My research agenda lies at the intersection of financial markets, and the macroeconomy and can be classified in three broad groups which are highly interrelated:

1. Macroeconomics and Financial Markets,
2. Cross sectional Asset Pricing,

1 Macroeconomics and and Financial Markets

1.1 Interaction of nominal rigidities and finance

In this part of my research agenda, I investigate causes and implications of nominal rigidities in microdata to shed light on monetary non-neutrality and the determinants of firms’ exposure to systematic risk. Nominal rigidities are the leading explanation for the real effects of monetary policy and are central ingredients of models at all central banks around the work. I use the confidential micro data underlying the producer price index at the Bureau of Labor Statistics to construct measures of price stickiness at the individual firm level and merge this metric with various financial and balance sheet information to study the reasons and effects of price stickiness on firm valuations, financial decisions, and investments.

In “Nominal Rigiditys and Asset Pricing” (Journal of Political Economy, revise and resubmit), I study whether infrequent product-price changes at the firm level are a source of macroeconomic risk which is priced in the cross section of stock returns. I document firms with sticky prices earn a return premium of more than 4% per year compared to firms with flexible prices. This premium is robust to controlling for standard cross sectional return predictors at the firm and industry level, and it is fully explained by differences in exposure to systematic risk. I show sticky-price firms have a CAPM beta which is higher by 0.40 than the beta of flexible-price firms. Sticky-price firms are risky and have higher exposure to systematic risk, and therefore earn a return premium. The premium for sticky-price firms is in the order of magnitude of the value premium, the most-studied cross-sectional return premium in finance. This premium varies substantially over the business cycle with strong implications for firms’ investment decisions and
the portfolio allocation of professional money managers. The consumption-wealth ratio can explain up to 60% of the time series variation in long-horizon regressions.

To rationalize these findings, I develop a multi-sector production-based asset pricing model in which sectors differ in the degree of price stickiness. I simulate the model and document that it can replicate all of my empirical findings. I show three margins determine the return difference between sticky- and flexible-price firms: a quantity margin, a price margin, and an inefficiency margin associated with price dispersion. To gain intuition for the three margins, consider the effects of a contractionary monetary policy shock. Aggregate output decreases after the shock, as does the aggregate wage rate, while marginal utility goes up. Firms ideally want to lower their product prices to accommodate the lower demand and marginal costs. Sticky price firms are, however, stuck at their currently too-high prices. Some consumers therefore substitute away to firms in the flexible-price sector due to their lower relative prices. In terms of revenues, firms in the sticky-price sector gain along the price margin, but lose along the quantity margin. In addition, the cross-sectional dispersion of prices is higher in the sticky-price sector, resulting in lower output and dividends. The three margins combined result in lower dividends for sticky-price firms compared to firms with flexible prices in times of high marginal utility.

Price rigidities are therefore not only central to explaining the business cycle dynamics of aggregate real variables such as gross domestic output or investment, but they also predict the cross section of stock returns. A firm’s exposure to systematic risk is a function of many parameters and factors. The frequency of product price adjustment is a simple statistic at the firm level which can account for a considerable part of the variation in firms’ exposure to systematic risk. To the extent that firms equalize the costs and benefits of price adjustment, the higher cost of capital for sticky-price firms reflects a holistic measure of the total costs of sticky prices.

In “Are Sticky Prices Costly? Evidence from the Stock Market” (American Economic Review (2016), with Yuriy Gorodnichenko), we test between alternative theories for the observed level of price rigidity in micro data. A central tenet of New Keynesian macroeconomics is that firms face costs associated with changing nominal prices, which can rationalize why they might forego an increase in profits by keeping nominal prices unchanged once hit by real or nominal shocks. The observed level of price inertia, however, does not necessarily imply purely nominal shocks have real effects or that sticky prices burden firms. In monetary search models, sticky prices can arise endogenously even if firms can change prices at any time without any cost. The key insight of this
paper is that in New Keynesian models, sticky prices are costly for firms, whereas in other models, they are not. To distinguish between these two alternative explanations, we perform high frequency event studies around the press releases of the Federal Open Market Committee. Specifically, we regress the squared returns of the constituents of the S&P500 in narrow event windows of 30 and 60 minutes around the press releases on squared monetary policy surprises which we identify from Federal Funds futures, the firm-specific frequencies of price adjustment, and the interaction terms. We find that monetary policy surprises lead to a large increase in the conditional stock market volatility for firms with sticky prices. This conditional increase is, however, almost completely muted for firms with flexible prices in line with the predictions of New Keynesian models.

Our findings document costs of price adjustment are an important factor for the observed level of price rigidities in micro data confirming one of the cornerstones of New Keynesian macroeconomics. Sticky prices are costly and nominal shocks therefore can impact the real side of the economy. Increasing trend inflation—a policy suggested by a number of economists to combat deflationary spirals in recessions—has possibly non-negligible costs in the light of our results.

Financial leverage varies substantially across firms and differences in leverage across firms are persistent. In “Flexible Prices and Leverage” (Journal of Financial Economics, (accepted for publication), with Francesco D’Acunto, Ryan Liu, and Carolin Pflueger), we study the differences in financial leverage across sticky- and flexible-price firms, both unconditionally and conditional on a shock to credit supply, the Interstate Banking and Branching Efficiency Act (IBBEA). In my previous research, I document sticky-price firms are riskier, which might result in lower financial leverage for firms with stickier output prices compared to flexible-price firms. Banking deregulation might result in banks with better monitoring technologies and increased geographic diversification, which would allow those banks to lend more to previously financially constrained firms.

In the baseline empirical analysis, we find indeed find sticky-price firms have unconditionally lower financial leverage than flexible-price firms. We estimate these magnitudes after controlling for standard determinants of financial leverage.

We exploit the staggered state-level implementation of the Interstate Banking and Branching Efficiency Act between 1994 and 2005 as a shock to the availability of bank credit. We interpret the staggered state-level implementation of the IBBEA as a shock to financial constraints exogenous to individual firms’ financial decisions. This shock allows us to test whether sticky-price firms increase their financial leverage more than flexible-price firms after the shock. We find sticky-price firms
increased leverage more than flexible-price firms after the deregulation. Of course, not all firms with low leverage are financially constrained, allowing us to exploit an additional cross-sectional heterogeneity. We show sticky-price firms with a lower cash-to-assets ratio and a larger external finance gap, which were more likely to need external financing to fund their operations, drive the effect. The most flexible-price firms kept their leverage virtually unchanged after the deregulation.

This study is complementary to the two previous papers in that it documents that price rigidities directly affect firm behavior. Frictions in the pricing technology impact the optimal choice of leverage and can result in foregone profitable investment projects due to capital-market imperfections.

1.2 Monetary policy and financial markets

The main objectives of the Federal Reserve (Fed) under its dual mandate are price stability and maximum employment. The fed funds rate is the Fed’s main conventional policy tool to achieve those goals. But whereas real consumption, investment, and GDP only respond with a lag to changes in the target rate, a large literature documents that asset prices respond directly and immediately to monetary policy shocks, making asset prices an ideal laboratory to test for the effect and different channels of monetary policy. Asset prices might react not only to changes in short-term interest rates, but also to changes in expectations about the speed of monetary policy loosening and tightening. At the same time, monetary policy decisions happen continuously rather than only on eight scheduled Federal Open Market Committee (FOMC) meetings that are the focus of a large event-study literature.

In “Monetary Policy Slope and the Stock Market” (working paper (2017), with Andreas Neuhierl), we use weekly changes in the one-month and three-month federal funds futures-implied rates to test for the effect of changes in the future path of monetary policy on asset prices throughout the year. Specifically, we argue that changes in short-dated futures affect all future target rates, and we can interpret it as a level factor. Changes in the long-dated futures instead also contain information about the future path of monetary policy. We regress changes in the three-month futures-implied rate on the changes in the one-month futures-implied rate to get a purified measure of changes in expectations of the path of future monetary policy. We refer to the residual of this regression as the slope factor. A positive slope factor reflects market expectations of a faster
monetary policy tightening, or markets assume that interest rates three months from now will be higher relative to what the market expected last week and relative to the change in expectations for the federal funds rate in one month.

Slope robustly predicts excess returns of the Center for Research in Security Prices (CRSP) value-weighted index over the following week. The slope factor explains around 2% of the weekly variation in stock returns. The predictability we uncover is economically large: an investor conditioning on the slope factor can increase his weekly Sharpe ratio by more than 20% compared to a buy-and-hold investor.

We document speeches of the chair or vice chair systematically predicting the slope factor. We use linguistic analysis and find that a more hawkish tone in speeches by the chair or vice chair predicts a faster monetary policy tightening. Our findings are consistent with the idea that monetary policy became more transparent in the 1990s. In fact, Ben Bernanke states in his inaugural blog post that “monetary policy is 98 percent talk and only two percent action.” Speeches affect stock returns via their effect on market participants’ expectations about the speed of future monetary policy loosening or tightening. Our findings provide evidence for the power of forward guidance and committing to future interest rate policies outside of liquidity-trap periods.

A growing literature documents large reactions of broad financial markets to monetary policy shocks in narrow event windows around monetary policy actions by the Federal Reserve. The large reaction of broad stock market indices is difficult to rationalize with the propagation mechanisms proposed in standard models. A growing literature in macroeconomics argues microeconomic shocks might propagate through the production network, and contribute to aggregate fluctuations. In “Monetary Policy through Production Networks: Evidence from the Stock Market” (working paper (2017), with Ali Ozdagli), we study theoretically and empirically whether the production network and input-output structure of the U.S. economy are also an important propagation mechanism of aggregate monetary policy shocks. Take an expansionary monetary policy shock increasing aggregate demand. Consumers might now purchase more cars, increasing the demand for cars. Car manufacturers now have to increase production requiring more intermediate inputs such as tires. This triggers an increase in the demand for rubber, oil, etc. Therefore, the increase in aggregate demand results in a direct demand effect, the purchase of more cars, but also to an indirect, higher-order demand effect for intermediate input goods.

We merge stock price data for individual firms from NYSE Trade and Quote (taq) with the
data from the benchmark input-output tables of the Bureau of Economic Analysis (BEA) and identify monetary policy shocks as changes in futures on the federal funds rates. A simple model of production with intermediate inputs guides our empirical analysis.

We use spatial autoregressions to decompose the overall effect of monetary policy shocks on stock returns in narrow time windows around press releases of the Federal Open Market Committee (FOMC) into direct effects and higher-order network effects. We find large indirect effects that are robust to different sample periods, event windows, and types of announcements. Our results are similar for industry-demeaned returns and when we account for the possibility of other common shocks in the same event window.

Within the context of our model, we interpret monetary policy shocks as demand shocks. Consistent with this interpretation, we provide evidence that measured direct effects of monetary policy are larger for industries selling most of the industry output directly to end-consumers compared to other industries. The greater importance of direct-demand effects for these industries is consistent with our model’s intuition that indirect-demand effects should be less important for industries “close to end-consumers.” We show our empirical results on the relative importance of direct versus indirect effects are consistent with data we simulate from a dynamic model with nominal frictions.

The importance of networks for the propagation of monetary policy shocks raises interesting questions for future research: Which are the central sectors for the propagation of monetary policy shocks? How does optimal monetary policy look in this framework? Can monetary policy fully stabilize the economy? Should monetary policy target specific sectors? These are questions I tackle in related work which I discuss in more detail in Section 3.1.

Gorodnichenko and Weber (2016), which I discussed in more detail above, also belongs to this area of my research agenda. We use the differential reaction of squared stock returns to monetary policy shocks in narrow event windows around the press releases of the Federal Open Market Committee to disentangle different theories for the observed degree of nominal output price stickiness at the micro level. We document firms with more sticky-output prices have a higher conditional volatility of stock returns in narrow event windows around FOMC announcements relative to other firms.
2 Cross sectional Asset Pricing

Equilibrium asset pricing models such as the CAPM, the consumption CAPM, or the ICAPM often fail to explain the cross section of returns sorted on various characteristics. The profession has largely moved towards factor models to explain cross-sectional variation in returns with separate factor models tailored to specific asset classes such as the Fama & French five-factor model for the cross section of stocks or the Lustig, Roussanov & Verdelhan dollar and currency HML model for currencies. In “Conditional Risk Premia in Currency Markets and Other Asset Classes” (Journal of Financial Economics (2014), with Martin Lettau and Matteo Maggiori), we study the common risk characteristics of currency carry trades and other cross sections jointly in a risk-based framework. Historically, the carry trade has been highly profitable, but traditional risk factors have little unconditional explanatory power. We document the carry trade has a higher comovement with the aggregate market portfolio in bad times when the required compensation for holding risky assets is particularly high. We find a downside-risk CAPM which allows for a higher compensation for comovement with the aggregate market portfolio in times of low market returns can rationalize the returns of carry trade strategies. State-dependent comovement with the market return is a pervasive feature across asset classes. The downside-risk CAPM can jointly explain the returns of currencies, commodities, various equity portfolios, equity index options, and sovereign bonds. These findings shed light on the common risk characteristics across asset classes and provide guidance for the development of new asset pricing theories, which can explain cross sectional return patterns across asset classes.

The inability of equilibrium asset pricing models to explain cross sectional-variation in returns and the subsequent rise in factor models has started a fishing expedition for new “anomalies” relative to the preferred factor models. The recent finance literature lists several hundreds of characteristics which appear anomalous relative to factor models. In “Dissecting Characteristics Nonparametrically” (working paper (2017), with Joachim Freyberger and Andreas Neuhierl), we argue portfolios sorts and linear regressions have important applications in empirical finance, but fall short in tackling the multidimensionality challenge: which characteristics provide incremental information for expected returns conditional on other firm characteristics. We propose a nonparametric method to determine which firm characteristics provide independent information for the cross section of expected returns without making strong functional-form assumptions.
Specifically, we use a group LASSO (least absolute shrinkage and selection operator) procedure for model selection and nonparametric estimation. Model selection deals with the question of which characteristics have incremental predictive power for expected returns, given the other characteristics. Nonparametric estimation deals with estimating the effect of important characteristics on expected returns without imposing a strong functional-form.

We show three applications of our proposed framework. First, we study which characteristics provide independent information for the cross section of expected returns. Among a large set of characteristics, we find only a small set of variables, including size, idiosyncratic volatility, and past return-based predictors, have independent explanatory power for expected returns for the full sample period and all stocks. Second, we compare the out-of-sample performance of the nonparametric model with a linear model. The nonparametric model generates an average Sharpe ratio for an equally-weighted hedge portfolio of 3.42 compared to 2.26 for the linear model. The linear model selects too many characteristics in sample which do not add predictive power out-of-sample, and nonlinearities are important. Third, we study whether the predictive power of characteristics for expected returns varies over time and find substantial variation for some characteristics—we find a momentum crash as past losers appreciated during the recent financial crisis—whereas others show little variation. Our framework shows many previously documented cross sectional return predictors might have no predictive power for returns once we condition on other characteristics and reduce the number of independent return dimensions theories have to explain.

Parallel to the literature on cross sectional asset pricing, a literature developing new asset pricing theories has developed to solve the equity premium and risk-free rate puzzles. Prominent examples in this literature are the habit formation model, the long run risk model, or models of rare disasters which all successfully solves these puzzles. A recent literature, however, documents that these models fail to explain the downward-sloping term structure of equity returns which is prevalent in the data. A short-term asset that only pays dividends in the near-term future has higher returns than the market index, which is a claim to the stream of all future dividends. The current evidence relies on short samples with two major recessions, and the downward-sloping term structure might be a recession phenomenon. Alternative explanations for the downward-sloping term structure of risk premia are differential taxation between dividends and capital gains and market microstructure noise.

One avenue for disentangling these potentially conflicting explanations is to wait for twenty
years and perform an out-of-sample test. Instead, in “Cash Flow Duration and the Term Structure of Equity Returns” (Journal of Financial Economics, accepted for publication), I tackle this problem by resorting to the cross section of stock returns. I create a direct measure of cash flow duration at the firm level using balance sheet data only which allows to extend the sample backwards by several decades. I sort stocks into ten portfolios with increasing cash flow duration. Low-duration stocks outperform high-duration stocks by 1.10% per month, but have lower CAPM betas. Exposure to classical risk factors cannot explain the novel cross section either. The difference in returns between low- and high-duration stocks is three times larger after periods of high investor sentiment, and excess returns of high-duration stocks load positively on changes in sentiment, indicating mispricing might explain the downward sloping term structure of equity returns.

Market participants might be overly optimistic about the prospects of high-duration stocks. Analysts expect stocks with high cash flow duration to grow twice as fast over the following five years compared to low-duration stocks. This difference in growth forecasts shrinks by more than 50% over the next five years. Analysts seem to extrapolate from past earnings growth into the future. High-duration stocks indeed grew substantially faster in the past than low-duration stocks, but they have the same growth in earnings over the following five years. Standardized earnings surprises corroborate overly excessive growth expectations for high-duration stocks.

Impediments to short selling might explain why rational arbitrageurs do not take sufficiently large short positions in possibly overpriced high-duration stocks. I find evidence consistent with mispricing. The spread in excess returns is strongest among stocks that are potentially the most short-sale constrained stocks. For possibly unconstrained stocks, I do not find any return variation with cash-flow duration. My findings document the downward sloping term structure of equity returns is a robust feature throughout the modern sample period and raises the bar for new theoretical models to be consistent with the new facts I document.
3 Microfoundation of Macroeconomic Phenomena

3.1 Network origin of aggregate fluctuations

A growing literature in macroeconomics argues microeconomic shocks might propagate through the production network and contribute to aggregate fluctuations. In Ozdagli and Weber (2017), we document production networks are empirically relevant for the propagation of monetary policy shocks to the real economy. In “Production Networks and the Propagation of Monetary Policy Shocks” (working paper (2016), with Ernesto Pasten and Raphael Schoenle), we study quantitatively the interaction of heterogeneity in price stickiness, sector size, and input-output structure across sectors to understand how the interaction of these empirically prevalent heterogeneities affects the real effects and propagation of monetary policy shocks.

To do so, we develop a multi-sector Calvo model with intermediate inputs and heterogeneous sector size. We show theoretically that real effects are bigger if the share of intermediate inputs is high or if sticky price sectors are important suppliers to the rest of the economy, to flexible-price sectors, or to large sectors. Quantitatively, we find that heterogeneity in input-output linkages contributes only marginally to the real effects of monetary policy shocks, whereas heterogeneity in the frequency of price adjustment creates large real effects of nominal shocks. Differences in consumption shares have an economically important effect on the aggregate real effects.

To reach those conclusions, we calibrate a 350-sector version of the model to the input-output tables from the Bureau of Economic Analysis and the micro-data underlying the PPI from the BLS. A less granular calibration with only 58 sectors understates the real effects of monetary policy by 25%. The impact response of inflation, on the contrary, is similar in the two calibrations. This finding cautions against drawing inference for the conduct of monetary policy from the response of inflation to monetary policy shocks. The large real effects reflect heterogeneity in price markups due to the different heterogeneities and a higher average level of markups, fully driven by the product market wedge. This stresses the importance of product markets and price stickiness for business-cycle fluctuations.

In “Nominal Rigidities and the Granular Origins of Aggregate Fluctuations” (working paper (2017), with Ernesto Pasten and Raphael Schoenle), we extend this work to study the aggregate fluctuations originating from shocks to firms or sectors. Identifying aggregate shocks that drive business cycles might be difficult. A recent literature advances the possibility shocks at
the firm or sector level may be the origin of aggregate fluctuations.

This view stands in contrast to the “diversification argument” of Lucas (1977), which conjectures that idiosyncratic shocks at a highly disaggregated level average out in the aggregate. In contrast, Gabaix (2011) argues that the diversification argument does not readily apply when the firm size distribution follows a fat-tailed distribution, which is the empirically relevant case for the U.S. Intuitively, shocks to disproportionately large firms matter for aggregate fluctuations, the “granular” effect. In a similar vein, Acemoglu, Carvalho, Ozdaglar, and Tahbaz-Salehi (2012) focus on sectoral shocks and show that input-output relationships across sectors can mute the diversification argument if measures of sector centrality follow a fat-tailed distribution, which is also the empirically relevant case for the U.S. They label this channel the “network” channel. Thus, either through a granular or network channel, microeconomic shocks to small numbers of firms or sectors may drive aggregate fluctuations, instead of aggregate shocks. Both channels, however, operate under the assumption of perfectly flexible prices.

We study whether and how nominal rigidities affect the importance of microeconomic shocks for aggregate fluctuations. To fix ideas, let us consider a multi-sector economy without linkages across sectors and consider a positive productivity shock to one sector. Marginal costs in this sector decrease and prices should fall in the absence of pricing frictions. But consider what happens if prices do not adjust. Demand for goods of the shocked sector remains unchanged, so production remains unchanged. Therefore, regardless of the size of the sector, the contribution of its shocks to aggregate fluctuations is zero except for some general equilibrium effects. A similar logic applies to production networks.

In the data, prices are neither fully rigid nor fully flexible, and substantial heterogeneity of price rigidity across sectors in the U.S. exists. How does the heterogeneity in nominal price rigidity interact with the granular effect and the network effect in affecting the ability of microeconomic shocks to generate sizable aggregate fluctuations? Do price rigidities distort the identity of sectors that are the origin of aggregate fluctuations? Can price rigidity create a “frictional” origin of aggregate fluctuations, conceptually different than the granular or the network origins already described in the literature?

We extend our model in Pasten, Schoenle, and Weber (2016) to study these questions. We first analytically study in a simplified version of our model the distortionary role of price rigidity on the granular and network origins of aggregate fluctuations. Up to a log-linear approximation, GDP is
a linear combination of sectoral shocks, and the model nests Gabaix (2011) and Acemoglu et al. (2012) as special cases. When we abstract from intermediate inputs and price stickiness, we recover the granularity effect of Gabaix (2011): the ability of microeconomic shocks to generate aggregate fluctuations depends on the fat-tailedness of the sector size distribution which we measure by sector GDP.

We derive conditions under which the interaction between the frictional, granular, and network sources may amplify the scale of aggregate fluctuations from microeconomic shocks. We also show theoretically that pricing friction changes the identity and relative contribution of the most important sectors driving aggregate fluctuations. Thus, price rigidity not only generates aggregate inertia, as is standard when shocks are aggregate, but may also distort the sign of aggregate fluctuations given the idiosyncratic nature of microeconomic shocks. Heterogeneity in price rigidity invalidates the Hulten (1978) result which holds in Gabaix (2011) and Acemoglu et al. (2012): sector (or firm) total sales are no longer a sufficient statistic for the importance of GDP volatility.

Quantitatively, the pricing friction alone creates sizable effects of microeconomic shocks on GDP volatility. Thus, there is a “frictional” origin of aggregate fluctuations that is conceptually different from the granular or network mechanisms already described in the literature.

Overall, price rigidity generates a frictional origin of aggregate fluctuations, it amplifies the granular and network channels of idiosyncratic shocks, and it changes the identity and relative importance of sectors for aggregate fluctuations originating from sectoral shocks. A central bank which aims to stabilize sectoral prices of “big” or “central” sectors might make a systematic policy mistake if it does not take into account the “frictional” origin of aggregate fluctuations. In ongoing work, we study optimal monetary policy within such a framework.

3.2 Formation of Inflation Expectations

Another area of macroeconomics that requires microfoundations is the formation of expectations regarding inflation by economic agents. Expectations about macroeconomic variables play a central role in economic theory and policymaking. Households’ inflation expectations determine their saving and consumption decisions and, ultimately, the effectiveness of monetary and fiscal policy. During the recent Great Recession, several leading macroeconomists and policymakers advocated a temporary increase in inflation expectations to increase current consumption and spending, and
bring the economy back to its steady-state growth path. A large and growing theoretical literature emphasizes the stabilizing role of inflation expectations and forward guidance, and quantitative easing has real effects in theoretical models because it raises households’ inflation expectations. Despite the central role in theory of inflation expectations for the effectiveness of both fiscal and monetary policy, we have limited knowledge on the relationship between inflation expectations and consumption behavior in the data and how individuals form inflation expectations. These are questions I tackle in this part of my research agenda.

Governments around the globe struggle to stimulate the economy. Large stocks of sovereign debt limit the scope of fiscal stimulus, whereas the zero lower bound on nominal interest rates and inflated central bank balance sheets constrain conventional and unconventional monetary policy. Macroeconomic theory has recently studied unconventional fiscal policy measures to stimulate demand by changing intertemporal prices. Unconventional fiscal policy exploits changes in consumption taxes to engineer an increasing path of consumption prices.

In “The Effect of Unconventional Fiscal Policy on Consumption Expenditure” (working paper (2017), with Francesco D’Acunto and Daniel Hoang), we exploit a pre-announced increase in value-added tax (VAT) to study the effect of inflation expectations on household spending. In November 2005, the newly formed German government unexpectedly announced a 3-percentage-point increase in VAT, effective in January 2007. The tax change qualifies as exogenous due to an inherited fiscal deficit following the taxonomy of Romer and Romer (2010), and Germany had no monetary sovereignty as a member of the European Monetary Union. Using novel micro data on inflation expectations from Germany and three other European countries, we show in a difference-in-differences identification design that the unexpected announcement of a future increase in VAT resulted in an increase in German households’ willingness to purchase durable goods throughout 2006, with a peak of a 34% higher willingness to buy durable goods compared to other EU households in November 2006. A back-of-the-envelope calculation suggests the announcement resulted in 10.3% higher real durable consumption growth throughout 2006, before the actual increase in VAT. Our empirical findings document unconventional fiscal policy can stimulate the economy via increasing inflation expectations and offer an alternative to unconventional monetary policy and government spending. Unconventional fiscal policy differs from fiscal stimulus or tax rebates because it does not rely on income effects, is time consistent, and is budget neutral.

Inflation expectations play a central role for macroeconomic stabilization and we document in
D’Acunto et al. (2017a) households strongly react in their consumption choices to their inflation expectations, but we still have limited knowledge on how households form these expectations. A stylized fact in survey data on inflation expectations across countries and sample periods is that women have systematically higher inflation expectations than men. In “Salient Consumption and Inflation Expectations” (work-in-progress (2017), with Francesco D’Acunto and Ulrike Malmendier), we study whether individual-level consumption experiences shape households’ inflation expectations. We test the extent to which the inflation perceived by households through their consumption experiences helps explain the large heterogeneity in inflation expectations across households, even for households that appear similar based on observable dimensions. We construct measures of experienced inflation using the micro data from the AC Nielsen homescan panel and ran two waves of our own survey on all 90,000 household members of the panel.

We first document a similar gender effect in our survey: women have on average substantially higher inflation expectations. Once we condition on who the primary shopper is in the household, a variable we can construct from our survey, we find the gender effect within and across households disappears, and we instead find an economically large shopper effect. Our preliminary findings indicate the prices households observe in their daily lives help shape inflation expectations. Hence, the current conduct of monetary policy by focusing on core inflation and neglecting many of the “volatile” price series households seem to pay attention to might result in systematic policy mistakes.

Recent heterogeneous agent models indicate common shocks might result in large aggregate effects due to heterogeneous responses across households which might complement classical intertemporal substitution channels. We find in D’Acunto et al. (2017a) households on average update inflation expectations over time to common shocks, but we have little knowledge on whether individuals react differently. Mental capabilities and IQ are central dimensions along which individuals differ. In “IQ and Inflation Expectations” (work-in-progress (2017), with Francesco D’Acunto and Daniel Hoang), we study how individuals in Finland update their inflation expectations to a large exchange rate devaluation in Finland after the demise of the USSR in the early 1990s using micro data on inflation expectations of Finnish men, which we merge with IQ data from the military entrance tests. We find men with low IQ have on average absolute forecasts for future inflation twice as large as men with high IQ, and are substantially less likely to update their inflation expectations to the exchange rate devaluation. These findings indicate common
monetary policy might have unintended redistributive effects, because a subset of the population might not update expectations and adjust consumption plans to common shocks.
References


