RESEARCH STATEMENT

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I am a macroeconomist interested in business cycles fluctuations and information economics. This note provides an overview of my current research in these areas. I begin by outlining my main research agenda under the heading *Rational Inattention in Macroeconomics*. Next, I present ongoing projects categorized under *Uncertainty & Expectations Dispersion*. Finally, under *Other Reasearch*, I summarize work with coauthors.

Rational Inattention in Macroeconomics

Rational inattention (Sims 1998, 2003) is a theory of costly information acquisition that centers on a fundamental trade-off: acquiring more informative signals increases both expected payoffs and attention costs (cognitive effort of processing information). Under this hypothesis, inattentive agents *optimally* design the signals they wish to receive about the state of the economy. Because these signals are noisy, they must be filtered, which in turn induces inertia in prices and quantities through slow learning. In my research, I embed rational inattention within Dynamic Stochastic General Equilibrium (DSGE) business cycle models. I study how this assumption about expectations formation helps close the gap between model predictions and the data, with a particular focus on its effects on the propagation of macroeconomic shocks and the resulting policy implications.

Rationally Inattentive Heterogenous Agents

Only a few papers have studied inattention in general equilibrium, but we know from Maćkowiak and Wiederholt (2015, 2023) that in Ricardian models with ex-ante identical agents, it can generate persistence in prices and quantities, as well as average forecast error–revision patterns consistent with the data. However, less is known about how it performs in heterogeneous agents environments. In particular, it is unclear whether inattention remains a strong propagation mechanism when some households cannot smooth consumption intertemporally, and whether it can generate cross-sectional expectations that match the data.

I investigate these questions in two-agent models featuring a calibrated share of constrained households (hand-to-mouth) and show that the microfoundations of the labor market are the determining factor. Under the standard assumptions of

competitive wages and households with labor market power, rational inattention cannot simultaneously generate persistence in the growth rates of macro variables and cross-sectional expectations that match the data. I propose ways out of this conundrum based on two key insights: (i) losses incurred from suboptimal actions relative to intra- and intertemporal decisions must be of similar magnitude (e.g., the stakes of the labor supply or wage-setting decisions must not outweigh those of the consumption–savings decision), and (ii) labor income should not peak on impact. I show that this can be achieved by either assuming that wages are set by firms with labor market power (monopsony) or by labor unions acting on behalf of households supplying differentiated labor types. The main contribution of the paper is to show that accounting for endogenous attention imposes an additional degree of structure on the model's microfoundations that matters for policy experiments and inequality implications.

An additional contribution of the paper is to empirically document expectation differences along a broader dimension of heterogeneity than previously studied. Using the New York Fed's *Survey of Consumer Expectations* and its supplemental questionnaires, I identify which respondents qualify as hand-to-mouth households and show that they form less accurate forecasts than others, even after conditioning on education, numeracy, and employment. This result is used to assess the models' fit in terms of expectations.

Shocks and their Propagation under Rational Inattention

The literature on business cycles has two main goals: (i) identifying the principal sources of fluctuations, and (ii) understanding how they propagate through the economy. DSGE models are the preferred framework for studying these questions; researchers write down models with optimizing agents (generally with perfect information), exogenous shocks, and adjustment frictions that allow them to fit the data. Once estimated, these models can address both points. Although specifications vary, there is broad consensus in the current vintage of medium-scale New Keynesian DSGE models regarding the main drivers of business cycles and the propagation of shocks.

In this paper, I compare the predictions of an RI-DSGE model with those of a baseline New Keynesian DSGE model in terms of propagation. A general observation is that a fair comparison of two DSGE models in terms of their internal propagation mechanisms is non-trivial to achieve: fully estimating both models leads to different estimates of the structural parameters that endogenously affect propagation *and* of the parameters that determine the exogenous stochastic sources of fluctuations. I propose a three-step procedure that addresses these issues and remains computation-

ally manageable when dealing with the model with inattention. First, I calibrate the structural parameters common to both models. Second, I estimate the remaining parameters—those governing adjustment frictions and exogenous shocks—in the New Keynesian model using Bayesian techniques. I impose the same parametrization for the stochastic processes governing the dynamics of exogenous shocks in the RI model. Third, I estimate the marginal attention costs such that the distance between the impulse responses to monetary policy shocks in the two models is minimized. Finally, I compare the responses to all other structural shocks.

At the time of writing this paper, and to the best of my knowledge, this is the first instance of an RI-DSGE comparable to a medium-scale New Keynesian DSGE (i.e., one that features both capital investment, pricing decisions and several exogenous shocks) being solved. The key methodological contribution is finding an appropriate change of variables such that firms' and households' attention problems can be rewritten as pure tracking problems, which in turn makes it possible to solve for the optimal signals efficiently.

Uncertainty & Expectations Dispersion

Uncertainty and expectations dispersion[1] that arise from imperfect information are potentially important for business cycles. The dynamic effects associated with their fluctuations are difficult to study under the paradigm of rational inattention because of tractability issues[2]. For that purpose, models with exogenous time-varying shock volatility or information structures are better suited. Here, I present ongoing work related to these topics.

Are Volatility Shocks Uncertainty Shocks?

A large literature studies the effects of uncertainty on macroeconomic dynamics by modeling it as fluctuations in the second moments of exogenous shocks (see Bloom 2009). To compare model objects with empirical counterparts, this work often relies on Structural VARs (SVARs) using Cholesky orthogonalization to estimate the effects of uncertainty shocks. However, Kilian, Plante, and Richter (2022) have recently shown that this identification strategy is inappropriate. These findings cast doubt on the empirical results of previous research, which cannot be remedied using alternative standard identification strategies.

[1] These concepts are distinct, but often conflated in the literature due to modeling assumptions.

[2] It is possible to compare their constant values across different model parametrizations, but it is computationally challenging to go any further.

In this paper, I propose combining the proxy-VAR approach with DSGE-based instruments (see Fève, Collard, and Guay 2024) to assess whether volatility shocks truly represent uncertainty shocks. First, I use Bayesian methods to recover time series of exogenous volatility fluctuations from a DSGE model. Second, I test their validity as proxies for uncertainty through an invertibility test. If the test is satisfied, one can then estimate a VAR using the model-generated series as instruments for uncertainty and recover the dynamic causal effects of the shock. This method has the advantage of simultaneously addressing both the lack of a direct observable counterpart for uncertainty shocks (i.e., the best proxies are likely contaminated by other shocks) and the aformentionned failure of standard SVAR identification techniques to recover these shocks.

Other Reasearch

Quantifying the Effect of Noisy News on Business Cycles

In this paper, coauthored with Patrick Fève (Toulouse School of Economics) and Alain Guay (UQAM), we investigate the impact of noisy news shocks about aggregate Total Factor Productivity (TFP) on business cycle dynamics. We begin by proposing a simple semi-parametric statistic that combines moment conditions between noisy signals and present or future changes in TFP to estimate the noise-to-signal ratio and the impulse response function (IRF) of news shocks to TFP. Building on this first step, we develop a multi-step procedure, based on local projections, to estimate the IRFs of both news and noise shocks. Simulation experiments confirm the robustness of the procedure in a general setting. We then apply our method to U.S. data and find that noise in TFP shocks plays only a minor role in explaining business cycle variations.

Inflation, Attention and Expectations

In current work with Dalibor Stevanovic (UQAM) and Massimiliano Marcellino (Bocconi), we argue that the empirical relationship between inflation and attention can partly be explained by the time-varying availability of public signals. In our theoretical framework, when attention is high, additional information about shocks affecting inflation is publicly available (e.g., through news media). Those public signals reduce not only a firm's uncertainty about the price level itself, but also uncertainty about the beliefs of others.

Focusing on monetary policy shocks, our model predicts that in high-attention regimes, the real effects of such disturbances are much smaller. We corroborate this

prediction with structural VAR evidence. The model also predicts that information rigidity decreases with attention. We test this implication using measured expectations of professional forecasters, but we do not find the expected positive correlation between information rigidity and attention. In fact, we observe the opposite; forecasters become slower to update their expectations when attention increases. This conflicting result suggests caution in using the expectations of forecasters as proxies for those of firms and households, which are the expectations that ultimately matter for the economy.

References

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