billion a share of Bank of China. This step was regarded a natural development of the long standing relationship between UBS and Bank of China and it reflected the growing importance of the Chinese market. The growth was indeed fast and emphasized revenues at the expense of risk exposure. Bonus systems were geared to revenue growth and managers' salaries were not affected by any potential loss. Furthermore, in order to boost revenues, the bank entered the market of mortgage-back securities (Collateralised Debt Obligations (CDOs) as well as the market of Credit Default Swaps which are a form of insurance for mortgage-backed securities. The New York office of UBS concentrated the effort on riskier "mezzanine" CDOs. Estimating the risk and relying on awarded AAA ratings, the bank hedged only 2-4% of many super-senior exposures.

As liquidity and low cost of capital was simply assumed, the bank was borrowing short-term money from wholesale markets at lower interest and buying long-term securities to boost the yield. A lot of these activities were off-balance sheet. Relying on historical measures of calculating the average risk exposure in these businesses, UBS was following a 'standard mode' that is typical for many other

financial institutions. The standard mode was to boost growth by creating off-balance sheet Structured Investment Vehicles in which they repeatedly bought long-term Collateralized Debt Obligations by borrowing short-term (usually 90 days) money in the wholesale markets at a low interest rate.

UBS's performance was reported according to International Financial Reporting Standards (IFRS). The return on equity in 2002 was 13.9% and it was regarded "slightly below target range of 15-20%" and was attributed to "market related declines in earnings" (UBS, 2002 p.55). In 2003 return on equity was up to 20.5% and in 2004 up to 27.7%. These spectacular increases reflected strong revenue growth, the combined impact of share buybacks and dividend payments outpacing retained earnings. In a document entitled sensing risk released to investors (UBS, 2004), the bank regarded understanding of risk as UBS's core competence: "Taking risks is an inherent part of the financial services industry. For a bank managing risk is, therefore, a prerequisite for achieving attractive rates on return to shareholders" (UBS, 2004, p.2). In 2005 return on equity was up to historically highest level of 39.7%.

In August 2006 Clive Standish released a report to investors (UBS, 2006) stating that UBS performance was strong despite the market reversal in the middle of May. He attributed this strong performance to the *high levels of invested assets, record underwriting fees, brokerage fees and trading activities*. There, were however, a number of small negative signals. Although investment banking revenues continued to rise in all businesses and geographical areas, especially in Asia, UBS recorded for the first time a loss of CHF 30 million related to hedging loan exposures. Total operating costs also rose 25% due to higher number of personnel which in July 2006 reached 71,882 employees. The bank was acknowledging that more difficult trading conditions were emerging and there were worries about future growth and inflationary developments. These signals did not change the fundamental direction of UBS and the Bank was reassured by the end of 2006 reporting a return on equity of 28.2 %.

Peter Wullfi, Chief Executive Officer, summarised the situation as follows: "When market conditions become difficult, the trust in our advice becomes especially important. We believe this [2007] will be another year of strong results" (UBS, 2006, p.2). The relentless focus on the maximization of revenue growth was not challenged by UBS chairman, Marcel Ospel, who was known for his determination to make UBS one of the world's top three investment banks. In 2007, UBS reported for the first-ever loss that brought the return on equity to -11.7%. The tremendous loss was attributed to negative revenues in the fixed income, currency and commodities area of the

Investment Bank. After these substantial losses in 2007, UBS was forced to sell its share in the Bank of China and started to take steps to ensure that lessons were learnt and embedded in its risk management. UBS used to measure risks at three levels (UBS 2007): Firstly, expected loss that is expected to arise on average over time in connection to an activity. Secondly, statistical loss such as Value at Risk (VaR) that measures the amount by which the actual loss can in a portfolio can exceed the expected average loss over a specified time horizon based on a specified level of confidence (probability). Thirdly, stress loss that could arise from extreme events.

In the annual reporting (UBS, 2007, p.4) it was stated that "*neither trading management market risk controllers foresaw the extreme developments in previously deep and liquid US residential mortgage market, which revealed the tail risks in UBS' portfolio. With the accompanying drying up of liquidity, the size of UBS' positions proved excessive relative to the market"*. UBS also emphasized the need to control risk by "*improvement of measurement of basis risk by increasing granularity of risk representation*. Nonetheless, UBS was confident that "*many parts of UBS's risk management and control framework were resilient in the face of 2007 stress market conditions*" (UBS, 2007, p.4). UBS's return on equity for 2008 continued to decline to an unprecedented -54.4%, compared with -11.7% in the prior year. As a result in 2008, UBS needed to write-off 38 billion Swiss Francs ($37.3 billion), destroying all corporate profits generated over the last 5 years. By the end of 2008 the company was rescued by the Swiss government in a coordinated action with the National Swiss Bank.

DISCUSSION OF FINDINGS AND IMPLICATIONS

The case demonstrates that in order to boost growth, UBS had been following the standard mode in the financial industry. Building structured investment vehicles off-balance sheet, UBS had been borrowing short-term money in the wholesale markets at a low interest rate and buying long-term securities. It should be noted that this standard investment practice of banks demonstrates the inherent risk of the banking model; in other words, banking is an inherently risky business. Holding long-term assets than liabilities enables investors, such as companies and households, to hold shorter-term assets than liabilities; hence, the banking model absorbs companies' and households' liquidity risks. The way in which UBS coped with that inherent risk is of fundamental importance when considering the reasons for their downfalls. This is best illustrated as a double mismatch for UBS. Firstly, these off-balance sheet activities created a liquidity mismatch because money had to be rolled-over repeatedly in the short-term to finance an indirect ownership of a 30 year home loan in the USA. The implications of this liquidity mismatch resulted in long-term dependency on the

wholesale markets to obtain liquidity. Secondly, and more seriously, the amount of liabilities (money borrowed) and assets (collateralized debt obligations) were disproportionally high compared to UBS's equity capital. Because of the scale of UBS's operations, the implication of this mismatch was that any significant distortion caused by the market value of their collateralized debt obligations or the rise in the premium needed to obtain liquidity in the market could threaten the survival of the bank at any time.

The combined effect of this double mismatch reveals the high leverage that UBS was running. UBS's extreme exposure to the wholesale money markets made them particularly vulnerable to the seizure of those markets. The case shows that UBS's risk management also failed to assess the quality of the long term assets that they were buying. No allowance was made for the fact that home loans were being provided at higher and higher multiples of salary, low teaser interest rates (which were expected to increase substantially), high loan to value multiples, low credit rating of borrowers, concentration of risks and inadequate credit checks.

It is apparent that UBS considered that liquidity would always be available and relied on sophisticated risk management systems which assumed that the use of average default rates were a reliable guide to expected default rates and that average variations were capable to deliver statistically robust inferences about the probability of variations in the future. In comparison with JP Morgan Chase approach to risk management (Walker, 2009), UBS did not only fail to "increase the granularity of risk representation" but also failed to act in time during 2006, despite the acknowledgement of "difficult conditions" and recorded losses related to hedging loan exposures; instead, relying on average probabilities based on historical data, UBS insisted that "this will be another year of strong results" (UBS, 2006, p.2). The ‘failure to act in time’ demonstrates the magnitude of perceived pressure to follow standard modes of action. Overlooking knowable and concealed risks and failing to communicate these risks (for a general analysis of these failures see Stulz, 2009), UBS maintained a set of focal points and sustained a range of repeated exchanges over recursive time. Hence, the case evidence can be presented along three conceptual dimensions a) focal points b) repeated exchange and c) recursive time (see figure 2).

Table 1: Analysis of Empirical Findings

Focal points	Business growth Return on equity Low cost to obtain liquidity

	Ratings of securities (by rating institutions) Gearing up operations Search for incremental yield
Repeated Exchange	-Borrowing short-term & Buying long-term assets (Collateralised Debt Obligations) -Selling insurance (Credit default Swaps) -Brokerage -Selling derivative products
Recursive Time	Annual and quarter Results Quarterly billing of fees Annual financial targets Annual league tables Periodic roll-over of credit (e.g. every 90 days, overnight etc.)

Firstly, UBS continued to act according to six focal points: achieving business growth, increasing return on equity, obtaining liquidity at low cost, relying on ratings of securities (by rating institutions), gearing up operations, and searching for incremental yield. These focal points were explicitly stated and communicated across the organisation circumscribing a set of clear bearings for action (UBS, 2006). Secondly, repeated exchanges such as borrowing short-term and investing long term, brokerage and trading derivatives became institutionalised practices which were taken for granted. Repeated exchange does not simply imply repeating the same things; instead, repeated exchange is about expanding by following the same mode. Thirdly, annual and quarterly results, annual league tables and roll-over borrowing practices, as well as institutionalised repetitions established a sense of recursive time. For example, recursive time allowed UBS to expand 'fixed-income' business (through structured investment vehicles) periodically over time.

Maintaining a set of focal points and sustaining a range of repeated exchanges over recursive time led to a number of preconceptions and errors in judgement. Certain events were over-weighted and probable risks under-weighted (Kahneman and Tversky, 1979; Kahneman, Slovic and Tversky, 1983). The confidence in risk management frames was very high as these frames were underpinned with facts, data and information. Problems started when suddenly liquidity during 2007 was not certain. A significant part of today's liquidity problems, however, can be traced back a few years ago when in prosperous times companies, such as UBS, herded together in a) using their profits to buy business growth through acquisitions of companies, and b) returning cash to investors in the

form of dividend payments or share buybacks. This may reflect an emphasis on increasing efficiency (Mattsson, 1969; Mouzas 2006) and an apparent lack of counter-cyclical, differentiated and own formula to invest the shareholders' money in organic growth. On the other hand, investors herded together by punishing those companies that held excessive cash reserves for future eventualities or did not follow the crowd in dividend payments or share buybacks.

The study demonstrates that 'tyranny of average' or peer group pressure to follow the crowd within business networks may result in herd effects with irrational overshoots. The study shows that over the period 1993-2008 the broader context within UBS was embedded was characterised by high employment levels, growing incomes, and low inflation. Following the bursting of internet bubble in late 2000 and the subsequent dramatic reduction of base interest rates by the Federal Reserve to 1%, general attention was redirected from shares to house investments. The double digit price increase in house prices in many countries such as USA or UK attracted many investors and financial institutions which were eager to find new sources of yield. Households were encouraged and were allowed to borrow excessively and invest in house properties. Similarly, chasing growth and incremental yield, investment banks such as UBS were gearing up their exposures in return for incremental increases in returns. Both households and financial institutions were driven by collective confidence that house prices would continue to rise in the future. But this did not occur. Households' affordability reached a tipping point and credit defaults, particularly within the subprime segment, became frequent and then prominent during 2007 (Shiller, 2008; Akerlof and Shiller, 2009). This led to collective panic and massive exodus from the hitherto standard mode of action. The tyranny of average started to take a reverse direction.

When it comes to financial institutions, the tyranny of average can become even more critical. Every financial institution is at the nexus of many different constituencies and this embeddedness in a broader context transforms them into shock amplifiers (Turner, 2009). The reasons for these amplified dynamics can be traced back to the existence of network externalities (Haldane, 2009). The financial industry is an international business network with codes defined by investors and financial institutions and links defined by repeated exchanges between these actors over recursive time (see figure 1). As Haldane (2009, p. 9.) cogently puts it "when assessing nodal risk, it is not enough to know your counterparty; you need to know your counterpart's counterparty too". Financial institutions such as UBS, however, treated multiple counterparties in the same way and relied on average data that promised simultaneously higher returns and lower risks; and the fact that everybody in this international business network was doing the same was sufficient to become confident that this practice was fine and that it will continue to do so in the future.

CONCLUSIONS AND IMPLICATIONS

Based on an empirical study of financial institutions, the present paper described the *tyranny of average* as peer group pressure to follow the crowd within business networks. The 2008 crisis and its widespread ramifications in many different business networks, was not brought about because individual actors made many errors but because too many actors made the same error. The paper presented evidence of the *tyranny of average* in the widespread use of leverage. Households, companies, banks, investment banks, other financial institutions and even governments, all followed the standard mode of gearing up their own capabilities. In an interconnected world in which leverage is used (Modigliani and Miller, 1958; Baxter, 1967; Baron, 1974; Marsh, 1982) to acquire assets whose yields are uncertain, the risks can neither be overlooked nor can they disappear through diversification. Yet, actors follow the standard mode of leverage in their surrounding networks because they have incentives to do so (gearing up maximizes return on equity), b) risks are considered small (perceived certainty) and c) returns are widely recognizable standards (salience). What are the managerial and theoretical implications of the *tyranny of average*? Corporations and public authorities need to understand that business action is often driven by animal spirits (Akerlof and Shiller, 2009) that may ultimately lead to a formidable force that prompts actors to herd together. Based on the analysis of empirical evidence, I propose a set of guiding principles which could be used in dealing with the tyranny of average in business networks. Managers and public policymaker could carry, champion and mediate the following set of guiding principles:

Implications for managers

-The *freedom of differentiation* as the antithesis of the *tyranny of average* is a serious managerial challenge. Instead of following the standard mode in their industry, managers need to develop their own idiosyncratic formula to find unique ways to create and capture value in business relationships.

-Ignoring the original source of value creation may lead to ‘network myopia’ in which distant inter-connections are overlooked.

-Treating multiple counterparties, individual business relationships or individual products in the same way as the usual market segmentation creates a static approach that underestimates the inherent volatility of existing and emerging preferences in business networks.

-Network externalities are accompanied by massive information asymmetries which have a dramatic impact on individual actors.

-Focal points in the sense of mutually perceived expectations may lead to systematic preconceptions and errors in judgement. Managers need, therefore, to engage in heedful interactions in their surrounding networks to challenge their focal points over time.

-Instead of contemplating how likely an adverse or catastrophic event might be, managers need to engage in scenario building and firms need to develop strategies to survive these events.
-Repeated exchanges require a new generation of contractual arrangements that balance the need for stability with the need to maintain sufficiently flexible.
-Leveraging operations needs to remain limited and liquidity should not be taken for granted.
-Managers need to be aware that they should not always do everything what they are allowed to do.

Implications for Public Policymakers

-The *tyranny of average* reflects 'animal spirits' and may lead to excesses or 'irrational exuberance' (Shiller, 2000; Akerlof and Shiller 2009). Public Policymakers need set limits and rules that will seek to mitigate excesses.
-Individual firms cannot rectify information asymmetries regarding existing transactions, asset prices or risk exposure. Therefore, the informational infrastructure of financial networks needs to be considered as a provision of public goods that needs immediate improvement.
-Increased leverage, in all its forms, by households, companies, and financial institutions exposes actors to unprecedented levels of risk. Instead of encouraging leverage through low interest rates, tax benefits and degradation of credit standards, policymakers need to rethink the whole structure of current incentives to encourage equity-driven investment.

It can be concluded from this study that the notion of the *tyranny of average* is useful for the analysis of networks and the process within them as it constitutes an additional and important dimension of business behaviour. An interesting issue which is not addressed in this study is the extent to which the tyranny or average is challenged by outsiders or newcomers in a business network. It is also interesting to conjecture about variations of the tyranny of average in different networks having different characteristics. Similarly, it is interesting to juxtapose the tyranny of average with the *freedom of differentiation*. For example, we would expect differentiators to create new sources of value which attract other actors and, thus, generate herd effects. It would be useful if the idea of a tyranny of average is tested through further research; this would allow further empirical insights to be generated about the actual process in business networks.

In order to broaden our understanding of the actual process in networks, we need to embrace new analytical tools that raise important questions about our intellectual assumptions regarding markets, prices, business interaction, accounting, liquidity, business valuation, expected utility as well as risk

and return. Prospect theory (Kahneman and Tversky, 1979) offers the first significant alternative to our existing paradigm of thinking. It builds on advances in cognitive psychology and it is based on experimental evidence about human behaviour. Embracing analytical tools from this area will help us understand business interaction under uncertainty, cognitive frames and network pictures, confidence, biases, fairness, corruption and bad faith as well as risks and errors in judgement (Akerlof and Shiller 2009). There is a long way to go and we have just started. Researchers that use the network approach have a comparative advantage in embracing these analytical tools; by taking a network perspective we challenge the 'average' and articulate a metaphor for 'connectivity' to capture dynamic processes of interaction among actors (Ford, Gadde, Håkansson and Snehota, 2003). The present paper has, hopefully, provided a conceptual platform to continue this exploration.

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