Research Statement

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July 7, 2015

My research belongs to two broad fields of economics and finance, (1) corporate finance and (2) behavioral finance, and it includes both empirical and applied theory papers. While I have been working on a quite broad set of topics, I believe there are several common unifying themes across my research, both in terms of methodology and content.

1 Corporate Finance Research

The overarching theme of my research in corporate finance is to quantify how various frictions – especially frictions in the financing market – affect the real economy, i.e. firms’ capital expenditures or labor demand, entrepreneurial activity, banks’ credit supply decisions, etc. I have divided this work into three distinct but related lines of work.

The role of credit frictions on economic activity

Understanding the effect of credit frictions on real activity is an important agenda for economists. Macro-economists have long recognized that credit frictions can amplify macro-economic fluctuations. Many public policies try to alleviate credit frictions for economic agents. Applied micro-economists have thus taken up the task of quantifying empirically the causal effect of credit frictions on corporate investment. This is a challenging task. An early literature documented a positive correlation between cash-flows and investment. However, interpreting this correlation as
evidence of financing friction is not straightforward. Credit constraints may force firms to rely more on internal funds to finance their investment; but cash-flows may also be simply correlated with investment opportunities. The literature made progress by proposing exogenous shocks to cash flows. However, these seminal contributions rely on some form of local/quasi-natural experiments, raising the question of their external validity. Additionally, these papers only consider shocks to cash-flows, while firms may rely on other sources of liquidity to fund their capital expenditures.

In a series of papers that I describe below, I have introduced a new way to approach this old and important question. This line of research recognizes that real estate collateral is a major source of debt capacity for households and firms alike. In the presence of financing frictions, it is thus credible that variations in housing collateral value will affect real activity. The empirical strategy we developed exploits variations in local house prices as shocks to the value of collateral available to agents that hold real estate assets. This strategy is a novel way to identify the effect of financing frictions on economic activity and can be applied to a large cross-section of firms. Beyond its value as an identification strategy, this empirical methodology also documents precisely an important and relevant channel through which credit frictions affect economic activity. Because real estate is a very “redeployable” asset, it is a large source of collateral for the economy. Understanding how regional variations in house prices affect the behavior of land-holding agents is a nice laboratory to study how aggregate collateral supply shocks may affect the economy. The recent boom and bust in house prices experienced in the US during the 2000s illustrates the empirical relevance of this line of research.

In “the Collateral Channel: How Real Estate Shocks affect Corporate Investment” (American Economic Review, 2012, [7]), joint with Chaney and Thesmar, we use variations in local real estate prices as shocks to the collateral value of land-holding firms. We measure how a firm’s investment responds to each additional dollar of real estate that the firm actually owns, and not how investment responds to real estate shocks overall. This empirical strategy uses two sources of identification. The first comes from the comparison, within a local area, of the sensitivity of
investment to real estate prices across firms with and without real estate. The second comes from the comparison of investment by land-holding firms across areas with different variations in real estate prices. The identifying assumption underlying this strategy is that whether firms own or lease their real estate assets is unrelated to how their investment opportunities are exposed to the local housing cycle.

Two sources of endogeneity might affect this empirical strategy: (i) real estate prices may be correlated with the investment opportunities of land-holding firms, and (ii) the decision to own or lease real estate may be correlated with the firm’s investment opportunities. We address the first source of endogeneity by instrumenting house price variations with the interaction of changes in mortgage rates and the local elasticity of land supply. We do not have a proper set of instruments to deal with the second source of endogeneity. We make two attempts at gauging the severity of the bias it may cause. We first control for the observable determinants in the ownership decision, which leaves the estimation unchanged. Second, we estimate the sensitivity of investment to real estate prices for firms that acquire real estate before and after they do so. Before acquiring real estate, future purchasers are statistically indistinguishable from firms that never own real estate. The sensitivity of their investment to real estate prices becomes large, positive, and significant only after they acquire real estate.

Quantitatively, in our main specification, we find that for each dollar increase in the value of real estate assets, firms invest 6 additional cents; this increase in investment is entirely financed through additional debt issuance. This sensitivity can be quantitatively important in the aggregate, since, as we show in the paper, real estate represents a sizable fraction of the tangible assets that firms hold on their balance sheet: in 1993, among public firms in the US, 59% reported at least some real estate ownership. Among these land-holding firms, the market value of real estate accounted for 19 percent of the firm’s total market value.

Credit constraints have also long been suspected to affect entrepreneurial activity. Most new business owners are individuals with limited wealth. Asymmetric information is likely to pre-
vent credit markets from operating efficiently for these individuals. An early literature, using for instance inheritance shocks, found large effects of liquidity on the decision to become an entrepreneur. Recent contributions have challenged this view, arguing that the correlation between wealth and entrepreneurial activity is tenuous and could reflect the existence of business connections more than actual credit constraints. The literature is thus still largely debating the importance of credit constraints in explaining entrepreneurial activity. In “Housing Collateral and Entrepreneurship” (*Journal of Finance, forthcoming, [11]*) joint with Schmalz and Thesmar, we adapt the methodology developed in our AER paper to address this debate. This methodology is particularly well-suited to look at this question since in many countries, housing collateral is almost a prerequisite for entrepreneurs to access significant amounts of debt financing. This is especially the case in France – the country in which our empirical analysis takes place – where banks often use the entrepreneur’s house as personal guarantee in corporate loan contracts.

Our empirical strategy thus exploits variations in local house prices as shocks to the value of collateral available to homeowners. We control for local demand shocks by comparing homeowners to two control groups that live in the same region but do not experience collateral shocks: (i) renters as in the AER paper and (ii) homeowners with a mortgage outstanding, who - in France - cannot take out a second mortgage on their house. Our empirical analysis use administrative data on business starts and firms’ balance sheet. Our results show that an increase in collateral value leads to a significantly higher probability of becoming an entrepreneur, confirming the importance of access to credit on entrepreneurial activity. Going from the 25th to the 75th percentile of the distribution of past house-price growth increases the probability of firm creation by full homeowners, relative to homeowners with an outstanding mortgage, by 28% in the most saturated specification. We also find that conditional on entry, entrepreneurs with access to more valuable collateral create larger firms, more value added, and are more likely to survive, even in the long run. These long run effects are particularly interesting since in theory, if productivity shocks are persistent, poor but productive entrepreneurs should eventually save themselves out of their credit constraint.
In “The Real Effects of Collateral Constraints” (Working Paper, 2015, [18]) joint with Chaney, Huang and Thesmar, we push the agenda developed in our AER paper a step further. The paper’s objective is to develop a quantitative model to estimate the aggregate effects of credit frictions. In order to do so, we combine the reduced-form approach developed in the AER paper with a structural general equilibrium model of investment and hiring under collateral constraints.

Our analysis starts by estimating the joint response of labor and capital to shocks to collateral values. We do this using French administrative data that allow for a precise measurement of both collateral values and employment counts at the firm level. Our results show a significant response of both employment growth and investment to shocks to collateral value. These responses are asymmetric: employment growth responds much less to collateral shocks than investment. To interpret these results, we develop a dynamic structural model of investment and hirings with minimal ingredients: a Cobb-Douglas production function with decreasing returns to scale, adjustment costs to both labor and capital, and a collateral constraint, which depend on the realization of local house prices. The estimation is done using a Simulated Method of Moments, which target in particular the reduced-form elasticities of employment growth and capital growth to house price shocks. As we show in the paper, these moments improve significantly the identification of parameters related to the collateral constraint.

We then nest this model in a general equilibrium model that clears the labor market, the product market and the capital market. This allows us to perform a series of general equilibrium counterfactuals. In particular, we consider the effect of removing entirely the collateral constraint, so that firms get access to their desired level of financing. In this counterfactual, we find that welfare increases by 4.5%. This increase in welfare comes mostly from a large increase (18%) in the aggregate stock of capital; the better allocation of the existing capital that results from the removal of the credit constraint plays only a minor role in improving welfare. Interestingly, the removal of the collateral constraint leads to very little gains in aggregate employment (less than 1%). This is because the estimated model exhibits larger adjustment costs to labor than to capital, but capital requires financing capacity while labor does not. Constrained firms thus distort their
input mix toward using relatively more labor. When the collateral constraint is removed, these firms use their new debt capacity to substitute capital for labor. Because of this substitution, the removal of the collateral constraint has only a limited effect on aggregate employment.

This paper is still very much a work in progress. However, I believe it represents an important contribution to two separate strands of the literature. Relative to the literature in corporate finance on the real effects of credit frictions, the combination of cleanly identified reduced-form evidence and a structural general equilibrium model allows for a meaningful aggregation of micro-elasticities. Relative to the macroeconomic literature on mis-allocation, our paper emphasizes the importance of using specific moments to identify parameters related to credit frictions, which are the key parameters in these models.

In “Banks Exposure to Interest Rate Risk and the Transmission of Monetary Policy” (Working Paper, 2015, [16]) with Landier and Thesmar, we explore the real effects of credit frictions in a banking context. When a bank borrows short term, but lends long term at fixed rates, any increase in the short rate reduces its cash flows; leverage thus tends to increase. If the bank faces credit constraints, it has to reduce lending in order to prevent leverage from rising. The paper is an empirical exploration of this simple mechanism. We measure banks’ exposure to interest rate risk through the income gap – the sensitivity of banks assets to changes in interest rate relative to the sensitivity of banks liabilities. While this measure is imperfect – in particular, it does not account for positions in derivatives – it is readily available from bank holding company data, which allows for a large sample study.

We show that, over the 1986-2011 period, banks have, on average, positive levels of income gap. There is also substantial heterogeneity in the cross-section of banks in how exposed they are to interest rate risk. This is crucial for our empirical analysis, which compares how banks with different levels of income gap react to monetary policy shocks. The first part of the paper ensures that our income gap measure does capture a bank’s income exposure to interest rate shocks. To this end, we show empirically that the sensitivity of banks’ profits to interest rates
increases significantly with their income gap, even when banks use interest rate derivatives. In a placebo analysis, we also show that the income gap does not explain how banks’ non-interest income reacts to monetary policy shocks.

In a second step, we show that the income gap predicts the sensitivity of bank lending to interest rates, both for commercial & industrial loans and for mortgage lending. Quantitatively, a 100 basis point increase in the Fed funds rate leads a bank at the 75th percentile of the income gap distribution to increase lending by about 1.6 percentage points annually relative to a bank at the 25th percentile. We address the endogeneity of the income gap to the unobserved heterogeneity in bank lending in two ways. First, we control precisely for local demand shocks by including quarter-by-state fixed-effects. Second, we exploit the existence of internal capital markets within financial conglomerates. Controlling for a commercial bank’s own income gap, we use the conglomerate-level income gap as a source of financial constraint exogenous to the lending opportunities of the local commercial bank. This approach is valid under the identifying assumption that the lending opportunities of the commercial bank is orthogonal to the conglomerate’s own income gap – controlling for the commercial bank’s income gap. These additional analyses confirm our main result, i.e. that banks with a larger income gap expand their lending less when interest rates decline, and thus that banks’ exposure to interest rate risk is an important determinant of the lending channel.

In “Banking Integration and House Price Co-movement”, (R&R at the Journal of Financial Economics, 2015, [15]), also with Landier and Thesmar, we consider the implications of households’ credit constraints on house prices in the US. Our starting point is the striking rise in the correlation of house prices across US state-pairs over the 1976-2000 period, which we document in the first part of the paper. Our hypothesis is that this phenomenon is related to the concomitant rise in banking integration across US states, and especially the emergence of large banks operating across state lines. The economic channel underlying this hypothesis relies on two conditions: (1) some households are credit constrained in their decision to purchase a house, so
that credit supply affects house prices (2) within a bank-holding company (BHC), shocks, e.g.,
funding shocks, propagate through through internal capital markets to the different divisions of
the BHC. If both conditions are met, the presence of a large, common lender across two states will
create a source of commonality in lending, and therefore of commonality in house prices across the
two states. This hypothesis gives an important role to the “granularity” of the banking system:
idiosyncratic shocks to large BHCs do not cancel out in the aggregate and instead create a source
of co-movement for lending supply in the multiple states where these large banks operate. Since
the integration of banking markets across US states led to the emergence of large lenders operat-
ing across state lines, a plausible hypothesis is that banking integration resulted in an increase in
house price correlation.

The paper starts by providing a simple statistical framework that helps us derive an appropriate
measure of banking integration across state pairs. We then document empirically that house price
growth correlation is strongly related to this measure of financial integration. Of course, financial
integration could simply follow economic integration: this reverse causality bias could lead us
to over-estimate the effect of banking integration on house price correlation. To attenuate this
concern, we use the bilateral deregulation of interstate banking as shocks to the level of banking
integration of US state-pairs. Since our regressions control for the pairwise realized correlation
of income growth, the identifying assumption underlying our empirical strategy is that these
pairwise deregulations are not correlated with the “non-fundamental” unobserved heterogeneity in
house price co-movement, an assumption we defend extensively in the paper. Quantitatively, our
Instrumental Variable estimates suggest that banking integration can explain up to one fourth of
the rise in house price correlation over the period we consider. An interesting conclusion from
our paper is that the integration of banking markets in the US significantly reduced the scope for
geographic diversification in mortgage lending.
The role of corporate ownership and governance on firm behavior

Until recently, financial economists had a very monolithic view of the firm: the modern corporation was a widely-held company, in which ownership was dispersed among atomistic shareholders, and control was in the hand of professional managers unaccountable to shareholders. Thanks to the collection of extensive data, this view has been challenged: even in the US, there is a large heterogeneity of ownership and governance structure, and even among large, publicly-traded corporations. However, this heterogeneity is not necessarily relevant for economic outcomes. In the absence of information frictions, the ownership structure of a company should be mostly irrelevant, i.e. it should not affect its investment policy or its hiring policy. Some of my early work focused on showing empirically the relevance of corporate ownership and governance for firms’ real outcomes.

In “Performance and Behavior of Family Firms: Evidence from the French Stock Market” (Journal of the European Economic Association, 2007, [1]), joint with Thesmar, we document empirically the performance and behavior of family firms listed on the French stock exchange between 1994 and 2000. We find that, in the cross-section, family firms largely outperform widely-held corporations, a result that holds surprisingly also for firms run by descendants of the founder. The identification in the paper is essentially cross-sectional and these correlations should be interpreted with caution. However, we try to make progress by investigating empirically the origin of this superior performance of family-firms.

First, we use employer-employee matched data to offer evidence of a more efficient use of labor in heir-managed firms. These firms pay lower wages, even allowing for a heterogeneous skill and age structure. Second, we present evidence consistent with outside CEOs in family firms making a more parsimonious use of capital, as these CEOs typically use less capital, pay lower interest rates on debt and initiate more profitable acquisitions. Finally, we find that firms run by descendants of the founder smooth out industry-level employment shocks, a result consistent with the existence of implicit labor contracts in family firms. This result, which has since been confirmed by additional research in different settings, is the main contribution of the paper. Our
interpretation is that managers with a long-term horizon, such as descendants of the firm’s founder, have the commitment necessary to enforce these implicit contracts. It also explains why these firms are able to pay their workers less, since their workers get to enjoy some insurance benefit from working in these firms.

Another widely debated form of ownership, both in the academics literature and in the popular press, is ownership by a private equity group. This debate emanates from early results in the literature that shows that part of the efficiency gains following leveraged buyouts (LBO) come from the divestiture of non-strategic assets and the aggressive downsizing of labor by target firms. In “Growth LBOs” (Journal of Financial Economics, 2011, [5]), with Boucly and Thesmar, we revisit this question in the light of the changing landscape in the private equity industry. Using a data set of 839 French deals, we look at the change in corporate behavior following a leveraged buyout (LBO). We benchmark the target firms by defining “control” firms using standard matching techniques over the exhaustive set of private firms in France. In the 3 years following a leveraged buyout, we find that targets become more profitable, grow much faster than their peer group, issue additional debt, and increase capital expenditures. We also provide evidence that private equity funds create value by relaxing credit constraints, allowing LBO targets to take advantage of unexploited growth opportunities. Post-buyout growth is concentrated among private-to-private transactions, i.e., deals where the seller is an individual, as opposed to divisional buyouts or public-to-private LBOs where the seller is a private or a public firm. The observed post-buyout growth in size, debt and capital expenditures are stronger when the targets operate in an industry that is relatively more dependent on external finance. These results contrast with existing evidence that LBO targets invest less or downsize and are thus important in the light of the existing policy debate on the role of buyouts in the economy.

My work on corporate ownership has naturally led me to think harder about corporate governance. The results in my papers on family firms and LBOs both suggest that concentrated ownership has large, positive effects on the efficiency of a company’s management. One can inter-
pret these results in terms of corporate governance: concentrated ownership is an efficient mode of corporate governance; traditional governance mechanisms used in widely-held corporations do not function as efficiently. In fact, the literature on corporate governance has had a hard time identifying real, positive effects of corporate governance on firm performance. However, this literature has traditionally focused on the role of external governance mechanisms, i.e. outside institutions designed to discipline the management of a company: board of directors and its various characteristics, corporate charters, ... 

In “Bottom-up Corporate Governance” (Review of Finance, 2013, [8]), joint with Landier and Thesmar, we shift the focus to “internal” governance mechanism, i.e. organizational mechanisms that can help discipline the company’s management. We propose a new, easily implementable, measure of governance based on the degree of independence of the CEO’s immediate subordinates. We call “independent from the CEO” a top executive who joined the firm before the current CEO was appointed. Firms with a smaller fraction of independent executives have poorer internal governance, in the sense that the executive suite is mostly aligned with the CEO and will have less incentive to constrain her decision making in a meaningful way. In a robust way, firms with a smaller fraction of independent executives exhibit (1) a lower level of profitability and (2) lower shareholder returns following large acquisitions.

The interpretation of our empirical results can be best understood in the light of a companion theory paper, “Optimal Dissent in Organizations” (Review of Economic Studies, 2009, [2]), also joint with Landier and Thesmar. This paper presents a contract-theoretic model of the firm, where the firm is modeled as a two-agent hierarchy: an informed Decision Maker in charge of selecting projects (a CEO) and an uninformed Implementer in charge of their execution (a top executive). Both have intrinsic preferences over projects, so that a governance issue arises. The paper models the costs and benefits of divergence between their preferences, that is, the costs and benefits of dissent within the organization. We find that dissent, which we measure empirically with the fraction of independent executives, is useful to (1) foster the use of objective (and sometimes private) information in decision-making and (2) give credibility to the Decision
Maker’s choices. However, dissent comes at the cost of hurting the Implementer’s intrinsic motivation, thereby impairing organizational efficiency. Empirically, the results found in “Bottom-up Corporate Governance” suggest that the former effects dominate the latter.

The determinants of entrepreneurship

A large literature has documented the negative effects of barriers to entrepreneurship on entrepreneurial activity, i.e. on the number of new firms created. This is an important and relevant economic question, given the crucial role played by young firms in the economic performance of a country. However, we also know from the literature that entrepreneurs are heterogeneous in many dimensions, including ambition, risk-aversion, ability, etc. The economic implications of removing barriers to entry depend crucially on how individuals select into entrepreneurship: for instance, if individuals sort into entrepreneurship based on ability, a removal of entry barriers may lead low-talent individuals to start new businesses. In the presence of credit constraints, this may deteriorate allocative efficiency, as scarce resources are diverted toward less productive firms.

This question of the determinants of the decision to become self-employed is at the heart of “Can Unemployment Insurance Spur Entrepreneurial Activity? Evidence from France”, (R&R at the Journal of Political Economy, 2015, [12]), joint with Hombert, Schoar and Thesmar. In this paper, we exploit a large-scale reform of the French unemployment insurance system that provided insurance to unemployed workers that created a new business. The paper starts by providing a standard evaluation of the reform on new business creation. The identification comes from cross-industry heterogeneity in the exposure to the reform: in some industries – mostly high fixed cost industries – unemployed workers are unlikely to start new businesses, so that these industries are less likely to be affected by the reform. Unsurprisingly, we first report that the provision of insurance brought upon by the reform led to a large increase in the number of new firms, especially in industries “more exposed” to the reform. This result confirms the long literature on the effect of entry barriers on entrepreneurial activity.

We try to move this literature forward by investigating empirically the characteristics of the
entrepreneurs that start a business thanks to the reform, i.e. the marginal entrepreneurs. Our empirical results are surprising. New firms started in response to the reform are, on average, smaller, but their founders share similar growth expectations and education levels with entrepreneurs who started a firm before the reform. These firms are also as likely to survive or to hire in the years following creation than firms created prior to the reform. In other words, the evidence show that providing downside insurance allowed unemployed workers to enter into self-employment without significantly lowering the average quality of the pool of entrepreneurs. This is the first contribution of the paper. It implies that the distribution of perceived entrepreneurial ability at creation is very homogeneous so that there is limited sorting on entrepreneurial talent.

The second contribution of this paper is to consider the equilibrium effect of this large-scale reform. The increased insurance provision led to a massive entry of new, small firms in some industries. We show that this entry led to significant crowding-out effects in the data. Employment in small incumbent firms operating in “treated” industries decreased by a similar magnitude as the number of new jobs created in start-ups following the reform. Overall, the net employment gain brought by the reform of the unemployment insurance system is not significantly different from zero. However, we also show that the new firms created following the reform are significantly more productive than incumbent firms, so that the reform raises aggregate productivity: the facilitation of entry led to sizable Schumpeterian dynamics at the firm-level.

As described above, an important part of my research has been aiming at measuring the real effects of credit frictions. Entrepreneurship is a natural setting where one can expect significant effects of credit constraints, since many entrepreneurs lack access to outside finance. In “Housing Collateral and Entrepreneurship”, which I described above, we studied how access to valuable collateral affects entrepreneurial outcomes. In “Entrepreneurship and Credit Constraints: Evidence from a French Loan Guarantee Program” (NBER publication on International Differences in Entrepreneurship, 2010, [4]), joint with Lelarge and Thesmar, we also provide a quantification of how much credit constraints restrict entrepreneurial activity
in a different context. More precisely, we exploit a credit-guarantee program in France specially designed for entrepreneurs: a public agency provide insurance to lenders against borrowers’ risk of default, while the subsidized insurance premium is paid for by the borrower. The main rationale for this type of public intervention is the widespread belief that the lack of collateral hinders the access of new firms to external finance. Our empirical strategy address the endogenous selection of entrepreneurs into the program by exploiting an exogenous regulatory shift in the mid-1990s, which led to an increase in the overall size of the program and to the eligibility of several new industries. Using a detailed administrative dataset with information on all French firms founded between 1988 and 1999, we provide a difference-in-differences estimation of the impact of the loan guarantee program on the creation and growth of start-up firms. At the firm level, getting a loan guarantee helps newly-created firms grow faster and pay a lower cost for their capital. This rejects the null hypothesis that these entrepreneurs are unconstrained prior to the reform. However, the program also significantly increases the probability of default of these new ventures, suggesting that risk-shifting may be a potential cost of loan guarantee schemes.

2 Behavioral Finance Research

Noise Traders and Asset Prices

The literature on behavioral finance has accumulated empirical evidence on markets’ inefficiencies. However, the link between “anomalies” observed in financial markets and behavioral theories is sometimes tenuous. My research in behavioral finance has focused on highlighting novel empirical facts and trying to relate them as much as possible to a model of investors’ behavior and asset prices. I started my research on behavioral finance by looking at the determinants of idiosyncratic volatility. We know that excess volatility in financial markets is a source of concern for economic efficiency: excess volatility can impair risk-sharing, prevent the efficient allocation of capital in the economy, or distort incentives based on market prices. Yet, the determinants of idiosyncratic volatility are still debated. The time-series behavior of idiosyncratic volatility provides some
useful indication on this question. The idiosyncratic volatility of stock returns has traditionally experienced large fluctuations at low frequencies. Following a large and steady rise in idiosyncratic volatility in the 1980s and the 1990s, volatility has gone down in the 2000s. An often-advanced cause for the rise in idiosyncratic volatility in the 1990s is the rise in retail trading. This claim is based on noise-trading models, where retail traders act as noise traders and create an additional layer of risk for investors in the market. However, identifying empirically the effect of retail investors on volatility is challenging because retail trading activity in a stock is endogenous and could itself be determined by the stock’s idiosyncratic volatility. For instance, stocks with high idiosyncratic volatility may grab retail investors’ attention.

To overcome this difficulty, we consider, in “Individual Investors and Volatility” (Journal of Finance, 2011, [6]) joint with Foucault and Thesmar, a policy change in the French stock exchange in 2000 that (1) triggered variation in retail trading activity for a subset of stocks (2) did not plausibly affect other possible determinants of volatility and (3) left a segment of the market unaffected by the policy change. To analyze carefully this reform, we first propose a version of a noise-trading model, which is adapted to the specific institutional setting of this policy change. The model unambiguously predicts that, under the assumption that retail traders are in fact noise traders, the reform should lead, for the stocks affected by the reform to a decrease in the volatility of stock returns, a decrease in short-term return reversals and a decrease in the price impact of trades, relative to the stocks left unaffected by the policy change.

We test these predictions in the data, using a difference-in-difference analysis. One of the contribution of the paper is to bring a careful identification strategy to analyze what we believe is an important question in behavioral finance. Our empirical methodology matches, using observable characteristics, each stock affected by the policy change to stocks in the unaffected group. We then compare the relative evolution of idiosyncratic volatility for the “treated” stocks and their controls. Using this approach, we show that, in fact, retail trading activity has a positive effect on the volatility of stock returns, a finding consistent with the idea that retail investors behave as noise traders. The daily return volatility of the stocks affected by the reform falls by 20 basis
points (a quarter of the sample standard deviation of the return volatility) relative to other stocks. For “treated” stocks, we also find support for the additional predictions of the model: a significant decrease in the magnitude of return reversals and in the price impact of trades.

“Are Retail Traders Compensated for Providing Liquidity?” (*Journal of Financial Economics, forthcoming, [10]*) with Barrot and Kaniel, pursues this line of research by delving further into the trading behavior of retail investors. More precisely, the paper attempts to reconcile two important but contradictory results in the literature: retail investors have been shown to provide liquidity to the market and liquidity provision strategies typically earn positive abnormal returns; yet retail investors have also been shown to trade at a loss.

To get at this question, we use a unique dataset obtained from a leading European on-line broker, which allows us to track the trades of a large sample of individuals over a long sample period (2002-2010). We first show that, consistent with recent literature, aggregate retail buy-sell imbalances are contrarian and positively predict the cross-section of stock returns at a horizon of a few weeks. We then test whether this increase in returns earned by retail investors corresponds to compensation for liquidity provision. To do so, we construct a weekly rebalanced portfolio that goes long in stocks purchased and short in stocks sold by retail investors and show that the returns on this portfolio increases when the supply of liquidity provided by institutional investors dries up: while a weekly rebalanced portfolio long in stocks purchased and short in stocks sold by retail investors delivers 19% annualized excess returns over a four factor model from 2002 to 2010, it delivers up to 40% annualized returns in periods of high uncertainty. Despite this high aggregate performance, individual investors do not reap the rewards from liquidity provision because (1) they experience a negative return on the day of their trade (they get picked-off), and (2) they reverse their trades long after the excess returns from liquidity provision are dissipated. Our results show that while the trading of retail investors does forecast superior returns, their inability to turn over their position fast enough, as well as the adverse prices at which retail investors get executed, explain why they fail to profit from providing liquidity.
Disagreement, Credit Bubbles and the Risk-Return Trade-Off

My second line of research in behavioral finance is centered around the notion of speculation. It explores how assets with different characteristics receive different exposure to speculative demand and thus experience different levels of mis-pricing. Following a long line of work in this area, speculation in my papers arises through the combination of heterogeneous beliefs and short-sales constraints. Prior to our work, most of the literature on disagreement and short-sales constraints had essentially dealt with models where agents could only trade a single asset. This was an important limitation to the empirical predictions that one could derive from these models.

“Quiet Bubbles” (Journal of Financial Economics, 2013, [9]), joint with Hong, specifically considers how speculation affects the pricing of credit claims. The paper builds on the following observation. Classic speculative bubbles are in general “loud”: price is high and so are price volatility and share turnover. However, the credit bubble of 2003-2007 is “quiet”: price is high but price volatility and share turnover are low. This simple observation led us to think about the role of assets payoffs in models of speculative bubbles. The paper develops a dynamic trading model, based on investor disagreement and short-sales constraints, where agents are valuing claims with different payoff functions. The fundamental idea that emerges from the model is straightforward: since debt up-side payoffs are bounded, the value of a credit claim is less sensitive to disagreement about asset value than equity and hence has a smaller resale option. The smaller resale option leads in turn to lower price volatility and turnover. Interestingly, an asymmetry emerges from our analysis of equity and debt bubbles: while optimism makes both debt and equity bubbles larger, it makes debt mis-pricing quiet but leaves the “loudness” of equity mis-pricing unchanged.

“Speculative Betas” (3rd round at the Journal of Finance, 2015, [13]), joint with Hong, emerges naturally from our work in “Quiet Bubbles”, although it touches on a different question. In this paper, we attack a long-standing puzzle in the finance literature, namely the failure of the risk-return trade-off. While the risk-return trade-off is the cornerstone of neoclassical
finance, it has very little support empirically. Stocks with higher market betas do not significantly
outperform lower risk stocks. Classical explanations for this fact rely either on measurement (it
is difficult to measure risk exposure) or on the inability of agents to lever up their portfolios. We
propose a different explanation and offer empirical evidence consistent with our explanation.

We start by developing an equilibrium framework for the pricing of a cross-section of assets
when agents have heterogeneous beliefs and some agents are short-sales constrained. The intuitive
idea underlying the model is that high beta assets are more exposed to disagreement about the
macro-economy and hence more prone to speculative overpricing relative to low beta ones. When
investors disagree about the common factor of cash flows, high beta assets are more sensitive
to this macro-disagreement and experience a greater divergence-of-opinion about their payoffs.
Short-sales constraints for some investors such as retail mutual funds result in high beta assets
being over-priced. When aggregate disagreement is low, expected return increases with beta due to
risk sharing. But when it is large, expected return initially increases but then decreases with beta.
In an important extension, we also show that when cash-flows are heteroskedastic, speculative
mis-pricing only arises when the variance of an asset’s cash-flows is low relative to its market beta.
In this extension of our model, the “speculativeness” of an asset is captured intuitively by the ratio
of its beta to its idiosyncratic variance.

Beyond the simple, static model that emphasizes the intuitions of our theory, the paper also
derives a dynamic version of the model, which is useful for calibration purposes. The calibration
shows that for reasonable parameters, one does not need very large levels of disagreement to
obtain significant distortions in the Security Market Line (SML). We also provide direct empirical
evidence for the two main predictions of the model: (1) the SML should be more concave when
aggregate disagreement is high (2) the effect of aggregate disagreement on the SML should be
more pronounced among speculative stocks, i.e. stocks with a large ratio of market beta to
idiosyncratic variance. To proxy for aggregate disagreement, we compute a beta-weighted average
of disagreement about stock earnings. We then perform a standard Fama-McBeth analysis on 20
beta-sorted portfolio to show that the SML is in fact more concave when aggregate disagreement

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is large. We then split the sample of stocks based on the ratio of market beta to idiosyncratic variance and compute the monthly slope of the SML on each of these two samples: as predicted by the theory, we find that aggregate disagreement forecasts negatively the slope of the SML only for the sub-sample of “speculative” stocks, i.e. stocks whose ratio of beta to idiosyncratic variance is high enough. These two results confirm two direct and unique predictions that emanate from our model.

“Inflation Bets on the Long Bond” (R&R at the Review of Financial Studies, 2015, [14]), joint with Hong and Yu, extends our work in “Speculative Betas” by considering how disagreement about inflation affects the pricing of the cross-section of treasuries. The standard liquidity premium theory of interest rates predicts that the Treasury yield curve steepens with inflation uncertainty. This is because investors demand a larger risk premium to hold long-term bonds. However, in a model where agents disagree on inflation and face short-selling costs in the Treasury market, this prediction does no longer necessarily hold. Since the prices of long-term bonds are more sensitive to inflation than short-term ones, investors also disagree and speculate more about long-maturity payoffs when uncertainty is high. Short-sales constraints then lead long maturities to become over-priced and the yield curve to flatten. Using the dispersion of inflation forecasts to measure uncertainty about inflation, we do find that dispersion in inflation forecasts is in fact associated with a flatter yield curve. We then exploit variations in Treasury supply to further test our model: when Treasury supply is limited, investors who are optimists about inflation are more likely to end up with all the bond supply, leaving the pessimists out of the market. This leads to overpricing and, because long bonds are more exposed to disagreement, to a flatter yield curve. The data confirms that the effect of inflation disagreement on the yield curve is much stronger in periods where the supply of Treasuries is limited.
3 Bibliography with Citation Statistics and Presentations

3.1 Publications


- Google Scholar Citations: 388; Web of Science Citations: 74
- **Media**: Handelsblatt (in German), Le Figaro (in French), Atlantico.fr (in French)
- **Seminar and Conference Presentation** [*means presentation by co-author*: ECGI conference on Family Firms (2004), European Economic Association (2004), CEPR Conference on Corporate Governance in Family/Unlisted Firms (2005)].


- Google Scholar Citations: 72; Web of Science Citations: 12
- **Seminar and Conference Presentation** [*means presentation by co-author*: PSE Séminaire Roy (*), Toulouse University (*), Harvard-MIT Organization Seminar (*), Kellogg School of Management (*)].


- Google Scholar Citations: 10; Web of Science Citations: 1
- **Seminar and Conference Presentation** [*means presentation by co-author*: AEA (2009)].


- Google Scholar Citations: 48; Web of Science Citations: -


5. “Growth LBOs,” with Quentin Boucly and David Thesmar.


- Google Scholar Citations: 121; Web of Science Citations: 14

- Media: PR Newswire

- Seminar and Conference Presentation [* means presentation by co-author]: World Economic Forum Conference (October 2008), Coller Institute’s private equity symposium (June 2008) (*)


- Google Scholar Citations: 125; Web of Science Citations: 16

- Seminar and Conference Presentation [* means presentation by co-author]: American Finance Association (2009) (*), AFFI conference in Paris (December 2008) (*), BI Norwegian School of Management (*), Haas School of Business, Booth School of Business, ESSEC (*), Tilburg University (*), and Toulouse University (*).


- Google Scholar Citations: 179; Web of Science Citations: 21
- Seminar and Conference Presentation [* means presentation by co-author]: University of Southern California, UC San Diego Rady School of Management, NYU Stern, MIT Sloan, the University of Amsterdam (*), London Business School (*), Oxford’s Said School of Business (*), University of Chicago, the European University Institute in Florence (*), Bocconi University (*), Toulouse University (*), the Kellogg School of Management, Princeton University, the Haas School of Business at Berkeley, the Fuqua School of Business at Duke, Stanford GSB, INSEAD (*), and the University of Naples (*), AFA New Orleans Meetings (2008) (*).

8. “Bottom-up Corporate Governance,” with Augustin Landier, Julien Sauvagnat and David Thesmar.


- Google Scholar Citations: 66; Web of Science Citations: 6
- Media: Strategy + Business


• Google Scholar Citations: 25; Web of Science Citations: 2

• Media: Financial Times


10. “Are Retail Traders Compensated for Providing Liquidity?” with Jean-Noel Barrot and Ron Kaniel.


• Google Scholar Citations: 1

• Seminar and Conference Presentation [* means presentation by co-author]: 3rd Helsinki Finance Summit on Investor Behavior Conference (2013) (*)

11. “Housing Collateral and Entrepreneurship,” with Martin Schmalz and David Thesmar.


• Google Scholar Citations: 24

• Seminar and Conference Presentation [* means presentation by co-author]: Berkeley economics, Berkeley Haas, LSE FMG, LBS, Yale SOM, Brown University, Wharton Real Estate, IDC (*), University of Michigan (*), University of Amsterdam (*), University of Wisconsin-Madison, University of Virginia, Harvard Business School, Kellogg

3.2 Working Papers


2\textsuperscript{nd} round at the \textit{Journal of Political Economy}

- Google Scholar Citations: 6
- \textbf{Media}: Bloomberg View, The Atlantic


3\textsuperscript{rd} round at the \textit{Journal of Finance}. 

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R&R at the Review of Financial Studies.

15. “Banking Integration and House Price Comovement,” with Augustin Landier and David

- Google Scholar Citations: 27


- Google Scholar Citations: 40
- Seminar and Conference Presentation [* means presentation by co-author]: American Finance Association (2012) (*), American Economic Association (2012) (*), Athens-


• Google Scholar Citations: 3
