To Whom It May Concern:

I am writing to apply for the Entrepreneurship Research Boot Camp. I am currently a 4th year PhD student in economics at University of North Carolina at Chapel Hill, where I have developed research fields in applied microeconomics, including labor economics and entrepreneurship. My current working paper studies the recent decline of the self-employed in the U.S., and I hope that this paper can be transformed into my future job market paper. The Entrepreneurship Research Boot Camp is a great opportunity for me because I will receive new knowledge from experts in this field, and it will help me to improve my paper.

The recommendation letter write is Prof. Klara Peter (kpeter@unc.edu).

Sincerely,

Alina Malkova

Contact Information:
UNC Economics
107 Gardner Hall, CB 3305,
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My name is Alina Malkova, I am currently a 4th year PhD student in economics at UNC Chapel Hill. My research interests are in the area of applied microeconomics, specifically in the fields of labor economics and entrepreneurship. My current working paper studies the recent decline of the self-employed in the U.S., and I hope that this paper can be transformed into my future job market paper. The Entrepreneurship Research Boot Camp is a great opportunity for me because I will receive new knowledge from experts in this field, and it will help me to improve my paper.

My dissertation is a series of papers examining the role of the credit market channel in the labor market choices. In this essay, I describe my recent paper, but the information about other papers you can find in my CV. My current working paper explains the role of credit market channel in the recent decline of the self-employed in the U.S. Over the past two decades the self-employment rate in the U.S declines[1]. Number of self-employed as a percentage of labor force decreased from 11.2% in 2003 to 9.9% in 2014, and the difference is accounting for 939 thousand people[2]. The changes in self-employment can be explained as a response to the decline in aggregate demand in the form of direct effects such as a decrease in consumer spending (Schweitzer and Shane, 2016), but also in the form of indirect effects that are expressed in lower ability to obtain financing.

In recent years difficulties with obtaining finances for self-employed can be generalized by two evidences. One is the de-liberalization of financial system after the financial crisis 2007-08 and during the Great Recession, that increases regulatory scrutiny and tightens collateral requirements for borrowers. The other evidence is the shrinking of the U.S. branch network since 2010 (Nguyen et al., 2019) and the increasing of the average distance between borrower and lender. And the literature the literatures have not explored the effects of the physical accessibility of credit market institutions on the transitions into and out of self-employment. According to the FDIC data[3], at least 80% of closings occur in areas where there is no meaningful impact on physical access as measured by the number of remaining branches. In the same time, the borrowing process for self-employed is informationally-intensive, and credit approval relies on the soft information about the borrower, in other words the personal presence during a loan transaction still can play an important role in obtaining funding. The literature discusses the positive correlation between the persistence of banks in particular area and the entrepreneurship activity, but these studies utilize aggregated data at the county level and don't take into account individual heterogeneity (Kashian et al. (2018), Hollander and Verriest (2016), Knyazeva and Knyazeva (2012)). This paper uses databases that allows to identify distances between each individual and all banks within the state, and estimates the dynamic choice model taking into account individual observed and unobserved heterogeneity.

The paper contributes to the literature demonstrating the heterogeneous responses of self-employed workers to changes in the credit market accessibility. In contrast to the literature that studies the self-employed I divide the self-employed into two groups. Type-1 self-employed are owners of capital-intensive businesses, who depend on the accessibility of credit market institutions. Branch closure or tighter collateral requirements will negatively influence on the lending to Type-1 self-employed, as a result number of Type-1 self-employed decreases. Type-2 self-employed are owners of less capital-intensive businesses, who more likely work informally or underreport their income for tax optimization. Example of Type-2 self-employed are tutors, housekeeping cleaners, lawn service, grounds maintenance workers and etc. For this type of self-employed the absence of credit institutions doesn't motivate workers to verify their earnings, and because the self-employed selected based on higher earnings the opportunity of tax evasion increases the probability of being self-employed, as a result number of Type-2 self-employed increases.

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[1] Hipple (2010); Schweitzer and Shane (2016); Bernhardt (2014)

[2] Data from U.S. Bureau of Economic Analysis, Number of Self-employed persons

[3] https://www.fdic.gov/regulations/laws/rules/5000-3830.html

The study utilizes several sources of the U.S. data during the period of 2003-2014. The main database is the Community Advantage Panel Survey (CAPS)[4]. The survey is well suited for the analysis, as it contains longitudinal information about the geographical coordinates of houses of participated individuals and allows to identify distances between each individual and all banks within the state. The analysis uses spatial data about banks location from the FDIC (SOD). To diminish the effect of unobservable local economic conditions that are correlated with the credit supply, I also use county and zip-code level control variables from the American Community Survey (ACS). The study focuses on two components of the CMA: collateral requirements (or the borrower's solvency) and the physical availability of banks (the distance constraint). The borrower's solvency is expressed in the form of available assets that can be used as collateral for a loan. The physical credit market accessibility is measured as an index based on the combination of following variables: average distance from the individual to 10 nearest banks, number of the banks and branches per capita at county level, number of bank workers per capita at county level.

The paper proceeds in two parts. In the first part, I present an intuitive theoretical model (a Roy model) to show the link between credit market accessibility and labor mobility among tree labor market states: paid employment, self-employment (formal and informal) and non- employment. The theoretical model is based on the work of Evans and Jovanovic (1989) and Buera (2009). Agents enter self-employment (Type-1 and Type-2) based on comparative advantage that depends on ability and availability of capital. If agents choose to be self-employed, they also choose how much capital they invest in their business. In the model, I also include cost of switching from paid employment to self-employment (security deposit, cost of time invested in new skills (such as accounting)) and non-interest cost of borrowing (transportation costs to obtain a credit). The model rationalizes self-employment decisions and provides interpretation of the link between credit market accessibility and labor market transitions.

In the second part, I provide the empirical model that is the dynamic multinomial logit model of employment with correlated random effects in order to quantify the importance of credit market accessibility for self-employment decisions. Preliminary results suggest the existence of the spillover effect of credit market accessibility on the transition into self-employment. Results shows heterogeneous effects of CMA on switching into and out of self-employment based on types of self-employed workers. For capital-intensive businesses, the improvement of credit market accessibility increases the transition into self-employment. Results show that credit rationing dominates effects of distance constraints, and both factors play more significant role for stayers than for switchers to self-employment. For informal businesses, the improvement of credit-market accessibility increases the transition out of self-employment.

Reference:

1. Bernhardt, A. (2014). Labor standards and the reorganization of work: Gaps in data and research.
2. Buera, F. J. (2009). A dynamic model of entrepreneurship with borrowing constraints: theory and evidence. Annals of finance, 5(3-4):443–464.
3. Evans, D. S. and Jovanovic, B. (1989). An estimated model of entrepreneurial choice under liquidity constraints. Journal of political economy, 97(4):808–827.
4. Hipple, S. F. (2010). Self-employment in the united states. Monthly Labor Review, 133(9):17–32. Hollander, S. and Verriest, A. (2016). Bridging the gap: the design of bank loan contracts and distance. Journal of Financial Economics, 119(2):399–419.

[4] CAPS comprise 11 years of panel survey data provided by approximately 5,000 low- and moderate–income homeowners and renters during the period of 2003-2014. The data collection has been run by the UNC Center for Community Capital with generous funding from the Ford Foundation.

5. Jensen, L., Tickamyer, A. R., and Slack, T. (2019). Rural-urban variation in informal work activities in the united states. Journal of Rural Studies.
6. Kashian, R. D., Tao, R., and Drago, R. (2018). Bank deserts in the usa and the great recession: geography and demographics. Journal of Economic Studies, 45(4):691–709.
7. Keeton, W. R. (2017). Equilibrium credit rationing. Routledge.
8. Knyazeva, A. and Knyazeva, D. (2012). Does being your bank's neighbor matter? Journal of Banking & Finance, 36(4):1194–1209.
9. Nguyen, H.-L. Q. et al. (2019). Are credit markets still local? evidence from bank branch closings. American Economic Journal: Applied Economics, 11(1):1–32.
10. Nightingale, D. S. (2011). Informal and nonstandard employment in the united states: implications for low-income working families.
11. Schweitzer, M. E. and Shane, S. (2016). The ins and outs of self-employment: An estimate of business cycle and trend effects.

Alina Malkova

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Personal Information	Date and place of birth: 08 April 1988, Saint-Petersburg, USSR Citizenship: Russia Languages: English, Russian
Research Interests	Labor Economics, Development Economics

Education

UNC Chapel Hill,

PhD in Economics, Expected: May 2020

New Economic School, Moscow

MA in Economics, July 2015

Moscow Institute of Physics and Technology, Moscow

M.Sc. in applied mathematics and physics, July 2011

B.Sc. in applied mathematics and physics, Aug 2009

Working Papers

1. **Malkova, A., "Knockin on Banks Door: How to Revive Self-Employment in the US"**

   This paper analyzes the link between credit market accessibility (CMA), as the physical accessibility of banks and collateral constraints, and self-employment. To do so, I link individuals from the Community Advantage Panel Survey (CAPS) database to all banks location from the FDIC (SOD) database. Using the dynamic multinomial logit model of employment with correlated random effects, I show the existence of the spillover effects that CMA creates on transition into and out of the self-employment. Results shows heterogeneous effects of CMA on switching into and out of self-employment based on dependence of self-employed businesses from capital. For capital-intensive businesses the improvement of credit-market accessibility increase the transition into self-employment. Results show that credit rationing dominates effects of distance constraints, and both factors play more significant role for stayers than for switchers to self-employment. For informal businesses the improvement of credit-market accessibility increase the transition out of self-employment.

2. **Malkova A, Peter, K., Svejnar J. " Labor Informality and Credit Market Development"**

   The paper investigates the effects of credit market development on the labor mobility between informal and formal labor sectors. The study shows that the formal labor sector can benefit from the development of the credit market. Despite the fact that formal workers have higher probability of obtaining a loan than either informal workers or non-employed individuals, the access to credit may create additional incentives for informal sector workers to switch to a formal sector job. In case of Russia, due to the absence of a credit score system, the formal lender may set a credit limit based on the verified amount of income. To get a loan the informal worker must first formalize her income initially, switch to the formal job, and then apply for a loan. To show this mechanism, we utilize RLMS data and

estimate the dynamic multinomial logit model of employment. Empirical results of the paper show that the probability of informal workers to switch to the formal job is higher for borrowers than for non-borrowers. Also, the relaxing of credit constraints increases this transition probability from informal job to formal, and improved credit market accessibility (by one standard deviation) increases the chances of informal sector workers to formalize by 5.4 ppt. These results are robust in different specifications of the model. Policy simulations show a strong support for the reduction in informal employment in response to better credit market accessibility in credit constrained communities.

3. **Malkova, A., Peter, K. "The Role of Social Networks and Informal Loans in Labor Market Choices."**

   The paper investigates the role of the informal credit market in labor market decisions. In many developing countries informal credit market consists of personal credit suppliers (friends, relatives, co-workers and neighbors), that form the social network of the borrower. The study examines the worker's trade-off between formal and informal credit institutions, and the role of social networks in the informal credit market accessibility. The paper utilizes the RLMS database, and the empirical study estimates how the selection into labor market can be driven by the accessibility of informal credit institutions, especially we are interested in the link between informal credit markets and labor informality. For this purpose, we use dynamic multinomial logit model of employment with correlated random effects to investigate the switching between labor market regimes associated with accessibility of the informal credit market. A prerequisite for the use of the informal credit market is the existence of a network with a certain level of trust and strong connections. The social capital of the borrower is measured by the level of private transfers (except informal loans) within a network divided by the total household income. Results suggest that the development of formal credit market doesn't influence on the demand for informal loans, which supports the idea about the traditionalism of borrower's preferences, distrust of banks and the absent of financial literacy. The probability of informal borrowing is higher for borrowers with stronger ties within their networks, and the development of informal credit market institutions doesn't have effect on increasing labor informality.

Publications (before PhD)

Golichenko OG, Malkova AA, "The Analysis of Processes of New Knowledge Production in Key World Regions and Russia." *Journal of the Knowledge Economy*, 2017.

Books

Golichenko OG, Balycheva YE, Malkova AA , Pronichkin SV, Samovoleva SA "State Policies and Models of Actors Behavior in the National Innovation System: a Monograph Edited by Golichenko OG, Samovoleva SA" *Moscow, RUDN*, 2016.

Research Experience

Research Assistant May- Aug 2018
the Center for Community Capital-UNC

RLMS Data Support since Sept 2016
the Carolina Population Center-UNC

Junior Researcher June - Sept 2015
The Centre for Economic and Financial Research (CEFIR)
Supervisor: Paltseva Elena, Ph.D.

Research Assistant March - Jul 2014
New Economic School
Supervisor: Patrick Kelly, Ph.D.

Junior Researcher Feb 2009 to May 2015
Laboratory of microeconomic analysis and modeling,
Central Economics and Mathematics Institute, RAS
Supervisor: Golichenko O.G., Doctor of Economic Sciences

Grants and Awards

Grants and Awards

- Dean's Graduate Fellowship, UNC 2018-2019
- The Graduate Student Transportation Grant, UNC May 2017
- The Joseph M. Kampf and the Elizabeth and Harry Brainard families scholarship, June-Aug 2016, June-Aug 2017
- Grant from Vladimir Potanin Foundation for academic excellence and research Feb 2014 - July 2015
- Grant for young researchers from Russian Foundation for Humanities (with Balycheva Y.E.) July 2012 - July 2014
- Award for the best student research paper on the 53th scientific conference at Moscow Institute of Physics and Technology Nov 2010
- Gold Medal of Distinction upon high school graduation 2005

Presentations

Conferences and Workshops

- Wisconsin Russia Project Young Scholars Conference 2018, Madison July 26-27, 2018
- 3rd International RLMS Users Conference, Moscow May 19-20, 2017
- 35th NES Research Conference, Moscow April 16-17, 2015
- Russian Summer School on Institutional Analysis, Moscow June 28- July 4, 2014
- Strategic Planning and Business Development, Moscow Apr 2014
- Second Russian Economic Congress, Suzdal, Russia Feb 2013
- International Conference on Socio-economic and technological innovations in the globalizing world, New Delhi, India Nov 2011
- The 53th scientific conference at MIPT , Moscow, Russia Nov 2010

Teaching Experience

Instructor

- Labor Economics Fall 2018; Spring 2019
  UNC CH
- Economic Statistics and Econometrics June-July 2017; June-July 2018
  UNC CH

Teaching Assistant

- Intermediate Microeconomics Aug 2017 -May 2018
  UNC CH
- Introduction to Economics Aug 2016- May 2017
  UNC CH
- Economic Development Aug - Dec 2015
  UNC CH
- Development Economics Sept 2014- Jan 2015
  Higher School of Economics (NRU)

Hardware and Software Skills	STATA, R, Matlab, SAS, LaTex, Python

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March 29, 2019

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To Whom It May Concern,

It is a pleasure for me to recommend Alina Malkova, who is a 4th year PhD student in Economics at the University of North Carolina – Chapel Hill, for the Entrepreneurship Research Boot. I am her dissertation advisor, and I am working with her on several projects. Alina has completed her course work successfully, passed both qualifying exams, and is currently working on her dissertation.

Alina came to UNC after graduating from the Moscow Institute of Physics and Technology and the New Economic School, both are highly ranked universities in Russia. I first met Alina in 2016 when she took my PhD level course in Labor Economics. She actively participated in class discussions and earned a high grade for the class. I think she is highly intelligent, inquisitive, motivated, and creative.

Since 2016 she worked at the Carolina Population Center as a support assistant for the Russia Longitudinal Monitoring Survey that is hosted at the UNC. Alina administers the database and provides support for English speaking users. Through this working experience, she gained skills in the administration of big databases, database design, and survey management.

In addition, Alina is actively involved in undergraduate teaching. She was a teaching assistant for the Intermediate Microeconomics course and Introduction to Economics. During last summer, she was an instructor in the summer course, Economic Statistics, and received good course evaluation from students. Currently she is teaching Labor Economics course for undergraduate students.

In May 2017, Alina presented her research at the 3rd International RLMS Users Conference in Moscow. She presented her study about the interaction between the credit market participation and income inequality. Her presentation was well received, given that it was her first research presentation at an international conference. In 2018, Alina was also selected to present at the Wisconsin Russia Project Young Scholars Conference in Madison. She presented her single-authored paper on the role of social networks and informal loans in labor informality in Russia.

The area of her research is the interaction between labor and credit markets. In her 2nd and 3rd year of PhD program, she focused on Russia where

informal jobs and informal loans are quite common. She has written two papers. In the first paper, she and I study how the increased access to formal credit institutions creates incentives for people to legalize their activities and to switch from the informal labor market to the formal one. In her second paper, Alina independently investigates the role of social networks and informal loans in the labor market choices.

This year she decided to start a new research paper focusing on the US labor and credit markets. The idea for the paper came during the summer of 2018 when Alina worked as a research assistant at the Center of Community Capital at the UNC. As a result of her work, the Center provided her with the access to their household panel with sensitive geospatial data. This unique database allows to study the physical accessibility of credit market institutions in the US, what has not been investigated in the literature previously. Her new research paper is trying to understand the reasons for the decline in self-employment rates in the United States. To explain the trends, she investigates the effect of credit market accessibility on transition in and out of self-employment in the U.S. This is likely to be her job market paper.

It is also important to note that Alina is a recipient of the Dean's Graduate Fellowship for her academic achievements. I believe that Alina combines all the necessary skills and qualities to become an excellent researcher. She is hard-working and a highly motivated student. Alina has a strong academic background, developed research skills, and she actively participates in undergraduate teaching. I highly recommend Alina Malkova for the Entrepreneurship Research Boot. Her motivation, academic achievements, progress in research, and success in teaching make her well suited to take advantage of this opportunity.

If you require more information, please do not hesitate to contact me by phone at (919) 966-3669 or by email at kpeter@unc.edu.

Sincerely,



Klara Sabirianova Peter