

Credit Discrimination in European Households

Evidence from survey data in Eurozone and the case of Greece

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Credit Discrimination in Households

Credit Discrimination

Credit discrimination refers to the exclusion of specific social groups from equal access to credit, often by marking them as high-risk borrowers.

Motivation

Denying credit deprives significant portions of the population from

- investment opportunities
- equal access to housing
- smooth consumption path over the life cycle

Our approach

- Explore credit participation and credit discrimination in 8 Eurozone countries
- Focus on the Greek credit market, supplementing our initial analysis with qualitative evidence

Part I: Exploring Credit Discrimination in the Eurozone

- Literature Background
- Data and Methodology
- Main Findings

Part II: Credit Discrimination in Greece: A qualitative analysis

- Particularities of the Greek Housing System
- Social geography of credit denials in Greece
- Evidence from the Metaxourgio neighborhood

Part I: Exploring Credit Discrimination in the Eurozone

- Empirical Works on Credit Discrimination
 - Female business owners face tighter credit constraints than males (Alesina et al., 2013; Muravyev et al., 2009; Stefani and Vacca, 2015)
 - Similar results have been obtained about ethnic minorities and immigrants (Aldn & Hammarstedt, 2014; Asiedu et al., 2012; Blanchard et al., 2008)
 - Bruder et al. (2010) provide evidence that migrant entrepreneurs are much more likely to be denied credit or to be awarded smaller loans
 - Duca (1993) employs the SCF to explore credit constraints in migrant households among others. After controlling for income, wealth and credit history, he shows that minorities face tighter credit constraints and more tight limits to debt than the average US white household
 - Firestone, (2014), the author identifies tight credit constraints in credit card provision for migrant US households
 - OECD (2015)

Empirical Works on Credit Discrimination

- OECD (2015): "Household finance and income inequality in the euro area"
 - By employing the Household Finance and Consumption Survey data for Eurozone households, they found "no evidence of discrimination in credit provision against women or immigrants"
 - To test for Cr. Disc. they employ binary dependent variable that equals unity if a given household in a given country has credit, and regress it on a vector of household characteristics.
 - Criticism
 - No distinction between secured and unsecured debt
 - They investigate credit participation rather than credit discrimination
 - Those households that were provided less credit than they requested, are depicted in the model as having faced no credit constraints, given that their participation variable still takes the value one
 - Exclude perceived credit constrains, i.e., households being reluctant to apply for a loan, because they fear they will be turned down (Hawley & Fujii, 1990; Crook, 1999)

HFCS Data

- First wave of the Eurosystem Household Finance and Consumption Survey
- Surveys were performed in 2009, 2010
- Surveys performed in a standardized manner across Eurozone countries
- Large variety on household finance questions
- Multiple Imputation employed for missing values. 5 datasets employed
- Sampling and Replicate weights estimated for each country for group to account for over/under representation
- Sample Countries: Austria, Belgium, Germany, Spain, Greece, Italy, Portugal, Netherlands
- Sample weights, replicate weights, multiple imputation analysis and regression models are estimated in R version 3.1.2 with the packages "Survey" and "Mitools"

Modelling Specifications: Logit

- Debt Participation

$$\text{hasDebt}_{ic} = \gamma_{0c} + \gamma_1 \text{migrant}_{ic} + \gamma_2 x_{ic} + \epsilon_{ic} \quad (1)$$

where hasDebt_{ic} takes 1 if household's debt is > 0 ,
 $c = (AT, BE, DE, ES, GR, IT, PT, NL)$, and i refers to the i -th household of the entire sample

- Credit Discrimination

$$\begin{aligned} & crDisc_{ic} \\ = & \gamma_{0c} + \gamma_1 \text{migrant}_{ic} + \gamma_2 x_{ic} + \gamma_{ic} + \epsilon_{ic} \quad (2) \end{aligned}$$

where hasDebt takes 1 if household has been denied credit or has perceived credit constraints, $c = (AT, DE, GR, PT)$, and i refers to the i th household that applied for credit in the last 3 years

Econometric Specifications: Secured Debt

Table: Logit Regression Odd Ratios

	Secured Debt Participation			
	(Austria)	(Belgium)	(Germany)	(Spain)
Female	1.00 (0.143)	0.99 (0.15)	1.13 (0.13)	1.11 (0.11)
Married	1.571 (0.181)	0.96 (0.17)	1.69 (0.17)	1.56 (0.13)
Family Size	1.319 (0.065)	1.26 (0.07)	1.22 (0.06)	1.11 (0.06)
Migrant	1.051 (0.261)	0.63 (0.26)	0.73 (0.18)	
Age of Household Head 34 -44 years	1.716 (0.194)	1.32 (0.23)	2.33 (0.23)	0.89 (0.17)
Age of Household Head 45 - 54 years	1.031 (0.20)	0.76 (0.21)	2.63 (0.23)	0.39 (0.16)
Age of Household Head 55 - 64 years	0.871 (0.229)	0.29 (0.25)	2.46 (0.24)	0.19 (0.20)
Age of Household Head 65 + years	0.525 (0.294)	0.06 (0.28)	0.89 (0.26)	0.08 (0.21)
Lower Secondary Education	0.306 (1.509)	1.12 (0.43)	2.10 (4.51)	1.02 (0.17)
Higher Secondary Education	0.311 (1.541)	1.40 (0.38)	2.55 (4.49)	1.31 (0.16)
Tertiary Education	0.393 (1.562)	1.77 (0.39)	3.08 (4.49)	1.56 (0.16)
Unemployed	0.574 (0.287)	0.39 (0.25)	0.62 (0.23)	1.56 (0.13)
Total Income (Log)	1.678 (0.205)	1.70 (0.09)	2.57 (0.14)	1.81 (0.10)

Econometric Specifications: Secured Debt

Table: Logit Regression Odd Ratios

	Secured Debt Participation			
	(Greece)	(Italy)	(Portugal)	(Netherlands)
Female	1.12 (0.15)	0.85 (0.11)	1.04 (0.16)	0.59 (0.20)
Married	2.07 (0.16)	1.29 (0.15)	1.63 (0.15)	1.69 (0.20)
Family Size	1.28 (0.07)	1.08 (0.05)	0.97 (0.05)	1.36 (0.08)
Migrant	1.08 (0.32)	0.67 (0.23)	0.85 (0.19)	
Age of Household Head 34 -44 years	1.00 (0.18)	1.02 (0.23)	1.83 (0.19)	1.02 (0.33)
Age of Household Head 45 - 54 years	1.38 (0.18)	0.80 (0.20)	1.00 (0.18)	1.32 (0.32)
Age of Household Head 55 - 64 years	0.98 (0.23)	0.45 (0.20)	0.45 (0.24)	0.89 (0.32)
Age of Household Head 65 + years	0.44 (0.31)	0.13 (0.27)	0.11 (0.23)	0.85 (0.32)
Lower Secondary Education	1.03 (0.28)	1.28 (0.25)	1.83 (4.51)	1.23 (0.48)
Higher Secondary Education	1.24 (0.24)	1.40 (0.30)	1.53 (4.49)	1.42 (0.47)
Tertiary Education	1.33 (0.26)	1.77 (0.30)	3.08 (0.16)	2.48 (0.48)
Unemployed	0.92 (0.17)	0.68 (0.23)	0.62 (0.17)	0.61 (0.26)
Total Income (Log)	1.678 (0.12)	1.95 (0.12)	1.76 (0.09)	1.26 (0.13)

Econometric Specifications: Unsecured Debt

Table: Logit Regression Odd Ratios

	Unsecured Debt Participation			
	(Austria)	(Belgium)	(Germany)	(Spain)
Female	1.04 (0.13)	1.45 (0.14)	0.96 (0.13)	0.89 (0.11)
Married	0.72 (0.14)	0.98 (0.17)	0.94 (0.14)	0.78 (0.13)
Family Size	1.10 (0.06)	1.30 (0.06)	1.10 (0.07)	1.43 (0.06)
Migrant	1.62 (0.22)	1.18 (0.24)	1.38 (0.17)	
Age of Household Head 34 -44 years	1.06 (0.20)	1.03 (0.23)	0.83 (0.20)	0.86 (0.19)
Age of Household Head 45 - 54 years	0.86 (0.17)	1.23 (0.23)	0.83 (0.17)	0.72 (0.18)
Age of Household Head 55 - 64 years	0.53 (0.17)	1.05 (0.24)	0.54 (0.21)	0.65 (0.20)
Age of Household Head 65 + years	0.27 (0.23)	0.36 (0.27)	0.13 (0.18)	0.21 (0.32)
Lower Secondary Education	0.11 (1.26)	1.12 (0.43)	1.35 (0.72)	1.20 (0.14)
Higher Secondary Education	0.13 (1.541)	0.78 (0.32)	2.55 (0.71)	1.13 (0.16)
Tertiary Education	0.08 (1.26)	1.77 (0.30)	1.13 (4.49)	1.00 (0.16)
Unemployed	1.29 (0.25)	1.17 (0.20)	0.99 (0.16)	1.01 (0.12)
Total Income (Log)	1.01 (0.10)	1.05 (0.07)	0.96 (0.03)	1.20 (0.08)

Econometric Specifications: Unsecured Debt

Table: Logit Regression Odd Ratios

	Unsecured Debt Participation			
	(Greece)	(Italy)	(Portugal)	(Netherlands)
Female	1.14 (0.12)	0.90 (0.11)	1.17 (0.15)	1.18 (0.14)
Married	0.85 (0.14)	1.07 (0.10)	0.76 (0.14)	0.75 (0.14)
Family Size	1.15 (0.06)	1.29 (0.05)	1.27 (0.06)	1.27 (0.06)
Migrant	0.81 (0.23)	0.88 (0.17)	1.14 (0.21)	
Age of Household Head 34 -44 years	1.07 (0.16)	1.30 (0.19)	0.80 (0.20)	0.80 (0.20)
Age of Household Head 45 - 54 years	0.96 (0.16)	1.00 (0.21)	0.53 (0.21)	0.52 (0.21)
Age of Household Head 55 - 64 years	0.84 (0.21)	0.75 (0.22)	0.48 (0.22)	0.47 (0.22)
Age of Household Head 65 + years	0.31 (0.28)	0.32 (0.26)	0.17 (0.27)	0.17 (0.27)
Lower Secondary Education	1.55 (0.28)	1.35 (0.15)	1.11 (0.17)	1.13 (0.17)
Higher Secondary Education	1.24 (0.22)	1.40 (0.14)	1.26 (0.17)	1.29 (0.17)
Tertiary Education	1.54 (0.22)	1.27 (0.30)	0.88 (0.20)	0.89 (0.20)
Unemployed	0.81 (0.18)	0.75 (0.18)	1.06 (0.18)	1.06 (0.18)
Total Income (Log)	1.57 (0.12)	1.00 (0.07)	1.48 (0.08)	1.48 (0.08)

Econometric Specifications: Credit Discrimination

Table: Logit Regression Odd Ratios

	<i>Dependent variable:</i>			
	Credit Discrimination			
	(Austria)	(Germany)	(Greece)	(Portugal)
Female	1.00 (0.44)	0.65 (0.26)	1.28 (0.45)	0.97 (0.29)
Married	0.39 (0.57)	0.41 (0.30)	0.48 (0.53)	0.62 (0.27)
Family Size	0.79 (0.21)	0.79 (0.12)	1.02 (0.25)	1.21 (0.35)
Migrant	4.19 (0.84)	1.55 (0.41)	1.26 (0.64)	1.43 (0.35)
Age of Household Head 34 -44 years	0.82 (0.67)	1.46 (0.44)	1.03 (0.45)	0.66 (0.29)
Age of Household Head 45 - 54 years	1.93 (0.68)	2.59 (0.39)	0.69 (0.55)	0.45 (0.32)
Age of Household Head 55 - 64 years	1.06 (0.72)	1.54 (0.43)	1.54 (1.02)	0.71 (0.37)
Age of Household Head 65 + years	3.47 (0.95)	1.04 (0.60)	0.40 (1.58)	0.47 (0.44)
Lower Secondary Education	0.00 (1.18)	0.17 (6.82)	0.88 (0.93)	0.76 (0.33)
Higher Secondary Education	0.00 (1.17)	0.11 (6.88)	1.24 (0.81)	0.78 (0.30)
Tertiary Education	0.00 (1.27)	0.14 (6.85)	0.49 (0.85)	0.95 (0.46)
Unemployed	2.01 (0.70)	2.80 (0.41)	2.10 (0.62)	1.06 (0.31)
Total Income (Log)	0.44	0.35	0.72	0.41

Main Findings: Debt Participation

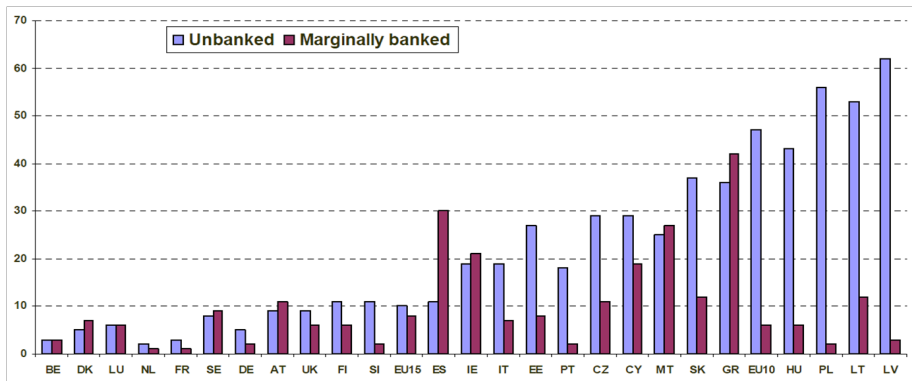
- Results regarding secured or unsecured debt holdings by migrants are mixed.
- Austria and Germany present high likelihood of migrants holding both secured debt and unsecured debt.
- In Belgium and Greece, they are slightly more likely to be holders of secured debt than the native residents, while in Portugal and Italy they are way less likely to hold secured debt.
- In Belgium and Portugal the chances are largely equal between migrants and non migrants, while in the case of Italy and Greece, it is highly improbable for migrants to hold unsecured debt.
- The likelihood of having debt by gender also varies across countries

Main Findings: Credit Discrimination

- Credit discrimination was explored in four countries, Austria Germany, Greece and Portugal
- In all the countries, being a migrant makes it way more likely to be refused a loan, according to the odd ratios estimated
- Unemployment and Income are the most consistent regressors of debt participation and credit discrimination, while the effect of age and education also varies across countries
- The observed variations across recipient countries could be attributed to the country-specific credit institutions as well as to the social and financial conditions of the ethnic minorities in one of them
- More detailed analysis and country focused analysis is required to assess credit discrimination, e.g., the one that follows

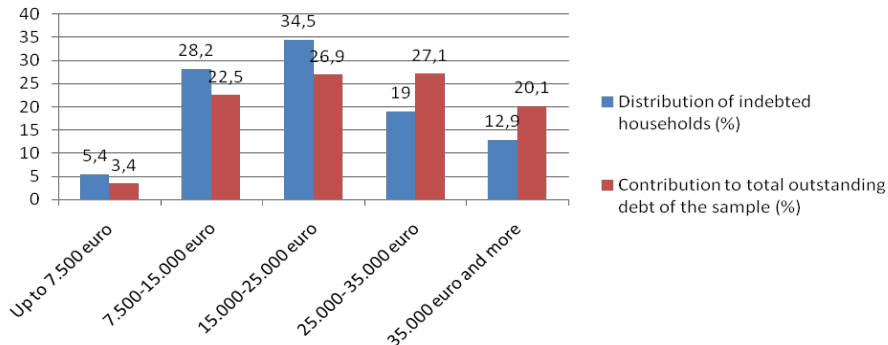
Part II: Credit Discrimination in Greece: A qualitative Analysis

Tenure status by Eurostat



EC (2008) reports that Greece scores the highest level of people financially excluded among the EU18 countries (28% of "financially excluded" and 78% of "no transaction account").

Tenure status by Eurostat



Household indebtedness: Loosening capital constraints and for WHOM?

Socio-economic characteristics of households are related to the probability of having a loan in Greece, the level of indebtedness are the following:

- Household's annual income
- Most probable categories: 20.000-30.000e, 30.000e and more (30% of the sample)
- Level of household borrowing is strongly related to income level (30% of the sample has borrowed the 47% of the total outstanding loans)
- The access of low-income households to the banking system remains limited, in the framework of a more effective credit risk management
- The loan burden of households in the lowest income group is high (2005: 61.2%, 2002: 25.7%) and is much higher than the average (2005: 33,5%, 2002: 22,8%).

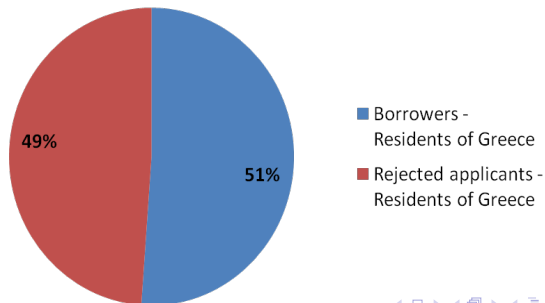
Household indebtedness: Loosening capital constraints and for WHOM?

- Household's wealth
- Degree of urbanization (density of population) in the area of residence:
 - Households resident in other urban areas have a much lower probability of having a loan than households resident in Athens or Thessaloniki
- Age of the household head: age groups between 25 ? 66 years old
- Educational level of the household head: upper educational level
- Tenure of employment of household head: (public sector employees)
- Household size: (3-4 members household)
 - single member households or couples without children or one child had lower probability on taking a loan
- Migrant groups: economic migrants have a 2.5 times lower probability of having a loan, being unclear whether it reflects demand- or supply-side factors.

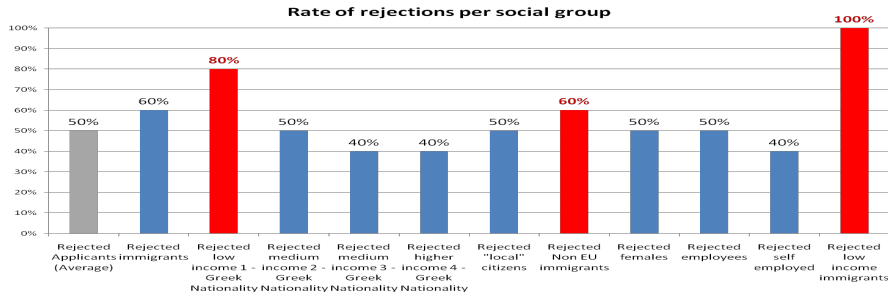
Source: Sample surveys by Bank of Greece, Economic Bulletin, 2007, 2005, 2002 (Mitrakos, Simigiannis, Tzamourani)

Social geography of credit denials in Greece

"Another problem is "financial exclusion". I put it in quotation marks in order to refer to social exclusion. Today banks reject entire economic sectors from granting a loan. We have social groups for which banks are closed. It is the poorest sections of society. People of low income cannot take credit cards or loans".
Government Vice President Yiannis Dragasakis, (08/03/2007), Greek Parliament



Social geography of credit denials in Greece

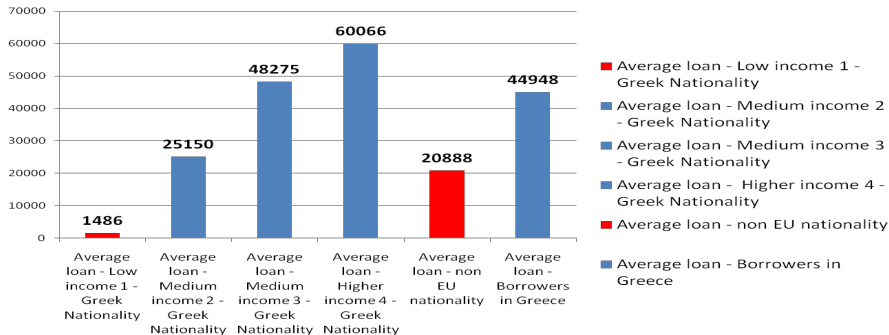


Credit denials are not homogeneously distributed:

- Low income Greek nationality citizens concentrate high rates of rejections, standing at 80%.
- Non EU immigrants are characterized by high rates of credit denials (60%).
- Low income immigrant groups (they consist a small percentage of the sample), were rejected at 100%

Social geography of credit denials in Greece

Average loan per social group (estimated in euro)

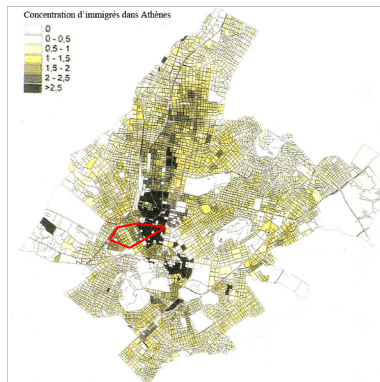


Lower income social groups and immigrants have access to lower loans:

- Low income "local" households were granted on average loans estimated at approximately 1.500 euro.
- The average loan of the sample has been recorded at 45.000 euro, while higher income groups have been granted 60.000 per household.

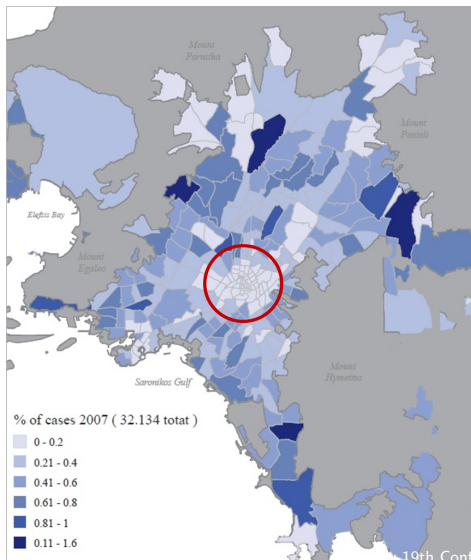
Immigrant population in Athenian center

Concentration of immigrant groups in Athens center

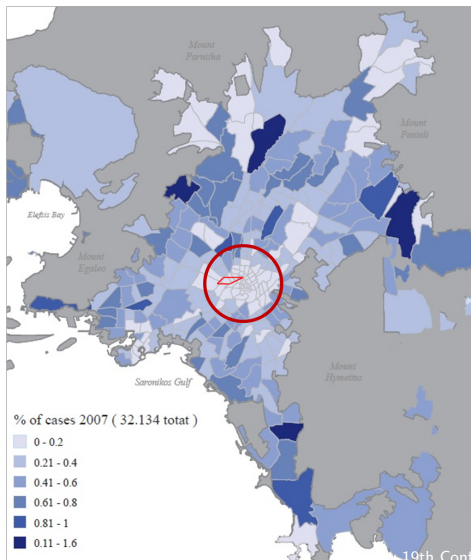


Source: Vaiou, D. et al (2007) Intersecting patterns of everyday life and socio-spatial changes in the city. Migrant and local women in the neighbourhoods of Athens

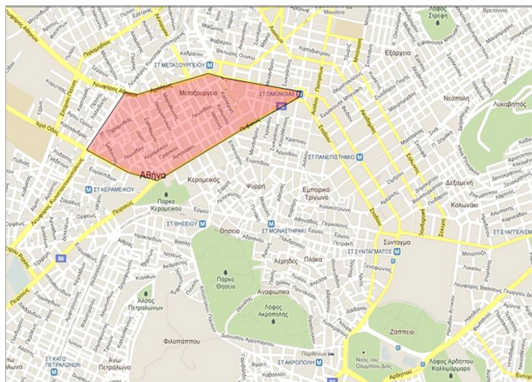
Number of Appraisals per population, in 2007 in Athens metropolitan area



Number of Appraisals per population, in 2007 in Athens metropolitan area



The area of Metaxourgio



” [In 1980s] One of the main causes of Metaxourgios decline was that its inhabitants were mostly workers and had no money or access to credit or subsidized loans in order to repair their homes or to rebuild new ones, like upper and medium classes did in other areas of Athens. (Aggelidis, 1992)”

The area of Metaxourgio



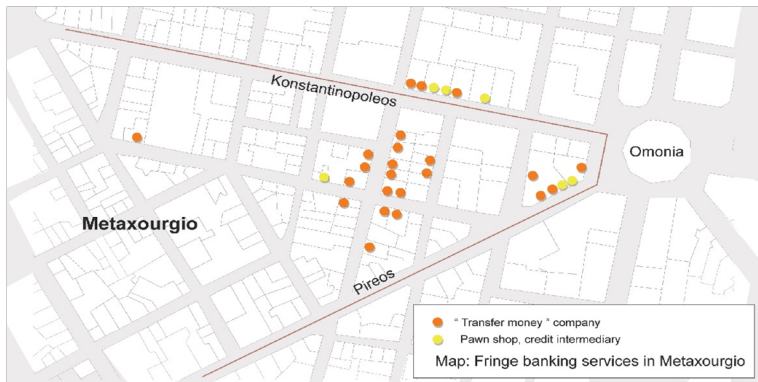
- "Immigrants is another case. Immigrants would hardly get a mortgage loan." Bank Employee at a local branch
- "Immigrant had to prove that they had income the last five years in Greece, most of which came from undeclared work. Bank Employee

According to market research, in the area of Metaxourgio, it was found that:

- "Asking prices of residential apartments range between 1.300 euros and euros 2.000 per sq. meter. The highest values are found in areas not inhabited by immigrants" Appraiser, Metaxourgio
- "If there is a difference between urban districts? Yes. The properties located in certain neighborhoods were getting, lets say, a little bonus because of their location. [...] If you want to build the same house in Petroupoli and the same house in another downgraded area, the chance for someone to get a loan in the second case is very small." Bank employee at a local branch

- "If I would grant a loan to the investor [name]? No, I would not give loans easily to any investor of Metaxourgio. He should have a lot of collateral. I don't think that someone could profit from the area. I consider it a high risk neighborhood". Bank employee at a central Section of the Bank
- "The area presented a decline in recent years, but today there is a small upgrade with the installation of a large number of art galleries and spaces". Appraiser, Metaxourgio
- "The area of the property described is degraded (an important number of foreigners live there)". Appraiser, Metaxourgio

Fringe banking services in the area of Metaxourgio



Fringe banking services in the area of Metaxourgio



- "Most of immigrants do not know the Organization for Social Housing and their right to a loan." Male, Albania, 40 years old
- "Yes, I would like to [take a loan]. I would like to feel protected citizen, hands-free to get a loan." Male from Georgia, 36 years old
- "Mostly, Albanians take loans to buy a house. We are from Africa, it is more far and we do not know if we want to stay in Greece. The banks are acting exactly the same to the Greeks and to foreigners."
- "Maybe in order to buy a house, if you are an immigrant you can take only a small percentage of the value to the foreigners." Male from Aithiopia, 40 years old
- "Immigrant had to prove that they had income the last five years in Greece, most of which came from undeclared work. Bank Employee at a local branch

New Speculators



Limitations and Future Work

Limitations

- Data are limited to one year/ Restricted too much in the case of credit applicants only.
- Small samples when we restrict the households credit applicants
- Hard to access sufficient sample of ethnic minorities and build confidential relationships with them

Future Work

- Expect second wave of HFCS data to employ a Panel Data analysis
- Post Crisis Levels

Concluding Remark

- Distinction credit participation and credit discrimination
- Large variation across Eurozone countries
- Credit denials analysis is important to raise "other" voices
- On a local level, more complex redlining tendencies in Athens between downgrade and real estate speculation

Thank You!