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“BANK-RAQOBAT-MODEL” KONSEPSIYASINING IQTISODIY-MATEMATIK ASOSLARI

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Annotatsiya. Maqolada zamonaviy bank tizimi faoliyatining nisbatan sodda va asosli tavsifi berilib, uni umumiy vaqtlararo muvozanat modelida qo'llash imkoniyatlari yoritilgan. “Bank-raqobat-model” konsepsiyasi oddiy pul multiplikatori munosabatlari bilan almashtirib bo'lmaydigan tizimli model sifatida asoslab beriladi. Bank tizimidagi moliyaviy vositalar harakatining ekonometrik tahlili asosida konsepsiyaning nazariy asoslari ishlab chiqilgan.

Kalit so'zlar: bank faoliyati, modellashtirish, Salop modeli, Xolstryom–Tirol modeli, Monti–Klyayn modeli, oligopol va Kurno raqobat modeli, Bertran usuli.

O'zbekiston iqtisodiyoti 2024 – 2026 yillarga mo'ljallangan pul-kredit siyosati doirasida barqaror o'sishda davom etmoqda. Aholi daromadlari, xorijiy investitsiyalar oqimi va davlatning “O'zbekiston – 2030” strategiyasi bank tizimini modernizatsiyalash va xususiylashtirish jarayonlarini jadallashtirmoqda. Bu esa bank faoliyatida yangi raqobat modellarini shakllantirishni taqozo etadi. Bank tizimi likvidligini prognozlashda mashinali o'qitish (RNN, LSTM) va “qarorlar daraxti” modellarining joriy etilishi muhim rol o'ynamoqda.

Banklar bir-biridan farq qilishni tanlaydilar. Ular strategik ravishda turli vositachilik faoliyati bilan shug'ullanadilar va o'zlarining biznes maqsadlariga mos keladigan balans tuzilmalarini tanlaydilar. O'sish imkoniyatlarini raqobatbardosh izlashda banklar o'z tashkilotlarining kuchli tomonlarini ishga solish uchun biznes modelini tanlaydilar⁶⁵.

Asosan, bankning biznes modeli oddiy: bu kredit berish va depozitlarni yig'ishdir. Banklar ommaga (yoki bank bo'lmagan raqobatchilarga!) juda o'xshash bo'lishi mumkin bo'lsada, aslida hammasi bir xil emas. Bu, ayniqsa, iqtisod asosan faoliyat, resurslar va tashkilotlarning ko'plab kombinatsiyalarini aks ettiruvchi ko'p sonli banklar tomonidan moliyalashtiriladigan Evropada to'g'ri keladi⁶⁶. Bankni modellashtirish va faoliyatini tahlil qilish banklar faoliyatini baholash va o'lchash uchun statistik, matematik va moliyaviy modellardan foydalanishni o'z ichiga oladi. Bu rentabellik, aktivlar sifati va kapitalning etarlicligini baholash uchun asosiy ko'rsatkichlarni tahlil qilishni o'z ichiga oladi, chunki biz samaradorlikning turli shakllarini baholash uchun ilg'or matematik usullardan foydalanamiz⁶⁷.

Moliyaviy modellashtirish moliyaviy tahlildagi eng qimmatli, ammo tushunarli bo'lmagan ko'nikmalardan biridir. Moliyaviy modellashtirishning maqsadi kompaniyaning kelajakdagi natijalarini bashorat qilish uchun buxgalteriya hisobi, moliya va biznes ko'rsatkichlarini birlashtirishdir⁶⁸.

Bank xizmatlari, kredit tashkilotlari va umuman bank tizimi o'rtasidagi raqobat muammosini hal qilish ayniqsa muhimdir. Bank tizimi va moliya bozorlari rivojlanishini takomillashtirish muammolaridan biri bu bozor munosabatlarining rivojlanish darajasidir. Bank xizmatlari bozori moliya bozorining ajralmas qismi bo'lganligi va aniq chegaralari bo'lmaganligi sababli u pul, valyuta va kapital bozorlari bilan kesishadi; iqtisodiyotning ushbu segmentlarida faoliyat ko'rsatadigan asosiy institutlarga tayanib, rivojlanish strategiyasini tuzish maqsadga muvofiqdir. Ushbu muassasalar moliya bozorida

⁶⁵ Rungporn Roengpitya. Bank business models. BIS Quarterly Review, December 2014.

⁶⁶https://www.eba.europa.eu/sites/default/files/document_library/1038860/Eurofi202022%20Business%20model.pdf

⁶⁷ <https://www.dundee.ac.uk/module/bu52009>

⁶⁸ <https://corporatefinanceinstitute.com/resources/financial-modeling/what-is-financial-modeling/>

faol ishlaydigan, bir vaqtning o'zida investorlar, emitentlar, brokerlar, dilerlar va hisob-kitob markazlari rolini bajaradigan banklardir⁶⁹.

Tijorat banklari faoliyatini matematik modellashtirish orqali raqobat ustunligini aniqlash konsepsiyasi asoslandi. Modellar orasida Salop, Xolstryom–Tirol, Monti–Klyayn, Kurno, Bertran va Daymond kabi yondashuvlar o'rganildi. Bu modellar orqali banklar o'rtasidagi raqobatning turli shakllari – monopolistik, oligopol va erkin raqobat holatlari tahlil qilindi.

Zamonaviy sharoitda bank tizimini o'rganish va bank ishini boshqarish matematik modellarsiz imkonsiz, ammo sanoqli mualliflarga bank tizimining rivojlanishini tavsiflovchi iqtisodiy va matematik modellarga e'tibor berishadi. Barcha modellar bir-biridan farq qiluvchi yo'nalishlarga ega va bankni mikro-modellashtirish darajasida ko'rib chiqadi, shu bilan birga uning moliya bozori bilan o'zaro aloqasi nuqtai nazaridan bank tizimining makromodelini yaratish zarur.

Birinchi marta bankning matematik nazariyasi Y. Edgeworth⁷⁰ tomonidan eslatib o'tilgan bo'lib, u optimallashtirish, ehtimollik, statistik, operatsiyalarni tadqiq qilishning muvozanat va muvozanat modellari, o'yin nazariyasi va boshqalarni o'z ichiga olgan. Bank faoliyati bilan bog'liq bo'lgan tashqi sharoitlar, shuningdek, uning ichida sodir bo'layotgan jarayonlar ko'pchilik tasodifiy xarakterga ega bo'lgan ko'plab omillar, sabablar, bog'liqliklar va qonuniyatlarning murakkab va noaniq o'zaro ta'sirining natijasidir.

Bank ancha murakkab tizimdir. Bu turli dinamik va ehtimollik xususiyatlariga ega bo'lgan moliyaviy oqimlar va mablag'larning sezilarli soni bilan bog'liq. Tizimning barqaror ishlashi iyerarxiya, tashqi (prudensial nazorat) va ichki tartibga soluvchilar va cheklashlar, qayta aloqa bilan ta'minlanadi. Bankni stoxastik oqimlar to'plami sifatida tavsiflashga yondashish bilan bog'liq usullar bu sohada o'zini yaxshi ko'rsatdi⁷¹. Quyida xulosa va takliflar:

1. Bank faoliyatini modellashtirishda matematik apparat tanlovi subyektiv va obyektiv omillarni hisobga olgan holda amalga oshirilishi zarur.

2. Bank tizimini mikro va makro darajada modellashtirish bir-birini to'ldiruvchi jarayon bo'lishi kerak.

3. Jahon amaliyotida qo'llanilayotgan Daymond, Xolstryom–Tirol, Monti–Klyayn, Kurno, Bertran va Salop modellari raqobat chegaralarini aniqlashda samarali vosita sifatida taklif etiladi.

4. Bank tizimidagi moliyaviy vositalarning harakati bo'yicha o'tkazilgan ekonometrik tahlillar "Bank-raqobat-model" konsepsiyasini ishlab chiqish uchun nazariy asos bo'lib xizmat qiladi.

⁶⁹ Рыкова И. Н. Банк тизими ва молия бозорлари муносабатини моделлаш. иқтисод фанлари доктори илмий даражаси учун автор. Ставропол давлат университети.-32 б.-2004 й.

⁷⁰ F. Y. Edgeworth. The Mathematical Theory of Banking. Journal of the Royal Statistical Society Vol. 51, No. 1 (Mar., 1888), pp. 113-127 (15 pages) Published By: Oxford University Press

⁷¹ <https://www.researchgate.net/publication/316067251>. Victor Selyutin. Model approaches to stress testing of banks and banking system: Modern trends and opportunities for improvement. February 2017 Finance and Credit 3(8):430-449. DOI:10.24891/fc.23.8.430

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THE ROLE OF INTERNATIONAL FINANCIAL INSTITUTIONS IN ADVANCING STRUCTURAL ECONOMIC COOPERATION AND FINANCIAL STABILITY IN UZBEKISTAN

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Economic development is closely tied to the growth of priority sectors; therefore, the allocation of foreign financial resources from international financial institutions should be based on a comprehensive assessment of their economic, geographic, scientific, technological, and innovative characteristics.

The rational allocation of financial resources mobilized from international financial institutions, along with the targeted deployment of their technical and advisory support to emerging sectors, aligns with the objectives and priorities outlined in President Shavkat Mirziyoyev's January 24, 2020 Address to the Oliy Majlis, within the framework of Uzbekistan's comprehensive socio-economic development.⁷²

In his work *The World Bank: Its First Half Century*, Professor Davesh Kapur of Johns Hopkins University notes that, among many countries, South Korea has utilized the financial resources of international financial institutions, particularly the World Bank Group, in a highly effective and productive manner.⁷³ From this perspective, the study examined South Korea's experience of economic cooperation with international financial institutions, which served as a basis for developing new directions of collaboration.

Taking these insights into account, strategies for allocating financial resources were formulated in accordance with the level of infrastructure development.

⁷² Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis // Xalq so'zi, January 25, 2020, No. 19 (7521)

⁷³ Kapur, D., Lewis, J. P., & Webb, R. (1997). *The World Bank: Its First Half Century*. Vol. 2. Brookings Institution Press, Washington D.C., p. 44.