

Research Statement – Mishel Ghassibe

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I am a PhD Candidate at the Department of Economics, University of Oxford, on the job market this academic year. My research interests are in **macroeconomics**, with a focus on implications of production networks, firm heterogeneity and goods market frictions for monetary and fiscal policies. I have three completed research papers, including a single-authored article that has been recently published in the *Journal of Monetary Economics*. My research has received a number of competitive awards, including the 2020 European Economic Association Young Economist Award and the best paper prize at the 2018 European Central Bank Sintra Forum. Below I summarize my completed and ongoing research by area, and outline the agenda I plan to pursue after completing my PhD.

I Monetary Policy and Production Networks

My research on monetary policy and production networks aims to understand how input-output linkages across firms and sectors affect the conduct and effectiveness of central bank policy. I have pursued this agenda both theoretically and empirically, and plan to maintain such mix in my future work.

In my [Job Market Paper](#) I develop a novel tractable sticky-price model, where input-output linkages are formed endogenously. This is a contribution over existing models that instead take production networks as exogenously given ([Nakamura and Steinsson, 2010](#); [Pasten et al., 2020](#); [Rubbo, 2020](#)). The model delivers cyclical properties of networks that are consistent with the empirical regularities I estimate using sectoral and firm-level data. A novel source of state dependence in nominal rigidities arises: the strength of complementarities in price setting and monetary non-neutrality increase in the number of suppliers that firms optimally choose to have.

As a result, the model simultaneously rationalizes the following three non-linearities in monetary transmission, which have been documented in empirical literature (Tenreyro and Thwaites, 2016; Jordà et al., 2019; Ascari and Haber, 2021). First, the model produces *cycle dependence*: the magnitude of real GDP's response to a monetary shock is procyclical. This occurs because in expansions the level of productivity is high, encouraging cost-minimizing firms to connect to more suppliers, which makes pricing decisions more co-ordinated and monetary non-neutrality stronger. Second, there is *path dependence*: non-neutrality of real GDP is higher following previous periods of loose monetary policy. This happens since under nominal rigidities higher supply of money makes prices charged by suppliers cheap relative to the cost of in-house labor, encouraging more connections and strengthening pricing complementarities. Third, there is *size dependence*: larger monetary expansions make the network denser and have a disproportionately larger effect on GDP than smaller expansions. On the other hand, larger monetary contractions shrink the network and generate a disproportionately smaller decrease in GDP. Such size dependence holds even if the probability of price adjustment is state-independent.

My paper "[Monetary Policy and Production Networks: an Empirical Investigation](#)" (*Journal of Monetary Economics*, 2021) is the first paper in the literature to offer econometric evidence on the contribution of production networks to the effect of monetary policy shocks on real macroeconomic variables. Existing literature, such as [Ozdagli and Weber \(2017\)](#), instead focuses on stock returns and the role of production networks in amplifying their response to monetary shocks. In particular, I construct a highly disaggregated dataset on sectoral consumption in the United States, to show that amplification through input-output linkages accounts for at least 30 percent of the response of aggregate consumption to monetary policy shocks. At the sectoral level, I find that the network effect rises in the frequency of price non-adjustment and intermediates intensity. Moreover, the network effect is highly concentrated: sectors that jointly account for 17 per cent of our sample aggregate consumption account for 98 per cent of the amplification. In order to develop our econometric specification, I obtain novel analytical sector-level solutions to a forward-looking New Keynesian model with asymmetric input-output linkages.

II Fiscal Policy

My research on fiscal policy studies how the effectiveness of both government spending and tax instruments varies across different phases of the business cycle. I have developed two research papers on this topic. A completed paper of mine develops a novel theory based on search frictions in the goods market, which predicts that fiscal multipliers' variation over states of the world is pinned down by the source of economic fluctuations. In the same paper I test such predictions and find support in United States data. In my ongoing work I study granular fiscal policy, such as interventions at the level of individual sectors, in an empirically realistic environment with firm heterogeneity and input-output linkages. Below I summarize the two papers.

In the paper ["State Dependence of Fiscal Multipliers: the Source of Fluctuations Matters"](#) (joint with Francesco Zanetti), we develop a general theory of state-dependent fiscal multipliers in a framework featuring two empirically relevant frictions: idle capacity and unsatisfied demand. The frictions are generated by search-and-matching in the goods market, in spirit of [Michaillat and Saez \(2015\)](#). Our key novel finding is that the source of fluctuations determines the cyclicalities of multipliers. Policies that stimulate demand, such as government spending, have multipliers that are large in demand-driven recessions, but small and possibly negative in supply-driven downturns. Conversely, policies that boost supply, such as cuts in payroll taxes, are ineffective in demand-driven recessions, but powerful if the downturn is supply-driven. Austerity, implemented by a reduction in government consumption, can be the policy with the largest multiplier in supply-side recessions and demand-driven booms, provided elasticities of labor demand and supply are sufficiently low. We obtain model-free empirical support for our predictions by developing a novel econometric specification that allows to estimate spending and tax multipliers in recessions and expansions, conditional on those being either demand- or supply-driven. Our empirical results provide a resolution to the empirical debate between [Auerbach and Gorodnichenko \(2012\)](#) and [Ramey and Zubairy \(2018\)](#) on the degree of state dependence in government spending multipliers.

In ongoing work titled ["Granular Search"](#) (joint with Francesco Zanetti), we develop a tractable model of random search in an empirically-relevant granular environment, where firms are interlinked by production networks and are subject to both aggregate and idiosyncratic

shocks. Our model simultaneously allows for search frictions in markets for final goods, as well as in markets for factors of production, such as labor and intermediate inputs. We contribute to the literature on distortions in economies with production networks (Bigio and La'O, 2020) by being the first paper to explicitly model and quantify search frictions in such granular setting. Our model delivers a novel theoretical mechanism: changes in search conditions in a particular granular market are able to propagate to other sectors and drive aggregate outcomes. For example, excess vacancies in a specific granular labor market reduce capacity of the product market which relies on that specific type of labor; as a result, the cost of search in that specific product market rises, which further shrinks capacity of all other product markets which use intermediate inputs from the affected sector. We show that inefficiencies created by granular search frictions in our model cannot be corrected by aggregate interventions, such as monetary policy. Instead, the first-best allocation can be recovered using a combination of targeted fiscal interventions, comprising of changes in sector-specific taxes and government consumption. For example, markets where search frictions deliver inefficiently low capacity require reductions in sector-specific supply-side taxation, whereas sectors with an inefficiently low demand require additional government consumption.

III International Trade and Production Networks

A substantial part of my ongoing research focuses on input-output linkages in an international dimension. I am currently working on two projects in this area. First, in one project I use novel UK survey data to identify firm-level shocks to expected tariffs, and estimate how such shocks propagate to pricing decisions. I compare the estimates to those predicted by a multi-sector model with both domestic and international networks and study optimal monetary stabilization of such disturbances. In another project I develop a model where input-output linkages across countries are formed endogenously, which allows to pin down the optimal degree of participation in global value chains.

In the ongoing work titled **"International Production Networks, Tariffs and Inflation: Theory and Evidence from UK Microdata"** (joint with Boromeus Wanengkirtyo) we use a new survey of UK firms, the Decision Maker Panel, to identify firm-level shocks to expected tariffs following Brexit and estimate the effect of such granular news shocks on firms' pricing decisions.

We then develop a multi-sector small open economy New Keynesian model with both domestic and international production networks and calibrate it using UK microdata on frequency of price adjustment and input-output linkages. Our model-based simulations of the effect of news tariff shocks replicate those estimated using survey data. Finally, we study the optimal conduct of monetary policy in such an open economy environment with networks. Our works contributes both to the empirical literature on propagation of trade shocks through granular environments with production networks (Barattieri and Cacciatore, 2020), as well as to the literature which builds models of input-output linkages across countries (Gopinath et al., 2020).

In another ongoing project I develop a framework for studying endogenous formation of input-output linkages across countries. Such framework pins down optimal degree of participation in global value chains with important implications for both monetary and trade policies. For example, states of the world with densely interconnected countries limit the potency of domestic monetary policy, as domestic costs become insensitive to prices of factors of production at home. At the same time, trade policies which deliver densely interconnected countries may increase volatility, as countries become more sensitive to shocks that originate abroad.

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