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DIGITALISATION AS A STRATEGY AGAINST THE SHADOW ECONOMY: EVIDENCE, MECHANISM DESIGN AND 2030 SCENARIOS FOR UZBEKISTAN

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Abstract: This study examines how the development of the digital economy can be used as a systematic instrument for combating the shadow economy, using Uzbekistan in 2017–2025 as the empirical setting. The paper proposes an integrated methodological framework that links digital instruments — electronic identification, cashless QR/POS infrastructure, electronic invoicing, online cash registers and open-API data integration — to formalisation, tax-base expansion and tax-gap reduction; estimates the determinants of the shadow-economy indicator on a regional panel and on sectoral data using log-linear regressions with an instrumental-variable correction for endogeneity; decomposes the change in the volume of the informal and hidden economy; and forecasts its dynamics to 2030 with an ARIMA(0,1,2) model and three policy scenarios. The share of the informal and hidden economy in GDP fell from 45.6% in 2017 to 34.3% in 2024 and 26.9% in 2025, while its nominal volume grew 3.13-fold in 2017–2024; this growth is fully explained by nominal GDP growth, the decline in the share reduced the potential volume by 173.2 trillion UZS, and the rising share of the hidden component added 13.8 trillion UZS of new concealed activity. On the regional panel, the number of active small businesses (elasticity +1.63) and wholesale turnover (+0.12) raise the shadow-economy indicator, whereas foreign-trade turnover (−0.34) and retail turnover (−0.05) reduce it. The effect of ICT-services value added falls from +2.06 to +0.87 after instrumenting, implying that digital services reduce informality only when they are bound to compulsory electronic reporting. A three-stage organisational-economic mechanism centred on a Digital Tax Hub with AI/Big-Data risk scoring and a 2×2 digitalisation–informality matrix for regional prioritisation are proposed.

Key words: shadow economy; informal economy; digital economy; e-invoicing; tax gap; risk-based tax administration; panel regression; ARIMA; Uzbekistan.

Аннотация: В исследовании рассмотрены возможности использования развития цифровой экономики как системного инструмента противодействия теневой экономике на примере Узбекистана в 2017–2025 годах. Предложена методологическая рамка, связывающая цифровые инструменты — электронную идентификацию, безналичную инфраструктуру QR/POS, электронные счета-фактуры, онлайн-кассы и межведомственную интеграцию данных — с формализацией деятельности, расширением налоговой базы и сокращением налогового разрыва. На региональной панели и отраслевых данных оценены факторы теневой экономики, выполнено разложение изменения её объёма и построен прогноз до 2030 года на основе модели ARIMA(0,1,2) и трёх сценариев. Доля неформальной и скрытой экономики в ВВП снизилась с 45,6% в 2017 году до 34,3% в 2024 году и 26,9% в 2025 году; снижение доли уменьшило её потенциальный объём на 173,2 трлн сумов, а рост доли скрытой составляющей добавил 13,8 трлн сумов новой скрытой деятельности. Установлено, что цифровые услуги снижают неформальность лишь при их связи с обязательной электронной отчётностью. Предложен трёхэтапный организационно-экономический механизм с Цифровым налоговым центром, использующим риск-скоринг на основе искусственного интеллекта и больших данных.

Ключевые слова: теневая экономика, неформальная экономика, цифровая экономика, электронные счета-фактуры, налоговый разрыв, риск-ориентированное налоговое администрирование, панельная регрессия, ARIMA, Узбекистан.

INTRODUCTION

The shadow economy — economic activity that is deliberately concealed from, or structurally invisible to, the official statistical and tax systems — remains one of the most persistent constraints on fiscal capacity, fair competition and evidence-based policy in emerging economies. Model-based estimates for 158 countries indicate that in developing economies the shadow sector may reach 30–40% of GDP, and that the quality of institutions and the depth of digital payment systems are among the strongest correlates of its decline [1]. For Uzbekistan, a country that since 2017 has combined rapid liberalisation with the "Digital Uzbekistan – 2030" strategy [2] and a dedicated programme of measures to reduce the shadow economy [3], the question is no longer whether digitalisation matters, but through which channels, at what elasticities and with what institutional design it translates into measurable formalisation.

According to official statistics, the combined share of the informal and hidden economy in Uzbekistan's GDP fell from 45.6% in 2017 to 34.3% in 2024 and, by preliminary data, to 26.9% in 2025 [4; 5]. At the same time, the regional spread remains wide: in 2025 the indicator ranged from 13.1% of gross regional product (GRP) in Navoi region and 19.1% in Tashkent city to more than 43% in Surkhandarya, Khorezm, Namangan and Kashkadarya regions [6].

The purpose of this article is to improve the methodology of combating the shadow economy on the basis of digital-economy development. The specific objectives are: (1) to formalise a conceptual framework linking digital instruments to formalisation outcomes; (2) to estimate the determinants of the shadow-economy indicator across regions and sectors of Uzbekistan; (3) to decompose the 2017–2024 change in the volume of the informal and hidden economy; (4) to design a three-stage organisational-economic mechanism with a Digital Tax Hub as its core; and (5) to build forecasts and scenarios to 2030.

LITERATURE REVIEW

The literature on measuring hidden activity is mature but fragmented. Direct methods (surveys, tax audits) are precise but partial. Indirect methods — the currency-demand approach [7], electricity-consumption and national-accounts discrepancy methods [8] and the Multiple Indicators–Multiple Causes (MIMIC) family [9; 10] — capture macro-level magnitudes but depend heavily on calibration assumptions. More recent work stresses that platform, gig and crypto-asset activity escapes these approaches, and that transaction-level digital data (e-invoices, online cash registers, QR/POS acquiring) open a qualitatively new measurement regime [11; 12].

A second strand studies the behavioural response of firms to digital tax administration — third-party reporting, pre-filled returns and real-time invoicing. D. Pomeranz showed, using a randomised experiment in Chile, that the paper trail created by the value added tax makes firms self-enforce compliance in transactions observed by a counterparty [13]. H. Fan and co-authors found that the computerisation of VAT invoices in China substantially increased tax collection, which shows the fiscal potential of invoice-level digital control [14]. R. Awasthi and M. Engelschalk emphasised that the tax system can both stimulate and enforce formalisation when compliance costs for small firms are lowered alongside stronger control [12].

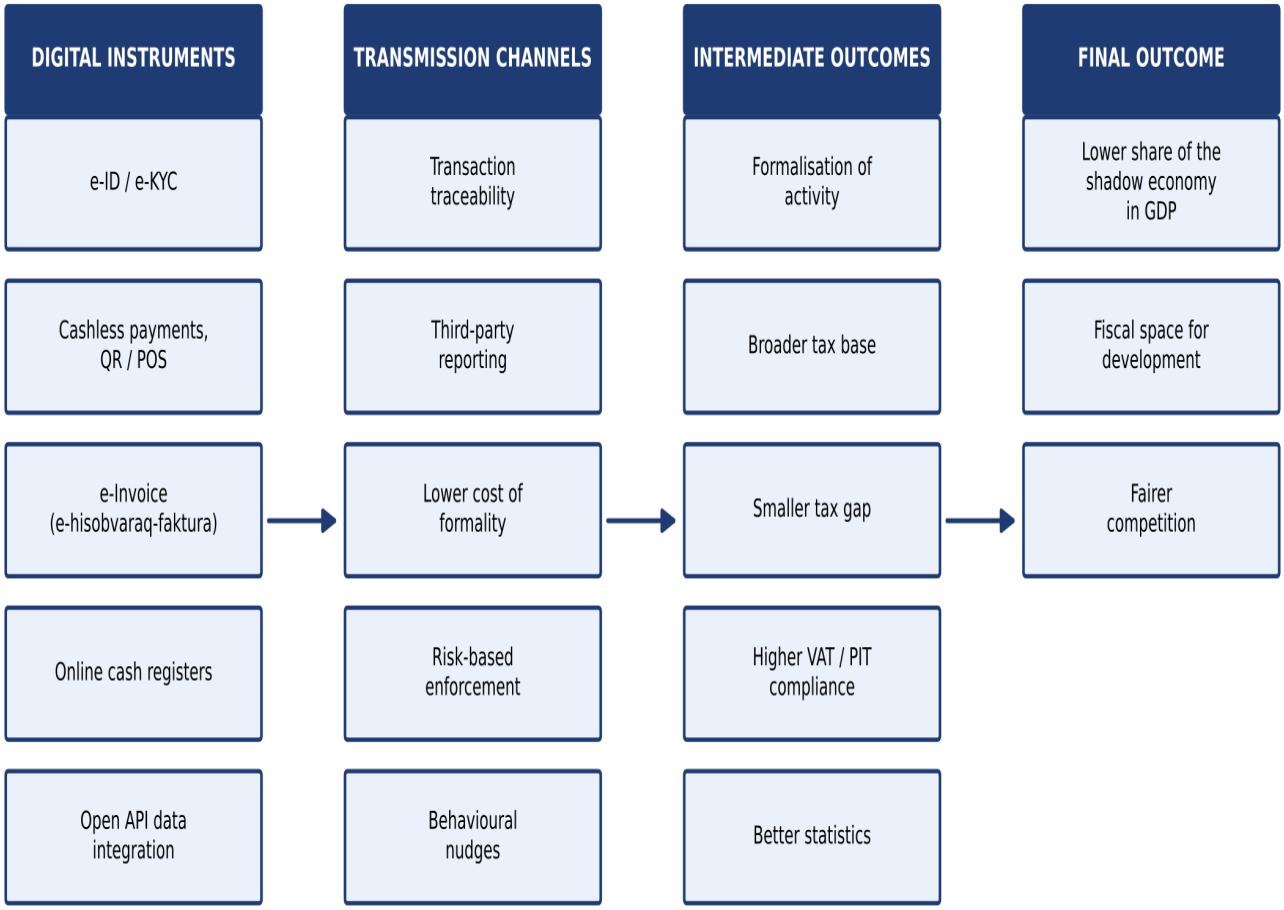
The author's earlier studies examined the genesis of the digital economy [15], methodological aspects of assessing the hidden economy in a digital setting [16], the role of digital technologies in combating the hidden economy [17], foreign experience in this field [18] and the policy levers available to the state [19], and the results were generalised in a monograph [20]. Three gaps nevertheless remain. First, country studies rarely connect the micro-instruments of digitalisation to a single, auditable chain from data integration to tax-gap outcomes. Second, the regional dimension within a country is seldom modelled. Third, the coexistence of a falling relative share and a rising absolute volume of informal activity is usually noted but not decomposed, which leads to conflicting policy readings.

RESEARCH METHODOLOGY

Conceptual framework

The framework (Figure 1) treats digitalisation not as a single variable but as a bundle of instruments that act through distinct transmission channels. Electronic identification (e-ID/e-KYC) establishes the legal identity of economic agents; cashless payments and QR/POS infrastructure create transaction traceability; electronic invoicing and online cash registers generate third-party-reported, real-time records; and open-API integration allows tax, customs, banking, cadastral and statistical data to be linked. These channels lower the cost of being formal, raise the probability of detection and enable risk-based rather than blanket enforcement. The intermediate outcomes are formalisation of activity, a broader tax base and a smaller tax gap; the final outcome is a lower share of the shadow economy in GDP.

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Source: author's conceptual framework (Rakhmanov, 2026).

Figure 1. Conceptual framework: from digital instruments to a lower shadow-economy share

Source: developed by the author.

Data

The empirical base covers 2017–2025. The national accounts data of the National Statistics Committee of the Republic of Uzbekistan provide GDP, GRP and the official estimates of the informal economy (unregistered activity of households and individuals) and the hidden economy (activity deliberately concealed to evade taxes), both in volume and as a share of GDP and GRP [4; 21; 6; 22]. In this article the sum of the two components — the informal and hidden economy — is used as the main indicator of the shadow economy. Data on ICT-services value added, e-commerce and trade turnover and small-business registers, as well as data on tax and e-invoice coverage and cashless payments, complement these series. The regional panel comprises the Republic of Karakalpakstan, 12 regions and Tashkent city. Sectoral series cover agriculture, industry, construction and services. All monetary variables are expressed in billions of UZS and log-transformed before estimation; shares are in per cent of GDP or GRP.

Measurement and classification of estimation methods

The study systematises the available approaches into direct (surveys, audits), indirect (currency demand, electricity consumption, income–expenditure discrepancy) and model-based (MIMIC, structural) methods, and distinguishes “top-down” macro-discrepancy estimates from “bottom-up” transaction-level estimates. Because no single method is universal, the paper uses the official estimate as the dependent indicator and complements it with digital transaction indicators (e-invoice coverage, share of cashless turnover, ICT-services value added) as explanatory variables. Table 1 summarises the comparative properties of the methods that inform this choice.

Table 1. Comparative properties of shadow-economy estimation methods

Approach	Core logic	Strengths	Limitations in a digital economy
Direct (surveys, audits)	Observe agents and transactions	High granularity; sectoral detail	Under-reporting; costly; non-random coverage
Currency demand	Excess cash ∝ hidden transactions	Long series; simple	Cashless shift breaks the cash–informality link
Electricity / physical input	Output–input discrepancy	Independent of tax data	Energy efficiency and services bias
MIMIC / structural	Latent variable from causes and indicators	Multi-factor; cross-country	Sensitive to calibration; relative index only
Transaction-level digital (e-invoice, online cash register, QR/POS)	Compare reported with observed flows	Real time; firm level; enables risk scoring	Requires data integration and legal mandate; platform/gig segments

Source: compiled by the author on the basis of [7; 8; 9; 11].

Econometric strategy

Three complementary models are estimated. First, a regional panel regression of the log of the shadow-economy indicator on log wholesale turnover, log retail turnover, log number of active small-business entities and log foreign-trade turnover, with region fixed effects. Second, a sectoral log-linear model selected by information criteria from the full indicator set; the preferred specification is

$$\ln Y = 7.033 + 0.14 \cdot \ln X_3 + 0.83 \cdot \ln X_9 + \varepsilon, \quad F = 865.38\ (p < 0.001), \quad R^2 = 0.996, \quad DW = 2.15, \qquad (1)$$

where Y is the sectoral shadow-economy volume and X_3 and X_9 are the e-commerce turnover and small-business activity indicators from the indicator set. Third, because the coefficient on ICT-services gross value added (+2.06) raised an endogeneity concern — digital services may expand precisely where unrecorded activity is large — a Durbin–Wu–Hausman test was run (statistic 3.14, p = 0.076), and the equation was re-estimated by instrumental variables using the number of mobile-internet subscribers and fibre-optic network density by region as instruments. Diagnostics include heteroskedasticity and serial-correlation tests, variance-inflation factors and the Hausman fixed- versus random-effects test.

Decomposition and regional typology

To reconcile the falling relative share with the rising absolute volume, the 2017–2024 change in volume V = s·GDP is decomposed into a scale component attributable to nominal GDP growth (holding the 2017 share constant) and a share component reflecting the change in the share itself:

$$\Delta V = s_0 \cdot (GDP_1 - GDP_0) + (s_1 - s_0) \cdot GDP_1, \qquad (2)$$

where s is the share of the informal and hidden economy in GDP and the indices 0 and 1 denote 2017 and 2024. The share component is further split between the informal and the hidden components. Regions are then classified in a 2×2 matrix by the share of the informal and hidden economy in GRP and a digitalisation index (ICT-services value added plus e-invoice coverage), which yields a transparent rule for prioritising digital investment.

Forecasting

The dynamics of the estimated shadow-economy volume are modelled with ARIMA processes. Candidate specifications — ARIMA(0,1,1), (1,2,1), (2,2,1), (2,1,1), (2,2,0) and (0,1,2) — were compared on AIC/BIC, residual stationarity and the Ljung–Box statistic; ARIMA(0,1,2) was retained. Point forecasts for 2025–2027 are reported, and three 2030 scenarios (pessimistic, digital, optimistic) are built on explicit assumptions about the pace of digitalisation and formalisation measures.

ANALYSIS AND RESULTS

Dynamics and regional heterogeneity of the informal and hidden economy

Between 2017 and 2025 the share of the informal and hidden economy in Uzbekistan's GDP declined from 45.6% to 26.9% (34.3% in 2024) [4]. The decline was driven by the informal component, whose share fell from 38.6% to 26.5% in 2024 and 19.0% in 2025, whereas the share of the hidden component remained in the range of 6.5–7.9% and stood at 7.9% in both 2024 and 2025 [21]. The decline coincides with the introduction of mandatory electronic invoicing, online cash registers, a sharp expansion of cashless payments and the simplification of tax regimes for small businesses.

The national average conceals strong regional dispersion (Figure 2). In 2025 the lowest shares were recorded in Navoi region (13.1%), dominated by industrial and mining projects with strong administrative control, and in Tashkent city (19.1%), consistent with the deepest penetration of electronic payments and reporting.

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Surkhandarya (46.2%), Khorezm (45.1%), Namangan (44.1%), Kashkadarya (43.1%), Jizzakh (41.2%) and Samarkand (40.1%) regions remain above 40%, reflecting unrecorded activity in agriculture, retail trade, services and micro-entrepreneurship [6]. All regions reduced the indicator compared with 2017, the largest reductions being in Andijan (by 28.6 percentage points), Navoi (24.1 p.p.) and Tashkent region (23.1 p.p.). At the same time, the share of the hidden component in GRP increased in several regions — in Namangan from 9.2% to 15.6%, in Samarkand from 6.0% to 11.3%, in Khorezm from 8.0% to 11.7% and in Fergana from 10.0% to 13.1% — which points to unregistered domestic trade and incomplete reporting in small business [6].

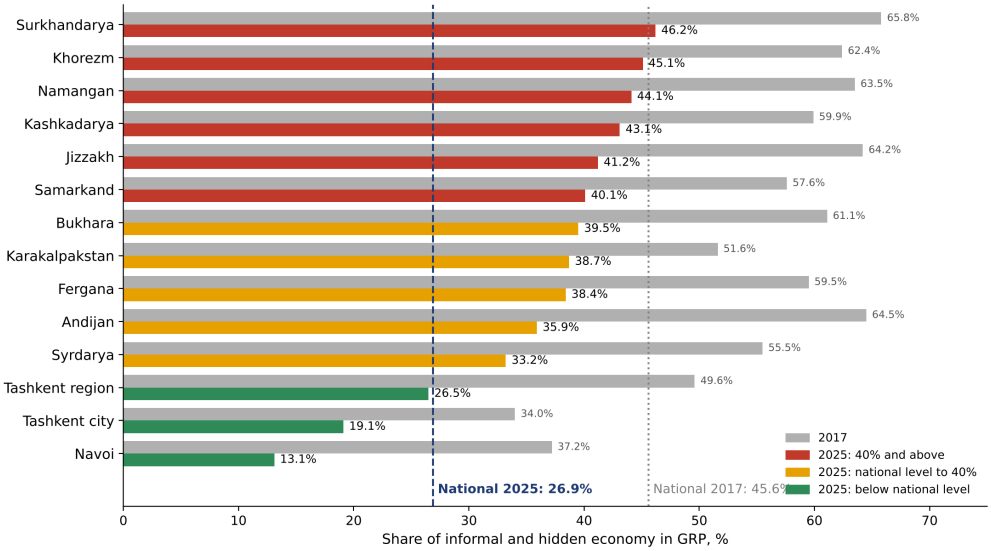


Figure 2. Share of the informal and hidden economy in GRP by region, 2017 and 2025, %

Source: compiled by the author on the basis of [6]; 2025 data are preliminary.

Decomposition of the “falling share – rising volume” paradox

While the relative share fell by 11.3 percentage points between 2017 and 2024, the absolute volume of the informal and hidden economy rose from 168,634.9 bln UZS to 527,360.9 bln UZS, i.e. 3.13-fold [4]. Decomposition (2) based on nominal GDP of 369,612.8 bln UZS in 2017 and 1,535,431.7 bln UZS in 2024 [22] shows that, had the 2017 share been preserved, nominal GDP growth alone would have increased the volume by 531.9 trln UZS, to 700.5 trln UZS (Figure 3). The reduction of the share subtracted 173.2 trln UZS from this counterfactual level. This net effect consists of two opposite movements: the decline in the share of the informal component reduced the volume by 187.0 trln UZS, while the increase in the share of the hidden component from 7.0% to 7.9% of GDP added 13.8 trln UZS of new, deliberately concealed activity [21]. Among the sectors, the share of the hidden economy in services remained high (13.6% in 2017 and 13.9% in 2024), whereas in construction it declined from 12.0% to 7.8% and in industry from 4.2% to 3.7%.

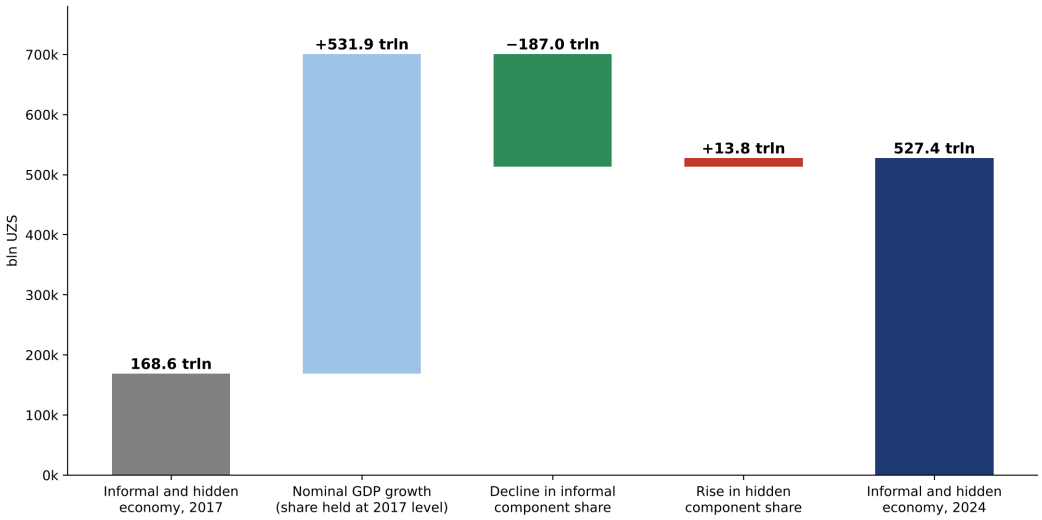


Figure 3. Decomposition of the change in the volume of the informal and hidden economy, 2017–2024, bln UZS

Source: author’s calculations on the basis of [4; 21; 22].

The reading for policy is twofold. In relative terms the reforms are effective: they have reduced the potential volume of the informal and hidden economy by more than 173 trln UZS. In absolute terms the fiscal stake remains large, and the deliberately concealed segment, concentrated in services and digitally intermediated activity, is growing faster than GDP. This indicates that digital control displaces part of hidden activity towards segments that are not yet covered by electronic reporting, and it justifies extending e-reporting obligations to platforms and gig intermediaries.

Determinants of the shadow economy: regional panel and sectoral models

The regional panel yields economically interpretable elasticities (Figure 4a). A one-per-cent increase in the number of active small-business entities is associated with a 1.63% increase in the shadow-economy indicator — the strongest effect in the model — indicating that the rapid growth of micro-firms outpaces their integration into reporting systems. Wholesale turnover has a small positive elasticity (+0.12), consistent with cash-intensive intermediate trade. Foreign-trade turnover (−0.34) and retail turnover (−0.05) reduce the indicator: external trade is documented through customs and banking channels, and retail is the segment where online cash registers and QR/POS acceptance have advanced furthest. All coefficients are statistically significant at conventional levels, and the fixed-effects specification is preferred by the Hausman test.

The sectoral model confirms that informality is formed by different factors in different sectors, with ICT and e-commerce indicators exerting both direct and indirect effects. The preferred specification explains 99.6% of the variance ($F = 865.38$, $p < 0.001$) with no residual autocorrelation ($DW = 2.15$). The initially estimated coefficient of ICT-services value added (+2.06), however, was implausibly large. The Durbin–Wu–Hausman test rejected exogeneity at the 10% level, and the IV re-estimation reduced the coefficient to +0.87 (Figure 4b). The correction carries a substantive message: the expansion of digital services does not reduce informality by itself; it does so only when digital activity is bound to compulsory accounting and reporting obligations. Diagnostic results are summarised in Table 2.

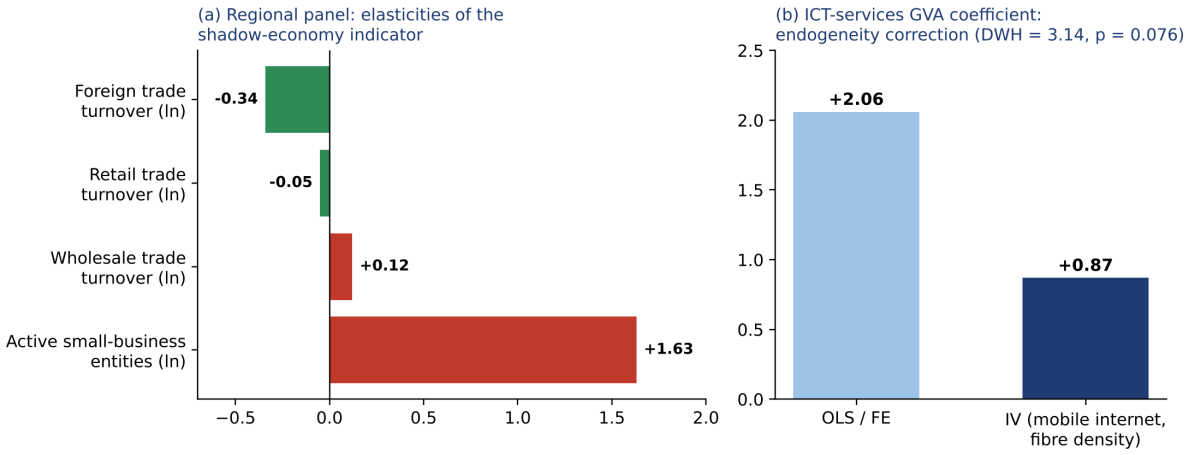


Figure 4. (a) Elasticities from the regional panel model; (b) correction of the ICT-services coefficient for endogeneity

Source: author's estimates.

Table 2. Diagnostic tests of the panel and sectoral regression models

Diagnostic	Statistic	p-value / criterion	Interpretation
Overall significance (sectoral model)	$F = 865.38$	$p < 0.001$	Model jointly significant
Goodness of fit	$R^2 = 0.996$	—	High explanatory power
Serial correlation	$DW = 2.15$	in [1.5; 2.5]	No first-order autocorrelation
Endogeneity of ICT-services GVA	$DWH = 3.14$	$p = 0.076$	Endogeneity at 10% level → IV used
IV re-estimation (ICT coefficient)	+2.06 → +0.87	instruments: mobile internet, fibre density	Effect conditional on reporting linkage
Fixed vs random effects (regional panel)	Hausman test	FE preferred	Region-specific heterogeneity controlled

Source: author's estimates.

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The IV result reconciles two seemingly opposite literatures: one that treats digitalisation as inherently formalising, and one that finds ICT-intensive sectors to be fertile ground for unrecorded activity. The resolution is institutional: digital services formalise the economy when they are coupled with compulsory, machine-readable reporting. This echoes international experience — universal e-ID and data exchange in Estonia, simplification combined with electronic administration in Georgia, cash-receipt incentive schemes in the Republic of Korea and SAF-T with e-invoicing in Romania — where compliance gains followed the pairing of infrastructure with legal mandates and incentives rather than infrastructure alone [11]. The strong positive elasticity of small-business counts (+1.63), in turn, shows that the surge in registered micro-firms, which is a success of liberalisation, has outrun the capacity of reporting systems.

Regional typology: the digitalisation–informality matrix

Combining the share of the informal and hidden economy in GRP with the digitalisation index places each region in one of four quadrants (Figure 5). Jizzakh, Surkhandarya, Bukhara, Khorezm and Kashkadarya regions fall into the “red zone” of high informality and low digitalisation, and first-tier digitalisation resources for 2025–2027 should be directed to these regions. Given the 2025 data, Namangan and Samarkand regions, where the indicator exceeds 40% and the hidden component is growing, also require priority attention. Tashkent city and Navoi region occupy the “green zone” and are the natural pilots for advanced AI/Big-Data risk scoring. The two amber quadrants call for differentiated instruments: where digital services are expanding faster than reporting obligations, the priority is to link services to mandatory e-reporting; where informality is low because of administrative control rather than digital depth, the priority is to lock in gains with infrastructure.

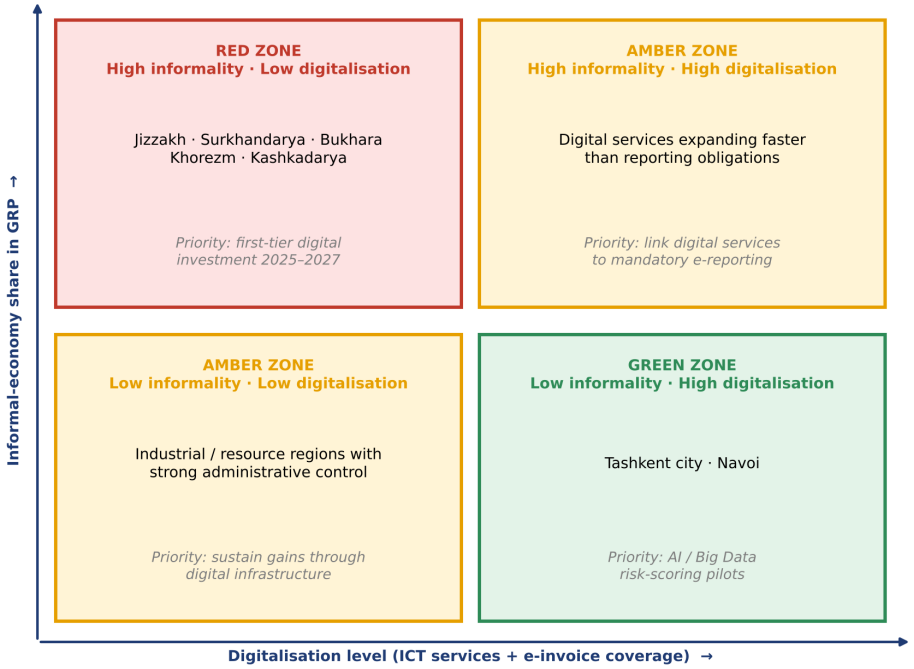


Figure 5. Digitalisation–informality quadrant matrix of Uzbekistan’s regions

Source: author’s classification.

The three-stage mechanism and the Digital Tax Hub

On the basis of the estimates, a three-stage organisational-economic mechanism is proposed (Figure 6). Stage 1 completes the regulatory and legal base — uniform legal status of electronic documents, mandatory e-invoicing and online cash registers for all VAT payers, and simplified regimes that make formality cheaper than concealment for micro-firms. Stage 2 builds the digital infrastructure — 95% internet coverage, universal QR/POS acceptance, e-ID/e-KYC for all residents and open APIs between agencies. Stage 3 introduces the Digital Tax Hub (DTH), a single platform for monitoring hidden activity, organised in three layers: a data layer (e-invoices, online cash registers, QR/POS, bank and customs data, e-ID, cadastre); an analytics and risk layer (AI anomaly detection, Big-Data record linkage, risk scoring per taxpayer, tax-gap estimation); and an action layer (risk-based audits, automated notices, differentiated incentives for formalisation and policy feedback). This architecture develops the risk-based segmentation of taxpayers envisaged by Decree UP-6098 [3]. The key risk indicators embedded in the DTH are a high share of cash receipts, breaks in e-invoice chains, inconsistencies between electronic reports and third-party data, and low historical tax discipline; each indicator

carries a threshold and a weight, producing a composite risk score that directs inspections towards high-risk entities and away from compliant ones, in line with the evidence that third-party reporting and targeted audits are more cost-effective than blanket inspections [13; 11].

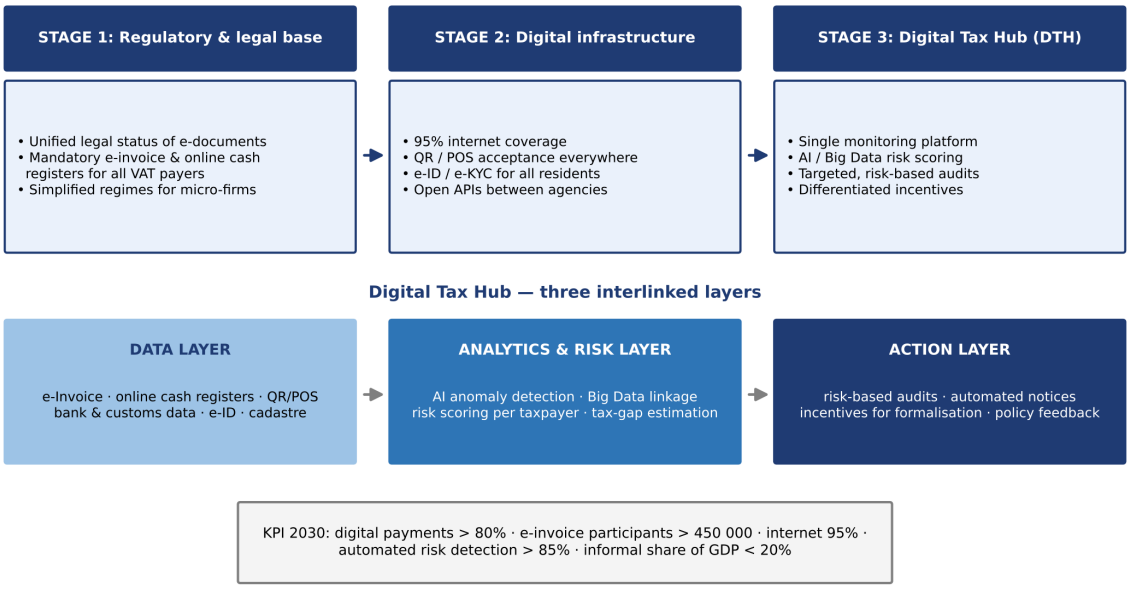


Figure 6. Three-stage organisational-economic mechanism and the layered architecture of the Digital Tax Hub
Source: developed by the author.

Table 3. KPI system of the three-stage mechanism, 2025–2030

Key performance indicator	Baseline (2024–2025)	Target 2030	Owner / data source
Share of digital (cashless) payments in retail turnover	growing rapidly	> 80%	Central Bank
Entities participating in the e-invoice system	expanding	> 450,000	Tax Committee
Internet coverage of population	high urban / uneven rural	95%	Ministry of Digital Technologies
Share of high-risk entities detected automatically by DTH	pilot stage	> 85%	Digital Tax Hub
Share of the informal and hidden economy in GDP	26.9% (2025)	< 20%	National Statistics Committee

Source: developed by the author.

Forecasts to 2030 and policy scenarios

Among the candidate ARIMA specifications, ARIMA(0,1,2) provided the best fit; its estimated equation is

$$\Delta y_t = 145.62 + 0.41 \cdot \varepsilon_{t-1} + 0.56 \cdot \varepsilon_{t-2} + \varepsilon_t, \qquad (3)$$

with stationary residuals and autocorrelations inside the 95% confidence band, indicating robustness to random shocks. Abstracting from exogenous shocks, the model projects the sectoral shadow-economy volume at 10,980 bln UZS in 2025, 12,132 bln UZS in 2026 and 13,284 bln UZS in 2027 (Figure 7a). Because nominal GDP grows faster, this trajectory is consistent with a continued decline of the relative share. Three scenarios are then defined for 2030 (Figure 7b). In the pessimistic scenario — reforms continue to rely on penalties and inspections, digitalisation is limited and public oversight weak — the share may return to 30–32%. In the digital scenario — simplified taxation, full electronic settlement, strengthened local-government and public oversight — the share falls to 20–22%. In the optimistic scenario of full technological and institutional modernisation — 100% digitalisation of signatures, e-invoices, reporting and labour contracts, with economic activity conducted only through digital services — the share can reach about 15%. The spread between scenarios is almost entirely an institutional variable: the degree to which digital services are made mandatory, interoperable and incentive-compatible.

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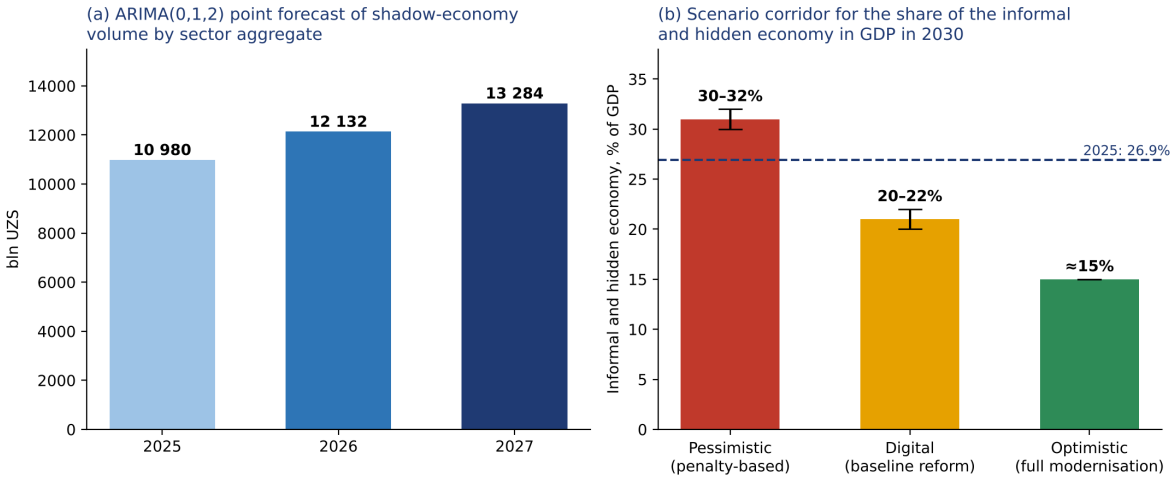


Figure 7. (a) ARIMA(0,1,2) forecasts of shadow-economy volume, 2025–2027; (b) 2030 scenarios for the share of the informal and hidden economy in GDP

Source: author's calculations.

The results should be interpreted taking into account that the dependent indicator is the official estimate, which itself embodies methodological assumptions, that the 2025 data are preliminary, that the panel is short and that the ARIMA forecasts are univariate. Firm-level e-invoice and QR/POS microdata will allow tax gaps to be estimated directly and the DTH risk indicators to be tested out of sample.

CONCLUSIONS AND RECOMMENDATIONS

Digitalisation reduces the shadow economy through identifiable channels — traceability, third-party reporting, lower cost of formality and risk-based enforcement — and these channels can be measured and managed as a single chain from data integration to tax-gap outcomes.

In Uzbekistan the share of the informal and hidden economy in GDP fell from 45.6% in 2017 to 34.3% in 2024 and 26.9% in 2025. The 3.13-fold growth of its nominal volume in 2017–2024 is fully explained by nominal GDP growth; the decline in the share reduced the potential volume by 173.2 trln UZS, while the rising share of the hidden component added 13.8 trln UZS of new concealed activity, concentrated mainly in services.

Regionally, small-business proliferation (+1.63) and wholesale trade (+0.12) raise the shadow-economy indicator, while foreign trade (−0.34) and retail trade (−0.05) lower it; after instrumenting, the ICT-services effect is +0.87, confirming that digital services formalise the economy only when tied to compulsory electronic reporting.

On this basis the following is recommended: to implement the three-stage mechanism — legal base, digital infrastructure and the Digital Tax Hub with AI/Big-Data risk scoring — with the KPI system set out in Table 3; to extend mandatory e-reporting to online platforms and gig intermediaries, where new concealed activity is concentrated; to direct first-tier digital investment to the regions of the red zone and to Namangan and Samarkand regions, while piloting advanced analytics in Tashkent city and Navoi region; and to lower compliance costs and introduce graduated incentives for micro-firms. Under the digital scenario these measures make it possible to bring the share of the informal and hidden economy to 20–22% of GDP by 2030, and to about 15% under full technological and institutional modernisation.

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