ENTREPRENEURSHIP IN POLITICAL TURBULENCE:

An Analysis of Russia's Entrepreneurial Ecosystem during Putin's Pivot

Senior Thesis submitted in partial fulfillment of requirements for graduation for

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Granite Ogborn

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Utah Valley University

Orem, UT 84058

Thesis Approval Page

In partial fulfillment for a Bachelor of Arts in Integrated Studies with minors in Business Management and Russian Studies at Utah Valley University, we hereby accept this senior thesis written by Granite Ogborn.

Defended:

Thesis Mentor Signatures:

_____ Scott Abbott, Integrated Studies, Utah Valley University

_____ Fred White, Russian Studies, Utah Valley University

_____Ronald Miller, Business Management, Utah Valley University

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Introduction

Russian President Vladimir Putin stepped aside in 2008 after serving two terms (2000-2008) because the Russian constitution allows a maximum of two consecutive terms. Putin's return to the presidency in 2012 sparked widespread protests and brought policy changes; criticism of his return is largely deserved, but one thing Putin's return has not been analyzed for is its economic impact.

Entrepreneurship in Russia offers insight into the economy because entrepreneurial activity is a reliable indicator of economic development. Measuring entrepreneurship is complicated because many social, political, and economic factors affect an entrepreneur's interest, potential success, and influence on the economy; this issue of measuring entrepreneurship is of continuing interest in academic research, with many portraying the factors as part of an entrepreneurial ecosystem. Using Gross Domestic Product (a traditional measure of economic development) and the Global Entrepreneurship Index (a measure that accounts for many of the varying factors influencing entrepreneurship) offers insight into the economy that can be extended to Russia over this time.

Entrepreneurship in Russia has been lagging considerably behind similar post-socialist countries since the 1990s. Comparison of entrepreneurship indicators shows little to no change. There are no negative effects on the economy and entrepreneurship until 2014 when Russia annexed Crimea. This decision can be blamed largely on President Putin, but there is no base for comparing what could have been if Putin was not elected. Therefore, Putin's return was only a political change, which only began to affect the economy later as it led to the destabilizing events in 2014.

First, I explain Putin's presidencies, including his return in 2012, the political criticism, and the ramifications of his return to power. Then, I review methods of measuring entrepreneurship, culminating in the academic idea of an entrepreneurial ecosystem and the development of the Global Entrepreneurship Index (GEI). Finally, I employ this academic framework and the GEI to compare the state of Russia's entrepreneurial ecosystem and economy before and after Putin's return. Results are mixed, but my analysis shows no changes until 2014. I then explain the influences on the Russian economy after 2014.

Putin's Pivot

History

> On December 31, 1999, Putin became acting president of Russia after [Boris] Yeltsin resigned. He was officially elected to the position of president in March 2000. Putin served two terms as Russia's president from 2000 to 2004 and from 2004 to 2008, before stepping aside—in line with Russia's constitutional prohibition against three consecutive presidential terms—to assume the position of prime minister. In March 2012, Putin was reelected to serve another term as Russia's president until 2018, thanks to a constitutional amendment pushed through by then President Dmitry Medvedev in December 2008 extending the presidential term from four to six years.[1]

Russian President Vladimir Putin is widely studied; experts regard his presidency and power as nationalistic, authoritarian, and self-enriching. In *Mr. Putin: Operative in the Kremlin*, Fiona Hill, former U.S. Security Council official, and Clifford Gaddy, an economist, offer a multidimensional portrait of Vladimir Putin. They describe Putin's primary goals and tactics by presenting various identities intended to appeal to different layers of Russian society. Tactics became more nationalistic when Putin returned to the presidency in 2012 to solidify a voter base—the older and less educated population.

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[1] Fiona Hill and Clifford Gaddy, *Mr. Putin: Operative in the Kremlin* (Washington, DC: Brookings Institution Press, 2015), 8.

Putin's first two terms as president (2000-2008) were generally beneficial to the Russian state, economy, and people. The law-and-order president reined in rampant law-disregarding oligarchs, establishing strong government rule.[2] The gross domestic product (GDP) per capita of Russia rose steadily from 2000-2008, coinciding with rising oil prices.[3] Because of Putin-leveraged support from the oligarchs, the Russian government profited, repaying foreign and domestic debt and building up a savings reserve, which stabilized Russia during the global financial collapse of 2008-10.[4] Hill and Gaddy summarized, "by most objective measures, the performance of the Russian economy during Vladimir Putin's tenures as president and prime minister was outstanding."[5]

The constitution barred Putin from serving a third consecutive presidential term, so former Prime Minister Dmitry Medvedev was nominated and elected as the Russian president from 2008-2012. Though no longer president, Putin continued to serve alongside Medvedev as the prime minister and retained significant power.[6] Richard Lourie, historian, criticized the Medvedev-Putin tandemocracy as "an arrangement that observed the letter of the constitution while mocking its spirit."[7]

The constitution was mocked again in September 2011, when President Medvedev announced a proposal that Putin return to the presidency.[8] Steve Lee Myers, journalist, said that

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[2] Hill and Gaddy, 29, 165, 185.

[3] Hill and Gaddy, 134.

[4] Hill and Gaddy, 86, 133-134.

[5] Hill and Gaddy, 133.

[6] Neil Robinson, "Russian Neo-Patrimonialism and Putin's 'Cultural Turn,'" *Europe-Asia Studies* 69, no. 2 (March 25, 2017): pp. 348-366, https://doi.org/10.1080/09668136.2016.1265916, 357.

[7] Richard Lourie, *Putin: His Downfall and Russia's Coming Crash* (Basingstoke, United Kingdom: Bedford Books, 2017), 196.

[8] Steven Lee Myers, *The New Tsar: The Rise and Reign of Vladimir Putin* (London, United Kingdom: Simon & Schuster UK Ltd, 2015), 389.

this shocking announcement revealed the nature of Russia's political system: one meant to preserve not the power of the people, but the power of Putin. Putin followed the restrictions of the Russian constitution; however, he broke its foundational meaning.[9] Riots emerged in the streets of Moscow and St. Petersburg from December 2011 well into 2012;[10] hundreds of thousands protested "Putin's return to the presidency after allowing Medvedev to pose as president while Putin retained all real power as prime minister."[11] Hill and Gaddy suggest that these protests were made up of a new demographic of people.[12] Gaddy explained that these people are the active members of society, the new middle class, and, most notably, the new *creative class*—those members of society who think independently and innovatively and support personal freedoms.[13]

Criticism

Vladimir Putin was inaugurated despite the riots and accusations of vote-rigging,[14] organized and supported with evidence on social media.[15] This return is often referred to as *rokirovka*, the Russian word for castling in chess. "'Castling' is the only move in chess that allows two pieces to be moved at the same time. It involves switching positions between the king and the rook."[16] Hill and Gaddy said that this "Medvedev-Putin job swap was seen by

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[9] Andrey Makarychev, Mommen André, and Andrey Devyatkov, "Master Signifier in Decay: Evolution of Russian Political Discourse since Putin's Comeback," in *Russia's Changing Economic and Political Regimes: The Putin Years and Afterwards* (New York, NY: Routledge, Taylor & Francis Group, 2013), pp. 18-23, 20.

[10] Hill and Gaddy, *Mr. Putin*, 227.

[11] Lourie, *Putin*, 196.

[12] Hill and Gaddy, *Mr. Putin*, 232.

[13] *The Middle Class vs the Creative Class: The Fight for Russia's Future*, *YouTube* (Brookings Mountain West, 2017), https://www.youtube.com/watch?v=RpAIpcI_K-k, 37:35-39:30.

[14] William A. Clark, "The 2012 Presidential Election in Russia: Putin Returns," *Electoral Studies* 32, no. 2 (2013): pp. 374-377, https://doi.org/10.1016/j.electstud.2013.01.003, 374.

[15] Hill and Gaddy, *Mr. Putin*, 228-29.; Lourie, *Putin*, 196.

[16] Hill and Gaddy, 462.

many Russian analysts as undermining the institution and position of the Russian presidency,"[17] and was highly criticized by journalists and Russian experts.[18]

In "Russia's Changing Economic and Political Regimes," Andrey Devyatkov, research fellow and professor, argued that "since [2012], the regime has, according to public opinion, lost such features as dynamism and innovativeness and, more importantly, the ability to produce a strategic agenda for society."[19] The new Putin administration has failed to improve the state economically, politically, or in any other way.

Gordan Hahn, researcher and professor, argued that Putin's return has largely frozen Russia's relationship with the West, and brought traditionalist, authoritarian retrenchment.[20] In essence, Putin is reversing the social and economic advances since the collapse of the Soviet Union in 1991, especially regarding internationalization.

Neil Robinson, professor of comparative politics, asserted in "Russian Neo-Patrimonialism and Putin's 'Cultural Turn'" that Putin's reign has returned Russian politics to stagnation. Putin's return to the presidency in 2012 was accompanied by a *cultural turn*, the "promotion of social, political and cultural conservative themes in the official political discourse" because of "the need to consolidate the core of Putin voters."[21] Robinson added, "Putin's 'cultural turn' towards conservative traditional values is almost relentlessly negative.

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[17] Hill and Gaddy, 216

[18] Hill and Gaddy, 216.

[19] Makarychev, Mommen, and Devyatkov, "Master Signifier in Decay," 20.

[20] Gordon Hahn, "Russia in 2012: From 'Thaw' and 'Reset' to 'Freeze,'" *Asian Survey* 53, no. 1 (2013): pp. 214-223, https://doi.org/10.1525/as.2013.53.1.214, 221.

[21] Robinson, "Russian Neo-Patrimonialism and Putin's 'Cultural Turn,'" 348. Citing Smyth and Soboleva, 2013 and Sakwa, 2014.

The only positive thing that Putin recommends is the preservation of Russian culture and its increased celebration and use in education."[22]

Ramifications

Putin's return deserves these criticisms from Hill and Gaddy, Devyatkov, Hahn, and Robinson. Immediately after inauguration, "Putin signed off a raft of punitive laws cracking down on dissent, and freedom of expression and assembly in Russia," as explained by Ewelina Wojciechowska, professor of political science. [23] In 2012 and 2013, the State Duma[24] adopted legislation including a law expanding the categorization of foreign agents and the Russian gay propaganda law, which introduced harsh punishment for those displaying gay propaganda, including the rainbow flag.

The *rokirovka* brought new meaning to a constitutional amendment passed in 2008—a change in the presidential term length from 4 to 6 years. Steven Lee Myers, reporter, explained, "Instead of four more years, Putin would serve six, until 2018. If he ran for another term after that—a fourth—he could be Russia's leader until 2024, surpassing Brezhnev[25] in political longevity. Only Stalin,[26] in power for thirty-one years, had remained in office longer."[27] Hill and Gaddy said that *rokirovka* restored a strong leader to the position of president, "but damaged a decade of efforts to restore the integrity of the Russian presidency as the position at the top of the vertical of power."[28]

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[22] Robinson, 363.

[23] Ewelina Wojciechowska, "Uncertain Development of Civil Society in Russia," *Torun International Studies* 1, no. 9 (December 2016): pp. 67-77, https://doi.org/10.12775/tis.2016.006, 67.

[24] The legislative body in the Russian government, along with the Federal Assembly.

[25] Leonid Brezhnev (1906-1982) was the leader of the Soviet Union from 1964-1982 (18 years).

[26] Joseph Stalin (1878-1953) was the leader of the Soviet Union from 1922-1952 (31 years).

[27] Myers, *The New Tsar*, 391.

[28] Hill and Gaddy, *Mr. Putin*, 217.

In 2014, unidentified armed men appeared in Crimea, a province of Ukraine. After armed conflict and protest, a snap vote in March indicated that 97% of voters wished to join Russia.[29] Shortly afterward, Russia annexed Crimea. In 2015, Putin authorized military intervention in the Syrian civil war.[30] In 2017, a U.S. intelligence committee asserted that Putin ordered a campaign to influence the U.S. 2016 election, favoring Donald Trump.[31] Putin was indeed reelected in 2018, and in 2020, he proposed major constitutional amendments which would extend his political power after his term ends in 2024.[32] In 2022, Putin announced a "special military operation" in Ukraine, which has become a continuing full-scale invasion.[33]

Evidence for these presented criticisms is found in policy changes (gay propaganda law), public unrest (protests), and governmental actions since 2012 (the annexation of Crimea and the war in Ukraine). These criticisms have remained qualitative, perhaps because Russia's GDP per capita continued to increase, showing no immediate indication of trouble. Putin deserves this political criticism but also deserves fairness in evaluating the economic impacts of his policy. The criticism of Putin's return in 2012 needs to be supported with quantitative evidence. To do so, the study of entrepreneurship can help thoroughly understand economic impacts and many organizations publish information on entrepreneurial data. The measures of GDP and

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[29] Hill and Gaddy, 4.

[30] Patrick J. McDonnell, W.J. Hennigan, and Nabih Bulos, "Russia Launches Airstrikes in Syria Amid U.S. Concern About Targets" (Los Angeles Times, September 30, 2015), https://www.latimes.com/world/europe/la-fg-kremlin-oks-troops-20150930-story.html.

[31] Intelligence Community Assessment, *Assessing Russian Activities and Intentions in Recent US Elections* (Washington, D.C.: Office of the Director of National Intelligence, National Intelligence Council, 2017), 1.

[32] Andrew Osborn and Vladimir Soldatkin, "Putin Shake-up Could Keep Him in Power Past 2024 as Cabinet Steps Aside," Reuters (Thomson Reuters, January 15, 2020), https://www.reuters.com/article/us-russia-putin-idUSKBN1ZE15J.

[33] Andrew Osborn and Polina Nikolskaya, "Russia's Putin Authorises 'Special Military Operation' Against Ukraine," Reuters (Thomson Reuters, February 24, 2022), https://www.reuters.com/world/europe/russias-putin-authorises-military-operations-donbass-domestic-media-2022-02-24/.

entrepreneurship may or may not directly support heavy criticism of Putin or the notion that his return was vehemently opposed by Russia's creative class.

Entrepreneurship and Economic Development

In the early twentieth century, few theorists considered entrepreneurs important for economic growth.[34] Nevertheless, Schumpeter and Leibenstein maintained that entrepreneurship is vital for economic growth, as it represents the creation of new commodities, materials, knowledge, and organizational forms.[35] Since the 1980s, economists have shifted to regard the entrepreneur as an important piece of economic development. Now, entrepreneurship is widely considered a major source of growth, job creation, and innovation, and perhaps necessary for sound development.[36] To ensure this economic growth, academics and policymakers have sought to measure entrepreneurial activity and understand how to influence entrepreneurial success.[37]

The Global Entrepreneurship Monitor (GEM), the Organisation for Economic Co-operation and Development (OECD), and the World Economic Forum began collecting data on entrepreneurship around 2000. The GEM collects a variety of individual-level data from survey responses. Others measure national or institutional variables including self-employment rates, small to medium size enterprise rates, business performance, innovation data, and firm entry and exit rates. However, "none of these measures are able to capture fully the essence of

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[34] Frederic Sautet, "Local and Systemic Entrepreneurship: Solving the Puzzle of Entrepreneurship and Economic Development," *Entrepreneurship Theory and Practice*, March 2013, pp. 387-402, https://doi.org/10.1111/j.1540-6520.2011.00469.x, 388.

[35] Sautet, 388-89.

[36] Sautet, 389; László Szerb and William Trumbull, "Entrepreneurship Development in Russia: Is Russia a Normal Country? An Empirical Analysis," *Journal of Small Business and Enterprise Development* 25, no. 6 (April 23, 2018): pp. 902-929, https://doi.org/10.1108/jsbed-01-2018-0033, 908.

[37] Zoltán J. Ács and Lázló Szerb, *The Global Entrepreneurship Index (GEINDEX)*, 5th ed., vol. 5 (Boston, MA: Now, 2009), 2.

entrepreneurship, 'neither empirically, nor conceptually.'"[38] The Global Entrepreneurship Index combines GEM response rates with institutional variables. This captures the dynamic nature of entrepreneurship and its effects on the economy. The indicators that comprise the index offer specific insight into which parts of the ecosystem are most or least conducive to entrepreneurship.

Global Entrepreneurship Monitor

Established in 1999, the Global Entrepreneurship Monitor (GEM) research program is a joint research project between Babson College and London Business School that assesses national levels of entrepreneurial activity annually.[39] The program grew quickly from 10 original countries, and now collects data from 115 economies across the world,[40] including developed and developing countries. National teams survey randomly selected adults in samples, ranging in size from 1,000 to almost 27,000, and ask questions to gauge respondents' attitudes and feasibility of personally starting a business. Data collected by the GEM program is a unique asset to scholars worldwide, as the data are robust, harmonized, and publicly available on the GEM website. The most well-known and widely used GEM measure is the Total Early-stage Entrepreneurial Activity (TEA) index, "which measures the percentage of a country's working-age population that is actively trying to start a new business (nascent entrepreneurs) and that which at least partially owns and manages a young business aged less than 3.5 years (baby businesses)."[41]

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[38] Ács and Szerb, 15-16. Citing Ahmad and Hoffman, 2007.

[39] Zoltan Acs, "How Is Entrepreneurship Good for Economic Growth?," *Innovations: Technology, Governance, Globalization*, February 23, 2006, pp. 97-107, https://doi.org/10.1162/itgg.2006.1.1.97, 98.

[40] "Mission & Values," GEM Global Entrepreneurship Monitor, accessed July 22, 2022, https://www.gemconsortium.org/about/gem/.

[41] Ács and Szerb, *The Global Entrepreneurship Index*, 16.

Measures of Entrepreneurship

The World Bank, founded in 1944, assists in economic development worldwide.[42] This organization collects and publicizes a variety of data, including Gross Domestic Product (GDP), the Ease of Doing Business rank, post-secondary enrollment rates, and the Human Development Index.[43] The World Economic Forum, created in 1971 as a platform for collaboration, research, and action for progress,[44] posts data on market size, business sophistication, innovation, available technology, and available venture capital.[45] The Organisation for Economic Co-operation and Development (OECD) serves to inform policy decisions with evidence-based solutions,[46] and publishes data on agriculture, technology, and the economy, including self-employment rates.[47]

What Kind of Entrepreneurship Matters?

To capture the essence of entrepreneurship more fully, academics discuss the exact definition of entrepreneurship. Using the collected data and measurements, they have developed various categorical filters for types of entrepreneurship that affect the economy differently. Opportunity entrepreneurship, high-growth gazelles, and productive entrepreneurship positively affect the economy. Using the best method for measuring entrepreneurship can illustrate the economic changes in Russia at the time of Putin's return.

Opportunity Entrepreneurship

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[42] "History," World Bank (The World Bank Group), accessed January 12, 2023, https://www.worldbank.org/en/about/history.

[43] Ács and Szerb, *The Global Entrepreneurship Index*, 33-34.

[44] Al Reyes, *The World Economic Forum: A Partner in Shaping History* (Cologny/Geneva, Switzerland: World Economic Forum, 2019), 9,13.

[45] Ács and Szerb, *The Global Entrepreneurship Index*, 33-34.

[46] "About the OECD," OECD, accessed January 12, 2023, https://www.oecd.org/about/.

[47] Ács and Szerb, *The Global Entrepreneurship Index*, 3.

Zoltan Acs, economist and professor, proposed that *necessity* entrepreneurship and *opportunity* entrepreneurship affect the economy in different ways, supposing that high levels of entrepreneurial activity in undeveloped countries were due to high levels of self-employment. The GEM program started to add this dimension to its survey and data gathering in 2004, pursuing an opportunity-necessity ratio.[48] Acs and Varga found that opportunity entrepreneurship indeed has a positive significant effect on economic development, whereas necessity entrepreneurship has no effect.[49] The ratio of opportunity/necessity entrepreneurship seems to match economic development more accurately.

High-Growth Gazelles

A large amount of literature pertains to entrepreneurial *gazelles*, a term coined by David Birch[50] to describe quickly growing small businesses.[51] These are often identified as firms with at least 20% sales growth in a year and less than 5 years old.[52] These young high-growth enterprises highly influence economic growth[53] and create many new jobs.[54]

Productive Entrepreneurship

William Baumol, economist, described that entrepreneurship may be productive or unproductive, depending on the payoffs, which vary in different societies. In undeveloped

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[48] Zoltan Acs, Sameeksha Desai, and Jolanda Hessels, "Entrepreneurship, Economic Development and Institutions," *Small Business Economics*, September 5, 2008, pp. 219-234, https://doi.org/10.1007/s11187-008-9135-9, 99.

[49] Acs, Desai, and Hessels, 219. Referencing Acs and Varga, 2005.

[50] Magnus Henrekson and Dan Johansson, "Gazelles as Job Creators: A Survey and Interpretation of the Evidence," *Small Business Economics* 35, no. 2 (February 6, 2009): pp. 227-244, https://doi.org/10.1007/s11187-009-9172-z, 228. Citing Landtröm, 2005.

[51] Ács and Szerb, *The Global Entrepreneurship Index*, 44.

[52] Henrekson and Johansson, 228

[53] Szerb and Trumbull, "Entrepreneurship Development in Russia," 909. Citing Nightingale and Coad, 2014.

[54] Henrekson and Johansson, "Gazelles as Job Creators," 227.

countries, low payoffs encourage entrepreneurship toward criminal and black-market activity, activities that do not lead to economic growth. In developed countries, there are often strong intellectual property rights and high respect for business owners, payoffs that encourage productive entrepreneurship that does lead to economic growth. "Baumol's claims have been tested empirically successfully, and historical analysis and experience seem to give them validity," as explained by economist, Frederic Sautet.[55]

Entrepreneurial Ecosystem

Even with the abundant data from the GEM project and other organizations, and recognition of specific positive forms of entrepreneurial activity, entrepreneurship doesn't happen in a vacuum. External influences on entrepreneurial activity are complex and difficult to summarize. Scholars use an ecosystem metaphor to describe the interconnectedness of the influences. In this metaphorical ecosystem, many primarily self-serving forces compete and cooperate for limited resources. It also illustrates that the social, political, and economic forces that influence entrepreneurial success are interdependent, dynamic, and complex. The purpose of the entrepreneurial ecosystem model is not to predict, but to better understand how economies function.[56]

The fundamental concepts of entrepreneurial ecosystems were part of a shift in studies from individualistic research toward a community perspective in the 1980s and 1990s. Andrew van de Ven, professor, noted in 1993 that "individual entrepreneurs cannot command all the resources, institutions, markets, and business functions that are required to develop and

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[55] Sautet, "Local and Systemic Entrepreneurship," 391. Referencing Sobel, 2008 and Bauer, 1972.

[56] Erik Stam and Andrew Van de Ven, "Entrepreneurial Ecosystem Elements," *Small Business Economics* 56, no. 2 (November 11, 2019): pp. 809-832, https://doi.org/10.1007/s11187-019-00270-6, 827.

commercialize their entrepreneurial ventures."[57] Similarly, entrepreneurship is not just a local phenomenon because it can affect the economy at large. Before the term, entrepreneurial ecosystem, became popular, Acs (2006) described a similar idea, the 'Entrepreneurial Framework Conditions'. His model introduced entrepreneurship as part of a larger system. The benefits of successful entrepreneurship propagate throughout the economy in the form of fiercer competition in research and development, labor markets, product and service markets, and financial markets.[58]

Early literature on entrepreneurial ecosystems, from 2006-2015, is directed at entrepreneurial leaders and policymakers, not an academic audience.[59] Erik Stam, a professor at the Utrecht University School of Economics in the Netherlands, is a supporter of the concept of entrepreneurial ecosystems. In "Entrepreneurial Ecosystems and Regional Policy," Stam described other frameworks applied to entrepreneurship, emphasizing that the entrepreneurial ecosystem approach solves the unresolved issues of the previous models.[60] He argues with previous scholars regarding exactly which indicators are useful. Some proposed to narrowly include only gazelles; however, Stam agrees with others that entrepreneurial ecosystems are more adequately defined by measures of innovation and growth-oriented leadership,[61] leaning on the continuing academic discussion of which types of entrepreneurship are beneficial to economic growth.

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[57] Stam and Van de Ven, 810.

[58] Acs, "How Is Entrepreneurship Good for Economic Growth?," 103.

[59] Erik Stam, "Entrepreneurial Ecosystems and Regional Policy: A Sympathetic Critique," *European Planning Studies* 23, no. 9 (July 8, 2015): pp. 1759-1769, https://doi.org/10.1080/09654313.2015.1061484, 1762.

[60] Stam, 1760.

[61] Stam, 1761.

Many scholars have offered different lists of the pillars of entrepreneurship, which largely overlap. These pillars, also called elements, principles, or attributes, are those primarily self-serving social, political, and economic forces that impact a person's interest and capability to start a business, as well as the success and economic impact of such a business.

Stam uniquely presents the pillars of entrepreneurship in categories, shown in figure 1. He explained, "the framework conditions include the social (informal and formal institutions) and the physical conditions enabling or constraining human interaction…The systemic conditions are the heart of the ecosystem: networks of entrepreneurs, leadership, finance, talent, knowledge, and support services."[62]

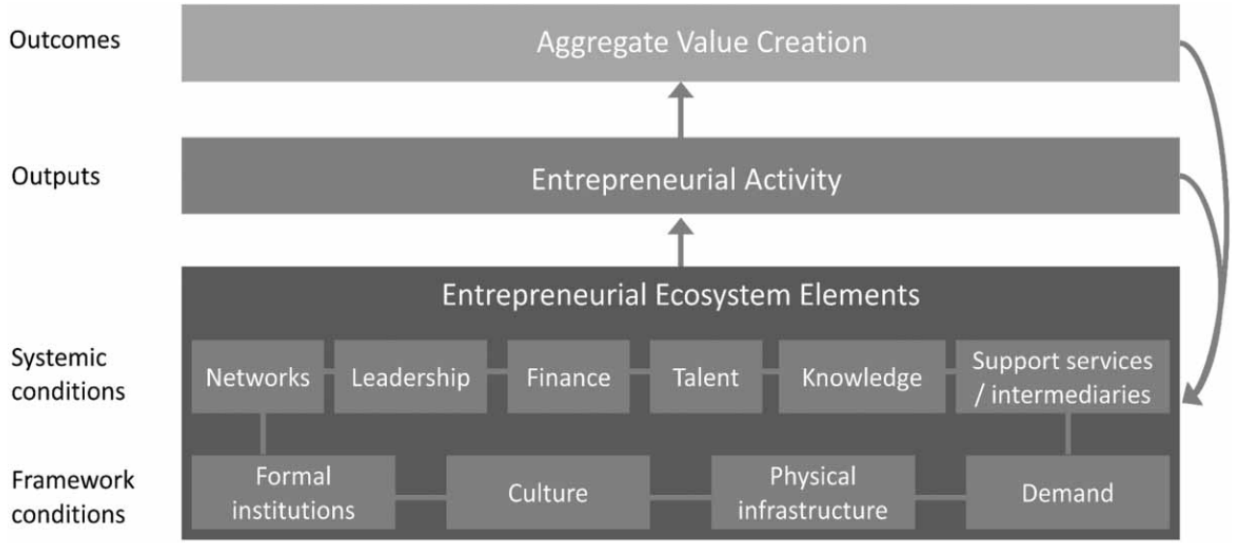

Figure 1.[63] Stam's elements of an entrepreneurial ecosystem.

The "ecosystem concept emphasizes that entrepreneurship takes place in a community of interdependent actors."[64] In "Entrepreneurial Ecosystem Elements," Stam and Andrew Van de

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[62] Stam, 1766.
[63] Stam, 1765, fig. 1, "Key elements, outputs and outcomes of the entrepreneurial ecosystem."
[64] Stam, 1762.

Ven revisit the concept and use it to analyze parts of the Netherlands. They aim "to develop an operational definition and an empirical model for measuring entrepreneurial ecosystem elements and the quality of regional entrepreneurial ecosystems."[65] They use the same broad conceptual framework that Stam proposed in 2015, changing the category names, and emphasizing the cyclical nature of entrepreneurial success (see fig. 2). Successful entrepreneurs reinforce the conditions for future generations; they serve as mentors, help others grow their network, and advocate for entrepreneurship in an institutional and social context. Although Stam and Van de Ven have a precise description of how the theoretical pillars of entrepreneurship sensibly interact, the pillars are not associated with widely available measures.

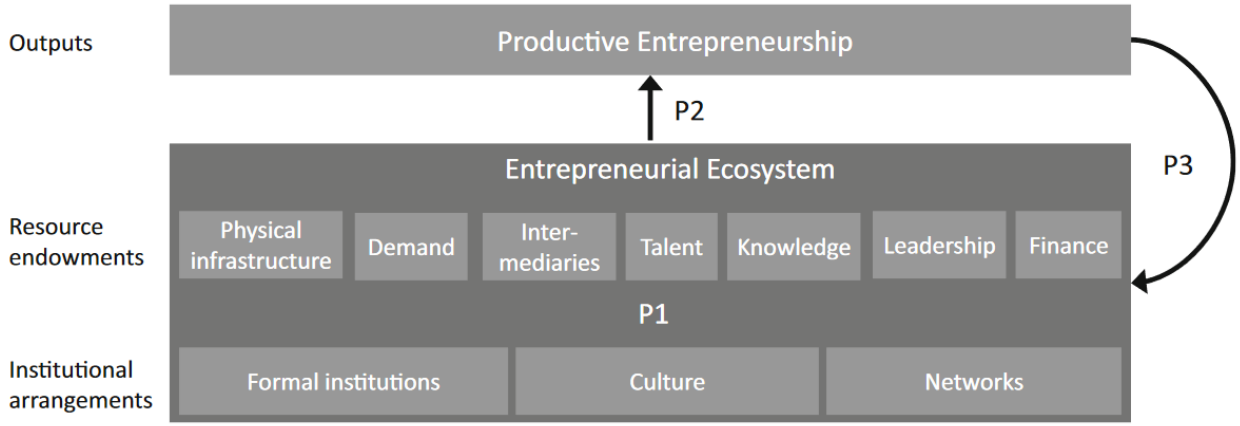

Figure 2.[66] Stam's updated elements of an entrepreneurial ecosystem

Global Entrepreneurship Index

In 2009, Acs and László Szerb, professor of business and economics, constructed the Global Entrepreneurship Index (GEI), a composite index that measures entrepreneurial activity and attitudes. This index highly correlates to economic development as measured by GDP.[67]

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[65] Stam and Van de Ven, "Entrepreneurial Ecosystem Elements," 810.
[66] Stam and Van de Ven, 813, fig. 1, "Elements and outputs of the entrepreneurial ecosystem."
[67] Ács and Szerb, *The Global Entrepreneurship Index*, 64-65.

This index solves the issues of other measures of entrepreneurship because it is sufficiently complex to capture the multidimensional feature of entrepreneurship. It includes indicators referring to Acs' opportunity entrepreneurship, Birch's high-growth gazelles, and Baumol's productive entrepreneurship, as well as incorporating individual-level and institutional-level variables.[68]

A country's GEI score depends on seventeen variables from the GEM annual adult population survey with fourteen institutional-level variables from the World Bank, the World Economic Forum, the OECD, and other organizations.[69] The indicators, or pillars, are calculated from variables using the interaction variable method. The variables are first normalized to a value between 0 and 1. Then the indicators are calculated as the product of one or two individual-level variables and an institutional interaction variable. The indicators are adjusted using a penalizing for bottlenecks method.[70] The average of these adjusted values creates the three sub-indexes, which are adjusted to be reported as values from 0-100.

Acs and Szerb asserted, "the entrepreneurial attitude (ATT) sub-index aims to identify entrepreneurial attitudes associated with the entrepreneurship-related behavior of a country's population."[71] The entrepreneurial activity sub-index, later renamed to the entrepreneurial abilities (ABT) sub-index, "is principally concerned with measuring high-growth potential startup activity."[72] "The entrepreneurial aspiration (ASP) sub-index refers to the distinctive nature of entrepreneurial activity."[73] The Global Entrepreneurship Index is the arithmetic

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[68] Ács and Szerb, *The Global Entrepreneurship Index*, 3-4.
[69] Ács and Szerb, 33.
[70] See Ács and Szerb, 30, 33-46 for details on each indicator and calculations.
[71] Ács and Szerb, 36.
[72] Ács and Szerb, 40.
[73] Ács and Szerb, 42.

average of the three sub-indexes. Summarized in table 1, the index is built from the sub-indexes, which rely on four or five pillars—each the product of an individual-level variable from the GEM survey and an institutional interaction variable.

Sub-Indexes		*Indicators*	*Variables*
Attitudes Sub-Index (ATT)	1.	Opportunity Perception	Opportunity Recognition
			Freedom
	2.	Startup Skills	Skill Perception
			Education
	3.	Risk Acceptance	Risk Perception
			Country Risk
	4.	Networking	Know Entrepreneur
			Agglomeration
	5.	Cultural Support	Carrier Status
			Corruption
Abilities Sub-Index (ABT)	6.	Opportunity Startup	Opportunity Motivation
			Governance
	7.	Technology Absorption	Technology Level
			Technology Absorption
	8.	Human Capital	Educational Level
			Labor Market
	9.	Competition	Competitors
			Competitiveness
Aspiration Sub-Index (ASP)	10.	Product Innovation	New Product
			Tech Transfer
	11.	Process Innovation	New Technology
			Science
	12.	High Growth	Gazelle
			Finance and Strategy
	13.	Internationalization	Export
			Economic Complexity
	14.	Risk Capital	Informal Investment
			Depth of Capital Market

Table 1.[74] The structure of the Global Entrepreneurship Index

[74] Szerb and Trumbull, "Entrepreneurship Development in Russia," 911, table II, "The structure of the Global Entrepreneurship Index."

Since its creation, the GEI has been calculated annually by the Global Entrepreneurship and Development Institute (GEDI), founded by Zoltan Acs.[75] GEI, sub-index, and indicator scores are available for 2006-2016 on the GEDI website.

Economy and Entrepreneurship in Russia

> The GEI's combination of both institutional and individual-level factors is especially informative in the case of transition economies. Besides institutional development, successful transition requires changes in individuals' and firms' attitudes, abilities, and aspirations leading to the formulation of new ventures, which was one of the key points of development right after the start of transition.[76]

Entrepreneurship study in Russia is valuable because it contributes to our understanding of entrepreneurship in countries transitioning to a free market. It helps local firms by revealing opportunities and constraints. Similarly, foreign firms benefit by developing new strategies for business in Russia or collaborating with Russian firms.[77] Because successful entrepreneurship encourages economic development through innovation, job creation, and technological advancement, understanding current entrepreneurship conditions in Russia could identify bottlenecks in development and economic growth. Reviewing changes in 2012 will illuminate socioeconomic changes which may or may not add weight to the criticism of Putin's return. It can also help local and foreign firms understand new opportunities, constraints, or strategies for business in modern Russia under Putin's presidency.

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[75] "About Us: Institute," Global Entrepreneurship Development Institute, accessed January 17, 2023, https://thegedi.org/theinstitute/.

[76] László Szerb and William Trumbull, "Entrepreneurship Development in Russia," 903. Citing Estrin and Mickiewicz, 2011; Cieslik and van Stel, 2012; and McMillan and Woodruff, 2002.

[77] Arto Ojala and Hannakaisa Isomäki, "Entrepreneurship and Small Businesses in Russia: A Review of Empirical Research," *Journal of Small Business and Enterprise Development* 18, no. 1 (2011): pp. 97-119, https://doi.org/10.1108/14626001111106451, 98.

Poor Performance to Begin With

Since the collapse of the Soviet Union in 1991, Russia has had the worst transition experience of the post-Soviet Union countries. Transitioning to a market economy involves "privatization, price liberalization, trade liberalization, and much more."[78] Each of these requires legalization, enforcement, and public attitude change. For example, property rights are legal, but cultural attitudes still regard private ownership as morally reprehensible.

> Productive entrepreneurship, in the sense of Baumol (1990), which includes innovation and the search for value-adding opportunities, is not permitted in the state-socialist system, although there may be considerable unproductive entrepreneurship such as rent seeking and criminal activity. For there to be productive entrepreneurship, it must be permitted. But much more than some sort of permissive legislation is necessary. Productive entrepreneurship may be legal, but very little will actually happen without well-developed institutions of a market economy, such as clearly defined and enforced private-property rights.[79]

Szerb and William Trumbull, professor of economics, said, "Most economists would argue that the mechanisms of privatization in Russia, and the poor development of an infrastructure to enforce property rights, meant that, in fact, Russia had made very little progress in developing a market economy during that initial period of privatization."[80]

Comparing Russia to the formerly socialist European Union (EU) member states—the Czech Republic, Hungary, Poland, Slovakia, Estonia, Latvia, Lithuania, Bulgaria, Romania, and Slovenia—Russia has had the worst transition when measured by percent change in GDP.[81]

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[78] Szerb and Trumbull, "Entrepreneurship Development in Russia," 903. Citing Melo et al, 1996.
[79] Szerb and Trumbull, 904.
[80] Szerb and Trumbull, 904. Citing Äslund, 2007.
[81] Szerb and Trumbull, 905.

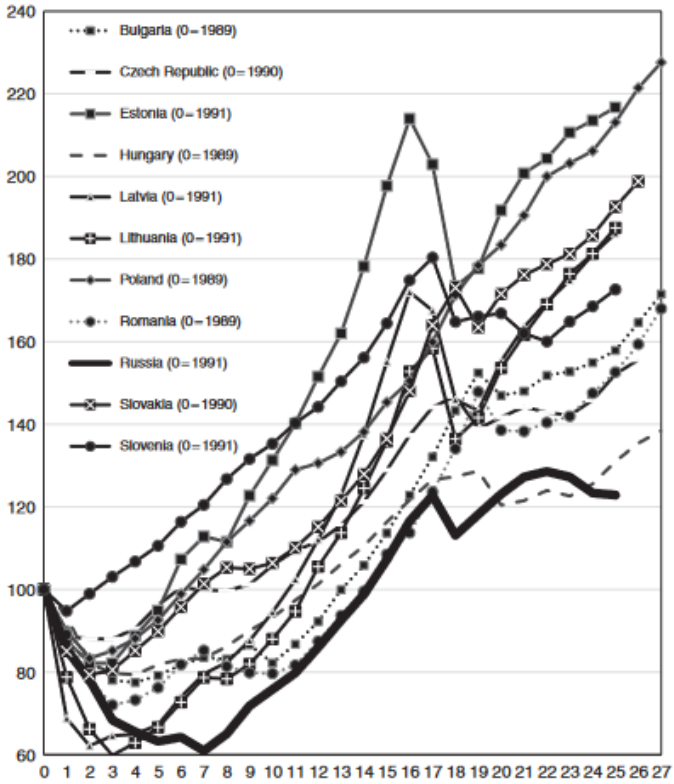

Figure 3.[82] Percent of GDP per capita (PPP) since transition for Russia and EU post-socialist countries.[83]

As shown in figure 3, Russia surely had the most disappointing macroeconomic performance among EU post-socialist countries; however, these formerly socialist countries may have had advantages, such as financial support and the promise of EU membership, which were not extended to Russia.[84] How did Russia compare to other former republics of the Soviet Union?

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[82] Szerb and Trumbull, 905, fig. 1, "Index of per capita GDP (PPP) for Russia and EU post-socialist countries."

[83] Szerb and Trumbull, 905. Note that year 0 is adjusted to be the year before transition for each country and uses early values extrapolated using growth rates calculated by Maddison (2013).

[84] Szerb and Trumbull, 906. Citing Treisman, 2014.

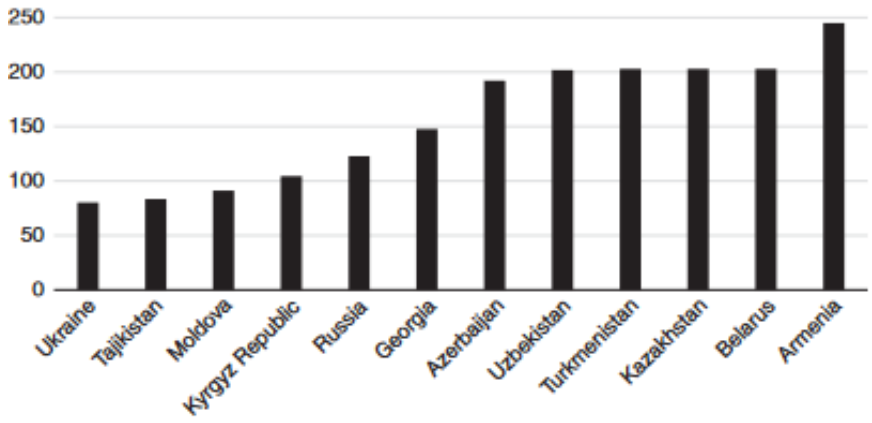

Figure 4.[85] GDP per capita in 2017 as a percent of 1991 values for Russia and former Soviet countries.

Figure 4 shows that Russia's performance was poor compared to these as well, as measured by the percent change in GDP per capita since 1991. Szerb and Trumbull explained, "Of the other 11 former non-Baltic republics, Russia outperforms only four… Furthermore, all of the countries Russia has outperformed have suffered civil strife, stalled reform, tumultuous politics, and endemic corruption."[86] Russia's economic performance has been quite poor compared to both the post-socialist countries and the former republics of the Soviet Union.

Pertaining specifically to entrepreneurship, Russia is a low performer. In the GEI, "Russia's scores are less than the scores of other post-socialist countries in six out of the nine pillars of entrepreneurial attitudes and abilities."[87] Scholars identify that "the unstable institutional situation, inconsistent regulations, and the absence of business laws inhibit entrepreneurial activities in Russia," as investigated by Ojala and Isomäki.[88] Russian

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[85] Szerb and Trumbull, 906, fig. 2, "Percent size of per capita GDP relative to 1991 for Russia and non-Baltic FSU countries."

[86] Szerb and Trumbull, 907.

[87] Szerb and Trumbull, 902.

[88] Ojala and Isomäki, "Entrepreneurship and Small Businesses in Russia," 108.

entrepreneurs have difficulties with the Russian government, suppliers, finances, and internationalization. They have a lower education level and have had fewer entrepreneurial experiences.[89] Corruption and issues with suppliers are not surprising problems, but other problems are surprising as the state of Russian society at large is seemingly developed.

> Despite having a large resource base, high education levels, a literate workforce, a huge domestic market, and high levels of research and development, Russia has failed to capitalize on these advantages, in terms of creating a vibrant, well-balanced economy with high levels of entrepreneurship and business creation.[90]

GEI in Russia

Global Entrepreneurship Index, sub-index, and indicator scores are available from 2006-2016 but have missing values for Russia in 2015.[91] The GEI score of Russia deteriorated from 2006-2010, recovered until 2014, and then further deteriorated until 2016, as shown in figure 5.[92]

The deterioration of the GEI score from 2006-2010 despite increases in GDP over that time supports the common sentiment that the increases in GDP in Russia (see fig. 6) are due to high oil prices because the GEI is generally highly correlated to GDP; however, using a best-fitting polynomial trend to compare GEI and GDP, Russia's GEI score is 57.3% below predicted, as calculated by Szerb and Trumbull.[93] This means that entrepreneurship in Russia is very poorly developed compared to the normal relationship between GEI and GDP. The oil industry continues to be a significant source of wealth and power in Russia.

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[89] Ojala and Isomäki, 108.

[90] Szerb and Trumbull, "Entrepreneurship Development in Russia," 903.

[91] László Szerb, message to author, December 31, 2022. Note that values may differ from those presented in annual GEI reports. The 2015 cannot be filled in with values from the 2015 report because the scores are adjusted afterward as more source data becomes available.

[92] Szerb and Trumbull, "Entrepreneurship Development in Russia," 915-916.

[93] Szerb and Trumbull, "Entrepreneurship Development in Russia," 913

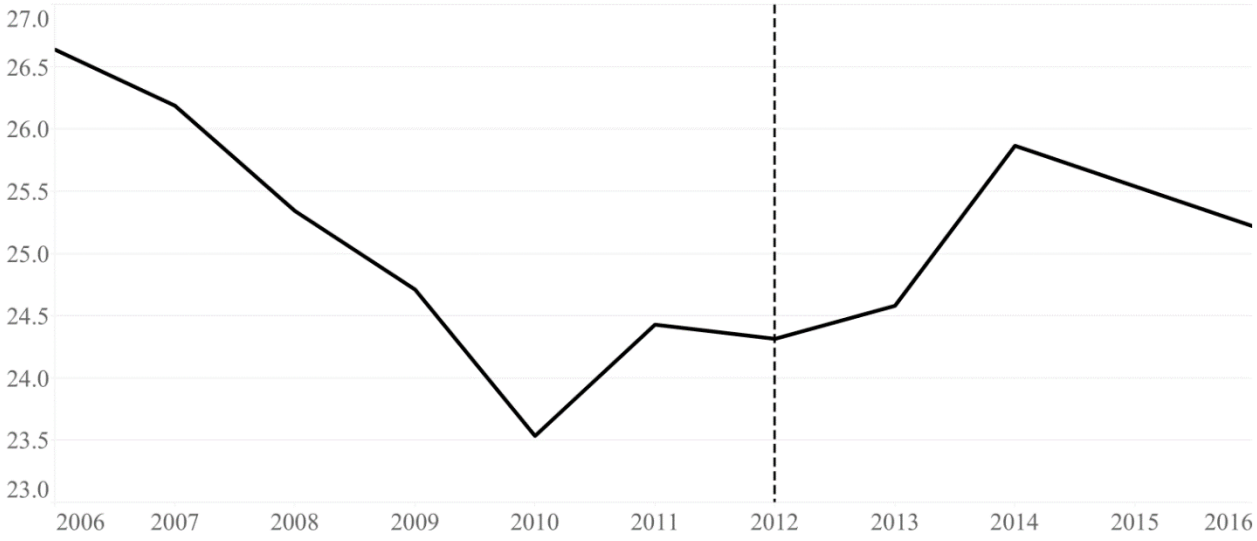

Figure 5.[94] GEI for Russia, 2006-2016

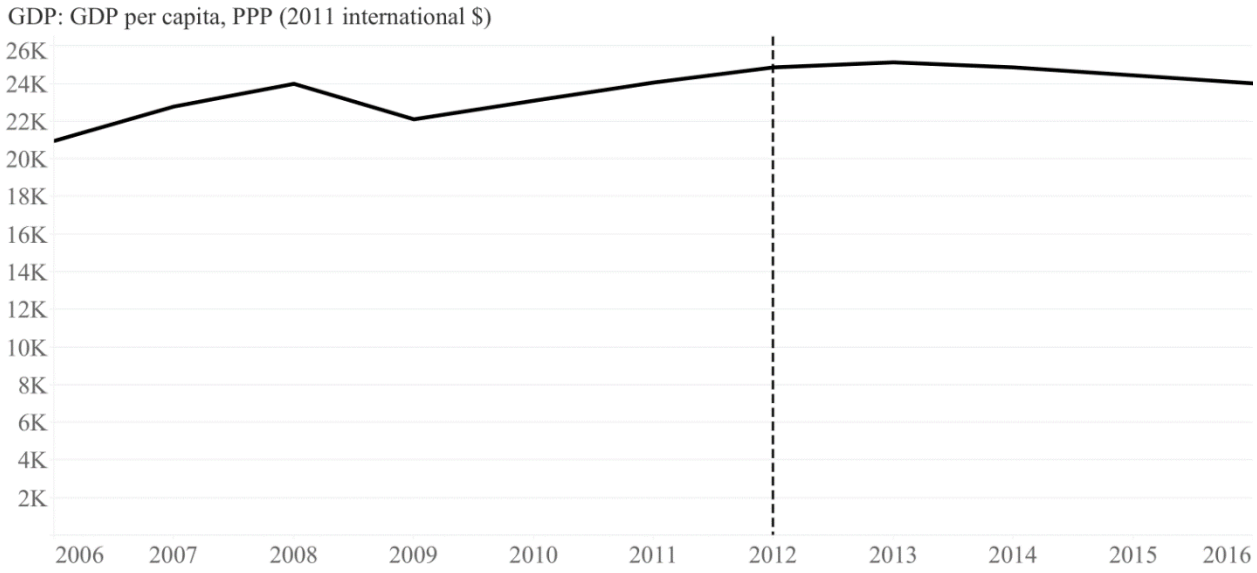

Figure 6.[95] GDP, PPP (2011 International $) for Russia, 2006-2016

[94] Author's creation. Source: *GEI 2006-2016 Dataset* (Global Entrepreneurship Development Institute), accessed January 27, 2023, https://thegedi.org/datasets/.

[95] Author's creation. Source: *GEI 2006-2016 Dataset.*

The GEI increases (see fig. 5) from 2010-2014 indicate that Putin's return in 2012 (shown in figures with a dashed line) did not immediately damage the economy. Likewise, the sub-indexes and indicator scores generally do not change over 2012. Many indicators increased over that time, including Networking, Startup Skills, High Growth, and Risk Capital. Some were already decreasing and did not accelerate, such as Opportunity Startup, Product Innovation, and Process Innovation. The greatest decreases were in the Product Innovation and Process Innovation indicators, which were already decreasing before 2012. Many indicators decrease significantly from 2014-2016.

Because the index combines individual-level (GEM survey response) data and institutional-level data, the scores would quickly react to changes in public perception. The downturn from 2014 is a result of the Russian annexation of Crimea and the sanctions placed on Russia as an international response.[96] Hence, Putin's return was mainly a political event, only affecting the economy in 2014.

The Entrepreneurial Attitudes Sub-Index

The entrepreneurial attitude (ATT) sub-index identifies attitudes associated with entrepreneurship-related behavior. It summarizes the population's opinions on opportunities for starting a business, skills and networks to exploit these opportunities, and confidence in success. Entrepreneurial attitudes are "influenced by the crucial institutional factors of market size, education, the riskiness of a country in general, the usage rate of the internet in the population, and culture."[97]

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[96] Hill and Gaddy, *Mr. Putin*, 354.

[97] Ács and Szerb, *The Global Entrepreneurship Index*, 36. Citing Reynolds, 2007; Schramm, 2008; Uhlaner and Thurik, 2007

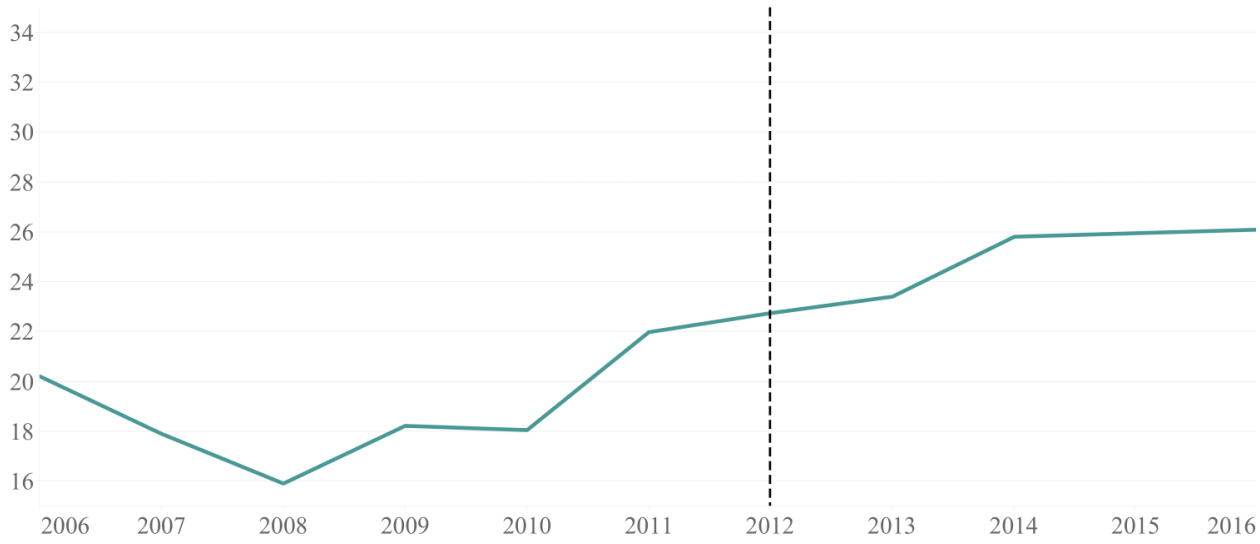

Figure 7.[98] ATT Sub-Index for Russia, 2006-2016

As shown in figure 7, Russia's scores for the ATT sub-index increased every year between 2010 and 2016, starting at 18.06 in 2010 and reaching 26.10 in 2016. This indicates that entrepreneurial attitudes increased over this time in Russia, meaning that people saw more opportunities, were more confident in their skills, and more confident in success. They may have reached higher levels of education and used the internet more.

Four of the five indicators that make up the ATT sub-index similarly show general increases from 2010 to 2016 (see fig. 8). There are large increases in the Networking and Startup Skills indicators, showing that Russian people are more confident in their ability to start a business and reaching higher levels of education on average. The entrepreneurial networks are expanding, and there is a slow increase in cultural acceptance of entrepreneurship, as shown by the small increase of the Cultural Support indicator score from 0.11 in 2011 to 0.16 in 2016. The trajectory of these indicators does not identify any decreases related to Putin's return to power.

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[98] Author's creation. Source: *GEI 2006-2016 Dataset*.

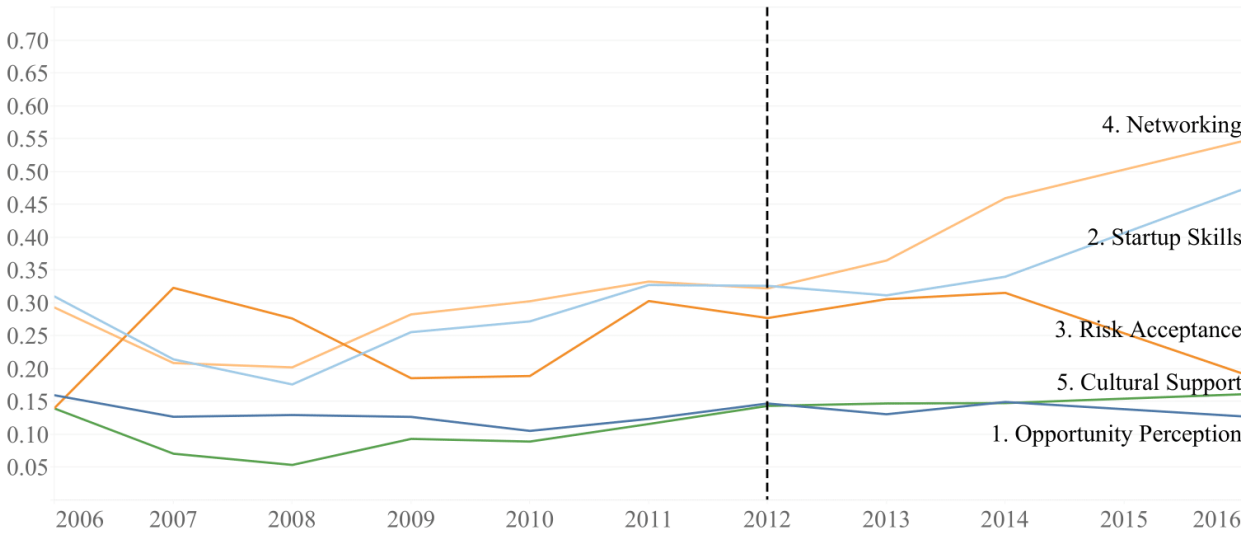

Figure 8.[99] ATT Indicators for Russia, 2006-2016

The Entrepreneurial Abilities Sub-Index

The entrepreneurial abilities (ABT) sub-index, formerly the entrepreneurial activity (ACT) sub-index, "is principally concerned with measuring important characteristics of the entrepreneur and the startup with high growth potential."[100] This sub-index measures opportunity startup motives, entrepreneurship in the technology sector, level of education, and product/service uniqueness. The institutional variables are the ease of doing business, availability of modern technology, human development level, and freedom of business operation.[101]

[99] Author's creation. Source: *GEI 2006-2016 Dataset*.
[100] Szerb and Trumbull, "Entrepreneurship Development in Russia," 910.
[101] Ács and Szerb, *The Global Entrepreneurship*, 40.

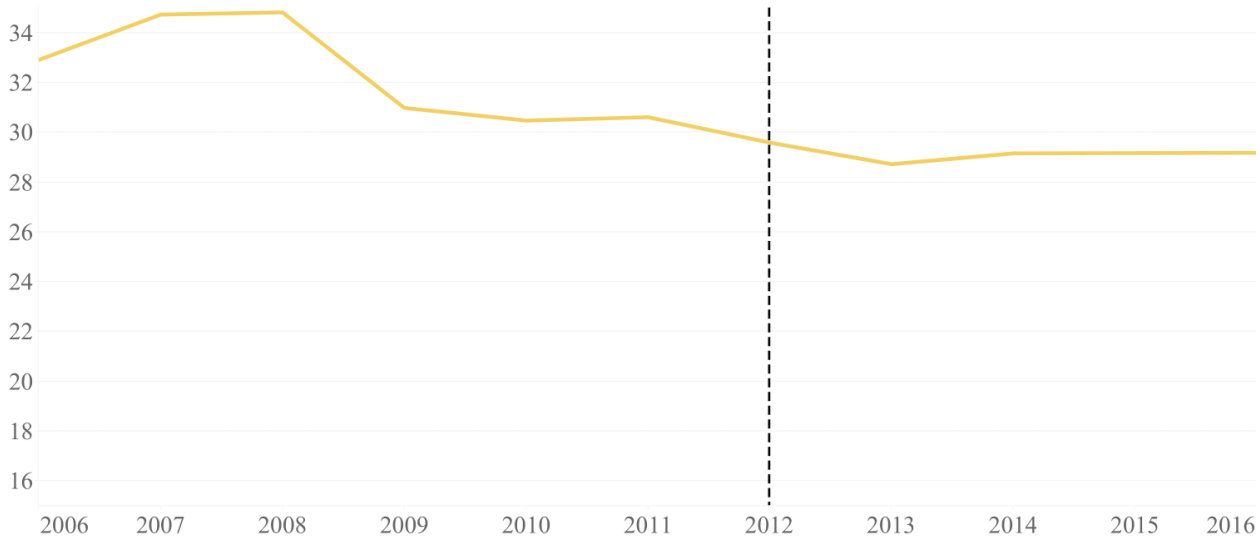

Figure 9.[102] ABT Sub-Index for Russia 2006-2016

Russia's ABT sub-index scores decreased from a high of 34.8 in 2008 to a low of 28.7 in 2013, apart from a small increase in 2011 (see fig. 9). This figure does indicate a change in 2012, and scores increased slightly after 2013. This indicator primarily shows a long-term fall since the 2008 market crash.

None of the indicators which make up the ABT sub-index show a significant change in the entrepreneurial activity or abilities related to 2012. As shown in figure 10, the Human Capital indicator decreased from 0.74 in 2011 to 0.64 in 2013 but recovered in 2014. The Opportunity Startup indicator, calculated from Acs' opportunity necessity ratio,[103] slightly decreased from 0.26 in 2011 to 0.20 in 2013. Although three of the ABT indicators decrease, their fall started in about 2008, the time of the global financial crisis, and the decrease did not accelerate after 2012. If fact, all of the ABT indicators do not change much after 2012. The sharp fall in Technology Absorption identifies that the 2008 market crash critically changed the

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[102] Author's creation. Source: *GEI 2006-2016 Dataset*.
[103] Acs and Szerb, 40.

number of early-phase startups in the technology sector and decreased the availability of the latest technology.[104]

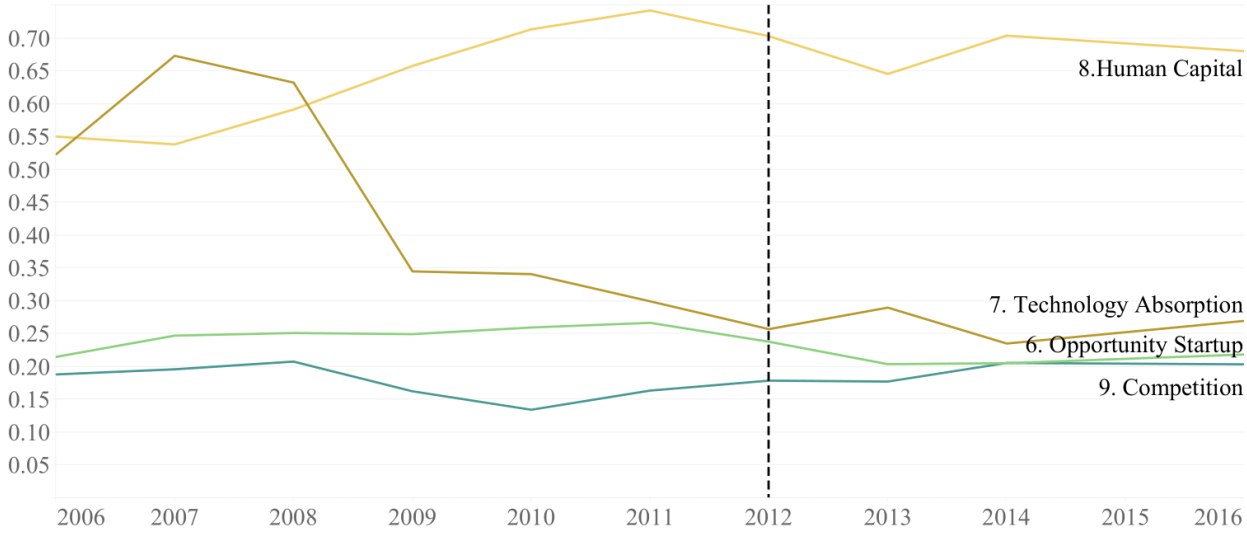

Figure 10.[105] ABT Indicators for Russia, 2006-2016

The Entrepreneurial Aspiration Sub-Index

The entrepreneurial aspiration (ASP) sub-index measures the unique qualities of entrepreneurial activity because entrepreneurial businesses are quite different from other businesses. It incorporates product and technology innovation, internationalization, ambitions for high growth, and finance variables, as well as institutional measures of research and development potential, business sophistication, globalization, and the availability of venture capital.[106]

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[104] Acs and Szerb, 41.
[105] Author's creation. Source: *GEI 2006-2016 Dataset*.
[106] Ács and Szerb, 42-43.

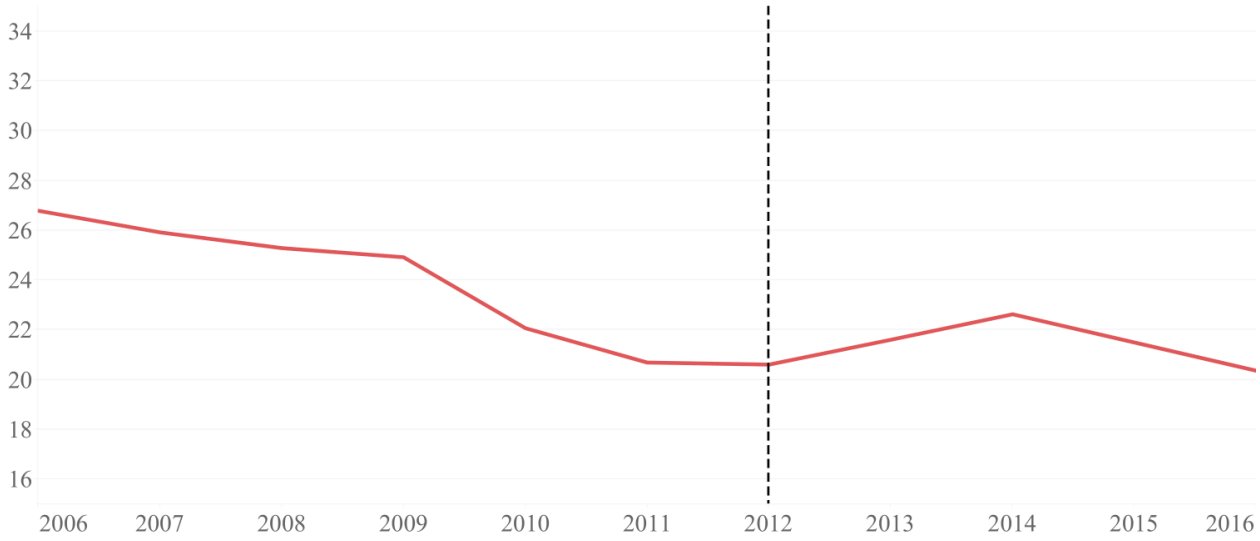

Figure 11.[107] ASP Sub-Index for Russia, 2006-2016

Russia's ASP index does not indicate a negative change in 2012 (see fig. 11). In fact, the 2012 score of 20.6 is a local minimum, the point when the score rebounded from the fall starting in 2006 and started increasing again until 2014. However, the score fell even lower to 20.36 in 2016.

The indicators which comprise the ASP sub-index show mixed changes in 2012 (see fig. 12). The High Growth, Risk Capital, and Internationalization indicators continue increasing beginning in 2011 until 2014, or thereabouts. Then, they drop in 2016. Therefore, Russian entrepreneurs were more likely to expect high growth, saw more opportunities for risk capital, another term for venture capital, and were more likely to export their products or services until the drop in 2016.[108] The Process Innovation and Product Innovation decrease sharply from 2011 to 2012, but the indicators were already decreasing since 2009. They even increased from 2012 to 2014. In 2016, the Process Innovation score was even higher, but the Product Innovation

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[107] Author's creation. Source: *GEI 2006-2016 Dataset*.
[108] Ács and Szerb, 44-45.

score fell. This suggests that entrepreneurs' opinions of the novelty of their product or service have been falling, but increased from 2012 to 2014.

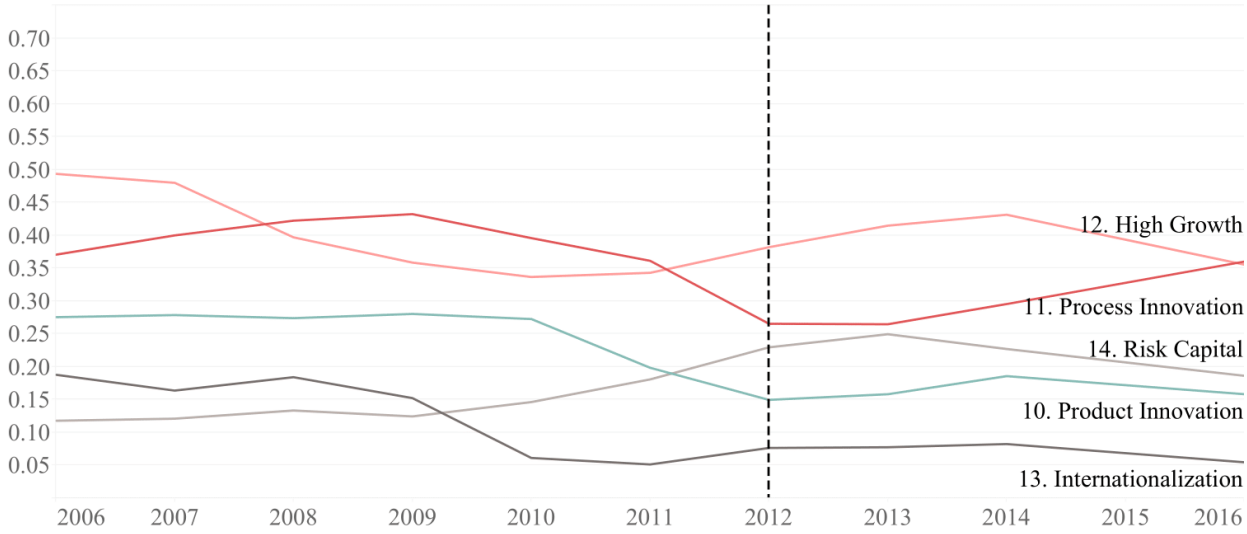

Figure 12.[109] ASP Indicators for Russia, 2006-2016

In summary, there appears to be no significant change in the GEI score or most of its indicators across 2012. In fact, the GEI score recovered significantly from 24.3 in 2012 to 25.87 in 2014. The ATT sub-index increased from 2010 to 2016. There was a continued decrease in the ABT sub-index from 2009 to 2013, which did not fluctuate in 2012. The ASP sub-index increases from 2012 to 2014. Generally, the indicators either increased over that time or were decreasing before 2012. So, in this analysis, there is no evidence that public opinions of entrepreneurial activity, as measured by the GEI, changed when Putin returned to the presidency.

There were, however, considerable decreases between the 2014 and 2016 scores. There is a dip in the Opportunity Perception and Risk Acceptance indicators; the Russian population saw fewer opportunities for entrepreneurship and was less likely to accept the risks associated

[109] Author's creation. Source: *GEI 2006-2016 Dataset*.

with starting a business.[110] The ASP sub-index fell 2.27 between 2014 and 2016, reflecting the decreases in the Process Innovation, Risk Capital, High Growth, and Technology Absorption indicators.

After 2014

The Russian annexation of Crimea in 2014 was met with international sanctions and reciprocal countersanctions.[111] In 2014, there was also a global decrease in oil prices[112] and a huge devaluation of the ruble, which fell 19% over 24 hours in December 2014.[113] There was a large drop in average income, an increase in interest rates, and an increase in the state's share of the economy between 2014 and 2017.[114] The economic sanctions in 2014 slowed economic activity, harming the development of entrepreneurship, especially innovation, as explained by Smirnov and Cheberko, professors of economics.[115]

> Entrepreneurship development in Russia is a state-regulated process, the priorities and instruments of which originated from the existing political-economic system. The [imposition] of sanctions and then the anti-sanction regime, along with the following currency and banking crises, have significantly influenced the state policy in the field of entrepreneurship.[116]

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[110] Ács and Szerb, 37-38.

[111] Sergej Smirnov and Eugeniy Cheberko, "Current Stage of Entrepreneurship Development in Russia from 2014 Up To 2017: Main Issues and Trends," in *6th International OFEL Conference on Governance, Management and Entrepreneurship. New Business Models and Institutional Entrepreneurs: Leading Disruptive Change* (Zagreb, Croatia: Governance Research and Development Centre (CIRU), 2018), pp. 344-355, 344.

[112] Smirnov and Cheberko, 344.

[113] Natalie Kitroeff and Joseph Weisenthal, "Here's Why the Russian Ruble Is Collapsing" (Bloomberg, December 16, 2014), https://www.bloomberg.com/news/articles/2014-12-16/no-caviar-is-not-getting-cheaper-everything-you-need-to-know-about-the-russian-ruble-collapse.

[114] Smirnov and Cheberko, 345. Citing Ovcharova, 2016; Krylov and Makarova, 2016; and Federal Antimonopoly Service, 2016.

[115] Smirnov and Cheberko, 346. Citing Dmitriev and Starova, 2015.

[116] Smirnov and Cheberko, 352

Unfavorable factors have negatively influenced the Russian economy at large, exacerbating the already poorly functioning entrepreneurial ecosystem.[117] "As a whole, the current situation seems to be [unstable] and contradictory due to factors which can support or inhibit the development in the country."[118] Entrepreneurs continue to be curbed by systemic issues of corruption and bureaucracy in regulatory agencies and the judicial system. A growing number of Russian people are involved in shadow entrepreneurship, or unregistered business activity.[119]

The three institutional arrangements in Stam and Van de Ven's model of an entrepreneurial ecosystem are formal institutions, culture, and networks (see fig. 2 on p. 17).[120] In Russia, formal institutions are corrupt and bureaucratic. This could potentially change if the political-economic policy in Russia changes by instituting deregulation, tax burden reduction, and the creation of incentives for small businesses to exit the shadow sector.[121] However, since Putin became president in 1999, there has been increasing statism, deliberalization, and patrimonialism.[122] There has not been any progress in solving the problems of tax burden, regulatory barriers, and corruption during the past 20 years.[123] The culture of Russia is also not conducive to entrepreneurship; the Soviet legacy, marked by unfavorable attitudes toward private

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[117] Smirnov and Cheberko, "Current Stage of Entrepreneurship Development in Russia," 344-345.

[118] Smirnov and Cheberko, 345.

[119] Smirnov and Cheberko, 345-346. Citing Gurvich and Suslina, 2015.

[120] Stam and Van de Ven, "," 813.

[121] Smirnov and Cheberko, "Current Stage of Entrepreneurship Development in Russia," 352

[122] Smirnov and Cheberko, 347. Citing Aidis, Estrin, and Mickiewicz, 2008.

[123] Smirnov and Cheberko, 346, 348; Sergei Smirnov et al., "On the Way to the Mass Entrepreneurship in Russia: Currents State and Trends," *6th International Conference on Information Management (ICIM)*, 2020, pp. 142-146, https://doi.org/10.1109/ICIM49319.2020.244687, 145.

ownership, persists and will likely be slow to change.[124] This slow change does seem to be happening, as the GEI indicator of Cultural Support is particularly low but has been slowly increasing. However, the Networking indicator for Russia is increasing quickly and seems to be on par with countries with a similar level of economic development.[125]

Conclusion

Putin's return to the presidency in 2012 is heavily criticized as it circumvented the spirit of the Russian constitution. It sparked protests and brought policy changes, but Putin's return did not damage the economy until 2014. Although a political disruption, there is no evidence that Putin's third presidency immediately upset the Russian entrepreneurial ecosystem. In fact, an argument could be made that the Russian business environment viewed Putin's return as a stabilizing factor as economic policy would remain the same. Putin's return in 2012 was a political controversy that negatively affected Russia and angered the Russian creative class, but the economy remained stable until 2014, with the annexation of Crimea, the instability of the ruble, and the increased interest rates.

Entrepreneurship in Russia has been lagging considerably behind similar post-socialist countries since the 1990s and, as shown by Russia's GEI scores, continues to perform poorly. Because entrepreneurship in Russia is so undeveloped, and the institutional and cultural barriers are unlikely to change soon, the economy of Russia is not robust. Vast natural resources support the GDP and economy, but Russia's continuing reliance on oil may prove disastrous, and inhibit the development of the economy. Although it is impossible to know what would have happened if Putin had not returned to the presidency, his return has brought social dissent and encouraged

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[124] Smirnov and Cheberko, 347. Citing Aidis, Estrin, and Mickiewicz, 2008; Szerb and Trumbull, "Entrepreneurship development in Russia," 904.

[125] Szerb and Trumbull, 916.

the nationalism which supported the annexation of Crimea. Furthermore, his administration has not solved the institutional issues wreaking havoc on the entrepreneurial ecosystem in Russia, as denoted in literature, surveys, and the Global Entrepreneurship Index. Of course, Putin has contributed to economic success in some ways, especially during his first two terms because of GDP increases and consolidation of power. It could be said that he has returned Russia's status to a global power. The re-election of Medvedev or the election of someone else may have had poor outcomes, but we do see poor outcomes now.

More study is needed to determine the effect of the 2020 invasion of Ukraine on the economy and entrepreneurship in Russia. More detail about the entrepreneurial ecosystem could be ascertained from complex analysis of GEM data, as well as compiling other relevant data sources such as those from the Russian ombudsman, Federal Antimonopoly Service, and those previously mentioned to collect data on entrepreneurship. The framework of an entrepreneurial ecosystem and the GEI could also be extended to other countries and potentially other timeframes—at the moment the GEI dataset only covers 2006-2016.

Selected Data Tables

The following data tables (tables 2-5) are the GEI, sub-index, and indicator scores for Russia 2006-2016.[126] Following each column of score values is a column containing the change since the previous value. There is missing data in 2015, and note that values may differ from those presented in annual GEI reports. The 2015 scores cannot be filled in with values from the 2015 report because the values are adjusted afterward as more source data becomes available.[127] The GDP, GEI, sub-index, and indicator scores shown in charts and tables and referenced in text is from the GEDI website and the author does not claim responsibility for its accuracy.

Year	*GEI*		*ATT*		*ABT*		*ASP*	
2006	26.64		20.22		32.91		26.79	
2007	26.19	-0.45	17.92	-2.30	34.73	+1.82	25.92	-0.87
2008	25.34	-0.85	15.92	-1.99	34.82	+0.09	25.29	-0.63
2009	24.71	-0.63	18.24	+2.31	30.98	-3.84	24.92	-0.37
2010	23.54	-1.18	18.06	-0.17	30.48	-0.51	22.07	-2.85
2011	24.43	+0.89	21.99	+3.93	30.61	+0.13	20.69	-1.38
2012	24.32	-0.11	22.75	+0.76	29.59	-1.02	20.61	-0.08
2013	24.58	+0.27	23.42	+0.66	28.73	-0.86	21.61	+1.00
2014	25.87	+1.29	25.82	+2.40	29.16	+0.43	22.63	+1.02
2016	25.22	-0.65	26.10	+0.29	29.18	+0.02	20.36	-2.27

Table 2. GEI and Sub-Indexes for Russia 2006-2016

[126] Author's creation. Source: *GEI 2006-2016 Dataset*.

[127] László Szerb, message to author, December 31, 2022.

Year	*1. Opportunity Perception*		*2. Startup Skills*		*3. Risk Acceptance*		*4. Networking*		*5. Cultural Support*	
2006	0.160		0.310		0.141		0.294		0.140	
2007	0.127	-.033	0.215	-.096	0.323	+.183	0.209	-.084	0.071	-.069
2008	0.130	+.003	0.176	-.038	0.277	-.047	0.202	-.007	0.054	-.017
2009	0.127	-.003	0.256	+.080	0.186	-.091	0.283	+.081	0.094	+.040
2010	0.106	-.021	0.272	+.016	0.189	+.003	0.303	+.020	0.090	-.004
2011	0.124	+.018	0.328	+.055	0.303	+.114	0.333	+.030	0.116	+.027
2012	0.147	+.023	0.327	-.001	0.278	-.026	0.323	-.010	0.144	+.028
2013	0.131	-.016	0.312	-.015	0.306	+.029	0.365	+.042	0.148	+.004
2014	0.150	+.019	0.340	+.028	0.316	+.010	0.460	+.095	0.148	+.001
2016	0.128	-.022	0.473	+.133	0.193	-.123	0.547	+.087	0.162	+.013

Table 3. ATT Indicators for Russia 2006-2016

Year	*6. Opportunity Startup*		*7. Technology Absorption*		*8. Human Capital*		*9. Competition*	
2006	0.215		0.523		0.550		0.188	
2007	0.247	+.032	0.673	+.150	0.538	-.012	0.196	+.008
2008	0.251	+.004	0.632	-.041	0.592	+.053	0.208	+.012
2009	0.250	-.002	0.345	-.287	0.658	+.066	0.163	-.045
2010	0.260	+.010	0.341	-.004	0.714	+.056	0.135	-.028
2011	0.267	+.007	0.300	-.041	0.742	+.029	0.164	+.029
2012	0.238	-.029	0.257	-.042	0.703	-.039	0.179	+.015
2013	0.204	-.034	0.290	+.033	0.646	-.057	0.178	-.001
2014	0.205	+.001	0.235	-.055	0.704	+.058	0.206	+.028
2016	0.219	+.013	0.270	+.035	0.680	-.024	0.204	-.002

Table 4. ABT Indicators for Russia 2006-2016

Year	*10. Product Innovation*		*11. Process Innovation*		*12. High Growth*		*13. Internatio-nalization*		*14. Risk Capital*	
2006	0.276		0.371		0.494		0.188		0.118	
2007	0.279	+.003	0.400	+.029	0.480	-.014	0.164	-.024	0.121	+.003
2008	0.274	-.005	0.422	+.022	0.397	-.083	0.184	+.020	0.133	+.012
2009	0.280	+.006	0.432	+.010	0.359	-.038	0.152	-.032	0.125	-.009
2010	0.273	-.008	0.396	-.036	0.337	-.022	0.061	-.091	0.146	+.022
2011	0.199	-.074	0.361	-.035	0.343	+.006	0.051	-.010	0.181	+.034
2012	0.150	-.049	0.265	-.096	0.382	+.039	0.077	+.025	0.230	+.049
2013	0.158	+.009	0.265	-.001	0.415	+.033	0.078	+.001	0.250	+.020
2014	0.186	+.028	0.295	+.031	0.431	+.017	0.082	+.005	0.227	-.022
2016	0.158	-.028	0.360	+.065	0.355	-.076	0.055	-.028	0.186	-.041

Table 5. ASP Indicators for Russia 2006-2016

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