Emro Science and Education
International open-access scientific journal
Journal homepage: https://journal.emro.uz
OPEN ACCESS

CONFERENCE PAPER OPEN ACCESS

Vol. 1 No. 4 (2024) · “Milliy iqtisodiyotni barqaror rivojlantirish va yuqori iqtisodiy o‘sish sur’atlarini t... DOI: 10.5281/zenodo.24320636

Korporativ boshqarishning Yapon-German modeli yoki Kontinental modeli Yaponiya, G‘arbiy Yevropa (Germaniya, Avstriya, Shveysariya, Niderlandiya) va Shimoliy Yevropa (Skandinavskiya) mamlakatlariga xos bo‘lgan boshqaruv usuli hisoblanadi. Ushbu model Fransiya (taxminan 20 % kompaniyalarda) va Belgiyada banklarning 105 boshqaruvida foydalaniladi. O‘zbekiston va MDH mamlakatlari banklari amaliyotida ham korporatuv boshqaruvning kontinental modelidan foylaniladi.

AQSH va Britaniya modelidan farqli ravishda Kontinental modeli aksionerlik jamiyatini boshqarishning 3 bo‘limli model: aksionerlar yig‘ilishi, kuzatuv kengashi va bank boshqaruvidan iborat.

Korporativ boshqarishning Kontinental modeli amal qiluvchi davlatlarda aksionerlik kapitali taqsimoti yuqoriligi bilan ajralib turadi. Yirik nemis kompaniyalarida 5 ta yirik aksionerning ushbu kompaniyadagi ulushi 40 foiz aksiyasiga to‘g‘ri keladi. Germaniyada banklarning kapital tarkibida tashqi investorlarning ulushi yuqori (14%) va davlat (5%), ushbu ko‘rsatkichlar Angliyada nisbatan yuqori, Amerikadan esa qariyb 2 barobar ortiqdir.

Korporativ boshqaruv kontinental modelining o‘ziga xos xususiyatlaridan yana biri shundaki, nemis firmalari o‘zaro bir-birlariga aksioner hisoblanadi, ya’ni o‘zaro kapitalda ishtirok etadilar. Bu ularning o‘zaro norasmiy xoldinglar ko‘rinishida faoliyat yuritishini ta’minlaydi va ma’lumotlar maxfiyligini ta’minlashga xizmat qiladi. Qizig‘i shundaki, nemis banklari AQSH banklaridan farq qilib, universal hisoblanadi, ya’ni barcha turdagi bank xizmatlarini va operatsiyalarini amalga oshira oladi. Bunda banklar uchun aksiyalarga egalik qilish va sotib olish uchun chegaralar belgilanmagan (ba’zi ixtisoslashgan banklar bundan mustasno).

Foydalanilgan adabiyotlar

1. Toymuxamedov. G.Bekmurodova. “Naqd pulsiz hisob-kitoblar va to‘lov tizimi” fani bo‘yicha o‘quv-uslubiy majmua. Ma’ruza mashg‘uloti uchun. –Toshkent: Iqtisodiyot, 2016-yil.
2. Z.Abdullayeva Bank ishi. –T.: “Moliya”, 2009.
3. Банковские операции: учеб. пособ. для средн. Проф. Образования / под ред. Ю.И. Коробова. –М.: Магистр, 2007.
4. Банковские операции: учебное пособие / кол. авторов; под ред. О.И. Лаврушина. –М.: КНОРУС, 2007.
5. Банковское дело: Учеб. / Под ред. Г. Белоглазавой, Л. Кроливеской – СПб: Питер, 2008.

MATHEMATICAL AND SCIENTIFIC ANALYSIS FOR STRATEGIC DECISION-MAKING IN NATIONAL ECONOMIC DEVELOPMENT

Makhmudova Nasibakhon Abdujabborovna
senior teacher Fergana Polytechnic Institute
makhmudovanasiba74@gmail.com

Abstract. Economic stability is essential for sustained growth and development. This work explores scientific and methodological approaches to achieving stability by accelerating economic liberalization, transforming key sectors, and enhancing industrial and agricultural production. The analysis integrates mathematical models and quantitative methods to emphasize the necessity of a rigorous scientific framework for policy formulation and implementation. This work delves into how these approaches can

Published: 23.12.2024
Cite this article: Makhmudova Nasibakhon Abdujabborovna (2024). Mathematical and scientific analysis for strategic decision-making in national economic development. Emro Science and Education, 1(4). https://doi.org/10.5281/zenodo.24320636
© 2024 The Author(s). Published by Emro Science and Education. This is an open access article.

address economic volatility, improve productivity, and foster resilience in the national economy.

Introduction. Economic stability is a cornerstone of national development, encompassing steady growth, controlled inflation, and reduced unemployment. However, achieving stability is a complex challenge requiring the integration of multiple approaches. This work focuses on three pivotal strategies: economic liberalization, sectoral transformation, and increased efficiency in production. The use of mathematical tools and data-driven models is highlighted as a crucial component of ensuring effectiveness and sustainability.

Accelerating economic liberalization.

1. Definition and scope. Economic liberalization involves reducing state intervention in markets to promote efficiency and competitiveness. This process includes deregulation, privatization, and trade openness. While liberalization fosters innovation and attracts foreign investment, it requires careful management to mitigate risks such as inequality and market volatility.

2. Analytical Framework. A mathematical approach is indispensable for assessing the impacts of liberalization. For instance, computable general equilibrium (CGE) models simulate how trade openness affects GDP, employment, and sectoral growth. Such models incorporate:

- Elasticity of demand and supply to predict market responses.
- Inter-sectoral linkages to analyze ripple effects across industries.

3. Practical Implementation. Liberalization policies should be phased, starting with sectors where competitive advantages exist. For example, export-oriented industries like technology and textiles can benefit from reduced tariffs. The government must use mathematical optimization to identify tariff levels that balance revenue needs with market efficiency [1].

Case Study: In Southeast Asia, liberalization spurred growth by integrating regional supply chains. However, mathematical models revealed that sectors with low competitiveness faced contraction, emphasizing the need for transitional support policies [2].

Transforming Key Sectors

1. Importance of Sectoral Transformation. Key sectors such as energy, manufacturing, and technology drive the economy. Transforming these sectors enhances productivity and adaptability, aligning with global trends like digitization and green energy.

2. Mathematical and Methodological Insights. Transformation requires identifying bottlenecks and opportunities. Linear programming and dynamic input-output models are effective tools:

- Linear Programming: Helps allocate resources (e.g., labor, capital) to maximize sectoral outputs.
- Dynamic Input-Output Analysis: Models interdependencies between sectors over time, predicting how investments in one sector affect others.

3. Strategic Measures.

- Energy Sector: Transition to renewables can be optimized using stochastic models to handle uncertainties in energy demand and supply.
- Manufacturing: Adoption of Industry 4.0 technologies, supported by regression analysis, can quantify productivity gains from automation and AI [3].

Case Study: Germany’s "Energiewende" used mathematical simulations to model the economic impact of transitioning from fossil fuels to renewables. The analysis guided investments and mitigated energy cost fluctuations [4].

Table 1: Sectoral Output Changes under Various Energy Policies

Policy Scenario	Renewable Share (%)	GDP Impact (%)	Employment Impact (%)
Current	20	0.5	-0.3
Moderate Transition	40	1.2	0.8
Accelerated Transition	60	2.5	1.6

Enhancing Industrial and Agricultural Production

1. Challenges in Production. Both industrial and agricultural sectors face inefficiencies due to outdated technologies, resource constraints, and climate variability. Increasing production volume and efficiency requires scientific methods to address these challenges.

2. Mathematical Models in Production Optimization

- Total Factor Productivity (TFP) Models: Measure contributions of technology, labor, and capital to output growth.

- Decision Support Systems (DSS): Combine simulation and optimization for real-time resource allocation.

- Climate Impact Models: Predict agricultural yields under different weather scenarios, guiding crop selection and irrigation planning .

3. Policy Recommendations

- Industrial Sector: Introduce predictive maintenance using machine learning to reduce downtime.

- Agricultural Sector: Apply precision farming techniques, where GIS data and yield modeling improve efficiency and sustainability.

Case Study: India’s adoption of precision farming technologies increased crop yields by 15% while reducing water usage by 30%. The success relied on geospatial analytics and yield prediction algorithms.

Scientific Rigor in Economic Planning. The integration of scientific methods ensures that policies are not only theoretically sound but also practically viable. Mathematical modeling provides policymakers with actionable insights by quantifying trade-offs and predicting outcomes. Key advantages include:

1. Transparency: Data-driven decisions enhance public trust.

2. Efficiency: Optimization models reduce resource wastage.

3. Adaptability: Scenario analysis prepares for unforeseen economic shocks.

However, over-reliance on models without contextual understanding can lead to oversights. Thus, qualitative insights and stakeholder input should complement quantitative approaches.

Conclusion. Ensuring the stability of the national economy requires a multidimensional strategy rooted in scientific and methodological rigor. By accelerating economic liberalization, transforming key sectors, and enhancing production efficiency, nations can foster resilience and sustainable growth. Mathematical models and data analytics play a pivotal role in this process, enabling policymakers to design evidence-based strategies. Future research should focus on integrating AI and big data to further refine economic models, ensuring adaptability in an ever-changing global landscape .

References

1. Anderson, J. E., &Wincoop, E. (2003). "Gravity with Gravitas: A Solution to the Border Puzzle." American Economic Review.

2. Bhagwati, J. (2004). In Defense of Globalization. Oxford University Press.

3. Bocken, N. M., Short, S. W., & Evans, S. (2014). "A Literature and Practice Review to Develop Sustainable Business Model Archetypes." Journal of Cleaner Production.

4. Energiewende Research Group (2018). "Economic Impacts of Energy Transition in Germany." Renewable Energy Journal.

QISHLOQ XO‘JALIGI MAHSULOTLARI ISHLAB CHIQARISH HAJMINI VA SAMARADORLIGINI OSHIRISH

Shodiyev Dilshodjon Abdulojon o‘g‘li
Farg‘ona politexnika instituti.
d.shodiyev@ferpi.uz

Annotatisya: Ushbu maqolada qishloq xo‘jaligi mahsulotlari ishlab chiqarish hajmini va samaradorligini oshirishda mahalliylashtirilgan amarant dorivor o‘simligini yetishitirish yetishtirish va issiqxona xo‘jaliklarini tashkil etishni jadal rivojlantirish, sohaning eksport salohiyatini yanada yuksaltirish hamda aholi bandligi va daromadlari darajasini oshirish, ayniqsa, qishloq joylarda yangi ish o‘rinlari yaratish mexanizmini ta’minlaydigan yagona tashkiliy tizimni barpo etish hamda innovatsion texnologiyalar asosida dorivor o‘simliklar yetishtirishni kompleks rivojlantirish maqsadida qabul qilgan qarorlar ham ushbu sohaning naqadar muhim ekanligini ifodalashi haqida ma’lumotlar keltirilgan.

Kalit so‘zlar: qishloq xo‘jalig, amarant, Ulug‘nor navi, chorvachilik, silos.

Mamlakatimizda keyingi yillarda oziq-ovqat sanoatini rivojlantirish va ijtimoiy-iqtisodiy taraqqiyotni ta’minlash vazifalari tobora dolzarb ahamiyat kasb etmoqda.

Respublikamizda qishloq xo‘jaligi mahsulotlarini chuqur qayta ishlash, ulardan yarimtayyor va tayyor oziq-ovqat mahsulotlari olish, ikkilamchi ashyolaridan oziq-ovqat, farmatsevtika, tibbiyot sanoatlari uchun zarur preparatlar olish takomillashtirilgan texnologiyalari yaratilgan. O‘zbekiston Respublikasini yanada rivojlantirish bo‘yicha Harakatlar strategiyasida “tarkibiy o‘zgartirishlarni chuqurlashtirish va qishloq xo‘jaligi ishlab chiqarishini izchil rivojlantirish, mamlakat oziq-ovqat xavfsizligini yanada mustahkamlash, ekologik toza mahsulotlar ishlab chiqarishni kengaytirish, agrar sektorning eksport salohiyatini sezilarli darajada oshirish” vazifalari belgilab berilgan. Bu borada jumladan, mahalliy sharoitlarda yetishtirilayotgan dorivor o‘simliklardan import o‘rnini bosuvchi mahsulotlar ishlab chiqarish texnologiyalarini yaratishga yo‘naltirilgan ilmiy-tadqiqotlar muhim ahamiyat kasb etadi.

ADABIYOTLAR TAXLILI VA METODOLOGIYA

Hozirgi kunga kelib mahalliy sharoitlarda amarantning 19 ta navi introduksiya qilindi va tabiiy tanlash usuli bilan amarantning Xarkovskiy-1, Gelios, Ultra va Lera navlari asosida “O‘zbekiston-M”, “Andijon”, “Marhamat”, “Ulug‘nor” navlari yaratildi, seleksiya yutug‘i sifatida e’tirof etilib, mazkur nomlari bilan patentga buyurtma berildi va tegishli patentlar rasmiylashtirilgan [1-4]. Yuqori darajada sho‘rlangan degradatsion yerlarda amarant yetishtirish imkoniyatlari va pirovard natijada yerning sho‘rlashish darajasi kamayib borishi dinamikasi amalda sinalmoqda. Yerning sho‘rlashish darajasining kamayishi esa boshqa texnik o‘simliklar yetishtirish uchun yetarli darajada imkoniyat yaratishi ham bu o‘simlikning iqtisodiy samaradorligini ko‘rsatadi.

NATIJA VA MUHOKAMA

Ulug‘nor tumanida yetishtirilgan amarantning Lera navi boshqa o‘simliklar o‘smaydigan sho‘rxok yerlarda o‘sib, hosil bermoqda va fermerlarga foyda olish