Research Statement

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1 Introduction

I specialise in macroeconomics and economic history. I also work in applied econometrics, examining and addressing the limitations of specific Stata packages and methods. Currently, my work focuses on two research agendas.

First, *what set of factors did cause the British Industrial Revolution*? Specifically, I address the research question of how market structure and business dynamism contributed to the British Industrial Revolution. In my work, I wish to advance long-standing debates regarding the causes of British Industrial Revolution by drawing on recent advances in the macroeconomic literature. This includes exploring theoretical frameworks of Schumpeterian growth models and distributional macroeconomics, as well as collecting firm-level data.[1]

Second, *what does drive cross-country differences in upper-tail human capital*? I study Soviet experience in shaping upper-tail human capital through chess and math Olympiads. For example, I explore everyday textual data—such as intellectual competition protocols and newspapers—to engage

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1. Philippe Aghion, Ufuk Akcigit, and Peter Howitt, "The Schumpeterian Growth Paradigm," *Annual Review of Economics* 7, no. 1 (August 2015): 557–575, ISSN: 1941-1383, https://doi.org/10.1146/ANNUREV-ECONOMICS-080614-115412; Benjamin Moll, Lukasz Rachel, and Pascual Restrepo, "Uneven Growth: Automation's Impact on Income and Wealth Inequality," *Econometrica* 90, no. 6 (2022): 2645–2683.

with questions related to the formation of superstars in science and chess. Ultimately, I aim to understand how the formation of knowledge influences motivation, values toward paid work, and the direction of innovation.

In the following, I will briefly introduce these two agendas and list some of my previous applied work and projects in Russian.

2 The British Industrial Revolution

2.1 Current Work

I began by constructing market concentration measures in local labour markets—defined as cities—to explore the distributional effects of the British Industrial Revolution. I developed these measures across industries, occupations, and occupation-city interactions using the BBCE database, linked to the I-CeM database, for the 1851–1911 years.[2]

I find a rise in market concentration between 1851 and 1911, which contradicts the findings of the literature—such as Autor et al. (2020)—on market concentration and the labour share.[3] While one would typically expect a decline in the labour share alongside increasing concentration, I observe a

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2. Robert Bennett et al., *British Business Census of Entrepreneurs, 1851-1911*, Accessed: 2025-03-20, 2019; Integrated Census Microdata (I-CeM), *I-CeM Data Archive*, Accessed: 2025-03-20, 2025.

3. David Autor et al., "The fall of the labor share and the rise of superstar firms," *The Quarterly Journal of Economics* 135, no. 2 (2020): 645–709; David Autor, Christina Patterson, and John Van Reenen, *Local and national concentration trends in jobs and sales: The role of structural transformation*, Working Paper w31130, https://doi.org/10.3386/w31130 (National Bureau of Economic Research, 2023).

simultaneous rise in both. In addition, Kwon et al. (2024) have measured corporate market concentration in the US and observed similar contradiction between theory and historical data.[4]

While similar distribution patterns during the Industrial Revolution were widely discussed in the literature before, most famously in Robert Allen's Engels Pause, previous investigations relied on sparse historical wage data.[5] The limitations of wage data, along with the questionable assumption that a rising labour share translates into higher average wages, overlook important distributional effects and highlight a broader disconnect between historical data and current theory. Hence, these research gaps highlight the limitations of the macroeconomic literature on the British Industrial Revolution.

2.2 Future Directions

I am currently addressing these research gaps in my work through the following steps:

- BBCE and I-CeM datasets, which digitised census micro-data, began in 1851. I am extending this analysis by linking it to data from other census-type registries of companies and entrepreneurs dating back to the 17th and 18th centuries.

4. Soyoung Y. Kwon, Yueran Ma, and Karsten Zimmermann, "100 Years of Rising Corporate Concentration," *American Economic Review* 114, no. 7 (2024): 2111–2140.

5. Robert C. Allen, "Engels' Pause: Technical Change, Capital Accumulation, and Inequality in the British Industrial Revolution," *Explorations in Economic History* 46, no. 4 (2009): 418–435, https://doi.org/10.1016/j.eeh.2009.04.004.

- Currently available micro-data focuses only on labour statistics, including occupation, tasks, and employment. To provide capital data, I am preparing a separate dataset containing capital-related information on entrepreneurs and linking it to existing labour statistics.

- The integration of such data will allow me to re-evaluate overlooked theories in the context of the British Industrial Revolution, such as vintage capital growth theory, internal labour market theory, and firm dynamics, as they can be integrated to explain growth.[6]

By addressing these gaps, my research contributes to ongoing debates about why the Industrial Revolution occurred in Britain, offering a perspective on the sources of economic growth—whether the growth internal to the firm or primarily shaped by market structure and firm dynamics.

3   Upper-Tail Human Capital

3.1   Current Work

To examine chess and intellectual culture in the Soviet Union, I've started with a framework that explores how Soviet leisure-time policies in the 20th

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6. Examples of theoretical frameworks: Boyan Jovanovic, "Firm-specific capital and turnover," *Journal of Political Economy* 87, no. 6 (1979): 1246–1260; Giacinta Cestone et al., "Exploiting Growth Opportunities: The Role of Internal Labour Markets," *Review of Economic Studies* 91, no. 5 (2024): 2676–2716; Aghion, Akcigit, and Howitt, "The Schumpeterian Growth Paradigm."

century influenced upper-tail human capital formation. My focus is on the spillover effects of these policies on economic life and political participation.[7]

As a first step, I analyse chess as a potential channel for forming upper-tail human capital.[8] To do this, I examine chess competition protocols published in local newspapers, as well as those collected by chess enthusiasts. I have collected and compiled 2,155 chess competition protocols from 1891 to 1991 into a single database. By measuring competition in chess, I found that competition in city-level declined more than sixfold in the 1930s and, more significantly, in the 1970s and 1980s.

Based on these competition estimates, I theorise that selection was the primary driver of declining competition during these periods, along with structural changes in the organization of chess schools.

Furthermore, controlling for traditional education measures such as the number of engineers per capita and educational attainment at different levels, I analyse whether chess selection influenced economic and political participation through the intellectual culture channel.

These policies, which I refer to as *intellectual culture*, encompass both top-down and bottom-up initiatives aimed at rewarding intellectual activities across different groups. My research explores the spillover effects generated by the intellectual culture.

7. Kirill Kushnarev, "Spillover Effects from Chess, 1891–2021" (Working paper, 2025).
8. K. Kushnarev.

3.2 Future Directions

Beyond chess as a single channel, I am developing an approach to frame intellectual culture in terms of shaping intrinsic and extrinsic motivation and values toward work, as it could be a potential cornerstone for relating the direction of technological change to culture.

4 Applied Projects in Russian

I have extensively published on these topics: the art market, climate change, the political economy of economic fluctuations, and theory.

4.1 Art Market

I've been interested in analyzing how market prices for art are formed, particularly in the case of the first Western auction held in Moscow in 1988.[9] I've developed an approach based on Sherwin Rosen's Economics of Superstar with respect to art prices.[10] This approach has consequently been applied to the Soviet case, where a hedonic regression model—commonly used to

9. K.A. Kushnarev and N.P. Ezdina, "Theoretical and Methodological Foundations for Constructing a Behavioral Pricing Model in the Art Market" [in Russian], 2019, Kirill A. Kushnarev, "Selection and Evaluation of Predictors in a Behavioral Pricing Model for the Art Market" [in Russian], *Plekhanov Barometer* 3 (2018): 65–68; A.I. Bolvachev and K.A. Kushnarev, "Mathematical-Statistical Pricing Model in the Art Market: Finance and Market Equilibrium" [in Russian], *Financial Management* 1 (2020): 51–63.

10. Sherwin Rosen, "The Economics of Superstars," *The American Economic Review* 71, no. 5 (December 1981): 845–858; Kushnarev and Ezdina, "Theoretical and Methodological Foundations for Constructing a Behavioral Pricing Model in the Art Market."

estimate art prices in the literature—was not applicable due to the absence of a sales history.

Another aspect of my research relates to money laundering and regulation in the art market. I've been active in several areas related to the development of anti-money laundering legislation in the Russian art market, as well as researching practices of offshoring art.[11]

4.2 Climate Change

I have been interested in forecasting decarbonization in terms of social and economic costs. My research began with a paper on the transition from grey to green growth in Russian regions and its potential economic implications.[12] Considering the high social costs of such a transition in the Russian context, I wrote my undergraduate thesis on the social costs of climate change transition at the local level. I estimated how much people are willing to pay, in terms of economic development, to transition from a grey to a green growth model. I was particularly interested in regions specialising in resource extraction.

I continued this work by examining the interaction between the economic

11. V. I. Glotov et al., "The Mechanism of Self-Regulation in the Art Market as a Factor in Countering the Legalization of Financial Flows" [in Russian], *Financial Research* 4, no. 69 (2020): 94–108; Aleksei Bolvachev and Kirill A. Kushnarev, "Money Laundering in the Art Market: Regulatory Mechanisms" [in Russian], in *The AML/CFT System in the Global World: Risks and Threats to the World Economy* (2020), 28–32; Kirill Kushnarev, "The Hypothesis of Homogeneity in Emerging Markets: The Case of the Diamond and Art Markets" [in Russian], in *National Session with International Participation of Student Scientific Communications* (2020), 54–56.

12. Kirill A. Kushnarev, "The Impact of the Industrial Growth Model on the Labor Market Under Russia's Decarbonization Commitments: A Methodological Framework" [in Russian], in *New Economy, Business, and Society* (2021), 61–69.

and social costs of change. In particular, I have been the principal investigator on a grant studying costs of reallocating government spending from social and climate policies to military expenditures. I also actively participated in advising the climate change advisor to the President of Russia before 2022, particularly on the implementation of a carbon market pilot project.

4.3   Political Economy of Economic Fluctuations

Subsequently, as part of my research, I became interested in medium-range business cycles, particularly in the context of the post-Soviet transition. I have written two papers on the interaction between inequality and economic growth in the transitioning Russian economy, with a focus on the political economy of Simon Kuznets' ideas.[13]

One of them specifically has extended Acemoglu and Robinson's framework on the *Political Economy of the Kuznets Curve* to analyze the Soviet transition.[14] The second one has summarized and translated key methodologies on political business cycles.[15]

13. A. I. Bolvachev and K. A. Kushnarev, "The Economic Views of S. Kuznets and the Reception of Medium-Term Cycle Theory in the Political Economy Narrative" [in Russian], Published in Russian, *University Bulletin*, no. 8 (2020); Kirill A. Kushnarev, "The Transformation of Kuznets Cycles in Post-Socialist Countries: The Relationship Between the Studied Cycles and Economic Growth" [in Russian], Published in Russian, *Scientific Works of the Free Economic Society of Russia* 224, no. 4 (2020): 541–553.

14. Daron Acemoglu and James A. Robinson, "The Political Economy of the Kuznets Curve," *Review of Development Economics* 6, no. 2 (2002): 183–203.

15. A. I. Bolvachev and K. A. Kushnarev, "The Economic Views of S. Kuznets and the Reception of Medium-Term Cycle Theory in the Political Economy Narrative."

4.4 Theory and Other Works

I have engaged in theoretical research in several papers, particularly by extending the basic Solow growth model to account for human capital differences and, consequently, analyzing the convergence of this model for countries with different levels of human capital.[16]

In addition, I have been working on adapting methodologies to estimate public capital spillovers in the Russian context, building on the methodology of Ma, Racine, and Ullah.[17]

And lastly, my colleagues and I published an optical recognition and segmentation model based on the RetinaNet architecture for financial documents in Russian.[18]

16. Kirill A. Kushnarev, "Application of an Extended R. Solow Model for Analyzing Economic Growth in the Context of the Convergence Problem" [in Russian] (2019), 116–117; Kirill A. Kushnarev, "Human Capital as a Predictor of b-Convergence of Economic Systems," in *Managing Geostrategic Issues: Proceedings of the Management International Conference 2019*, Published in English (2019), 85–85.

17. Shujie Ma, Jeffrey S. Racine, and Aman Ullah, "Nonparametric Estimation of Marginal Effects in Regression-Spline Random Effects Models," *Econometric Reviews* 39, no. 7 (2020): 792–825; Kirill A. Kushnarev, "The Role of Public Capital in the Development of Russia's Real Sector: Introduction and Review of Empirical Studies" [in Russian], Published in Russian, *Current Issues in Economics and Sociology*, 2019, 69–75.

18. Petr Sokerin, Alla Volkova, and Kirill Kushnarev, "Object Detection in Financial Reporting Documents for Subsequent Recognition," *International Journal of Advanced Smart Convergence* 10, no. 1 (2021): 1–11.