



MISTRA
FINANCIAL
SYSTEMS

ANNUAL REPORT
2016



MISUM

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RESEARCH ON FINANCIAL SYSTEMS A CATALYST FOR AGENDA 2030

Mistra Financial Systems (MFS) is a research program exploring how financial systems more effectively can work for social and environmental sustainability, funded by the research foundation Mistra. The Program is hosted by the Misum center at the Stockholm School of Economics. Misum is founded on the conviction that science-based research can play a key role in developing strategies and policies for a more sustainable society.



Achieving the United Nation's Sustainable Development Goals (SDGs), will require trillions of dollars of investment in new technologies and production systems. Most of this needs to be funded through private capital markets. How can policymakers, regulators as well as financial institutions best foster the necessary developments, build on current momentum toward sustainability and ensure that the financial system can meet the challenge? Mistra Financial Systems is intended to serve as a platform for knowledge production supporting this development.

For Misum and Stockholm School of Economics, it is an honor to coordinate thirty research projects involving more than 50 researchers at eight distinguished institutions. These projects analyze a variety of actors, levels and perspectives, all related to sustainability in financial markets.

In 2016, the first year of MFS, the projects produced several new working papers, articles in prominent journals, and a range of important meetings between academia, policy makers and the financial sector. Stakeholder seminars were organized where research findings and ideas could interact with the world of practice. Members of the MFS research community have been invited to present their work at numerous seminars and academic conferences. From the very start, the financial community has been deeply involved in collaboration with researchers, ensuring both that research is as useful and relevant, and that ideas are distributed widely.

It is Misum's vision that our academic research can be a valuable source of insight, understanding and independent views, informing policy makers and the financial industry about the changes needed to make the financial system more conducive to social and environmental sustainability. And it is with great excitement that we enter into our second year with such a fantastic team of partners.

Cecilia Repinski, Research Platform Manager, Sustainability in Financial Markets, Misum
Lin Lerpold, Associate Professor, Stockholm School of Economics; Executive Director, Misum

Mistra Financial Systems was founded by a research consortium of nine partners; the Swedish House of Finance, Gothenburg University, the ICMA Centre at Henley Business School, Vienna University, Kingston University, Stockholm Environment Institute, the Royal Swedish Academy of Sciences, the Royal Institute of Technology as well as Misum at the Stockholm School of Economics.

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A SUSTAINABLE FINANCIAL SECTOR

The last few decades, the financial industry has been on a tear. From 1980 to 2007, the US financial sector grew from less than 5% of GDP to more than 8%. This is not exclusively a US phenomenon. According to OECD data, the sector increased its share of Swedish GDP by about 1% from 2005 to 2015.

For such a significant part of the economy, and one that creates so much wealth for those involved, it would seem appropriate to ask what society is getting back. In this regard, the answer is mixed. There is no doubt that the financial sector provides essential services for the modern economy. The sector allows households to save and borrow, buy houses and retire. It allows existing firms to invest and grow, and supports the creation of new firms. Without all this, no economy could work. At the same time, observers point out that the financial sector is imperfect. Much recent criticism can be organized under four headings: first, the financial sector generates instability and crises, with large associated effects on unemployment and growth; second, the financial sector is large: it absorbs human resources that might be better devoted to other activities; third, households and firms may not always get the services they need at reasonable cost; and fourth, the financial system does not adequately support sustainable investment.

AN IMPERFECT AND UNSTABLE SECTOR

All of these critiques are important. When it comes to crises, financial firms can take actions that may be individually rational and profitable, but may lead to long-run system wide risk. In a perfect world, regulatory constraints and oversight should discourage such "externalities". In practice, however, rules are flawed, regulators make mistakes, and the financial sector is a massive global tangle of evolving complexity. The academic debate on whether it is possible to make crises rarer, alleviate their effects, and avoid pernicious side effects of regulation (such as low growth) continues.

INDIVIDUAL VS. SOCIETAL BENEFITS

The financial sector attracts talent to an unusual degree. This is not inherently negative, as the financial sector plays a crucial role in the economy. But if individually profitable activities do not correspond to

socially beneficial outcomes, a sector may grow too large, or focus on the wrong activities. Economists call such excess rewards – regardless of whether they flow to capital or labor - rents. Whether or not the financial sector generates rents, whether rents can be curbed, and whether the allocation of talent in the economy is skewed to finance, to the detriment of other industries and activities, are important topics. At MFS, two projects bearing on these issues are "Angel Finance" at SSE and "The financial sector in endogenous growth models with clean technologies" at KTH.

BETTER FINANCIAL OUTCOMES

In regard to households, extensive academic research has documented that households often make poor financial decisions. For example, households seem to have insufficient exposure to the stock market in their long-term savings, which typically will reduce their resources for retirement, with negative implications for living standard and well-being. The MFS projects "Financial knowledge of individuals", "Investing in complex financial products" and "Influencing financial planning" all concern how to understand and improve decision-making and outcomes.

GOING BEYOND GREEN INVESTMENT STRATEGIES

Individuals, NGOs and governments across the world look to sustainable investment strategies as an additional tool to reduce the environmental impact of modern life. Green investment strategies are weak tools, in that they only work if many investors act in the same way (for example, divest the same polluting companies). For governments, more direct approaches to controlling emissions, such as taxes are likely to have greater impact and fewer side effects. In the government's domestic tool kit, therefore, sustainable investing probably should not divert attention from more direct policy tools.



PLANET VS. FINANCIAL RETURNS

Even though these are inherently common decisions, to be decided politically, many want to make individually sustainable choices. What can an environmentally conscious individual investor do to make sustainable financial decisions? Today, many practical hurdles remain to investing sustainably. These hurdles include identifying the right investment options: the definition of green products must be both comprehensible and trustworthy to households. The MFS project “Industry benchmarking of banks, asset managers and rating agencies on sustainability best practice” explores rating systems and their implementation in investment portfolios, and MFS researchers have recently weighed in on practical proposals for eco-labelling in the Nordic region. Another key is to avoid over-promising. Historically, household financial products have often been sold with untenable performance expectations. If green retail products are to exist as a meaningful segment in asset management ten or twenty years from now, the industry must find a way to give honest appraisal of the trade-offs involved. First and foremost, promising higher returns in assets or strategies that are designed to encourage sustainable business practices is not realistic. Firms must be rewarded for green behaviors with a lower cost of capital, and that means lower returns for investors. Not every year for every asset, but in the long run, on average. If the industry does come around to a realistic view of green finance, I believe many investors are willing to face

the tough choice of planet vs. returns, making some concessions for the former. My personal prediction is that, if the industry does not come around, disappointed investors may line the path to oblivion, with green funds taking their place alongside extinct investment fads of yesteryear.

LOOKING AHEAD

The issues of financial sustainability are many and varied. I have not made the whole set of issues justice in this short overview. Yet, the broad themes are taking shape. Issues of sustainability are interlinked, and we as a society often face important trade-offs. Can we offer green investment products that don't make untenable promises to households? Can we reduce the climate impact of banks without endangering financial stability? Mistra Financial Systems, and the many promising research projects and talented researchers it funds (only a handful of which I have mentioned here), provides one concrete and important step toward better understanding of these important issues. With the first year in the bag, and with many productive projects already underway, we are off to a great start.

A handwritten signature in black ink, appearing to be 'R. A. ...'.

Professor, Department of Finance, Stockholm School of Economics; Program Director, Mistra Financial Systems

RESEARCH STREAMS

Mistra Financial Systems consists of 30 research projects divided into five research streams. The research streams complement each other as they seek to answer "how financial systems can better contribute to sustainable development of society" by addressing different levels of agency; from macro to micro level. They also address different time scales from nearer to longer term, and include different actors and perspectives. Together, they shape the transdisciplinary and collaborative features of Mistra Financial Systems.

GREEN MACRO

Our research aims to explore the role of the financial system in supporting the transition to a sustainable economy. Conversely, we also explore the potential implications of climate change and environmental policies on financial stability.

The long-term ambition of the project is to develop a comprehensive analysis of the links between natural and financial systems, and support the development of a fair, sustainable and prosperous society.

The research stream addresses a variety of challenges by modelling the macroeconomic and financial system in a way that captures the balance-sheet interactions of households, consumption and capital good firms, banks, the government, the central bank and other relevant sectors. This modelling approach allows us to combine financial variables with the dynamics of physical stocks and flows related to energy and environmental issues.

For instance, we study how climate-related financial risks might affect the speed and smoothness of the transition to a low-carbon capital stock, with a focus on how market sentiments and expectations around stranded assets might lead to the formation of carbon financial bubbles. Further, we investigate the role of financial regulation and central banking in supporting the transition to a climate-friendly economy, and critically discuss the feasibility of policies such as 'green' Quantitative Easing, differentiated reserve and capital requirements or the inclusion of ESG criteria in risk weighting. Moreover, we explore the implications of a long-term decline in growth rates – a 'secular stagnation' – on the achievement of a low-carbon economy.



Lead: Emanuele Campiglio,
Vienna University of Economics
and Business (WU)

POLICY

The aim of this research stream is to analyse policy options that can facilitate for the financial sector to support sustainability transformations. Policy options include public policies as well as voluntary standards and initiatives that can serve as game changers.

The vision of this work package is to enhance our understanding on what policy changes, at different organisational levels, are needed to transform the financial sector to better address sustainability challenges. Our research embraces all organisational levels, from case studies of local innovations to participatory research at the global level on standards and guidance. Our work has an empirical focus by studying actual transition processes, both past and present. Case studies include small-scale innovative financial mechanisms to support biodiversity conservation and climate smart production in developing countries, sector-based transitions to circular systems in the manufacturing and energy sectors in European countries, as well as analysis of global policy initiatives. At the global level, we will also assess the major players and investors behind extractive fishing, forestry, mining etc., and how this mapping of financial flows can induce new policy responses.

Transformations are often driven by market forces and technological innovations, sometimes in combination with government policies. However, sustainability transformations are not likely to occur without decisive policy initiatives. Our research will shed light on how governments and investors interact during critical transitions, and how different approaches to regulation and policy instruments enable different pools of capital to finance circular economic systems.



Lead: Thomas Hahn, Royal Swedish
Academy of Sciences

GOVERNANCE

The Governance work package aims to encourage general financial economists to start researching the transition towards a sustainable economy. The participating researchers are experts in fields such as entrepreneurial finance, corporate governance and household finance. The aim is to increase the general knowledge about the role of the financial sector in achieving a more sustainable economy by having these general experts broadening their research agendas to explicitly incorporate sustainability.

About the three themes: Financing of sustainable firms, long-termism and investor attitudes, gender, financial literacy and the role of households.

The long-term ambition of the Governance research stream is to produce top-level research combining financial

economics and sustainability that is published in top-ranked, widely recognised finance and economics journals. Our vision is further to inspire and encourage other researchers to incorporate the sustainability perspective into their traditional financial economics research.

The Governance work package analyses how the financial system can support the transition to a sustainable economy by applying the tools of general economics and academic literature within financial economics.



Lead: Gustav Martinsson,
Royal Institute of Technology (KTH)
and Swedish House of Finance (SHoF).

MARKET DRIVERS

Our research explores the market drivers and financial prerequisites for sustainable growth. We consider both the supply side (technology and innovation) and the market side (demanding customers, prices, regulations, subsidies and procurement).

The long-term vision of the project is to contribute to the understanding of how financial markets, exclusively or in combination with regulations and governmental incentives, can influence the proportion of investments and innovations in “clean” versus ‘dirty’ technologies.

The research stream addresses the question of finance and sustainable growth by using large amounts of annual data from a wide variety of both international and national statistical sources. The different data sources are matched on three main levels of aggregations; firms, industries and nations.

For instance, we study how different financial markets and asymmetric subsidization affect technological change and innovation in renewable and sustainable energy such as solar energy. International patent data is a suitable tool for identifying environmental innovations. In the research, we combine patent information with factors such as prices, introduction of environmental regulations and taxes, and financial markets in order to investigate development and diffusion innovations within and across industries.



Lead: Hans Lööf,
Royal Institute of Technology.

PRACTICAL TOOLS

Our research has a practical approach to sustainable development and explores what financial institutions can do within the current system. The main purpose is to develop useable tools for sustainable investors. The concrete results will include tools to i) better track the effectiveness of engagement activities (especially in fixed income), ii) measure citizens’ interest in sustainable development goals, iii) better track the completeness of corporate carbon disclosure, iv) benchmark rating agencies on their technical accuracy and financial independence from the assessed entity and v) better measure overall financial market health.

During 2016, the ICMA Centre at Henley Business School has been working in close collaboration with the financial sector on several of the Practical Tools research projects, including multi-year projects on engagement effectiveness, a benchmark of study of ESG rating agencies and a research project on systemic risk. Furthermore,

Practical Tools has conducted a comprehensive empirical study on the performance implication of the exclusion decisions of two leading Nordic investors, Norway’s Government Pension Fund-Global (GPF) and Sweden’s AP-funds. The authors investigated whether asset owners can meet ethical objectives through an exclusion-based strategy without compromising financial returns. The study resulted in a widely recognized paper, launched at a joint SweSIF seminar at the Stockholm School of Economics and published in the Journal of Business Ethics.



Lead: Andreas Hoepner,
ICMA Centre at Henley Business School

RESEARCHER INTERVIEWS

For more information on Financial Systems' publications, please visit:
www.hhs.se/mfspublications



GUSTAV MARTINSSON

Royal Institute of Technology (KTH) and Swedish House of Finance (SHoF).

What are the most important findings from your research?

The purpose of our research is to provide an academic perspective on how to improve financing of an environmentally sustainable economy. More concretely, we investigate how difficulties in obtaining capital can affect private sector innovation investments in environmental technology in Sweden. Innovative investments are often intangible, the outcomes are highly uncertain, and information asymmetries between entrepreneurs and outside investors are potentially severe which drive up the cost of capital. Recent literature on financing and innovation suggests that financing constraints on innovation are likely to be economically significant.

How can your research be used by the financial sector?

Equity is likely the most relevant (marginal) source of external funding for high-risk investments in environmental technology innovations. A key implication from this report is that the level of private sector investment in environmental technology depends on the availability and cost of external equity. This suggests that efforts to improve access to external equity finance is more important than debt financing when it comes to financing environmental technology.

How can financial regulators promote increased access to capital for green innovation?

Financial regulators can increase efforts to lower the cost of external equity capital, which has been shown to be the significant marginal financing source for investments in new technologies. The academic literature emphasizes improvements in accounting standards and financial transparency as well as legal protection of investors as policy fields that can lower the cost of capital.

ANDERS ANDERSON**Director, Swedish House of Finance****What are the key findings of your research?**

We measure financial literacy among LinkedIn members, complementing standard questions with additional questions that allow us to gauge self-perceptions of financial literacy.

We have found the average financial literacy to be surprisingly low given the demographics of our sample; fewer than two-thirds of CFOs, CEOs, and COOs complete the test correctly.

We find that the link between financial literacy, precautionary savings, and retirement planning hinges critically on self-perceptions. Savers and planners are those who believe they are financially informed, not necessarily those who are informed. Mistaken perceptions of financial literacy are as important as actual financial literacy.

What are the implications for the financial sector and the society as a whole?

In the wake of the financial crisis, financial literacy has been placed front and center in policy discussions attempting to reform retail financial markets. Our results heap more trouble onto the plate of policy makers who strive to improve literacy in order to facilitate household financial planning and savings. Mistaken perceptions about financial literacy may be as problematic as financial illiteracy itself.

Further, our findings indicate that individuals who overestimate their knowledge about financial products, and thus most important for policy makers to reach, are less willing to accept financial advice. Sub-optimal investment decisions and limited participation in the kinds of planning and savings decisions needed to build a sound financial future, can in the long run also be harmful to the pension system and to society at large.

Have you defined your next research topic?

Yes, with the support of VINNOVA, we will conduct a similar study taking into account ESG literacy in investment decisions.



Adding the sustainability dimension will most likely bring further complexity when making informed investment decisions. It will be interesting to explore the relation between awareness of sustainability questions and knowledge in financial matters and how that connects to financial decision-making.

JOAKIM SANDBERG**University of Gothenburg and Misum****Describe your research on institutional investment and fiduciary duty.**

I explore the recent changes and future trends in the principles that govern institutional investors and fiduciary duties. I want to bring forth new perspectives on the systemic effects that investment practices have on the long-term stability of the economy and the interests of beneficiaries of financial, social and environmental sustainability.

What are your concrete recommendations to the financial sector?

Asset managers and pension funds need to take a more active role in safeguarding the interests of future generations and fragile stakeholders. There is reason to argue that pension funds should be given independent social and environmental obligations. These obligations should ideally be legally imposed by governments and, at least in some critical circumstances, be allowed to trump the funds' fiduciary duties to beneficiaries. In terms of the more practical governance of pension funds, we need to develop goals, expertise and reporting that more directly addresses future generations and fragile stakeholders.

Which other research topics within institutional investments should be explored?

I would personally like to explore fiduciary duty in emerging markets, where fund managers are less governed by rigid and obsolete financial systems. Such managers could be more inclined to make bolder and more sustainable investment decisions.



GREEN FINANCE SEMINAR

At a seminar hosted by the Swedish House of Finance in December, Mistra Financial Systems and UNEP Inquiry gathered leaders from the finance sector, government and academia to discuss how Green Finance can scale.

HIGH-LEVEL SEMINAR WITH UNEP ON GREEN FINANCE

In order to successfully deliver on the UN Sustainable Development Goals (SDGs) by 2030, trillions of dollars of investment from the private sector will be needed. Green finance is a fast growing phenomenon that aligns finance sector incentives with the global development agenda through financing and investment opportunities in environmental solutions.

Although there is a clear policy momentum to engage private capital to deliver on the Paris agreement and the SDGs and a demonstrated leadership within the finance sector, actual capital redeployment remains distressingly low.

Against this background, Mistra Financial Systems in collaboration with UNEP Inquiry for the Design of a Sustainable Financial System invited the

finance sector, government, regulatory bodies and academia to a seminar exploring hurdles and opportunities on how Green Finance can scale. At the seminar, UNEP Inquiry made an exclusive launch of its Second Global Report that provides a global outlook on financing sustainable development: "Moving from Momentum to Transformation in a Time of Turmoil". Furthermore, Mistra Financial Systems launched a brand new study, developed in collaboration with the UNEP Inquiry, that maps out the Swedish landscape: "Finance and Innovative Investment in Environmental Technology: The Case of Sweden".

The seminar gathered over 100 participants and included prominent speakers like the Co-director of UNEP Inquiry Simon Zadek and senior economist Klas Eklund, as well as high-level representatives from AP7, Danske Bank, Church of Sweden, Kommuninvest and Mistra.



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STAKEHOLDER



KARIN REUTERSKIÖLD, SUSTAINABLE BUSINESS STRATEGIST, DANSKE BANK

How can MFS support you in your work? What do you expect from MFS?

Research is critical in creating value for the financial services sector and for Danske Bank and our customers. As a leading research hub, MFS can support the financial sector's transformation towards sustainable development. I also believe that the sector has been lacking an impartial academic forum, and MFS can serve an important role in filling this gap.

What is your take on the financial sector's role in driving sustainability?

First of all, it is important to understand that digitalization and sustainability is fundamentally transforming the way we do business and it is impossible to foresee what the industry will look like 10 years from now. That said, I think there is a window of opportunity for forward-looking, value-driven companies that work to integrate ESG factors in their business model. By addressing the most pressing sustainability issues and challenging the industry, MFS can also be a driving force in this process.

What are the most critical research areas within the field of sustainable finance?

Measurability of ESG factors and KPIs is an important research area from which the finance sector needs guidance and recommendations. Further, in view of the challenges that the industry is facing, it would be useful to also explore softer issues like values, culture and norms.



JOHAN FLORÉN, HEAD OF COMMUNICATION AND ESG AT AP7 AND CHAIRMAN OF SWESIF

How can institutional asset owners benefit from research? What do you expect from MFS?

Research is one of the most important aspects of asset management and forms the basis on which investment decisions are made. In my role as Chairman of Swesif, I have seen a clear lack in terms of quality and coordination of ESG research. As one of few European hubs for sustainable finance, MFS has an opportunity to take a leading role in promoting academic stringency and strengthening the industry's knowledge.

What is your take on the financial sector's role in driving sustainability?

There is currently positive momentum in the industry and I firmly believe that institutional asset owners and financial service providers can be drivers of change, but a prerequisite for this is relevant and coordinated research and increased cross-sectional collaboration. For example, AP7 and MFS collaborate on several research projects where we can draw benefits from our different comparative advantages.

What are the most critical research areas within the field of sustainable finance?

Topics such as impact investing and pricing of sustainability should be better integrated into traditional financial research, which primarily has focused on financial modeling and shareholder value maximization. Further, we must also promote research that explores the industry's ability to make a positive impact as opposed to exclusion-based strategies that do not drive actual change.

INTERVIEWS

**GUNNELA HAHN, HEAD OF RESPONSIBLE INVESTMENT,
CHURCH OF SWEDEN**

How can MFS support you in your work? What do you expect from MFS?

I expect MFS to play an important role by raising the bar with regard to ESG research, which in my view so far, to a great extent, has failed to address the concrete problems of the financial industry. The sector needs an objective convener to bring research projects and industry initiatives together.

What is your take on the financial sector's role in driving sustainability?

Institutional asset owners like the Church of Sweden is arguably one of the more influential investors in Sweden and we strive to encourage sustainable practices in all the companies we invest in, but there are limits on how much we can do. We need to dramatically raise the awareness and knowledge of sustainability issues in the sector and promote concrete and action-oriented research.

What are the most critical research areas within the field of sustainable finance?

I think we need to focus less on shareholder value maximization and more on long-term value creation for both investors and the society as a whole. We are all interconnected. In the long run, a company cannot succeed in a society that fails. It would be interesting to explore investment vehicles and other structures, such as regulatory framework or remuneration models, that reflect that view.



**SIMON ZADEK, CO-DIRECTOR, INQUIRY INTO THE DESIGN
OF A SUSTAINABLE FINANCIAL SYSTEM, UN ENVIRONMENT**

What is your take on Sweden's role in driving sustainability in the global financial system?

On the one hand, Sweden is a small country with a relatively small financial sector, which suggests that Sweden's impact on a global level is insignificant. On the other hand, Sweden is at the forefront in terms of innovation, financial technology and legal frameworks. By continuing to push this ambitious agenda, I think Sweden can serve as an international role model within financial technology and innovation.

What do you expect from MFS and what areas of collaboration do you see between MFS and UN Environment?

I would encourage MFS to be more short-term, concrete, policy-oriented and closer to practitioners in its research within the next years. Further, it is important to conduct research from an international perspective, exploring the global links between Sweden and other countries. In terms of collaboration, UN Environment welcomes research partnerships on research topics of mutual interest, but we would also be delighted to play a convening role in Sweden, for instance by sharing our experiences on best practice international processes and national road maps.

What are the most critical research areas within the field of sustainable finance?

First of all, research on governance as a normative framework will be critical in order to bring about the increased mandates necessary to transform the industry. Another important topic is to explore how information disclosure and risk management can be improved and made more relevant to the finance and investment sector. Finally, we need to link research to sustainability road maps at the national level; how do we build them, what coalitions are needed, and how do they relate to international standards?



WOMENS FINANCE DAY



WOMEN IN FINANCE - MAKING THE MOST OF THE TALENT POOL

Underrepresentation of women in the financial sector is a well-known challenge that the industry has struggled to address. A number of prominent researchers, finance professionals and students share their views on the matter.

There is a widespread view that the financial sector has been traditional, conservative and slow to attract more women. In many countries, the numbers reaffirm this view; less than 10% of all U.S. fund managers are women and finance has the biggest gender pay gap of any industry in the U.K. In Sweden, only 30 percent of executive committees in financial services are comprised of women, according to the 'Women in Financial Services' report by global management consultancy Oliver Wyman. Maria Frithz Warg is Deputy Director of the Swedish House of Finance and Program Director of SSE Executive Education. She has developed a number of executive education and finance programs at the Stockholm School of Economics. Ms. Frithz Warg believes that the underrepresentation of women in the financial sector is a challenge for future talent provision.

– There is an apparent gender problem in the industry. By excluding women and discouraging them to pursue a career within finance, we are missing out on a huge talent pool.

Ms. Frithz Warg emphasizes the importance of

informing about the whole spectrum of careers in finance.

– Many still have a narrow-minded view that a career within finance means moving to London and working at an investment bank. In my view, there are a variety of jobs within finance that really have the potential of making the world more sustainable, something that should attract a new group of both female and male talents.

WOMEN'S FINANCE DAY

The Swedish House of Finance and Ms. Frithz Warg has also been a partner of Women's Finance Day (WFD), an event arranged by the Student Association at Stockholm School of Economics aimed to inspire talented and driven young women to pursue a career within finance. Johanna Ingemarsson and Molly Kjessler are two of the students managing WFD.

– The overall aim of WFD is to encourage a career within finance. But WFD is more than just a single day event. After the main event, our work continues through seminars, debates and the launch of Women's Finance Network, says Ms. Kjessler.

"Finance is fun! Give it a try"

Women's Finance Network is a one-year mentoring program bringing together 25 selected students from the SSE Bachelor's Program with experienced mentors working in finance.

– The new network provides an excellent opportunity to build strong relationships with inspiring professionals in the industry, says Ms. Ingemarsson.



In 2016, WFD expanded from a banks-only event, taking a broader perspective on the financial sector.

– We wanted to take a more inclusive approach to attract a broader range of both students and companies. It was great to see so many new additions like the AP Funds, the Swedish Central Bank and several private equity companies, says Ms. Ingemarsson.

CREATING A DEEPER UNDERSTANDING THROUGH RESEARCH

To develop deeper knowledge about employer and recruitment practices in the financial sector further, the Swedish House of Finance is conducting a study on how human resources practices and procedures affect employees' opportunities and careers, specifically how such practices affect men and women differently and thus operate to include or exclude women. The case study is done in collaboration with a commercial bank and a private equity company. SSE researchers Pernilla Bolander and Kajsa Asplund are heading the study.



– We wanted to create a deeper understanding of the underrepresentation of women in finance, more specifically exploring recruitment and selection processes, performance management and practices concerning parental leave.

According to Ms. Bolander and Ms. Asplund, the problem cannot be addressed solely by increasing the share of women by x%, thereby "improving the numbers".

– To achieve fundamental change we need to address more complex issues like culture, norms and psychological factors. The bias against women is often highly unconscious and impulsive. Large and influential companies have a critical role to play in addressing these issues to make the industry more inclusive.

CAREER PATHS AND ROLE MODELS

Ingrid Werner is a prominent researcher within financial economics and a role model for many young women in Sweden and abroad. Her view on how to increase the share of women in finance is clear:

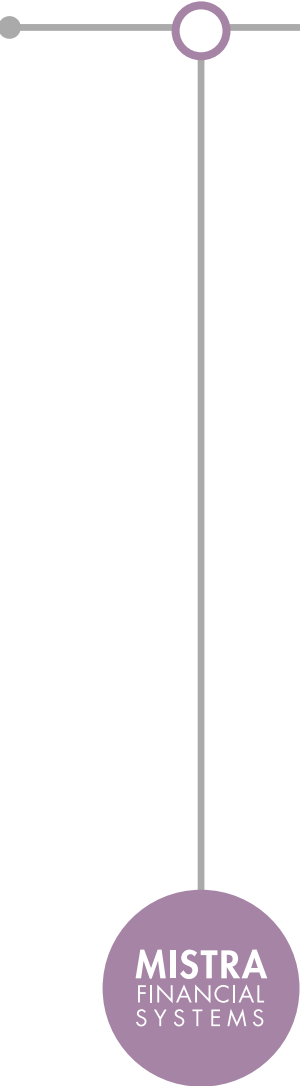
– I believe that the most important factor is to make sure women are aware of the career opportunities in finance. This information has to be available to young women, before they apply to university. Another factor is the importance of women role models. Role models are incredibly important for young women thinking about pursuing careers in male-dominated fields.

Ms. Werner believes that there are promising signs of the industry becoming more diverse and inclusive, encouraging a wide variety of career paths.

– You don't have to want to be an aspiring investment banker or hedge fund manager in order to pursue a career in finance! For example, my academic career has enabled me to collaborate with amazing people all over the world, to travel the globe, to give advice to industry professional, and to contribute to policy debates. Finally, being an academic, I have very flexible hours and can work anywhere. This allows me to strike a good work-life balance which I know is important for many young women. Finance is fun! Give it a try!

MOMENTS FROM

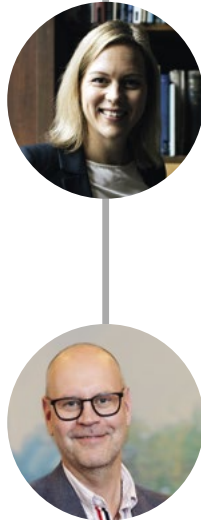
MARCH



LAUNCH!

Mistra Financial Systems is launched in March 2017. The program is a research consortium comprising a total of nine partners; the Swedish House of Finance, University of Gothenburg, the ICMA Centre at Henley Business School, Vienna University, Kingston University, Stockholm Environment Institute, the Royal Swedish Academy of Sciences, the Royal Institute of Technology and Misum at the Stockholm School of Economics.

APRIL



PRESENTATION OF MFS

Cecilia Repinski at Misum presents Mistra Financial Systems at a joint seminar between Misum and the Swedish Environmental Protection Agency.

ANDERS ANDERSON DISCUSSES RESEARCH FINDINGS

Anders Anderson at the Swedish House of Finance is invited to the Swedish Financial Supervisory Authority to discuss research findings on financial literacy in the context of precautionary savings and retirement planning.

SEMINAR ON INNOVATIVE FINANCIAL INSTRUMENTS

The Royal Swedish Academy of Sciences arranges a seminar on innovative financial instruments, specifically insurance and bonds.

MAY



RESEARCH PRESENTATION BY HARRISON HONG

Harrison Hong, Professor of Finance and Economics at Princeton University, visits the Swedish House of Finance. Professor Hong presented his recent research on the ability of markets to price risks associated with climate change at a seminar for the Swedish finance sector. His recent study concerns the links between drought, food company cash flows and their stock price performance and finds that "markets do not efficiently price climate change risks".

SPEECH ON GLOBAL INVESTING AND RISK MANAGEMENT

Andreas Hoepner at ICMA Centre at Henley Business School gives a speech at MSCIs annual conference on global investing and risk management.

RESEARCHERS JOIN REFERENCE GROUP

Emma Sjöström at Misum and Joakim Sandberg at Gothenburg University join the Reference Group for the Nordic Ecolabelling of Investment Funds.

OUR FIRST YEAR

JUNE



SWESIF SEMINAR

Mistra Financial Systems and SweSIF (the Swedish Forum for Sustainable Investments) organizes a joint breakfast seminar at the Swedish House of Finance. Emanuele Campiglio, Gustav Martinsson, Hans Lööf and Andreas Hoepner presents the program's research areas and projects. Johan Florén, AP7 and SweSIF Chairman, moderates a discussion on how Mistra Financial Systems can be of relevance to institutional investors, and conversely how SweSIF members could support/collaborate with MFS.

JULY



ARTICLE IN JOURNAL OF FINANCIAL ECONOMICS

The scientific article "Precautionary savings, retirement planning and misperceptions of financial literacy" by Forest Baker, David Robinson and Anders Anderson at the Swedish House of Finance is published in the Journal of Financial Economics.

ARTICLE IN JOURNAL OF BUSINESS ETHICS

Mistra Financial Systems publishes its first peer reviewed article in "Journal of Business Ethics" titled "On the Price of Morals in Markets: An Empirical Study of the Swedish AP-Funds and the Norwegian Government Pension Fund".

ALMEDALEN

Sophie Nachemson Ekwall (Stockholm School of Economics), Ulrika Stavlöt (FORES) and Cecilia Repinski (Misum) from Mistra Financial Systems participates in various events during the Almedalen week in Visby.

ADVISORY BOARD FOR RATING THE RATERS

The Practical Tools research stream launches the Advisory Board for Rating the Raters project with institutional investors in Sweden and Europe.

SEPTEMBER



PANEL AT NORDIC TBLI CONFERENCE

Mistra Financial Systems organizes a panel at the Nordic TBLI conference at Nasdaq in Stockholm titled "Mistra Financial Systems: Academic evidence for 21st century financial decision making". TBLI is a global forum that brings together investors, asset managers and thought leaders in sustainable finance. Andreas Hoepner (ICMA), Johan Florén (AP7) and Åke Iverfeldt (Mistra) participated in the panel.

PRESENTATION AT INVESTMENT INNOVATION BENCHMARK

Cecilia Repinski at Misum presents Mistra Financial Systems at the Investment Innovation Benchmark (IIB) Summit in Stockholm that convenes institutional investors, academia and innovators of financial products and services.

SEMINAR ON SUSTAINABLE OWNERSHIP

Misum holds a seminar on Sustainable Ownership with Sophie Nachemson Ekwall as well as Peter Norman (Chairman of the Board of Mistra Financial Systems).

OUR FIRST YEAR

SEPTEMBER



SNS SEMINAR ON SOCIAL IMPACT BONDS

Per Strömberg at the Swedish House of Finance comments on Social Impact Bonds at an SNS seminar with Toby Eccles. Social Impact Bonds are “outcomes based social contracts” between investors, public actors, services providers and beneficiaries.

PRESENTATION BY ERIC KEMP BENEDICT AT INTERNATIONAL CONFERENCE

Eric Kemp Benedict at Stockholm Environment Institute gives a presentation on “The implications of secular stagnation” at the Conference of Post-Keynesian Economics in Kansas City.

MFS FIRST BOARD MEETING

Mistra Financial Systems has its first full board meeting.

OCTOBER



KEYNOTE AT ESG INVESTMENT FORUM

Andreas Hoepner and Cecilia Repinski delivers a keynote speech on Mistra Financial Systems at the Global ESG Investment Forum in London.

WORKING PAPER ON STRANDED ASSETS

Eric Kemp Benedict at Stockholm Environment Institute and Emanuele Campiglio at Vienna University presents a working paper on stranded assets and financial risk at a conference hosted by the Research Network Macroeconomics and Macroeconomic Policies (FMM) in Berlin.

NOVEMBER



BO BECKER IN SNS SEMINAR

Bo Becker at the Swedish House of Finance comments on the Swedish Financial Supervisory Authority report on “How can the financial sector contribute to sustainable development” at an SNS seminar.

COLLABORATION WITH SWEDISH INSTITUTE AT SUSTAINABILITY FORUM

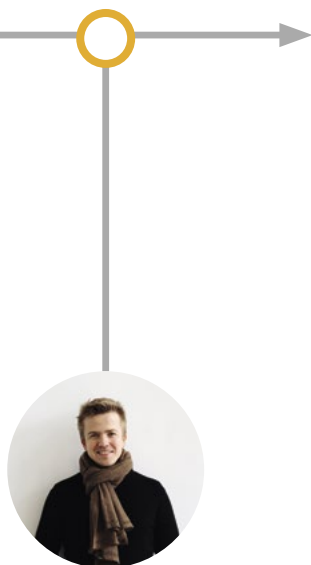
Mistra Financial Systems collaborates with the Swedish Institute in the 2016 Sustainability Forum on financial markets. The forum convenes finance, academia, fintech and NGOs in emerging markets with selected Swedish stakeholders for a 48-hour global think tank around new solutions for how financial markets can support sustainability. Thomas Hahn at the Royal Swedish Academy of Sciences, Ulrika Stavlöt at FORES and Cecilia Repinski at Misum participates in the Forum.

JOAKIM SANDBERG GIVES PRESENTATION ON EXECUTIVE PROGRAMS

Joakim Sandberg at the University of Gothenburg gives a presentation on “The ethics of executive programs: philosophical and psychological perspectives” at a conference organized by the University of Bayreuth in Germany.

LOOKING AHEAD

DECEMBER



PRESENTATION BY EMANUELE CAMPLIGLIO AND ANDREAS HOEPNER

Emanuele Campliglio at Vienna University and Andreas Hoepner at the ICMA Centre at Henley Business School present their research at a conference organized by J. Safra Sarasin, Investment Innovation Benchmark (IIB) and MSCI in Vienna.

GREEN FINANCE SEMINAR ON UN ENVIRONMENT

Mistra Financial Systems together with the UN Environment Inquiry into the Design of a Sustainable Financial System convenes institutional investors and banks for an informal roundtable discussion around how green finance can scale in Sweden.

GUSTAV MARTINSSON LAUNCHES REPORT

Gustav Martinsson at the Royal Institute of Technology launches a report done in collaboration with the UN Inquiry into the Design of a Sustainable Financial System.

GREEN MACRO

In 2017, the Green Macro team will produce a prototype of the macroeconomic model numerically calibrated to the Swedish economy, for which we have laid the foundations in 2016. We are also producing new academic research on the role of market expectations in the creation of climate financial bubbles; the policies for achieving a smooth transition to low-carbon forms of capital; the role of central banks and financial regulators in supporting the low-carbon transition; the different explanations of secular stagnation and relative macroeconomic environmental implications.

POLICY

In 2017, the Policy team will present some of our on-going research at the scientific conference "Resilience 2017 – Resilience Frontiers for Global Sustainability." We will publish three papers or book chapters on: innovative financial mechanisms in relation biodiversity conservation; accountability of financial institutions to safeguard sustainability outcomes (fiduciary duty); and how large asset managers relate to corporate activities driving ecosystem change of large scale biomes that control climate systems globally.

MARKET DRIVERS

In 2017, the Market Drivers researchers will conduct a quantitative study encompassing a systematic mapping of financial support to early stage development in sustainable energy technologies at the Royal Institute of Technology. The research team will also carry out a survey study in collaboration with the SIFO Institute on green innovation among new and small firms in Sweden. In addition, the team will explore the relationship between carbon taxes, path dependency and directed technical change in the auto industry. The Market Drivers team applies this general methodology on solar energy to investigate two main questions: (i) can government intervention affect the direction of innovation? and (ii) do firms redirect technical change in respect to taxes, regulations and subsidies? The paper will be presented and discussed at a high-level conference in Germany and a workshop in South Korea.

GOVERNANCE

In 2017, the Governance stream will primarily comprise data analysis and the provision of new and unique insights in a variety of different and important fields. For example, there is ongoing work that provides new information to the seed financing of entrepreneurial firms in the environmental technology sector. Furthermore, there is work that aims to estimate the cost of capital of sustainable firms in Sweden.

PRACTICAL TOOLS

In 2017, the Practical Tools team anticipates to produce a first draft framework on complete carbon reporting, accompanied by a scientific article on 'Climate Change and Asset Prices: Are Corporate Carbon Disclosure and Performance Priced Appropriately?'. Moreover, the team will support Dr. Hampus Adamsson, Dr. Damian Borth and their team at Mistra Financial Systems' partner Sociovestix Labs to complete their research on attention indices that measure the time-varying, relative interest of citizens towards four separate UN Sustainable Development Goals (SDGs). This will allow researchers to understand the emphasis which the public places on individual SDGs vis a vis each other.



SUSTAINABILITY

FROM VANGUARD TO BUSINESS CRITICAL

In the 1990's, sustainability was a word "à la mode". It was a word captured by environmentalists and activists striving to make the earth a better place. In view of the magnitude of the challenges we face, combined with several environmental disasters at the time, an increasing number of people saw the need for a transformation in society's impact on the environment. This change in perception was fast and almost furious and sustainability has now become as natural as caring about customers or employees.

Today, no company can afford to neglect sustainability issues. To survive and prosper, all companies have to adopt sustainable business practices. If they do not, there is a risk of being abandoned by customers, disciplined by authorities and punished by capital markets.

Building sustainable businesses and a sustainable society is a long-term project that can never be completely resolved or finished. It requires constant attention. As this is an issue of strategic importance, it cannot easily be

delegated to consultants and external experts. It belongs to the board and management.

In this regard, financial markets are of critical importance. Financial markets can move swiftly and mercilessly. In the stock market, massive values can vanish in a fraction of a second. This applies to unsustainable business practices. Therefore it is of great importance that research in financial markets also emphasizes sustainability. The MFS program, sponsored by Mistra, aims to shed more light on the financial sector's role in a more sustainable future. This will have benefits for all those decision makers who need to take bold action soon.

Peter Norman
Chairman of the board

FINANCIAL STATEMENT 2016

MFS DISPERSED BOOKED COSTS 2016

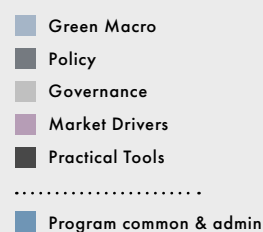
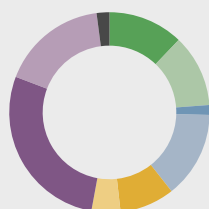
By Program Partner

University of Gothenburg	699 146
Henley Business School	674 562
Kingston University	91 317
KTH	806 634
Royal Swedish Academy of Sciences	510 396
Stockholm Environmental Institute (SEI)	269 989
Swedish House of Finance (SHoF)	1 607 889
Stockholm School of Economics	990 362
Vienna University of Economics and Business (WU)	118 759
TOTAL	5 769 054

MFS BUDGET 2016 -2019

By work stream

Green Macro	3 822 099
Policy	4 907 248
Governance	5 897 500
Market Drivers	4 044 005
Practical Tools	4 425 000
.....	
Program common & admin	6 920 000
TOTAL PROGRAM	30 015 851



BOARD, PROGRAM HOST & PROGRAM DIRECTOR

BOARD

Chairman: Peter Norman, Swedbank
Members: Christopher Järkebom, Skanska
Per Krusell, Stockholm University
Lars Wedeborn, FAM
Ingrid Werner, Ohio State University

The program director and a representative for the program host participates in board meetings.

The board reports progress and activity to Mistra (including financial reporting), approves an operating plan every year, and undertakes such modifications and adjustments in MFS when needed.

PROGRAM HOST SSE

The program host organizes and houses central MFS activities, administrates financial flows and reporting, and guarantees that MFS is run in accordance with Mistra rules and guidelines. At SSE, MFS is organized under Misum.

PROGRAM DIRECTOR Bo Becker, SSE

The program director oversees operations and program reporting, manages shared program resources and activities, and supports the board. The program director has central staff, possibly including a program manager, as support.

FUNDED BY



The Swedish Foundation for
Strategic Environmental Research

MISTRA FINANCIAL SYSTEMS

Mistra Financial Systems is a Mistra-funded research program on how financial systems can be supportive of the Sustainable Development Goals. Through a total of 30 research projects, divided into five research areas, carried out by more than 50 researchers, Mistra Financial Systems aims to investigate both possibilities and limitations in this regard. Especially, the program seeks to investigate what kinds of changes that are needed to make financial systems more conducive to social and environmental sustainability. Mistra Financial Systems is hosted at Misum, the Mistra Center for Sustainable Markets, at the Stockholm School of Economics. Partners include Swedish House of Finance, The Royal Institute of Technology, The Royal Swedish Academy of Sciences, Stockholm Environment Institute, Gothenburg University, Vienna University, Kingston University and the ICMA Centre at Henley Business School.



SWEDISH HOUSE
OF FINANCE



WIRTSCHAFTS
UNIVERSITÄT
WIEN VIENNA
UNIVERSITY OF
ECONOMICS
AND BUSINESS



ICMA Centre



GLOBAL ECONOMIC DYNAMICS
AND THE BIOSPHERE
THE ROYAL SWEDISH ACADEMY OF SCIENCES

UNIVERSITY OF
GOTHENBURG

The Mistra Financial Systems programme is hosted by Misum in collaboration with our partners.