Discussion of Expectations and Credit Cycles:  
What Role for Overoptimism of Borrowers and Lenders? 

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In the decade after the Great Recession, research on credit cycles and research on expectations are among the most vibrant areas of study in economics. De Stefani and Zimmerman (2019) summarize research progress at the intersection of these two important literatures, where the central question is to understand the role of expectations in credit cycles. My discussion amplifies the theme in their review: recent work offers accumulating evidence that imperfectly rational expectations are frequently a key component of credit cycles, and there are many interesting open questions for future investigation. 

1 What Drives Credit Cycles? 

Since the Global Financial Crisis, there is increasing—and by now perhaps unanimous—recognition that credit cycles are central to economic fluctuations (Schularick and Taylor, 2012; Jordà, Schularick, and Taylor, 2013; Mian and Sufi, 2009, 2014; López-Salido, Stein, and Zakrajšek, 2017). But why do boom and bust cycles in credit arise? 

As De Stefani and Zimmerman (2019) point out, expectations have emerged as a promising candidate. Several other contributions in this volume also point to this direction. I think there are several important dots that connect together. 

First, there is evidence that distorted incentives do not seem to explain everything, as highlighted by Fahlenbrach and Stulz (2011) and Cheng, Raina, and Xiong (2014), among others. 

Second, there is a set of influential work, following Schularick and Taylor (2012), that looks to history and finds that credit cycles happen repeatedly and are not confined to a particular institutional setting (such as originate-to-distribute). Previous scholars who looked to history such as Minsky and Kindleberger (though in a more episodic and less quantitative way) also postulated that credit cycles seem to originate from over-optimism leading to credit and investment booms.
Third, there is a long literature in behavioral finance that considers biased expectations to be central to asset price fluctuations, which traditionally focused on the stock market instead of credit markets. Since Shiller (1981) and De Bondt and Thaler (1985) in the 1980s, one way to understand fluctuations in the stock market is that investors have biased beliefs that over-react to news. More recently, there is more direct evidence using expectations data from surveys of investors (Greenwood and Shleifer, 2014; Amromin and Sharpe, 2013; Bordalo, Gennaioli, La Porta, and Shleifer, 2019a).

Against this backdrop, over the past few years, there are several papers that provide important empirical evidence on the role of biased expectations in credit cycles. First, Greenwood and Hanson (2013) show that low issuer quality predicts low or negative excess corporate bond returns, and issuer quality tends to decline after periods of low default. The result suggests that credit market investors may extrapolate default rates, which is further explored in Greenwood, Hanson, and Jin (2019). Second, Baron and Xiong (2017) demonstrate that credit expansions increase bank equity crash risk, but bank stock holders do not appear to foresee the crash risk. Third, Fahlenbrach, Prilmeier, and Stulz (2017) find that fast loan growth predicts poor bank performance, but banks and analysts do not seem to anticipate the poor performance. Finally, Richter and Zimmermann (2019) show that high past profits of banks lead to credit expansions and over-optimism of bank CFOs.

Overall, the first two papers provide evidence based on dynamics in market prices, while the last two papers use direct data on expectations. The overarching finding is that expectations in credit markets appear imperfectly rational, which can drive boom/bust cycles. In addition to the empirical papers, new models of expectations are also developed and applied to credit cycles (Bordalo, Gennaioli, and Shleifer, 2018).

In the following, I first briefly summarize the general lessons from research on expectations: what are the consistent features of expectations we observe in the data across different domains? I then transition to applications of expectations in the research on credit cycles, and discuss some special elements in analyzing credit cycles. I will also outline some open questions in understanding expectations and credit cycles.

2 Expectations and Economic Activities: An Overview

For decades, the benchmark framework of expectations in economics research is Rational Expectations (RE). While RE is an important theoretical construct, it is not necessarily an empirical description of economic decision makers. In recent years, there are growing interests in understanding the empirical features of expectations formation, using data on expectations from surveys of decision makers. These studies find accumulating evidence that 1) expectations can be meaningfully elicited and measured in the data, 2) expectations in the data have significant explanatory power for economic decisions, and 3) expectations in
many domains appear imperfectly rational, but deviations from RE have some consistent patterns.

This body of work by now covers several domains, including

- Financial markets: expectations of stock returns (Greenwood and Shleifer, 2014; Amromin and Sharpe, 2013; Andonov and Rauh, 2018; Giglio, Maggiori, Stroebel, and Utkus, 2019; Nagel and Xu, 2019), bond yields (Piazzesi, Salomao, and Schneider, 2013; Cieslak, 2018), credit spreads (Bordalo, Gennaioli, and Shleifer, 2018).

- Macroeconomic outcomes: expectations of inflation, GDP (Malmendier and Nagel, 2015; Coibion and Gorodnichenko, 2012, 2015; Bordalo, Gennaioli, Ma, and Shleifer, 2019b; Broer and Kohlihas, 2019; Fuhrer, 2019).

- Firms: expectations of earnings, sales (Gennaioli, Ma, and Shleifer, 2016; Bordalo, Gennaioli, La Porta, and Shleifer, 2019a; Bouchaud, Krueger, Landier, and Thesmar, 2019; Richter and Zimmermann, 2019; Rossi, Gulen, and Ion, 2019; Ma, Ropele, Sraer, and Thesmar, 2019).

- Households: expectations of income, house prices (Rozsypal and Schlafmann, 2019; De Stefani, 2018).

What is the structure of deviations from perfectly rational forecasts in the data? One common theme in the data, across different domains, is that people tend to over-extrapolate recent shocks or trends (Greenwood and Shleifer, 2014; Piazzesi, Salomao, and Schneider, 2013; Bordalo, Gennaioli, and Shleifer, 2018; Bordalo, Gennaioli, Ma, and Shleifer, 2019b; Gennaioli, Ma, and Shleifer, 2016; Richter and Zimmermann, 2019; De Stefani, 2018; Landier, Ma, and Thesmar, 2019). Correspondingly, forecast errors are predictable: forecasts tend to be over-optimistic when current conditions are good, and vice versa. Figure 1 below shows a few examples. Panel A shows predictable forecast errors in credit spread forecasts by analysts in financial institutions (using data from Blue Chip Financial Forecasts dataset) from Bordalo, Gennaioli, and Shleifer (2018): when current credit spreads are low, financial analysts tend to under-estimate future credit spreads, and vice versa. Panel B shows predictable forecast errors in earnings growth forecasts by CFOs from major non-financial firms (using data from the Duke CFO survey): when current earnings are high, CFOs tend to over-estimate future earnings growth. The predictability in forecast errors indicates deviations from rational expectations, in the direction of over-extrapolation. The extrapolative tendencies in expectations can be important for understanding credit cycles, and help explain why credit booms and excess lending may arise in good times, sowing the seeds for subsequent crises.

To further flesh out the impact of expectations on economic decisions, recent research also provides ample evidence on the link between expectations measured in the data and...
economic activities. For instance, investors with more optimistic expectations of stock returns hold more stocks in their portfolios (Andonov and Rauh, 2018; Giglio, Maggiorgi, Stroebel, and Utkus, 2019). Firms with more optimistic expectations of future earnings make more investments (Gennaioli, Ma, and Shleifer, 2016; Ma, Ropele, Sraer, and Thesmar, 2019; Richter and Zimmermann, 2019). Accordingly, biases in expectations transmit into decisions and shape real outcomes.

Figure 1: Predictability in Forecast Errors

In Panel A, the dashed line is the average credit spreads in the past four quarters; the solid line is mean forecast errors (realized minus forecast) of average credit spreads in the next four quarters. In Panel B, the dashed line is corporate earnings (normalized by book assets) in the past twelve months; the solid line is mean forecast errors (realized minus forecast) of earnings growth in the next twelve months.

Panel A. Financial Analyst Forecast Errors of Credit Spreads

Panel B. CFO Forecast Errors of Future Earnings Growth

3 Expectations and Credit Cycles

Putting everything together, there is an emerging narrative of biased beliefs and credit cycles supported by empirical evidence. The narrative generally goes as follows. First,
Some good fundamental shocks arise. Then, the good shocks feed into over-extrapolaiton and over-optimism, and lead to (excessive) credit expansions. Next, credit booms and excessive lending eventually turn into losses. Finally, moment of recognition comes and credit crises take place.

One paper that has traced out these steps most fully is the recent work by Richter and Zimmermann (2019). Using historical data across 17 countries as well as recent data on expectations of bank executives, they show the following important links. First, high past profits tend to lead to over-optimism in bank CFOs’ expectations about future profitability. As shown by Figure 2, Panel A, when current return on equity (ROE) is high, bank CFOs tend to over-estimate future ROE. Second, optimistic expectations of bank CFOs are accompanied by high credit growth, as shown by Figure 2, Panel B. Finally, high credit growth predicts a higher probability of credit crisis.

Figure 2: Evidence on Expectations and Credit Cycles from Richter and Zimmermann (2019)

In Panel A, the green line is the current return on equity (ROE) in the US banking sector; the orange line is average bank CFO forecast errors (realized minus forecast) of ROE in the next four quarters. In Panel B, the green line is the change in the loan-to-GDP ratio in the next four quarters; the orange line is average bank CFO forecast optimism.

Panel A. Over-Extrapolation in Bank CFO Expectations

Panel B. Bank CFO Expectations and Lending Growth

While the recent advancement in research offers many new insights, there are a number of open questions for future work. I summarize some of them below.

First, an open question is what triggers reversals in optimistic beliefs and turns the tide to panics. Do beliefs revert because over-optimism gradually fades on its own, or because
losses from excessive lending eventually become overwhelming?

Second, while empirical analyses show that expectations overall play an important role in driving economic decisions, further work is needed to assess the impact of the biased component of expectations.

Third, the narrative of boom and bust cycles in investment driven by biased expectations can in principle apply to any type of firms (not just banks). What are the special features of credit cycles and debt contracts?

As De Stefani and Zimmerman (2019) highlight, in the context of lending, both beliefs of borrowers and beliefs of lenders can play a role. Lessons from theoretical analyses (Simsek, 2013) suggest that borrowers’ optimism about the upside (of an asset or a project they try to finance), or lenders’ optimism about the downside, tends to be most powerful. When borrowers are optimistic about the upside, they would have high willingness to buy the asset and would be happy to accept the terms lenders offer. When lenders are optimistic about the downside, they think default is unlikely, and would be willing to expand the quantity of credit or offer attractive terms. Most of the data on expectations so far measure beliefs about conditional means or central tendencies, not beliefs about the tails. Future work may advance our understanding of beliefs about the tails. Future work may also advance our understanding of whether credit cycles generally involve biased beliefs among all parties, or they primarily involve biased beliefs among lenders (which drive credit supply).

In the context of credit markets, one can also ask whether there are potentially interesting interactions between biased expectations and financial frictions. Do financial frictions dampen the impact of biased expectations (e.g., by making it harder for people to act on their beliefs) or amply it (e.g., through financial acceleration)?

4 Summary

Research on credit cycles and on expectations has made substantial progress since the Global Financial Crisis. There is accumulating evidence from the work on expectations that expectations in practice tend to be imperfectly rational, often in the direction of over-extrapolation. There is also accumulating evidence from the work on credit cycles that extrapolative expectations appear to be an important driver of lending booms and eventual crises. A number of interesting open questions remain for the years ahead. With advancement in both modeling and data collection, the interaction between work on credit cycles and on expectations is an exciting enterprise. There are high expectations for this investment, and one can be hopeful that the investment will yield high returns.
References

Amromin, Gene, and Steven A Sharpe, 2013, From the horse’s mouth: Economic conditions and investor expectations of risk and return, Management Science 60, 845–866.


Bordalo, Pedro, Nicola Gennaioli, Rafael La Porta, and Andrei Shleifer, 2019a, Diagnostic expectations and stock returns, Journal of Finance Forthcoming.

Bordalo, Pedro, Nicola Gennaioli, Yueran Ma, and Andrei Shleifer, 2019b, Over-reaction in macroeconomic expectations, Working paper.


Broer, Tobias, and Alexandre Kohlhase, 2019, Forecaster (mis-)behavior, Working paper.


De Stefani, Alessia, 2018, House price history, biased expectations and credit cycles, Working paper.


Fuhrer, Jeffrey C, 2019, Intrinsic expectations persistence: Evidence from professional and household survey expectations, Working paper.


Giglio, Stefano, Matteo Maggiori, Johannes Stroebel, and Stephen Utkus, 2019, Five facts about beliefs and portfolios, Working paper.

Greenwood, Robin, Samuel G Hanson, and Lawrence J Jin, 2019, Reflexivity in credit markets, Working paper.


Ma, Yueran, Tiziano Ropele, David Sraer, and David Thesmar, 2019, Do managerial forecasting biases matter?, Working paper.


Nagel, Stefan, and Zhengyang Xu, 2019, Asset pricing with fading memory, Working paper.


Rossi, Stefano, Huseyin Gulen, and Mihai Ion, 2019, Credit cycles, expectations, and corporate investment, Working paper.


