The Effect of Household Credit Constraint on the White-Black Wealth Accumulation Gap

Motivation

Access to credit markets is key to low-income households if they are to overcome their low level of initial endowments. Because the principal asset in which households can invest is their house, any barriers to mortgage credit will inhibit both their ability to accumulate wealth.

While a lot of research has studied the impact of banking market efficiency in the U.S., in particular exploiting the deregulation waves of the 70s, 80s (e.g. Jayaratne and Strahan 1996), much less is known about the effect of bank *geographic* expansion on mortgage access to low-income and minorities.

If proving the existence of clear ``discrimination" on the mortgage market has been hard to establish (e.g. Brevoort, 2011), Celerier and Matray (2016) studying the unbanked phenomenon find that on average, black households are three times more likely to be unbanked and this gap can be explained by the fact that bank branches density (number of bank branch offices per capita) is much smaller in poor counties and in black counties, adjusted for quartile of income. Celerier and Matray (2016) also show that interstate branching deregulation episodes between 1994 and 2005, which allowed out-of-state banks to enter more easily into a given state, led to a stronger increase in branch density in black counties. This happens in particular in states with a history of discrimination identified for instance as states that allowed slavery before the civil war of 1861-1865. This larger expansion led to a reduction of the white-black gap on financial inclusion.

Research Question

This research plans to address two questions related to the notion of "bank geographic expansion":

- Does an overall increase in the number of bank branch density and bank competition reduces the likelihood for black households applying for a mortgage to be denied relative to a white household living exactly in the same zipcode?
- Controlling for the overall supply of bank branches and competition structure, does the *type* of the banks present in the area matter? Namely, is mortgage application by a household living in a given area and belonging a certain group (for instance black) more or less likely to be approved if some specific banks (for instance an out-of-state banks from New-York) have offices in this area, relative to local bank with offices in the same area? And if it is the case, do we see more prominent effects in states with a history of discrimination?[1]

The type of the bank will be defined according to two characteristics:

1. Whether or not the bank comes from a state with a history of discrimination
2. The weighted average characteristic of the counties in which the bank is present at the beginning of the period, where weights are given by the bank deposit market shares in the counties it operates.

Identification

To obtain exogenous variations in bank branches in a given area, we plan to use two ingredients. First, the US staggered interstate branching deregulation between 1994 and 2010 allowed out-of-state banks to enter certain more easily. Celerier and Matray (2016) studying the "unbanked phenomenon", show that branch density in these affected counties increases dramatically, in particular in states with a history of discrimination, which contributes to a reduction in the white-black gap of unbanked households.

Second, to identify *which* bank is going to enter the deregulated state and in which county this bank is going to open a new branch, we plan to combine the interstate branching deregulation with a modified version of the gravity equation suggested by Goetz et al. (2016). The intuition is that, based on the initial bank branch network and the distance with

[1] See Celerier and Matray (2016) for a detailed description of the different proxies to identify states with a history of discrimination

new potential markets, we can “predict” where a bank is going to open a new branch following a deregulation episode and use this prediction as our instrument.

Data

These two projects overlap a lot and have important economies of scale regarding the data collection, cleaning and preparation.

To answer these questions, we need household-level geocoded mortgage applications and outcome, as well as the detailed bank branch network of each bank in the US and various geographic level characteristics.

Assembling such a collection of datasets at the geographic-year level raises important concerns about the compatibility within/between datasets. Oftentimes, the same dataset may have been compiled differently across years, and we also frequently need to merge different datasets to conduct research. In such cases, we carry out a thorough data analysis to maximize data compatibility. In particular, given the geographic dimension of the research, one important issue is the development of clean cross-walks to correct for administrative boundary redesigning.

The different datasets that need to be assembled are:

- **Mortgage loans**: From the Home Mortgage Disclosure Act (HMDA) database. HMDA reports information on all the mortgage *applications* since 1990 and contains mortgage application and application status (denied or accepted), as well as loan characteristics (response, amount and loan purpose) and some of the applicant characteristics that include income, gender, race and the census tract of the house. Because HMDA data are extracted from lending institutions reports, some important information such as the localization of the mortgage may need to be cleaned and assigned in a census tract using geocoded methods.
- **Bank Branch Offices**: The Federal Deposit Insurance Fund (FDIC) provides annual branch-level data from June 1994 to June 2017. It contains information on branch characteristics: branch ownership, exact address of the branch office, which can be matched to a census tract or a county, and the total amount of deposits in the branch.
- **Bank Balance Sheet**: both HMDA and the FDIC data contain identifiers that allows to match lending institutions in HMDA and branch offices in FDIC to banks' balance sheet data from the Federal Reserve's Reports of Condition and Income, also known as Call Reports. In particular, it is possible to match individual mortgage originations (as reported in HMDA data) to the originating bank. In addition, because the Call Reports have information at the ``bank subsidiary" level, it is crucial to link properly bank subsidiaries to their parent bank holding companies (BHCs).

In addition to these ``mortgage / banking dataset", the projects need to collect income and demographics datasets from the Census and the County Business Pattern, that here again, need some harmonization over time (e.g. Elsby, Hobijn and Sahin, 2013).

Data diffusion

All these data are publicly available but require an important effort of cleaning and harmonization. As such, a priori nothing will prevent the assembled and clean data to be made publicly available once the research is completed.

References

Celerier C. and A. Matray (2016). Bank Branch Supply and the Unbanked Phenomenon. *Working Paper.*

Elsby, M. W., B. Hobijn, and A. Şahin (2013). The Decline of the US Labor Share. *Brookings Papers on Economic Activity, 2013*(2), 1-63.

Goetz, M., A. Laeven, and R. Levine (2016). Does the Geographic Expansion of Banks Reduce Risk? *Journal of Financial Economics 120*(2), 346-362.

BUDGET

600 hours of Research assistant (25$ per hour)	15,000$
Traveling and conferences	1,000$
TOTAL	**16,000$**

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Academic Appointment

2016 - Present	**Assistant Professor** **Princeton University, Department of Economics, Bendheim Center for Finance**

Affiliation

2016 - Present	**Julis-Rabinowitz Center for Public Policy and Finance, Princeton University**

Education

2010 - 2015	**PhD HEC-Paris, Finance Department** *Title* : "Essays in empirical finance" *Supervisor*: David Thesmar. C*ommittee Members*: Daniel Paravisini, Ulrich Hege, Amit Seru
2013-2014	**Visiting PhD Student, London School of Economics**
2009-2010	**M Phil Economics: Paris School of Economics**
2008-2009	**MA Quantitative Economics and Finance, HEC-Polytechnique**
2005-2009	**Msc Business, HEC-Paris**

Research

Research Interest

Primary: Household Finance, Innovation- Entrepreneurship, Banking, Financial Inclusion
Secondary: Behavioral Finance, Corporate Finance

Published Papers

"The Real Effect of Hurting Lending Relationships: Evidence from Innovative Firms and Inventor Mobility", with Johan Hombert 2016 *Review of Financial Studies, forthcoming*

"Do firm managers overreact to salient risks? Evidence from US Firms Proximity to Hurricane Strikes", with Olivier Dessaint, 2016, *Journal of Financial Economics, forthcoming*

Working Papers

"Can US Innovative Firms Escape Import Competition from China?", 2016 with Johan Hombert, R&R at *Journal of Finance*

"Ripple Effects of Noise on Corporate Investment", 2017 joint with Olivier Dessaint, Thierry Foucault and Laurent Frésard, R&R at the *Review of Financial Studies*

"Bank Branch Supply and the Unbanked Phenomenon", with Claire Célerier, 2016

"Public Health Insurance and Access to Credit", joint with Claire Celerier, 2016

"The Local Innovation Spillovers of Listed Firms", 2015

"The Transmission of Corporate Culture: Evidence from Bank Acquisitions", joint with Charles Boissels and Thomas Bourveau, 2016

"Experimental Evidence on the Foundation of Public Good Contribution", with Elizabeth Beasley, 2014

Work in Progress

"Religion and Innovation", joint with Roland Benabou

"Inequality, Social Mobility and the Development of the "Religious Right"", joint with Roland Benabou

"The political economy behind municipality bond market", joint with Atif Mian

Teaching Experience

2015-2016	**Risk Management (Master of Finance), Princeton University**
	Applied Corporate Finance (PhD), Princeton University
2009-2014	**Lecturer in economics and financial economics IPESUP Paris** Microeconomics Macroeconomics Financial Economics
2010-2012	**Lecturer in economics and behavioral economics, Sciences Po Paris** Introduction to Economics (Microeconomics and Econometrics), undergraduate Behavioral Economics and Public Policies, undergraduate

Awards, Grants and Honor

2009-2014	HEC Paris Foundation Fellowship
2014	HEC Paris, Visiting Scholarship for LSE
2013	AFA travel grant
2011	Duisenberg Summer School in Dysfunctional Finance NBER Summer School "Entrepreneurship and Financial Entrepreneurship"

Professional Experiences

2009	**Intern, French Ministry of Economics and Finance** Econometric analysis on the consequences on the reform of the French R&D tax credit
2008-2009	**Consultant at faberNovel**, Consulting firm specialized in the management of innovation, Paris
2006	**Intern, World Bank**, Washington DC

Other Activities

2009-2012	Co-founder and General Secretary of a French Think Tank dedicated to the issues of higher education, research and innovation
2009-Present	Co-founder and Administrator of a non-profit start-up, Le Muz
2008-2009	General Secretary of a French think tank dedicated to the issues of European integration
2005-2010	Co-founder and member of the editorial committee of the review *Regards Croisés sur l'Economie*, edited by La Découverte

Language, skills

Computer skills: Stata, Matlab, Latex, Bloomberg, Datastream, SDC
Languages: French (native), English (fluent), German (intermediate)