

Review of Business and Economics Studies

DOI: 10.26794/2308-944X

The journal was reregistered
in the Federal Service for Supervision
of Communications,
Informational Technologies,
and Mass Media:
PI No. ФС77–67072
of 15 September 2016

Издание перерегистрировано
в Федеральной службе по надзору
в сфере связи, информационных
технологий
и массовых коммуникаций:
ПИ № ФС77–67072
от 15 сентября 2016 г.

**Publication frequency –
4 issues per year**

**Периодичность издания –
4 номера в год**

Founder: Financial University

Учредитель: Финансовый университет

The Journal is included into the system
of Russian Science Citation Index

Журнал включен в систему Российского
индекса научного цитирования (РИНЦ)

The Journal is distributed by subscription.
Subscription index: 42137
in the consolidated
catalogue “The Press of Russia”

Журнал распространяется по подписке.
Подписной индекс 42137
в объединенном
каталоге «Пресса России»

Вестник исследований бизнеса и экономики

DOI: 10.26794/2308-944X





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REVIEW OF BUSINESS AND ECONOMICS STUDIES

(ROBES) is the quarterly peer-reviewed scholarly journal published by the Financial University under the Government of Russian Federation, Moscow. Journal's mission is to provide scientific perspective on topical economic and business subjects.

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ISSN 2308-944X



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Журнал "Review of Business and Economics Studies" («Вестник исследований бизнеса и экономики») зарегистрирован в Федеральной службе по надзору в сфере связи, информационных технологий и массовых коммуникаций 15 сентября 2016 г. Свидетельство о регистрации ПИ № ФС77-67072.

Подписано в печать: 14.07.2023.
Формат 60 × 84 1/8.
Заказ № 779
Отпечатано в отделе полиграфии
Финуниверситета
(Москва, Ленинградский
проспект, д. 49).
16+



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Volume 11, Number 2, 2023

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ORIGINAL PAPER

DOI: 10.26794/2308-944X-2023-11-2-6-14

UDC 339.73(045), 339.9(045)

JEL E02, F02

The Changing Role of the US Dollar in the Global Monetary System of a Multipolar World

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ABSTRACT

This research **aims** to identify possible global monetary system development scenarios in the context of the current United States dollar supremacy. The primary **method** used is foresight analysis, which is based on a combination of deductive and historical data and trend analyses. The paper outlines the main drivers of potential change and uses them as inputs for scenario analysis. The three considered scenarios are a continuation of the absolute dollar dominance, reduction of the dollar's power and split of the world economy between multiple currencies, and the emergence of a new single prevalent currency. The main **conclusion** is that the second multipolar scenario resembles the current dynamics the most and is considered the baseline. However, the answer depends on the forecasting horizon as the scenarios have a certain sequencing. The dollar will probably maintain its supremacy in the short term. Its decline in the mid-term will give rise to a multipolar world, which can then, theoretically, lead to the emergence of a new dominant currency in the long term. The **results** might be used as a framework for further structured analysis of possible outcomes in this domain.

Keywords: United States; dollar; hegemony; reserve currency; China; multipolar world

For citation: Ilyinsky A.I., Magamedov A.S. The changing role of the US dollar in the global monetary system of a multipolar world. *Review of Business and Economics Studies*. 2023;11(2):6-14. DOI: 10.26794/2308-944X-2023-11-2-6-14

ОРИГИНАЛЬНАЯ СТАТЬЯ

Изменяющаяся роль американского доллара в глобальной монетарной системе многополярного мира

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АННОТАЦИЯ

Целью данного исследования является определение возможных сценариев развития мировой монетарной системы в контексте текущего доминирования доллара Соединенных Штатов Америки. В качестве основного **метода** исследования был использован форсайт-анализ, который базировался на комбинации дедуктивного анализа и анализа исторических данных и трендов. Данная работа определяет основные драйверы потенциальных перемен и использует их в качестве вводных для сценарного анализа. В работе рассматриваются три сценария: сохранение доминирования доллара, снижение значимости доллара и деление мировой экономики между несколькими валютами и появление новой главенствующей валюты. Основной **вывод:** второй (многополярный) сценарий наиболее соответствует текущим тенденциям и поэтому рассматривается как базовый. Однако ответ также зависит от анализируемого периода, так как прослеживается определенная последовательность между сценариями. Доллар, вероятно, сохранит свое главенство в краткосрочной перспективе. При этом снижение его значимости в среднесрочной перспективе

тиве приведет к становлению многополярного мира, в котором затем, в теории и долгосрочной перспективе, может появиться новая превалирующая валюта. **Результаты** работы могут быть использованы для структурирования последующих исследований в данной области.

Ключевые слова: США; доллар; гегемония; резервная валюта; Китай; многополярный мир

Для цитирования: Ильинский А.И., Магамедов А.С. Изменяющаяся роль американского доллара в глобальной монетарной системе многополярного мира. *Review of Business and Economics Studies*. 2023;11(2):6-14. DOI: 10.26794/2308-944X-2023-11-2-6-14

Introduction to the US dollar hegemony

The United States of America (the US) is considered a global hegemon in modern political and economic theory. The term describes the leading position of the US to all other countries, be it financial, economic, military, or technology domain. The country has the largest nominal Gross Domestic Product (GDP),¹ the largest military,² and technology spending.³ This allowed the US to establish monetary hegemony with its currency, the United States dollar (USD), acquiring the reserve status and becoming the world's dominant payment means [1].

The dollar's global ascent began in the post-World War II years, when most countries fixed their currencies against the dollar under the Bretton Woods agreement. Since then, the dollar has been empowered with unrivaled trust and has been used as the primary payment means in global trade. Today, up to 80% of global export invoicing is done in USD dollars (except for Eurozone, where USD accounts for 20%) [2]. Roughly 60% of national banks' reserves are US dollars.⁴ The scale of these near-monopoly numbers is signified by the fact that the US accounts for only 25% of the global GDP.⁵ The closest competitor, Euro has reserves share of 20%. That leaves bits and pieces for the next six biggest currencies sharing the remaining 20% of the balance: Japanese yen, British pounds, Canadian and Australian dollars, Chinese Renminbi, and Swiss francs⁴.

¹ GDP (current US\$). 2021. URL: <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD> (accessed on 15.05.2023).

² U.S. defense spending compared to other countries. 2022. URL: https://www.pgpf.org/chart-archive/0053_defense-comparison (accessed on 15.05.2023).

³ Main Science and Technology Indicators. URL: <https://www.oecd.org/sti/msti.htm> (accessed on 16.05.2023).

⁴ Currency Composition of Official Foreign Exchange Reserves. 2022. URL: https://data.imf.org/?sk=E_6A5F467-C_14B-4AA8-9F6D-5A09EC_4E_62A4 (accessed on 15.05.2023).

⁵ GDP (current US\$). 2021. URL: <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD> (accessed on 15.05.2023).

Literature overview

This dominant position of the USD had become a cause for controversy, especially after the global financial crisis of 2007–2008, when the world's financial system almost collapsed due to subprime mortgage lending and derivatives speculation in the US.

The story starts with Robbert Triffin [3] and his famous work predicting the inevitable collapse of the reserve currency, which has always been the dollar. Still, the global monetary system is heavily reliant on the American currency (I. Hjertaker and B. S. Tranøy [4]). H. M. Schwartz [5] believes the main explanation is in US's control over international intellectual property, allowing the extraction of a major part of the total profit. P. Gourinchas [6] highlights another attractive dollar feature — complementarities between the role of the dollar for international trade and international financial transactions. S. Murau, J. Rini and A. Haas [7] believe that global governments might not have enough political will to transform the system without a significant shock, which is a matter of time.

At the same time, there is an expectation that emerging countries, particularly BRICS, will financially challenge the US. Z. Zongyuan and P. Mihaela [8] believe the countries have built the necessary infrastructure for that. A particular example is China, often seen as the main protagonist. W. O. Alwago [9] explored the launch of the Central Bank Digital Currency (CBDC) or digital renminbi that gives the country the first mover advantage. Yet, K. Siddiqui [10] does not expect the renminbi to challenge the dollar materially in the next few decades.

Interestingly, E. Prasad [11] believes that secondary reserve currencies such as the British pound or Euro will be phased out by the renminbi first. While the old currencies declined, S. Arslanalp, B. Eichengreen, and C. Simpson-Bell [12] identified a growing share of unconventional currencies such as the Canadian dollar or Korean won. The change is driven by the development of international fi-

financial centers and the emergence of new directly traded currency pairs.

Regarding other factors affecting the dollar, Daniel McDowell [13] saw a decline in the dollar use by the sanctioned states. D. Halcoussis, W.H. Kaempfer, and A.D. Lowenberg [14] noted a trend toward protectionism that further reduces the dollar's importance.

Summarizing all the above, existing research highlights important dynamics of the global economy and raises questions about the future of the dollar hegemony. Yet the knowledge is fragmented, and the bigger picture is missing. This paper covers this gap by outlining high-level scenarios and defining the play's main stakeholders. The result might be used as a basis for planning and preparation for the possible disruption at the country level. The matter is urgent as the scale of potential disruption is tremendous, given the role of the USD on the global level.

Pillars of the dollar dominance

Despite the research focusing on the disadvantages of the dollar-run system, two strengths must be considered to have a balanced view. Of course, one can think of more, but they will be a derivative of these core ones, and we focus on them within this paper. Each of the two must be placed on the scales when assessing the countries' future outcomes and potential willingness to drive the change to an established system.

The first strength is stability. Dollar and dollar bonds being backed by the US are considered risk-free assets. The country has best-in-class corporate governance and a strong army, which combined mitigate external and internal risks. In addition, the government virtually cannot default on its liabilities as it can always refinance its debt from any participating country. As a result, global investors accumulate dollars or American assets bought with dollars to secure their wealth, especially in the event of instability.

The second is liquidity. The dollar is accepted anywhere in the world and can be easily converted into any asset, be it another currency or something material. A combination of several factors forms this feature. Besides the stability mentioned above, which increases the currency's attractiveness, the US has a foreign exchange infrastructure with all the countries that is a heritage of the Bretton Woods agreement. These international connec-

tions are further enhanced by the world's most profound and most sophisticated financial markets, enabling any exotic transaction. All this creates unrivaled global trade possibilities through cross-conversion via the dollar, especially for countries with non-mainstream currencies (e.g., South Africa and South Korea).

Challenges to the US dollar hegemony

Pressure on the dollar hegemony comes from four primary sources: inherent limitations of the global reserve currency model, the rise of new superpower countries, internal mismanagement of the economy by the US government, and technological developments in digital and decentralized finance.

a. Flaws of the reserve currency system

The inherent limitations are split into two parts. Part one is called Triffin's Dilemma, after its author, the economist Robert Triffin and was formulated in 1960. The US must run a constant current account deficit to supply dollars for the world's reserve accumulation and trade liquidity. At the same time, the deficit growth drives the sovereign debt, and the bigger it becomes — the less trust the global community has in the dollar. Today, we might observe the real-life case study as the US debt totals a significant \$ 31 trillion,⁶ more than the country's GDP, and is a hot international topic and a matter of disagreement between the US's ruling parties [15].

Part two concerns US manufacturing. While political US institutes benefit from reduced borrowing rates of the reserve dollar, real business struggles with international competition [16]. Excessive demand for the reserve currency strengthens the dollar, which has two cumulative effects. First, it becomes cheaper for consumers to acquire international products, i.e., import becomes more accessible. Second, US export becomes more expensive for foreigners. Both effects discourage domestic production and investment, increasing the US reliance on international players and making the country more vulnerable to supply chain and trade war disruptions. The most graphic example is the rise of China, which took over electronics, apparel, and many other manufacturing domains, including microchips, causing various political clashes and trade wars between the country and the US.

⁶ Understanding the National Debt. URL: <https://fiscaldata.treasury.gov/americas-finance-guide/national-debt> (accessed on 17.05.2023).

b. Emergence of new geopolitical and economic powers

The next source of pressure is the rise of new superpowers. It has been 80 years since the Bretton Woods agreement. Today, we see several promising geographies like India, Southeast Asia, the Middle East, and Latin America. However, most attention is paid to Europe and China — each is considered a significant player and center of gravity in the respective region.

China smartly exploited its weak currency and low labor rate to develop outstanding manufacturing capabilities and earned the title of the world's forge. It often takes second place after the US on the most critical metrics, with an occasional surge to first place. Today, it is the number one trade partner for more than 120 countries, including the US [17]. The country has the first or second largest economy, depending on whether one factors in purchasing power parity into calculations.^{7,8} It has the second largest population and labor force, marginally yielding to India, which recently took the lead.⁹ China has second absolute spend on the military, equipped with nuclear weapons, and fortifies the country against direct encounters.¹⁰ Its currency, Renminbi, is already a reserve currency with 3% of the global reserves,¹¹ which certain scholars predict to increase in the future [18].

The European Union — an economic union of 27 countries, includes powerhouses like Germany and France and would be the third largest economy after the US and China [19]. Most countries in the region are considered first-world countries. They are very close to the US in terms of development: a stable political and economic climate, strong military, a high human development index, etc. And what is most important, run the single currency — the euro, which is often predicted to be the successor to US

hegemony. The currency accounts for 20% of the global reserve balance.¹²

A glance will reveal these two regions, with the US almost ideally splitting the world into three equal parts in terms of economy and geography — each center is equally distant from the other two. Thus, being global powers, both regions exercise significant influence and might interfere with the previously unconditional authority of the US.

c. Loss of the dollar's safe currency reputation due to the US economy's shocks and use of the dollar as a geopolitical weapon

The third element is outstanding events and actions of the American institutes that create additional strain on the financial system and undermine public confidence in it. There have been a number of cases throughout the history, including the cancellation of the USD's gold standard in 1971 and the Vietnamese war of 1955–1975, that roughly halved the dollar's value. However, these are, in a way, the relics of the past, and more recent events are of particular interest: the financial crisis of 2007–2008 and the economic sanctions imposed on several countries such as Iran and Russia.

The financial crisis resulted from the mortgage market crumbling due to risky lending. It caused significant damage to the global economy and reduced its growth for several years. Yet the most critical was the near collapse of the global financial system. US mortgages accounted for a massive 73% of the US GDP [20], and a significant part of risks was pushed overseas through derivatives. As a result, several international institutions (including European banks) defaulted and required government assistance [21]. Economic sanctions were another cause of the global disturbance. The US uses various financial measures, including international USD payments obstruction via Swift and block on redemption of USD-denominated debt (which constitutes the majority of international reserves). Given the dollar's importance in the global monetary system, this is a powerful geopolitical tool.

Both of the above elements jeopardize the dollar's reputation as a stable and safe currency as investors see the materialization of previously considered non-existent risks. The urgency for a change for them is amplified by the colossal share of the dollar in assets and reserves. This stimulated

⁷ GDP, PPP (Current International \$). URL: <https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.CD> (accessed on 15.05.2023).

⁸ GDP (current US\$). 2021. URL: <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD> (accessed on 15.05.2023).

⁹ India to Overtake China as World's Most Populous Country in April 2023. 2023. URL: <https://www.un.org/en/desa/india-overtake-china-world-most-populous-country-april-2023-united-nations-projects> (accessed on 17.05.2023).

¹⁰ U.S. defense spending compared to other countries. 2022. URL: https://www.pgpf.org/chart-archive/0053_defense-comparison (accessed on 15.05.2023).

¹¹ Currency Composition of Official Foreign Exchange Reserves. 2022. URL: https://data.imf.org/?sk=E_6A5F467-C_14B-4AA8-9F6D-5A09EC_4E_62A4 (accessed on 15.05.2023).

¹² Ibid.

countries (including China, the primary holder of the US debt) to search for ways to diversify risks. The solutions used included more traditional assets such as Swiss francs and gold or innovative methods such as digital currencies and crypto assets. Moreover, sanctions created a reverse effect as the number of affected countries grew — sanctioned countries started forming alliances of all kinds (e.g., trade between China and Russia in national currencies¹⁵).

d. Introduction of new technology-enabled currencies

As for the new currencies, historically, one of the dollar's competitive advantages was an extensive international payments network. The system is costly and slow but is challenging to replicate and, therefore, has remained uncontested. Some countries were seen doing trade in national currencies, but that is a semi-manual process that is difficult to scale. This absence of payment alternatives made countries extremely vulnerable to disruptions, which took the form of sanctions for several countries. However, digitalization and technological development provided possible options. One is the Central Bank Digital Currency (CBDC). Two are blockchain-based cryptocurrencies like Bitcoin and Ethereum. It is essential to mention that each operates completely differently despite being united under the “technology-enabled” umbrella.

CBDC is an early concept similar to a regular central bank's money with one significant difference. The means can be built from scratch without the limitations of the legacy architecture, which might create a better fit for international trade.¹⁴ CBDC has no mass-scale real-world application yet but is being piloted by numerous central banks worldwide. As for cryptocurrencies, they have become a hot topic over recent years and are popular with individuals¹⁵ for transborder payments as a way to avoid government control. Businesses have not used these means on a large scale, and trade volumes are insignificant globally. Still, the tech-

nology is there, and it might gain an impulse as the new generations of crypto-native people grow up. Additionally, the smart features of the blockchain give additional flexibility that might be used to overcome the limitations of traditional currencies.

The future of US dollar hegemony

To assess future outcomes, we use two questions as a guideline: what the theoretically possible end states of the global financial system are and what the possible transition paths are. The first question was used to lay out the structure of the three end states, and the second question helped assess the feasibility of each of the alternatives. The scenarios below are shown logically for ease of comprehension without any other ranking in mind.

Scenario 1: Continuation of US dollar dominance

The starting “do nothing” scenario assumes no active steps are taken, and all players still use the dollar as before. In this case, it is possible to expect a gradual erosion of the USD's power due to the system's shortcomings described in Triffin's dilemma. The scenario would culminate in an excessive US debt level leading to a default and complete collapse of the international monetary system. The main reasons for the chaos to spread outside the US would be the absence of a close substitute (perspectives of the Euro will be discussed shortly) and the devaluation of half of the world's reserves.

However, the severity of the damage makes the collapse highly unlikely. In the short term, all existing stakeholders would keep the system running as it is in their best interest to avoid a complete breakdown. As for the long-term, current de-dollarization efforts (e.g., emerging trade in national currencies¹⁶) show the aspiration of the countries to reduce the dollar influence, and there seems to be enough time to prepare, reducing the chances of collapse. Moreover, the US might drive the change being interested in stopping the previously mentioned deterioration of manufacturing and resolving its significant debt. However, this change will require a strong political will, as it might have an unappealing image of American surrender.

Scenario 2: Emergence of a multipolar currency system with several currencies coexisting

¹⁶ China's Yuan Replaces Dollar as Most Traded Currency in Russia. 2023. URL: <https://www.bloomberg.com/news/articles/2023-04-03/china-s-yuan-replaces-dollar-as-most-traded-currency-in-russia> (accessed on 18.05.2023).

¹⁵ China's Yuan Replaces Dollar as Most Traded Currency in Russia. 2023. URL: <https://www.bloomberg.com/news/articles/2023-04-03/china-s-yuan-replaces-dollar-as-most-traded-currency-in-russia> (accessed on 18.05.2023).

¹⁴ Central Bank Digital Currencies for cross-border Payments Report to the G20. 2021. URL: <https://www.bis.org/publ/othp38.pdf> (accessed on 15.05.2023).

¹⁵ Cryptocurrencies — Worldwide. 2022. URL: <https://www.statista.com/outlook/dmo/fintech/digital-assets/cryptocurrencies/worldwide> (accessed on 16.05.2023).

The middle scenario assumes that multiple currencies will run the system. The scenario is the closest to today's reality, where several reserve and trade currencies coexist (e.g., dollar, renminbi, crypto, and digital currencies), and, therefore, seems the most probable of the three. The main difference to reality will be a more balanced ratio of the currencies that would strongly correlate with the economic power of the economies.

Interestingly, there might be any combination of geographies and currencies. A theoretical setup (only to illustrate the multi-currency view) could look like the following. The American continent would still hold to the dollar, the European region might switch to a cryptocurrency, and Asia would run digital Yuan. In this setup, the second-order regional countries (e.g., Indonesia and Vietnam in Asia) would trade with each other in the region's reserve currency, while cross-region trade would involve two major currencies. For the scenario to become true, some countries must share the reserve role, its benefits, and its burdens with the US. Only China and Europe have an economic scale that might make it work, but there are nuances.

Despite the strong Chinese economy and all the merits and enablers previously mentioned, there are two significant blockers. First, the country follows an export-oriented development model with an artificially weakened currency, where the US is the leading trade partner buying most of the trade surplus.¹⁷ At the same time, the US accommodates the Chinese proceeds from this export in the form of investments [16], as no other country has comparable investment capacity and financial markets development. As a result, taking on the reserve role by China would mean abandoning this export model, which has brought the country to where it is today, and would require finding a different development paradigm.

The second blocker lies in the Chinese government's controls over the country's capital accounts [22], and limits on the amount of debt foreigners hold. And, as was previously explained, foreign entities must be the primary holders of the sovereign debt for the reserve system to work, and it is a major contradiction. Overall, the reserve status requires certain sacrifices, and there is a question

of whether the communist party is willing to make those.

As for the Euro, which might seem a promising contestant to the US, there is a significant barrier to becoming a reserve currency. The region has limited debt capacity despite the size of the economy and the use of a single currency. Europe is a union of independent countries, all of which are of varying credit trustworthiness — think Germany versus Greece. This immediately reduces the potential pool of secure bonds investors seek.

Scenario 3: Replacement of the US dollar with another dominant global currency

The third scenario implies that the dollar will no longer be a reserve currency, and other means will take the role. There are two possible ways this might happen. First, a regional currency (from scenario number two) will dominate others and become the global reserve currency. However, we will not discuss this alternative as it means restarting what once was the dollar hegemony and, therefore, seems unlikely given the learnings from the past.

The second way is a global agreement on using a single supranational currency. The currency must include a special balancing mechanism to avoid trade surplus or deficit issues. For this reason, Special Drawing Rights used by the International Monetary Fund (IMF) today or Bancor proposed by John Keynes fit well. Also, a crypto/blockchain currency with some special "smart contract" rule might theoretically work. However, it is important to stress that cryptocurrencies do not have a solid use case today and are mentioned for the completeness of the review with high long-term potential in mind.

The main hurdle to implement any of these alternatives would be reaching an agreement with major economies, as it would require unprecedented levels of collaboration. Given the current competitive dynamics and geopolitical tensions, this scenario seems unlikely in the short term.

Implications of the reserve currency change for the US and the world

The discussion of possible implications should start with the US as the country that will be affected the most. Three critical areas to examine are: borrowing rates and sovereign debt, trade and investment flows, and geopolitical influence. The main problem with the first element, the sovereign debt, is the ability of the US to service it. The current level of the debt is 11.5 times the

¹⁷ China Trade balance, exports, Imports by Country 2020. URL: <https://wits.worldbank.org/CountryProfile/en/Country/CHN/Year/2020/TradeFlow/EXPIMP/Partner/by-country> (accessed on 18.05.2023).

government's income, which was \$ 2.7 trillion in the fiscal year 2023.¹⁸ In the event of lower demand for the dollar due to the emergence of alternatives, the borrowing rates will increase, materializing the rollover risk. The government will be forced to refinance existing debt at a higher rate, driving the interest payments up. This is critical given the US budget deficit¹⁴ and limited funds availability. In the end, the government might need to cut spending on potentially essential projects (e.g., military, education, infrastructure) to make the budget even.

Regarding trade and investment flows, the main question is about the investment changes. The US is considered a safe harbor and has a significant capital inflow. There is a high chance these flows will not change significantly with the emergence of the multipolar world (which we consider a baseline). The US has extremely flexible and deep financial markets with a strong reputation and governance. In addition, the country is at the forefront of technology and innovation. However, a significant portion of the inflow is speculative, which does not add value to the economy and just drives the trade deficit. This, in turn, leads to higher borrowing and higher sovereign debt mentioned previously.

Finally, there is geopolitical influence. The US can influence global politics in its favor with various financial levers (besides previously mentioned sanctions). Reduction in the dollar influence will limit these possibilities and might push the US to the last resort of using military forces in certain cases.

Moving on to the rest of the world, there are three primary considerations: enhanced competitiveness of the reserve currencies, end of export-oriented development, and the drop in the value of the dollar balances. The first element benefits the global community and is about the emergence of international competition for funds. The reserve currency issuers might start competing with each other to attract the most funds, which might result in many benefits, from increased lending rates to a better investment climate, more developed financial markets, etc.

However, the transition will have its toll in the form of two potential issues. The first is the previously described end of the export-oriented model, which is critical for all surplus-running countries such as

Germany, Japan, and Russia. Besides, some countries might not have a surplus with the US directly, but they could trade with Germany or China, which will still lead to the US at the end of the value chain.

The second concern is the pressure on the dollar's value due to the mass sale of the dollar holdings. The countries must rebalance their portfolios to match the new reserve currencies' structure to trade in the new multipolar world. If governments do not perform that gradually and begin the race to sell their dollars quickly, that might drop the value of the holding significantly, potentially causing country-level bankruptcies and another global financial crisis.

Conclusions and options for policy reform in the US government

The role of the US dollar will likely diminish with time, given the pressures and ongoing transformations toward the multipolar world. Therefore, the rhetoric must be focused on changes. Evidently, any material changes will happen over the following decades, giving the US government time to prepare and secure the most benefits by leveraging its dominant position. The renewal strategy might cover five aspects.

The first is maintaining the supremacy of the financial markets in terms of quality and depth to ensure the stable inflow of foreign capital that will finance nation-critical projects in the future. Trust and advanced institutes are the main assets of the US, and it would take years for other countries to catch up. Most countries will have to radically change their processes and standards and then wait decades to establish a history of reliable investments to convince investors.

The next element might be taking the initiative to create a new supranational currency. The dollar still holds tremendous power, which might help capture the first-mover advantage. For example, the creators of the currently most popular cryptocurrencies (e.g., Bitcoin, Ethereum) kept a significant stake after the launch, capitalizing on the currency appreciation.

The third element might be the insourcing and stimulation of its highest value-added production (e.g., electronic chips) to ensure strong exports and a balanced international trade position. This point could work well with the US's world-class technology and talent attraction capabilities.

The fourth element would be working with the closest allies and neighboring states like Mexico.

¹⁸ How much revenue has the U.S. government collected this year? URL: <https://fiscaldata.treasury.gov/americas-finance-guide/government-revenue/> (accessed on 18.05.2023).

Ultimately, the competition might not be between the countries but between the clusters or regions. The US, therefore, might set up closer ties with its neighbors and gear them up to have similar advantages as in the points mentioned above.

The final element might be the pragmatic corrections of US foreign policy within the framework of the realpolitik theory, taking into account the changing geopolitical situation and the legitimate interests of all international actors.

The primary conclusion is that the multipolar scenario resembles the current dynamics the most and is regarded as the baseline. However, the answer depends on the forecasting horizon because the scenarios follow a specific sequence. Dollar dominance will likely persist in the near future. Its decline over the medium term will result in a multipolar world, which could theoretically lead to the emergence of a new dominant currency over the long term.

Limitations of the paper and future research

This paper provides the high-level framework to analyze the possible changes to the dollar he-

gemony. It would benefit greatly from additional in-depth research on the defined challenges and scenarios. In particular, the future research plan might include a discussion of the emerging superpowers. With its complex political and economic considerations, China could be one of these deep dives. At the same time, another longer-term view of other high-growth economies such as India or Indonesia might contribute to the comprehensive understanding of this multi-decade process.

Digital and cryptocurrencies are also worth a separate discussion that requires substantial expertise in the technical domain. Possible questions to explore could be practical implementation in international trade for digital currencies and the ability to function without the dollar as the underlying currency for the crypto ones.

Finally, the work focuses solely on geographic views of the world, with countries being the leading trade agents. The research would benefit greatly from exploring implications for various supranational political and economic organizations (e.g., BRICS, Mercosur).

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Conflicts of Interest Statement: The authors have no conflicts of interest to declare.

The article was submitted on 04.05.2023; revised on 21.05.2023 and accepted for publication on 03.06.2023.

The authors read and approved the final version of the manuscript.

ORIGINAL PAPER

DOI: 10.26794/2308-944X-2023-11-2-15-26

UDC 316.346.2(045)

JEL J16, J21, J23

Employment of Women, Gender Diversity and Gender Sensitisation in Indian Economy: A Critical Review

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ABSTRACT

The workforce participation rate has been increasing across all nations contributing to the growth of the economy. The **aim** of this research was to analyse the status of women's employment in India. It also examines the extent to which organisations in India have adapted gender diversity and created a friendly work environment for both male and female employees. The author employed a **method** of collecting secondary data with the help of available official statistics and research reviews to analyse the current trend of women's employment in the Indian economy. The analysis revealed certain surprising **results**. It was observed that the participation of women in the workforce was lower in urban areas than in rural areas. The critical review also revealed that there is still a need to promote diversity at the workplace in the Indian economy across the nation. The **key conclusion** is that there is an ardent need for gender sensitisation among individuals at an earlier age to bring all genders at par in India. The research also proposes suggestions that can help in promote women's workforce participation. This analysis can contribute to enhancing the economic growth rate of the country.

Keywords: women employment; gender diversity; gender sensitisation; workforce participation rate

For citation: Gupta S. Employment of women, gender diversity and gender sensitisation in Indian economy: A critical review. *Review of Business and Economics Studies*. 2023;11(2):15-26. DOI: 10.26794/2308-944X-2023-11-2-15-26

ОРИГИНАЛЬНАЯ СТАТЬЯ

Занятость женщин, гендерное разнообразие и повышение осведомленности о гендерной проблематике в индийской экономике: критический обзор

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АННОТАЦИЯ

Уровень участия рабочей силы растет во всех странах, способствуя росту экономики. **Цель** этого исследования состояла в том, чтобы проанализировать положение с занятостью женщин в Индии. В нем также рассматривается, в какой степени организации в Индии адаптировали гендерное разнообразие и создали благоприятную рабочую среду как для мужчин, так и для женщин. Автор использовал **метод** сбора вторичных данных, включая официальную статистику и опубликованные обзорные материалы, для анализа тенденций занятости женщин в индийской экономике. Анализ выявил некоторые неожиданные **результаты**. Было отмечено, что доля женщин в рабочей силе в городских районах была ниже, чем в сельской местности. Критический обзор также показал, что по-прежнему существует необходимость поощрять разнообразие на рабочих местах в индийской экономике по всей стране. **Ключевой вывод** заключается в том, что существует острая необходимость в повышении гендерной осведомленности среди людей

в более раннем возрасте, чтобы уравнивать все гендеры в Индии. В исследовании также предлагаются рекомендации, которые могут помочь в расширении участия женщин в рабочей силе. Проведенный анализ может способствовать повышению темпов экономического роста страны.

Ключевые слова: занятость женщин; гендерное разнообразие; гендерная осведомленность; уровень участия рабочей силы

Для цитирования: Гупта С. Занятость женщин, гендерное разнообразие и повышение осведомленности о гендерной проблематике в индийской экономике: критический обзор. *Review of Business and Economics Studies*. 2023;11(2): 15-26. DOI: 10.26794/2308-944X-2023-11-2-15-26

1. Introduction

The Indian government has been introducing several policies, rules and regulations (such as the Beti-Bachao, Beti-Padhao¹ and Sukanya Samridhi Yojana² schemes, and mandatory maternity leave rules) to promote girls' education, women's empowerment and women's employment. However, the national-level surveys reflect a deterioration in women's employment in India. In such a situation, first it is necessary to understand the present status of women employment in India and then to reflect upon the impact that gender diversity and gender sensitisation can create towards enhancing the women's recruitment as well as their promotions to higher management levels in organisations. With the use of official statistics and research reviews, the current study analyses various aspects of gender issues and the employment of women in an Indian context. According to a 2018 World Economic Forum report, the labour force participation rate (LFPR) among females in India was 26.97 percent, while the world average stood at 48.47 percent in 2018.³ The report of the Forum stated that the basic challenge of the Indian economy is to provide women empowerment through education and economic agency. The rate of women participation in India has been falling since 2005, when it was as high as 36.78.⁴ One of the studies concluded that "the national characteristics of the economy, the social sphere and the environmental situation drive any country to adapt individual indicators to national specifics" [1]. Such specific indicators need to be looked at in the Indian context as well. Certain indicators such as health and education

have been found to be neglected among girls (especially in rural regions), which has led to deterioration in the health and education of women and ultimately to their economic productivity and capacity to contribute or earn an income. Gender equality leads to women empowerment and an empowered woman can significantly contribute towards the development of health conditions, status of education and productivity of whole families as well as communities [2].

When an individual needs to make decisions with reference to repayment of the debt taken for investment, the rationality of those individuals is bounded (e.g., they may decide to pay it in the next instalment) [3]. Such conditions might also influence the decision making, risk taking, competition and earning capacity of individuals as well as nations. It will ultimately influence economic growth and corporate potency and therefore, it must dovetail to increase workforce participation among all families and societies. The Economic Survey 2017–2018 shows that in the past 15 years, the challenge of gender has been long-standing, and therefore, it is the responsibility of all stakeholders to find a solution. It further reflects that gender equality is not a unidimensional issue in India.⁵

Researchers have indicated limited women employment in private organisations as well as in the public sphere. The causal factors are the persistence of gender stereotypes [4], biases in recruitment and selection processes at other places as well [5]. Several studies have indicated the lack of female role models and training opportunities as the reasons behind the low rate of women's employment [6].

2. Methods

With an aim to critically analyse the current status of employment of women in India and to examine the extent to which organisations have

¹ URL: <https://wcd.nic.in/schemes/beti-bachao-beti-padhao-scheme>

² URL: <https://groww.in/p/savings-schemes/sukanya-samridhi-yojana>

³ World Economic Forum. *The Global Gender Gap Report 2018*. (accessed on 25.4.2023).

⁴ International Labour Organisation, ILOSTAT database. <https://ilostat.ilo.org/data/> (accessed on 15.03.2023).

⁵ World Economic Forum. *The Global Gender Gap Report 2018* (2018). WEF_GGGR_2018.pdf (weforum.org) (accessed on 25.04.2023).

Table 1
Key labour force estimates according to usual principal status (UPS)

Parameter	2nd EUS (2011–12)				3rd EUS (2013–14)				4th EUS (2015–16)				5th EUS (2016–17)			
	M	F	T	P	M	F	T	P	M	F	T	P	M	F	T	P
LPFR	77.4	25.4	–	52.9	76.6	22.6	–	50.9	74.4	25.8	–	52.5	75.0	23.7	48.0	50.4
WPR	75.1	23.6	–	50.8	73.5	20.9	–	48.5	71.4	23.8	–	49.9	72.1	21.7	45.9	47.8
UR	2.9	6.9	–	3.8	4.0	7.2	–	4.7	4.1	7.7	–	4.9	4.0	8.7	4.3	5.0

Note: M – Male; F – Female; T – Transgender; P – Person.*

Source: Annual Report 2018–19. Ministry of Labour and Employment, Government of India. https://labour.gov.in/sites/default/files/Final_AR_English_21–7–19.pdf

* Key Labour Force Estimates According to Usual Principal Status (UPS) Approach Based On 2nd, 3rd, 4th and 5th Employment-Unemployment Survey (In Percent).

adapted gender diversity in the country, secondary data were collected from governmental websites.⁶ These websites were specifically used to acquire official statistics. They were analysed to reflect the trend of the workforce participation rate of the country, especially in the women section. Further, literature reviews were also collected from several research journals to analyse the current trend of women's employment in India. Also, the author examined the significance of gender diversity and gender sensitisation at organisational level. Certain findings were surprising, for example, urban areas had lower female workforce participation in comparison to rural areas. The research critically analysed the reasons behind such findings and suggested certain recommendations to encourage balanced workforce participation throughout the country.

3. Results and discussion

The present research tried to analyse the workforce participation rate of women in the country from the available official records and research reviews, with an emphasis on the gender diversity and gender sensitisation in the Indian economy. The findings and interpretation have been mentioned in this section accordingly.

3.1. Status of women employment in India

Table 1 reflects the Labor Force Participation Rate (LFPR), Worker Population Ratio (WPR) and Unemployment Rate (UR) for persons aged 15 years and above according to Usual Principal Status

⁶ URL: https://labour.gov.in/sites/default/files/Final_AR_English_21–7–19.pdf; URL: <http://datatopics.worldbank.org/gender/country/india> and data.gov.in

Approach (UPS) based on the 2nd, 3rd, 4th and 5th Employment-Unemployment Survey in India. The unemployment rate in India has shown an increasing rate in comparison to the available women labor force. Further, the speakers of the 108th session of International Labor Conference⁷ emphasised the lower female labor force participation rates that remained a concern in many countries. They stressed the need to focus on the role and participation of women in the labor market. Such findings increase a concern about the reasons for gender discrimination as well as the lower participation rate of women workforce in the Indian context.

3.1.1. Decline of women workforce participation rate in India

Surveys have shown that most Indian females work primarily as domestic help and then secondarily as textile workers. With an increase in girls' education rates, a decline in the employment rate among women in India has been an interesting field of academic enquiry. There has been a J- or U-shaped relationship between women's education and their labor force participation [7–11].

The employment of men largely depends upon “economic factors”, while the same among women depends upon “reproductive, demographic, social, religious and cultural factors” [12]. Casteism is still found to have a relevant impact on the employment status of Indian women. Studies show that women of lower castes are accepted socially to be in the labour market [13], whereas women belonging to

⁷ International Labour Organisation, ILOSTAT database. URL: <https://ilostat ilo.org/data/> (accessed on 15.05.2023).

higher castes have greater restrictions on their mobility [14]. One of the studies also revealed that many organisational decisions such as: recruitment, job allocation, transfer, promotion and termination are influenced by a number of factors such as gender, region of origin, education, caste, age and marital status [15]. Such findings emphasize the influence of gender bias at the stage of recruitment as one of the reasons behind the lower employment of women in Indian organisations.

It has been assumed that the family models and perceptions of developing economies are different, at least to some extent [16]. Also, studies reflect family income as a factor responsible for women not going out for work. It has further been revealed that if the income of the family is high, the women of the family would have less incentive to work [17]. Studies of the 1960s have shown that most Indian labour forces have been participating in the field of agriculture [18]. Recent trends have still shown higher women's labour force participation in the rural than urban areas, while very few educated women are working in the industries. India is one of the exceptional countries where the modern sector has experienced a fall in women's work force participation despite women's rising education⁸ [19]. In a similar context, it has been emphasised that the government and policymakers should "focus on financial knowledge, financial attitude and financial behaviour as determinants for strengthening financial literacy". It was suggested that there is a strong association between these determinants of financial literacy [20]. These determinants might inspire women in urban areas to work and contribute to the nation's economy.

In the case of women who can get a salary on a monthly basis, the probability of being employed steadily increases as their education increases, whereas for casual wage labour and for work in family farms and businesses, the Labor Force Participation Rate (LFPR) of women decreases with an increase in education. Also, if the women attain a moderate level of education, they no longer get involved in jobs requiring manual labour [21]. The trend reflects a decline in women's LFPR with an increase in education among agricultural and non-agricultural women workers, who tend to be the daily wagers. Therefore, if there is a lower par-

ticipation rate of women in the workforce, then lesser are the chances of gender diversity in Indian organisations. At this juncture, we need to understand that a more diverse workforce might yield more innovation, creativity and productivity for the organisations. Furthermore, the intention to engage in work participation is also an important factor. Collective efforts on the part of women themselves, their families, supervisors, colleagues and organisations are required to enhance working women's propensity to aspire and realise their aspirations for advancement in their careers [22].

3.2. Gender diversity in organisations

With a need to understand the present position of gender diversity in Indian organisations, it is necessary to primarily understand the role and significance of a gender diverse workforce.

3.2.1. Women and gender diversity

Management, HRM and IHRM are gendered in many ways. Most obviously, there is the continuing dominance of men in management, especially at the very top and highest pay levels. Yet despite, or perhaps because of this, management has been and continues to be represented as strangely gender-neutral, whether as part of supposedly non-gendered bureaucracy or taken-for-granted managerial imperative. There are many aspects to the gendering of men in management [23]. There has been a historical transformation of management from male near-monopoly to dominant traditional managerial masculinities and to more modern forms of gendering [24]. Furthermore, gender diversity has been found to be related to the corporate social responsibility rating and reputation of an organisation [25].

An organisation that promotes a diverse workforce is likely to value gender diversity. Further, such organisations believe that the role, relevance, performance and dedication of women can influence the productivity of the organisation. Research suggests that women can provide a significant positive input when placed as members of the board if there is gender diversity in organisations [26]. If women are appointed as board members, they are more sincere and serious in their role and attend meetings with full preparation than male board members [27]. The reason behind the positive performance of certain companies is few of the leadership qualities found more frequently among

⁸ World Bank. (1991). *Gender and Poverty in India*. Washington, D.C.: The World Bank.

Table 2
Gender data portal of India

Featured indicators	2000	2018
Employment in agriculture, female (% of female employment) (modelled ILO Estimate)	74.4	57.1
Employment in agriculture, male (% of male employment) (modelled ILO Estimate)	54.5	40.2
Employment in industry, female (% of female employment) (modelled ILO Estimate)	11.7	18.7
Employment in industry, male (% of male employment) (modelled ILO Estimate)	17.9	26.3
Employment in services, female (% of female employment) (modelled ILO Estimate)	14.0	24.2
Employment in services, male (% of male employment) (modelled ILO Estimate)	27.5	33.5
Unemployment, female (% of female employment) (modelled ILO Estimate)	2.4	3.6
Unemployment, male (% of male employment) (modelled ILO Estimate)	2.8	2.3
Wage and salaried workers, female (% of female employment) (modelled ILO Estimate)	9.1	19.2
Wage and salaried workers, male (% of male employment) (modelled ILO Estimate)	17.4	22.4
Contributing workers, female (% of female employment) (modelled ILO Estimate)	33.8	26.3
Contributing workers, male (% of male employment) (modelled ILO Estimate)	12.5	7.9

Note: Data available at the World Bank.*

Source: The World Bank. URL: <http://datatopics.worldbank.org/gender/country/india>

* World Bank. Gender Data Portal in India. Washington, D.C.: The World Bank. URL: <http://datatopics.worldbank.org/gender/country/india> (accessed on 24.04.2023).

women.⁹ It has also been found that there is an increased tendency towards governance-related controversies if the organisations do not have gender diversity at the level of board members [28].

Further, the presence of female members has been found to be significantly associated with the financial performance of the organisations [29] and led to increased effectiveness [30]. It is undeniable that, heterogeneous work force supplements the potency and competencies of each other, yet studies show that women earn 65% of the total amount that men earn for the same job.¹⁰

3.2.2. Gender diversity in Indian organisations

The workforce participation rate shows differences in gender diversity among different kinds of industries, firms and organisations in India. Predominantly, the trend shows that males are more

employed than females in similar kinds of organisations. The salary being paid is also different for both males and females working under similar work environments (*Table 2*). On the contrary, the percentage of contributing family members is higher among women than men in India. Not much significant difference has been observed in the trend, even within a time span of ten years in the Indian context with regards to diversity and their contributions. It has been argued that gender diversity at higher positions can enhance the effectiveness of the board [26].

The above data (*Table 2*) reflect gender bias in terms of recruitment, employment and salary in the Indian context. The statistics of the GDP rate show a fair increase in employment, while a decreased trend of the women's participation rate is reflected in the data. The patriarchal society might be one of the reasons for the lower work participation rate of women in India. In a similar trend, it was found that, patriarchal beliefs and practises de-power women [31]. According to the findings, whenever the women's section is unable to cope with the physical and social demands of the environment, they feel powerless. It has been further suggested that governmental and non-governmental organi-

⁹ Women Matter (2008), Female Leadership, a competitive edge for the future, September, McKinsey and Company, Paris. URL: https://www.mckinsey.com/~media/mckinsey/business%20functions/people%20and%20organizational%20performance/our%20insights/women%20matter/women_matter_oct2008_english.pdf

¹⁰ World Economic Forum. *The Global Gender Gap Report*. (accessed on 25.04.2023).

Table 3
Workforce participation rate by gender (in percentage) in India

Category	2004–05 Male	2004–05 Female	2009–10 Male	2009–10 Female
Rural	84.6	48.5	81.1	37.2
Urban	76.3	22.7	74.0	18.3

Note: Data available at the Government of India.*

Source: data.gov.in

* URL: https://data.gov.in/catalog/workforce-participation-rate-gender-percentage?filters%5Bfield_catalog_reference%5D=94739&format=json&offset=0&limit=6&sort%5Bcreated%5D=desc (accessed on 24.04.2023).

sations can promote women empowerment through the feminist movements and may create conditions favouring women's empowerment (lessening of the belief and practise of patriarchy). But the women still may not necessarily feel empowered. Further, providing employment opportunities to women might not ensure their autonomy and having control over their income. It is usually controlled by the patriarchs in the family.

Comparing the involvement of women in the workforce among rural and urban regions of India, a very peculiar and interesting pattern has been observed (refer to *Table 3*). The table reveals that women residing in rural areas are more engaged than urban women in the workforce. The reason behind such differences in female workforce participation among rural and urban areas might be due to the education that is comparatively better imparted through better resources in urban areas. Wherein, educated urban women understand the relevance of the ideal age of marriage, childbirth, self-dependency, urge to be self-employed, empowered and being less submissive to domestic violence. Since they are comparatively more independent and less compliant, they are more interested in entrepreneurship, running their own businesses instead of working under superiors in organisations. Such reasons might contribute to lesser women's engagement in organisation of urban areas. According to the Census report of 2011,¹¹ the literacy rate of girls was 39.89% in 1991, increased to 54.16% in 2001 and further increased to 65.5% in 2011 in India. The education that a society provides to its women is closely related to their social position, which leads to an increase in social status of women [32]. Studies further show that

¹¹ Census Data. Govt. of India, Ministry of Home Affairs Office of Registrar General and Census Commissioner. India (2011). URL: http://www.censusindia.gov.in/2011-common/census_2011.htm (accessed on 24.04.2023).

the tendency of women's empowerment in India is heavily dependent upon many variables, including geographical location (urban/rural), educational status, social status (caste and class) and age [33].

Although the trend of women in rural and urban areas shows as half of the working population, yet women trail men in pay, promotion, benefits and other economic rewards [34–36]. The identity of women is molded through life's "hidden curriculum". This curriculum teaches females to be submissive in the dominant patriarchal system of power. It teaches women to be silent, invisible, accept male power and accept role contradictions [37]. Similar findings are reflected in the above statistics (*Table 3*). This shows that the under-participation of women in employment is not due to their own will, in fact, more than one third of Indian women (both urban and rural) primarily engaged in housework have reported that they want to work for pay if a job was available [38]. If the financial inclusion of women section is increased, then it enhances the economic growth of any country.¹² In a similar context, it was found that countries having larger gender gaps in financial inclusion are found to have higher inequality in income.¹³ The findings therefore necessitate greater inclusion of women in the workforce for economic growth and income equality. Researchers have reported a new normative framework and mentioned how these norms can help include women section in the Indian workforce to a larger extent. Those men-

¹² Sahay R., Cihak M., and other IMF staff. 2015. Financial inclusion: can it meet multiple macroeconomic goals. IMF Staff Discussion Note 15/17. Washington: International Monetary Fund. URL: <https://www.imf.org/external/pubs/ft/gender/IMFWomensEmpowerment.pdf> (accessed on 03.05.2023).

¹³ Aslan G., Deléchat C., Newiak M., Yang F. Inequality in financial inclusion and income inequality. IMF Working Paper 2017. No. 17/236. Washington: International Monetary Fund. URL: <https://www.imf.org/external/pubs/ft/gender/IMFWomensEmpowerment.pdf> (accessed on 03.05.2023).

tioned norms need to be implied in order to give an opportunity for both men and women to work at same level. They also mentioned that there is a need to prioritise the social security of the women workforce and create new social safety nets that account for the needs of workers engaged in new forms of work [39].

A complex set of structures in male-dominated society and organisations prevents women from accessing senior positions. In this context, a dearth of women in leadership was found which may be due to the discrimination in the workplace [40].

Further, aspects such as socio-cultural, legal, personal, and organisational hinder the women's rise to higher positions [41]. Consequently, there also exists a phenomenon of the glass elevator, which is an additional component of the glass ceiling, as it has been pointed out that "there is no reason to assume that increasing the number of women in an organisation will necessarily improve their conditions of employment. It may even be the case that increasing the number of women, without addressing the sexist attitudes imbedded in male-dominated organisations, may exacerbate women's occupational problems" [42]. Further, there exists a similar type of barrier that women leaders face in both developed and developing countries throughout their careers. Women leaders have to overcome the issues like the gender gap and the glass ceiling being experienced by women in any organisation. Organisational bias, a lack of assertiveness and poor networking also pose barriers to Women's Leadership [43].

There has been a tradition that "a woman's place is at home", which has been consciously maintained by society.¹⁴ There are some barriers, e.g., psychological barriers, societal-related barriers, organisational barriers against which women are still fighting to strengthen their presence at the higher level of management of organisations [44].

The existing statistics show a doubt whether India will be able to achieve gender diversity among board members by 2027, as projected on an international basis [28]. So, a tremendous effort is still required to be done to promote women employment at par with male employment and to judge female employees on the basis of performance and not on the basis of various other related aspects

(e.g., marital status, age of their child and family members). If Indian companies are to be at par with global corporate trends with respect to diversity, lots need to be done.

Apart from that, there may be several other factors that may lead to a decline in women workforce participation, for example, sexual harassment at the workplace, which can lead to an increment in employee turnover [45–47]. Although there can be many influencing factors that result in job switching or shifting of the employees, studies reflect that it is the victim or harassed employees who tend to quit or change the job. While analyzing the relationship between sexual harassment and career attainment among women, it was found that the victims of harassment were 6.5 times more likely to change their jobs compared to non-victims [48]. Further, an average loss of \$ 22,500 has been estimated in the productivity in terms of each person who was working in a team and left their job after being affected by harassment [49]. The trend shows that violence against women at the workplace hampers productivity of the organisations as well as the motivation level of employees. These findings may be considered as one of the determining factors of decline in women workforce participation.

The factors contributing to violence against women can be the immediate environment (e.g., family) or the community [50], which might also be one of the reasons behind the willingness of women not to get involved in occupation.

3.3. Gender sensitisation in Indian organisations

The above discussed statistics and literature review show that there is an ardent need to sensitise individuals towards the relevance, role, contributions, efforts and implications of both female as well as male in Indian organisations. Gender sensitisation might possibly help the Indian patriarchal society reframe the traditional gender roles and contribute towards increasing women employment in organisations. This can possibly be done with continuous training, framing government policies, promotional schemes at the occupational level. Efforts need to be made so that gender roles do not hamper the promotion and motivation of women employees.

A large gender gap has been observed in the employment of the labour force and all the types of work in which women are engaged. There are

¹⁴ Jadesimi A. Female leadership: the glass ceiling is cracked not broken. Forbescom. 2016.

two types of gendered norms in the culture of Indian society: one type of norm favours men, and the other type of socio-cultural norm devalues women in public spaces, which help to maintain masculinity in the workplace [51]. Thus, there still exists gender bias and discrimination in society, which ultimately might influence the contribution of women workforce to the organisations' productivity. There is a requirement for efforts to decrease negative stereotypes and traditional gender roles. It has been opined that there is an ardent need to execute a gender mainstreaming strategy, introducing transparent mechanisms, gender sensitisation in processes of recruitment, the formulation of organisational norms and guidelines towards equal career policies, stakeholder awareness of gender training programmes and affirmative action plans, which may also contribute to decreasing the glass ceiling and glass elevator [52]. Although women have equal legal rights as men in India, evidence shows women's discrimination in a societal context. This necessitates a requirement of sensitizing the society on gender issues so that there would be no discrimination on the basis of gender, primarily through women empowerment [53]. Sessions should be conducted at schools, colleges and workplaces to sensitize the younger generation and create awareness of gender sensitisation among them [54].

The Census survey report of 2011¹⁵ has also emphasized the importance of creating awareness among the general masses about gender issues to facilitate correct reporting of information about each member, especially women. Steps are to be taken to reach out to respondents through gender sensitive publicity campaigns and outreach programmes. Such campaigns might create an environment that will sensitize both enumerators and respondents.

To redress the existing imbalances between the positions of males and females, it is necessary to take gender-specific measures. Such measures can help ensure equal participation and development of females and males [55]. It is further emphasized that the education sector can significantly contribute by starting educational programmes and helping to bring about an attitudinal change

towards gender equity among individuals. Thus, evidence reflects the requirement for change in the perception of individuals of all generation, so that both men and women can be seen at par in terms of their liabilities, competencies, status, roles and functions in Indian society. Therefore, if gender sensitisation and empowerment programmes aim at young people precisely at the time when they are forming their gender attitudes, then there exists a potential to diminish gender inequity in the short and long term. Construction of gender attitudes and perceptions of gender norms occurs during ages 10–19 years and during this time, adolescents engage with and construct their own gender-based understanding of what it means to be a boy or a girl [56]. During early adolescence, generally, individual perceptions about gender norms begin to form, and if awareness of gender equality as well as issues related to gender discrimination is created at this stage, then the adolescents might have a more sensitive gender attitude. Further, it has been stated that "inequality slows economic growth", so such inequalities might decline the growth rate of the economy and it need to be avoided [57].

Therefore, to eradicate or lessen the propensity for gender discrimination in India, it is necessary to create awareness among individuals since childhood. In one of the Girl Rising Gender-sensitisation programme among school going adolescents, it was found that both genders reported more positive outcomes at follow-up with reference to gender attitudes, perceptions of gender norms, and locus of control. After the sensitisation programme, the adolescents were found to have more equitable attitudes towards gender roles/privileges/restrictions, gender attributes, and gender violence [58].

4. Conclusions and recommendations

With the help of available statistical data and research reviews, the author tried to determine the present status of women in the field of occupation in India. The author also aimed to examine the extent to which organisations in India have adapted gender diversity and created a friendly work environment for both male and female employees. The statistical data taken from official sources (e.g., Ministry surveys, World Bank reports) revealed not much improvement in the status of women employment in the past years. Although the Indian Government has been launching several campaigns and schemes to pro-

¹⁵ Census Data. Govt. of India. Ministry of Home Affairs Office of Registrar, General and Census Commissioner. India. 2011. URL: http://www.censusindia.gov.in/2011-common/census_2011.htm (accessed on 24.04.2023).

mote the betterment of girls in the male-dominated society, the status of women progress lags far behind. Although the literacy rate among girls has increased, a trend of decline in women employment participation rate has been observed.

The author also emphasizes the requirement of gender diversity for more different ideas, concepts, innovation and creativity in decision making in Indian organisations. It is suggested that education can play a significant role in creating a platform for potent employees, irrespective of their gender. Such awareness can be embedded in the curriculum itself. Some researchers, on the basis of their interviews, emphasised the importance and advancement of HRM, its amalgamation, academia and industry liaison in the development of the HRM curriculum and local contextualisation. The interviews also emphasised the factors necessary to achieve HRM optimal growth, concerns to oversee, creation of opportunities, and future challenges and prospects for HRM learners [59].

On the basis of the above-mentioned facts and findings, it can be concluded that there is an ardent requirement for gender sensitisation in Indian society. The author further opines that gender sensitisation campaigns and training sessions should be imparted to individuals of the society at a very early age; this would help in barring traditional gender roles and enhancing women's participation in the workforce. According to the National Commission for Women and Children,¹⁶ if the gender sensitisation and legal awareness programmes are introduced among children at the school level, it can eminently contribute towards developing values of equality, inclusivity and diversity among them. These aspects can further help in making a healthy society for adolescent boys and girls. Moreover, knowledge of laws relating to women is important for the development of young minds as well as to inculcate correct values, self-discipline and national spirit among individuals at a very early age, irrespective of their gender. Awareness programmes towards the changing trends, acceptance, reworking upon the existing thoughts and mental rigidity, unlearning the learned facts and importance of all genders should be promoted in Indian society.

Media platforms should come with advertisement campaigns, contests, quizzes and competi-

tions that can help women of both rural and urban areas participate independently and come up with more innovative, liberal and creative ideas. Organisations need to understand that providing an equal platform to all the employees of the organisation may help them increase productivity and recognition.

The author further proposes that, the organisations and workplaces should give equal importance to the safety and security of women. With an uncertain increase in crime rates against women, they feel less ready to work. The occurrence of criminal acts not only hampers one's own progress, but it also influences the progress of the community and country [60]. Women can therefore contribute significantly to economic growth if they are provided a safer work environment. Organisations should promote gender diversity, and efforts should be made to minimise gender bias in the recruitment, selection or promotion of women employees. Preferably, gender sensitivity and related training programmes can be imparted to existing employees. It was suggested in one of the studies that the organisational leaders should ensure HR effectiveness in terms of HR practices like recruitment, training and compensation for the development of learning capabilities across employees. Further, the managers should adopt transformational leadership for utilising HR effectiveness in order to improve learning at an organisational level [61].

The policymakers of Asian countries including India should take more initiatives to improvise the tools that might influence the growth and development of their economies [62]. Therefore, it is suggested that, if the country needs to increase its economic growth rate and productivity, it needs to work on redesigning the existing gender roles as well. Stress should be placed on their contribution and not on the gender of the individual. This can be started at a very early stage such as late childhood or adolescence and help contribute to a stronger economy. The concept of gender equality needs to be emphasized in society, which means that all individuals should have full rights to live with dignity, status, position and liberty. As research indicates, gender equality is not only a precondition for the all-round development of society, but it also can contribute towards reducing poverty [2].

The above suggestions indicate the necessity of bringing about a change in the existing gender norms of the society. Gender equality can act as

¹⁶ URL: http://www.ncw.nic.in/sites/default/files/Module-%20Gender%20Sensitisation_0.pdf (accessed on 31.05.2023).

a buffer towards growth rate of productivity and economy. Therefore, the employees of the organisation need to be sensitized towards gender equity. They need to give importance to the potential and competency skills of employees. The

government is already trying out ways to promote women employment, now it is our responsibility to bring about a change in thought process and help in contributing towards a more productive economy.

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Conflicts of Interest Statement: The author has no conflicts of interest to declare.

The article was submitted on 10.05.2023; revised on 30.05.2023 and accepted for publication on 10.06.2023.

The author read and approved the final version of the manuscript.

ORIGINAL PAPER

DOI: 10.26794/2308-944X-2023-11-2-27-37

UDC 332.14,334.02,338.45(045)

JEL G32, O13, O30, Q40

Risk Analysis and Innovative Product Management in Rosatom State Corporation: A Case Study of a Green Project Floating Nuclear Thermal Power Plant “Akademik Lomonosov”

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ABSTRACT

Risk management plays a crucial role in ensuring the dynamic development and energy security of the national economy in the nuclear sector. This study **focuses** on the application of the smart card method for evaluating risks in the energy sector, using the example of a carbon-free energy technology development project at Rosatom State Corporation. The **subject** of the research is the Floating nuclear thermal power plant “Akademik Lomonosov”, which is designed to provide reliable electricity and heat supply to consumers in the Far North and Far East regions. This project is one of the key directions for developing the new business block in the State Corporation Rosatom. The **aim** of this study is to evaluate the risk management of innovative projects in the green nuclear sector, with a focus on the Floating nuclear thermal power plant “Akademik Lomonosov”. The authors used the **methods** of comparative analysis, system analysis, the analysis of statistical data, financial reports, and official documents. The **results** show that risk management is crucial for ensuring the dynamic innovative development of nuclear energy in the near-, medium- and long-term, and the smart card can be a beneficial tool in this regard. The **key conclusion** of the study is that the green project Floating nuclear thermal power plant “Akademik Lomonosov” has been successfully prepared for operation, considering most of the key risks. The risk evaluation conducted using the smart card method has demonstrated its effectiveness in identifying and managing risks associated with the project. The authors emphasize the importance of integrating smart cards into risk assessment practices in the nuclear industry and highlight their potential for use in future projects.

Keywords: risk analysis; management of innovative products; energy sector; smart cards; Rosatom State Corporation; Floating nuclear thermal power plant Akademik Lomonosov; green project

For citation: Allenykh M.A., Anisimova A.I. Risk analysis and management of innovative products in Rosatom State Corporation: a case study of green project Floating nuclear thermal power plant “Akademik Lomonosov”. *Review of Business and Economics Studies*. 2023;11(2):27-37. DOI: 10.26794/2308-944X-2023-11-2-27-37

ОРИГИНАЛЬНАЯ СТАТЬЯ

Анализ рисков и управление инновационными продуктами Госкорпорации «Росатом» на примере «зеленого» проекта «Плавучая атомная тепловая электростанция «Академик Ломоносов»

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АННОТАЦИЯ

Управление рисками играет решающую роль в обеспечении динамичного развития и энергетической безопасности национальной экономики в ядерном секторе. Данное исследование посвящено применению метода смарт-карт для оценки рисков в энергетическом секторе на примере проекта по разработке

«безуглеродных» энергетических технологий в Госкорпорации «Росатом». **Предметом** исследования является плавучая атомная тепловая электростанция «Академик Ломоносов», которая предназначена для обеспечения надежного электро- и теплоснабжения потребителей в регионах Крайнего Севера и Дальнего Востока. Данный проект является одним из ключевых направлений развития блока «Новые бизнесы» в Госкорпорации «Росатом». **Целью** данного исследования является оценка управления рисками инновационных проектов в атомной отрасли на примере плавучей атомной тепловой электростанции «Академик Ломоносов». Авторы использовали **методы** сравнительного анализа, системного анализа, анализа статистических данных, финансовых отчетов и официальных документов. Результаты показывают, что управление рисками имеет решающее значение для обеспечения динамичного инновационного развития атомной энергетики в ближайшей, средне- и долгосрочной перспективе, и смарт-карта может стать полезным инструментом в этом отношении. **Ключевой вывод** заключается в том, что «зеленый» проект «Плавучая атомная тепловая электростанция «Академик Ломоносов» был успешно подготовлен к эксплуатации с учетом большинства ключевых рисков. Оценка рисков, проведенная с использованием метода смарт-карт, продемонстрировала свою эффективность в выявлении рисков, связанных с проектом, и управлении ими. Авторы подчеркивают важность интеграции смарт-карт в практику оценки рисков в атомной отрасли и подчеркивают их потенциал для использования в будущих проектах.

Ключевые слова: анализ рисков; управление инновационными продуктами; энергетический сектор; смарт-карты; Государственная корпорация по атомной энергии «Росатом»; «Плавучая атомная тепловая электростанция «Академик Ломоносов»; зеленый проект

Для цитирования: Алленых М.А., Анисимова А.И. Анализ рисков и управление инновационными продуктами Госкорпорации «Росатом» на примере «зеленого» проекта «Плавучая атомная тепловая электростанция «Академик Ломоносов». *Review of Business and Economics Studies*. 2023;11(2):27-37. DOI: 10.26794/2308-944X-2023-11-2-27-37

Introduction

In the context of the current geopolitical situation, the emerging trends of reducing nuclear programs in several countries, and the world community's growing interest in alternative energy, the innovative component plays a very important role for the Russian nuclear industry. Alternative energy is a key concept of green development, as it is aimed at sustainable and environmentally friendly energy production. This concept proposes reducing dependence on fossil fuels, such as oil, coal and gas, and switch to the use of renewable energy sources. It is backed up by a collective international commitment to keep global warming below 2 °C in accordance with the Paris Agreement and nationally determined contributions. Therefore, when doing the strategic planning of innovative activities for nuclear industry enterprises, it is advisable to consider the features of forming an innovative potential, considering green technologies.

In the dynamic market environment, the potential for innovation is fostered by diverse resources that are strategically employed to achieve a competitive edge for businesses through the generation and implementation of green innovative ideas, products, or processes. This poten-

tial plays a pivotal role in driving the economic growth of enterprises.

The key characteristic of the innovative potential within an energy organization is that all its components operate synergistically as a cohesive system with the aim of decreasing carbon dioxide emissions into the atmosphere. The concept of innovation potential coordinates and harmonizes individual elements, directly influencing their characteristics and operational logic. This coordination enables transformation of capabilities into a higher-quality state, aligning with the latest advancements in the field. One of the main innovative products in the nuclear industry that can be considered in the context of green development, is the development and distribution of new types of reactors with improved characteristics.

Literature review

The development and implementation of innovative products in the energy sector require careful consideration of potential risks and effective risk management strategies. In the energy sector, there are numerous risks associated with innovation and the dynamic structure of the industry, and there is interest in researching risk management in this area since

the synergy of new tools and technologies in this industry has not been studied before.

However, the results of the existing research related to the management of innovative products and risks are not consistent, mainly due to a lack of expert opinion on the key features of a developed risk management system of innovative products and the way they are implemented in organizations in the green energy industry [1, 2].

However, as the authors of the study emphasize [3], the long-term development of the innovative sector of the green economy in Russia is the optimal solution that contributes to the technological progress of industry and the reduction of the hydrocarbon footprint. The interest of both the state and the private sector in the development of the green economy should lead to an improvement in the state of the energy sector, ensuring energy security and reducing the technological and innovation gap between Russia and the world leaders in green energy.

Innovative products in the energy sector as a whole pose significant risks, and effective risk analysis and management strategies are important for the successful development and implementation of such products [4]. According to the authors, risk analysis methods include scenario analysis, historical data analysis, expert opinion, comprehensive analysis, and the analytic hierarchy process [5]. They argue that these tools can help identify and mitigate potential risks associated with energy projects and technologies.

Another important theme is the use of risk management tools and techniques to address identified risks. In their article "Risk management in product development: risk identification, assessment, and mitigation — a literature review", the authors provide an overview of various risk management tools, including fault tree analysis, failure mode and effects analysis and event tree analysis [6]. The authors identify these methods as effective for risk assessment.

In addition to comprehensive risk assessments and risk management tools, effective risk management in the energy sector also requires collaboration and communication among stakeholders. In their article "Study of innovative technologies in the energy industry: Nontraditional and renewable energy sources", the authors argue that effective risk management requires collaboration between stakeholders, including project develop-

ers, regulators, and local communities [7]. They emphasize the importance of open communication and stakeholder engagement in identifying and mitigating potential risks associated with renewable energy projects.

Overall, the literature highlights the importance of comprehensive risk assessments, the use of risk management tools and techniques, and effective collaboration and communication among stakeholders. By addressing potential risks early in the innovation process and implementing effective risk management strategies, energy companies can increase the likelihood of successful innovation and sustainable growth in the industry.

At the same time, no previous studies have been conducted regarding the risk assessment of innovative products using the smart card tool, which, according to the authors of this article, is effective and can be applied in dynamic sectors that are associated with a high level of risk.

Materials and methods

The methodology of risk analysis and management of innovative products in the green nuclear power industry is a system of principles and approaches to management, economic and engineering activities based on reference and verified system solutions that allows for the realization of the innovative potential of energy facilities reliably and safely [8].

The high degree of diversification of the activities of Rosatom State Corporation and the complexity of the relationships determine the need to assess the risks of innovative products in the development and launch of the energy market.

The results of the study were obtained using the basic provisions of system analysis, predictive qualitative and quantitative methods, smart cards, and petal diagrams.

Results and discussion

To develop its innovative potential, Rosatom adopts the Program for Innovative Development and Technological Modernization until 2030¹:

¹ Passport of the program of innovative development and technological modernization of Rosatom for the period up to 2030 in the civil part (p. 14). URL: <https://rosatom.ru/upload/iblock/k/705/7057d872e3bcc6bd5ddcc636f32220c0.pdf> (accessed on 13.04.2023).

1. Main goals and objectives of innovation development.

2. Key performance indicators and their indicative values until 2030.

3. Priority directions for innovative development for energy and non-energy markets.

4. Features of the innovation management system, the innovation structure of the State Corporation, as well as the organization of interaction with third-party organizations.

In the strategic planning of innovation activities, Rosatom considers the specific features of the current situation in the world market and geopolitical tensions, existing economic and political uncertainties that lead to the closure or restrictions of work in certain foreign markets (for example, the markets of Ukraine and Georgia). The difficulties associated with restrictions on attracting modern technologies from abroad are being overcome by pursuing the import substitution policy since 2014, which included activation of scientific research within the State Corporation itself and involvement of third-party domestic organizations.

The current economic situation implies the use of new key indicators, one of which is the effectiveness of Rosatom's innovation activities, as the previously used indicator of the percentage of the established unconditional funding of R&D to the State Corporation's revenue is ineffective, since it does not reflect sufficient volume of innovation. In addition, the efficiency and commercial attractiveness of the results of innovative developments are actively promoted. At the end of 2020, new key indicators were implemented, such as the growth rate of labor productivity in the organizations of the nuclear power industry to the level of 2020, the level of research and development costs to the volume of output of innovative products and services, and the reduction in the consumption of energy resources in the nuclear industry. The main purpose of including these indicators is to conduct a relative analysis to assess the implementation of the innovation development program in the state corporation (in comparable conditions). An annual decrease or increase in indicators is expected due to an increase in the output of innovative products.

Key performance indicators of Rosatom's innovation activities, established by the Innovative Development and Technological Modernization

Program for 2021, were fully achieved and exceeded (*Table 1*).

The innovation component is one of the main components of the national scientific potential and a source of competitive advantages. The key factor of development for industries and individual enterprises is the activity aimed at using and commercializing the results of research and development to release new competitive goods and services to the market. For the Russian nuclear power industry, the task of innovation activity is to develop existing technologies as well as develop and implement new nuclear technologies that will become the basis for the company's successful operations in the future. A promising direction is to create a new generation of nuclear energy technologies based on fast neutron reactors with a closed nuclear fuel cycle for nuclear power plants that meet the country's energy needs and increase the efficiency of using natural uranium and spent nuclear fuel.

Thus, to realize the innovative opportunities of the economy and increase the share in international markets, it is necessary to create new products for the Russian and international markets, reduce the cost of production and the timing of processes in the nuclear energy industry.

Nowadays, along with traditional businesses, Rosatom is actively developing new innovative business lines and entering new markets. The development of the "new businesses" core, which is primarily focused on non-industrial markets, will solve problems such as capacity utilization, employment of highly qualified specialists and will contribute to increasing labour productivity and improving the return on assets, which will, in turn, increase the company's attractiveness and, as a result, strengthen Russia's leadership in the world in the field of innovation and the nuclear industry.

Three approaches are defined for new businesses within Rosatom: bringing an existing product to new markets (for example, a nuclear power plant service); creating a new product with subsequent access to the company's markets or to markets with alternative energy (for example, creating a new product called "wind farm" and entering the understandable Russian market with it); and offering a new product with forming a market for it.

Table 1

The planned and actual key indicators of innovation performance of the State Corporation Rosatom (based on the results of 2021)

Indicator	Plan	Fact	Results for year
A share of innovative products and services in total sales of products and services in the industry, %	21.0	25.7	Excess by 22.38%
The number of the results of the intellectual activity (patents, etc.), cumulative total, units.	2520	2906	Overperformance by 15.32%
A portfolio of foreign orders for 10 years, USD billion	136.2	139.9	Excess by 2.72%
A portfolio of orders for 10 years outside the contour, RUB billion	1604.96	1974.1	Excess by 23.00%
The growth rate of labor productivity in the organizations of the nuclear power industry to the level of 2020, %	101.6	135.0	Excess by 32.3%
The level of research and development costs to the volume of the output of innovative products and services (not higher), %	14.6	13.68	Overperformance by 6.30%
Reduction in the consumption of energy resources in the nuclear industry (in comparable conditions) relative to the base five-year period (2020), %	0.5	0.99	Excess by 1.98%
The number of deviations in the operation of nuclear power facilities at a level higher than 2 on the international scale of nuclear events INES (annually), units.	0	0	Realized

Source: Compiled by the authors.*

* Results of activities of the State Atomic Energy Corporation Rosatom for 2021. Public annual report. URL: https://report.rosatom.ru/go/rosatom/go_rosatom_2021/rosatom_2021_ru.pdf (accessed on 13.04.2023).

It should be noted that Rosatom has been operating in non-traditional and new markets for decades. However, the decision to transform “other products”, which were not previously included in the priority direction of development of the State Corporation, into the innovative core “new businesses”, has been made relatively recently. Therefore, the development of new segments of the nuclear industry market, coupled with increasing influence in those where it is already represented, should create a basic basis for forming a competitive advantage (*Table 2*).

When implementing new businesses, the competitive advantages will include the price factor, which provides for a flexible system of discounts developed by Rosatom. In addition, when ordering complex infrastructure projects or other works that determine a large transaction, the price may be reduced, but at

the same time, as with standard volumes, the cost of each stage of production and price will be monitored.

For the export of new businesses, an important competitive advantage will be the ability to use various project financing tools, from the possibility of assistance in providing interstate credit for constructing nuclear power plants to investment participation in the authorized capital of companies responsible for the construction and future operation of nuclear power plants, in which it is mandatory to conclude an intergovernmental agreement with the borrower’s state guarantee.

New businesses will have a high level of competitiveness in both the Russian and global markets. However, several measures that will help strengthen competitiveness should be considered. Main measures include the assessment and elimination of emerging risks at all stages, as

Table 2
Competitive advantages of Rosatom's new businesses

Factor	Characteristic
Price	A flexible system of discounts, the possibility of reducing the price due to the scale of the transaction
Financing condition	The possibility of crediting and other forms of financial support for projects
The disposal of spent nuclear fuel	Rosatom has technologies for reprocessing spent nuclear fuel
Staffing	Highly qualified personnel. Training in specialized programs, including advanced training.
International experience	The long-term history of effective and profitable economic relations.
Strategic partnership between states with a focus on nuclear power products	The potential inclusion of a nuclear power product transaction in an interstate partnership program and within the broader framework of interstate relations.
The capacity for localizing	The suggestion to establish significant volumes of industrial production in the partner country, with the aim of promoting economic and infrastructural development.

Source: Compiled by the authors based on [9].

increasing the production of innovative products will increase the number and significance of risks. Rosatom utilizes a process-based management model, where each process has its own passport that includes a section dedicated to risks. Risk management is overseen by the process owners, while a dedicated department is responsible for monitoring risks and providing methodological and methodical support, as well as collecting relevant data.

Risk analysis is the study of information about the risk, which provides input data for making decisions about the need to develop an appropriate methodology, as well as for choosing the most appropriate measures to apply. The risk should be analyzed considering the combination of the consequences of the risk's impact and the probability of its implementation, as well as from the point of its multiple consequences and impact. There are two main methods of risk analysis: qualitative and quantitative.

The combination of these methods of risk assessment for managerial decision-making is used in preparing a smart card for evaluating innovative projects. A smart card is a tool for visualizing and assessing risks using numerical values or percentages. It helps organizations and project teams identify and classify various risks. This card provides information about the current

level of achievement of the project goals and, at the same time, highlights possible risks that may affect the further implementation of the project. By analyzing the smart card, managers can determine which aspects of the project are performed below the set values, and the associated risks. This helps to focus efforts on the most critical areas of the project, where it is necessary to take measures to achieve the required percentage of completion and minimize risks.

A smart card is a valuable tool for decision-making and project management because it provides an overview of the current state of the project, helps quickly respond to risks and problems, as well as plan measures to manage them.

The method of calculating a smart card includes several stages:

1. Risk identification: identification of a list of potential risks that may affect the project.
2. Selection of indicators characterizing risks: identification of indicators characterizing the project according to the list of potential risks.
3. Classification of risks: division of indicators into categories depending on their nature, for example, technical, financial, operational, etc.
4. Collecting data on indicators: obtaining targeted quantitative and qualitative data on selected indicators from the project regulatory documents.

5. Risk probability assessment: analysis of the implementation of the indicator set by the corporation for each parameter for the project from 100% with the assignment of categories (A: 0–33.2%, B: 33.3–66.6%, C: 66.7–74.9%, D: 75–100%). The assessment is carried out based on the qualitative and quantitative characteristics of the project, established in the plan, considering its goals and objectives. This may be also a subjective assessment based on experience and expert opinion, or the use of statistical data, if available.

6. Graphical representation of the evaluation results: visual interpretation of the results obtained, where various methods can be used from the construction of a two-dimensional matrix to various kinds of diagrams.

7. Risk analysis and management: development of risk management strategies for indicators where categories A and B are assigned.

Currently, plastic cards equipped with microprocessors and memory can be used to build digital smart cards to minimize errors in corporations. They are used for storing, processing, and transmitting information, as well as performing various authorization and authentication functions. By using special software applications and algorithms, digital smart cards can analyze and assess risks based on the data provided to them. They allow for complex calculations, modeling, and simulation, which help to predict and assess the likelihood of certain risks and their potential consequences.

Rosatom employs a risk management system that encompasses unified methodological guidelines for effective risk mitigation. The system utilizes a scoring expert system, enabling a systematic evaluation of risks. In essence, the process involves assessing the likelihood of risk occurrence, expressed as the fractional values determined by expert judgment. This assessment is followed by completing a table, incorporating ranges and corresponding scores, to quantify the risk probability. Likewise, the consequences of realized risks are evaluated based on expert assessment, considering the monetary impact in terms of millions of rubles. A similar table is filled out, associating ranges with scores to determine the risk consequences.

To establish the risk criticality, the scores from the probability table and the consequences table

are multiplied, resulting in a comprehensive risk score. The risk matrix is then divided into different zones, such as green, yellow, red, and the control boundary. Depending on the assigned score, corresponding risk management strategies are adopted.

According to the authors, the smart card tool can be successfully applied in practice in a state corporation because it allows evaluating projects using a point-based expert system, considering both qualitative and quantitative indicators and their distribution, which corresponds to the Rosatom management system. Moreover, the utilization of smart cards can address several limitations observed in the scoring process. For instance, traditional scoring relies on expert opinions, leading to subjective and ambiguous outcomes. In contrast, smart cards assess projects based on predefined indicators, goals, objectives, and key performance indicators, thereby reducing the risks associated with subjective judgment.

In this article, application of the smart card tool was illustrated by a case study of the green project Floating nuclear thermal power plant (FNTPP) Akademik Lomonosov in Pevek, Chukotka Autonomous Okrug. This project provides a unique new-generation energy source based on Russian technologies of civil and military shipbuilding and nuclear power engineering, designed to provide reliable electricity and heat supply to consumers in the Far North and Far East [10]. In the context of carbon regulation introduced at the initiative of the EU, the FNTPP project can serve as an example of the introduction of "green" technologies in the energy sector. The results of the research conducted during the first public ecological expedition to the floating nuclear thermal power plant in Pevek City confirmed its safety for the environment.

It is assumed that there is a step of 25 or 33.3% between the stages of completion, depending on the completeness of the indicator analysis. The final goal has been set, and in accordance with the achieved result, the percentage of completion for each parameter will be estimated. For risk analysis, seven groups of parameters are considered: price characteristics, market-product, technical, macro and infrastructure indicators, profitability parameters and indicators for safety assessment. These parameters were chosen because the risk

assessment is carried out by the innovation project for making management decisions.

The first indicator is price analysis. The goal is that the costs of the declared goods, works, services correspond to the industry average of similar data. Currently, the price corresponds to the industry average for similar works and the amount of investment in the project is 10,460 mln RUB, which corresponds to 66.7% of the final goal completion.

The second group of indicators are market and product parameters. The first analyzed risk in this group is the product/result image. The image of the product/result must be formed, details and specific measured values must be described, and a specific value for the consumer must be justified. The plant is designed with a large margin of safety to counter external threats. The station is equipped with two KLT-40S icebreaker-type reactor units, which can generate up to 70 MW of electricity and 50 Gcal/h of thermal energy, which is enough to ensure the energy consumption of a city with a population of about 100 thousand people [6]. The life cycle of this power plant is designed for 40 years to fill not only the current electricity deficit, but also to meet the growing needs of residents in the settlements of the Chukotka Autonomous Okrug in the future. Thus, the completion with ultimate goal is 100%. The same situation is with the consumer/customer indicator. Specific consumers/customers of the product are proposed, it is justified by the type of need the product implements, this need is evaluated, and there is a documentary proof of interest. This can be substantiated by the fact that the construction of the station was undertaken as part of the state program "Development of the Nuclear Power Industry Complex" in Russia. One of the most notable characteristics of the floating nuclear thermal power plant is its capacity to supply power to industrial facilities and populations in areas that lack access to centralized power supply but hold considerable untapped economic potential.

However, considering such an indicator as external/foreign markets, only 66.7% is completed, as there is a market for the product, but the product allows the organization to reach a new level. Currently, and at the initial stage of design and development, China has shown the greatest interest in the FNTPP. Foreign compa-

nies from Southeast Asia, the Republic of Cape Verde, Indonesia, and others are also showing interest in FNTPP with its desalination equipment. In the case of successful operation of the FNTPP, it can be expected that countries that do not need large amounts of electricity and do not have the opportunity to operate large-capacity reactor installations will want to implement the project. Such countries now dominate the market, so the appearance of a small-capacity FNTPP will allow many countries to use nuclear energy. At the same time, the project provides a unique new-generation energy source based on Russian technologies of civil and military shipbuilding and nuclear power engineering, which means that the product surpasses all known analogues in Russia and abroad in terms of the main claimed technical and economic characteristics and is competitive in the Russian and global markets.

The third group of analyzed parameters can be called technical support indicators. The most important characteristic in this group is the novelty of the solution. The ultimate goal is to discover a fundamentally new solution or phenomenon. However, only 50 percent of this parameter was successfully completed. In the case of FNTPP, a well-known principle that has not been used before to solve similar problem was used. In foreign countries, the most commonly used are floating power plants based on renewable energy sources that contribute to the displacement of carbon, which affects the climate and people's livelihoods. Considering the specificity of domestic maritime borders, Rosenergoatom has developed a variant of the FNTPP — an innovative type of power plant located in the water areas or in the water spaces of mainland territories to increase the scale of economic development of relatively confined spaces, continents, and their coastal territories for energy supply to the population and enterprises.

The fourth group is macro parameters. Considering the compliance with the Rosatom strategy and the business strategies of the divisions, the project is directly aimed at achieving the goals and fulfilling the tasks of the Innovative Development Program of Rosatom. Also, the FNTPP project has a significant impact on developing science and technology on the scale of a separate industry, which means that the indicator significance for further technological development is

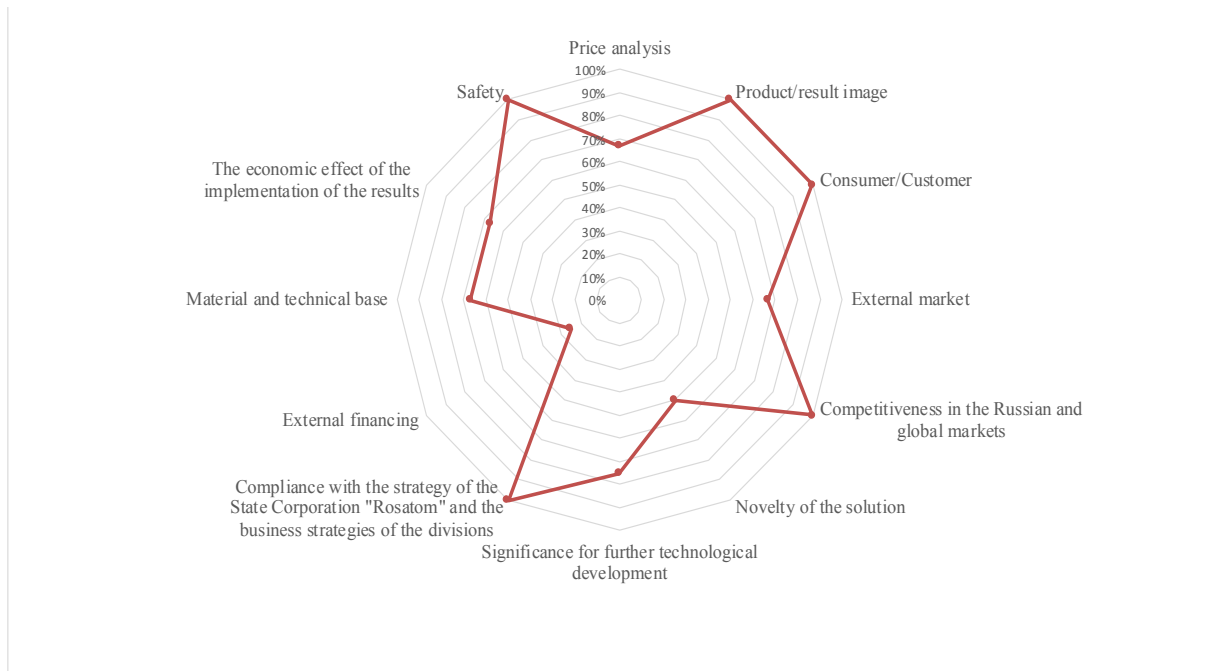


Fig. A petal diagram of risks within the FNTPP project

Source: Developed by the authors.

completed by 75% as it has not had a cardinal influence yet. The riskiest in this section are the opportunities to attract external financing, as the work is carried out with the involvement of external financing, but external financing accounts for less than 50% of the project cost. The investment Committee of the Russian Federation Budget (17%) and Rosenergoatom Concern JSC (83%) participate in the project implementation [10].

The fifth group of parameters to consider is infrastructure, where the most important indicator is material and technical base. The ultimate goal is that the material and technical base must be sufficient for the successful implementation of the declared works within the framework of one organization. However, to implement the Akademik Lomonosov project, it was necessary to involve co-executors who have the necessary equipment or software. There was all the necessary material and technical base for the FTNPP, which means only 66.7% of it is complete and falls into the risk group for further analysis.

Under profitability parameters, it is necessary to analyze the economic effect of implementing the results. The economic effect must be two or more times higher than the costs. Considering a Floating thermal nuclear power plant, the economic effect exceeds the costs. In a moderately optimistic scenario, the NPV of FTNPP is 8,359

mln RUB and the IRR = 8%, while in a conservative scenario, the NPV = 5,819 mln RUB and the IRR = 7% [11].

The safety of a project is one of the most important parameters to recognize in order to eliminate risk in the future. In the case of FTNPP, all the measures necessary to confirm the reliability and safety of the FTNPP operation were carried out in accordance with the schedule. Firstly, the reserve of time before the start of the reactor core's melting is sufficient for the operator to carry out corrective actions. Secondly, the water supply to the reactor at various stages of the accident does not lead to an increase in the yield of hydrogen and prevents the complete destruction of the core. Thirdly, during the operation of the reactor shaft bay system, the retention of the core melt in the housing is reliably ensured.

From the compiled smart card for the project of a Floating nuclear power plant, we can draw conclusions about the usefulness and complexity of the project. Most of the risks are minimized, which shows high quality and planning at the preparation stage. However, for a more visual representation of the risks, the authors have chosen to present the smart card as a petal diagram (see Figure). It consists of several petals radiating from a central point, with each petal representing a specific category. The length of each petal is proportional to the value or mag-

nitude associated with that category, allowing for easy comparison and analysis.

Conclusions

The petal diagram clearly shows that the greatest risk for the project is one of the macro parameters, the possibility of attracting external financing, which occurred due to the small funding from the Federal Budget. However, according to other analyzed indicators, such as NPV and IRR, in optimistic and pessimistic scenarios, the financial risks are minimized, and the payback of the project is high. At the same time, there are no safety, compliance with the strategy, competitiveness, product/result image and consumer/customer risks, which indicate the high quality and great prospects of the project. In addition, the process of making managerial decisions on this project could be simplified since the necessary risks are analyzed using the smart card, which describes each parameter, shows the achieved result and the one that could potentially be achieved, and a petal diagram that clearly reflects all the risks

and based on which the project manager can quickly accept, reject, or adjust the project.

Risk management of innovative projects in the nuclear sector is the most important tool for ensuring the dynamic development of nuclear energy in the near-, medium- and long-term, ensuring the energy security of the national economy of Russia. Based on the conducted risk evaluation using the smart card applied to the case of the Floating nuclear thermal power plant “Akademik Lomonosov”, it can be concluded that this green project was successfully prepared for operation, considering most of the key risks. Thus, the smart card is a simulator for evaluating innovative projects and can be used in the nuclear field. The example of the FNTPP illustrates the effectiveness and visibility of this tool to reflect the risks in the nuclear industry for further management decision-making, as this station is currently being effectively operated, and in December 2019, the FNTPP issued the first electricity to the isolated network of the Chaun-Bilibinsky node of the Chukotka Autonomous Okrug.

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Conflicts of Interest Statement: The authors have no conflicts of interest to declare.

The article was submitted on 04.05.2023; revised on 21.05.2023 and accepted for publication on 03.06.2023.

The authors read and approved the final version of the manuscript.

ORIGINAL PAPER

DOI: 10.26794/2308-944X-2023-11-2-38-48
UDC 316.64,330.16,159.9(045)
JEL D01, G41

How Do Leaders of State-owned Microfinance Organizations Perceive Their Business Environment?

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ABSTRACT

The article is devoted to the study of attitude of representatives of State-owned Microfinance Organizations to their clients and to the regulators as well as the understanding of their own role in these relationships. **The aim** of the study was to analyze the State-owned Microfinance Organizations leaders' perception of the business environment. **The subject** of the study includes a subjective assessment of the role of their organization in the financial system of the region, the attitude towards consumers of the services of their organizations (Entrepreneurs), the expected attitude of Entrepreneurs to the services provided by their organizations, and relations with regulatory authorities. **The relevance** of the study is associated with the growing importance of State-owned Microfinance Organizations in the implementation of the tasks set by the government of the Russian Federation, so there is a need for an additional study of subjective assessment of their own position in the system of business relations. **The scientific novelty** is that the business environment has been structured based on the main participants in the interaction. The authors used **methods** of descriptive statistics, in particular, frequency analysis. As a **result**, the perception by representatives of state microfinance organizations of their role as participants in the financial market was studied in three aspects of the scheme proposed by the authors: their importance for the economy of the region, the attitude of consumers to their services, and the peculiarities of interaction with regulators in their perception. It is **concluded** that representatives of state microfinance organizations assess their field of activity as socially significant and prestigious, the regulator as trustworthy, but admit that some costs for mandatory requirements could be reduced.

Keywords: state-owned microfinance organizations; trust; regulator; semantic differential; optimization of regulation

For citation: Vikentieva E.N., Andronov M. Yu., Gagarina M.A. How do leaders of state microfinance organizations perceive their business environment? *Review of Business and Economics Studies*. 2023;11(2):38-48. DOI: 10.26794/2308-944X-2023-11-2-38-48

ОРИГИНАЛЬНАЯ СТАТЬЯ

Как руководители государственных микрофинансовых организаций воспринимают свою бизнес-среду?

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АННОТАЦИЯ

Статья посвящена изучению отношения представителей государственных микрофинансовых организаций к своим клиентам и регуляторам, а также их понимания собственной роли в этих отношениях. **Цель** исследования заключалась в изучении восприятия руководителями государственных микрофинансовых

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организаций своей бизнес-среды. **Предмет исследования:** субъективная оценка роли своей организации в финансовой системе региона, отношения к потребителям услуг своих организаций (предпринимателям), ожидаемое отношение предпринимателей к услугам, предоставляемым их организациями, и отношения к контролирующим органам. **Актуальность** исследования связана с возрастающей значимостью государственных микрофинансовых организаций в реализации задач, поставленных правительством Российской Федерации, поэтому возникает необходимость в дополнительном изучении их субъективной оценки собственного положения в системе деловых отношений. **Научная новизна** состоит в том, что осуществлено структурирование бизнес-среды на базе основных участников взаимодействия. Авторами использовались **методы** дескриптивной статистики, в частности частотный анализ. В **результате** изучено восприятие представителями государственных микрофинансовых организаций своей роли как участников финансового рынка в трех аспектах предложенной авторами схемы: их значение для экономики региона, отношение потребителей к их услугам и особенности взаимодействия с регуляторами в их восприятии. Сделаны **выводы**, что представители государственных микрофинансовых организаций оценивают свою сферу деятельности как социально значимую и престижную, регулятора – как заслуживающего доверия, но признают, что некоторые расходы на обязательные требования можно было бы сократить.

Ключевые слова: государственные микрофинансовые организации; регулятор; семантический дифференциал; оптимизация регулирования; доверие

Для цитирования: Викентьева Е.Н., Андронов М.Ю., Гагарина М.А. Как руководители государственных микрофинансовых организаций воспринимают свою бизнес-среду? *Review of Business and Economics Studies*. 2023;11(2):38-48. DOI: 10.26794/2308-944X-2023-11-2-38-48

Introduction and literature review

Financial security is the most important factor in a sustainable national economy. The financial sector is characterized by dynamism and sensitivity to various trends specific to periods associated with external challenges. Precise and prompt actions of all participants in the financial market, including the heads of financial institutions, their clients and the regulator, are important, and the requirements of the latter are mandatory for all participants in financial relationships. Finding a balance between “Citizen Security” and “Freedom of Business” is a constant and complex work carried out by the state.¹

Microfinance market participants are Microfinance institutions (MFIs), namely: microfinance organizations (MFOs), consumer credit cooperatives (CCCs), agricultural consumer credit cooperatives (ACCs), housing savings cooperatives and pawnshops.² The need to study relations between microfinance institutions (MFIs) and other market participants, improve the regulatory framework and ensure that microfinance institutions can carry out their social mission has been emphasized in a number of studies (see systematic review [1]).

The activities of microfinance institutions differ significantly from those of, for example, banks in

terms of efficiency, business orientation, stability and asset quality. They have “higher intermediation, non-interest income, wholesale funding and liquidity, but lower efficiency and asset quality” [2, p. 1]. One of the objectives of the MFIs is the fight against poverty. In this connection, their clients are also different from the clients of banks. Usually, these are people with low incomes, the rural population and ethnic minorities as well as small businesses. The researchers note that, unlike banks, microfinance organizations can issue small loans, achieving a high level of both financial and social efficiency [3]. Another feature of microfinance institutions (MFIs) is that they use an alternative financial intermediation system (business model) to provide financial services. They facilitate unsecured lending through close monitoring of credit and have a clear ability to collect savings through donations (other than deposits). The unique intermediation model is shown to present MFIs with lower credit risk; however, this comes at the cost of higher business risk [4]. In this regard, one of the research questions may concern the role of trust in such relationships. Another issue the authors raise is that strong competition in the microfinance industry may force MFIs to abandon their mission-oriented behavior and behave like conventional profit-oriented firms. Such pressures may influence MFIs to follow the lending practices of their commercial partners, i.e., maximize their income and allow less cross-subsidization of weaker client groups. This, in turn, will be contrary to their

¹ Decree of the President of the Russian Federation of July 21, 2020 No. 474 “On the National Development Goals of the Russian Federation for the period up to 2030”.

² Bank of Russia. URL: https://www.cbr.ru/eng/about_br/bank-structute/dmr/

social mission and is believed to be detrimental to their economic sustainability and social performance [5].

If we turn to the Russian experience, the majority associate microloans with small payday loans at a high interest rate. However, there are also state-owned microfinance organizations (State MFOs), which provide for persons belonging to small and medium-sized enterprises (SMEs) the opportunity to obtain loans at preferential interest rates. For example, 3% per annum on a loan in the amount of up to five million rubles and for a period of up to three years. The federal budget provides subsidies to the budgets of the regions of the Russian Federation, which in turn are transferred to the State MFOs by increasing the capitalization of these organizations. Thus, unlike, for example, subsidizing the interest rate of soft loans provided by commercial banks, control over the transferred funds is not lost. In addition, the Ministry of Economic Development of the Russian Federation, in Order No. 142 dated March 26, 2021 (hereinafter — Order-142),³ defines the requirements for the implementation of measures aimed at ensuring preferential access for SMEs to borrowed funds, and for the State MFOs themselves. For example, the maximum interest rate should be (clause 2.1.2.14.1 and clause 2.1.2.14.2 of the Appendix to Order-142):

- no more than the key rate of the Bank of Russia for priority projects (youth entrepreneurship, export activities, a female founder, and others, including those determined by a constituent entity of the Russian Federation);
- no more than 1/2 of the key rate of the Bank of Russia for social entrepreneurship, priority projects in single-industry towns.

In accordance with clause 2.1.2.19 of Order-142, the activities of the State MFOs should be evaluated, among other things, by the following indicators:

- by the end of 2022, the current portfolio of microloans should be at least 80% of the funds received for the implementation of the microfinance program.

- “Portfolio risk more than 30 days” (the current portfolio of microloans with overdue payments of more than 30 days) should not exceed 12% of the total active portfolio of microloans.

The activities of the State MFOs are organized through regional executive authorities. Due to the combination of entrepreneurial microfinance and the activities of the centers “My Business”, a synergistic effect is achieved. It is possible to take into account the needs of financing types of economic activities that are relevant for specific territories, see *Table 1*.

Each region of the Russian Federation, as a rule, creates a single state microfinance organization to receive subsidies for state support for SMEs in accordance with Order-142. However, at present, the general list of existing State MFOs compiled by the SME Corporation⁴ includes 161 organizations. Perhaps some of them do not actually carry out microfinance activities. This is evidenced by the absence of the text “microfinance company” or “microcredit company” in the full name of a number of organizations, which is a violation of the Federal Law of July 2, 2010, No. 151-FL “On microfinance activities and microfinance organizations”. So, for example, in the list of “SME Corporation” with the type “Microfinance Organization” there is “Bobrovsk fund for support of entrepreneurship of the Voronezh region” (TIN: 3602008644).⁵ However, in the state register of microfinance organizations, there is no entry with such a Taxpayer Identification Number.⁶

State MFOs ensure the achievement of certain results within the framework of federal projects (*Table 2*).

Thus, State MFOs contribute to the implementation of:

- The National Development Goal of the Russian Federation “Decent, Efficient Work and Successful Entrepreneurship”: by 2030, to ensure an increase in the number of employed in the field of

³ Order of the Ministry of Economic Development of dated March 26, 2021 No. 142 “On approval of requirements for the implementation of activities carried out by constituent entities of the Russian Federation, whose budgets are provided with subsidies for state support of small and medium-sized businesses, as well as individuals applying the special tax regime “Tax on professional income”, in the subjects of the Russian Federation, aimed at achieving the goals, indicators and results of regional projects, ensuring the achievement of the goals, indicators and results of federal projects that are part of the national project “Small and medium-sized businesses and support for individual entrepreneurial initiatives”, and requirements for organizations that form the infrastructure for supporting small and medium-sized businesses”.

⁴ List of organizations that, according to the SME Corporation, are included in the support infrastructure. URL: <https://corpmsp.ru/infrastruktura-podderzhki/> (accessed on 07.03.2023).

⁵ Unified Register of Organizations that form the infrastructure of SMEs. URL: <https://monitoring.corpmsp.ru/reestroi.html> (accessed on 15.03.2023).

⁶ Registers of subjects of the microfinance market. URL: <https://cbr.ru/microfinance/registry/> (accessed on 07.03.2023).

Table 1
Examples of financial products provided in different regions of the Russian Federation

Region	Link
Arkhangelsk Region	https://cmf29.ru/calculator
Moscow Region	https://www.mofmicro.ru/programs/
Republic of Altai	https://мойбизнес04.рф/structure/mkk-nko-fond-podderzhki-msp-ra/mikrofinansirovanie/kreditnye-produkty/
Udmurt Republic	https://www.fond.udbiz.ru/zaymy/
Khanty-Mansi Autonomous Area	www.fundmicro86.ru

Source: Compiled by the authors.

Table 2
Examples of activities of State MFOs in the implementation of federal projects

Federal project	Result
Self-employed support	Self-employed citizens are provided with microloans at a reduced rate by state microfinance organizations in the amount of 500 million rubles annually (2021–2024)
Preacceleration of SMEs	Starting entrepreneurs were provided with preferential financial resources in the form of microloans by state microfinance organizations. Number of active microloans by years: 2021–3,924; 2022–4,230; 2023–4,431; 2024–4,731
Acceleration of SMEs	SMEs are provided with preferential access to borrowed funds of state microfinance organizations. Number of active microloans by years: 2021–38,900; 2022–41,600; 2023–43,900; 2024–46,800

Source: Compiled by the authors.

small and medium-sized businesses, including individual entrepreneurs and self-employed, up to 25 million people.

- State program “Economic development and innovative economy”.⁷
- National project “Small and medium business and support of individual entrepreneurial initiative”.⁸

In connection with the growing importance of State MFOs in the implementation of the tasks set,

there is a need for an additional study of their subjective assessment of their position in the system of relations.

Based on the theoretical analysis carried out, the analysis of business environment of state MFOs should include three aspects: (1) attitude towards oneself — an assessment of one’s social role, since this aspect is the most vulnerable [5], (2) attitude towards consumers of services of state MFOs, since these the relationship differs from the borrower-bank relationship [3, 4] and (3) the attitude to regulatory structures, since state MFOs are subject to systematic regulatory pressure.

The aim of the study was to study the perception of the leaders of the State MFO of their business environment. The subject of the study was threefold and included a subjective assessment of the role of their organization in the financial system of the region, the attitude towards consumers of the services of their organizations (Entrepreneurs), the expected attitude of Entrepreneurs to the services provided by their

⁷ Decree of the Government of the Russian Federation of April 15, 2014 No. 316 (taking into account the edition of Decree of the Government of the Russian Federation of December 25, 2021 No. 2489) «On approval of the state program of the Russian Federation «Economic development and innovative economy». URL: https://www.economy.gov.ru/material/dokumenty/postanovlenie_pravitelstva_rf_ot_15_aprelya_2014_g_n_316.html (accessed on 16.03.2023).

⁸ Passport of the national project “Small and medium-sized businesses and support for individual entrepreneurial initiatives”. URL: https://www.economy.gov.ru/material/directions/nacionalnyy_proekt_maloe_i_srednee_predprinimatelstvo_i_podderzhka_individualnoy_predprinimatelskoy_iniciativy/ (accessed on 16.03.2023).

organizations, and relationships with regulatory authorities.

In this regard, we hypothesized that representatives of state MFOs differentiate their professional activities, perceive their business environment (clients and regulators) as professional, responsible and interested in development, but at the same time, they have a clear idea of how to optimize the regulatory impact based on their own experience.

Methodology

The questionnaire was compiled on the basis of a series of interviews with representatives of State MFO from five regions. The survey was conducted by targeted sending an electronic link to the response collection form to specific representatives of 42 State MFOs through one of the messengers used by the respondents, the email also included a motivational video. Thus, organizations in 42 constituent entities of the Russian Federation in seven federal districts (Central, Northwestern, Southern, Volga, Urals, Siberian, Far Eastern) are targeted. In addition, an electronic mailing was carried out from the National Association of Microfinance Market Participants "NAUMIR" (<https://наумир.рф>) to all State MFOs. The expected number of responses was 126; actually, 44 questionnaires were received. Thus, the response rate was 0.35. We consider this indicator quite good since this category of respondents is not numerous and difficult to access.

Sample. The study involved representatives of State MFOs ($N = 44$) among those — 10 are CEOs of the organization, 25 are heads of the level making strategic decisions in areas of activity, and 9 the level of management of operational activities in areas. Regional representation of the sample: 6 — Central Federal District, 3 — Northwestern Federal District, 2 — Southern Federal District, 15 — Volga Federal District, 6 — Urals Federal District, 6 — Siberian Federal District, 6 — Far Eastern Federal District. The organizations that participated in the study are at the following phases of the life cycle, in accordance with clause 8.5 of the Development Concept of the State MFO (Order 745): newly created MFOs operating from the moment of creation up to 1 year 0%; young MFOs operating from 1 to 3 years 2.4%; mature MFOs operating for more than 3 years 97.6%. The size of the portfolio of microloans (the value is known as of the date closest to the survey) of the studied organizations is: 500 million rubles 26.2%;

over 500 million, up to 1 billion rubles 38.1%; over 1 billion rubles 35.7%. Approximate share of SMEs and self-employed (hereinafter — Entrepreneurs) covered by the organization's services in the region where the organizations whose management was interviewed in the study operate: up to 10% of Entrepreneurs — 22 (50% of the sample); from 10% to 50% Entrepreneurs — 15 (35% of the sample); over 50% of Entrepreneurs — 7 (16% of the sample).

In accordance with the objectives of the study, MFO representatives' perception of the role of their organizations as participants in the financial market (importance for the economy of the region, consumers' attitudes to their services and characteristics of interaction with regulators as the most significant partners for the organization) were assessed.

In order to identify an objective assessment of the role of the State MFO in the financial system of the region, the question was asked: "What is the approximate share of the organization's coverage of SMEs and the self-employed (hereinafter referred to as Entrepreneurs) in your region? (in %)".

To identify a subjective assessment of the role of the State MFO, the semantic differential method was used, which, according to a number of authors, allows measuring the "personal meaning" of something for a particular person. The semantic differential measures the connotative meaning, which is subjective, individual and valuable and is opposed to the denotative — objective, interpersonal, cognitive [6, 7]. The subjective significance of the State MFO for the region, in our opinion, can be determined through the characteristics of the activities of their employees as prestigious, approved and socially significant, which made up the positive pole of the bipolar scales of the semantic differential, the negative pole, respectively, made up antonymous adjectives. As another indicator that does not have a social context, a scale was added that describes the professional activity of the State MFO as "highly paid — underpaid". Thus, the respondents were asked to evaluate their activities on four bipolar graduated scales (descriptor scales), the poles of which are set using verbal antonyms that reflect both the value and financial aspects.

To assess the attitude of the State MFO representatives to consumers of their services (Entrepreneurs), a variant of the semantic differential method was used — a personal differential, which allows evaluating other people as an object. The following bipolar scales were given: Undisciplined — Disciplined; Democratic — Authoritarian; Passive — Active; Slug-

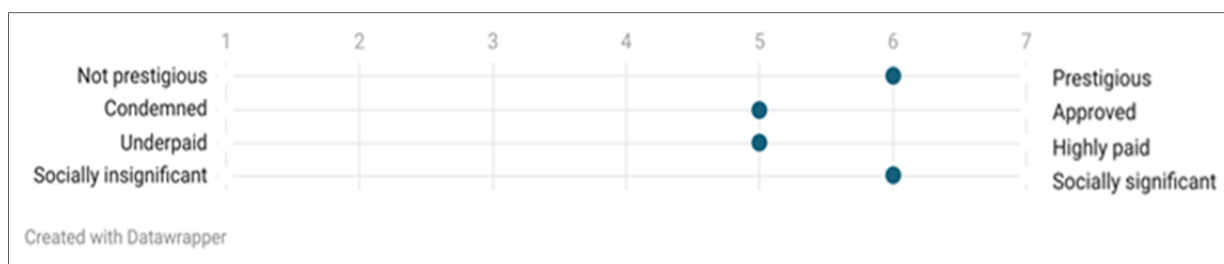


Fig. 1. The results of the assessment of the State MFOs heads' attitudes to their profession (SD method, Medians)

Source: Compiled by the authors.

gish — Energetic; Not-business — Business; Poor quality — High quality; Unprofitable — Profitable; Poor — Rich; Backward — Progressive; Irresponsible — Responsible.

The expected attitude of Entrepreneurs to the services provided by the State MFO was assessed through the question “Evaluate the level of trust of Entrepreneurs in the services of the State MFOs?”, followed by a 5-point Likert scale from “1 — do not trust at all” to “5 — completely trust”.

Relations with regulatory authorities, as the most significant partners for the organization, were assessed as follows. Firstly, in accordance with the traditions of organizational trust research [8], three components were considered as indicators of trust in the regulator (meaning the Central Bank of the Russian Federation): Competence — “The regulator understands how our business works”, Consistency — “The regulator, in most cases, complies with assumed obligations” and Benevolence — “The regulator is interested in the successful development of our business”.

Secondly, the interviewed representatives of the State MFOs had to express their opinion on the regulatory function (the current scale of regulatory activity, the cost for regulated companies to comply with regulatory requirements) of the following state structures:

1. Central Bank of the Russian Federation (Bank of Russia).
2. Federal Financial Monitoring Service (Rosfinmonitoring).
3. Regional executive authorities.
4. Self-Regulatory Organization (SRO).
5. Corporation “SME”.
6. Federal Tax Service of Russia (FTS).
7. Federal Service for Supervision in the Sphere of Telecom, Information Technologies and Mass Communications (Roskomnadzor).
8. Federal Antimonopoly Service of Russia (FAS RF).

9. Prosecutor’s Office of the Russian Federation.
10. Financial Ombudsman.

Due to the small size of the sample, only non-parametric descriptive statistics were available. This allowed us to ascertain general trends in the perception of MFO managers of their organizations as participants in the financial market, without giving an answer to the cause-and-effect relationships and factors of these results.

Results were processed in SPSS 22.

Results and Discussion

First, we will consider the role of State MFOs as participants in the financial market. The results are presented in Fig. 1.

Fig. 1 shows that the assessments of the professional activities of the State MFOs are shifted towards positive values, especially in terms of their social significance and prestige, the payment and approval of the profession are rated somewhat lower but still positive.

If we turn to the frequency analysis, then, 80.9% of the heads of the State MFOs consider the scope of their professional activity prestigious, 69% socially approved and 80.9% socially significant. At the same time, 74.1% of the surveyed managers believe that Entrepreneurs trust the services of State MFOs. In particular, 69% of the surveyed executives believe that Entrepreneurs are not embarrassed by the presence of the text “microfinance organization” in the name of the company.

The attitude of representatives of State MFOs to their clients can be obtained by analyzing the median values of the semantic differential scales (Fig. 2).

From Fig. 2, we can see that representatives of State MFOs highly value discipline, responsibility, energy, business activity and profitability in their clients, to a lesser extent general activity and progressivism, but at the same time they consider them not rich.

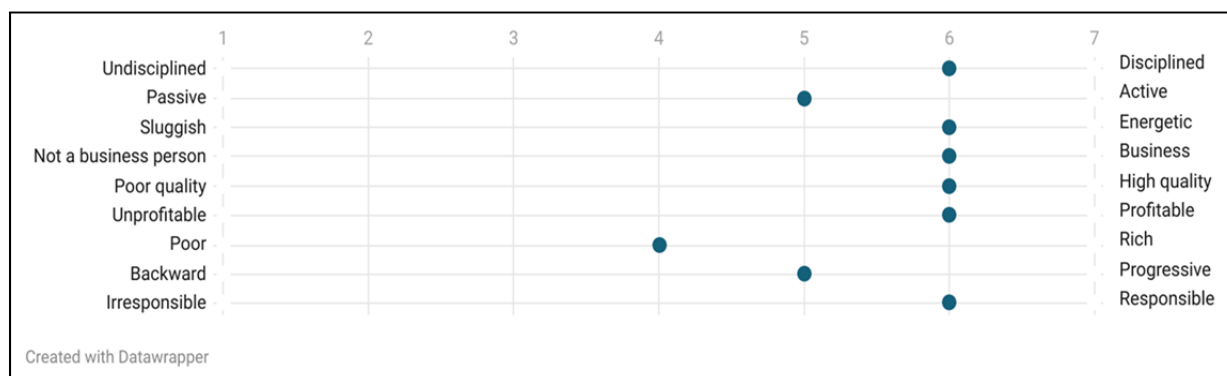


Fig. 2. The results of the assessment of the State MFOs heads' attitudes to their clients (SD method, Medians)

Source: Compiled by the authors.

Turning to the frequency analysis, we can note the following number of respondents who agreed with these assessments: Disciplined (61.9%), Active (78.6%), Energetic (80.9%), Business (80.9%), Qualitative (80.9%), Profitable (83.3%), Not rich (71.5%), Progressive (61.7%), Responsible (83.3%).

Thus, in the understanding of the leaders of state MFOs, their activities are significant and prestigious, the profile of consumers of their services (in the perception of leaders) can be described as positive with a predominance of qualities that reflect the focus of Entrepreneurs on results and responsible business conduct.

The next stage of the analysis is the relationship with regulatory structures.

First, we analyzed the trust in Bank of Russia, frequency analysis is presented in Fig. 3–5.

Trust in the regulator can be described as follows: the representatives of the State MFOs who participated in the study are convinced that the regulator understands how their business works, is interested in business development and fulfills its obligations; that is, it is Competent, Consistent and Benevolent. Thus, the attitude towards the regulator is characterized by a fairly high level of trust.

We then looked at interactions with regulators in the following areas:

1. Requirements for activities for the issuance, repayment of loans.
2. Control of targeted use of subsidies.
3. Reserves (loans, receivables, etc.).
4. Risk management system.
5. Interaction with SME Corporation.
6. Accounting.
7. Tax accounting.
8. Supervisory reporting: Bank of Russia.
9. Supervisory reporting: Ministry of Economic Development of the Russian Federation.

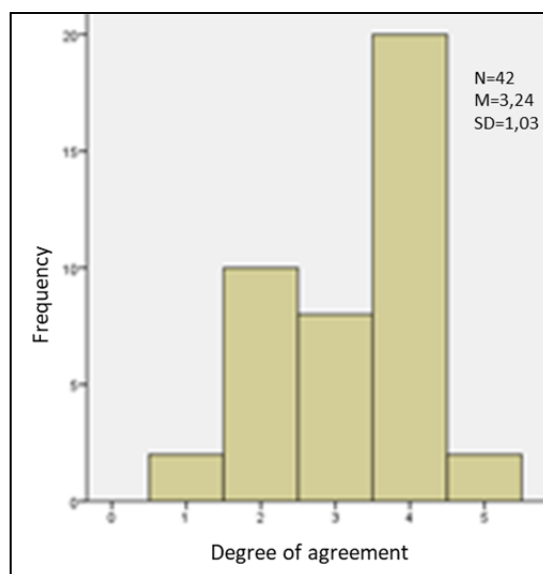


Fig. 3. The number of respondents who expressed varying degrees of agreement regarding Regulator Competence (here and in Fig. 4–5 Answer options: Strongly disagree – 1 point, Rather disagree – 2 points, Neither/difficult to say – 3 points, Rather agree – 4 points, Strongly agree – 5 points)

Source: Compiled by the authors.

10. Supervisory reporting: regional executive authorities.

11. Anti-Money Laundering / Countering the Financing of Terrorism / Countering the Financing of Proliferation of weapons of mass destruction (AML/CFT/CPF).

12. Protection of personal information.

13. Compliance with antitrust laws and requirements in the field of advertising.

14. Basic standards.

15. SRO internal standards.

Respondents assessed the current scale of regulatory requirements in the context of each of the state structures, the reasons for the difficulties in meet-

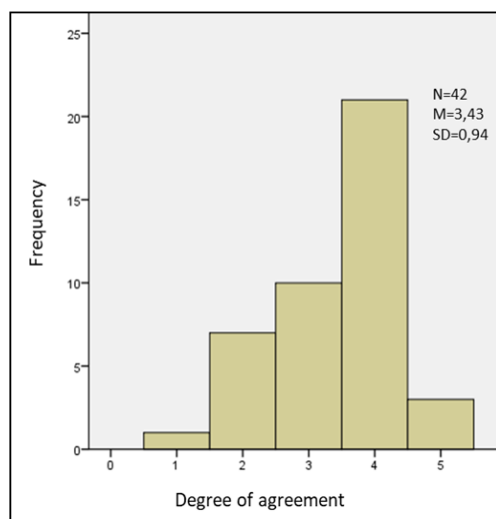


Fig. 4. The number of respondents who expressed varying degrees of agreement regarding Regulator Benevolence.

Source: Compiled by the authors.

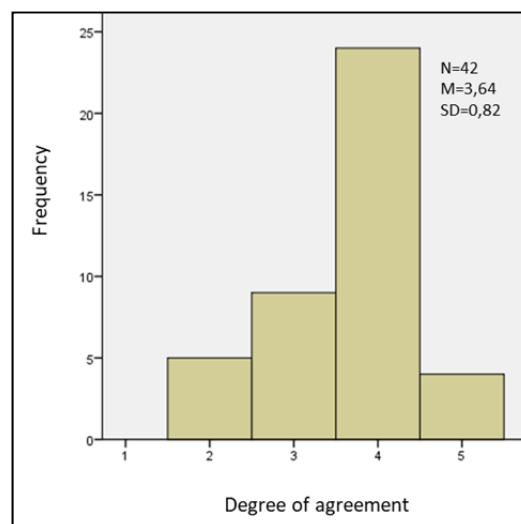


Fig. 5. The number of respondents who expressed varying degrees of agreement regarding Regulator Consistency.

Source: Compiled by the authors.

ing these requirements, the level of expenses of the organization for the implementation of mandatory requirements in these areas, and also gave a forecast of a potential reduction in their costs in case of optimization of regulation (in % of the existing level).

Table 3 provides descriptive statistics of respondents' answers to the question about the existence of excessive regulation in the context of interaction with different structures.

As can be seen from Table 3, three state structures turned out to have increased values: the Bank of Russia, Rosfinmonitoring and SME Corporation. Thus, we can say that the heads of State MFOs associate the greatest difficulties in meeting regulatory requirements with these state structures. No difficulties in meeting regulatory requirements from the Federal Tax Service, the Federal Antimonopoly Service and the Financial Ombudsman.

Another aspect of interaction with regulatory organizations is its cost. Let us consider how our respondents assessed the organization's costs of meeting the mandatory requirements. Descriptive statistics are given in Table 4.

According to the data presented in Table 4, State MFO representatives associate the main costs of compliance with regulatory requirements with such areas as requirements for activities for the issuance, repayment of loans, reserves (for loans, receivables, etc.), the risk management system, interaction with the Corporation SMEs, accounting, tax accounting, supervisory reporting (Bank of Russia), AML/CFT/CPF, personal data protection, basic standards.

At the same time, the interviewed managers see a potential reduction in their costs in case of optimization of regulation by 45–50% in the following areas: reserves (for loans, receivables, etc.), interaction with the SME Corporation, supervisory reporting: Bank of Russia, supervisory reporting: Ministry of Economic Development of the Russian Federation, supervisory reporting: regional executive authorities, AML/CFT/CPF, personal data protection.

When assessing the impact of various reasons on costs when meeting the mandatory requirements, it was found that the listed reasons were assessed by the respondents as significantly affecting costs (Table 5). At the same time, it should be added that the degree of automation of mandatory requirements was assessed by the respondents as average (5 points out of 10).

Conclusions

Based on the study, the following conclusions can be drawn. Due to the media's influence in the minds of the inhabitants, the term MFO has a negative connotation, which can also apply to their key representatives. However, based on the results obtained, it can be noted that the key representatives of the MFOs (State) themselves perceive their business environment as trustworthy, which is an essential driver for the economy [8, 9]. Such attitudes create the prerequisites for the development of the region's economy. Respondents evaluate the consumers of their services (Entrepreneurs) as hardworking, active, responsible and believe that

Table 3

Descriptive statistics of the results of respondents' assessment of the presence of the problem of excessive regulation (in the context of each regulator)

Bank Regulators	M	Med	SD	Percentile		
				25	50	75
1. Bank of Russia	3.21	4.00	1.071	2.00	4.00	4.00
2. Rosfinmonitoring	3.36	4.00	.983	2.00	4.00	4.00
3. Regional executive authorities	3.29	3.00	1.255	2.00	3.00	4.25
4. SRO	2.31	2.00	.780	2.00	2.00	3.00
5. Corporation "SME"	3.81	4.00	1.131	3.00	4.00	5.00
6. FTS	2.64	2.00	.906	2.00	2.00	3.00
7. Roskomnadzor	2.79	3.00	.842	2.00	3.00	3.00
8. FAS RF	2.38	2.00	.731	2.00	2.00	3.00
9. Prosecutor's Office of the Russian Federation	3.21	3.00	1.071	2.00	3.00	4.00
10. Financial Ombudsman	2.19	2.00	.740	2.00	2.00	3.00

Answer options: Absolutely no problem – 1 point, No. problem – 2 points, Difficult to assess – 3 points, There is a problem – 4 points, Serious problem – 5 points.

Source: Compiled by the authors.

Table 4

A descriptive statistic of an organization's estimated costs of meeting mandatory requirements

Requirements	M	Med	SD	Percentile		
				25	50	75
1. Requirements for activities for the issuance, repayment of loans.	3.60	4	3.60	4.00	.857	3.00
2. Control of targeted use of subsidies.	3.07	3.50	1.135	2.00	3.50	4.00
3. Reserves (loans, receivables, etc.)	3.79	4.00	1.025	3.00	4.00	4.25
4. Risk management system	3.33	4.00	.954	2.75	4.00	4.00
5. Interaction with SME Corporation	3.36	4.00	1.100	3.00	4.00	4.00
6. Accounting	3.62	4.00	.882	3.00	4.00	4.00
7. Tax accounting	3.40	4.00	.857	3.00	4.00	4.00
8. Supervisory reporting: Bank of Russia	3.45	4.00	.942	3.00	4.00	4.00
9. Supervisory reporting: Ministry of Economic Development of the Russian Federation	2.95	3.00	1.011	2.00	3.00	4.00
10. Supervisory reporting: regional executive authorities	3.21	3.50	1.116	2.00	3.50	4.00
11. AML/CFT/CPF	3.67	4.00	.721	3.00	4.00	4.00
12. Protection of personal information	3.69	4.00	.715	3.00	4.00	4.00
13. Compliance with antitrust laws and requirements in the field of advertising	2.88	3.00	1.017	2.00	3.00	4.00
14. Basic standards	3.36	4.00	.958	3.00	4.00	4.00
15. SRO internal standards	2.95	3.00	.962	2.00	3.00	4.00

Comments on the table. Answer options: No costs – 1 point, Almost no costs – 2 points, Difficult to estimate – 3 points, There are costs – 4 points, Excessive costs – 5 points.

Source: Compiled by the authors.

Table 5

Descriptive statistics of assessments of the impact of various reasons on costs when meeting mandatory requirements

Mandatory requirements (MT)	M	Med	SD	Procentile		
				25	50	75
1. Large volume of MT	3.93	4.00	.745	3.00	4.00	4.25
2. Ambiguity of MT	3.79	4.00	.925	3.00	4.00	4.00
3. Variability of MT	3.95	4.00	.731	3.00	4.00	4.25
4. Regional differences in understanding of MT	3.74	4.00	.857	3.00	4.00	4.00
5. Insufficient interaction between the regulator and IT	3.81	4.00	.862	3.00	4.00	4.00
6. Lack of automation	4.05	4.00	.825	4.00	4.00	5.00

Comments on the table. Answer options: Absolutely no effect on costs – 1 point, Almost no effect on costs – 2 points, Difficult to assess – 3 points, An impact on costs – 4 points, A significant impact on costs – 5 points.

Source: Compiled by the authors.

Entrepreneurs, in turn, trust the services provided by their organizations.

State MFO representatives assess their field of activity as socially significant and prestigious, which may reflect their tendency towards responsible business conduct. Controlled entities (State MFO) consider the actions of regulators (the Bank of Russia, the Ministry of Economic Development of the Russian Federation and others) to be highly professional, mandatory and positive. Thus, regulators are assessed as professional partners, interested in business development, and benevolent.

At the same time, it should be noted that the study revealed issues that impede the activities of State MFOs, in the form of certain areas of state regulation, in which the interviewed managers see some redundancy, incurring additional costs for organizations, which theoretically can be significantly

reduced (up to 50%). They are mainly related to redundancy, supervisory reporting, AML/CFT/CPF and personal data protection. The results of the study may be useful for regulatory authorities to optimize the administrative burden, including by receiving and processing proposals from controlled entities.

The study has **limitations**. The main reason is the small sample size, which does not allow for division into sub-groups, internal comparisons and identification of factor structure. However, it can be assumed that the resulting small sample is representative of a relatively small group of leaders of state MFOs as well. The conclusions obtained in the study are methodologically adequate to the tools used, especially since they are not extended by the authors further than the description of the judgment and assessment of a narrow professional group.

ACKNOWLEDGEMENT

We would like to thank the representatives of state MFOs who kindly agreed to take part in the study and provide information about their organizations.

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Conflicts of Interest Statement: The authors have no conflicts of interest to declare.

The article was submitted on 23.03.2023; revised on 30.05.2023 and accepted for publication on 05.06.2023.

The authors read and approved the final version of the manuscript.

ORIGINAL PAPER

DOI: 10.26794/2308-944X-2023-11-2-49-58

UDC 338.57.055.2(045)

JEL D12, D40, E31, F31, H31, O13

A Systematic Review of the Causes and Consequences of Price Hikes in Bangladesh

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ABSTRACT

This systematic review **aims** to examine the causes and consequences of price hikes in Bangladesh, with a particular focus on their policy implications. **Methods:** A comprehensive search of electronic databases was conducted, and inclusion and exclusion criteria were applied to identify relevant studies for analysis. **Results:** The causes of price hikes in Bangladesh were found to encompass global oil prices, government policies, supply chain inefficiencies, and lack of competition. The consequences of price hikes included decreased purchasing power, reduced living standards, increased poverty, and adverse effects on investment and employment. Household welfare was negatively impacted, and businesses relying on imported raw materials or energy were affected. The author **concludes** that to address the issues stemming from price hikes, policymakers should consider implementing strategies to control inflation, promote competition, enhance supply chain efficiency, and manage government spending. By incorporating these policy implications, Bangladesh can mitigate the adverse effects of price hikes, leading to enhanced economic stability and well-being.

Keywords: price hike; inflation; Bangladesh; competition; economic development; policy implications

For citation: Emon Md M.H. A systematic review of the causes and consequences of price hikes in Bangladesh. *Review of Business and Economics Studies*. 2023;11(2):49-58. DOI: 10.26794/2308-944X-2023-11-2-49-58

ОРИГИНАЛЬНАЯ СТАТЬЯ

Систематический обзор причин и последствий резкого роста цен в Бангладеш

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АННОТАЦИЯ

Целью настоящего систематического обзора является изучение причин и последствий резкого роста цен в Бангладеш с уделением особого внимания их последствиям для политики. В качестве **метода** исследования использовался всесторонний поиск опубликованных научных работ в электронных базах данных с применением критериев включения и исключения для выявления релевантных исследований с последующим их анализом. В **результате** исследований было установлено, что основными факторами повышения цен в Бангладеш являются мировые цены на нефть, государственная политика, неэффективность цепочек поставок и отсутствие конкуренции. Последствия повышения цен включали снижение покупательной способности, снижение уровня жизни, рост бедности и неблагоприятное воздействие на инвестиции и занятость. Это негативно сказалось на благосостоянии домашних хозяйств, а также на предприятиях, зависящих от импортируемого сырья или энергии. Автор делает **вывод**, что для решения проблем, связанных с резким повышением цен, директивным органам следует рассмотреть возможность реализации стратегий контроля инфляции, поощрения конкуренции, повышения эффективности цепочки поставок и управления государственными расходами. Учитывая эти последствия для политики, Бангладеш может смягчить негативные последствия повышения цен, что приведет к повышению экономической стабильности и благосостояния.

Ключевые слова: повышение цен; инфляция; Бангладеш; конкуренция; экономическое развитие; политические последствия

Для цитирования: Emon Md M.H. Систематический обзор причин и последствий резкого роста цен в Бангладеш. *Review of Business and Economics Studies*. 2023;11(2):49-58. DOI: 10.26794/2308-944X-2023-11-2-49-58

1. Introduction

Price hikes have been a persistent problem in Bangladesh for many years, affecting the cost of living for the population. Low-income households, who spend a significant portion of their income on basic necessities, are particularly vulnerable to this issue. Inflation is one of the main causes of price hikes in Bangladesh, characterized by the sustained increase in the general price level of goods and services. This inflationary pressure is driven by factors such as high government spending, an increase in the money supply, and global commodity price increases. Additionally, the lack of competition in various sectors of the economy contributes to the price hike, allowing companies to set prices at high levels, especially in sectors like banking, telecommunications, and energy. The consequences of price hikes in Bangladesh are far-reaching. It leads to decreased consumer spending, which in turn affects production, employment, and foreign investment. The purchasing power of households decreases as they are forced to spend more on basic necessities, resulting in a decline in living standards and an increase in poverty. Price hikes also affect businesses, particularly those relying on imported raw materials or energy, as they raise production costs, reduce profitability, and hamper competitiveness, leading to decreased investment and employment. To address this issue, policymakers in Bangladesh should develop strategies that tackle inflation and promote competition in key sectors of the economy. This may involve reducing government spending, implementing effective monetary policies, and promoting competition through regulatory measures. Furthermore, targeted social protection measures, such as subsidies or cash transfer programs, can be implemented to mitigate the impact of price hikes on low-income households. Policymakers should also focus on promoting investment and reducing production costs, especially for businesses reliant on imported inputs, through measures such as tariff reduction and providing tax incentives. The aim of this research is to provide a comprehensive understanding of the causes and consequences of price

hikes in Bangladesh, along with its policy implications. The findings will be valuable for policymakers, researchers, and stakeholders, aiding in the development of effective strategies to address this issue and promote economic development. This study aims to systematically review the existing literature on the causes, consequences, and policy implications of price hikes in Bangladesh. By delving into this research question, it will contribute to an in-depth understanding of the issue and assist policymakers in mitigating the impact on the economy, households, and businesses.

2. Literature review

Price hikes constitute a significant problem in Bangladesh, affecting the economy, households, and businesses. Inflation erodes the purchasing power of consumers, reduces the profitability of businesses, and hinders the overall economic growth of the country [1]. Despite numerous efforts by the government to control inflation, it remains a major concern for policymakers and citizens alike. The problem of price hikes has been particularly acute for food items, which account for a large share of household budgets in Bangladesh. The literature suggests that a variety of factors contribute to inflation in Bangladesh, including rising global oil prices, supply chain disruptions, and fiscal deficits. In this section, we will provide an overview of the existing literature on the causes and consequences of price hikes in Bangladesh, with a particular focus on food inflation. This section provides an overview of the existing literature on the causes and consequences of price hikes in Bangladesh. According to the Bangladesh Bureau of Statistics, Bangladesh's annual inflation rate rose to 8.78 percent in February 2023 from 5.57 percent in the previous month. This was the highest inflation rate recorded in the past three months, driven primarily by a rise in food prices, which increased to 8.13 percent in February, up from 7.76 percent in January. In contrast, non-food items experienced a slight decrease in prices, with the rate of increase dropping to 9.82 percent in February from 9.84 percent in January. Month-

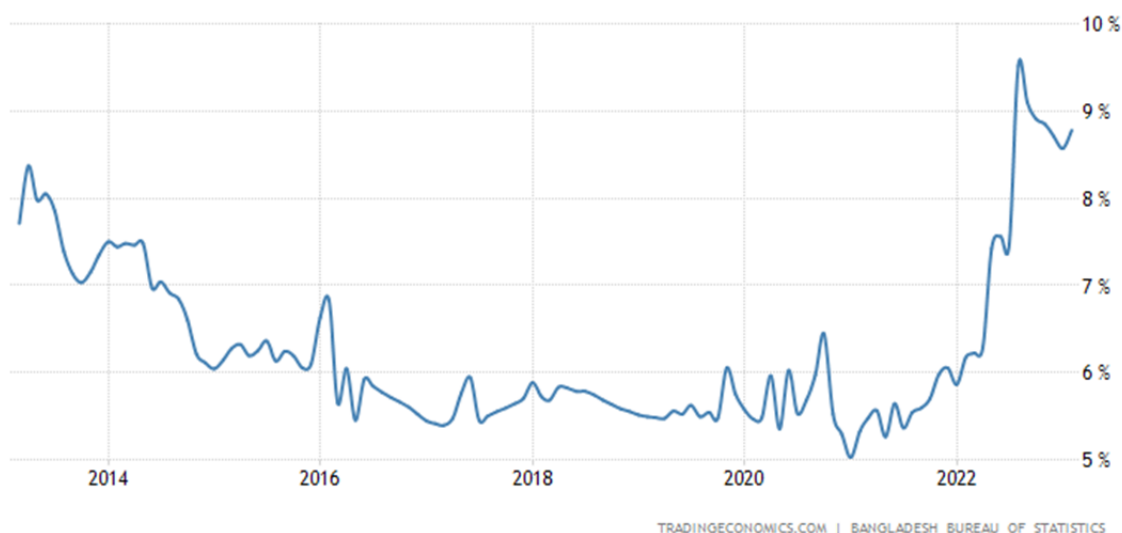


Fig. 1. Inflation rates in Bangladesh

Source: Trading Economics, BBS. URL: <https://tradingeconomics.com/bangladesh/inflation-cpi> (accessed on 30.05.2023).



Fig. 2. Food Inflation rates in Bangladesh

Source: Trading Economics, BBS. URL: <https://tinyurl.com/bdds4f8k> (accessed on 30.05.2023).

on-month, consumer prices rose by 0.58 percent in February, following a 0.60 percent increase in January.

According to the Bangladesh Bureau of Statistics (2023), food inflation in Bangladesh has averaged 6.42 percent from 2013 to 2023. The highest recorded food inflation rate in Bangladesh was 9.94 percent in August 2022, while the lowest rate of food inflation was 3.77 percent in February 2016.

2.1. Causes of price hikes in Bangladesh

Inflation is a major cause of price hikes in Bangladesh. A study [2] found that inflation has a significant impact on the prices of goods and services in Bangladesh. The study found that a one percent

increase in inflation leads to a 0.75 percent increase in the price level. The study also found that the impact of inflation on price levels is higher for non-food items than food items. Government spending is another cause of price hikes in Bangladesh. A study [3] found that government spending has a significant impact on inflation in Bangladesh. The study found that a one percent increase in government spending leads to a 0.37 percent increase in inflation. An increase in the money supply is also a cause of price hikes in Bangladesh. A study [4] found that an increase in the money supply leads to an increase in inflation in Bangladesh. The study found that a one percent increase in the money supply leads to a 0.49 percent increase in

inflation. Global commodity price increases also contribute to price hike in Bangladesh. A study [5] found that global commodity price increases have a significant impact on the prices of goods and services in Bangladesh. The study found that a one percent increase in global commodity prices leads to a 0.23 percent increase in the price level in Bangladesh. Another factor contributing to the price hike in Bangladesh is the lack of competition in many sectors of the economy. In some cases, there may be only one or a few companies producing a particular product or service, and this lack of competition allows them to set prices at a high level. This is particularly true for sectors such as banking, telecommunications, and energy. A study [6] found that a lack of competition in the banking sector has led to higher prices for banking services in Bangladesh. The study found that the high concentration of banks in Bangladesh allows them to charge higher prices for their services. A study [7] investigated the impact of competition on inflation in Bangladesh using a panel data approach. The results suggested that an increase in competition in the banking sector could help reduce inflation in the country. The study also found that competition in the energy sector could have a similar effect, although the impact was not as significant as in the banking sector.

Similarly, study [8] investigated the impact of competition on the price of mobile phone services in Bangladesh. The study found that increased competition in the telecommunications sector led to a reduction in the price of mobile phone services. The authors suggested that the government should encourage competition in the sector through regulatory measures such as spectrum allocation. One example of a sector in Bangladesh where the lack of competition contributes to high prices is the telecommunications industry. Until recently, there were only a few major players dominating the market, which limited competition and allowed these companies to set higher prices for their services. In Bangladesh, the telecommunications sector was primarily controlled by two major companies: Grameenphone and Banglalink. These companies held a significant market share and enjoyed limited competition for a long time. As a result, they were able to maintain higher prices for mobile phone services, including voice calls, SMS, and data. Due to the lack of competition, consumers had limited options and were left with no choice

but to pay the higher prices set by these dominant players. The absence of a competitive market environment meant that the companies had little incentive to lower prices or improve service quality. To address this issue, the Bangladesh government took steps to introduce more competition in the telecommunications sector. It granted licenses to new operators, such as Robi Axiata Limited and Teletalk Bangladesh Limited, allowing them to enter the market and offer services to consumers. This increased competition has led to a more competitive pricing environment, with companies offering various promotional packages and lower tariffs to attract customers [9].

2.2. Consequences of price hikes in Bangladesh

2.2.1. Impact on households

A price hike can have serious consequences for households in Bangladesh. It can lead to a decrease in the purchasing power of households, as they are forced to spend more on basic necessities such as food and utilities. This can lead to a decrease in living standards and an increase in poverty. A study [10, 11] investigated the impact of food price inflation on household welfare in Bangladesh using data from the Household Income and Expenditure Survey (HIES). The study found that food price inflation had a significant negative impact on household welfare, particularly for low-income households. The authors suggested that policies to tackle inflation should prioritize the food sector to mitigate the impact on low-income households.

2.2.2. Impact on businesses

Businesses in Bangladesh are also affected by price hikes, particularly those that rely on imported raw materials or energy. Higher prices can lead to an increase in production costs, which can reduce profitability and competitiveness. This can lead to a decrease in investment and employment. A study [12] investigated the impact of energy price hikes on the competitiveness of the manufacturing sector in Bangladesh. The study found that energy price hikes had a significant negative impact on the competitiveness of the sector, particularly for small and medium-sized enterprises (SMEs). The authors suggested that the government should implement policies to promote energy efficiency and reduce dependence on imported energy.

2.3. Policy implications

The policy implications of price hikes in Bangladesh are significant. Policymakers need to develop strategies to tackle inflation and increase competition in key sectors of the economy. This may involve measures such as reducing government spending, implementing monetary policy to control the money supply, and promoting competition through regulatory measures [13–15]. A study [16] investigated the effectiveness of monetary policy in controlling inflation in Bangladesh. The study found that monetary policy had a significant impact on inflation, but its effectiveness varied depending on the instrument used. The authors suggested that policymakers should consider using a combination of instruments to effectively control inflation. Similarly, a study [17] investigated the impact of government spending on inflation in Bangladesh. The study found that government spending had a significant positive impact on inflation, suggesting that policymakers should consider reducing government spending to tackle inflation.

2.4. Limitations of existing research

One limitation of existing research on price hikes in Bangladesh is the lack of empirical studies that use advanced econometric techniques to analyze the relationship between inflation and its determinants. Many studies rely on descriptive statistics or simple regression analysis, which may not fully capture the complexity of the issue. Another limitation is the lack of research on the impact of price hikes on specific sectors of the economy. While some studies have investigated the impact on households and businesses, there is a need for more research that focuses on particular sectors such as agriculture, manufacturing, and services. This could help identify the specific factors that contribute to price hikes in these sectors and inform targeted policy interventions. Additionally, there is a need for more research that investigates the impact of price hikes on vulnerable populations such as women, children, and older adults. These groups may be disproportionately affected by price hikes due to their limited access to resources and lower income levels. Price hike is a significant issue in Bangladesh, with inflation rates frequently exceeding the target set by the government [18]. The causes of price hikes are complex and multifaceted, including factors such as money

supply, exchange rates, and a lack of competition. The consequences of price hikes are significant, particularly for households and businesses, and policymakers need to develop strategies to mitigate their impact. Existing research has identified several policy implications, including the need to reduce government spending, implement monetary policy to control the money supply, and promote competition through regulatory measures. However, there are also limitations to the existing research, including the need for more advanced econometric techniques and sector-specific studies. Overall, addressing price hikes in Bangladesh requires a comprehensive and nuanced approach that considers the unique characteristics of the country's economy and the needs of its diverse population.

3. Methodology

This research used a systematic review approach to identify and synthesize the existing literature on the causes and consequences of price hike in Bangladesh. A comprehensive search of electronic databases, including Web of Science, Scopus, and Google Scholar, was conducted. The search terms included “price hike,” “inflation,” “Bangladesh,” and other relevant keywords. The inclusion criteria for this research were: (1) the study was conducted in Bangladesh, (2) the study examined the causes and/or consequences of price hikes, and (3) the study was published in a peer-reviewed journal. The exclusion criteria were: (1) studies conducted outside of Bangladesh, (2) studies that did not examine the causes and/or consequences of price hikes, and (3) studies that were not published in peer-reviewed journals. The quality of the studies was assessed using the Critical Appraisal Skills Programme (CASP) checklist. Data extraction was conducted using a standardized data extraction form, which included the study design, sample size, data collection methods, and key findings. The data were synthesized and analyzed using a thematic analysis approach. The identified themes and sub-themes were analyzed and synthesized to answer the research question. The extracted information was organized into different themes and sub-themes related to the causes, consequences, and policy implications of the price hike in Bangladesh. The literature review was structured using headings and subheadings to present the findings in a clear and organized manner. To ensure the reliabil-

Table 1
Percentage change in inflation and selected factors in Bangladesh, 2010–2020

Year	Inflation	Global Oil Prices	Government Spending	Supply Chain Inefficiencies	Lack of Competition
2010	5.5%	17.2%	14.5%	7.9%	5.2%
2011	8.2%	18.1%	15.6%	8.5%	6.1%
2012	7.5%	16.5%	16.3%	8.1%	6.7%
2013	7.4%	16.0%	15.8%	7.6%	6.4%
2014	6.1%	14.9%	16.2%	7.2%	7.1%
2015	6.4%	11.4%	17.5%	7.7%	7.3%
2016	5.8%	7.6%	18.1%	8.0%	7.9%
2017	5.7%	10.6%	17.9%	8.2%	8.1%
2018	5.8%	20.6%	17.4%	8.4%	8.5%
2019	5.5%	14.6%	18.5%	8.7%	8.8%
2020	5.5%	31.5%	19.1%	8.9%	9.2%

Source: Bangladesh Bureau of Statistics (BBS). URL: <https://bbs.portal.gov.bd/> (accessed on 30.05.2023).

ity and validity of the literature review, the articles were critically evaluated based on the quality of the research methodology, the relevance of the findings, and the credibility of the authors. The articles were also evaluated based on the strength of the evidence presented and the coherence of the arguments made. Overall, this literature review aimed to provide a comprehensive and up-to-date analysis of the causes, consequences, and policy implications of price hikes in Bangladesh, based on the available empirical studies and theoretical analyses.

4. Findings and discussion

This section presents the findings and discussion of the research on the causes and consequences of price hikes in Bangladesh, as well as the policy implications of the research.

4.1. Causes of price hikes in Bangladesh

The research identified several causes of price hikes in Bangladesh, including external factors such as global oil prices, as well as internal factors such as government policies, supply chain inefficiencies, and lack of competition. The findings suggest that global oil prices have a significant impact on the inflation rate in Bangladesh [19]. The country is heavily reliant on imported oil, and changes in global oil prices can quickly translate into changes in domestic fuel prices, which in turn can lead to inflationary pressures. This find-

ing is consistent with previous research on the impact of global oil prices on inflation in developing countries [20–22]. Government policies were also found to be a significant contributor to price hikes in Bangladesh. The study found that expansionary fiscal policies, such as increases in government spending, can lead to inflationary pressures. This finding is consistent with previous research on the impact of government spending on inflation in developing countries [23, 24].

The research also identified supply chain inefficiencies as a contributor to price hikes in Bangladesh. In many cases, there are multiple intermediaries involved in the supply chain, which can increase the cost of goods and services. Additionally, there are logistical challenges in transporting goods across the country, which can lead to shortages and price hikes. This finding is consistent with previous research on the impact of supply chain inefficiencies on prices in developing countries [25]. Another factor contributing to price hikes in Bangladesh is the lack of competition in many sectors of the economy. In some cases, there may be only one or a few companies producing a particular product or service, and this lack of competition allows them to set prices at a high level. This finding is consistent with previous research on the impact of competition on prices in developing countries [26, 27].

The data presented in *Table 1* sheds light on the factors contributing to price hikes in Bangladesh be-

tween 2010 and 2020. Throughout this period, inflation rates ranged from 5.5% to 8.2%. This indicates a sustained increase in the general price level of goods and services, which directly affects the cost of living for the population. Global oil prices, another significant factor, exhibited notable fluctuations, ranging from 7.6% to 31.5%. As Bangladesh heavily relies on oil imports, higher global oil prices translate into increased costs of fuel and transportation, thereby impacting the prices of essential commodities. Government spending in Bangladesh gradually increased during the observed years, with rates ranging from 14.5% to 19.1%. High levels of government spending can stimulate aggregate demand and potentially result in excess liquidity in the economy, which can contribute to price hikes. Moreover, supply chain inefficiencies, represented by percentages ranging from 7.2% to 8.9%, highlight challenges and bottlenecks in the production and distribution processes. These inefficiencies can lead to increased costs and disruptions, ultimately influencing prices. The lack of competition in various sectors of the economy, reflected in the data as percentages ranging from 5.2% to 9.2%, allows companies to set prices at higher levels due to limited alternatives. Sectors such as banking, telecommunications, and energy have particularly experienced this lack of competition. The absence of competitive pressures enables companies to maintain elevated prices, further contributing to the issue of price hikes in the country. It is important to recognize that these factors are interconnected and mutually reinforce each other, creating a complex landscape that exacerbates the price hike in Bangladesh. Policymakers need to take these factors into account and develop comprehensive strategies to address them. Measures such as controlling inflation, promoting competition, improving supply chain efficiency, and managing government spending should be considered to mitigate the impact of price hike on the economy and alleviate the burden on the population's cost of living.

4.2. Consequences of price hikes in Bangladesh

The research identified several consequences of price hikes in Bangladesh, including a decrease in the purchasing power of households, a decrease in living standards, an increase in poverty, and a decrease in investment and employment.

The findings suggest that price hikes can have serious consequences for households in Bangladesh.

It can lead to a decrease in the purchasing power of households, as they are forced to spend more on basic necessities such as food and utilities. This can lead to a decrease in living standards and an increase in poverty. This finding is consistent with previous research on the impact of price hike on household welfare in developing countries (*Table 2*) [13].

Businesses in Bangladesh are also affected by price hikes, particularly those that rely on imported raw materials or energy. Higher prices can lead to an increase in production costs, which can reduce profitability and competitiveness (*Table 3*). This can lead to a decrease in investment and employment. This finding is consistent with previous research on the impact of energy price hikes on the competitiveness of the manufacturing sector in developing countries [12].

4.3. Policy implications

The research identified several policy implications of price hikes in Bangladesh. Policymakers need to develop strategies to tackle inflation and increase competition in key sectors of the economy. This may involve measures such as reducing government spending, implementing monetary policy to control the money supply, and promoting the competition through regulatory measures. The findings suggest that monetary policy can be effective in controlling inflation in Bangladesh, but the effectiveness varies depending on the instrument used. Policymakers should consider using a combination of instruments to effectively control inflation. Additionally, policymakers should focus on improving the efficiency of the supply chain, such as reducing the number of intermediaries and improving logistics, to reduce the cost of goods and services. Promoting competition in key sectors of the economy can also help to control prices. This can involve measures such as opening up markets to new entrants, promoting foreign investment, and breaking up monopolies. This can lead to lower prices, improved product quality, and increased innovation. In addition, policymakers should consider policies that target the most vulnerable segments of society, such as social safety nets and targeted subsidies. These policies can help mitigate the negative impact of price hikes on low-income households (*Table 4*). Furthermore, policymakers need to focus on long-term solutions to reduce the country's reliance on imported oil and other commodities. This can involve investing in renewable energy sources and promoting domestic produc-

Table 2
Impact of price hikes on household welfare in selected developing countries

Country	Impact on household welfare
Bangladesh	Decrease in purchasing power, decrease in living standards, increase in poverty
India	Decrease in purchasing power, decrease in consumption, increase in poverty
Brazil	Decrease in purchasing power, decrease in welfare, increase in poverty
Nigeria	Decrease in purchasing power, decrease in consumption, increase in poverty

Source: Developed by the author.

Table 3
Consequences of price hikes in Bangladesh

Consequence	Description
Decrease in Purchasing Power	Households spend more on basic necessities and have less disposable income
Decrease in Living Standards	Basic needs such as food and utilities become more difficult to afford
Increase in Poverty	Households may fall below the poverty line due to higher costs
Decrease in Investment and Employment	Higher production costs reduce profitability and competitiveness of businesses

Source: Developed by the author.

tion of key goods and services. This can help reduce the impact of global price fluctuations on the domestic economy.

The price hike is a significant challenge facing Bangladesh, with multiple causes and consequences. Global oil prices, government policies, supply chain inefficiencies, and lack of competition are all contributing factors. Price hikes can lead to a decrease in the purchasing power of households, a decrease in living standards, an increase in poverty, and a decrease in investment and employment. Policymakers need to develop strategies to tackle inflation and increase competition in key sectors of the economy. This may involve measures such as reducing government spending, implementing monetary policy to control the money supply, and promoting competition through regulatory measures. In addition, policymakers should consider policies that target the most vulnerable segments of society, such as social safety nets and targeted subsidies. Furthermore, policymakers need to focus on long-term solutions to reduce the country's reliance on imported oil and other commodities.

5. Conclusion

Addressing the issue of price hikes in Bangladesh requires a multifaceted approach that tackles the

root causes and mitigates the consequences. The persistence of price hikes in the country affects the cost of living, particularly for low-income households, and has far-reaching implications for the economy, businesses, and overall welfare. The causes of price hikes in Bangladesh encompass both external and internal factors. Global oil prices significantly impact domestic fuel prices due to the country's heavy reliance on oil imports. Government policies, such as expansionary fiscal measures, can contribute to inflationary pressures. Supply chain inefficiencies and the lack of competition in various sectors further exacerbate the issue by increasing costs and allowing companies to set high prices. The consequences of price hikes are extensive and affect multiple aspects of society and the economy. Decreased purchasing power and living standards, as well as increased poverty, directly impact households. Businesses, especially those reliant on imported inputs, face higher production costs, reduced profitability, and decreased competitiveness, which can lead to reduced investment and employment opportunities. To address this issue, policymakers should prioritize strategies that combat inflation and promote competition. Controlling government spending, implementing effective monetary policies, and fostering compe-

Table 4
Policy implications for tackling price hikes in Bangladesh

Policy Implication	Description
Reduce Government Spending	Expansionary fiscal policies can lead to inflationary pressures
Implement Monetary Policy	Control the money supply to manage inflation
Promote Competition	Reduce prices by increasing competition in key sectors of the economy
Increase Efficiency in Supply Chain	Streamline logistics and reduce the number of intermediaries involved in the supply chain

Source: Developed by the author.

tion through regulatory measures are essential steps. Improving supply chain efficiency, reducing the number of intermediaries, and enhancing logistics can help reduce costs and disruptions in the production and distribution processes. Targeted social protection measures, such as subsidies and cash transfer programs, can provide relief to low-income households affected by price hikes. Furthermore, policymakers should focus on promoting investment and reducing production costs, particularly for businesses reliant on imported inputs. This can be achieved through measures such as tariff reduction and providing tax incentives. Ad-

ditionally, long-term solutions should be pursued to reduce the country's dependence on imported commodities, including investing in renewable energy sources and promoting domestic production. The findings and policy implications presented in this research serve as a valuable resource for policymakers, researchers, and stakeholders involved in addressing the issue of price hikes in Bangladesh. By understanding the causes, consequences, and potential solutions, policymakers can develop effective strategies that promote economic development, alleviate the burden on households, and create a more competitive and resilient economy.

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Conflicts of Interest Statement: The author has no conflicts of interest to declare.

The article was submitted on 27.03.2023; revised on 07.06.2023 and accepted for publication on 11.06.2023.

The author read and approved the final version of the manuscript.

ORIGINAL PAPER

DOI: 10.26794/2308-944X-2023-11-2-59-66

UDC 330.88(045)

JEL A14, B55, Z13

“Techno-Structure”: Seminal Notions for Construing Modern Societies as (Horrifying) Mechanized Anthills

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ABSTRACT

The **aim** of this paper is to sketch a description of the power structure in a hyper-modern setting. To make sense of contemporary social phenomena, entomological analogies and metaphors could constitute a conceptual and **methodological** toolkit worthy of replacing “social science” approaches of these days. To accomplish this, a vast, pioneering, and enthralling research labor of scrutiny awaits to be done. Meantime, it will be expedient to lay the groundwork by positing our shared living space as a semi-automated “nest” based on artificial intelligence called the “Techno-Structure”. The **results** of using an *ento-economic* approach show that this Techno-Structure appears to be not the concretization of a collective nightmare spawned by the sick psyche of the West (as proclaimed by “postmodernists”), but rather some sort of singular, unannounced, and “revolutionary” reconfiguration of social symbiosis. This economic reconfiguration has been loosely labelled “modernity,” and in several substantial aspects, it is indeed alien to what preceded it. What remains roughly unchanged, though – and this is the **key conclusion** – is the basic stratification of the collectivity into a massive, globalized underclass (increasingly cannibalized by the automation), topped by a thinned out, industrious middle-stratum thoroughly indentured to an ever more powerful and exclusivist leadership group, who holds the keys to the Structure’s computerized central.

Keywords: power; state; modernity; exploitation; anarchism; technology; entomology; postmodernism

For citation: Preparata G.G. “Techno-Structure”: Seminal notions for construing modern societies as (horrifying) mechanized anthills. *Review of Business and Economics Studies*. 2023;11(2):59-66. DOI: 10.26794/2308-944X-2023-11-2-59-66

ОРИГИНАЛЬНАЯ СТАТЬЯ

«Техноструктура» – ключевые идеи для интерпретации современных обществ как (ужасающих) механизированных муравейников

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АННОТАЦИЯ

Цель этой статьи состоит в том, чтобы представить эскизное описание структуры власти в гиперсовременной обстановке. Понимание современных социальных явлений возможно с помощью концептуального и **методологического инструментария** с использованием энтомологических аналогий и метафор, которые вполне могут прийти на смену современному аппарату «социальной науки». Для этого предстоит проделать огромную, новаторскую и увлекательную исследовательскую работу. Прежде всего целесообразно заложить основу, представив наше общее жизненное пространство как полуавтоматизированное «гнездо» на базе искусственного интеллекта под названием «техноструктура». **Результаты** использования энтоэкономического подхода показывают, что эта техноструктура является не конкретизацией коллективного

кошмара, порожденного больной психикой Запада (как провозглашают «постмодернисты»), а своего рода единичной, необъявленной и «революционной» реконfigurацией социального симбиоза. Эту экономическую реконfigurацию вольно называют «модернити», хотя в некоторых существенных аспектах она действительно чужда тому, что ей предшествовало. Однако то, что остается в целом неизменным — и это **ключевой вывод** — это базовое расслоение общества на массовый, глобализованный низший класс (все более поглощаемый автоматизацией), возвышающийся над ним поредевший, трудолюбивый средний слой, полностью подчиненный еще более могущественной и претендующей на исключительное лидерство группе, которая владеет ключами от компьютеризированного центра техноструктуры.

Ключевые слова: власть; государство; модернити; эксплуатация; анархизм; технология; энтомология; постмодернизм

Для цитирования: Препарата Г.Д. «Техноструктура» — ключевые идеи для интерпретации современных обществ как (ужасающих) механизированных муравейников. *Review of Business and Economics Studies*. 2023;11(2):59-66. DOI: 10.26794/2308-944X-2023-11-2-59-66

Then, when a number of lodges will have formed around a doctrine of amoral technicity, autochthonous forces will be drawn to their malignancy in order to reawaken with their help the *ancient power*, the longing for which is always throbbing at the bottom of their heart.¹

Ernst Jünger, Gardens and Streets (1939)

Among themselves the machines will war eternally, but they will still require man as the being through whose agency the struggle will be principally conducted. In point of fact, there is no occasion for anxiety about the future happiness of man so long as he continues to be in any way profitable to the machines; he may become the inferior race, but he will be infinitely better off than he is now.

Samuel Butler, Erewhon (1872)

Introduction

The context of this piece is what has been labeled, since 2011 (allegedly), as the Fourth Industrial Revolution, namely that societal shift whereby our System has not just been computerized (that transition, in fact, dates from the 1980s), but “intelligently” re-wired within a pervasive, worldwide, and “open” cyber-net of “information,” which has transformed commerce and communication by dramatically accelerating the speed and dissemination of “data”. Not only this: a further attribute of this progression is the ability of the System — when it is hooked up to the cyber-net — to reboot and “upgrade” itself (as computers and smart phones routinely do) *autonomously*, i.e., without being prompted by the owner of the device. This “self-awakening” of the machine has elicited jittery evocations of the sci-fi dystopias

of the late sixties and gone on to feed a massive sociological literature — which reads more like superstitious folktales than “dispassionate social observation” — on the alleged dangers of unbridled artificial intelligence: viz., on the alien takeover of the planet by self-conscious robots bent upon enslaving us in turn. This particular aspect, we shall also address in the discussion.

The gist of the paper focuses on what I call — employing entomological terminology — “chemical communication”: in other words, on that sort of mystifying signaling that invading “dulotic” (i.e., slave-making) ants employ to confuse and disarray opposing cohorts of worker and soldier ants when attempting to penetrate and take over a foreign nest. Entomologists have found that such invasions are characterized by the regular use of peculiar “gases,” which parasitical invaders spray when leading their sallies: they are suggestively called “propaganda pheromones” [1]. With us humans, it is the same as it is with such social insects. Much of our public, didactic, and official communication is indeed “chemical.” Which is to say that such communication works like a mondegreen:² outwardly, it sounds nonsensically alien — utterly so; but in the apparent gibberish and speciousness of the verbalisms and constructs thus speechified (and systematically foisted on pupils and employees in our System) there lies — if properly reconfigured — not exclusively a set of messages devised to shield from common adperception³

² A mondegreen is a word or phrase that is misinterpreted as another word or phrase (especially when sung), usually with quaint results.

³ The mental process by which a person makes sense of an idea by assimilating it to the body of ideas he or she already possesses.

¹ Ernst Jünger, Werke, Bd. 2. “Gärten und Strassen”. Stuttgart: Klein-Cotta, 1960–65 [1942], 28–29, emphasis added.

the exploitative exigencies of the System, but also a more direct sort of instruction. The superficial hogwash of technical jargon, as it variously transpires from the interminable circumlocutions of public discourse, essentially conceals a basic “chemical” intimation, namely that the subjects of the modern, mechanized anthep are “free.” State propaganda is specifically assembled to diffuse this suggestion and thereby ingrain in the hearer the conviction that the State is his home, his protector, his shield, his defender, his father, his Big Brother, his be-all and end-all: the subject only finds “freedom” in the constituted hive. The glandular complement to this secretory System of persuasive innuendo is a conduit of psychological suggestiveness, which is concomitantly activated to placate the individual’s anarchistic instinct, to neutralize his (mildly) insubordinate bent: should fear or the fanaticizing grip of patriotism be insufficient to envelop the community as a whole (that is, the sum of its various psychological types), the subject’s — more or less dimmed, though insuppressible — awareness of the System’s hierarchical iniquity must be “finessed,” so to speak; it must be given (psychological) space to be vented out by offering the individual a choice of “anti-System” discourses if the latter chooses (as he most likely will) to abide in the ant-heap as a tax-paying, law-abiding citizen, but of the “progressive” sort — because he (knows he) is no fool to the shenanigans of the political world. Historically, the self-satisfied progressive has been essentially given, or rather, *allowed* to choose from three “chemical” options: Marxism, Austrian Free-marketeering (so-called “Methodological Individualism”), and lately “Postmodernism” (also referred to as “Multi-culturalism” or “Critical Theory”).

In essence, what these three pseudo-contrarian forms of chemical communication (ultimately seek to) achieve is to convince the acquiescing recipient that *power as such simply does not exist* — power, i.e., as a structured elite (of parasites) controlling (by way of a middling stratum of industrious workers, viz. “the technocracy”) every step, pulse, allotment, and bio-rhythm of the social metabolism. It is a criminal erasure of exploitative responsibility effected through discursive suggestion. If power must not be acknowledged; if power must not be mentioned, such effacement is perforce achieved by intoxicating the subject

with the hallucinated sentiment that s/he alone is empowered: s/he has to believe there is no true wielding of power other than his or her own. For Marxism, power is merely “superstructure”; it just falls away when individuals will have seized the means of production after having banded together and victoriously fought in the (chimerical) name of “class-consciousness”; economics is everything, politics is nothing. For the Austrian free-market followers, the market and individual success thereon is everything; the State is but a tribal, “constructivist” encroachment on the freedom afforded by creative entrepreneurship in the mercantile arena; economics is everything, politics is (worse than) nothing (a nuisance, in fact). For postmodernism in its Foucauldian variant, power is but the result of a chronic, raging, and issueless conflict waged “at the margins” of society by a demoniacal materialization — the “disciplinarian machine” — against the aboriginal resistance of unsubmitive flesh; the unsubmitive flesh of criminals, jobless nobodies, and marginalized masses. The rage against the machine is everything, politics is nothing.

Postmodernism is not only the latest, most fashionable of the three main forms of chemical progressive discourse, but, more than the other two, it has come in the last two decades (since its launch in the eighties) to dominate the discursive space of State and academia with a pervasiveness and despotic assurance rarely seen before. In response to the recent apprehension about the fate of the environment and the ravages the latter has suffered as a result of blind technological advance and the consumeristic waste issued therefrom, postmodernism has sold as “explanations” its usual package of metaphorical imagery unmistakably featuring the technological Behemoth, variously and perennially occupied with cannibalizing on this earth all that is good, green, and pristine.

The discussion uses the latter vignette as its point of attack and goes on to trace the origin, motivation, and political expediency of such discursive material before addressing the true problematic aspect of the late technological drift of our societies.

Methodology and summary findings

Drawing on the institutionalism of Thorstein Veblen and, for certain finer aspects, on the anarchist sociology of Jacques Ellul, this pa-

per argues that technology as a societal frame of organization, though unique as a spiritual manifestation, is not in itself a cosmic and unmanned plague besieging us all, but rather a manipulable artefact wherewith the exploitative process of the parasitical leadership of the nest can be, and has been, considerably refined. In this sense, the theoretical contribution of this short essay is to offer an unconventional approach to social phenomenology by constructing a framework made of the following pieces: 1) the incorporation of entomological findings and their application to the human realm — an interpretative device which I designate as “entomo-economics”; 2) the assumption of an unambiguous “New Anarchist” stance, which champions the works of thinkers not generally encompassed by traditional anarchist literature (viz., old school, nineteenth century revolutionary anarchism) — i.e., *pacifist* authors who identify the chief source of organized and ultra-noxious parasitism in the institutional performance of modern States and their industrial appendices (i.e., the Techno-Structure); and 3) the methodological commitment to complement the analysis of modern political economy by default with philosophy, religion, and anthropology, which are systematically neglected in the profession.

Discussion

Much has been talked and written about this new, so-called *technocratic* era. Much has been said, through “literalized metaphors” (T. Szasz) — for that is all we seem capable of doing — of this human being “at the center of,” or better, “imprisoned” by a hyper-technicized, centralizing apparatus; of this human being who, thus entrapped for over two centuries, ends up not knowing neither what he is doing, nor why he acts the way he does, nor what he himself has (humanly) become after such a prolonged habituation to the dictates of an *alien* presence — of an inhuman presence, like that of the “machine,” which appears to have gained the upper hand over everything [2, 3].

This is the story, the tale, the myth of the monster, of the mechanized Golem, which, cosmically, insinuates itself in the psycho-social fabric of our recent experience in order to take possession of the world and its inhabitants. From this my-

thologeme, as we know, Hollywood has derived a notorious blockbuster: *The Matrix* (1999). In this story, as in the many discursive speculations aired in the past century on so-called “technological power,” the curious aspect resides in the suggestion that the political executive (in- and out-of-sight), with its elites, its “clubs,” has *disappeared*; apparently, we may no longer see, or catch sight of the (more or less violently autocratic) “conductor,” who, in the narrative, is thereby (suitably) replaced by a “routine” of a “crazed” computer, which, one day, nests itself deviously at the helm, ensnaring us and/or eventually attempting to annihilate us all (as in A. Clarke’s novel, which S. Kubrick brought to the big screen with his 1968 classic *2001: A Space Odyssey*), or which, like the “matrix” itself, “vampirizes” us after having systematically thrown us into a state, generally irreversible, of psychic coma. The machine “masks” the coma, spoon-feeding us, throughout our lives, a scripted hallucination, which we grab hold of, mistaking it for the daily consecution of our wakeful state.

Some of the many philosophers that have treated this esteemed theme have stressed how the “discipline of the machine” is, in their view, animated, through the response/obeisance of the human body, by the pursuit of self-seeking “utility” — a utilitarian pursuit that, in the final analysis, translates into, or rather, is beheld by man, thus manipulated, in a moment of intermittent lucidity, as naked desire, a naked *will to power*.

At this juncture, we encounter a paradox, for, in fact, the point of departure in this story coincided with the advent, with the jubilant introduction of the machine, which enters the stage as a product of “technique” — namely, as something issued from Apollonian intuition, science, and practical ingeniousness, intended to make our lives simpler, by saving working hours and all the physical toil theretofore expended in achieving one or more functions, often vital ones. So, this progression starts out as a fundamentally positive and benevolent development, but then, eventually, and unfortunately (nobody knows exactly why), it ushers into a dystopian nightmare made up of steel-and-glass structures, irradiated with magnetic impulses. These *irresponsible* structures are chewing up the world and mankind, regurgitating the one as a slosh of radioactive trash, and the other as

an ugly conglomeration variously divided into 1) herds of zombies hooked up body and soul to the technocratic network; 2) of *campesinos* ever more marginalized in the moribund periphery of the rural world; and, finally, 3) of overflowing masses of "excluded ones," i.e. men and women, unskilled and redundant, all of them "flesh" ("bodies") in excess — flesh whose existential condition interests absolutely no one, precisely because the substance within human beings that could have stimulated empathy itself (human interest) has been entirely emptied (by the machine) of its lymph.

The paradox leads us directly to the practical question. We do understand that technique is the creation of a good instinct; it emerges as an all-human, genial solution to a series of concrete existential problems; yet it is just as patent that "something" has perverted this aboriginal seed of (technical) goodness into a colossal degeneration. This fact is horribly disquieting and sensational at the same time. What is to be done?

If a regression to cave-dwelling is unthinkable — all the more so as the social and technical "virtues" of the machine per se (and of its inventors: the class of the "engineers") are undeniable — one cannot but go back, yet again, to the issue of ethics. Such is the question of how "best" to employ the machine, or of how "best" to posit, morally, the question of man, of the engineer-man, who initially fathers the machine and yet falls hostage to his creature after it bizarrely "awakens" and thenceforth proceeds to manipulate him for good or ill (in point of fact).

This problem must be encompassed within what may be construed as the *hyper-modern* — rather than "postmodern"— era. "Postmodern" is a label devised with a view to deceive considering that the degeneration of which we are speaking is nothing but an exasperation of a tendency exhibited by societies ever since they began to mechanize their institutions in a systematic fashion — especially their executive and monetary-financial functions, i.e., the very nodes in which *power* is exercised. Or "used to be exercised," would quibble the cultural neo-movement of so-called *postmodernism*, which stretches the metaphor of the "matrix" to the extremes of a representation from which, as we were saying at the beginning, the elites have been opportunely erased: in this vision, "power" becomes lymphatic liquid which

circulates seamlessly in a "circuit," in the pipework of a reticulated "cage" — i.e., our own world, which the alien spirit of the machines had refashioned into a hideously mechanized termitary, chaotically jolted by uncontrollable tumults of mutinous flesh — where nothing, of a criminal nature or otherwise, is truly anybody's *fault* and where everything is blinding and mute violence, action and reaction, enthusiastic multitude and languorous counter-multitude; where everything is polluted by the waste of a structure, once "modernly" self-assured and presently dilapidated, which, from 1945 onwards, would seem to have totally lost its bearings [4].

Thus may be roughly summarized the "theory" (a fairy tale, in fact, as it customarily is in the "social sciences") of the French postmodernists; a theory which strikes its roots in the visionariness of the genial and disquieting Georges Bataille (1897–1962), whose sociological insight [5, 6] was, in fact, plagiarized, altered, and astutely re-confected *ad usum academicorum* by philosopher and academician of France Michel Foucault (1926–1984) in the 1960s. France's propagandistic central turned Foucault into a *vedette* in 1966 when it understood that with a vision of this sort, one could have relieved, discursively speaking, the dialectical schema of Marxism, which had then become obsolete (propagandistically speaking); the parts in the play had to be re-assigned: for the role of the "rebels," the "proletarian workers" were replaced wholesale by the *pègre* (the low-class delinquents of the "gutter"); and for the role of the "capitalists," the industrialists were substituted, instead, by ... the Void, the nothingness of mechanizing and disciplining power: which is to say — and here lies the "beauty" of the construct — by the *absence* of power itself, as traditionally understood. On the rhetorical plane, this was a *hyper-conservative* maneuver, and a particularly crafty one, whose pernicious consequences may be clearly seen today: in the United States, Foucauldian postmodernism has become a State-mandated (sub-)liturgy (and, as in all standardizations worthy of the appellation, Foucault's name has been elided in the process) — one just has to think of the gigantic inquisitorial and discursive apparatus which, in that country, revolves nowadays around the so-called *politics of diversity*. Upon this postmodern bastion, itself erected on weird, late French re-elaborations of

mystico-gnosticism,⁴ the USA, *res mirabilis*, has effectively launched yet another colonization of Europe's discursive space, "forcing" into the cultural game the "metaphorical dividers" of *difference*; these conceptual "wedges" are thrown into play with a view to create, artificially, fences of hatred between persons belonging to the same social stratum. This peculiar wordplay forcibly sets people up against one another by reference to differentiations of gender, sexual orientation, ethnicity, and beliefs (even the flimsiest ones).

The relation of all this with the hyper-modern fable of the Technological Empire lies in the fact that, having assimilated the notion of "power" with that of the de-personalized "evil" of technocracy — which, according to Foucault and his American epigones, possesses, in the macro-political framework, neither face, nor center, — the only "human weapon" we have left in the face of this disciplining monster bent on homogenizing all things so as to feed on them would be to fall back upon our last, makeshift turfs of "partial certainty," upon our niches of inter-personal and inter-social "difference" — be it a difference of sex, "race," or religion — and, thus re-invigorated, (attempt to) react intermittently against the machine and against the potential vexations of "the others," who, in the final analysis, are all so very different from "us" [8].

In fact, such sophistic intoxication has also superbly served as choice ammunition in the intense barrage of fire that postmodernism has been continuously directing at the Catholic Church (finger-pointed by her adversaries as a most pernicious and ultra-powerful disciplining central, arid and retrograde: in other words, a self-contained "matrix" in her own right). Why the Catholic Church? Because the latter had remained throughout the twentieth century the only "imperial" rival which the Anglo-American Commonwealth had not yet succeeded in knocking down after the results of the two World Wars, when England with American brawn had been able to disable in succession: Russian czardom, the Central Powers (Prussia and Austria-Hungary), the Ottoman Empire, and,

finally, the Empire of the Rising Sun (in one big, unrepentant blaze). Looming like a vast de-territorialized kingdom that ruled through credence alone over a billion souls (a marvel), Rome, with its vicar of Christ, was simply too much to stomach for the Anglo-Americans: it had to be taken, harnessed to the Anglo-American locomotive, and hyper-modernly refitted. This arm-wrestling match between Washington and Rome began in earnest in the 1980s under the pontificate of John Paul II.⁵ Discursively, the clash became tangible under Pope Ratzinger.

The Church timidly rebuffed what she saw as an attack on her magisterium on divine truth and family values via a blustery advocacy of "difference/diversity" for its own sake, which she felt sought to put her teachings on an equal and levelling footing with those of multitudinous other authoritative sources (worldwide) of proper moral comportment (relativism). That the provocation was done out of "spite" — and possibly something more than that — may not be doubted, although the trouble was that it had absolutely nothing to do with relativism, "practical" or "ethical" as it may be. It was something far more insidious. It was not just designed to challenge the Vatican's doctrinal "infallibility" and thereby downsize its "political ego," so to speak; it was above all a studied offensive to delegitimize progressively an adversary's authority in order to defat and absorb him entirely in due time.

Conclusions

Two aspects are worth stressing. The first is anthropocentrism, i.e., the mental drift that for more than two centuries has been spinning Hyper-modern Man around, convincing him that, with *reason* alone, he can solve all his needs and practical questions; convincing him, moreover, via the self-awareness of his *psyche* — i.e., via the illusion of being *complete and self-contained* — that he is ultimately autonomous. This profound alienation from true existence and from the complexities of Nature (this "schizophrenia"), imbued with avid arrogance, is said to cause man to stray, to mishandle himself and the environment. Some commentators thereby

⁴ All sorts of latter-day fable-like constructions about Creation and the beginning of collective life that draw imagery from non-Christian, non-traditionalist myths and Gospels that feature demons, titans, snakes, and demiurges of various sorts fashioning the universe and/or ruling over the cosmos on an equal footing with, if not with far greater clout than, the "good God" of traditional religion.

⁵ See the author's book *Empire and Church: The Anglo-American Buyout of the Vatican and the Hyper-Modern Demise of Catholicism*. Città di Castello and Hemlock, NY: Ad Triarios Press; 2023. Forthcoming.

auspicate — this is the second point — that, in light of this glaring aberration, the world community finds a way to lay the foundations of a “new Man,” a new humanism; of something that is especially sensitive to the “respect for labor.”

Very well. To the foregoing, one may add, or rather, it may behoove the argument to reiterate, that the issue of “morality,” and of the associated exigency of reforming it continually, ultimately emanates from that overwhelming and insidious psycho-social current, whose “physics” Thorstein Veblen, as early as 1899, had described in his extraordinary classic *The Theory of the Leisure Class*. Veblen expounded the basic heinousness of this drift under the appellation of “barbarian” or “predatory temperament.” [9–11]. Two decades earlier, with a terminology and intensity comparable to those of Veblen, Leo Tolstoy had exposed in his *Confessions* the same phenomenon by referring to it as the “Law of Violence.” The gist is the following: as long as human beings — as they have done heretofore, “believers” and otherwise, all of them, in the like, undaunted fashion — will continue to evaluate, assess, and judge *everything* in terms of exclusivist success, victory, exploit, strength, excellence, clannishness, prestige of rank, competition, and incessant struggle for “primacy” and *privilege* (viz., vying for the best “combs” in the hive), it will be *impossible* to rid ourselves of noxious hierarchies; it will be impossible to dispose of a spirit of ubiquitous and imperious *prepotence* (a thirst for exploiting, bullying, bossing others around), which distorts every kind of human rapport; in one way or another violent, manipulative coercion and intimidation course through the entirety of our mutual (especially professional) interactions, from the most subtle and apparently harmless exchange or psychological intimation, to the most humiliating and brutal forms of subjection. From the institutionalized exaction of usury (in our sacrosanct bank accounts) to the culminating and final “dementia” of craving power/ “high status” pure and simple⁶ — which is the delirious end-all and be-all of human behavior — everything we do and organize always appears to be inspired by a more or less latent acceptance of a regime of (status-driven) contempt

and harassment. This resigned acquiescence, on our part, in the violence of injustice assumes forms that vary according to the “space” in which such oppression is exercised; this violence of iniquity, as they teach us since childhood, we must either supinely come to terms with in order to survive if we are born weak or defend ourselves from it if we are born strong, so as to *prevail* somehow. And eventually come to enjoy the deserved plaudits and privileges of triumph. Violent the alpha, violent the omega.

All societal structures, be they pre-modern or hyper-modern, along with the men and women that are part thereof (though the women to a less degree — ours is still very much a “man’s world”), have always been saturated with the Law of Violence. So saturated, in fact, that, as pointed out by another sociologist of technology, Jacques Ellul, the belligerent fomenters of State propaganda are no longer expected to rack their brains to concoct ever more colorful hogwash with which masses of individuals may be induced, with patriotic élan, to do/approve/swallow things they would otherwise never tolerate: no need to sweat, the masses are already “sold” [7]. “Mass-Man” — be it a (bitter) fruit of “exclusion” or a nondescript employee (even of mid-level rank) stuck in a cubicle of the mechanized anthill — is, verily, so barbarized, so spiritually debilitated, and, at bottom, so (intimately) aware of his total irrelevance and uselessness as to be psychologically predisposed, just to feel he is a part of some “grand endeavor,” to respond with alacrity to any “call to battle.” Thus, he allows himself to be “fielded” according to schemes dictated by a logic of pre-arranged *hostility* between “irreducible foes.”⁷

For, in the end, even if “the machine,” technology and the monstrous techno-propagandistic apparatus that germinates out of it [12, 13], constitute altogether an undeniable reality — let us designate this conglomeration by the term “Techno-structure,” — it is no less true, however much the jabberers of postmodernism’s may deny it, that it is always the elites — the new ones being more or less legitimate filiations of the old ones — that are ultimately privy to the access codes of the Structure’s console. And it is inevitably from the

⁶ “...Cette autre forme de démence, maintenant disparue, qu’on appelait l’ambition politique...” (“...This other form of dementia, presently vanished, which was once called political ambition...” Gabriel Tarde, *Fragment d’histoire future*, 1896).

⁷ Viz., the case of the bogus contraposition Christian West vs. Islamism or the recent rebooting of Russia’s enmity are both conspicuous instances of the geo-strategic, geo-Hollywoodesque “game” of the past decade or so.

elites that violence, by whose “law” everyone is to abide, ultimately radiates.

This is the key point: the “new humanism” will have to issue from a re-examination of our psycho-

social frame of mind, and, thence, of the socio-political structures — unfailingly oligarchic and elitist — that have been systematically erected upon those particular “spiritual” foundations.

ACKNOWLEDGEMENT

This essay stems from the author’s reply as a discussant to the presentation of Professor Adriano Fabris, University of Pisa, “La radice umana della crisi ecologica” (“The Human Root of the Ecological Crisis”), which was offered within a series of seminars devoted to the papal encyclical *Laudato Sí* at the Pontifical Gregorian University on December 17th, 2015.

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Conflicts of Interest Statement: The author has no conflicts of interest to declare.

The article was submitted on 04.04.2023; revised on 05.05.2023 and accepted for publication on 17.05.2023.

The author read and approved the final version of the manuscript.

ORIGINAL PAPER

DOI: 10.26794/2308-944X-2023-11-2-67-72
UDC 33.018(045)
JEL B41, B 49, D11, D81

Utility of Sacrifices: Reorientation of the Utility Theory

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ABSTRACT

Utility theory is a pivotal concept in economics that provides insights into how an individual is motivated to act under budget constraints. The main assumption of this theory and the entire field of economics is that a rational human being and an individual derive utility from the consumption of goods and services under given budget constraints. **The aim** of this article is to explore these fundamental assumptions and introduce a new theoretical framework for deriving utility, which is termed the “utility of sacrifices”. Various **methods** were employed in the study, including a review of existing literature, an analysis of prevailing theories, and observations in real-world scenarios. **The results** show that, through observations, a “rational” human being derives utility from both consumption and voluntary sacrifices. Therefore, in **conclusion**, it is proposed that the total utility of an individual is the sum of these two components. This theoretical framework provides a more comprehensive understanding of human decision-making and behavior in economics. It also provides novel insights for future research and applications in economics.

Keywords: utility; consumption; sacrifices; decision-making; behavior

For citation: GC A. Utility of sacrifices: reorientation of the utility theory. *Review of Business and Economics Studies*. 2023;11(2):67-72. DOI: 10.26794/2308-944X-2023-11-2-67-72

ОРИГИНАЛЬНАЯ СТАТЬЯ

Полезность потерь: усовершенствование теории полезности

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АННОТАЦИЯ

Теория полезности является ключевой концепцией в экономике, которая дает представление о том, как человек мотивирован действовать в условиях бюджетных ограничений. Основное предположение этой концепции и всей экономической теории состоит в том, что рациональный человек получает полезность от потребления товаров и услуг при заданных бюджетных ограничениях. **Цель** этой статьи состоит в том, чтобы исследовать это фундаментальное предположение и представить новую теоретическую основу для описания полезности, которая названа автором «полезность потерь». Для исследования использовались различные **методы**: в основном обзор существующей литературы, анализ общепринятых теорий и наблюдения в реальных сценариях. **Результаты анализа** показывают, что, согласно наблюдениям, «рациональный» человек извлекает пользу как из потребления, так и из добровольных потерь. Поэтому автор делает **вывод**, что общая полезность индивидуума представляет собой сумму этих двух составляющих. Эта теоретическая основа обеспечивает более полное понимание процесса принятия решений и поведения человека в экономике. Это также дает новые идеи для будущих исследований и приложений в экономике. **Ключевые слова:** полезность; потребление; потери; принятие решений; поведение

Для цитирования: ДжиСи А. Полезность потерь: усовершенствование теории полезности. *Review of Business and Economics Studies*. 2023;11(2):67-72. DOI: 10.26794/2308-944X-2023-11-2-67-72

Introduction

Utility theory has been the foundation of economics, especially in microeconomics, which is the key to behavior and decision-making [1]. The economists of the early 18th-century tried to find out why an individual acts in a certain pattern [2]. Jeremy Bentham was an English philosopher who introduced the utility concept into social science in 1789 [3]. Utility is the reflection of an individual's value or preference [4–7], which generates pain and pleasure in an individual from their action [8]. In the early stages, economists used utility theory to explain mainly two concepts – demand behavior and to justify or amend an economic policy [9]. It is, in the simplest terms, satisfying desire [10]. Under the Homo Economicus concept, utility has been considered a characteristic feature of an individual [11]. Frish (1926–1971) attempted to establish a quantitative definition of utility using an axiomatic representational theory of measurement [12]. Furthermore, economists have explained that utility comes from consumption [8, 11, 13–15]. There is another school of thought that assumes utility is generated from attributes of the product instead of the product itself [16]. There is still an ambiguous attitude towards utility among economists [8]. Nonetheless, there is no disagreement that whether utility comes from products or attributes, the final process is consumption. However, an individual gets some level of utility from voluntary sacrifices, which have not been mentioned or explained in the traditional utility theory. Therefore, incorporating this component into the theory makes it more realistic. Nonetheless, another dimension, utility as time, was also proposed [17]. It is important to note that utility maximization drives choice behavior and perceived value is about the trade-off between benefit and sacrifice [18].

Traditional utility theory

Historically, there have been two approaches to utility theory: the cardinal approach and the ordinal approach. The fundamental difference between these two approaches is the measurement of utility. The cardinal approach assumes that utility can be quantified and proposes a unit of measurement, *util*.

However, the ordinal approach assumes that utility is a subjective concept that cannot be measured but can be compared.

The traditional utility theory makes several assumptions. The first assumption is the rationality of an individual. It means an individual has full capacity to properly process the available information [19]. Under this assumption, an individual is supposed to maximize his or her utility subject to a given budget constraint. Furthermore, to be a “rational” individual, one must be selfish, and utility is obtained through the consumption of goods and services. However, it is well-acknowledged that rationality has diverse manifestations [20]. Further, rationality has cognitive and axiological dimensions beyond instrumental and utilitarian functions [21].

Secondly, marginal utility is diminishing [22]. That means each additional unit of consumption produces less utility. Thirdly, the total utility of a basket of goods depends on the quantity consumed. Early versions of the theory assumed that utility was additive. In the cardinal approach, another assumption is the constant utility of money. In the ordinal approach, a diminishing marginal rate of substitution is adopted. Further, the assumptions of consistency and transitivity of choice are also added.

In the cardinal approach, if we consider a simple model consisting of a single commodity and a single individual, an individual tries to maximize the difference between his utility and his expenditure:

$$U - P_x q_x, \quad (1)$$

where U is the total utility and is a function of the quantity consumed.

Similarly, P_x and q_x are the price and quantity of the commodity x , respectively. It also represents the budget constraints of an individual:

$$U = f(q_x). \quad (2)$$

In the ordinal approach, given the money income (Y) of an individual and the market price of the commodities (P_i), the consumer tries to maximize his or her utility (U).

$$\text{Maximize } U = f(q_i), \quad (3)$$

where $i = 1, 2, \dots, n$,
subject to

$$\sum_i^n q_i P_i = Y. \quad (4)$$

Proposed new theoretical framework

Nowadays, the utility concept is more important than ever [8]. Therefore, it demands a better understanding. Traditionally, it is assumed that utility is derived from consumption. However, it is easily observable that an individual does not only get his or her utility from the consumption of goods and services. Rather, an individual also gets utility from voluntary sacrifices.

Let us discuss an example. Consider an economically active person working hard for his livelihood. He works and earns money for his family, which consists of a wife and a child. For dinner, he brought three slices of pizza and three cans of drink — one for each. Suppose he spent all his earnings. While sitting for dinner, the child was hungrier, and after finishing his slice of pizza, he asked for more from his parents. There is no chance to get more pizza for their child. The parents, either one or both, must sacrifice some pieces of pizza from their slices and feed them to their child.

In the aforementioned case, either or both parents have not been able to consume their intended portion of the pizza. More clearly, they are consuming less than equilibrium, that is at the tangent of the budget line on the indifference curve. For simplicity, let's consider that the father provides an extra pizza to his child from his slice. Based on traditional utility theory, the father must have a lower level of utility than he ought to have since his expected consumption was higher than what he actually has. In traditional utility theory, a decrease in utility is equivalent to a decrease in satisfaction. If this is true, the father must have some kind of bad feeling about his sacrifices. However, in reality, in such a case, the father would not be less happy or less satisfied because he could not have the expected amount of consumption under the given budget constraint. Rather, he would be at least as happy as if he

had consumed at the initially expected level of consumption.

Consider another instance of any couple living in a relationship. In a healthy relationship, people do share. By sharing, individual consumption is reduced. However, the utility does not decrease when compared to the state in which all initial endowments are made by oneself.

Not only the sacrifices for the family but also for an unknown person will have some utility if the sacrifices are voluntary actions. For instance, if you are coming out of the store after purchasing some cookies and you encounter a hungry bagger asking for some food. In such a case, you may give some pieces of cookies to the bagger or may not. It is purely a voluntary action. If you provide some cookies to the bagger, in such circumstances, the expected utility you are supposed to derive from the consumption will be reduced. However, your total utility would not be reduced. That means the sacrifices are also creating some sort of utility for you.

The aforementioned three cases indicate that an individual may derive utility from sources other than the consumption of goods and services. Rather, it is also generated through voluntary sacrifices. Therefore, the equation for total utility can be extended as follows:

$$\text{Total Utility} = f(x, y) - \lambda(I - P_x x + P_y y) + f\left(\sum_1^i S_i\right), \quad (5)$$

where $f(x, y)$ represents a utility function, λ is the Lagrangian multiplier, P_x represents the price of an x commodity, P_y represents the price of an y commodity, and $\sum_1^i S_i$ is the sum of all sacrifices.

Alternatively, we can rewrite the equation (5) as follows:

$$\text{Total Utility} = \text{Utility from consumption} + \text{Utility from sacrifices}, \quad (6)$$

which an individual tries to maximize.

Similarly, assuming utility is an ordinal concept, it can be compared. Further, sacrifices

made by different individuals may create different levels of utility. More precisely, the level of utility generated from sacrifices to one's family and the level of utility generated from sacrifices to the unknown might have been at different levels. Therefore, one can assign various weights to these sacrifices. Hence, the equation (5) of total utility can be updated as follows:

$$Total\ Utility = f(x, y) - \lambda(I - P_x x + P_y y) + f\left(\sum_1^i w_i S_i\right), \quad (7)$$

here w_i is the associated weight to each i .

Therefore, rather than maximizing utility from consumption, a rational individual tries to maximize total utility from consumption and sacrifices jointly.

Marginality in the utility of sacrifices and welfare

The concept of marginality is also important for the theory of the utility of sacrifices. In the marginality school, diminishing marginal utility is the key concept in modern economics. A voluntary sacrifice generally comes from individuals who have at least some amounts of goods and services to consume from which one can generate utility.

Assume that an individual is sacrificing his or her last unit of consumption to an individual who does not have anything to consume. In such a case, the utility of sacrifices would be less than the utility of consumption by another individual as the first unit of consumption. This can be demonstrated by the following relation:

$$TU_1(x_0) < TU_2(x_1) + TU_3(x_2), \quad (8)$$

here, $x_0 = x_1 + x_2$.

That is, an individual sacrifices x_2 amount from his or her initial endowment x_0 , and another individual generates utility by consuming it. It is impossible to measure the utility between or among individuals because of its subjective nature. However, intuitively, at the societal level, $TU_1(x_0)$ would be less than the summation of $TU_2(x_1)$ and $TU_3(x_2)$ even though x_0 is the summation of x_1 and x_2 . Therefore,

this concept could be helpful to describe total social welfare.

Budget constraints and resource constraints

Traditionally, utility theory also assumed that there are technically unlimited commodities to consume for an individual. It is only constrained by his or her budget limit. For the simplification of an economy, there is nothing to criticize. However, in various parts of the world that are basically isolated, there is an extreme scarcity of goods and services to consume. For example, in severely food-insecure regions, this might not be an issue of budget constraints. Despite having money in their pocket and not sufficient food on their plate, they are generating some level of utility that needs to be accommodated in the utility theory. Further, let us assume a severely food-insecure community of 100 inhabitants. From the selfish characteristic of a rational human being, everyone should try to satisfy their hunger. Let us assume, the food basket of the community can feed 50 inhabitants sufficiently. In this course of action, however, instead of feeding sufficiently 50 persons, they are happy to sacrifice some food for others and suffer from hunger. Such incidences indicate that humans are not perfectly selfish, rather they are altruistic.

Conclusion

Utility theory has a crucial foundation in modern economics, and its importance is ever increasing. Making every theory more realistic is desirable, and economists always try to do so. In the traditional utility theory, it is assumed that every rational economic agent – an individual – tries to maximize his or her utility by consuming more and more commodities under given budget constraints. This framework assumes that a rational economic agent is selfish, and that his or her utility is only derived from the consumption of goods and services. However, intuitively, it is observable that although humans are basically selfish, but not absolutely. Further, contrary to the traditional assumption that utility is only generated from consumption.

Nonetheless, it is observable that a rational individual is also generating utility from voluntary sacrifices. Furthermore, sacrifices from saturated or near-saturated individuals to less saturated would generate more utility in society as a whole. Therefore, adopting this theoretical framework of the utility of sacrifices would make the utility theory more realistic. Additionally, this work will contribute to the teaching of basic economics. Similarly, it also contributes to the development of the neuroeconomics concept of utility preferences as well as the ethics of family relationships.

ACKNOWLEDGEMENTS

The author appreciates the Vipassana Center, Kathmandu, Nepal where he got this insight while performing a 10-day vipassana meditation.

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Conflicts of Interest Statement: The author has no conflicts of interest to declare.

The article was submitted on 15.04.2023; revised on 19.05.2023 and accepted for publication on 25.05.2023.

The author read and approved the final version of the manuscript.