Let's change finance

How finance changed the world & How to reframe finance

Jacob Spronk

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Valedictory address at the occasion of the official farewell as
Professor of Financial Management Science
at the Rotterdam School of Management, Erasmus University,
on Friday 11 September 2015

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Samenvatting

Reviseer financiële onderzoeksagenda en financieel onderwijs

Financieel management behoeft meer aandacht voor context en impact

Zowel de financiële onderzoeksagenda als het financieel onderwijs zijn aan een grondige revisie toe. Dat betoogt scheidend hoogleraar Financial Management Science bij Rotterdam School of Management, Erasmus University (RSM) Jaap Spronk in zijn afscheidscollege Let's Change Finance.

Spronk bespreekt in zijn rede een verdachte van de financiële crises die opmerkelijk goed uit de schijnwerpers wist te blijven en die in zijn ogen misschien niet de grootste boosdoener, maar op zijn minst wel medeplichtig was: zijn eigen discipline finance, met inbegrip van subdomeinen als *financial management science* en *financial economics.* "Waar het aan heeft ontbroken in ons vakgebied is het academisch debat en introspectie met betrekking tot de gevolgen van de strikt financiële manier van denken," zegt Spronk. "De dingen die we doen, doen we goed – maar er zijn ook andere dingen die we moeten doen."

Onderliggende aannames

Veel problemen, zoals de niet-financiële gevolgen van beslissingen, zijn binnen deze academische discipline niet aan de orde gesteld, aldus Spronk, terwijl dat wel had moeten gebeuren. Daarnaast werden de kwesties die wel aandacht kregen vaak benaderd op een manier die niet echt helpt bij besluitvorming en management, omdat de onderliggende aannames te onrealistisch waren voor individuele beslissingen. Toch is finance in de loop van de tijd een soort filosofie geworden die zowel de manier van denken als het gedrag van managers en organisaties heeft beïnvloed. Veel van deze kwesties zijn vanuit de financiële wetenschap nooit aangeroerd.

Financiële onderzoeksagenda

Spronk doet suggesties hoe het beter kan, de gevolgen van financiële beslissingen krijgen extra aandacht in zijn betoog. Hij wil een aanzet geven voor het debat met en onder zijn collega's. Gelet op de financiële crises van 1998, 2001, 2008, de eurocrisis en de meest recente Chinese beurscrisis, verdedigt Spronk de stelling dat de financiële onderzoeksagenda en het financieel onderwijs aan een grondige revisie toe zijn. Dit kan binnen de huidige universiteiten niet gemakkelijk worden gerealiseerd, zegt Spronk, maar hij doet ook suggesties voor de verbetering van het universitaire klimaat. Het uiteindelijke doel is om het financieel management meer oog voor context en impact te geven.

Abstract

Let's change finance (Summary)

Jaap Spronk reflects on the financial crises the world has been – and is still – witnessing, and re-addresses a question which has been raised many times already: who are responsible? He does not focus on the usual suspects and explanations, many of which have been taken for granted. Instead, he points at a suspect that has stayed remarkably well out of the spotlight, which was in his eyes not the main culprit but at least an accomplice: his own discipline of finance, including labels such as *financial management science* and *financial economics*. And he will plead guilty. Spronk argues that both the financial research agenda and financial education need an overhaul.

Underlying assumptions

Spronk shows that within this academic discipline, many issues that should have been addressed, such as non-financial impacts of decisions, were not. In addition, the issues that received attention were often framed in ways that did not really help decision-making and management because of the underlying assumptions being too unrealistic for individual decision-making. Still, over time, finance became a philosophy that influenced both the way of thinking and the behaviour of managers and organisations. Many of the issues remained untouched by financial academia. “What has been lacking in our field is academic debate and introspection relating to the impacts of the purely financial way of thinking,” says Professor Spronk. “The things we do, we do reasonably well – but then we need to do other things as well.”

Financial research agenda

Professor Spronk gives an overview of what issues and aspects in finance require attention in order to bring more context into financial decisions and which of the issues that do receive attention need to be re-addressed with a different mindset – while paying attention to the impact of financial decisions. In a number of cases, Spronk will provide suggestions of how these elements could and in some cases should be reframed. His intention is to stimulate discussions with and among his colleagues. Considering the financial crises of 1998, 2008 and the euro crisis, Spronk argues that the financial research agenda and financial education need an overhaul. He explains why this cannot easily be achieved in the universities of today, but adds suggestions for improving university climate. The ultimate goal is to make financial and investment management more humane.

Content

1. Introduction

Dear Rector,
Dear Ladies and Gentlemen,

Thank you very much for being here: I do appreciate your presence and I hope that you will have a pleasant afternoon.

My apologies to the Rector for being one year late with this valedictory lecture. There is hope: my inaugural address was two years late, so in the meantime I have become twice as fast.During my years at Erasmus University, I worked for two schools consecutively: the School of Economics and Rotterdam School of Management. So, I hope that you allow me to deliver two valedictory lectures instead of one today. In order to make this more bearable for you, I will do each of the two lectures in half of the usual time, so that your span of attention is not stretched any further than it would be with just one regular valedictory.

In the first lecture, I will address the financial crises we have witnessed and ask a question which has been raised many times already. The question is: Whodunnit? I will not focus on the usual suspects or explanations, many of which have been taken for granted[1]. Instead, I will focus on a partner in crime, a suspect that has stayed remarkably well out of the spotlight. In my view, it is not the main culprit but it is definitely an accomplice. The suspect is my own discipline of finance, including labels such as financial management science and financial economics. And I will plead guilty. Within this academic discipline, many issues that should have been addressed, such as the non-financial impacts of decisions, were not. The issues that received attention were often framed in ways that did not really help decision-making and management, because the underlying assumptions were often too unrealistic for actual decision-making at individual or company level. Nevertheless, over time finance became a philosophy that influenced both the way of thinking and the behavior of managers and organizations. Many of the issues remained untouched by financial academia. What has been lacking in our field is academic debate and introspection related to the impacts of the purely financial way of thinking. We do the things we do well – we simply need to do other things as well.

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1 Between 1985 and 1995 we saw the collapse of centrally guided governments, followed by worldwide deregulation, emphasis on markets and shareholder value, and increased economic growth in large parts of the world. So what went wrong? Explanations include myopic decision-making, greed, ignorance, lack of control, and bonus systems. The suspects mentioned most are bankers, CEOs and CFOs, supervisors, rating agencies, and the public at large.

In the second lecture, I will give an overview of what issues and aspects in finance require attention (that is to bring more context into financial decisions) and which of the issues that do receive attention need to be re-addressed with a different mindset (also paying attention to the impact of financial decisions). In a number of cases, I will suggest how these elements could and in some cases should be reframed. My main purpose for doing this is to stimulate discussions with and among my colleagues. After the financial crises of 1998, 2001, 2008, and currently in the middle of the never-ending Euro crisis and wondering whether the Chinese financial crisis of this year is over or not, both the financial research agenda and financial education need an overhaul. I will explain why this cannot easily be achieved at the universities of today, but I will add suggestions for improving the university climate.

2. Why change finance?

2.1 Capital Ideas

During the last forty years or so, the world of finance has changed dramatically, both in theory and in practice. As shown clearly by Peter Bernstein in his Capital Ideas, 1991, and Capital Ideas Evolving, 2007, financial theory and finance practice developed for a large part in parallel and often hand in hand. One of the cover texts on Bernstein's 1991 book reads as follows:

"....Capital Ideas traces the origins of modern Wall Street, from the pioneering work of early scholars and the development of new theories in risk, valuation, and investment returns, to the actual implementation of these theories in the real world of investment management. Bernstein brings to life a variety of brilliant academics who have contributed to modern investment theory over the years: Louis Bachelier, Harry Markowitz, William Sharpe, Fischer Black, Myron Scholes, Robert Merton, Franco Modigliani, and Merton Miller. Filled with in-depth insights and timeless advice, Capital Ideas reveals how the unique contributions of these talented individuals profoundly changed the practice of investment management as we know it today....."

As a recommendation to Bernstein's 2007 book, shortly before the beginning of the financial crisis, John C. Bogle, founder of the Vanguard Group writes:

"....A lot has happened in the financial markets since 1992, when Peter Bernstein wrote his seminal Capital Ideas. Happily, Peter has taken up his facile pen again to describe these changes, a virtual revolution in the practice of investing that relies heavily on complex mathematics, derivatives, hedging, and hyperactive trading. This fine and eminently readable book is unlikely to be surpassed as the definitive chronicle of a truly historic era....."

These academic achievements were recognized by nine Nobel Prizes in economics, honorary doctorates[2] and otherwise. The financial Nobel Prizes were for Franco Modigliani in 1985, Harry Markowitz, Merton Miller, and William Sharpe in 1990, Robert Merton and Myron Scholes in 1997 and for Eugene Fama, Lars Peter Hansen, and Robert Shiller in 2013.

2 For instance, in 1993, Stephen Ross received an honorary doctorate at Erasmus University.

2.2 Capital Ideas in a Nutshell

What were these capital ideas, triggering a new financial way of thinking, a new financial way of life? A first answer can be obtained by the definition of finance provided by Robert Merton, one of the Nobel Prize winners mentioned above, in his text book with Zvi Bodie[3]:

"....Finance as a scientific discipline is the study of how to allocate scarce resources over time under conditions of uncertainty. There are three analytical "pillars to finance-optimization over time (the analysis of intertemporal trade-offs, asset valuation, and risk management. At the core of each of these pillars are a few basic "laws" and principles that apply across all of the topical subfields.....)

As a teaser for potential buyers of the book, they state:

"Our text encompasses all of the subfields of finance – corporate finance, investment, and financial institutions – within a single unifying conceptual framework.

So finance is about allocating scarce resources over time under conditions of uncertainty. Individuals, companies, governments, and other economic agents are defined as decision-makers, who define a number of decision alternatives after which they try to identify which alternative is best for them. So, for instance, how do you best finance a university degree, how do you choose the best pension scheme (for those who have the freedom to choose), how do you choose from competing capital investments and so on. Financial decisions usually lead to results *in the future, over time*. Moreover, the results are *uncertain*. So the challenge is how to describe uncertain future results. And what is your attitude towards uncertain future outcomes? You may prefer results in the short term, whereas others can wait for results in the longer term. You may like taking risks, at least to some extent, whereas others tend to avoid risks at all cost. The theory of finance makes a number of assumptions about the average decision-maker (I do not know who that is but definitely not you or me). One of these assumptions is that it is all about optimal consumption over time. There is a lot of academic literature on preferences, but the theory of finance goes further by deriving that, without knowing the exact preferences of people, you can best serve them by maximizing their financial wealth. A crucial assumption underlying this outcome is that there are well-functioning financial markets, accessible to all individuals and companies alike and subject to the same conditions. Given such markets, all market participants can borrow

3 Bodie, Zvi, and Robert C. Merton. Finance. N.J.: Prentice Hall, 2000.

and lend money to achieve the optimal consumption pattern over time. Likewise, companies can issue shares and bonds and other financial instruments to finance their activities. Financial theory has concentrated on how financial markets price claims on uncertain future cash flows. Looking back at the financial Nobel Prizes mentioned above, Modigliani worked on arbitrage in financial markets; Markowitz, Miller and Sharpe were rewarded for their pioneering work in pricing financial markets; Merton and Scholes worked on the market valuation of financial derivatives, and Fama, Hansen, and Shiller were recognized for their empirical analysis of asset prices. At this point, we should note that the analytical pillars, laws, and principles are intended to *describe* the aggregate effect of the behavior of financial markets actors. The main purpose is to describe the way financial assets, like stocks and bonds, and options on bonds and stocks are priced. But in the wording of Bodie and Merton and many others, the descriptive theory becomes prescriptive. They use words like "*how to allocate* scarce resources over time, *optimization over time* and *risk management*. In my opinion, this prescriptive pretension is one big step too far:

The contribution of financial theory is (only) in the *valuation* of uncertain future cash flows in the market place, where value is the value today. The value is also a *relative value*, because it is derived as a function of two or more benchmarks like the return on the market index and the risk-free rate of return. Of course, this value can be used to compare the present value of, for instance, alternative investment policies or alternative risk management strategies. But generally this is not good enough to make a proper comparison in practice. Whether it is in investment management (also called asset management) or in financial management of the firm, the context and the potential impacts of the decision are important and need to be included in the comparison.

2.3 Capital Ideas and Academia

Finance as an academic discipline has a huge impact on reality. It influences the way we frame financial decisions, our actual behavior, and how we organize our companies and other entities. One may rightly wonder whether this impact is always positive and whether the way of framing is always appropriate.

Academia welcomed the new developments in the theory of finance with open arms. In the 1970s and 1980s, *Research* was redirected towards the 'modern' portfolio theory, capital market theories, and contingent claim analysis (the study of financial derivatives like options, futures, and swaps). Corporate finance followed by introducing the newly acquired concepts in the domain of corporate financial decision-making. In the process, a long tradition of business economics was put aside, at least in the Netherlands. In Germany, business economics has clearly survived, thus providing a lot of the context required for decision-making. In the late 1980s, econometricians also discovered finance and a seemingly endless stream of empirical articles flooded the financial literature. The new theory of finance and its empirical bandwagon was characterized as *mainstream financial research*, marginalizing any research outside the mainstream, while the gap between academic research and real-life management largely remained over all these years.

Of course, there are always fish that do not swim in the mainstream. An illustrious example is the psychologist Daniel Kahneman, who received a Nobel Prize in 2002, "…for having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty…" The emerging fields of behavioral economics and finance were now recognized and accepted, giving room to a new literature. At Erasmus University's FinBel Department, Martijn van den Assem, Guido Baltussen, and Thierry Post produced excellent and eye-catching work on behavioral finance. Another example of more adventurous research is the work by Han Smit on real options, games, and actual behavior, which has helped to bridge the gap between finance in theory and corporate strategy, as witnessed by his latest book[4]. In the same FinBel Department, I had the pleasure to work on multi-dimensional finance together with other researchers, including Marc Goedhart, Winfried Hallerbach, Haikun Ning, Igor Pouchkarev, Marc Schauten, and Eric Vermeulen. At RSM, Mathijs van Dijk delivered his inaugural address last year on the Social Value of Finance[5], and will give priority to this theme in his future research. Recommended reading!

Quite naturally, the new financial theories also became the centerpiece of academic *financial education*. Since the 1970s, large numbers of students have grown up with Brealey and Myers' Principles of Corporate Finance[6] and a series of competing but otherwise very similar textbooks. And when I say large numbers of students, I mean large numbers! During most of the 1980s and 1990s, 1800 students a year followed the propaedeutic year at the School of Economics. Even today, between one and two thousand students a year obtain a

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4 Smit, Han and Thras Moraitis, Playing at Acquisitions, Behavioral Option Games, Princeton Univ. Press, 2015.

5 Dijk, Mathijs van, 2014, The Social Value of Finance, ERIM Inaugural Addresses Research in Management Series, ERIM, Rotterdam, http://hdl.handle.net/1765/1

6 Brealey, Richard and Stewart Myers, Principles of Corporate Finance (1st edition), McGraw-Hill, 1981.

master degree in financial economics, financial management, or similar programs at universities in the Netherlands. And this is in the Netherlands only. The theory of finance has conquered a central position in financial education on all continents. In one way or another, students from all over the world were introduced into the secrets behind *the pillars to finance-optimization over time (the analysis of intertemporal tradeoffs, asset valuation, and risk management, built on a few basic "laws" and principles*[7]. This is all very well, but what did they learn about the context of financial decisions and the impact of financial decisions beyond the effect on shareholder value? Too little![8] Fortunately things are starting to change. At present, upon inspection of the contents of financial master programs offered by some Dutch and foreign universities, we can see more attention is dedicated to the context and the implications of financial decisions in subjects such as behavioral finance, institutional aspects, strategy and finance, and ethics and corporate responsibility.

Fortunately, students do not take everything taught in classroom for granted, but they do acquire a financial way of thinking during their master program and this is very beneficial when working in practice as an analyst, consultant, entrepreneur, or manager. At this stage, we can only hope that graduates develop and maintain a good eye both for the assumptions behind the financial way of thinking and for the context and impact of their decisions.

2.4 The Impact of Capital Ideas

Finance is a powerful discipline with a huge impact. Over the last forty years, the developments in finance have been accompanied and partly supported by other important trends such as globalization, the increasing computer power at ever lower costs, the arrival of the network society, and important shifts in economic and political power. A truly global financial system has emerged with a well-developed financial sector in many countries, with powerful transnational and global players and an impressive list of financial centers in the world[9].

The impact of the 'capital ideas' was broader than financial markets and asset management alone. The way of thinking that was developed for describing financial markets and asset management also gained ground in the field of corporate finance and investment banking, in insurance, and in many other

7 Bodie and Merton, op cit.

8 In addition, bachelor education as required for financial master programs often lack context topics such as economic history, economic geography, and philosophy.

9 See The Global Financial Centres Index 17" (PDF), Long Finance, March 2015 for an overview.

fields, including even public management. I would now like to take a brief look at the impact of capital ideas on asset management and on corporate financial management, and conclude with a view on the impact of the financial way of thinking at large.

Asset management

In asset management, the gap between financial theory and practice is much smaller than in the case of corporate financial management. But also in this case, there are differences. For instance between the rational and well-informed investors living in financial theory and the real-life investors highlighted by behavioral research. Also, an increasing number of investors have more objectives than wealth maximization alone[10].

Also a relatively small gap can have huge consequences. This was sinisterly demonstrated by the collapse of Long Term Capital Management (LTCM), a hedge fund managed by Myron Scholes and Robert Merton, less than one year after they both received their Nobel Prize in 1997. The Russian Ruble crisis caused a worldwide contagious effect. Starting with 4.72 billion dollar in equity and 124.5 billion dollar in debt, LTCM was confronted with losses of over 4 billion dollar in a month or two and a large amount in open positions. The Federal Reserve Bank of New York and a group of banks had to step in to prevent a chain reaction in the financial world that might have been an early version of the 2008 crisis.

Despite these types of events, the theory of finance has provided the world of investments with useful insights, principles, hypotheses, and tools. The valuation principles of financial theory are central to asset management and the management of investment risk. In addition, concepts like market efficiency, diversification, and risk adjusted performance measurement have made the communication between professional investors and their clients much more accurate. Without any doubt, current theories will evolve and eventually be replaced by new theories, with more focus on the behavioral aspects of investments. But it is still safe to say that academic research in finance as such has positively contributed to asset management in practice. The world has got used to the expression that past results do not have predictive value, and there is growing attention for fundamental investing[11] complemented with risk analysis and risk management at the level of single investments and at the portfolio level. Academic education fairly much follows the lines of academic

10 Hallerbach, W., H Ning, A Soppe, J Spronk, A framework for managing a portfolio of socially responsible investments, European Journal of Operational Research, Vol.153/2, March 2004, pp. 517–529.

11 For instance, Warren Buffett and in Europe, Intrinsic Value Investors (www.ivinvestors.com).

research in asset management. One note should be made about macroeconomics and international economics, which are obviously indispensable for good investment decisions and should be part of finance programs focusing on asset management[12].

Corporate financial management and investment Banking

The recipe for a specific company that wants to use the valuation framework[13] of the financial theory as a guide book for its actual financial decisions looks very simple:

1) List the decision alternatives possibly in the form of decision trees, including optional decisions.
2) Describe the future cash flows of each alternative (including contingent claims).
3) Look at the value of the associated cash flows for each decision alternative. The value is defined as the price one has to pay if an exact copy of these cash flows were be acquired on the financial markets: The market value of the decision alternative.
4) Choose the alternative with the highest market value. In this view, a company can be seen as a portfolio of capital investment projects or options on such projects plus a series of financing options. In the 101 in Finance, the objective of the company is the maximization of the market value of the company for existing shareholders. The recipe for decision-making based on financial market value alone is simple, but not necessarily easy to implement. Future cash flows are not simply the result of spinning a wheel of fortune. Cash flows result from the company's decisions in interaction with the stakeholders' anticipations and reactions. Also, deriving market value for the company's decision alternatives is not easy, because the markets do not always look like those assumed in theory.

Is this description of the recipe a simplification? Of course. Does it give a good flavor of financial thinking? Yes. Clearly, financial market value or rather estimated financial market value plays a crucial role in financial decision-making. All financial graduates have been educated with the mantra of maximizing shareholder and market value. They know how to value investment alternatives, how to analyze and manage risks, how to attract funds, and so on. If choices have to be made, the alternative with the highest estimated contribution to shareholder value is selected.

12 This note is added as a health warning because many programs do not include Macro and International Economics.

13 Here we assume that the valuation framework includes the valuation of contingent claims, such as to include the valuation of alternatives in managing the company's risk.

Nevertheless, companies do have more objectives than financial wealth maximization alone. These include maintaining liquidity, maintaining control, accumulating market share or creating the best image in terms of service quality and safety. And despite the importance of maximizing market value, companies have to take other stakeholders into account as well (instead of seeing these stakeholders as cost and revenue factors with impact on the cash flows).

In case of major strategic moves, such as stock issues, bond issues, spin-offs, and mergers and acquisitions, companies are assisted by investment banks and by a variety of consultants and lawyers. With the globalization of the economy and of the financial system, investment banking has grown enormously and has become highly specialized. Investment banks attract smart and ambitious graduates from the best schools and universities in the world. In 2012, ten of the most important investment banks (Goldman Sachs, Morgan Stanley, JP Morgan Chase, Barclays Capital, Citigroup, Deutsche Bank, Credit Suisse, Bank of America Merrill Lynch, UBS, and Rothschild) managed M&A deals worth a total of 4 trillion US dollars[14]. The financial graduates amongst them have all mastered the *"analytical pillars to finance-optimization over time."* So it is not surprising to see that many investment banks approach their clients' problems with two purely financial perspectives only. One is the effect on the client's market value. And the other is the contribution to the bank's bottom line. In a dynamic world, firms need to make bold moves: divestitures, mergers, acquisition and the like. Investment banks play a crucial role, and so do the company's management and its advisors. Valuation and legal aspects get all the attention required. Ideally, in these kinds of strategic moves, the company (or companies in the case of a merger or acquisition) also pays attention to the impact of the strategic financial decisions beyond the shareholders' point of view. A necessary condition to achieve this is that financial education prepares for this from both a technical and an ethical point of view.

Impact at large

It may be good to put the emergence and impact of financial thinking in an historical time frame. Important developments such as the development of capital market theory and the first option pricing models took place in the 1970s. This was the era of the Cultural Revolution in China, the Brezhnev era of stagnation in the USSR, the oil crises in 1973 and 1979, and the revolution in Iran. At the same time, the 1970s also saw a revival of creative entrepreneurship, for example, the very first Apple computer in 1976, the Apple II in 1977, and more in general, the beginning of personal computers. Still, by the end of the 1970s and the beginning 1980s, there was a worldwide recession with

14 Calculated with www.relbanks.com numbers based on Bloomberg and The Financial Times.

rock bottom share prices. For example, in the Netherlands there was a labor income quote of 95.1% in 1981.

It was time to push the reset button. And indeed, politicians such as Thatcher (1979-1990), Reagan (1981-1989), and many others, including Lubbers (1982-1994) in this country, were the figureheads of a new era of economic growth in a neo-liberal setting combined with Reaganomics in the US. Many institutions in the western world, including corporations[15], had become slow, lazy, and inflexible. The tools and ideas of the now maturing financial theory were a very welcome and powerful tool to change the world. Shareholders' interests were back in the arena and the contribution to market value became the yardstick for measuring economic performance. In the 1980s, the western world flourished whereas the communist world was in crisis. In 1989, the Berlin wall fell, soon to be followed by the breakdown of the USSR and many of its satellite countries becoming independent from Moscow.

During the 1990s, the world economy experienced an enormous expansion. China's real GDP had already tripled during the 1980s (after the Cultural Revolution) and tripled once more during the 1990s. Many other countries, for example, those in central and eastern Europe started to catch up with western economies, making use of the international literature on economics, finance, and management. Many academics were and still are teaching mainstream finance from Warsaw to Shanghai and from Jakarta to Bangalore. A wide range of western universities and schools started to spread their wings globally and in many of the high growth countries, entirely new schools were founded. Again, the financial way of thinking was helpful to bring badly needed change. The 1990s was a period of increasing employment, growing welfare, and a booming stock market on Wall Street, not only driven by the huge changes in the global economy, but also by important changes in technology. Examples include the introduction of Netscape in 1994, followed by Google in 1997, characterizing massive access to the truly worldwide web. Increasing numbers of people and politicians start to pay attention to the external effects of economic growth, such as the impact on nature and climate. In many countries, companies started to issue annual reports showing the company's effect on the environment.

Around the turn of the century, there was a series of financial crises. The Asian Crisis in 1997, the Ruble and the Latin American crises in 1998, and the dotcom boom and bust starting in 2001 resulted in a relatively slow process of declining stock prices until the spring of 2003. The revival was fueled by Alan Greenspan making the greenback very cheap, by a worldwide economic recovery,

15 Michael C. Jensen, The Eclipse of the Public Corporation, Harvard Business Review, Sep-Oct, 1989.

and by technological developments, such as the emergence of social media (LinkedIn in 2003, Facebook in 2004, and Twitter in 2006) and the emergence of smartphones (Blackberry in 2003 and IPhone in 2007).

The financial sector increasingly became king of the world and the financial way of thinking and behavior was hardly questioned, at least not by the financial sector itself or by financial academia. Still, in society at large, there was a growing appeal for companies to do business in a social and corporate responsible way.

And then came El Gordo under the crises: the real estate crisis of 2007, quickly turning into a liquidity crisis, a credit crisis, and a banking crisis in 2008. And then we discovered that there was something badly wrong with the Euro. Unfortunately, stubborn politicians are still claiming the euro is good for peace in Europe.

Financial crises happen all the time. However, since a decade or two, globalization has manifested itself. The financial sector has grown into a system, which is truly global and dynamic, representing a large slice of the world economy. Increasing, interdependencies between financial institutions, including their clients have grown to a point that goes beyond present intuition. If something unexpected happens somewhere in the financial system, a chain of reactions may ignite, affecting people, companies, and financial institutions globally. This could have serious impacts, such as the ones we have experienced over the last eight years. People start to wonder who or what can be blamed for the crises. At this point, I do not want to enter the blame game, because many parties bear responsibility, and some of the causes are inherent to the financial system as it has developed over time. However, I wish to concentrate on the role of academia[16].

2.5 Academia Challenged

Since the 1980s, academic research and education have been based on neoclassical, micro-economic valuation frameworks, originally developed in the 1970s, refined in the 1980s, and empirically scrutinized ever since. As shown by

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16 During a briefing by academics at the London School of Economics on the turmoil on the international markets the Queen asked: "Why did nobody notice it?" Professor Luis Garicano, director of research at the London School of Economics' management department, had explained the origins and effects of the credit crisis when she opened the £71 million New Academic Building. The Queen, who studiously avoids controversy and never gives away her opinions, then described the turbulence on the markets as "awful". Professor Garicano said: "She was asking me if these things were so large how come everyone missed it." He told the Queen: "At every stage, someone was relying on somebody else and everyone thought they were doing the right thing."

http://www.telegraph.co.uk/news/uknews/theroyalfamily/3386353/The-Queen-asks-why-no-one-saw-the-credit-crunch-coming.html

Bernstein, mentioned before, ***theory and practice went hand in hand during the 1980s and 1990s*** and led to a successful development of the asset management sector. The financial way of thinking became the centerpiece of academic research and education in finance. Essentially a valuation theory, it became a powerful tool to estimate the relative value of assets like stocks and bonds, of options and other derivatives, and of portfolios. And with this knowledge it becomes a lot easier to trade in these assets! The CBOT, the Chicago Board of Options Exchange was the first exchange to trade standardized options. It was founded in 1973, the same time when Black and Scholes published their now world-famous option pricing formula. Theory hand in hand with practice. A milestone for risk management, despite the fact that derivative tools can be misused. It is like with knives: "good to cut the vegetables but do not cut your fingers." And "give the knife neither to innocent children nor to crooks."

At this point, it is important to re-emphasize the warning in many financial commercials: "past results are no guarantee of future performance." Financial theory can calculate the relative value of assets today but cannot ***calculate the relative value of the same assets tomorrow or next week***. It is not possible to predict a financial crisis either. This may be one of the reasons why the financial industry is often surprised by financial crises or at least by the timing of these crises. For instance, during the build-up of the dotcom crisis, many financial academics knew there was something wrong with relative values of assets (e.g., most share prices of dotcom companies were totally out of sync.). However, they could not predict when the bubble would burst.

In principle, the valuation tools of financial theory can be applied to any stream of future and uncertain cash flows. So it can be used for valuing the future cash flow generated by a company as a whole or by any of the company's decisions. It can be used to value the future cash flows of a cooperation, of the shop around the corner, of a not-for-profit organization, or of any other entity generating cash flows. All textbooks on corporate finance from the early 1980s onwards explain the modern theory of finance in detail, together with the valuation models based on this theory. So far so good. Then, explicitly or implicitly, ***the goal of shareholder value maximization is introduced as the only yardstick for all decisions, including risk management decisions***. Of course, shareholder value should be fostered. The history of the 1970s and early 1980s with rock bottom share prices and a worldwide recession is a clear warning of what happens if the providers of capital are neglected. But other values are important as well and are not automatically taken into account by a form of shareholder value maximization that ***essentially ignores the context of any decision***. But in this increasingly connected world ***context is becoming more important over time***, and the cost of ignoring context is becoming higher.

The assumed goal of individual people is maximizing the utility of consumption over time, which becomes maximization of wealth. For companies, this goal is market value maximization in the presence of well-functioning markets. But people want other things as well, including things that money cannot buy. Rationality is defined in terms of financial-economic rationality and thus in terms of one ***dimension, money***. And the rationality is supported by hard numbers in beautiful presentations backed by towers of Excel sheets. Sometimes you see calculations of the firm's cost of capital with a precision of two digits after the decimal point. Once you know the assumptions underlying the calculations, you even doubt the digits in front of the decimal dot. But the presentations look impressive. In reality, the future and risk and estimated values are ***much less quantifiable than assumed*** in both research and education.

My last point for now is a ***conjecture***, at best a hypothesis, but I do not want to leave it out. The success of the financial way of thinking may well have provided the world with a ***way of thinking with a much broader impact than a financial one alone***. The conviction that companies should maximize their market value (ignoring context), might have led to centralized organization structures entirely focused on maximizing that single goal at the overall company level. It may sound logical and rational, but it ignores the environment within and surrounding the company. There are so many centralized companies where people have become elements of a machine. Unfortunately, also many public organizations such as schools, universities, and hospitals have picked up the same bad habits of centralization, managed by Excel managers living in the cloud.

Now, does the way we teach our students and the choices regarding our research agenda have an impact on society? Let's not be too modest: it must have an impact when you confront thousands of students per year with the same market valuation recipes with relatively little attention for the underlying assumptions, or for the context and impact of financial decisions. And does the definition of mainstream research, with an overemphasis on empirical research and a neglect of more fundamental questions have an impact? Of course! And did this have an impact on any of the financial crises? Most likely, yes! The financial way of thinking was supreme: shareholder value and wealth maximization, value measured in monetary terms only, reliance on numbers, estimates and multi-colored Excel sheets, and risk being measurable, quantifiable, and tradable. Did we teach our students to raise critical questions? Did we investigate all the questions we had?

So there is a challenge for academic research and education. The financial way of thinking is powerful for estimating market values. But we need to know more about the underlying assumptions. The current interest for behavioral aspects is serving that purpose, but there is more. We also need to look behind the numbers: where does value come from, where does risk come from, etc. We should learn to cope better with context, which is becoming increasingly important every day. Our theories should be complemented with the analysis and valuation of other impacts than purely monetary effects alone. Education should reflect the latest results of research and it should be complemented with explicit attention for corporate responsibility and ethical aspects of financial decisions.

3. Towards change in academic finance

3.1. The Changing Reality of the Financial World

Panta Rei. The world is changing very fast due to technological change and increasing wealth. We are more interconnected than ever before and we are increasingly part of a worldwide network society. We are witnessing an unprecedented migration of people worldwide and enormous shifts in power and wealth, both geographically and within industries. Technological possibilities have emerged, developed, and opened up many new possibilities and thus threats and opportunities. ICT, Robots, 3D printing, Artificial Intelligence and Coca Cola Light. In terms of our emotions, we see signs of uncertainty and discomfort with what is happening and the apparent lack of control. Some fear the increasing gap between technological change, which is claimed to be exponential, and cultural change, which is claimed to be linear. Others are optimistic about technological developments, giving us an enormous potential of access to information, data, analysis of anything and everything. Communications technology has created a potential for worldwide cooperation, which is bigger than ever.

The world of finance is experiencing several changes as well. Below, I will briefly describe the major global shifts in power and wealth, and give you some examples of the impact of technological changes and examples of non-technology based changes made by people. The supervision and regulation of financial systems (national and supranational) is also changing fast (maybe not very fast) but is out of the scope of this presentation. Next, I will discuss the changing image of the financial sector in the eyes of the public, and will then address a number of issues with the current way of financial thinking that require attention.

Panta rei. Let us look at some numbers, illustrating the importance of the financial sector and showing remarkable shifts in wealth and power over the last twelve years. Liyan Chen[17], composer of the FORBESGlobal2000 of 2015[18], states that:

"... Banks are easy to hate, but they remain among the largest and most powerful companies on Earth. The FORBES Global 2000 is a comprehensive list of the world's largest, most powerful public companies, as measured by a composite

17 Liyan Chen, 2015 Global 2000: The World's Largest Banks, Forbes 2015.

18 http://www.forbes.com/sites/liyanchen/2015/05/06/2015-global-2000-the-worlds-largest-banks/
Full list: The Global 2000 Companies In 2015

score of revenues, profits, assets and market value. This year's Global 2000 companies hail from 61 countries and account for combined revenues of $39 trillion, profits of $3 trillion, with assets worth $162 trillion, and a market value of $48 trillion. This year, banks and diversified financials dominate with 434 spots – more than one fifth of the world's largest companies – representing the largest share of any industry. For the first time since our first ranking in 2003, China's "Big Four" banks took over the top 4 spots. Among the world's 100 largest banks, China houses the most with 13 banks in total, while the U.S. places second with 11 spots. Canada comes third with 6 spots, followed by the U.K., Japan, Spain, and France...."

Forbes also provides a list of the world's 25 largest banks in 2015[19]:

1. ICBC, China
2. China Construction Bank, China
3. Agricultural Bank of China, China
4. Bank of China, China
5. JPMorgan Chase, US (7)
6. Wells Fargo, US (4)
7. HSBC Holdings, UK (2)
8. Citigroup, US (1)
9. Bank of America, US (3)
10. Banco Santander, Spain (12)
11. Mitsubishi UFJ Financial, Japan (15)
12. Bank of Communications, China
13. Itaú Unibanco Holding, Brazil
14. Commonwealth Bank, Australia
15. Royal Bank of Canada, Canada
16. China Merchants Bank, China
17. Westpac Banking Group, Australia
18. Banco Bradesco, Brazil
19. TD Bank Group, Canada
20. UBS, Switzerland (6)
21. Industrial Bank, China
22. ANZ, Australia
23. Sumitomo Mitsui Financial, Japan
24. China Minsheng Banking, China
25. National Australia Bank, Australia

So there has been a remarkable geographical shift since 2003.

Number of top 25 banks per country:

Bank location	2003	2015
Australia	0	4
Brazil	0	2
Canada	0	2
China	0	8
Europe, ex UK	9	2
Japan	2	2
UK	5	1
US	9	4

19 I have added the ranks in 2003 in brackets.

The above illustrates that the financial sector is an important part of the economy and that the geographical distribution of the financial sector has changed significantly. These changes are not the same for the all types of banking. The top ten investment banks in the world are still entirely occupied by the 'old' names in the industry from Goldman Sachs to UBS and Rothschild (see above).

Panta rei. Technology has an enormous impact on the financial world. The financial sector has become a truly global system, which is fully connected 24/7. Innovations such as Internet banking have been adopted worldwide and have found their way to remote areas in Africa using mobile banking technologies. Examples of innovations and developments in the financial world that are driven by technology are easy to find and include Bitcoins, crowd sourcing, and a wide range of payment systems such as PayPal and TransferWise. The impact of technology will continue and a variety of parties, including giants like Google and Apple are eager to conquer a part of the financial industry.

Panta rei. The preceding period has also seen innovations that were not directly inspired by new technology. Notable examples include microfinance, micro-ventures and inclusive finance, intended to provide small scale financing to poor people with good ideas for small business ventures but who do not have access to the official financial system. Other forms of bridging the gap between demand and supply in financial markets include the re-emergence of credit unions or peer-to-peer financing, with entrepreneurs lending to other entrepreneurs, crowd funding, and public-private-partnerships.

We can also observe the growth in old fashioned banking initiatives like the Svenska Handelsbanken, which does not pay bonuses, has no budget, and is very successful in an increasing number of countries. Sustainable or "green" banking is also becoming more popular. The Dutch Triodos Bank has social objectives in addition to purely economic objectives.

The world of asset management has developed many new products. These include large numbers of ETFs that have achieved massive and increasing trade volumes. We also see a wide offer of investment products specializing in green, grey, or socially responsible investments.

Panta rei. The image of the financial industry is not as it was say ten years ago. The deep and long crises we are experiencing do not help. An interesting quote comes from the world largest PR company, introducing their 2014 Edelman Trust Barometer[20]:

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20 http://www.edelman.com/insights/intellectual-property/2014-edelman-trust-baromater/trust-in-business/trust-in-financial-services/

"...As the financial services industry continues its path to recovery, the importance of trust – or lack thereof – remains front and center. Despite slight improvements in trust levels compared to five years ago, the demand for structural and regulatory reform in the industry remains high across the globe, and the need to rebuild trust through performance is increasingly apparent.

Today's consumer wants to be sincerely engaged in a way that conveys a deeper understanding of their personal goals and values, and what is important to them about their financial institutions. Yet, as negative headlines continue, it is increasingly difficult for consumers to trust when the discussion continues to surround new fees, narrow product offerings and fine print – all of which signal a return to the "old ways" of business.

So, what's ahead? As the financial services landscape changes, so comes opportunity. The Edelman Trust Barometer, now in its 14th year, makes it clear that engagement and integrity are the path forward to building trust with consumers, employees, regulators, partners and clients. Now is the time for industry leaders to seize the opportunity by rebuilding trust in a way that is sustainable for business and puts customers and society at the center of focus..."

This quote illustrates the importance of trust, engagement with stakeholders, integrity and transparency. This sounds more relational than transactional, which is not necessarily what I would expect from a survey conducted in the US. But maybe this is another of my prejudgments.

3.2 Changing the Agenda

'Rational'[21] decision-makers play a central role in financial theory (and most policy advice based on financial theory). They list a number of decision alternatives, predict future cash flows, and choose the alternative with the highest market value. Using this type of rational decision-making as a building block of financial theory itself is one thing. Framing actual decision problems in practice in the same 'rational' way is another thing. There are cases in which the tools of financial theory can be applied in a relatively straightforward manner. However, there are numerous situations, both in investment and in financial management that are a bit more complicated. In the following, I will restrict myself to financial management of the company.

21 Rationality defined in a specific, theoretical way.

Let's look at ***three main types of decisions***:

1) You make a decision and wait for the results. There may be a range of uncertain factors, beyond your control, influencing the results. Once you have made your decision, you are like a sitting duck waiting for what is going to happen.
2) You make a decision and wait, also impacted by a range of uncertain factors beyond your control, but now you have a series of options to influence the results. For instance, you have introduced a new product and the demand is much higher than expected and you have built in the option to quickly increase your production capacity. Or demand is much lower than expected and you have built in the option of quickly scaling down capacity.
3) You make a decision but now, in addition to the usual uncertainty factors, there is or are other decision-makers as well (e.g., competition as a stakeholder), who anticipate and react to what you decide and vice versa. These situations are known as games: the ***outcomes of your decisions depend on decisions by others and vice versa***. Recently, you have had the opportunity to watch a Greek game called Mother Merkel and the Motor Mouse. Once again: ***the outcomes of your decisions depend on decisions by others and vice versa.***

Games come in many varieties. Game theory has become a separate field of study and is increasingly playing a role in other fields such as economics and strategy. Some terms from game theory have become household names, like 'win-win situation' and 'zero-sum game'. ***Games are important in business and in finance.*** When you consider the multiplicity of stakeholders companies have to deal with, more games become visible. Examples include the relationship between the company and its bank or more general with its suppliers of capital, the relationship between a company and its competitors, and the relationship between the management and the owners of a company. In financial theory, games are largely ignored[22] and cannot be modeled in the form of the usual decision trees. So what does financial theory do with multiple stakeholders? The cash flows that are used within the valuation exercise are assumed to be residual cash flows, which is what remains after all stakeholders other than the shareholders have been paid. At the moment of decision, the decision-maker is assumed to be able to calculate or estimate the effects on all stakeholders, in monetary terms. In other words, financial theory only recognizes decisions of type 1 and type 2.

Type 1 and type 2 decisions can be labeled as being ***transactional***. The same holds for the way finance deals with stakeholders: each stake can be 'bought off'. Game situations are not transactional, but ***relational***. The way game situations

22 However, interesting examples of game theory and (strategic financial decisions) can be found in Smit (op. cit.)

are dealt with probably varies with culture. Some cultures are more transactional, whereas other cultures are more relational. The theory of finance and the associated culture is definitely more transactional.

In order to describe the dynamic effects between company stakeholders and the effect on the firm's future cash flows, it may be worthwhile to ***describe decisions as part of systems***, giving access to the world of systems thinking, having the possibility to include feedback and feedforward loops, and opening the toolbox of systems dynamics[23]. This suggestion is not intended to replace the usual decision tree, value optimization approach of financial theory, but at least to complement it. Thus far, systems modelling has not been used very often in the domain of economics and finance. The added value of systems modelling has been demonstrated by researchers such as Steve Keen,[24] who modeled financial systems at the macro level and showed the crucial impact of the accumulation of debt in most western economies since the 1970s. Keen was one of the few who predicted the 2008 crisis. More in general, the recent and ongoing transfer to a global network society requires new philosophies. Old ideas, such as centrally guided thinking and free market thinking have demonstrated many pros and cons. But ***the world badly needs new philosophies that complement and enrich old philosophies***. A dynamic global network system does not behave like a centrally steered airplane flying from A to B. No need to search for the pilot in the cockpit, Joris[25].

At the micro level of financial decision-making, we suggest ***that systems modelling should complement the usual valuation models***, because of the increased network character of society to connect with stakeholder approaches and to have a better view of the long-term effects of decisions. In modern textbooks, the emphasis is on decision-making, valuation, and risk management (where the choice between different risk management policies is again choosing between different decision alternatives based on market value). Nothing wrong as such, until you realize that these decisions are part of processes within a system, where the dynamics of the system are strongly affected by the dynamic relations of the company with its major stakeholders. The company makes decisions, which are often studied in isolation. It is important to realize that these decisions are part of a dynamic process.

23 The author is grateful to his former student, Ginanjar Utama, presently with the Central Bank of Indonesia, for recommending to put systems thinking (back) on the agenda.

24 Steve Keen, 2011, Debunking Economics - Revised and Expanded Edition: The Naked Emperor Dethroned? Zed books. In the Netherlands, we refer to the work of Dirk Bezemer: Understanding Financial Crises through Accounting Models, Accounting Organizations and Society 10/2010; 35(7): 676-688.

25 Luyendijk, Joris, 2015, Dit kan niet waar zijn, Atlas Contact.

In many academic publications on optimal capital structure decisions, optimality is measured in terms of the firm's market value. As shown by Schauten and Spronk[26], capital structure should be modeled as a process in which decisions and external events influence the market value of the company, but it also has other effects such as the flexibility of the company, the company risk as perceived by non-financial stakeholders and so on. ***So, the capital structure problem is one of managing capital structure over time, with capital structure decisions playing a serving role.*** A similar reasoning holds for managing the firm's portfolio of real options, risk management over time and so on. Within these processes, some decisions can be framed as stand-alone problems and some should be framed in relation to their position in the process[27].

The 101 in Finance gives us the mantra that the firm's goal is to ***maximize the value of the goal of the firm for the current shareholders***. Any decision has to be evaluated in terms of its contribution to shareholder value. As argued before, this makes sense if all stakeholders have been taken into account properly. And this is not always the case, because of the dynamic game type of relations with various stakeholders. Another issue with the shareholder value criterion is the downside of limited corporate liability (which in itself is mainly positive for economic progress). That is, if something goes terribly wrong in or with the company, the effects on society can be so big that the company cannot bear the consequences. A recent example is the nuclear reactor problems in Fukushima. So what do we do with shareholder value? First of all, it should remain a criterion for decision-making. And financial theory, even with its shortcomings, is able to make a well-educated estimate of the effects of any decision on market value. Then, if we know what effects we are ignoring by using the market value criterion, we should try to bring these effects within the value equation, either in monetary terms or otherwise. This is, of course, the field of ***multiple criteria decision-making***, one of my main research areas. The recipe can be summarized in few words:

1) Estimate the effect of your decisions on all stakes.
2) Express all effects that can be reasonably expressed in monetary terms in monetary terms. Describe other effects in any other way that is appropriate.
3) Compare the effects of the decision alternatives and choose the best one. Is this recipe easy to implement?

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26 Schauten, M. B. J., & Spronk, J. (2009). Optimal capital structure decision in a multi-criteria framework: Solutions for an M&A case as proposed by practicing financial experts. The Journal of Financial Decision Making, 5(1), 69-98.

27 Yamaguchihas developed a systems approach to modelling financial statements and cash flow dynamics. Yamaguchi, Kaoru, Principle of Accounting System Dynamics, Modelling Corporate Financial Statements, Proceedings International System Dynamics Conference, NY, 2003.

At Erasmus, much of the work done on ***multidimensional finance*** would fit well within a systems approach. The new edition of the Handbook by Greco[28] et al. that will appear in 2016 gives an overview of multidimensional finance.

Note, that comparing decision alternatives described in multiple dimensions is not as simple as comparing them on basis of economic value alone. And although there is a large array of tools supporting this type of multiple criteria decision-making, it takes more time to come to a conclusion. But if this *slow decision-making* gives a better chance of actually being implemented with better results it may be well worth the time.

The theory of finance aims to describe the ***pricing in financial markets***. To that end it describes ***market participants as decision-makers***. An ***'average' or 'representative'*** decision-maker is assumed to have clearly described preferences and a well-defined statistical image of the future. As mentioned, the relatively new field of behavioral finance studies these ***behavioral characteristics of decision-making***. In real-life financial management, the preferences of the decision-maker are generally not explicitly available and certainly not in detail. The uncertainty a decision-maker faces with respect to the potential outcomes of decisions may not be available in neat statistical terms. In many real-life cases, uncertainty can, at best, be described in imprecise terms, and available information is far from complete. In the abovementioned overview, I present a series of frameworks for financial management, recognizing that the actual (non-average) decision-maker is often very different from the 'representative' decision-maker. Multiple stakeholders can play a role and the process nature of decision-making is reflected. It would be interesting to learn how these kinds of frameworks could be integrated within a systems approach.

This may be a good moment to address the role of ***quantitative tools in finance education, research and practice***. Obviously finance is money and money comes in numbers, lots of them. Over the last four or five decades, the power to save, store, and analyze date has increased enormously. This is a bonanza for empirical research and for a broad range of management science techniques such as optimization and Monte Carlo simulation. Results often look impressive, exact and academically sound. However, some health warnings are required. Each model is based on assumptions and on data. Unfortunately, not all assumptions are valid and not all data are correct, despite efforts to get them right. Not everything is quantifiable. The risks of mortgage back securities were

28 S. Greco et al. (eds.), 2016, Multiple Criteria Decision Analysis, International Series in Operations Research & Management Science 233, Springer, NY, Chapter 24, Multicriteria Decision Aid/Analysis in Finance, Jaap Spronk, Ralph E. Steuer, and Constantin Zopounidis.

grossly underestimated ten years ago. And past results are no guarantee for future results. This also holds for many mathematical models, simply because the world that is being modeled is changing very fast. Another issue is that we like to communicate in terms of aggregated variables, like the inflation in China or the value of the German stock market index. To outsiders, these entities may look like well defined, stable and thus comparable: in fact they are not. By definition, aggregation means loss of information. It is worse when the manner of aggregation is unclear and / or changes continuously.

There are two things that we need to do in education. The first is to pay more attention to the ***communication of the results of financial models***, including their limitations. The second is to learn to ***look behind the numbers***: to analyze where economic value comes from and to analyze the sources behind the risks we are dealing with.

Earlier today I mentioned that ***the strong emphasis on market value maximization may have led to centralized organization structures entirely devoted to serving that single goal at the overall company level.*** In my opinion, this hypothesis justifies more research. It is strange that centralized systems exist in what is increasingly a global network society. Do centralized companies function better or worse than comparable companies without budgets, bonuses, and service level agreements like Svenska Handelsbanken? And for my colleagues in other disciplines: What is the best way to organize banks and other financial intermediaries in a global network system?

I am convinced that people should not be reduced to elements of centralized machines. Instead we should try to create value and stimulate innovation by using the knowledge and skills of academics and other talented people and by managing to link human beings into teams and networks, catalyzing their full creative potentials through enterprise and leadership.[29]

3.3 Changing Academia

I hope I have convinced you that both education and research in finance need an overhaul. The proposed research agenda is intended to provoke discussion. Put a few academics together and within an hour you will no longer recognize the proposal. Fine with me: What is more important is that we pay more attention to the context and implications of finance. And context is become

29 The last sentence is loosely based on a quote from a book on Human Systems Management Milan Zeleny, 2005, HSM, Integrating Knowledge, Management and Systems, World Scientific Publishing Co.

even more important as technologies change and develop. We need new ways of looking at financial management, and these need to be developed together with financial managers, consultants,[30] and colleagues from a variety of disciplines.

But are the universities of today adequately equipped for the challenges ahead? This question is not only relevant for financial management, but also for other disciplines. There is a contradiction between the global and dynamic network society and the more or less centrally guided universities of today. Today's world is increasingly dynamic, interrelated, and uncertain. Because taxpayers are demanding to know how their bucks are spent, the educational sector has created a myriad of performance measurement and reporting systems. These systems are both costly and ineffective, thus leading to the politically formulated requirement of more professional management. Many of today's managers rely on 20th century management philosophies, resulting in centralization and an illusion of control. This brought us the universities of today, in which the abacus has become an altarpiece. Schools within universities, departments within schools, and researchers within departments who do not benefit very much from the potential of interaction: the silo effect[31]. And what about performance evaluation? Research, for instance, is evaluated by measuring quality and volume of output[32], often leading to more and excellent research. But it discourages risk taking innovation, new ventures into terra incognito, and the crossing of disciplinary borders. So many of problems that need to be addressed from a societal point of view are not addressed because of the performance systems used.

It must be said that both education and all supporting services at universities have become very professional. Look at the facilities at this university and others in the Netherlands and elsewhere, at the management of Research Institutes like ERIM, and at the way large number of students are being served: high standards are being achieved. Still, the question is whether universities can survive as such centralized institutions as they are today. Like the world of finance, academia will become more interconnected than ever before and will be increasingly part of a worldwide network of learning and discovery. Nobody knows how this system will evolve (Joris would be missing the pilot again) but

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30 A good example is McKinsey on Finance, providing what is mentioned "Perspectives on Corporate Finance and Strategy". In Number 53, Winter 2015, Marc Goedhart, Tim Koller, and David Wessels conclude in the "Real business of business", that shareholder-oriented capitalism is still the best path to broad economic prosperity, as long as companies focus on the long term.

31 Gillian Tett: The Silo Effect: The Peril of Expertise and the Promise of Breaking Down Barriers, Simon & Schuster.

32 See, for example, http://www.tinbergen.nl/research-groups-researchers/tinbergen-fellow-requirements/

there will be big changes. The answer of a centrally guided system (with the illusion of control, obtained by measuring anything and everything continuously) is not good for universities, and it is not good for people, either.

So what should we do? In my opinion, universities should be organized as open network organizations, connecting students, researchers, and other stakeholders (alumni, companies, and institutions) to the worldwide academic network system.

It will take some time before we get there. In the meantime, companies like Bloomberg, Google, and Facebook have created physical and virtual working environments that can inspire us to advance our universities into the 21st century.

What if Erasmus had been born 400 years later? He would have loved the possibilities of modern times to connect to a worldwide academic system. I checked him out on Facebook, but their timelines only cater for people who were born in 1905 or later. But I found his email address:
DesideriusErasmus2@gmail.com and he recently created his Twitter Account @Desirasmus2.

4. Acknowledgments

Today, I formally say farewell to Erasmus University where I have worked for many years. That does not mean that I intend to retire or to stop working. I am only retiring from RSM and I will continue to work full-time on the further development of a global educational network, and as a part-time professor in a warmer part of our Kingdom. I always enjoyed academic life with its young people, new ideas, and its community, and I would like to stay an entrepreneurial part of it. This is the place and time to express my gratitude to all those who made my time at Erasmus University so worthwhile.

Dear teachers,

Apart from learning from one's own mistakes – and from the mistakes made by others, we can learn by listening to and interacting with other people. **I cannot mention you all**, but I would like to mention a few of my teachers. At the end of my inaugural speech three decades ago, I expressed my appreciation (still valid) for professors Diepenhorst, Nijkamp, and Hartog. The latter became a very good friend and sparring partner until he died two years ago at the age of 97. Another person I would like to mention is my Taiwanese / American friend Po-Lung Yu, who continues to be a great inspirator. Finally, I would like to mention George Yip. As I wrote to him recently, I appreciated his presence in Rotterdam and his Deanship very much. You made the difference that aspiring business schools so badly need!

Dear colleagues,

Over the years, I have worked with many academic colleagues and staff members, both at Erasmus University and elsewhere. Cooperating in research and education, organizing activities, and managing departments and international organizations. I enjoyed my work almost every single day And this was largely due to the qualities of the people I worked with: My colleagues at the Finance Department, FinBel, during a large part of my life at Erasmus and my colleagues at post-experience RSM, where – more than before – I realized the difference between talking about decisions, making decisions and implementing decisions. The latest example is the great support I received from ERIM during the production of this lecture. Thank you all!

I would also like to thank all my colleagues at other universities and research groups, both in the Netherlands and abroad.

As some of you may have noticed, I am not always in my office. In a way, I am trying to follow the example of Desiderius Erasmus, who said: "The world is my home", jumped on a donkey and never came back.[33] Different from Erasmus, I come back to Rotterdam all the time, but that is because, unlike Erasmus, I have my home in Rotterdam.

More seriously, today it is more important than ever that universities build and maintain global networks connecting with its present and potential future stakeholders. It is a pleasure to see how international both Erasmus campuses have become.

It is a privilege to help link Erasmus University a little bit more with the world. I am grateful for this opportunity also because while on the road, you make many international contacts and friends and also get new ideas and insights.

Dear students and alumni,

Today is not the first time I am lecturing in this auditorium. I have been teaching in this very place for many years. Every year, this is where I taught Introduction to Finance, assisted by a dedicated team of FinBel colleagues. Over the years, I have been involved in teaching all levels of students: Bachelor, Master, PhD, MBA, Executive Master and many more, here and abroad. And I thoroughly enjoyed it. I have always loved both research and teaching and the interaction between the two.

I like students for their energy and their impartiality, which often results in new ideas and in new ventures. RSM's MBA programs showed me the enormous value of class interaction among students and lecturers, especially in truly international classrooms. The interaction with students and alumni is very stimulating. I hope to stay connected with you for many years to come.

Dear family,

Dear Yvonne, Sarah, Nicolaas, Carmen, Zoë, Hugo, Thomas, Sanne and, last but not least, Little Leo: If Erasmus would have had a family like yours, he would surely have returned to Rotterdam.

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33 As witnessed by its website, this university also has the ambition to be a real international university: Desiderius Erasmus once said "The world is my home" and that's what Erasmus University always keeps in mind. In the multicultural classroom, you attend lectures given by an Italian professor and your fellow students come from countries like China and Brazil. Lecturers travel round the world to bring back global perspectives. You'll be part of a truly international environment.

http://www.eur.nl/english/prospective/erasmus_university/5_good_reasons/

Yvonne, what can I say to express my appreciation and love for you? First, it is private and secondly we know each other so well (especially after reading a book on the differences between Dutch and Belgians and another on the differences between men and women). When I am at work and say I am going home, I mean I am going to you. And, as my colleagues at work know, when I say I am going to my girlfriend, I mean I am going to you. (Admittedly, this expression has caused some confusion at times). We are on this long journey together, called life. I hope the joint journey will be long and happy as always.

Ik heb gezegd.

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Spronk has initiated several important programmes for RSM and Erasmus University Rotterdam, including an MSc and a one-year executive master degree in financial management. He was member of the founding board of the Tinbergen Institute, school for doctoral studies in economics, and he participated in the European Doctoral Programme in Quantitative Methods in Management. Being fluent in Dutch, English, French, German and Italian, Professor Spronk has assumed professorships at numerous foreign universities, including Bocconi University in Milan, Italy, and has held visiting professorships at the Helsinki School of Economics in Finland, the University of Bergamo and the University of Catania in Italy, and the State University of New York at Buffalo, USA. He has served as an editor or numerous journals, including managing editor of the *Springer Series in Financial Modelling*, associate editor of the *Journal of Multiple Criteria Decision Analysis* and the *Revue Belge de Statistique, d'Informatique et de Recherche Opérationnelle*. Currently he has editorial roles in eleven finance, banking and decision-making journals based in eight different countries.

Spronk is founder (1986) and was chairman of the EURO Working Group on Financial Modelling. He has been a member of the Koninklijke Hollandsche Maatschappij der Wetenschappen (Royal Dutch Society of Sciences) since 1988. His international awards include the Umbra Erasmi Medal of Erasmus University in 1996, Gold Medal of the University of Crete in Greece in 1996, Gold Medal of the International Society of Multiple Criteria Decision Making in 2002, and The President's Award of the EURO Association in 2012. Since 2015, Jaap Spronk is CEO of GEMFM Global Inc. based in NY, USA. He also holds a Professorship at the University of Curacao. Jaap is in the Board of various Companies and Not-for Profit Organizations, and is advisor to Investors, Corporates and Governmental organizations.

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