Research Statement

My primary research interests lie in Finance, Macroeconomics, and the intersection of the two, with the main focus on how models of asymmetric information and agency problems in corporate finance may help us understand macro-finance phenomena. My secondary research interests also include application of models of bounded rationality in finance and macroeconomics.

During my PhD I have completed three research projects, each of which has spurred interest in an independent research agenda. In what follows, I outline the completed projects, but also the new research questions they have raised, and how I plan to address them in the future.

My latest project, which is the last chapter of my PhD, and also my Job Market Paper, is motivated by an empirical observation that both credit booms and financial crises are preceded by swings in the trend growth rate of real productivity. The three greatest crises in the last 100 years, – the Great Depression, the Japanese slump, and the Great Recession, – were all preceded by periods of major productivity booms that ran out of steam before the busts (Cao and L'Huillier, 2018). Most existing theories of financial crises do not account for this, and place the origins of the financial boom/bust cycle within the financial sector; those that do typically feature deterministic crises (Gorton and Ordoñes, 2019; Boissay et al., 2016; L'Huillier et al., 2020), whereas available data suggest that crises ex-ante are low probability events.

I build a theory of credit booms and banking crises driven by productivity that incorporates Diamond and Rajan's (2000, 2001) work on bank capital structure into a simple macroeconomic model with capital and aggregate uncertainty. Booms may occasionally be followed by crises because optimal structure of banks' liabilities becomes increasingly fragile during periods of strong growth. Specifically, because banks invest in projects with uncertain long-run returns, in the first-best world they would raise funding using long-term state-contingent instruments, like equity. However, the ability of banks to issue equity is limited by moral hazard, as they can make it difficult for investors to obtain repayment in the future. Like in Diamond and Rajan, the use of demandable deposits that subject misbehaving banks to runs creates discipline and allows banks to increase financing. Normally, banks fund themselves with a mix of equity and deposits that maximizes discipline, but ensures that they always remain solvent. When growth prospects become sufficiently strong, however, worsening moral hazard induces banks to rely exclusively on deposits, leading to higher credit, asset prices, and investment. If the anticipated growth fails to materialise, though, the excessive deposit financing leads to a banking crisis. This theory of the crises has profound implications for policy. For example, while widely discussed leverage restrictions may indeed eliminate crises, they hurt welfare by stifling asset prices and investment at the time when it is most valuable.

There are, however, important questions which one cannot address within the simple three periods model I used in the paper. How are the possibility and likelihood of crises related to the duration and magnitude of preceding booms? Does the desirability of regulatory intervention vary as a credit boom progresses? While we know that leverage restrictions are costly in the short run, do they perhaps improve welfare in the long run, by forcing the financial sector to accumulate more capital? How do financial cycles feed back into real economic growth? Lastly, what frictions are necessary to prevent banks from making deposits contingent on realised aggregate state, and thus avoiding crises? All of these should be possible to address in a continuous-time model with a stochastically evolving productivity growth. I have experience of working with continuous time models from one of my other projects, and I believe that building a model laboratory of productivity-driven financial crises in a continuous time setting would be a natural step forward towards answering the above questions, and is therefore one of the projects I plan to undertake next.

In my second paper, I re-examine and extend empirical findings of Greenwood and Hanson (2015) on return predictability in the dry bulk shipping industry. I confirm that excess returns to owning ships are strongly predictable and negatively related to past ship earnings and prices, but also find that this predictability is concentrated during global recessions. Furthermore, return predictability in recessions is economically large: a financially unconstrained mean-variance investor can dramatically increase their utility by exploiting it in real time. The countercyclicality of return predictability is, however, incompatible with the behavioural explanation of predictability proposed by Greenwood and Hanson. I suggest an explanation of countercyclical return predictability based on time-varying subjective structural uncertainty about future shipping demand. Agents may overreact to a transitory shock if they are unsure about its long-run implications. Because of the accompanying surge in uncertainty, agents' reaction is reduced following positive shocks, but amplified following negative shocks, due to risk aversion and real option effects.

An alternative plausible explanation of countercyclical predictability is a distressed seller hypothesis. It is widely documented that many shipping firms are highly levered. What may be happening, therefore, is that these firms are forced to deleverage and sell assets during recessions, exactly at the time when potential buyers of ships are also short of cash (Shleifer and Vishny, 1992). This may result in cash-in-the-market pricing, and high returns to those who manage to purchase ships during distress periods. Going forward I plan to explore this promising channel in detail theoretically, and do more empirical work to be able say more about which of the possible described mechanisms is the most likely explanation of return predictability in shipping.

My third project is on managerial compensation in innovative, financially constrained firms with high growth opportunities. In a model of a single firm, I show that stock-based compensation can incentivize the manager to work hard to pursue further growth, but also to conceal from investors bad news about the firm's prospects in order to maintain high stock price growth. This leads to overinvestment and bubble-like boom and bust in the stock price

in equilibrium. This paper thus extends results of Benmelech et al. (2010) to high-growth, no-dividend firms.

In the model, the manager is impatient, and always sells all his stocks immediately upon award. Furthermore, the timing of eventual revelation of concealed bad information to investors is exogenously imposed. We know, however, that during the dot-com bubble, managers of high growth start-ups accumulated large stock holdings. Moreover, we know that the bubble was fed and then burst by a coordinated sell-off by insiders and informed investors (see e.g. Griffin et al. 2011), suggesting an endogenous information revelation mechanism along the lines of Abreu and Brunnermeier (2003).

In my near-future work I am therefore planning to explore how the model can be extended to the case of many firms with correlated growth prospects, and also endogenize the managers' sell-off and exit decisions. The goal is to shed light on the dot-com bubble of 1990s and similar events that involved entire sectors of the economy, rather than individual firms. Theoretical challenge arises because it is not clear whether the results obtained for a single firm so far can be easily generalised to the case of many heterogenous firms with correlated fundamental values, since heterogeneity can make it difficult for informed insiders to coordinate and conceal information from the market. One solution that I plan to explore is introduction of plausible information frictions that arise due to unobserved liquidity shocks, prompting some managers to sell their stocks even when their firms' prospects are good, as in Doblas-Madrid (2012).

Thank you for your time and consideration. Please feel free to contact me should you have any questions.

Sincerely, 31 January 2021

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