SWEDISH HOUSE OF FINANCE | STOCKHOLM SCHOOL OF ECONOMICS

Annual Report 2022

FINANCE DURING TURBULENT TIMES

Lessons learned from financial research

What is the role of banks in financial crises?

Government lending in times of crisis

ESG: Finding clarity though research

The future of decentralized finance

SWEDISH HOUSE
OF FINANCE

Creating impact through research

Words from the Director

The idea behind the Swedish House of Finance (SHoF) is that academic research on finance is important, even critical, to public policy as well as to private decision making. The global financial crisis starkly illustrated the consequences of poor regulation, mistakes, and, more broadly, of not understanding financial issues. And so, eleven years ago, SHoF was formed as a public-private partnership, located at the Stockholm School of Economics.

The idea of an academic center with broad public and private support, and with a national mandate, has turned out excellently. It creates an independent voice on policy. And it creates stability, essential to attracting academic talent.

Locating the center physically at the Stockholm School of Economics — Sweden's only department of finance — made sense. In terms of connecting research to practice, central Stockholm is hard to beat. Within a short walk from our offices is one of Europe's greatest concentrations of private equity and venture capital, several important bank headquarters, and most of the regulatory and political institutions of Sweden.

Although SHoF's mission is fundamentally focused on research, teaching also helps guide research. SHoF's fellows — at SSE and elsewhere — teach finance at various levels. This connects us with the practical realities of the financial system.

The result is that we have many amazing scholars at the Swedish House of Finance, working on today's key issues in finance. This annual report describes some of this.

None of this would happen without funding. Those institutions, in the public and private sectors, that have supported us have made an important investment in the greater good of advancing learning and applying it to the issues facing the financial system in Sweden and abroad. I believe the long-term payoff will be substantial for the economy, for the quality of financial regulation, and for the many people involved with the financial system. For me, it is a great pleasure to be involved with this project.

BO BECKER
Director, Swedish House of Finance

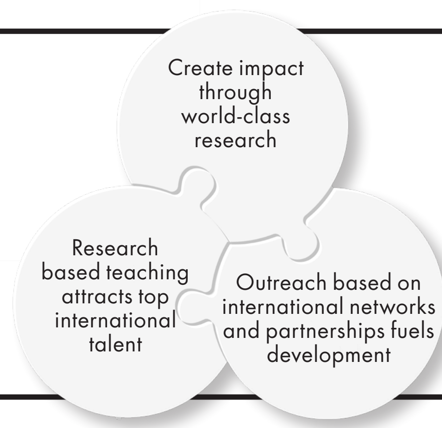
Head of Department of Finance and Cevian Capital Professor of Finance, Stockholm School of Economics

Our objectives

The Swedish House of Finance is a non-profit, nonpartisan organization, funded by the government and the private financial sector.

The Goal of the Center is to:

- Strengthen financial research
- Create impact through world class research
- Share positive externalities with the private, public and academic sectors in Sweden



A center of excellence

A national research center was established at the Stockholm School of Economics in 2011. The aim was to create one of the top research institutions in Europe. Funding was provided in equal parts by the government (through Vinnova) and the private financial sector.

A national mission

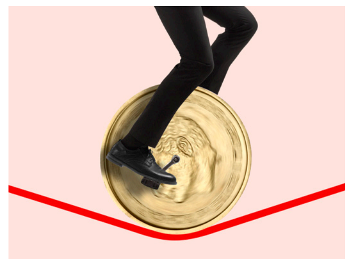
The Swedish House of Finance supports departments dedicated to financial research at Swedish universities. Our support takes various forms, including programs that encourage researchers to publish their findings in top academic journals. The center also has a national mission to provide researchers at Swedish universities with Swedish financial data.

We facilitate contacts between researchers and the public and private financial sectors in Sweden. In turn, this activity leads to new research, new private initiatives and policy discussions on how financial regulation can be made more efficient. The center is a vital part of the research and development necessary to continue to establish Sweden as one of the leading financial centers in Europe, and to support the development of a strong Swedish economy characterized by a high rate of innovation.

Research topics

The researchers at the Swedish House of Finance examine a number of different areas within the field of financial economics, including corporate debt and insolvency; the monetary policies of central banks; political policies incentivizing financial markets towards sustainable investment; the efficiency of incentive compensation programs; value creation in private equity; stock market listings; and gender bias in financial services and household savings.

In this issue



Finance in turbulent times

The world economy is currently facing major challenges. Russia's war against Ukraine, high energy costs and inflation are increasingly weighing on households and enterprises.

These are problems not just for the real economy, but for financial systems too. To shed insight, this section features some of the data work and analysis done by researchers at the Swedish House of Finance on topics such as international capital markets and wealth transfers, households' investments, and supply chain risks during times of global stress.

One study that is highlighted investigates Sweden's 2009 government lending program — the first of its kind allowing firms to postpone various tax payments — giving valuable insights into the outcome of similar policies that have been rolled out elsewhere during the pandemic and the energy price crisis.

During the year, SHoF arranged several seminars on current policy issues that provided a scientific perspective on systemic risk and stress in the financial system. We were particularly pleased to host a discussion with Ben Bernanke, Douglas Diamond and Philip Dybvig, who were awarded the Nobel Prize in Economics for their research on banks and financial crises.

What is the role of banks in financial crises?

Per Strömberg, Professor of Finance at the Stockholm School of Economics and a member of the Nobel Prize Committee, discusses how this year's Nobel Prize-winning research has shaped the way we deal with financial crises.

Our lives are closely intertwined with banks and financial systems. We get our salaries in our bank accounts, from which we make payments for our everyday essentials; with just the tap of a card, we get access to food, transport, and clothes. Banks are also involved in our lives during those big moments, like buying our first home or actually launching a business we have dreamt of doing for years.

Yet, few can articulate what banks are, why they exist and why failures in the banking system can lead to disastrous crises that persist for a long time. In 2022, Ben Bernanke, Douglas Diamond and Philip Dybvig were awarded the Nobel Prize in Economic Sciences "for research on banks and financial crises", which has improved how society deals with financial crises. The key finding in their research is why avoiding bank collapses is vital.

"They provide the foundation of what is now the modern understanding of banks: the role banks play in the economy, why we have financial crises and why we need banks to be regulated," Strömberg says.

"We think it's very important for economics because it's made a huge impact on tons of research following their work, and also for practice, because a lot of modern thinking about regulation of the financial system, and how you fight financial crises, rests on their research," he adds.

"

Diamond and Dybvig showed that if we have deposit insurance, then we don't have to rush to the bank because we know we will get our money back. Or if the central bank provides emergency loans to this bank, we know we will be safe. Avoiding runs on financial institutions is what modern banking regulation is all about."

—PER STRÖMBERG, SSE Centennial Professor of Finance and Private Equity, SHoF and Stockholm School of Economics

Nobel seminar

Per Strömberg, professor at SSE and member of the Nobel Prize Committee, led a discussion with this year's recipients of the Nobel Prize in Economic Sciences: Ben S. Bernanke, Douglas W. Diamond and Philip H. Dybvig on their research on banks and financial crises.

Watch the discussion

Which came first, bank failure or depression?

Ben Bernanke wrote his winning paper in 1983, analyzing the Great Depression in the 1930s using empirical and historical data.

"(Bernanke) convinced the research community that the failure of banks was really the reason why the Great Depression became so deep," Strömberg says. "This was a huge break with the perceived wisdom at the time."

Before Bernanke's paper, the consensus among financial researchers about the bank failures in the 1930s was that they were a consequence of the depression. Another view, proposed by Milton Friedman and

Anna Schwartz, was that while the bank failures were important for the recession turning into a deep depression, it was primarily for monetary reasons, since bank deposits are part of money supply. They argued that the fact that the Fed at the time did not print more money led to the depression becoming much longer and deeper than it otherwise would have been.

"They were very money-oriented," says Strömberg. "Bernanke however, said that the bank failures were indeed important but not primarily because they shrank money supply, but because when banks failed, firms and households couldn't get credit. And that had a huge effect on their performance and investment which fed into the economy, leading to a great depression."

Banks monitor borrowers but who monitors banks?

In a separate paper, Diamond analyzes how lenders ensure borrowers honor their commitments. He explained that it is easier and cheaper for depositors who have directly or indirectly invested in a project to delegate credit evaluation and investment progress monitoring to banks instead of doing it individually.

But if the bank is monitoring the borrowers to ensure their investments are sound, who is monitoring the banks? Diamond showed that the way in which banks are organized means they do not need to be monitored by the depositors at all.

"The reason we don't have to do it is because banks lend money to thousands of companies, not just to one. If banks do their monitoring job correctly, the occasional firm might still fail but if you provide lending to 10,000 different firms, it's predictable what those credit risks are on condition that the bank does its job," Strömberg says.

"If the bank runs out of money, however, then we know that the bank hasn't done its job. We can then put that bank into bankruptcy and get our money back. We can discipline the bank without having to monitor it," he says, adding that it is in the bank's interest to monitor its borrowers without the depositors needing to monitor the bank. ♦

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Wealth transfers in turbulent times

As capital markets are deeply interconnected, a shock originating in one market creates a ripple effect on the rest of the world. During times of global stress, financial markets around the world suffer losses. However, some markets are affected more than others.

A study by Magnus Dahlquist, Anna Pavlova, Christian Heyerdahl-Larsen, and Julien Pénasse explains how rich countries like the United States often receive a wealth transfer from the rest of the world during turbulent times.

The authors find that while the net foreign assets and stock markets fall in the United States when a crisis hits, the loss is overturned by the dollar appreciation, which results in a wealth transfer to the U.S, breaking away from existing literature that shows how the U.S. transfers wealth to the rest of the world during bad times.

“Our paper highlights the observed patterns in the capital markets during times of stress and uses a model to understand the mechanisms behind them.”

—MAGNUS DAHLQUIST, Peter Wallenberg Professor of Finance, Stockholm School of Economics

Volatile energy markets and new risks to the financial stability in Europe

SNS/SHoF Finance Panel with Vincent Maurin of Swedish House of Finance at the Stockholm School of Economics, Daniela Peterhoff of Nasdaq, Mats Persson of Fortum, Karolina Ekholm of Swedish National Debt Office and Paulina Dejmek-Hack of European Commission (DG FISMA). Panel moderated by SHoF’s Pehr Wissén.

The energy prices in Europe have been volatile and increased dramatically following Russia’s invasion of Ukraine. The crisis exposed weaknesses in the European energy market design that could lead to risks for the financial system in general.

The discussion focused on the European energy derivatives market and central clearing counterparties (CCPs). CCPs "mutualize" counterparty credit risk but may face systemic risks in situations of extreme price volatility and if trading members, such as energy producers, face liquidity constraints.

Watch the discussion

Using data to understand inequality

Paolo Sodini is Professor of Finance at the Stockholm School of Economics. He is the director of the Institute for Microdata (MiDa), which promotes the dissemination and use of unaggregated, individual-level financial data.

How do households invest during bad times? When times are bad and when markets fall, households tend to rebalance their investment portfolios by buying risky assets like funds and stocks, but the extent to which they do so depends on several factors, such as wealth and education levels.

"We show that people, on average, rebalance 50% of the drop in portfolio shares when markets go down," Sodini says, adding that people who are wealthier and more financially sophisticated tend to rebalance more.

"This group of people tends to be wealthier, more highly educated and save in private pensions. For them, the need to rebalance is lower."

However, this is only true on average. Those at the very top tend to be less diversified, partially because they became wealthy through their own business ventures. But because they take more risks that expose them to fluctuations in the economy, the wealthiest earn higher expected returns than the rest of the population, Sodini's research shows.

"Higher expected returns at the top tend to increase wealth inequality, but are justified by how much risk the wealthiest take, since they are more exposed to the risk of bad times - there is even more financial fragility at the top, which in turn can generate social mobility," he says, referring to the ease of which high net-worth individuals could lose their wealth and for others to join the very rich.

Closing the gap

The researchers at MiDa have access to anonymized information on the detailed asset holdings of each person in Sweden through tax filings collected by Statistics Sweden, the country's national statistics agency.

"Why do we have income being quite equal, and wealth being so unequal? That's true everywhere. And in Sweden, particularly so."

—PAOLO SODINI, Professor, Stockholm School of Economics

Economic crises and its consequences for households

Researchers from Swedish House of Finance (SHoF), Stockholm University (SU) and the Institute for International Economic Studies (IIES) have received a SEK 17 million grant from the Swedish Research Council to investigate how economic policy can prevent and mitigate economic crises and look into how crises impact inequality. The project is led by Per Krusell, from SU and IIES.

"We have data not only on whether they have funds, stocks, or real estate, but also information on which stock, fund, or real estate property they have over time and how much they have in them. This is the only way we can study the origins and dynamics of wealth inequality, or household financial fragility in different pockets of society," Sodini says.

Detailed and accurate individual-level data on household finance is hard to come by as the datasets that are available in major economies like the U.S. or the Eurozone are usually collected through surveys, which can be unreliable.

"It's important that you have administrative data like in Sweden," he says.

In 2007, however, Sweden abolished their wealth tax and the data collection that came along with it, posing a major hurdle to research and to effective policy decisions.

"They abolished the real estate register and stopped collecting information on holdings of mutual funds, stocks, and bank account balances. They also stopped collecting information about debt," Sodini says.

"It has left the country blind. For example, we don't know where the high level of debt in Sweden really resides, and how fragile real estate markets are to the recent increases in interest rates. How much should we worry? Who is more at risk? What can the government do to avoid a major recession? Is Riksbanken increasing interest rates too much or too little? Without data, it is hard to answer these questions."

MiDa has made it its mission to close the gaps left by the wealth tax abolishment. For example, although Statistics Sweden has abolished the real estate register, MiDa is using data from the Swedish Mapping, Cadastral and Land Registration Authority (Lantmäteriet) to build its own register; and when it comes to the country's total debt, it is looking into data coming from how much Swedish households are paying in interest to find out how much debt they may have.

"We are rebuilding as many of the variables as we can, and we will be doing this through state-of-the-art statistical techniques, including machine learning," he adds.

Sweden as a laboratory

One of the biggest questions in economics is finding out why income inequality is so much lower than wealth inequality.

"At the end of the day, wealth must be saved from income," Sodini says. "People expect Sweden to be egalitarian, and sure, it is true for income. But for wealth, it is definitely not. This makes Sweden a very interesting laboratory to study." ♦

Government lending in times of crisis

In response to the Global Financial Crisis, the Swedish government instituted a corporate lending program. Evaluating the program's effectiveness provides novel insights into how recently issued policies elsewhere — aimed at containing the fallout of the COVID-19 pandemic — will work.

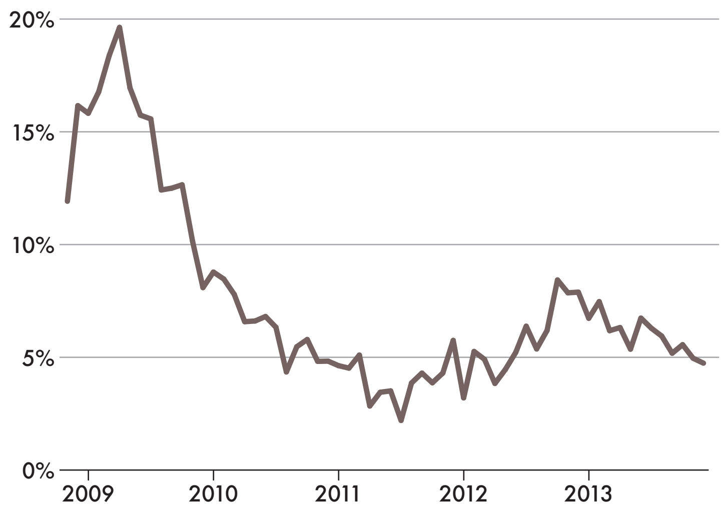
As the coronavirus pandemic spread, governments around the world shut borders, enforced lockdowns, and imposed curfews, turning business as we know it on its head. To soften the blow, countries employed an unprecedented number of temporary lending and tax deferment programs, just as Sweden did during the Global Financial Crisis (GFC). But how effective are such packages, and were they able to keep businesses afloat well after the pandemic was over?

In a new study, Gustav Martinsson and Christian Thomann, academic partner visitors at SHoF, looked into Sweden's 2009 government lending program together with James Brown from Iowa State University to ask: what kind of businesses participated in the program? What did they do with the proceeds? How did these companies fare in the years following the crisis?

Sweden's 2009 Program

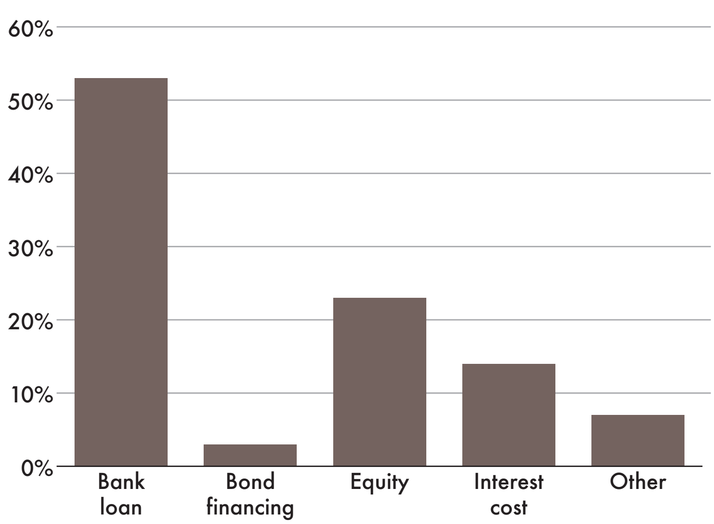
Being a small but open economy, Sweden was particularly hard hit by the financial crisis in 2008 and 2009. Although the Swedish government implemented several measures to ensure financial stability, it was concerned that the financial crisis

Percentage of Swedish companies reporting difficulty in obtaining financing



Source: Monthly survey "Financing the firm's activities", National Institute of Economic Research

Reasons why it was hard to access finance in Sweden



Source: National Institute of Economic Research had spilled over to the real economy, constraining liquidity in otherwise healthy firms.

At the peak of the crisis, more than 15% of Swedish firms reported a "considerably harder than normal" access to finance, with over half saying it was harder than usual to access normal bank loans. To combat this, the government rolled out a program which allowed firms to postpone paying all labor-related taxes and fees typically due at the end of each month.

These payments included withheld personal income taxes, fees to cover employees' social security, government-provided healthcare insurance and workers' compensation. All suspended payments were treated as a loan from the government, with a fixed interest rate of about 5.3% a year.

The maximum amount of funding each firm could receive from the program was twice the monthly amount of labor taxes and fees, roughly corresponding to 9% of the firm's total annual wage bill.

This program differed from traditional government lending programs which generally take the form of longer-term grants to small businesses, loan guarantees to particular types of firms, and the opportunity to reduce taxes by accelerating deductions and depreciation on certain types of investment.

By targeting a company's labor taxes, firms did not have to be profitable to gain liquidity from the policy. They participated by simply checking a box on the labor tax form,

"Excessive debt in the corporate sector is of course an area of concern. However, excessive deleveraging in times of crisis is likely to contribute to increasing the amplitude of the business cycle."

—CHRISTIAN THOMANN, Associate Professor, visiting from Royal Institute of Technology

"The Swedish Global Financial Crisis lending program was the first of its kind when launched in 2009. Evaluating its effectiveness is therefore relevant for policy responses to the COVID-19 pandemic both in Sweden and elsewhere."

—GUSTAV MARTINSSON, Associate Professor, visiting from Royal Institute of Technology

Read a Q&A with the researchers

making it straightforward for the firm to access the funds and for the tax agency to administer the program.

The estimated cost of administration is SEK 16 million (about US $1.5 m) or just SEK 271 (about US $25) per loan; considerably lower than the usual costs associated with underwriting unsecured loans.

What kinds of companies participated in the program?

The study found that only about 6% of Swedish companies participated in the scheme. Firms in manufacturing and services used the program at higher rates than firms in other sectors. The participating firms had less cash in reserve and entered the financial crisis with substantially higher debt-to-asset ratios.

The firms that took up the program were also younger, generated less internal cash flow, paid lower dividends, and had already used up a larger fraction of their granted credit line when the financial crisis hit. Overall, participating firms appeared to have lower access to standard liquidity management tools — like cash reserves and credit lines — to deal with a sudden short-term liquidity shock.

What did the companies do with the proceeds?

The study wanted to know if companies used the government loan to pay off other loans, but it found that companies instead used the loan to increase their overall debt levels. This means that instead of using the money to pay off debt, companies used it to improve their business, like funding their current assets.

What happened to participating firms post-crisis?

The study found that despite the increase in debt among firms, firms who benefited more from the lending program were not more likely to file for bankruptcy or encounter severe financial distress. In fact, more exposure to the program was associated with a substantial reduction in the likelihood of a firm encountering severe financial distress.

Ending lending programs

Across Europe companies now have to start repaying state-backed loans that were introduced during the COVID-19 pandemic. Sweden extended its corporate loan program in December 2022 to ease the impact of the energy crisis. The question is how the ending of different government support programs will affect business and economies around Europe. While it may be useful to extend the lending program to accommodate for the current situation, at some point the deferred taxes needs to be repaid, Martinsson and Thomann say. This can lead to debt overhang problems and prolong the economic downturn. Furthermore, other lenders may be reluctant to lend to firms that have high priority loans from the government. ♦

Views on inflation

Inflation has risen significantly faster than expected. We spoke to some of our researchers about how inflation will affect different assets and the household economy.

On the **real estate** market, **Peter Englund,** Professor Emeritus at SSE, says that property is considered a long-term asset that can serve as a hedge against inflation and is affected by long-term real interest rates, particularly in a rising interest rate environment. However, he notes that households both in Sweden and elsewhere have an unprecedented level of debt. With higher interest rates and living expenses, many households may face financial strain, particularly if they have adjustable-rate mortgages.

For **Riccardo Sabbatucci,** Assistant Professor at SSE, **"nowcasting"** is a crucial aspect of financial economics as it allows for the prediction of the present and near future using real-time data. This method is particularly relevant due to the lag time in the availability of official statistics. Nowcasting allows for an early estimate of key economic indicators, such as inflation, before official figures are released. This updated and real-time estimate is crucial for effectively managing financial risk, he explains, especially since bonds and equity markets are heavily influenced by inflation expectations and often react strongly to the release of Consumer Price Index (CPI) figures.

Magnus Dahlquist, Finance Professor at SSE, says that when it comes to **investment trends,** nominal bonds, specifically long-term bonds, are expected to underperform in the face of inflation. However, the performance of cash or short-term bonds remains uncertain. The performance of stocks and real estate may also be impacted by the type of inflation and economic growth. In a scenario where a recession coincides with rising inflation, it may be challenging for any traditional asset class to yield positive returns.

“An ‘updated’, real-time estimate of inflation, or an improved inflation expectation, is key to properly managing financial risk."

—**RICCARDO SABBATUCCI, Assistant Professor, Stockholm School of Economics**

Read the interview

Supply chain risk: changes in supplier composition and vertical integration

Global supply chains were under immense pressure this year: manufacturing giant China maintained a "Zero Covid" policy, a war raged on in grain-producing Ukraine while sanctions were put on major natural gas producer Russia. At the same time, Europe faced an unusually hot summer, drying up major trade routes, while countries around the world reeled from higher commodity prices and labor shortages.

In a new study, Swedish House of Finance's Mariassunta Giannetti, Michigan State University's Nuri Ersahin, and Southern Methodist University's Ruidi Huang look into which firms are most affected by supply chain risks and how it affects firms' policies and industrial structure as a whole.

The study found that firms facing higher supply chain risks were firms in industries that use differentiated products as inputs, firms with suppliers on different continents and firms that are small relative to their suppliers, as they have limited bargaining power.

It also found that to mitigate the impact of supply chain risks, companies invest more to increase and diversify their suppliers, suggesting changes in the geography of supply chains and organization of economic activity. Higher supply chain risks also lead to supplier acquisition. ♦

Mariassunta Giannetti is the Katartina Martinsson "Chair in Finance"

Mariassunta Giannetti has been appointed the Katarina Martinson Professor of Finance at Stockholm School of Economics' School of Business, Economics and Law.

She was awarded the position for her research on corporate governance and finance. Particularly on how both formal structures, such as laws and regulations, and informal structures, such as culture and social norms, affect corporate finance, investor behavior, and economic and financial integration.

Mariassunta has been professor of finance at the Stockholm School of Economics since December 2008. She is also a research fellow at the Centre for Economic Policy Research and a research associate at the European Corporate Governance Institute.

The chair appointment is SSE's most prestigious academic recognition for a faculty member.

"I have always been interested in studying how reducing frictions and fragmentation on financial markets can strengthen the European Union's operability."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ESG: Finding clarity through research

Environmental, Social and Governance (ESG) investing was in the spotlight this year, when several large banks and investors were fined for misleading claims about their ESG funds. What followed were calls by investors and activists alike about transparency around measuring ESG performance.

In 2022, sustainable finance continued to be an important research area at Swedish House of Finance (SHoF). This section showcases work looking into the drivers of ESG investing, the effectiveness of government subsidies to spur green consumption, and how investors can create timely impact.

SHoF also facilitated dialogue about these issues between academia, the public and private sectors. In October, Laura Starks, professor at the McComb's Business School and recipient of the 2022 Skandia Award, visited the center to discuss the opportunities and challenges of ESG investing. In 2023, SHoF will be hosting a conference on how the financial system can be harnessed as a tool in addressing climate change.

ESG investing is not just about the climate; social and governance issues are important components too. In December, SHoF hosted academics and practitioners in financial economics to attend the Women in Finance conference. This section also highlights research looking into how mergers and acquisitions can impact mental health.

How can investors have the fastest ESG impact?

Acquiring dirty firms to turn them green will create impact but buying companies that are already green — at a premium — may create impact more quickly, a new study shows.

Climate scientists say that unless greenhouse gas emissions are reduced quickly, the world faces potentially catastrophic consequences. Despite the surge in environmental, social and governance (ESG) investing, the current debate focuses on how investors can generate impact but not on how swiftly the impact can be achieved.

In a theoretical study, Swedish House of Finance's Jan Starmans, Johns Hopkins University's Deeksha Gupta and University of Hong Kong's Alexandr Kopytov investigate for the first time how investors can generate positive environmental and social impact in a timely manner: should investors passively invest in "green" firms or actively target and reform "dirty" companies?

Should investors buy "dirty" firms to turn them green?

The authors study a financial market with regular financial investors who are strictly concerned with financial returns as well as socially responsible investors who value measurable social and environmental impact alongside financial returns.

In the case where there are no socially responsible investors, the study shows that the owners of "dirty" firms will turn their companies green only if their pro-social preferences are sufficiently strong. In this scenario, to create impact, it makes sense that investors should invest in firms that remain dirty to reform the production processes.

> "The question regarding how quickly investors in financial markets can generate impact is crucial considering the current international efforts to rapidly reduce global emissions. We hope that our study raises a number of questions that will help investors to incorporate this dimension into their investment decisions and help them to be more impactful."

—JAN STARMANS, Assistant Professor, Stockholm School of Economics

Starmans, Gupta and Kopytov's study show however, that such an investment strategy can cause strategic delay in reform for some entrepreneurs.

If more investors buy dirty firms to turn them green, the higher demand may bump up acquisition prices for these companies. This incentivizes owners of unsustainable companies to keep them dirty until they find an investor, and this in turn delays the company's reform. This is also true even if the owners of dirty firms would have turned it green themselves in the absence of the socially responsible investors, the study found.

When investors commit to not buying dirty firms

ESG investors can choose a "negative screening" of their portfolios by excluding companies that do not align with certain values and the study looked into how this strategy impacts the timeliness of company reform.

It found that owners of a dirty firm with some pro-social preferences will tend to reform the company themselves if investors commit to not investing in dirty firms. They will realize that there are no gains in keeping their company dirty, so they reform the firm immediately.

However, the study also suggests that such an investment mandate may derail the reformation of dirty firms that are owned by those with weak social preferences. In this scenario, unsustainable companies will remain dirty as there are no investors in the market who are willing to acquire dirty firms to turn them green.

Hans Dalborg Award 2022

Hans Dalborg passed away last year. "He has left us with deep sadness but also with many bright memories and enormous gratitude for his lifelong contribution to academic work within finance as well as to the development of the financial industry in Sweden," says Niklas Ekvall, board chairman at the Swedish House of Finance (SHoF), and CEO of AP4.

"Hans was absolutely instrumental in the establishment, and the development of the Swedish House of Finance to become the very important national research center in financial economics it is today. This is true when it comes to raising the necessary financing, but also when it comes to his personal involvement as a board member for almost 20 years."

The Hans Dalborg Foundation for Research in Banking and Finance has provided substantial financial support to young and promising researchers for many years. In 2022, the Hans Dalborg Award was given to SHoF's Jan Starmans and Misum's Emma Sjöström for their research in sustainable finance.

Should investors buy firms that are already "green"?

Current research suggests that investing in companies that are already green is suboptimal as they already have environmentally friendly business models, and this is generally not considered to be "impact investing".

However, the study shows that when investors choose to only invest in companies that are already green and pay a premium for such firms, the current owners of the firms are incentivized to reform the firm immediately, preventing any delays and generating impact quickly.

Such a strategy can be implemented, for example, through an investment mandate where investors commit to buying stakes in firms with already high ESG standards while accepting financial returns below the market rate; the study even suggests that the more concessions investors are willing to accept on the financial returns of their green investments, the more they can incentivize current owners to reform their firms.

Implications for impact investing

The "impact" of an investment is typically measured after the investment is made, so investors who employ positive screening (to include only green firms in their portfolio) or negative screening when choosing which firms to invest in without creating additional positive change post-investment are typically not considered "impact investors".

The study, however, suggests that only focusing on impact post investment can in fact generate a delay in firm reform. It found that the quickest way for socially responsible investors to have impact is to commit to acquiring firms that are already green at a premium.

Carbon pricing research project receives SEK 5 million grant

Per Strömberg (Stockholm School of Economics), Gustav Martinsson (Stockholm University) and Christian Thomann (KTH Royal Institute of Technology) received a grant worth SEK 5.1 million from Marianne and Marcus Wallenberg Foundation. The grant funds a research project in which the three researchers will study how carbon pricing impacts firm policies and their emissions.

Carbon pricing is often emphasized as one of the most important policy tools for achieving decarbonization. In their research project, Martinsson, Strömberg and Thomann will focus on Swedish manufacturing firms and how they respond to the incentives provided by the world's largest carbon pricing market, the European Union Emission Trading System (EU ETS).

The measurable impact, at least where the pace of change is concerned, should therefore happen before the investment instead of after as focusing on results post-investment only provides a partial picture of the actual impact investors can generate. ♦

Do green subsidies work to change consumer behavior?

Transportation is the largest contributor to global warming and countries around the world are looking into tax rebates and discounts to spur green consumption and reduce emissions.

In order to mitigate the industry's impact on the climate, Sweden introduced a SEK 1 billion (US $97.5 million) subsidy program for electric bicycles in 2018, which allowed buyers to receive a 25% subsidy on the retail price of a new e-bike, capped at SEK 10,000.

It worked: e-bike sales nearly doubled, daily car commuting went down, and carbon emissions from the consumers fell.

But after exceeding the annual spending budget already during the first year, the program was axed.

A study by Swedish House of Finance's Anders Anderson and Columbia University's Harrison Hong found that the program would only break-even if the cost of carbon was US $600/ton, more than six times the market price of carbon now.

Their study is relevant given how countries around the world are looking into similar incentives to increase green consumption and reduce reliance on fossil fuels; it shows the types of data needed and steps to take in order to evaluate these programs.

“Our analysis highlights the type of data one would need and what steps need to be taken in order to evaluate any program that seeks to promote green transportation. Time is short and resources are scarce. We must evaluate these policies carefully and improve on them when necessary.”

—ANDERS ANDERSON, Associate Professor, Stockholm School of Economics

While many incentives in Europe have already been introduced in the last decade, the number of schemes has increased significantly in the past few years. In the U.S., an e-bike bill offering a 30% tax credit for E-bike purchases was introduced earlier in 2022, on top of the many regional incentives already in place across the country. ♦

Read the full article

How effective are sustainability ratings?

Morningstar introduced the "globe ratings" in 2016 to rank the sustainability of mutual fund portfolios. Research has shown that these ratings have significantly increased flows to the funds that received the highest sustainability ratings, while the funds with the lowest ratings experienced outflows.

However, a study by Swedish House of Finance's (SHoF) Mariassunta Giannetti, Warwick Business School's Nickolay Gantchev and Culverhouse College of Business's Rachel Li, found that the introduction of Morningstar's Globe Ratings caused only a temporary surge in investment flows to stocks with high sustainability assessments.

The ratings caused many sustainable stocks to become overvalued, making them less attractive to investors. This then led fund managers to offload high-sustainability stocks for undervalued and low-sustainability ones, skewing the ESG investment mechanism by pushing investment flows back to valuing performance over sustainability.

The study suggests that sustainability-rating tools may offer only a limited and short-term boost to ESG investments and that regulation may be necessary to direct capital towards more sustainable investments. ♦

ESG investing: Opportunities and challenges

Laura T. Starks, professor of finance at McCombs Business School, visited SHoF for a seminar to discuss the differences in investor motivations: financial risk and return considerations (i.e., ESG value), nonpecuniary preferences (i.e., ESG values), or a combination of the two. She is the recipient of the 2022 Skandia Award for her contributions to the field of banking, insurance, and financial services.

“Examining the ESG risks allows you to avoid some exposures that in the long-term can hurt you, and this is particularly the case with climate change,” says Starks.

Watch the interview with Professor Starks

Advancing gender representation in finance

The "Women in Finance Database" facilitates fact-finding and induces action from academic institutions. In 2021, only 20% of researchers employed to conduct financial research at leading universities were women.

Female representation varies widely within academia, and financial economics seems to be especially gender-unequal.

To increase the knowledge about the share of female researchers, the Swedish House of Finance (SHoF) launched the "Women in Finance Database", a tool to monitor the participation of women working with financial research at leading research institutes around the world. The purpose of the project is to make the share of women in this field available to the public.

SHoF collected information about 5,653 researchers at 133 research institutions across 20 countries. All finance departments and divisions at universities and business schools featured in UT Dallas Business School's Global Top 100 and European Top 50 rankings were included. The statistics can be visualized at country, institutional, and seniority level, ranging from research associate to full professor.

The Women in Finance database will become a panel dataset to be updated every year. Over time, it will be possible to analyze researchers' movement patterns, including their position changes, and dropout rates, and whether these differ from their male peers.

"A more diverse staff increases innovative thinking and improves the work environment."

—MARIEKE BOS, Deputy director and researcher SHoF

"The tool is a service to the academic community. The data can be used for benchmarking. If you want to evaluate the diversity of your own research group, it is of course much easier if you can compare it to others or to an average."

—GÖRAN ROBERTSSON, Executive Director SHoF

Fewer women at the top

As of June 2021, only one out of five researchers in financial economics were, on average, women. However, this number varies significantly across countries, universities, and hierarchical levels. A striking pattern found among almost all countries and institutes is that the proportion of female researchers declines with increasing seniority. This pattern seems to be even stronger amongst the top-ranked institutions.

In Sweden, 32 female researchers are active at the three Swedish universities featured in the database (The Stockholm School of Economics, Stockholm University, and the University of Gothenburg). After Australia, Sweden has the second highest female representation in the world, with 29% of academic positions filled by women. At the full professorship-level, however, the country falls back to the third position, behind Norway and Canada, with 19% female professors.

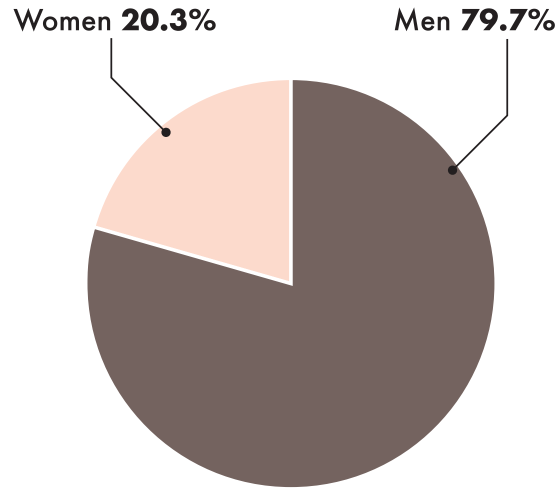
"It is good to keep in mind that we are often only talking about a handful of female professors. So, if one of them moves or retires, institutions and/or countries can rise or plummet fast in these rankings. On a similar note, it is tougher for large research departments to feature a high percentage of women relative to tiny departments," highlights Marieke Bos, deputy director and researcher at SHoF.

A benchmark tool can also advance a diversity in the finance industry

The tool will make the relative share of women across universities more transparent, and increase incentives for universities to continue recruiting out of a diverse talent pool.

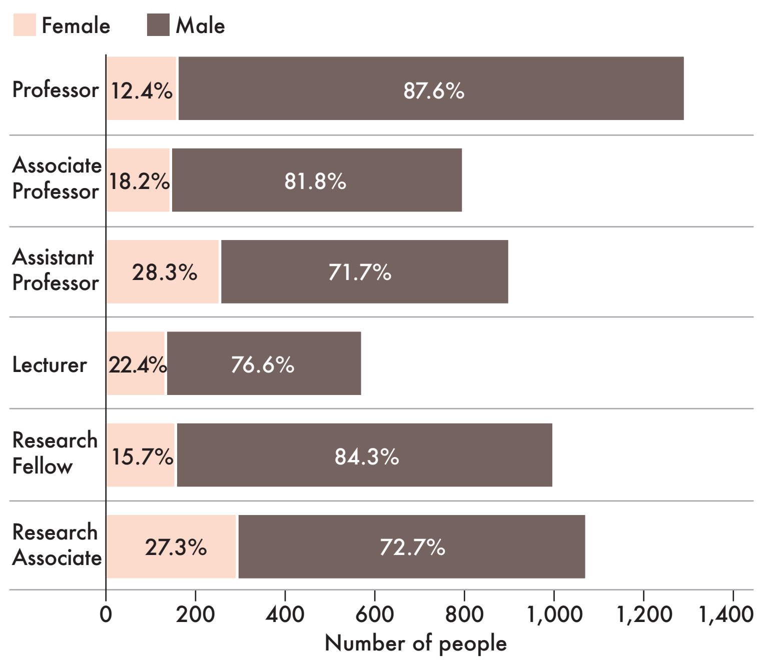
A more diverse group of academics that will teach the MBA, MSc, and BSc programs in Finance can also help to improve gender balance in the financial industry, as female role models can inspire more female students to consider studying financial economics. ♦

Gender distribution among researchers



Source: Women in Finance Database
Note: Based on positions at 133 research institutions, excluding non-academic staff.
As of June 2021.

Gender distribution across hierarchical levels



Source: Women in Finance Database
Note: Based on positions at 133 research institutions, excluding non-academic staff.
As of June 2021.

Discover more about the women in finance data

Gender and promotion gaps in the finance industry

How can businesses retain women and achieve more equality in representation and compensation across their company? The Swedish House of Finance hosted a conference in December to discuss what can be done to advance women into senior positions.

Some of the topics discussed were:

- **Evidence from the current situation** with Maija Inkala, spokesperson of Allbright, and Maria Janson, Head of Institutional Banking at Swedbank and Chair of Swedish Securities Markets Association.

- **Programmes and policies towards gender equality** in the public and private sectors with Kerstin af Jochnick, Member of the ECB's Supervisory Board ECB, and Eva Halvarsson, CEO of AP2.

- **Exit strategies and practical tools** to reduce the promotion gap and increase female representation in senior management with Joakim Nordenstam, Head of People at DNB, and Maria Lindbom, CEO of Lager & Partners. ♦

'Potential' and gender promotion gap

Kelly Shue, Professor at Yale, presented a study showing that women are consistently judged as having lower leadership potential than men, even though their performance is rated equally or higher than their male counterparts. The study showed that lower potential ratings explain up to 50% of the gap in promotions.

The study revealed that managers hold female employees to a higher standard than men, and underestimate women's abilities to perform in the future. Shue explained that 'potential' — measured in general in terms of assertiveness, execution skills, charisma, leadership, and ambition, for example — is a more abstract concept than performance, and hence subject to greater biases.

"It's not necessarily about us having negative stereotypes of women, we might view women as being conscientious or hardworking. But because these are not the same stereotypes that we associate with successful management, then we are less likely to forecast that women have high management potential."

Watch an interview with Professor Shue

How do mergers and acquisitions impact employee mental health?

Companies usually engage in mergers and acquisitions to encourage growth and to assert a competitive edge, but this often means restructuring, reorganization, potential job losses and general uncertainty, which can have detrimental effects on employees' mental health.

A study by Marieke Bos, Ramin Baghai and Laurent Bach, together with Nova School of Business and Economics' Rui C. Silva showed that M&A negatively impact workers' mental health across all indicators, including stress and anxiety, depression diagnoses, both inpatient and outpatient care, medication prescription, and even death and suicide. ♦

"We document negative effects of acquisitions on the well-being of workers, comparable in magnitude to other important personal events in workers' lives."

—RAMIN BAGHAI, Associate Professor, Stockholm School of Economics

+8%
Depression diagnosis

Blue-collar workers
worst-off

Target firms'
employees impacted more

Horizontal mergers
Impact is greater when competing firms merge

+ 9.6%
Antidepressant medication

31-50
Age group most impacted

Women
impacted more

Read the full article

Future of finance

The utopian vision of decentralized finance, where central banks and other financial intermediaries are nonexistent and transactions are conducted via blockchain, was greatly challenged in 2022.

As central banks tightened monetary policy, the crypto market tumbled, causing sell-offs and failures of various crypto companies and projects like Terra. The dramatic downfall of the FTX exchange marked the end of business-as-usual for the industry.

These failures have sparked calls for increased regulation in the crypto industry due to issues such as fraud, theft, and irresponsible lending and trading. Investors, analysts and policymakers say that proper government oversight could have prevented many of these problems.

This section provides highlights from Swedish House of Finance's seminars and conferences on the impact of digitalization, cryptocurrencies, Artificial Intelligence (AI), and machine learning on finance, where researchers, policymakers and practitioners discussed central bank digital currencies (CBDCs), the future of decentralized finance, and AI and machine learning's impact on financial services.

Who will win the battle between innovation and regulation?

Easy, fast, efficient and financially inclusive – the crypto economy and decentralized finance have exploded into a multibillion-dollar industry, sparking a wave of global disruption set to change the face of traditional finance. Or will it?

In the last couple of years, we have watched algorithms making inroads into almost every aspect of finance, leaving regulators with a very difficult task to fulfill. Many are struggling to find ways of protecting investors and consumers, while at the same time leaving the door open for innovation.

Then came 2022, churning out one devastating calamity after the other amongst prominent crypto actors like FTX and Terra Luna. Might these developments allow regulators and central banks to catch their breath, and get back into the game on their own terms? In this section we share insights from some of the seminars that were arranged on these issues.

A brief history of money and the role of the central banks

Gary B. Gorton, the Frederick Frank Class of 1954 Professor of Finance at the Yale School of Management explained that there is nothing new in the rise of new monetary technologies. In the past there were many cases of private money issuance.

Before the US Civil War, there were 1,500 banks issuing their own notes in different denominations. The difficulty was to keep a stable value on those currencies, as well as to contain the spread of counterfeits, which eventually led to private currencies being banned. The reason the central banks were given the monopoly in the first place was to issue money, and manage and guarantee its value.

> “History has proven time and time again why central banks should hold the monopoly of circulating money; but that is not even part of the conversation at the moment, which makes me very pessimistic about the future.”
>
> **—GARY B. GORTON, Professor at Yale University**

Pathways to governance in the decentralized economy

Darrell Duffie, the Adams Distinguished Professor of Management and a professor at Stanford University's Graduate School of Business agrees that the reliance on trusted official money is at the core of an efficient economy. "It's hard to run an economy if you can't trust the payments, but it's also hard if you can't carry out those payments cheaply and efficiently."

He suggests that countries that do not invest in understanding decentralized finance drivers and digital currency options are going to be left behind, highlighting that there are already many different initiatives underway to explore the viability and functionality of Central Bank Digital Currencies (CBDC). Only 11 countries have fully launched a digital currency, data from the Atlantic Council CBDC Tracker shows, even though 114 countries, accounting for more than 95% of global GDP, are exploring them. "Very few countries have actually deployed a CBDC. And the reason for that is not only technology, it's also economic policy."

Duffie's proposal to the US Federal Bank is to use regulation and fast-payment infrastructure to promote a more open, efficient, and competitive bank-railed payment system. He also suggests it should allow the entry of private stablecoins and fintech banks, subject to compliance and interoperability standards, alongside continuing the development of CBDC technology, and supporting wholesale CBDCs for settlement systems and cross-border payments.

But challenges still abound, including the fact that central banks only have jurisdiction over their own territories, with no way of serving an algorithm legal notice. Stefan Ingves, the head of Sweden's central bank at the time, said in the same seminar that ideally we need global coordination to resolve these issues. But looking at the state of the world he doubts that will be an option in the foreseeable future.

Antoinette Schoar, the Michael M. Koerner Professor of Entrepreneurial Finance at MIT Sloan School of Management suggests placing regulatory oversight at the level of the validators and developers that control the network protocols of the blockchain. These "on-off" ramps to the blockchain are entities with an address, a CEO and a board of directors, and therefore legally liable, unlike the blockchain itself. If the validators are known and regulated, she said, it will be in their interest to verify that only certified participants transact on the blockchain. To support cross-border use, countries agreeing on standards can use the same blockchain to fight crime, terrorism, tax evasion and fraud, which can then be built out to support further applications. ♦

Industry seminar with Gary B. Gorton from Yale School of Management and Stefan Ingves, former Governor of Sverige Riksbank, held in the fall 2022. Panel moderated by Pehr Wissén.

Access more insight on digital money and DeFi

Is there a future for "stable" stablecoins?

In 2022, one of the largest stablecoin platforms on the market, Terra Luna, tumbled and lost its entire value. This initiated a debate about the very future of stablecoins. Adrien d'Avernas and Vincent Maurin, researchers at Swedish House of Finance, wrote a paper analyzing what would be required for a stablecoin to thrive. This is what they have to say about the main outcomes.

Our theoretical analysis shows that most stablecoin designs are prone to crashes; that is, the promise of a stable value is not fully credible. Not surprisingly, recent failures were concentrated on algorithmic stablecoins that have no reserves to back issuance.

In our study, we show how safe collateral fosters stability. A fully backed stablecoin resembles a narrow bank in that it only invests in the safest assets available. This helps to avoid crash risk. While such a design would ensure stability, only time will tell if private stablecoins can survive technological innovation by central banks in the form of central bank digital currencies.

Safe collateral comes at a cost

We also note that holding very safe collateral comes at a cost: stablecoin issuers must hold large amounts of low-return assets. Ultimately, the optimal amount of reserves solves a trade-off between issuer profit and stability. As long as investors can assess this trade-off and the inherent risks in a transparent way, there is

"Rather than forcing stablecoin issuers to hold reserves, a more promising regulatory venue would thus be to mandate disclosure of reserves."

—VINCENT MAURIN, Assistant professor, Stockholm School of Economics

"Interestingly, we also find that decentralization can foster price stability."

—ADRIEN D'AVERNAS, Assistant professor, Stockholm School of Economics

nothing wrong with algorithmic stablecoins, which have little or no reserves. Rather than forcing stablecoin issuers to hold reserves, a more promising regulatory venue would thus be to mandate disclosure of reserves. This would help investors tell truly stable stablecoins apart from speculative investments.

We also find that smart contracts — small programs in charge of executing pre-designed policies such as the automatic redemption of a stablecoins against collateral — can enhance trust in these systems. With smart contracts there is no need to just "believe" that the platform will always redeem a stablecoin for one dollar of collateral, since the operation executes on an immutable piece of code.

Interestingly, we also find that decentralization can foster price stability. In the case of DAI (see the box on the right), users themselves are in charge of issuing and redeeming stablecoins in exchange for collateral. By design, these users can make profits by carrying out these redemptions when the value of the stablecoin is not equal to US $1. Thus, as long as someone is ready to step in to profit from these operations, these users can adjust the supply of stablecoins in order to guarantee the peg without needing a decision from a central actor (such as in the case of Tether).

Thus, our analysis points towards over-collateralized and decentralized stablecoins as being the most promising. ♦

A brief overview of stablecoin

A stablecoin is a crypto asset pegged to another asset. The asset usually consists of a fiat currency such as the U.S. Dollar, or a precious metal. The purpose of a stablecoin is, as its name suggests, to maintain a relatively stable price in order to help users avoid the volatility risks that are increasingly associated with the crypto markets.

In considering ways for governments to approach decentralized finance, regulators are now beginning to look more closely at stablecoin as one of the potential pathways, alongside central bank digital currencies (CBDC), to help them maintain control over their currencies.

The question is whether a regulated version of stablecoin issued by central banks could be a solution to enable cheap, fast and smooth payments? And if so, how should privately produced stablecoins be regulated?

Fiat-backed, crypto-backed, and algorithmic are currently the three main types of stablecoin:

- Fiat-backed stablecoins, like Binance USD (BUSD), are pegged to traditional fiat currencies. They maintain a peg by keeping fiat reserves that can be exchanged for the stablecoin.

- Crypto-backed stablecoins (such as DAI) tend to over-collateralize their tokens in order to factor in crypto price volatility.

- Algorithmic stablecoins control supply without the need for reserves, using algorithms and smart contracts to manage that supply. This model is less commonly used than crypto or fiat-backed stablecoins, and more challenging to run successfully. It is the type of stablecoin to which Terra Luna belongs.

How artificial intelligence and machine learning are impacting the finance industry

An influx of data and new technology is transforming financial services. Bringing together leading academics and practitioners from around the world, the 2022 edition of the Swedish House of Finance's annual conference discussed the various ways in which artificial intelligence (AI) and machine learning (ML) are impacting the finance industry.

The conference participants shared their experiences with using AI and machine learning in their work, including in areas such as algorithmic trading, portfolio optimization, and fraud detection, and delved into the potential of these technologies. However, limitations were also pointed out, especially in regard to trust and transparency in the implementation of these models.

Erik Thedéen, former Director General of the Swedish Financial Supervisory Authority and now the Governor of the Swedish Riksbank, was a keynote speaker at the conference. Here are the key takeaways from his speech:

Transparency and explainability

The need for more transparency in AI and machine learning models cannot be overstated, said Thedéen. To establish trust in these systems, it's imperative

"We have seen cases where it's clear that even highly educated financial advisers, as well as their clients, don't really understand how these products work. This allows financial service providers to exploit that knowledge gap if the incentives are not correctly set. You may want to regard this observation as theoretical - but it's not."

—ERIK THEDÉEN, Director General of the Swedish Supervisory Authority at the time

that the outside world, regulators, and clients comprehend their functioning.

"In the future, you will need to be able to explain to your client how your advice, or your model, acted and why," he said. "This is something that also European regulators will be focusing on in the new AI Act."

Data governance and integrity – getting the fundamentals right

Data governance is crucial for maintaining the integrity of the data used by algorithms. Thedéen noted that before discussing AI and automation, fundamental issues must be addressed.

"A general problem in the financial sector resides in the area of consumer finance. The most important word here is 'incentives', where banking and financial services employees are encouraged to sell— or to advise, as they call it— expensive and complex products that customers may not fully understand, and which are not always in their best interests to invest in."

Closing the financial advice-gap and supporting financial inclusion

Robo-advisory services in the Swedish market are growing and that there are many benefits to this development, including increased access to independent advice for a wider range of people and households.

"Providing advice based on solid theory and practice to lower-income households will help to narrow the advice gap and promote financial inclusion," he said. "Many household investors may feel more comfortable to have someone hold their hand when making investment decisions, but in my opinion, it's worth considering that independent robo-advice can be more factual and unbiased than human advice."

Better diversification and credit assessments

Robo-advice has the advantage of providing better diversification, with checks in place to prevent over-selling in downturns, said Thedéen. He also sees potential for robo-advisors to provide more objective credit assessments and reduce biases related to race, gender, and class.

Despite the associated risks, Thedéen believes that there are numerous opportunities to be had from using AI and ML in finance, provided they are implemented correctly and guided by the right incentives.

"If we succeed in applying AI and machine learning in the right way, based on the right incentives, maybe the financial industry will do better in the future when it comes to delivering on its main purpose namely to lend, to save, and to pay." ♦

Watch the conference videos

Organization

Research Team

The international research team at the Swedish House of Finance (SHoF) and the Department of Finance at the Stockholm School of Economics ranks #4 in Europe and #27 in the world, according to the Washington University Ranking which measures publications in top academic journals in the last five years.

Data Center

Access to high-quality financial data for research purposes stimulates academic research and contributes to higher education. SHoF Research Data Center has a national mission to develop and distribute valuable datasets to the benefit of the academic community. By providing this data to researchers and students free of charge, SHoF Research Data Center lowers the barriers to empirical research.

National PhD-program and academic seminars

The National PhD Program in Finance is open to all doctoral students in finance at Swedish universities. It gives PhD students the opportunity to participate in top-quality graduate level courses in finance. Leading researchers from around the world are invited to discuss their latest work at weekly academic seminars.

Governance

The Swedish House of Finance at the Stockholm School of Economics is Sweden's national research center in financial economics. It serves as an independent platform where academia, the private and public financial sector can exchange knowledge and gain access to a global network of leading researchers in finance.

Partners

Funding is provided both by the Swedish government and the Swedish private financial sector. Our partners support independent, high-quality research in all areas of financial economics. The Swedish House of Finance collaborates with a range of academic institutions in Sweden and abroad. Our Swedish Academic Partner Program supports faculty recruiting and retention at finance departments and institutions in Sweden.

Resident researchers

The Swedish House of Finance hosts approximately 65 researchers. This includes 25 research fellows, 15 research assistants and 25 PhD students in the field of finance. In addition, many researchers visit the center for a few days or up to several months, every year.

ANDERS ANDERSON

Associate Professor

Anderson's research focuses on **behavioral and consumer finance**, as well as trading behavior of individual and institutional investors. He is currently interested in the relationship between knowledge, confidence and choices, particularly in the area of **sustainable investment.**

Read: Financial Literacy in the Age of Green Investment

RAMIN BAGHAI

Associate Professor

Baghai's research focuses on **corporate finance.** His latest work explores how mergers affect the **mental health** of employees; how **credit ratings** are used in the delegated management of **fixed income assets** to limit risk taking; and whether the provision of **wage and employment insurance** by firms differs for men and women.

Read: How Do Mergers Affect the Mental Health of Employees?

BO BECKER

Head of Department of Finance and Professor of Finance

Becker's research is on **corporate finance,** especially **corporate credit markets, credit cycles** and **corporate governance.** Recent topics include how corporate debt contract features can improve investment efficiency, zombie lending to distressed borrowers in the Euro area, the design of delegated asset management in fixed income, and the optimal design of insolvency systems.

Read: Disruption and Credit Markets

CLAS BERGSTRÖM

Professor Emeritus in Finance and Law

Bergström's research areas include corporate finance, **corporate and securities law.**

MARIEKE BOS

SHoF Docent and Deputy Director

Bos' research lies in the field of **household finance** and **empirical banking.** Her current research focuses on how acquisitions affect the mental health of employees; the economic consequence of a **mental health** diagnosis; intergenerational transmission of financial distress; and **consumer debt** resolution.

Read: Impulsive Consumption and Financial Well-Being: Evidence from an Increase in the Availability of Alcohol

ALVIN CHEN
Assistant Professor

Chen´s research focuses on **corporate finance, contract theory,** and **information economics.** He has recently carried out research on how companies should be compensating non-executive employees who face promotion risk, and how stock buybacks affect different types of shareholders.

Read: Incentivizing Rank-and-File Workers with Equity Pay

MAGNUS DAHLQUIST
Peter Wallenberg Professor of Finance

Dahlquist's research interests lie in **asset management, asset pricing,** and **international finance.** He currently focuses on the **investment behavior** of individuals' and institutions'; **pension plan** design; **trading strategies** in the bond and currency markets; and performance evaluation.

Read: International Capital Markets and Wealth Transfers

ADRIEN D'AVERNAS
Assistant Professor

D'Avernas' main research focuses on financial markets and the macroeconomy with emphasis on **financial intermediation, monetary policy,** and **digital money.** Recent topics are disruptions in the money market; the impact of shortages of Treasury bills on the pricing of short-term assets; and the stability of stablecoins.

Read: Central Banking with Shadow Banks

MEHRAN EBRAHIMIAN
Assistant professor and Eva and Mats Qviberg Research Fellow

Ebrahimian's research focuses on the impact of financing frictions on the real economy, especially as it relates to **inequality.** He has recently been studying entrepreneurship in **low-income regions.**

Read: How Venture Capitalists and Startups Bet on Each Other: Evidence From an Experimental System

PETER ENGLUND
Professor Emeritus

Englund's research areas include **real estate finance,** banking and **financial stability.** He is currently interested in taxation and other housing market policies as well as **macroprudential policy.**

Read: Financial regulation and macroeconomic stability in the Nordics

MARIASSUNTA GIANNETTI

Katarina Martinson Professor of Finance

Giannetti has broad research interests in the areas of **corporate finance** and **financial intermediation.** She has recently studied the transmission mechanism of monetary policy. One of her papers shows that negative interest rate policies pretty much produce business as usual, and that negative rates on corporate deposits stimulate firm investment.

Read: Is there a zero lower bound? The effects of negative policy rates on banks and firms

ANASTASIA GIRSHINA

Assistant Professor

Girshina's research focuses on the fields of **household finance** and **real estate finance.** Some of the topics she has been working on lately include the role of education and gender for saving decisions, portfolio choices, and wealth accumulation. She is the **Deputy Director of MiDA** - the Institute for Micro Data.

Read: Why Women Earn Lower Real Estate Returns

ALEXANDER LJUNGQVIST

Professor, Stefan Persson Family Chair in Entrepreneurial Finance

Ljungqvist's research covers the areas of **corporate finance, governance,** and **taxation,** investment banking, **IPOs,** entrepreneurial finance, private equity, venture capital, **asset pricing, market microstructure, innovation,** and patents.

Read: Do Corporate Disclosures Constrain Strategic Analyst Behavior?

VINCENT MAURIN

Assistant Professor

Maurin's research interests lie in **financial contracting, intermediation,** and market structure. His most recent research focuses on the design of **central clearing counterparties,** as a means to mitigate risk in financial markets and liquidity risk in private equity.

Read: A Theory of Liquidity in Private Equity

DIOGO MENDES

Assistant Professor

Mendes' research focuses on **empirical corporate finance, financial economics** and **development economics.** He is currently working on a project on **zombie-firms** and bankruptcy triggers, as well as on the impact of the pandemic in **real estate** markets.

Read: The Impact of Financial Education of Executives on Financial Practices of Medium and Large Enterprises

OLGA OBIZHAEVA
Assistant Professor

Obizhaeva is working in the areas of **institutional asset management** and **market microstructure.** Her most recent work analyzes the impact of **search engine technology** on financial markets.

Read: "OK Google": Online Visibility and ETF Fund Flows

MARCUS OPP
Professor

Opp's research **spans contract theory** and **financial intermediation.** His most recent research analyzes the economics of **socially responsible investment** (which won the European Finance Association 2020 best paper prize in responsible finance) and discusses whether and how to integrate **climate change** into financial regulation.

Read: A theory of socially responsible investment

RICCARDO SABBATUCCI
Assistant Professor

Sabbatucci's research is focused on **empirical asset pricing.** Lately, he has studied the impact of the pandemic on financial markets and **payout decisions** of companies and the information embedded in high-frequency firm-specific data for **forecasting** purposes.

Read: The Term Structure of Cash Flow Risk

TOBIAS SICHERT
Assistant Professor

Sichert's research focuses on understanding and learning from **asset prices,** as well as **financial econometrics.** He is currently working on applying **machine learning** methods to finance, for example, in order to better understand option returns, and their relation to the return of the underlying stocks.

Read: A Non-Linear Market Model

PAOLO SODINI
Professor and Director of MiDa – the Institute for Micro Data at SSE & SHoF

Sodini's research focuses on **household finance.** He has studied **household savings** and **portfolio choices,** focusing on their determinants as well as their effect on **wealth inequality.** He also has worked on the impact of **homeownership** on household economic outcomes and **gender bias** in real estate markets. He uses big data containing information on the finances of Swedish households to conduct his research.

Read: Can Security Design Foster Household Risk-Taking?

JAN STARMANS
Assistant Professor

Starmans focuses his research on **corporate finance, sustainable finance, contract theory,** and **search theory.** He is currently exploring how quickly socially responsible investors can induce firms to reduce their negative externalities, and which investment practices they can use to have **timely impact.**

Read: The Pace of Change: Socially Responsible Investing in Private Markets

PER STRÖMBERG
SSE Centennial Professor of Finance and Private Equity

Strömberg currently focuses his research on **private equity, angel investing,** and the effects of **carbon pricing** on firm behavior. Strömberg currently focuses his research on private equity, angel investing, and the effects of carbon pricing on firm behavior.

Read: Carbon Pricing and Firm-Level CO2 Abatement: Evidence from a Quarter of a Century-Long Panel

DONG YAN
Assistant Professor

Yan's research focuses on **corporate finance, M&A,** and the real effects of **financial markets** on corporate investment activities. Her work covers, for example, how financial information and financial constraints affect corporate production and **inventory management,** as well as the value of callable bonds in facilitating investments and takeovers.

Read: Credit Risk, Debt Overhang, and the Life Cycle of Callable Bonds, Review of Finance.

YE ZHANG
Assistant Professor and Eva and Mats Qviberg Research Fellow

Zhang's current research focuses on **sustainable finance** and **diversity** in the **venture capital** industry, as well as on the bargaining process in the **housing market.** She uses various field and lab-in-the-field experiments to conduct her research.

Read: Impact Investing and Venture Capital Industry: Experimental Evidence.

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Data Center

Access to high-quality financial data for research purposes stimulates academic research, and contributes to higher education. Today, these datasets have become highly priced commodities that are packaged and sold for commercial use. By providing financial data to researchers and students free of charge, Swedish House of Finance's Research Data Center lowers the barriers to empirical research.

Nordic Compass: Unlocking the black box of ESG investment

The Swedish House of Finance ramps up its ESG database established in 2014 to widen access and deepen granularity.

In a very short space of time, ESG (Environment, Social & Governance) investment has risen from a nice-to-have, to in 2021 encompassing about one third of the world's assets under management. Nordic Compass, an ESG database hosted by Swedish House of Finance, is open to all researchers at Swedish Universities, making it possible to research and evaluate corporate sustainability data for companies listed at Nordic stock exchanges to as far back as 2014. Nordic Compass sets out to help stakeholders, investors and regulators to ensure that ESG investments really hit the mark.

Are investment flows really being guided into projects that progress and accelerate planetary and societal wellbeing? If we break it down, where is progress being made in terms of carbon emissions – whether looking at corporations' own operations, and all the more importantly, their external footprint? How much of ESG investment is actually accelerating green technology and infrastructure with positive and measurable outcomes? At what rate are companies advancing gender equality and inclusion in real terms, and what are the underlying drivers? Where is it not working out as expected, and why? What more, concretely, needs to be done?

These are questions that occupy the mind of Anders Anderson, Associate Professor at the Stockholm School of Economics, working with the Swedish House of Finance's Nordic Compass ESG database.

"We see an enormous opportunity for researchers and financial services practitioners in the Nordic countries – to come together to help unlock the black box that ESG investments today entail."

—ANDERS ANDERSON, Associate Professor at the Stockholm School of Economics

Corporate sustainability database with long pedigree

Anders explains that the Nordic Compass database was established in 2014 in order to evaluate how large sized corporations in the Nordic region were meeting their UN Sustainable Development Goal (SDG) commitments. The purpose is to facilitate access to high-quality financial data for researchers, and by extension, financial analysts.

"Raw individual firm-level data for specific ESG variables is either widely unavailable or too expensive for researchers to access. The fact that Nordic Compass started gathering such data in 2014 makes us one of the longest running public corporate sustainability databases in the world."

So far Nordic Compass has kept a relatively low profile, but with alarming developments around the world in terms of climate change, biodiversity loss and systemic inequality, Anders reasons it is high time to spread the knowledge of the database's existence more broadly.

Deepening scope and capabilities to narrow ESG measurement gaps

"Not only does Nordic Compass provide researchers with quality data relevant to the ESG purpose, we also provide them with a methodology that helps them define and detect different economic activities, and provides them with tools to map these economic activities as net contributions to the different UN SDG goals." Anders pointed out that the methodology to perform SDG alignment assessments is still far from standardized, which is hampering investments that would otherwise contribute in a more targeted way to meeting environmental and social goals.

"That is why we are now working on a methodology that will help researchers and financial services practitioners – especially fund managers – to access more detailed ESG investment insight, as a means to avoid falling foul of greenwashing and ensure focused and measurable investment outcomes."

On top of that, Nordic Compass will now study the differences in SDG alignment assessments between different SDG data vendors. The objective is to detect and measure where uncertainty in these assessments is the largest, and where the marginal utility for further research is the highest, in order to develop a modern data infrastructure that corresponds to today's needs. The idea is also to focus more on mid-cap companies than in the past. ♦

Learn how to use the Nordic Compass database

Discover datasets available at SHoF's research data center

Learn more about the datasets

Finbas

The Finbas database is a high-quality financial database containing daily end-of-day stock price data, with a record of corporate actions and fundamentals from the Nordic Stock Exchanges, MTF and OTC markets. The data is available for Sweden, Norway, Denmark and Finland, with records of each country going back to 1912, 1980, 1993 and 1986 respectively.

NASDAQ HFT

The High-Frequency Trading database contains all messages (orders, cancellations and trades) sent and received to the Stockholm Stock Exchange matching engine. All datasets are based on the NASDAQ OMX Historical ITCH files from 2010.

Serrano Database

This database covers financial history for all Swedish companies since 1997, based on financial statement data from the Swedish Companies Registration Office (Bolagsverket). In addition, there are records covering general company data from Statistics Sweden (SCB), bankruptcy information from the Swedish Companies Registration Office, and group data from Bisnodes group register.

Nordic Compass – Swedish House of Finance's ESG Database

This database covers the Environmental, Social and Governance data (ESG) of 400+ publicly traded Nordic large-cap and mid-cap companies, established in 2013. ESG-data is collected from company reporting and disclosures by a data collection team. It is then structured and harmonized. The dataset includes ISIN codes and organization numbers that link to other datasets.

PAtLink

Link patents and organizations with PAtLink, a database that matches unique patent/trademark identifiers with unique organization identifiers. The database includes all patents belonging to Swedish firms since 1990, sourced from Patstat, and organization numbers from the Serrano database, enabling the correlation of patent information with accounting and financial data of the patenting firms

Fama-French Factor

The Three-Factor Model (market, size, value) database, developed by Eugene Fama and Kenneth French, improves on the traditional CAPM model by explaining a larger fraction of long-term expected return variations. This dataset also includes the momentum factor proposed by Mark Carhart.

Historical Archives

Explore historical data with two archives: one containing annual reports for companies listed on the Stockholm Stock Exchange between 1912-1978 in PDF format, and another holding official stock lists from the exchange spanning 1912-2007. We are continuously updating the archive to include data from 1979 onwards

National PhD program

The National PhD Program in Finance is open to all PhD candidates in financial economics at Swedish universities. It gives students the opportunity to participate in top-quality graduate level courses in finance. The program consists of five core doctoral finance courses. In addition, several one-week courses are offered alongside the core courses. These intensive mini-courses cover specialized areas of finance, and are typically taught by leading experts.

Johan Waldén
Professor, UC Berkeley, Haas School of Business

Continuous Time Finance

The development of derivatives markets may be the single most important innovation in financial markets in the last fifty years. The course focused on applied stochastic calculus applied to problems within finance. Students applied the theory to derive many continuous time asset pricing formulas, including the celebrated Black-Scholes formulas for pricing plain-vanilla options.

Darrell Duffie
Professor, Stanford's Graduate School of Business

Digital Currencies: Policy Economics

Globally, there is a debate over how to develop payment systems. This course gave an overview of digital currencies and payment system innovation. The course looked into topics such as the industrial organization of payment markets, the impact of fintech payment market entry on bank credit provision and implications for currency dominance and financial sanctions.

Peter Koudijs
Professor, Erasmus University Rotterdam

Four Centuries of Finance

Finance history is not only interesting in its own right, it also enables analyzing different settings that are closer to the simplified settings of theoretical models. It can also provide a long-term perspective on important questions. In this course, students discussed how historical research can provide fundamental insights into the models that underpin financial economic thinking today.

Academic seminars

The Swedish House of Finance (SHoF) also arranges weekly academic seminars throughout the year. Every Friday, leading researchers from around the world are invited to discuss their latest work.

Meanwhile, SHoF and Stockholm School of Economics research fellows and PhD-students regularly present their ongoing work at informal seminars.

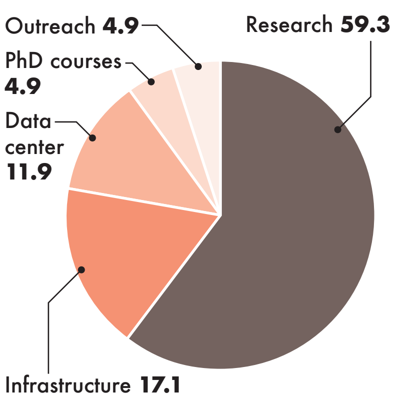
See calendar for upcoming academic seminars

Center Financing

We are very grateful to all our partners for their financial support. Part of our success can be attributed to the fact that the Swedish House of Finance (SHoF) is recognized as an independent center of excellence. A mixed funding from government, research foundations and private industry allows for nonpartisan and unbiased research, which is equally important for the researchers themselves as well as those drawing on their competence.

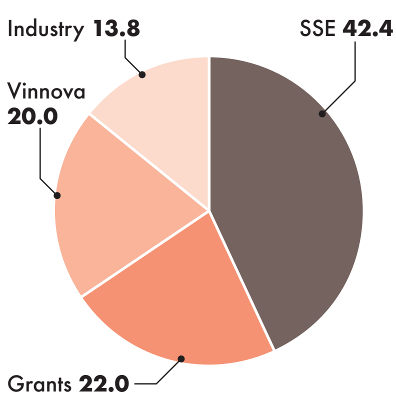
The total costs for 2022 amounted to SEK 98.2 million, an increase from SEK 83.0 million in 2021, which is due to several new large projects throughout the year. The center's costs are categorized in terms of five areas of activity:

Cost distribution in 2022



Note: Values are in MSEK

Funding distribution in 2022



Note: Values are in MSEK

Research: Salaries of researchers and funding for PhD students make up a significant part of research costs.

Research infrastructure: The center aims to provide researchers with necessary research infrastructure, which is often difficult to fund through research grants alone. The core of these operations includes premises, management, and research administration.

Data Center: The Data Center has two principal tasks: (i) to develop national research databases in finance and an infrastructure which facilitates the work of researchers, and (ii) to provide researchers in Sweden with access to international databases in the field of finance.

PhD courses: The costs are related to the remuneration of teachers for doctoral courses and the reimbursement of expenses for course participants from universities other than SSE.

Outreach: The outreach activities aim to bridge the gap between academia and practice by disseminating research via various channels such as conferences, seminars, press and social media.

Disseminating research in 2022

4	**CFAR ranking of financial research ranks the SSE finance department as number four in Europe**
12	**papers published in top 8 journals in financial economics**
18	**feature articles explaining financial research to practitioners with over 3,200 unique readers**
26	**percent increase in newsletter subscriptions**
28	**new videos featuring leading experts**
77	**seminars, conferences and roundtable discussions**
112	**percent increase in website traffic to the Data Center**
1,274	**new LinkedIn followers**
20,530	**downloads of Swedish House of Finance research papers on SSRN**
37,933	**YouTube views**

*** Numbers refer to January 1 to December 31, 2022**

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The Board of Directors consists of representatives from the Swedish financial industry and Stockholm School of Economics.

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"We would like to recognize the valuable support of our partners and friends who have helped the Swedish House of Finance become a world-class institution. Without your generous contributions of funds, time, and effort, SHoF would not be possible. We encourage companies, organizations, public institutions, and private donors to collaborate with the Swedish House of Finance in our mission to strengthen the Swedish financial market through frontier level research and fact-based discussion."

—BO BECKER, Director of the Swedish House of Finance

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SWEDISH HOUSE OF FINANCE

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