Satyam Goel
PhD Candidate in Economics
University of Liverpool
Phone: (+44) 7749753824
Email: satyam.goel@liverpool.ac.uk
Website: www.goelsatyam.com

Research Statement

I am a macroeconomist with special interests in monetary economics and housing economics. Methodologically, I use both theory and empirical methods to analyze pressing policy questions. My empirical work utilizes advanced time series econometrics and machine learning techniques, while my theoretical works are grounded in using Dynamic Stochastic General Equilibrium (DSGE) models, focusing on Heterogeneous Agent New Keynesian (HANK) frameworks. Thematically, my research centers on three core agendas: understanding the interactions between demographics and macroeconomic policies, particularly the intergenerational redistributive impacts of monetary policies; examining the link between housing markets and financial stability; and investigating the role of effective central bank communication in promoting financial stability during times of high uncertainty and structural change. My current and planned work in these research agendas are discussed in detail below.

Demographics and Monetary Policy

The integration of heterogeneity into macroeconomic models marks a critical evolution in understanding the distributional consequences of macroeconomic policies. My research advances this approach by emphasizing demographic factors, specifically the role of life-cycle stages in mediating households' responses to macroeconomic policies. Current literature, while rich in its examination of household heterogeneity, often underrepresents the importance of demographic transitions. I argue that households' experiences of macroeconomic shocks evolve as they progress through stages of the life cycle—education, employment, and retirement—shaping their vulnerabilities and responses to policy changes in distinct ways. Therefore, incorporating a life-cycle framework is essential for capturing age-specific policy impacts.

In my job market paper, *"The Generational Divide: Who Gained and Who Lost from the 2021–23 Inflation Surge?"[1]*, I use an Overlapping Generations Heterogeneous Agent New Keynesian (O-HANK) model, calibrated to the Euro Area, to evaluate the redistributive effects of the recent high-inflation episode and monetary tightening across the age distribution and over the life cycle. I use the model to generate a scenario that captures the 2021–2023 inflation episode.

The findings show that high inflation leads to immediate (on-impact) wealth losses across all cohorts. Households nearing retirement, typically net creditors, experience the most substantial losses due to the inflation-induced erosion of their nominal asset holdings. In contrast, younger households, who are net debtors, benefit slightly from lower real debt burdens as inflation reduces the real value of their nominal liabilities. These immediate effects are intensified under a stronger central bank response to inflation deviations.

A critical yet often overlooked factor in determining the winners and losers from inflation and monetary policy shifts is the role of life-cycle dynamics. As households age, their financial behaviors and asset exposures change significantly: younger cohorts, generally net debtors, transition to asset accumulation in middle age and eventually to asset decumulation post-retirement. This life-cycle progression means that the welfare effects of inflation and monetary policy depend on a household's position in this trajectory, impacting not just current income but the entire path of relevant asset prices and aggregate allocations throughout their lifetime.

The model's life-cycle analysis reveals that inflation's effects are regressive. Middle-aged cohorts, in their asset accumulation phase, benefit from inflation-induced declines in asset prices, which enable them to acquire assets, such as housing, at reduced costs, thereby improving their lifetime welfare. Conversely, younger households face compounded disadvantages due to reduced labor income from inflation-driven economic contractions and rising debt servicing costs. Older cohorts, who are in the decumulation phase, incur notable welfare losses as they are forced to liquidate assets at lower values. While the central bank's anti-inflationary

stance exacerbates on-impact losses across all age groups, it ultimately preserves the real value of savings, yielding long-term welfare benefits, particularly for those aged 50 and above.

This approach underscores the importance of considering the lifecycle effects when evaluating the redistributive consequences of economic shocks and the policies designed to mitigate them, highlighting that the welfare implications of inflation and monetary policy extend far beyond immediate income effects.

In another study, *"Intergenerational Distributional Impact of the Zero Lower Bound"* (with Oliver de Groot) [2], we develop an O-HANK model incorporating a Zero Lower Bound (ZLB) constraint to explore how persistent low interest rates can create intergenerational redistributive effects. Specifically, we examine how a preference shock, which causes households to delay consumption, impacts welfare across age groups when interest rates remain constrained by the ZLB—a situation that reflects Europe's prolonged low-interest-rate environment after the 2007 financial crisis.

Our findings show that when the ZLB persists following this shift in household preferences, there is a pronounced life-cycle welfare redistribution—from middle-aged working cohorts to both the youngest and oldest generations. To isolate the effects of the ZLB, we analyze how this preference shock affects welfare under both constrained (ZLB) and unconstrained monetary policy scenarios. Without the ZLB constraint, the shock exacerbates welfare losses over the life cycle, particularly for older individuals who rely on nominal financial assets as their primary retirement savings vehicles. However, under the ZLB constraint, we identify a stabilizing effect of the ZLB on older cohorts' welfare. Overall, while middle-aged cohorts face welfare losses across both policy regimes, the presence of the ZLB mitigates adverse effects on the savings of the elderly, effectively preventing them from being the greatest losers.

Building on my current research, I aim to deepen my exploration of how monetary policy affects heterogeneous households, with a particular focus on life-cycle debt exposure. Younger and lower-income households often face significant leverage constraints, in sharp contrast to their older and wealthier counterparts. This disparity leads to differential impacts of monetary policy across household demographics.

Effective Monetary Policy Communication

Effective communication has become a critical tool for central banks, complementing conventional monetary policy actions—particularly during major economic disruptions like the Global Financial Crisis, when nominal interest rates reached their effective lower bound and communication became a policy tool in its own right.

Brexit represents another significant geopolitical event that intensified the economic aftershocks of the Global Financial Crisis, creating exceptional financial market volatility and uncertainty in the UK. To navigate these challenges, the Bank of England (BoE) adopted a comprehensive monetary policy strategy, including both conventional and unconventional measures, and placed strong emphasis on effective communication. In, *"Deciphering Delphic Guidance: The Bank of England and Brexit"*[3], co-authored with Jagjit Chadha, Corrado Macchiarelli, Arno Hantzsche, and Sathya Mellina (published as an IMF working paper), we employ local projections and text-mining techniques to analyze the UK bond market's response to the BoE's monetary policy strategies in the context of Brexit. Our analysis illustrates how effective communication significantly enhanced the BoE's multipronged strategy, aiding in lowering the term premium—a reflection of investors' risk perceptions. This communication proved critical not only for navigating Brexit's aftermath but also for reinforcing other monetary policy measures, such as Quantitative Easing and forward guidance.

Building on this research agenda, I am particularly interested in how central bank communication—especially forward guidance—affects the speed of monetary policy transmission. Evidence, including Doh and Foerster (2023), suggests that tools like forward guidance may reduce transmission lags by influencing financial markets more rapidly than traditional rate adjustments. As central banks refine their communication strategies, key questions remain: How can communication be tailored to effectively target diverse audiences? What trade-offs exist between communication and the diversity of views expressed? And how much information should be disclosed for transparency without undermining policy goals? These questions offer valuable opportunities for further research.

I intend to advance both research agendas—on demographics and monetary policy, and on central bank communication—as their relevance grows in an increasingly complex economic environment. Leveraging high-frequency data and advanced computational tools, I aim to enhance our understanding of monetary

policy's impact on different population segments, contributing to more effective and informed economic policymaking.

Policy Work

In addition to my academic research, my policy-oriented work focuses primarily on housing markets and their complex interplay with financial stability and monetary policy. I have contributed to various aspects of housing economics, providing insights through research articles, policy papers, and book chapters.

My policy-oriented writings on the relation between housing markets and financial stability include: *"Housing in the Economy: Scale, Cycle and Stability"*[4]. This paper highlights the housing sector's instrumental role in shaping economic cycles and influencing financial stability. It sheds light on the multifaceted dynamics of housing in the broader economic context. Additionally, my article in the Economics Observatory, *"How does the housing market affect financial and economic stability?"*[5], draws parallels with the 2007-09 global financial crisis to emphasize the need for policies addressing housing vulnerabilities during periods of high inflation.

Additionally, in a co-authored study funded by the Australian government, "The Future of Australian Cities and Regions in a Post-Pandemic World"[6] I examine the determinants of firm and residential location patterns across Australia, exploring barriers and drivers that impact regional development and analyzing COVID-19's long-term effects on spatial employment and settlement patterns. Further enriching the methodological discourse, a book chapter titled *"Econometric Methods in Housing Research"*[7] provides a review of core econometric tools utilized in housing market analyses. Another significant contribution is the paper *"Amenities and Housing Market Dynamics: Implications for Population Change, Urban Attractiveness, Innovation and Productivity"*[8], which delves into the complex relationships among housing dynamics, urban population changes, and productivity. I am currently working on another book chapter, *"Monetary Policies and their Housing Consequences"*[9], which aims to examine the effects of monetary policies on housing market dynamics.

*References

[1] Satyam Goel. "The Impact of Surprise Inflation across the Age Distribution and Life Cycle of Euro Area Households". Manuscript. 2024.

[2] Satyam Goel and Oliver de Groot. "Intergenerational Distributional Impact of the Zero Lower Bound". Work in Progress. 2023.

[3] Jagjit Chadha, Corrado Macchiarelli, Satyam Goel, Arno Hantzsche, and Sathya Mellina. *Deciphering Delphic Guidance: The Bank of England and Brexit*. Tech. rep. International Monetary Fund, 2024.

[4] Duncan Maclennan, Chris Leishman, and Satyam Goel. *Housing in the economy: Scale, cycles and stability*. ISBN: 978-0-7334-4001-4. Sydney: UNSW City Futures Research Centre, 2021.

[5] Satyam Goel, Chris Leishman, and Duncan Maclennan. *How does the housing market affect financial and economic stability?* Economics Observatory. 2023.

[6] A Vij, A Ardeshiri, C Leishman, A Beer, S Goel, HD Han, S Horne, R Hancock, and S Wise. "The Future of Australian Cities and Regions in a Post-Pandemic World". In: (2023).

[7] Chris Leishman and Satyam Goel. "Econometric methods in housing research". In: *Research Handbook on Housing, the Home and Society*. Edward Elgar Publishing, 2024, pp. 122–140.

[8] Chris Leishman and Satyam Goel. "Amenities and Housing Market Dynamics: Implications for Population Change, Urban Attractiveness, Innovation and Productivity". In: *Urban Studies* (2024). In print.

[9] Satyam Goel and Oliver de Groot. "Monetary Policies and their Housing Consequences". In: *A Political Economy for the Housing of Nations*. Ed. by D. Maclennan, J. Miao, and H. Pawson. Working book chapter. [Edward Elgar], 2025.