

## Research Statement

Sneha Agrawal

NEW YORK UNIVERSITY

Email: [sa3798@nyu.edu](mailto:sa3798@nyu.edu)

Website: [www.sneha-agrawal.com](http://www.sneha-agrawal.com)

I am a macroeconomist with interests in monetary economics, banking and production network dynamics. A common theme in my recent research is exploring how different sorts of uncertainty – e.g. from volatility in exchange rates, crude oil prices or financial market premia – propagate through the economy. My research seeks to address these questions by combining macroeconomic theory with careful empirical analyses of micro-data. Below, I summarize my main research to date and describe my research agenda in the coming five years.

### Uncertainty, Markups and Price Dynamics: Implications for the Financial and Real Sectors

#### “Bank Lending Margins and The Exchange-Rate Uncertainty Channel”, 2020

In my job market paper (JMP), I study how volatility in a trade-weighted US dollar index impacts the US banking sector. Empirically, I document that during periods of greater exchange-rate (ER) volatility, foreign banks *retrench* from the US syndicated loans market (SLM). This retrenchment causes a bottleneck in the supply of loanable funds available to US banks. US banks who rely on syndicate funding respond by tightening their credit standards in an attempt to re-allocate scarce funds. According to my estimates, a one-standard-deviation increase in ER volatility, increases the net interest margins of US banks by 10 annualized basis points (bps), whereas their balance sheet contracts by 2-3% points. The findings are consistent with banks exerting market power in the loan market while simultaneously shrinking their balance sheets.

To analyze this hypothesis, I show in a dynamic panel data model that the price and volume effects are both higher, for banks with *greater SLM exposure (as proxied by the banks’ loans-to-interest-earning-assets ratio)*. Overall, my JMP proposes a mechanism through which volatility in the US dollar propagates through the banking system into the real economy, and provides evidence suggesting that the mechanism is quantitatively important. An implication of my findings is that volatility in the US dollar can be used as a measure of “*global risk*”.

#### “Input Price Uncertainty and Markups”, 2019

In this joint work with Abhishek Gaurav and Melinda Suveg, we study *how uncertainty about input prices* – generated either by volatility in the price of crude oil or the exchange rate of the Swedish Krona (SEK) – *impacts the markups of Swedish firms*. Our theoretical analysis considers a model in which firms are required to commit to an output price ex ante, before they know the exact input costs they will be facing. Firms therefore make pricing decisions based on their expectations about future costs. Profits are determined ex-post and defined as the difference between the revenue and the realized input costs (which of course will generally differ from the expected cost).

We show that in our model, a profit-maximizing firm will choose to protect itself against losses in states of the world where the realized input costs are greater than the expected costs. In such states of the world, firms' profits will be lower than expected, and will be negative if the input costs are sufficiently high. Firms choose to insure themselves from such losses by charging a higher markup than the optimal markup chosen by a firm in a baseline model without uncertainty in the input prices. We refer to the greater markup under uncertainty about input prices as a *precautionary output-price markup*. Overall, our paper makes both theoretical and empirical contribution to the literature. Theoretically, we show that the size of the precautionary output-price markup is increasing in the amount of uncertainty about input prices. Empirically, we provide evidence consistent with our prediction in a sample of Swedish firms whose size of the precautionary output-price markup is greatest during period with higher input-cost uncertainty, and more so for firms with greater exposure to such volatile inputs.

#### “Inflation and Output Dynamics: Assessing the Strength of Network Effects”, 2019

In this paper, Simon Gilchrist, Egon Zakrajšec, and I use a spatial dynamic factor model to estimate the strength of network effects in industry's response to demand shocks. Our empirical analysis relies on a rich panel data set with information about output, prices, wages and employment (at a narrowly defined industry level). We merge this panel data set with the BEA input-output tables, trade shares, financial spreads and commodity indices to quantify and analyze the nature of industries and their concomitant strength of network spillovers. Our empirical methodology allows us to decompose industry level responses into a direct effect and those resulting from a network propagation effect. Our results indicate that the US Production Sector exhibits strong network spillovers in response to a demand shock. This is particularly true for output, prices and wages where spillovers account for between 50-80% of the average industry response. In contrast, our estimates imply that the response of industry level employment is primarily due to the direct effects of aggregate fluctuations on industry activity. We also document that network spillovers are strongest in tradeable goods industries that are much farther down in the supply chain. As a result of these strong spillovers, the inflation response of tradeable goods industries to demand shocks is weaker compared to the more upstream non-tradeable industries. Effectively, tradeable goods industries exhibit greater price rigidity. Consistent with this finding, tradeable goods industries also exhibit larger fluctuations in output in response to aggregate demand shocks.

#### Research Based on Policy Evaluation

##### “Black Money and Demonetization”, 2018 (cited by Gopinath et al in QJE, 2020)

On November 8, 2016, the government of India surprisingly announced that, in an attempt to crack down on the use of illicit and counterfeit cash, it would demonetize the two largest denomination Indian bills: ₹500 (US \$7.70) and ₹1000 (US \$15). The government announced that all such bills would need to be exchanged for equally valued new bills issued by the central bank. The sudden nature of the announcement and the prolonged

cash shortage in the weeks that followed created significant disruption throughout the Indian economy.

In my third-year paper, I formulate a search-theoretic monetary model and use it to explain the well-documented economic disruptions that followed the announcement. In the model, an agent's decision to continue holding illicit old bills (black money) depends on how the benefits of doing so – evading taxes – compare to the costs – the penalty one faces if caught by auditors. I show that in the stationary monetary equilibrium of the model, money laundering is a predictable response to a government policy that requires people to reveal their true taxable incomes, rendering the demonetization policy weak in achieving its intended goals.

Going forward, I hope to complete my ongoing papers, submit them for publication in peer-reviewed journals, and launch new projects that fit my overall research agenda. I am excited to learn from my future colleagues and graduate students, and strike up new collaborations with them on topics of mutual interest.