

On February 29, 2024 the **Macroeconomic Risk Chair** awarded the **2023 Junior Research Prize** to **Moritz Lenel** (Princeton University) and **Rohan Kekre** (The University of Chicago Booth School of Business) for their paper entitled “The Flight to Safety and International Risk Sharing”. Following the award we had the opportunity to interview them about their research.

This newsletter includes **the interview** with Lenel and Kekre, a brief description of **their awarded paper**, as well as **three research papers** on fiscal policy, monetary policy, and wealth inequality. [+](#)

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Macroeconomic Risk

Macroeconomic Risk Chair Junior Research Prize 2023: Rohan Kekre and Moritz Lenel

On February 29, 2024, the Junior Research Prize 2023 was awarded to Rohan Kekre (University of Chicago Booth School of Business) and Moritz Lenel (Princeton University) for their work entitled “The Flight to Safety and International Risk Sharing” during a conference organised online. We had the opportunity to interview them about their award winning paper and their research path.

The Flight to Safety and International Risk Sharing

Rohan Kekre (University of Chicago Booth School of Business) and Moritz Lenel (Princeton University)

[The Flight to Safety and International Risk Sharing](#), Working Paper, January 2024. [+](#)

The U.S. sits at the center of the international monetary system. There are two defining features of this role. The first concerns its currency. Relative to bonds denominated in the currencies of equally high-income countries, dollar bonds pay well when equities pay poorly, and have low expected returns when output has been declining. These imply that dollar bonds are a hedge whose value rises in bad times. The second concerns the U.S. international investment position. The U.S. is positively exposed to equities and negatively exposed to the dollar exchange rate. As such, it serves as the “world’s insurer” and transfers wealth to the rest of the world in bad times.

Absent the U.S.’ greater capacity to bear risk, its net foreign assets would be only as volatile as net exports.

This paper proposes a quantitative two country business cycle model with nominal rigidities to jointly capture these patterns and study their implications. The two key ingredients of the framework are a time varying demand for safe dollar bonds and a higher risk tolerance of the U.S. relative to the rest of the world, bridging a growing literature emphasizing the safety and liquidity value of U.S. Treasuries with another strand of the literature that argues that the U.S. has a greater capacity to bear risk than the rest of the world.

In the model, an increased demand for safe dollar bonds, a flight to safety, implies that the relative return on all other assets has to increase. If US interest rates do not fall sufficiently to achieve this return differential, this instead is achieved by a decline in global consumption and investment as well as immediate dollar appreciation, increasing the returns on risky assets and foreign bonds going forward. The goods market and foreign exchange market

responses are linked by a larger fall in U.S. output than output abroad, appreciating the U.S. terms of trade. As dollar bonds thus pay well in endogenously “bad” times, they earn a negative risk premium versus foreign bonds, and relatively risk tolerant agents insure the risk averse against such a shock. If agents in the U.S. are more risk tolerant than those abroad, this implies that

U.S. net foreign assets fall on impact of the shock. In the periods which follow, the dollar depreciates, excess foreign bond and equity returns are high, global output recovers, and U.S. net foreign assets improve. These patterns are consistent with observed comovements in the data, but cannot be delivered by productivity and disaster risk shocks. Flight to safety shocks therefore provide a resolution to the “reserve currency paradox” elucidated by Maggiori (2017).

The quantitative model disciplines the demand for safe dollar bonds to match spreads in financial markets, and differences in risk tolerance across countries to match the sensitivity of U.S. net foreign assets to excess equity returns. The model generates



untargeted comovements between relative bond returns, equity returns, output, and U.S. net foreign assets quantitatively in line with the data. It allows the authors to study global business cycles and the transmission of macroeconomic policy. Absent the time-varying demand for safe dollar bonds, global output would be roughly 15% less volatile, particularly so in the U.S. Absent the U.S.’ greater capacity to bear risk, its net foreign assets would be only as volatile as net exports, but net exports would in turn bear a greater burden in external adjustment and the U.S. would no longer earn positive average returns on its external position. Both the flight to safety and greater U.S. risk-bearing capacity played important roles in the Great Recession. Finally, the creation of safe dollar liquidity, such as via the dollar swap lines employed by central banks in recent crises, is globally stimulative but revalues wealth in the U.S.’ favor.

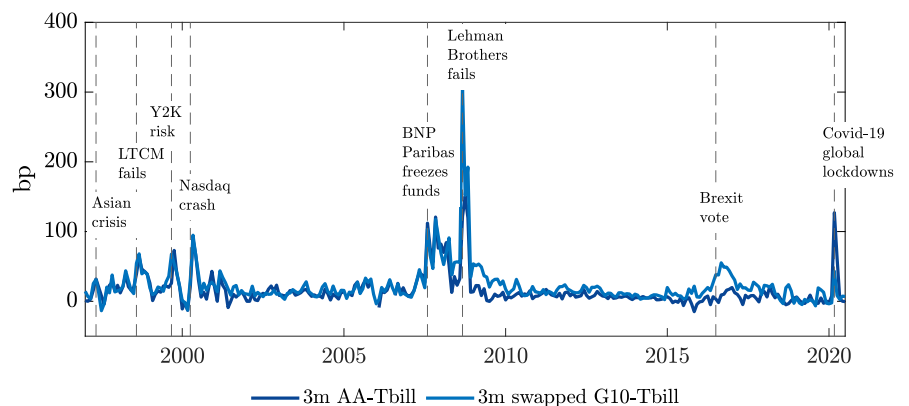


Figure 1: Annualized spreads versus U.S. Treasuries

Interview: Rohan Kekre and Moritz Lenel

Let's start with questions about the main findings of your paper. One of the key components of your model is (conventional) monetary policy. However, we have seen that in the last 10+ years QE has played a major role, especially in the FED response to the covid pandemic. How would your mechanism to be affected by this difference in the conduct of monetary policy?

The transmission of a flight-to-safety shock in our model depends on the reaction function of conventional monetary policy, in particular on how able or willing the U.S. central bank is to lower policy rates in response to a heightened global demand for safe dollar assets. Quantitative easing may allow the central bank to stimulate the economy even at the zero lower bound and therefore play a very similar role as more aggressive monetary policy in mitigating the recessionary effects of a flight to safety. Indeed, it is precisely because such unconventional policies are available and have been used that we abstract from the zero lower bound in our analysis.

Somewhat related, you mentioned during the discussion that the supply of safe assets in your model is deliberately simplified and plays essentially no role. Could you elaborate further on how fiscal policy might influence (or be influenced by) these dynamics?

In our analysis, the key driving force is the "net-demand" for safe dollar bonds, how strong is the demand for safe dollar bonds relative to their supply. The fact that the observed convenience yield rises in bad times (at the same time Treasury issuance typically rises) suggests to us that demand shocks for safe assets are the dominant driving force at high frequencies. But fiscal policy can certainly play a role in meeting the demand for safe assets and thus mitigating the rise in the convenience yield, as in the case of dollar swap lines we study at the end of the paper. While a normative analysis requires a deeper microfoundation of what generates the convenience yield, from a positive perspective our analysis clarifies that such policies can have meaningful stabilization effects.

Let's talk about the genesis of this paper.

How did you come up with the idea and what were the challenges you faced in transforming the idea into a paper? How did the paper change in its different versions? Did the revision process involve a significant revisiting of the paper?

In our previous work we had explored the consequences of heterogeneous portfolio choice in a closed economy New Keynesian setting. A large literature in international economics emphasizes heterogeneous portfolios across countries and it seemed natural to apply our theoretical and quantitative tools to studying heterogeneous agent models with aggregate risk in that context. In the end the project became more distinct from our earlier work than we had anticipated. In that previous paper, we emphasized the effects of redistribution

on risk premia. These effects are present in our paper on the flight to safety but play a secondary role. Instead, the focus is more on explaining the composition of the U.S. international investment position, and its codetermination with the stochastic properties of the dollar.

You guys have been working together on several papers, how do you split the work and what do you think are features of a successful collaboration?

We usually each specialize on certain parts of a paper and present our progress to each other in near daily conversations on Skype and now Zoom. If we can convince the other person that a theoretical, empirical, or quantitative insight is interesting, we usually find that's a good sign it should be in the paper. Working together makes it so much easier to identify quality ideas and enjoy the process of getting there along the way. It's great luck to find a coauthor with whom that joint enjoyment of process and progress works so well.

How has your research agenda evolved over time and where is it headed? What

do you think are areas of interest for people who would like to work in this field?

We have been interested in business cycles and stabilization policy through a macro-finance lens. In a couple papers we have studied the transmission of monetary policy through risk premia in financial markets, and in another couple papers we have studied both the demand for safe dollar assets and the empirical effects of supplying those assets via dollar swap lines. Our newest paper "Exchange Rates, Natural Rates, and the Price of Risk" studies the drivers of the dollar exchange rate more broadly. It seems to us that there remains a lot we don't know about each of these topics. For instance, how should optimal monetary policy be conducted given its effects on risk premia? What are the microfoundations of the demand for safe dollar

assets? What explains the heterogeneity in exchange rate comovements vis-a-vis the dollar across currencies?

A last couple of questions for our PhD students more specifically. What would you recommend to current PhD students who might be in search of ideas for new papers? What have you learned in your career as an economist that you wish you had known when you were a PhD student?

As a PhD student one naturally worries a lot about finding research ideas, but working on any project it becomes clear that there are so many questions left and right. The key, at least to us, seems to be to pick the question that keeps the research process exciting enough to make it through long stretches of what might appear to be little progress, to then reach the precious eureka moments. So our advice is probably to open the Financial Times, find an interesting question and just get started.

Fiscal policy can certainly play a role in meeting the demand for safe assets and thus mitigating the rise in the convenience yield.

The video replay of the Junior Research Prize 2023 is available online. [+](#)

Stimulus Effects of Common Fiscal Policies

Tobias Broer (Stockholm Univ.), Jeppe Druedahl (Univ. of Copenhagen), Karl Harmenberg (Univ. of Oslo) and Erik Öberg (Uppsala Univ.)
Stimulus Effects of Common Fiscal Policies, Working Paper, 2024.

The post-2007 Great Recession quickly brought monetary-policy interest rates to their lower bound of zero around the world. Governments stepped in to stimulate their economies using a variety of large fiscal interventions. Little did they know that they would repeat this exercise at even larger scale 10 years later, when the COVID 19 pandemic brought the world economy to a standstill. In its aftermath, **governments spent unprecedented resources on a multitude of discretionary fiscal measures to sustain the economies**, from stimulus checks via short-time work schemes to unemployment benefit increases or extensions. While not their only purpose, **the output stimulus that these policies provide is a key input to policy design that we know little about**, partly because data are not informative about the relative effects of policies that are simultaneously deployed in response to the same shocks.

In their paper “Stimulus Effects of Common Fiscal Policies”, **Broer et al. propose a structural general-equilibrium framework whose features allow to quantitatively capture the different stimulus effects of common fiscal policy measures**. Despite the model’s richness, it remains analytically tractable and thus transparent for policy makers. Specifically, when viewed in the domain of sequences of economic variables that converge back to their steady-state values after a fiscal intervention, the framework allows an analytical characterisation of fiscal propagation as a circular transmission of shocks through three blocks associated with, respectively, incomplete markets, labor-market and pricing frictions. This allows to rank fiscal multipliers without computing full general-equilibrium responses, and to identify which model features and parameters make different policies effective at boosting output. This

seems important when policymakers may have their own views about particular parts of the transmission mechanism.

The benchmark parameterization of **their framework implies strong differences in the cumulative fiscal multipliers associated with different policies**, which range from 0.3 to 1.6. Relative to the benchmark of government consumption, the efficacy of transfers to households - in the form of universal stimulus checks or conditional transfers to the (long-term) unemployed - is particularly sensitive to the degree of partial consumption insurance that determines marginal propensities to consume and their effects on precautionary savings. The efficacy of transfers to firms - in the form of retention or hiring subsidies - hinges on the elasticity of separation and vacancy posting to firm profits and the marginal propensity to consume these.



On Natural Interest Rate Volatility

Édouard Challe (Paris School of Economics) and Mykhailo Matvieiev (Aix-Marseille University)
On Natural Interest Rate Volatility, Working Paper, August 2024. [+](#)

One of the key issues of modern macroeconomics is that, **in a low interest rate environment, central banks may not be able to effectively track the natural rate because of a binding effective lower bound (ELB) on the policy rate.** While most of the recent literature has focused on the downward trend in interest rates and on the risks that this poses to the effectiveness of monetary policy, in their paper “On Natural Interest Rate Volatility”, Édouard Challe and Mykhailo Matvieiev stress how it is just as important to study the volatility of natural interest rates around the trend. In fact, an increase in the interest rate volatility can exacerbate how frequently (and severely) the natural rate may fall below the ELB.

There are two main channels through which the volatility of the natural rate may evolve over time: first, the frequency and/or the amplitude of aggregate shocks hitting the economy may change; and second, the propagation of these shocks to aggregate savings demand and supply may change. In this paper, the authors investigate the latter channel and more specifically ask what are the structural factors that determine the response of the natural rate to aggregate shocks, as well as how these factors might have evolved over the past few decades. In particular, they consider two main types of shocks: discount-factor shocks – which shift the aggregate supply of savings – and productivity shocks – which instead act on the aggregate demand for savings.

The authors address this in two steps. In a first step, they lay out a tractable two-period overlapping-generations (OLG) model which includes **three key factors that are likely to increase the responsiveness of the natural rate to the underlying structural shocks: (i) increased out-of-pocket health spending in old age; (ii) decreased goods-market competition; and (iii) increased public debt.** They then exploit the tractability of the model to derive analytical formulae for the elasticities of the equilibrium interest rate to both discount-factor shocks and total factor productivity shocks.

In a second step, they then construct a fully-fledge quantitative OLG model which includes those three forces and calibrate

it to two time periods: the early 1980s and the recent years. The authors then compute numerical aggregate savings supply and demand curves and confirm that both have been flattening, implying that aggregate shocks have a greater impact on the equilibrium interest rate.

The paper identifies three main channels responsible of a heightened responsiveness of the natural rate to structural shocks:

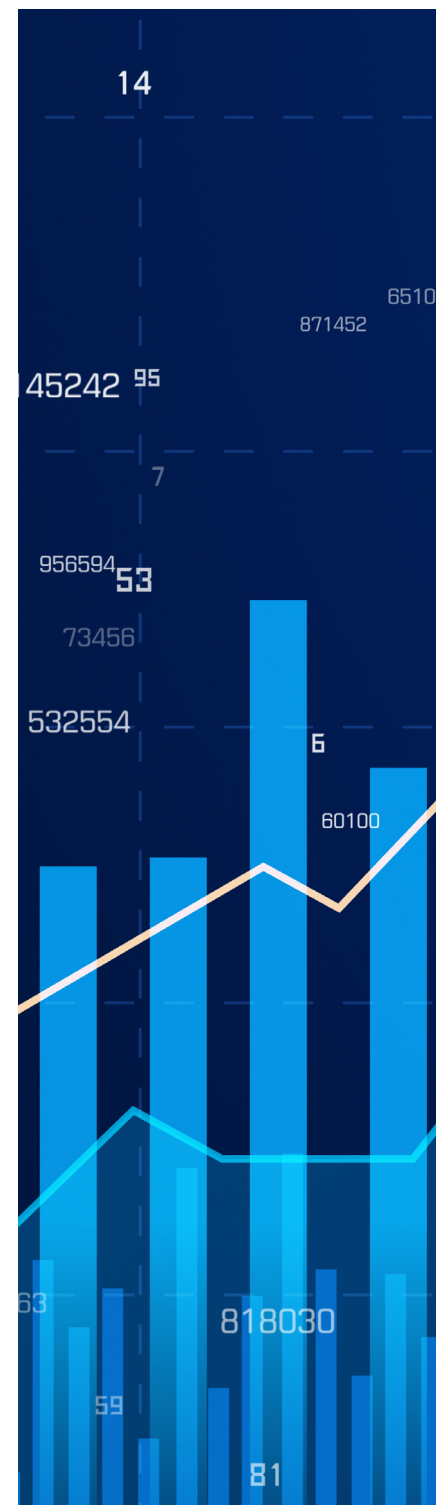
- 1 Increased health spending in old age reduces the households’ willingness to adjust savings in response to changes in expected returns on assets. This flattens the aggregate savings supply curve, amplifying the impact of shocks on the natural interest rate.
- 2 Reduced goods-market competition diminishes firms’ responsiveness to interest rate changes, flattening the capital demand curve, which leads to larger fluctuations in the natural interest rate following structural shocks.
- 3 Higher levels of public debt also flatten the savings demand curve since government liabilities are less sensitive to changes in the interest rate than firms’. This, too, magnifies the interest rate’s response to shocks.

As a consequence, greater health spending, lower competition, and greater public debt all tend towards raising the elasticities of the natural interest rate to aggregate shocks.

In their quantitative model the authors also find that **the equilibrium interest rate’s response to a given structural shock is about 40% larger in 2020 compared to 1980.** Moreover, the persistence of these interest rate changes has increased, indicating a more prolonged impact of structural shocks in recent years. Quantitatively, they find a moderate role for the rise in old-age health spending in explaining the magnification, and a more substantial role for the other two factors.

These findings underscore the importance of understanding changes in interest-rate volatility above and beyond the downward trend in its average level. By identifying key

structural factors that have heightened the rate’s responsiveness to shocks, Challe and Matvieiev’s paper offers valuable insights into the dynamics of the natural interest rate and has important implications for monetary policy – particularly in low-interest-rate environments where the ELB can constrain policy effectiveness.



Heterogeneous Risk Exposure and the Dynamics of Wealth Inequality

Riccardo A. Cioffi (Paris School of Economics)

Heterogeneous Risk Exposure and the Dynamics of Wealth Inequality, Working Paper, December 2021. [+](#)

In the past couple of decades plenty of research has been carried out in the areas of macroeconomics and finance spanning the topics of households' portfolio choices, asset pricing, and wealth inequality. Although these topics are deeply interconnected, however, research has largely focused on each of them independently and their link has been left mostly unexplored. This link is evidently composed of two distinct (albeit interrelated) parts: on the one hand, in the presence of systematic differences in portfolio composition along the wealth distribution, asset price movements induce changes in wealth inequality; on the other, changes in households' wealth holdings affect aggregate demand for assets, therefore potentially affecting asset prices.

In his paper "Heterogeneous Risk Exposure and the Dynamics of Wealth Inequality", Riccardo Cioffi directly tackles the first half of such connection by developing a theory based on heterogeneous exposure to aggregate risk in asset returns that can account for the observed heterogeneity in households' portfolios. He then asks how these differences in portfolio choices across the wealth distribution influence the dynamics of wealth inequality.

Specifically, he develops a heterogeneous-agent, partial equilibrium model that carefully accounts for the role of households'

optimal portfolio choice along the wealth distribution in the presence of a rich menu of assets and aggregate risk in asset returns. Incidentally, he also shows that the dual role of housing as a risky investment and a necessary good is crucial for the model to generate the right schedule of portfolio shares: by effectively introducing a form of decreasing risk aversion, the model is in fact capable of generating an optimal share of equity that is increasing in wealth.

Hence, by matching portfolio heterogeneity along the wealth distribution, the model is capable of replicating both the high level of wealth inequality – driven by differences in total returns to wealth – and the response of wealth inequality to movements in asset returns.

This has several implications for the dynamics of wealth inequality:

➤ Shocks to equity returns have large and persistent effects on wealth inequality. For instance, a one standard deviation increase in equity returns raises the top 10% wealth share by approximately 1 percentage point, a much larger effect compared to similar shocks in housing returns.

➤ Whether changes in returns are assumed to be permanent or transitory has extremely different implications for the evolution of

inequality: the long-run effect of a sequence of temporary shocks is in fact about eight times larger than that of a corresponding permanent change in returns.

➤ By feeding the realized sequence of returns into the model, the model is capable of replicating the observed rise in U.S. top wealth shares since the 1980s and uncovers that the sharp increase in wealth inequality was primarily driven by abnormal equity returns during the late 1990s and early 2000s.

Cioffi's paper makes a significant contribution to the literature on wealth inequality by demonstrating that variations in asset returns, particularly equities, can substantially influence wealth distribution dynamics. Hence, if we want to have a better understanding of wealth inequality dynamics – he concludes – we should also have a good model of price determination.

Compared to the rest of the literature, his paper therefore reaches a very different conclusion about the observed increase in U.S. wealth inequality; namely that such a sharp rise in inequality is perfectly compatible with an economy in which, among the many possible realizations of asset returns, the observed one just happened to be especially favorable to the portfolios of the rich.





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