PEMPAL

TCOP Treasury Community of Practice

PEMPAL Treasury Community of Practice (TCOP)

TCOP Plenary Meeting 2025

Modernizing and Digitalizing Treasury Operations

Tashkent, Uzbekistan

October 13-16, 2025

EVENT REPORT

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Introduction & Opening

On October 13 - 16, 2025, PEMPAL Treasury Community of Practice (TCOP) held the Annual Plenary Meeting in Tashkent, Uzbekistan. The main objective of the plenary was to discuss the latest trends in modernization and digitalization of treasury operations.

The event was hosted by the Ministry of Economy and Finance and the State Treasury Committee of Uzbekistan and was attended by over 90 participants, including over 70 officials from 18 TCOP member countries.[1] Representatives of the Korean Fiscal Information Service (KFIS) joined the meeting as guest speakers. A representative of the EU Delegation to Uzbekistan joined several sessions of the meeting, and a representative of OECD contributed to the plenary agenda remotely. The meeting was facilitated by the World Bank team.[2]

The meeting was opened by **Gulnora Rakhimova, Deputy Minister of Economy and Finance of Uzbekistan**. She welcomed the participants and pointed out the role of the treasury in securing fiscal sustainability and highlighted the potential of digital technology, including AI, in improving the transparency of financial flows and preventing violations and fraud. She praised the role of PEMPAL as a platform providing multiple opportunities for peer-to-peer learning and underscored the high relevance of the event agenda to the current efforts of moving to a smart treasury in Uzbekistan.

Abdulaziz Khaydarov, Chairman of the Treasury Service Committee of Uzbekistan, welcomed guests and noted that the TCOP Plenary in Tashkent was not just another conference, but was a platform for exchanging experience among over 70 practitioners from around 20 European and Asian countries. He thanked the leadership of the Ministry of Economy and Finance of Uzbekistan and the World Bank for their support in organizing this event in Tashkent.

Arman Vatyan, PEMPAL Task Team Leader, World Bank, pointed out that Uzbekistan has been an active member of the PEMPAL family. He praised the impressive progress achieved by the country in PFM reforms and thanked the hosts for their readiness to share their experiences with other PEMPAL members and their amazing hospitality. Arman highlighted that Uzbekistan has evolved from being a member of PEMPAL to becoming a donor to the network and thanked the Ministry of Economy and Finance for its continuous support to PEMPAL development.

Aynura Bakaybaeva, Head of Division on Methodology for Gender and Green Budgeting, State Budget Policy Department and Chair of PEMPAL Budget COP Executive Committee, welcomed all plenary participants to Tashkent. She noted that TCOP and BCOP were very close communities and extended best wishes for fruitful discussions during the event.

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[1] Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Croatia, Georgia, Hungary, Kazakhstan, Kyrgyz Republic, Moldova, Montenegro, North Macedonia, Romania, Serbia, Tajikistan, Türkiye, Turkmenistan, and Uzbekistan.

[2] The team comprised Arman Vatyan (PEMPAL Task Team Leader), Fabienne Mroczka (TCOP Resource Team Leader), Galina Kuznetsova (TCOP Resource Team member), Charles Blanco (Sr. Public Sector Specialist), Khuram Farooq (Sr. Public Sector Specialist), Mark Silins (TCOP Thematic Advisor), and Elena Dobrolyubova (TCOP Resource Team member). Nurgul Tatybekova, Zilola Yusupova, and Durdona Umarova (Tashkent Country Office) joined the event in Tashkent. Mingul Seitkazieva and Mikaela Stepanyan (PEMPAL Secretariat) provided logistical support to the event.

Fabienne Mroczka, TCOP Resource Team Leader, welcomed the participants on behalf of the Resource Team, thanked the Ministry of Economy and Finance and the Treasury Service Committee for inviting TCOP to Uzbekistan, outlined the main objectives of the event, and introduced the participants and the event agenda.

Nazim Gasimzade, Head of State Treasury Agency of Azerbaijan and TCOP ExCom Chair, thanked the hosts for organizing the event in Tashkent and shared the progress in TCOP activities since the last Plenary meeting held in Belgrade in June 2024 *(Fig. 1)*.

TCOP Face-to-Face Events

- **Nov 2024: Thematic Meeting in Tirana** (~60 participants from 17 countries)
- **March 2025: TCOP Thematic Day in Vienna** (~40 participants from 17 countries)

PEMPAL CROSS-COP Events

- **Jul 2024: PEMPAL Cross-COP Leadership Meeting** (Vienna, Austria)
- **March 2025: PEMPAL Whole-of-Network Plenary** (Vienna, Austria)

Virtual Events

- **5 virtual thematic events** covering most TCOP thematic areas
- Communicating **results of KPs & thematic surveys** (Optimal Coverage of TSA, CCC Note)
- **Sharing the latest reform progress** (Georgia, Romania) and **impact of reforms** (Azerbaijan, Georgia, Kazakhstan, Tajikistan & Türkiye)

Knowledge Products

- **The Role of the Cash Coordination Committee*** (Jul 2025)
- **Measuring Cash Management Performance: Case of Türkiye** (March *2025*)
- **Measuring Treasury Performance in PEMPAL countries*** (Jan *2025*)

* *KPs based on TCOP thematic surveys*

Fig. 1: Overview of TCOP Activities since Belgrade

Since the Belgrade Plenary, TCOP conducted 8 events (3 face-to-face meetings and 5 virtual sessions) attended by over 370 PFM practitioners from 19 PEMPAL countries, contributed to two cross-COP events, carried out 2 thematic surveys, and published 3 knowledge products (KPs). TCOP activities are highly rated by the community members: the average satisfaction rate is 4.8 points out of 5 for face-to-face events and 4.6 points for virtual events. **98%** of TCOP members rate the quality of COP KPs as 'good' or higher. **Over two-thirds** of TCOP members use KPs and other TCOP materials frequently or all the time.

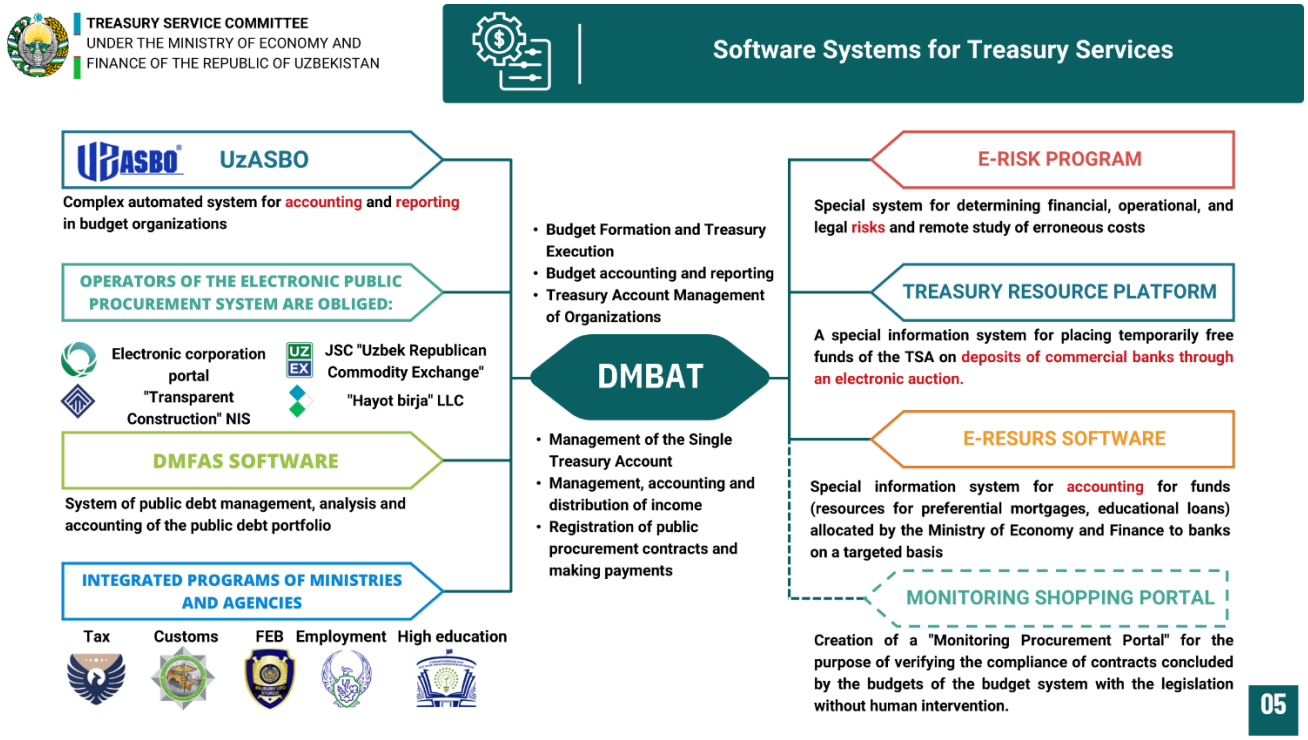
Furthermore, TCOP activities have made a significant impact on treasury development across the region. In 2018-2024, **85% of TCOP member countries (17 out of 20) have implemented** treasury reforms and treasury development measures based on the knowledge gained through PEMPAL. As national treasuries face new challenges, TCOP continues to play a crucial role in supporting its members in their further reform efforts. In the coming year, TCOP plans to hold two face-to-face events, a thematic event in February and a Plenary meeting in autumn in Baku. **Nazim** noted that the Ministry of Finance of Azerbaijan plans to allocate USD 120 thousand to co-finance the next plenary and urged other delegations to consider possibilities to provide financial support to PEMPAL.

1 Experience of Uzbekistan in Developing Treasury Operations

1.1 Overview of Treasury Development, Strategic Directions, and Upcoming Reforms

In his first presentation, **Abdulaziz Khaydarov** provided an overview of treasury development and upcoming reforms in Uzbekistan. For the past two decades, the treasury of Uzbekistan has evolved from a pilot in selected regions to a large modern organization serving about 9.6 thousand clients, including central and local governments, budget organizations, and some state-owned enterprises (SOEs). Since 2016, all budget revenues have been consolidated on the TSA, and in 2018, the Treasury moved to more active cash management by using auctions for temporary investment of TSA balances. In 2024, interest revenues from deposits earned by the Treasury accounted for US$80.5 million.

Digitalization has been an important driver in treasury evolution. By 2024, 98 percent of treasury payments were based on electronic documents and 55 percent of contracts were registered automatically. The integration of the DMBAT system *(Fig. 2)*, with a range of other systems including UzASBO (automated system for accounting), public procurement platforms, public debt, risk management, tax and customs, has enabled the Treasury to streamline business processes, drastically reduce arrears, and introduce the *green corridor* regime for selected payments.



Source: presentation by A. Khaydarov at the TCOP Plenary Meeting, October 13, 2025.

Fig. 2: Integration of FMIS with Other Information Systems in Uzbekistan

Further development of the treasury service system in Uzbekistan focuses on four strategic directions:

- Implementing a **digital treasury system**, which involves the introduction of the *Green Corridor* principles in payment processing (currently applied to payroll and utility payments and based on automatic verification by DMBAT and UzASBO systems), further digitalization of the contract registration process, and using the potential of AI in treasury business processes,

- Strengthening **cash management** through establishing an Interagency Committee on Liquidity Management, improving the methodology for determining the cash buffer, further extending the TSA based on the outcomes of the sectorization process, and broadening the range of investment instruments used by the treasury (including the use of repo operations),
- Developing a **risk mitigation system**[3], including expanding the capabilities of automatic risk detection and implementing preventive control measures to reduce operational risks in procurement and payment operations, such as developing a risk register and implementing AI in the risk management area, and
- **Centralizing the functions of budget organizations**, including public procurement, accounting, and the calculation of payroll.

Optimizing and digitalizing payment processes provide a basis for optimizing treasury's organizational structure. Currently, the treasury in Uzbekistan operates at three levels (central treasury, regional, and local offices). Process automation has already enabled the Treasury Service Committee to reduce the number of local office staff by 178. It is expected that by the end of 2026, optimization would affect 416 more staff, and by 2027, local treasury offices would be closed, with the remaining functions transferred to the regional level.

The presentation prompted active discussion. **Rakhat Tokbayev, Kazakhstan,** inquired about the conditions for extending treasury services to SoEs, the approach used for covering extrabudgetary funds by the TSA, and the distribution of roles on placing temporarily available funds between the treasury and spending units. **Nazim** asked about the difference between the interest rate earned by the Treasury on temporary deposits of the idle TSA balance and the market rate. **Abdulaziz** clarified that SoEs that were transferred to the treasury had to close their accounts in commercial banks. The treasury controls applied to SoEs are somewhat lighter than those applied to budget organizations. For instance, payment transactions of budget organizations are controlled for the correct application of budget expenditure items, whereas SoEs' expenditures are controlled against a broader classification (types of expenditure groups, i.e., salary, construction works, etc.). However, the treasury controls are applied to both budget and non-budget funds. So far, only non-market SoEs have been included in the TSA, including over 20 extrabudgetary funds. Abdulaziz added that the treasury may invest all funds in the TSA (except for the minimal buffer intended to cover primary needs), whereas budget organizations may use the auction system for investing special funds received from paid services, fines, or duties. Commercial banks are obliged to offer interest rates not lower than the Central Bank refinancing rate, which is currently 14 percent.

1.2 PFM Reforms in Uzbekistan

Bekzod Ulugov, Head of Division, State Budget Policy Department, Ministry of Economy and Finance of Uzbekistan, provided a detailed overview of PFM reforms. For the past six years, PFM in Uzbekistan has undergone significant modernization (Table 1). In addition, significant progress has been achieved in adopting IPSAS (as of 2025, 17 budget accounting standards have been developed and implemented based on the IPSAS) and implementing GFSM 2014 standards. Uzbekistan's progress in PFM reforms has been acknowledged in the recent PEFA assessment[4], which documented visible improvements in increasing public finance transparency, budget reliability, as well as budget execution and internal audit.

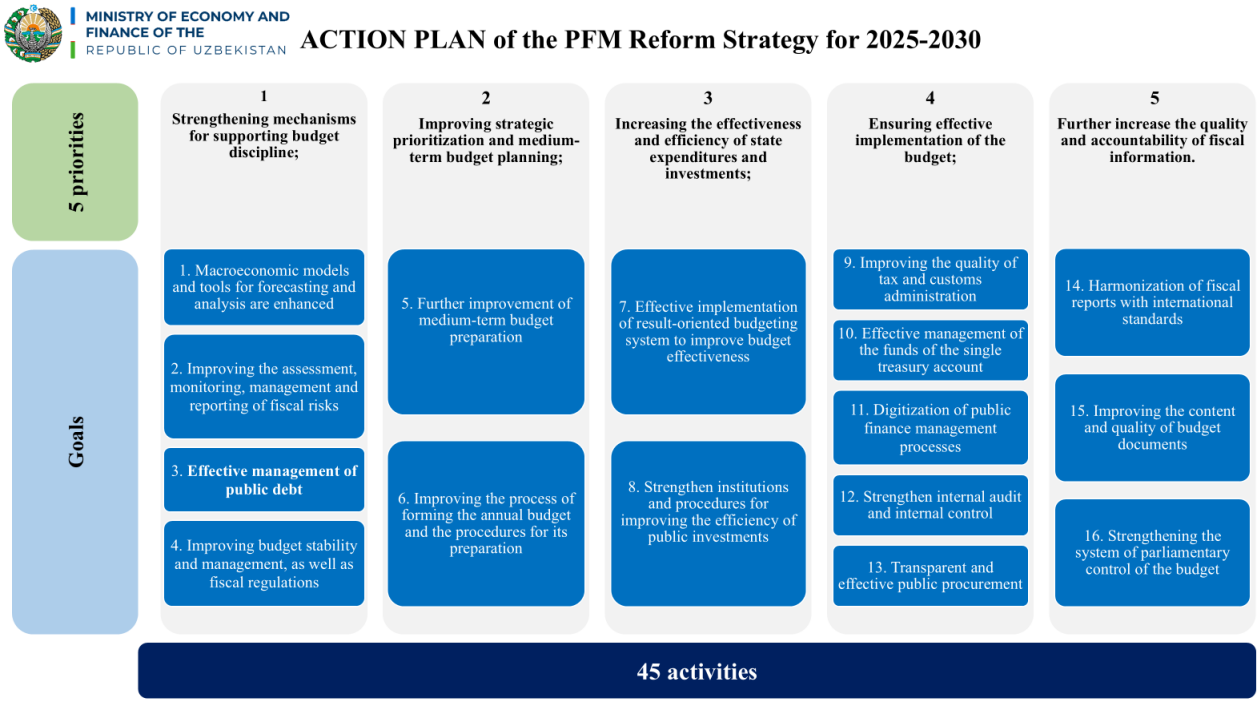
[3] Currently, local administrations and spending units are being ranked by risk levels, and certain limits can be applied to high-risk clients. Identification of systemic risks may trigger amendments to the existing regulations.
[4]The report is available at: *https://www.pefa.org/country/uzbekistan.*

Table 1: Key PFM Reforms in Uzbekistan

Year	Reform
2018	Establishing an internal audit function
2019	Transition to mid-term (3-year) budgeting
2021	- introducing fiscal rules (**public debt–to–GDP** ratio and **consolidated budget deficit–to–GDP** ratio), - establishing an annual borrowing ceiling for **external borrowing,** - introducing elements of performance budgeting for pilot ministries, - introducing participatory budgeting
2022-2023	- rolling out performance-based budgeting to other ministries - introducing SDG budgeting and green budget tagging
2024	Introducing program-based budgeting
2025	Establishing a ceiling for the total value of all new projects signed under PPP principles

Source: presentation by B. Ulugov at the TCOP Plenary in Tashkent.

The PFM Reform Strategy for 2025 – 2030 includes five core priorities: (i) strengthening mechanisms to support fiscal discipline, (ii) improving strategic prioritization and medium-term budget planning, (iii) increasing the effectiveness and efficiency of state expenditures and investments, (iv) ensuring effective budget execution, and (v) further increase the quality and accountability of fiscal information *(Fig. 3)*.



Source: presentation by B. Ulugov at the TCOP Plenary in Tashkent, October 13, 2025.

Fig. 3: PFM Reform Strategy for 2025 – 2030: Priorities and Objectives

During the question and answer session, some further details were clarified. **Rakhat** inquired who prepared consolidated financial statements in Uzbekistan. **Bekzod** explained that this was the function of the Ministry of Economy and Finance, but it was planned to transfer this function to the treasury in the future. **Abdulaziz** confirmed that transferring this function to the Treasury Service Committee had been recommended by the IMF and was expected by the end of 2025. **Rakhat** asked about the possible coordination between the treasury

and internal audit functions. **Abdulaziz** confirmed that the Treasury Service Committee cooperated with internal auditors in case any fraud risks were detected. Furthermore, the treasury also cooperates with internal security agencies. Such cooperation is regulated by a Government Resolution and an internal cooperation agreement.

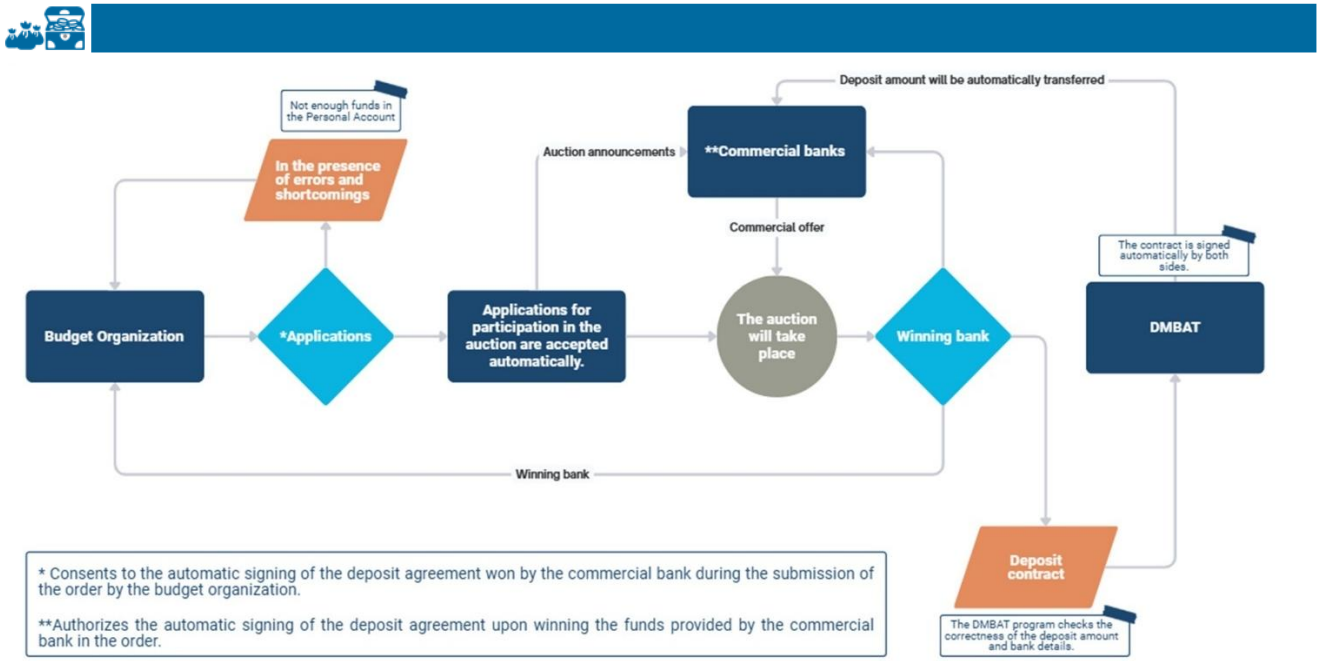
Barış Can, Türkiye, praised Uzbekistan for the impressive improvements across most PEFA indicators and asked why the revenue outturn had been the only indicator that had deteriorated (from B+ to B). He noted that, in some cases, domestic borrowing was more expensive and inquired about the approach used in Uzbekistan to determine the external borrowing ceiling. **Bekzod** clarified that the external borrowing ceiling had been set at the level of US$5 billion. Half of this amount can be used for budget support borrowing, and the other half for supporting investment programs. The borrowing ceiling is determined based on the debt/GDP ratio and the state budget deficit set at three percent. **Bekzod** explained that lower performance in terms of revenue outturn was largely due to the world market dynamics, as the budget depends on gas exports. However, further measures aimed at expanding the revenue basis and combating the shadow economy are underway.

1.3 Effective Management of Temporarily Available Funds in the TSA

Dilshod Rashidov, **Head of Department, Treasury Service Committee of Uzbekistan,** shared the practice of placing temporarily available funds on deposits in commercial banks. In Uzbekistan, TSA accumulates consolidated budget funds (state budget, local budgets, state targeted funds and other targeted funds, extrabudgetary funds of budget organizations), as well as the Customs Committee deposit account, funds of non-market-SOEs, and higher education institutions. These funds are used by the Treasury as a single resource, and are invested in deposits in commercial banks using the **G'azna Resurs** system. Spending units, state target funds, SOEs, and other institutions may also use this system to invest special funds (own revenues). The auction process is fully automated: the system checks funds availability, the commercial bank is selected based on the best interest rate offered, and contracts are concluded electronically (*Fig. 4*).

To manage the risk of fund losses, several measures are implemented. Compliance of commercial banks participating in auctions with the normative indicators established by the Central Bank is checked monthly. In addition, commercial banks participating in auctions should demonstrate the sufficiency of authorized capital, should not have arrears on previously placed deposits, provide external audit statements, and should have long-term credit ratings (at least B from S&P or Fitch or at least B2 from Moody's).

The presentation prompted an active discussion. **Erekle Gvaladze, Georgia,** inquired if any collateral was used for auctions, how often auctions took place, what were the usual terms of deposits and whether deposits in foreign currency were possible. **Dilshod** clarified that Uzbekistan relied on other risk management measures and did not use collateral. So far, there have not been cases of non-return of deposits. However, in such cases, the Treasury can automatically write off the funds from the correspondent account of the commercial bank in the Central Bank. Auctions are held once every 2-3 months, but spending units run auctions almost every day. The usual deposit duration for TSA funds ranges between three months and a year, while spending units may place deposits for shorter periods of time. **Abdulaziz** added that some institutions, such as the Pension Fund, may be interested in short-term deposits for one or several days.



Source: presentation by D. Rashidov at the TCOP Annual Plenary in Tashkent, October 13, 2025.

Fig. 4: Auction Procedure for Placing Temporarily Available TSA Funds on Deposits in Commercial Banks in Uzbekistan

Barış noted that the auction procedure was competitive, but could lead to concentration risks. He also inquired about the policy for the cut-off rate and the procedures used to estimate the TSA balance amount available for investment. **Dilshod** clarified that to prevent concentration risk, the total amount of deposits was limited to 10 percent of the total commercial bank's liabilities. The minimum balance to be kept on the TSA is estimated as a monthly amount of priority expenditure (such as payroll, utility, and similar costs). The Treasury or budget units determine the cut-off rate. **Nazim** noted that the practice of deposits is implemented in parallel with the budget deficit. **Abdulaziz** pointed out that the TSA accumulated all funds and not only those of the state budget. Therefore, both the borrowing operations to cover the state budget deficit and the lending operations to place temporarily available TSA funds were justified.

1.4 E-Procurement System in Uzbekistan

Sarvar Nazarov, **Director, Public Procurement Policy Department, Ministry of Economy and Finance of Uzbekistan**, presented the e-procurement system used in Uzbekistan. In Uzbekistan, all procurement stages have been digitized and are performed electronically. The e-procurement system comprises four platforms: Uzbek Commodity Exchange, E-cooperation portal, Hayot Birja, and E-tendering platform for procurement in the field of construction. Various procurement procedures, including simplified procedures such as e-store and auction are being used. Integration of the procurement portal with other government information systems allows for automatic exchange of information and identification of the potential conflict of interest between contracting authorities and tender participants.

The presentation prompted a very active discussion among the participants. **Nazim** asked several questions on the procedure for developing and amending procurement plans and the differences between the e-store and auction procedures. **Sarvar** explained that all contracting authorities are obliged to develop their procurement plans by December 20, but these plans can be amended on a quarterly basis following legal amendments. In the future, it is planned to switch budget planning from item-based budgeting to budgeting

using the goods, works, and services classifier. This classifier is operated by the Ministry of Economy and Finance and is integrated with the tax and customs information systems. The classifier includes over 100 thousand types of goods and services, and is planned to be used for identifying starting prices for public procurement and help prevent repetitive procurement of similar goods. E-store and auction are simplified procedures used for the procurement of standard goods. In the case of the e-store, the contracting authority selects the goods posted in the e-store, and the contract is automatically concluded within 2 days. During an auction, the contracting authority defines the goods to be procured, and the vendor that has offered the lowest price is automatically selected. A further question was asked about the practice of reserving funds for payments against the contracts concluded. **Sarvar** noted that the whole contract amount is reserved in the treasury, which helps to automatically release payments against these contracts immediately after goods and services have been delivered and the invoice has been approved. **Elena Dobrolyubova, TCOP Resource Team member,** noted that this practice has been instrumental in reducing arrears, and this was one of the areas of progress highlighted in the latest PEFA assessment on Uzbekistan. **Rakhat** asked to provide more details on contract registration procedures and the rating of construction companies used in Uzbekistan. **Sarvar** noted that the system automatically registered contracts concluded using e-store and auction procedures (i.e., about 60 percent of all contracts). In case of appeals, the system automatically freezes the procurement process. Regarding the rating of construction companies, several criteria are used, including registration date, company experience, licenses, registered vehicles, and staff education. The rating is calculated automatically and is publicly available at the website: https://reyting.mc.uz/.

1.5 Table Discussions on Uzbekistan's Experience in Treasury Development and PFM Reforms

Participants acknowledged the truly impressive progress of Uzbekistan in various aspects of treasury modernization, reflected on the presentations on Uzbekistan's experience in treasury development and PFM reforms and formulated some recommendations that the Treasury Service Committee could consider in the future (Table 2).

Table 2: Table Discussions Summary: Reflections and Recommendations

Most interesting aspects potentially applicable to other countries	Recommendations to Uzbekistan on further steps
• Implementing Green budget tagging • Impressive treasury coverage, including extrabudgetary funds and funds of some SOEs in the TSA and are fully fungible • Institutionalization of digital transformation in the treasury: one of the two deputy heads of the Treasury Service Committee is directly in charge of these issues; PFM digitalization is managed within one ministry • Deep integration of FMIS with other government information systems, connecting all stages of the budget execution process; integration between procurement and treasury systems • Digitalization of business processes in Uzbekistan that has helped to improve treasury efficiency and staff optimization	• Continue digital transformation based on the balance between opportunities and risks • Explore the potential of AI in treasury operations, including in treasury control, not just financial analysis • Continue to enhance data integration and develop data analytics • Strengthen cybersecurity and data governance • Consider integrating all investments of temporarily available funds in the Treasury to overcome the current fragmentation, where budget entities may invest special funds separately • Consider introducing efficiency scorecards to measure the performance of the commercial banks participating in auctions

Most interesting aspects potentially applicable to other countries	Recommendations to Uzbekistan on further steps
• Significant attention to cash management and using auctions for placing idle balances in commercial banks • Special attention protecting the interests of vendors and clients in public procurement and introduction of special accounts that help guarantee the timely delivery of goods and services • Implementing anticorruption measures early in the procurement process • Introduction of auctions for low-value contracts, allowing quick procurement of goods • Introduction of the unified classifier for all goods, works and services, integrated with the tax administration • Centralized procurement units that may help achieve considerable savings in public procurement • Automated risk management systems • Significant progress in IPSAS implementation • Introducing corporate bank cards	• Gradually move to more active cash management, including operations on the secondary market • Ensure effective coordination of debt management and cash management functions • Consider using commitment blocks instead of automatic payments to vendors • Consider the need to maintain four different operators for public procurement (as all of them might charge commissions, resulting in additional expenditure for public entities) • Build reputation and improve cooperation with budget entities

Source: summary of discussions

In his concluding comment, **Mark Silins, TCOP Thematic Advisor, World Bank,** congratulated the Ministry of Economy and Finance and the Treasury Service Committee of Uzbekistan for the significant progress achieved in a broad range of PFM reforms. He noted the strategic commitment and high-level support to the reform agenda and pointed out that some of Uzbekistan's practices, such as the integration of procurement and payment processes, were exemplary for the PEMPAL region and have enabled the treasury to push the controls forward to the beginning of the process and introduce automatic approvals at the end of the process. Mark noted that the capacity of and support from the budget entities were critical for the success of further reforms. He thanked the Treasury Service Committee for hosting the Plenary and noted several areas where Uzbekistan could benefit from the experience of other PEMPAL countries, including cash management and forecasting, risk management, and reporting.

2 Automating Treasury Business Processes and the Role of Digital Technology in Supporting Risk Management

2.1 World Trends and Best Practices in Automating Treasury Business Processes

The session was opened by **Mark Silins,** who shared his perspectives on the potential and limits to automation of treasury functions. Embracing digital technology is an evolutionary process that has three main stages: (i) digitization (focused on replacing manual processes with digital ones), (ii) digitalization (when processes become digital by default), and (iii) digital transformation (which involves reforming business processes to become digital by design). Most PEMPAL countries are at the first two stages of digital development, and further efforts are needed to move to the final stage of digital transformation. Once processes have been redesigned and fully digitized, many of the traditional processing and process control activities are likely to be redundant (Table 3). Value-added controls should occur early in the process, for example, at the procurement stage, and will be less focused on compliance and more focused on value for money and effectiveness.

Table 3: Scope for Reduced Treasury Controls by Payment Type

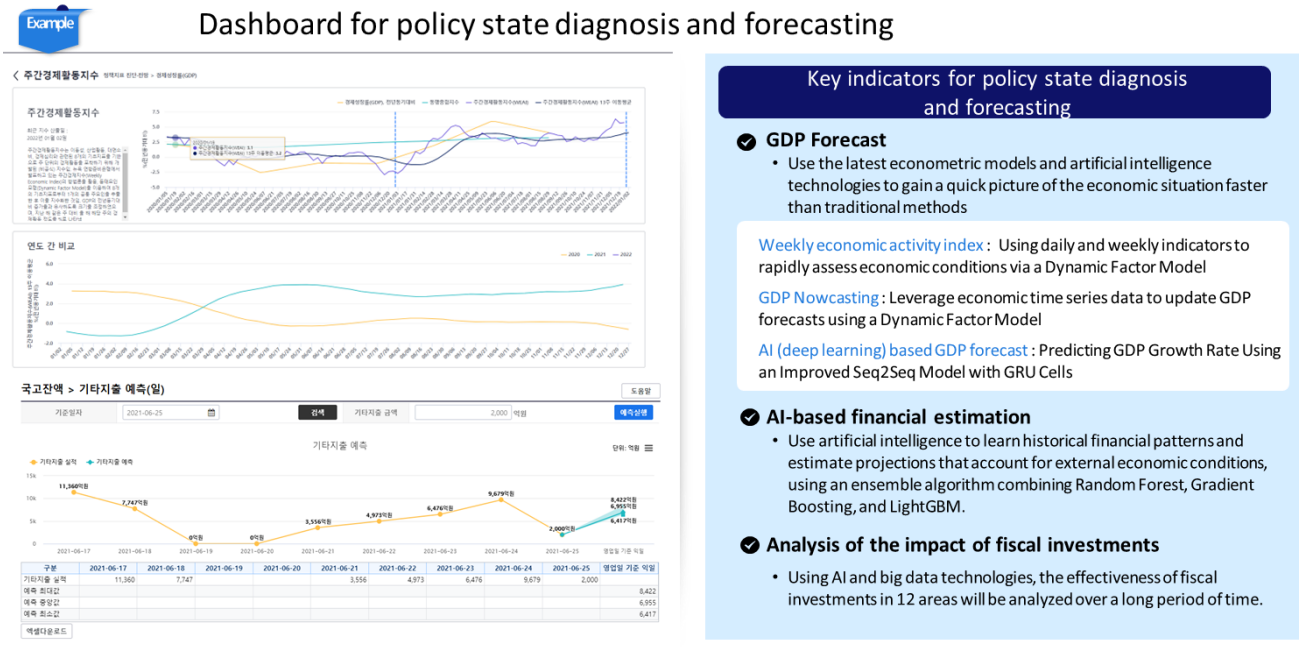
Payment Type	Controls	Readiness for Green Corridor
Salaries/Pensions	Centralized e-payroll system coupled with employee IDs and control over established positions and budgets	Y
Repetitive payments	Should be controlled in a system with clear beneficiary IDs linked to payment approval	Y - For existing payees – N - new payees checked
Debt	Clear schedule of principal and interest payments – payments generated in debt system e.g. DEMFIS	Y
One-off-Payments	Social payments etc. during COVID – high risk so need to establish clear criteria for ensuring only approved beneficiaries receive payments	N
Inter-budgetary Transfers	These are within government (low risk) and should be based on approved budgetary amounts or from shared revenues	Y
Large Capital Payments	Big risk at the procurement stage (need to mitigate procurement risks at this stage - not later in the payment process). Risks also exist that the project is not delivered in accordance with the contract – this is a role for the budget entity expert who verifies and certifies the integrity of project deliverables.	N- Unless strong ex-ante controls are in place likely to need treasury review
Secret Payments	Secret payments should be subject to the same controls as other payments with access to the payment information limited to approved officials	Y
Advances	Focus on the elimination of these high-risk payments – debit cards, funds in escrow	N

Source: presentation by M. Silins at the TCOP Plenary in Tashkent, October 14, 2025.

Automation of treasury control functions has important staff implications, calling for the redeployment of staff to more value-added functions. Notably, despite the significant potential of digital technology, some treasury functions will continue to require human intervention in the foreseeable future. These include approval of unusual or emergency transactions, assessment and analysis of risks and development of risk mitigation strategies, consulting with and understanding stakeholder needs to remain responsive, development of forecasting models and new reporting templates, e.g., cross-cutting reporting, analysis of cash forecasting models (although the forecasting itself can be largely digitized), analysis of financial reports (although the report preparation can be largely digitized), development of internal control policies and procedures and, where relevant, accounting policies, updating of the UCoA and associated manuals, and training and education of budget entities.

Sangwook (Paul) Nam, dBrain+ Settlement System Operation Division Head, KFIS, shared the experience of South Korea in automating treasury operations and the use of AI. Korea uses an IFMIS called dBrain+ that manages the full fiscal lifecycle and is integrated with 144 information systems supported by 81 institutions. It includes the Central Financial Management System, Financial Linked System, Fiscal Data System, and Open Fiscal Data. Over time, IFMIS in South Korea has evolved from providing fiscal task support to rendering timely policy decision support.

The high level of IFMIS development allowed South Korea to explore the potential of using AI in PFM. Currently, dBrain+ leverages AI technologies to conduct fiscal estimations, including data-driven GDP forecasting and treasury balance analysis (*Fig. 5*). Furthermore, KFIS is currently working on applying generative AI to dBrain+ to improve fiscal transparency and accessibility. It is expected that generative AI will be integrated into fiscal operations in 2026.



Source: presentation by P. Nam at the TCOP Plenary in Tashkent, October 14, 2025.

Fig. 5: Using AI in PFM in South Korea

Notably, the Korean experience highlights several factors that should be considered when implementing AI in the PFM context (Table 4).

Table 4: Implementing AI in PFM: Lessons Learned from South Korea

Consideration	Lesson Learned
AI Model Sustainability	To enhance the accuracy and adaptability of AI prediction models, continuous investment is required—particularly in budgeting and the recruitment of skilled data scientists.
Broadening AI Impact in Fiscal Operations	AI predictive models are used by a limited group of decision-makers, resulting in minimal impact. Expanding their use across fiscal operations is key to boosting productivity and relevance.
Transforming Fiscal Operations through AI Evolution	The rise of generative AI—beyond traditional machine learning and deep learning models—signals a need for innovation in fiscal operations to keep pace with evolving AI technologies.
AI Literacy	Enhancing AI literacy involves targeted training, hands-on experience, and fostering a mindset of responsible and informed AI use.
Launching AI-Driven Fiscal Projects	Introducing AI into fiscal operations requires a supportive environment and hands-on project experience.

Source: presentation by P. Nam at the TCOP Plenary in Tashkent, October 14, 2025.

Charles Blanco, Senior Public Sector Specialist, World Bank, provided an overview of implementing AI in governments and national treasuries. AI tools can provide ample opportunities to raise productivity (efficiency and effectiveness), improve government responsiveness, and strengthen accountability. Typical AI-performed tasks include recognition, event detection, forecasting, personalization, interaction support, goal-driven optimization, content generation, and reasoning. However, implementing AI tools triggers ethical, operational, exclusion, public resistance, and inaction risks that should be carefully considered. Despite the high interest in using AI, some 70 percent of AI public initiatives fail. Using AI to control AI could be a potential solution to some of these risks. The World Bank supports several countries in implementing AI tools in the context of PFM. The ongoing project on using AI for cash flow management forecasting in Georgia is of particular relevance to the TCOP audience (Box 1).

Box 1: Using AI for Cash Forecasting in Georgia

In 2025, the State Treasury of Georgia, with the support of the World Bank, initiated a pilot project aimed at using the potential of AI to improve cash forecasting. Currently, the project focuses on short and medium-term forecasting, while long-term forecasting is planned to be addressed later. AI is used to forecast daily, weekly, and monthly totals of revenues, expenditure, and the state budget balance. The quality metrics include accuracy (RMSE), explained variance (R^2), and percentage error (MAPE/sMAPE). The methods being tested include statistical baselines (ARIMA, SARIMAX, ETS), ML algorithms (univariate and multivariate), and Deep Learning (TCN, LSTM, etc.) The initial results demonstrate higher accuracy of AI predictions for weekly values, as compared to daily values. In the future, it is planned to integrate forecasts into a Power BI dashboard for monitoring and decision-making and add event calendars for taxes, payroll, and debt service, so models can anticipate spikes.

The presentations made during the session prompted active discussion. Referring to Mark's presentation, **Nazim** pointed to the tradeoff between delegation of authority and institutional maturity and asked for advice on how a balance could be achieved in this respect. **Mark** noted that once budget entities are preparing electronic transactions directly in systems, controls should shift to earlier steps in the process to ensure efficiency. These controls can be decentralized, and/or central bodies can continue to play a role where the maturity levels of budget entities are still developing. This allows a more tailored and responsive control framework with budget entities assuming more responsibility over time.

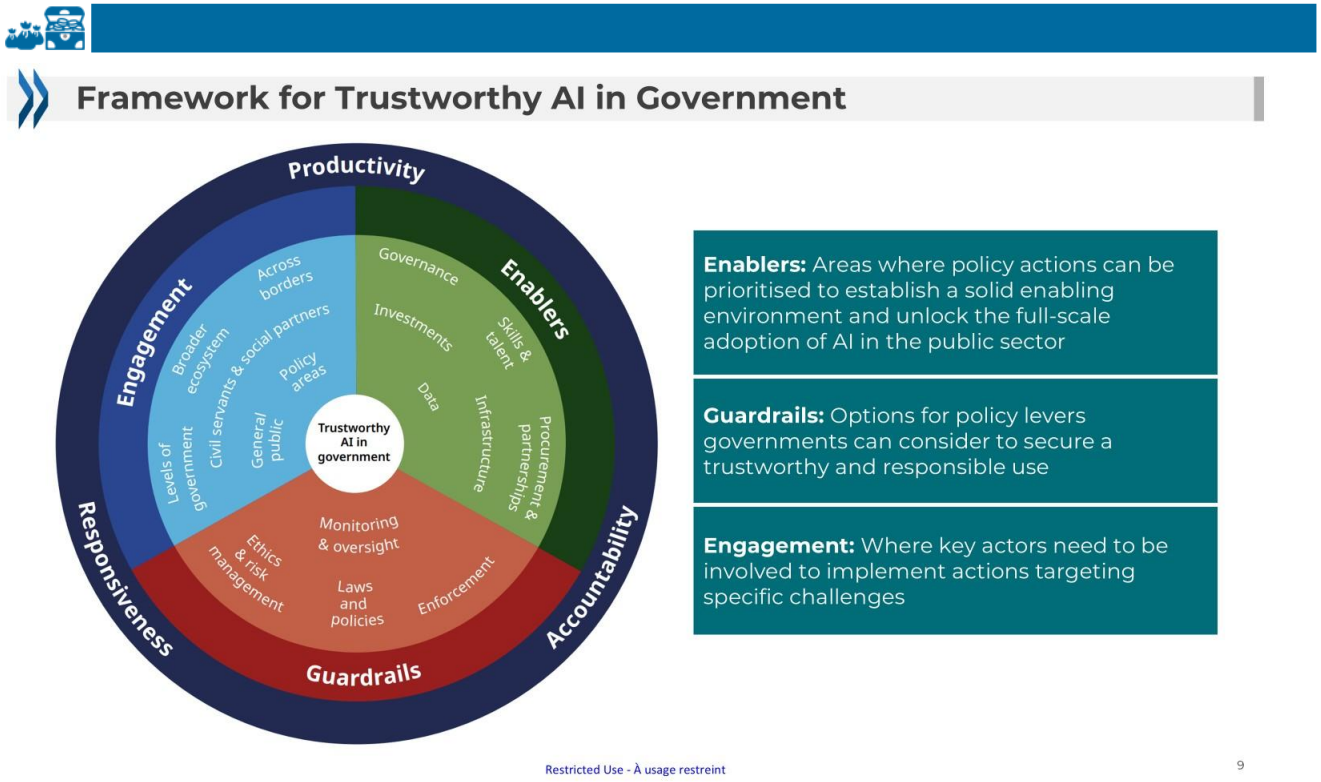
Moving to the topic of AI, **Nazim** raised the issue of significant data storage costs in case the data is placed in a private cloud as a significant constraint for AI implementation. **Charles** noted that conducting an AI readiness assessment could help identify infrastructure needs and develop a roadmap for AI implementation. **Paul** noted that in South Korea, private clouds were used to deploy generative AI. In addition, a new government cloud supporting public AI application was planned. **Barış** strongly supported the implementation of AI in PFM but expressed a concern about overreliance on AI that could lead to human expertise losses. He also wondered how AI could be controlled by AI. **Charles** noted several initiatives on using AI agents for controlling AI have been developed in some countries and organizations and stressed that the frameworks that are used by AI had been designed by humans. **Abdulaziz** supported the idea of starting AI implementation with diagnostics and informed the participants that such a diagnostic is currently underway in Uzbekistan. He asked about the activities that were not recommended to countries planning to introduce AI in PFM. **Charles** suggested that countries should first focus on streamlining business processes, developing policies and regulations, and building technical capacity. Before investing in technology. He also argued that countries should not overthink whether to use AI and should not excessively rely on IT instead of humans. **Paul** proposed starting with small-scale projects and supporting staff initiatives on AI implementation. He stressed that AI projects should be driven by functional departments rather than IT departments and warned that implementing AI was an iterative process. Finally, **Paul** highlighted the importance of high-level management engagement in the process. **Mark** pointed out the need to start from the bottom and first reengineer business processes to make them digital by design and stressed the importance of data integrity and quality in successful AI implementation.

Elbek Khodjaev, Project Manager, Delegation of the European Union to Uzbekistan, made several closing remarks for the session, highlighting the high relevance of the discussions for PFM development in Uzbekistan and other PEMPAL countries.

2.2 Using Artificial Intelligence in Treasury Operations

The first presentation at the session was delivered by **Delphine Moretti, Senior Policy Analyst, Lead of OECD Working Party on Public Financial Management, OECD**, who shared insights from the recent OECD study on the use of AI in governments,[5] focusing on using the AI potential in PFM. She pointed out that AI is an evolving concept, and currently it includes transaction-based systems generating outputs based on the pre-defined rules (such as algorithms, business intelligence, robotic process automation) and generative AI producing output based on training and interaction (including natural language processing and computer vision). AI offers ample benefits to governments, including automated, streamlined, and tailored processes and services, better decision-making, sense-making, and forecasting, enhanced accountability and anomaly detection, and unlocking opportunities for external stakeholders, but also entails a broad range of risks and faces important challenges. To address the risks and challenges associated with the AI implementation, OECD has developed a Framework for Trustworthy AI in Government that identifies AI enablers, guardrails, and areas of engagement (*Fig. 6*).

[5] The OECD report is available at: https://www.oecd.org/en/publications/2025/06/governing-with-artificial-intelligence_398fa287.html



Source: presentation by D. Moretti at the TCOP Plenary meeting in Tashkent, October 14, 2025.

Fig. 6: OECD Framework for Trustworthy AI in Government

In OECD countries, there is a growing interest in using AI tools in government, including in PFM (Table 5). Overall, the AI use cases collected from OECD countries show undeniable potential for AI in PFM, coupled with significant risks, as well as point to possible profound implications on transparency and accountability, calling for changes in the role of oversight bodies and (possibly) introduction of additional safeguards in PFM to minimize AI-related risks.

Table 5: Using AI in PFM in OECD and Other Countries

Area	Forecasting	Spending Decisions	Budget Planning and Monitoring	Financial management	Engagement with external stakeholders
Project type	ML and DL-powered forecasting models can increase accuracy and speed in forecast preparation.	Big data, data analytics and data visualization were groundwork for evidence-based or targeted spending decisions.	Structured data and in some cases unstructured data already used in AI-powered (ML, word cloud) predictive models aimed at: (i) forecasting baselines, (ii) costing new policies, (iii) identifying and monitoring patterns and	Already significant use of AI, in particular RPA, to assist civil servants with repetitive tasks – e.g., invoice routing – to improve productivity and re-assign time for more analytical tasks. ML and DL used to improve quality and resilience of	NLP-powered chatbots offer opportunities to revolutionize interaction with external stakeholders on fiscal issues.

Area	Forecasting	Spending Decisions	Budget Planning and Monitoring	Financial management	Engagement with external stakeholders
			trends indicative of potential fiscal risks.	processes – e.g., to prevent improper payments (fraud or errors) in emergency situations.	
Country examples (OECD and other countries)	South Korea, Türkiye	South Korea	France, Indonesia, Türkiye	Denmark, US, Georgia, Serbia, Finland	Mexico, Brazil

Source: developed based on the presentation by D. Moretti at the TCOP Plenary meeting in Tashkent, October 14, 2025, and other TCOP materials.

Following Delphine's presentation, **Aydın Yilmaz, Head of Artificial Intelligence and Data Analysis Department, General Directorate of Public Accounts, Ministry of Treasury and Finance of Türkiye,** shared the experience in implementing the AI-Supported Accounting and Advanced Analytics Project (Box 2). He pointed out that the project builds upon the data collected in IFMIS, developed in 2017 and upgraded in subsequent years. Currently, IFMIS consists of five main systems (asset, payroll , expenditure management, accounting management, and management information systems). IFMIS already has some applications supported by AI, and more AI-supported projects are planned.

Box 2: AI-Supported Accounting and Advanced Analytics Project in Türkiye

The project aims at (i) increasing efficiency, quality, and savings in public spending, (ii) improving decision-making and policy development processes, and (iii) strengthening risk-based financial audit infrastructure. It was initiated due to limitations of using BI queries for financial management purposes. The project focuses on automating detection of anomalies in transactions at the levels of accounting units, spending units, and public institutions, and flagging anomalies based on cluster and trend anomalies using ML algorithms. Analysis of historical data suggested that about 75-80 percent of transactions do not have any anomaly. In about one-fifth of transactions trend anomalies were detected, cases of cluster anomaly account for 1.1-1.2 percent, and less than 1 percent of transactions have both cluster and trend anomalies.

The approach was applied to analyze past data (for audit purposes) and stream data (for early warning purposes). In addition, the fraud detection functionality based on semi-supervised learning was tested and image processing technology (OCR) has been implemented to increase the effectiveness of control, audit, analysis, system, and resource planning processes.

Source: presentation by A. Yilmaz at the TCOP Plenary meeting in Tashkent, October 14, 2025.

During the discussion that followed the presentations, several issues were clarified. **Rakhat** asked about the institutional arrangements for implementing AI in Türkiye. **Aydın** explained that his department used to be a Data Analytics Department. Currently, some 10 staff are employed in the department, but close collaboration with a research institution has been established. **Barış** added that the Accounting Directorate of the Ministry of Treasury and Finance started using AI for analyzing spending behavior and detecting anomalies and noted that this data is also used for informing cash forecasting. **Abdulaziz** asked several questions about IFMIS components in Türkiye and inquired whether a new government decision could lead to a spending anomaly.

Aydın noted that spending units were responsible for entering data into the payroll system. Separate IFMIS systems are integrated using PostgreSQL. He also clarified that detecting an anomaly triggers manual checks.

Nazim referred to the "black box" issue of AI and inquired what was considered the acceptable rate of AI accuracy. **Aydın** noted that the performance of AI in analyzing large amounts of data is better than human performance. **Barış** added that acceptable deviation may differ depending on the type of institutions. **Ilona Rakhmakovi, Georgia,** noted that Türkiye opted to use open-source software and pointed to the cybersecurity risks for the system. She inquired how these risks were handled. **Aydın** explained that when the functionality is added to software, the code for these additions is not published. **Delphine** noted that OECD countries opted for working with service providers instead of using open code. **Abdulaziz** wondered how the effectiveness of the financial intelligence system developed in Türkiye was measured. **Aydın** clarified that they compared the outputs of AI on historical data with the results of audits of public institutions. In 90 percent of cases, the conclusions were similar.

Fabienne thanked the presenters for their informative presentations and participants for fruitful discussions and closed the session.

2.3 Automating Treasury Business Processes: Using AI and BI in Treasury Operations in PEMPAL Countries

The session focused on the discussion of the experiences of Serbia and Romania in automating treasury business processes.

Jelena Fiščan, Acting Assistant Director of Treasury, Treasury Administration of Serbia, shared the Serbian experience in implementing AI for signature verification and using BI for the data management system. In Serbia, AI (OCR) technology is used for end-to-end automation of signature verification. The approach allows for automatic detection of signatures in scanned documents and comparison with those stored in the database using CNN-based signature embedding and similarity scoring. The automatic verification procedure takes less than 2 seconds. The centralized signature database allows for profile updates and recalculated embedding. The system ensures a complete audit trail for every action and is adapted to future growth in data volume.

In addition, **Jelena** presented the business intelligence (BI) system used by Serbia. The system provides interactive access to financial data from various data sources, supports real-time reporting and monitoring and ad hoc report creation. Currently, the system is used by over 5,000 organizations (with up to 10 thousand users simultaneously).

During the question-and-answer session, several issues were discussed. **Attila** asked about the rationale for implementing signature verification rather than moving to e-signatures. **Jelena** clarified that e-signatures were applicable only to e-documents. **Paul** inquired about the operational status of BI. He noted than in Korea there were fewer (200-300) users of a similar subsystem (KOFIS) and wondered about the approach used to control users of BI in Serbia. **Jelena** explained that each institution had a system administrator who shared access to the system. Two-factor identification was used for the first access. **Khuram Farooq, World Bank,** inquired about the costs of access to BI. **Jelena** noted that the cost of access was included in the Oracle license fee. It is affordable based on cost-benefit analysis. **Yusuf Yavuz, Türkiye,** raised an issue of security of the signature verification system and inquired how false positive or false negative results were managed. **Jelena** stressed that the system was protected, and a backup of the database is supported. She explained that a signature was considered verified when a 92 percent match was achieved. In cases below 92 percent, other procedures apply (for instance, the person who signed the document may be invited to the treasury office).

In his presentation **Attila György, Undersecretary of State, Ministry of Finance of Romania**, shared his experience in reducing budget classification errors in payments processed by the Romanian Treasury to improve the quality of reporting. To address the issue, a list of "warnings" corresponding to 15.7 thousand types of operations was developed to flag possible errors (Table 6). The approach was initially applied to past (monthly) data, and this helped detect about 15 thousand errors in 2.5 million operations. The approach is also applied to improve the quality of classification at the stage of budget planning.

Table 6: Types of Possible Classification Warnings in Romania

Warning	Examples
Certain public institutions are expected to use certain budget lines (on revenue and expenditure)	- spending units subordinate to local self-government bodies cannot receive subsidies from the central budget - schools do not pay pensions
Certain payments can be sent to certain recipients	- transfers between public institutions should not be made to state owned companies
Inconsistencies between the classification used and keywords in the explanation field	- current repairs are recorded as capital repairs
Certain operations are possible but very unlikely	- rents of land

Source: presentation by A. Gyorgy at the TCOP Plenary Meeting in Tashkent, October 15, 2025.

During discussion, **Elena** noted the challenging task of checking for all possible errors and pointed out that the Romanian approach highlighted the importance of cooperation between budget and treasury practitioners. **Abdulaziz** asked if the treasury could correct the errors automatically. **Attila** explained that the budget units had to introduce the corrections, but one-off corrections were also applied at the reporting stage. **András Réz, Hungary,** inquired for the reasons for the large number of errors. **Attila** argued that the number of errors was not very high and mentioned the legacy of improper classification among the key reasons. **Arman** suggested considering developing a chatbot or another tool for spending units to assist with classification issues. **Attila** mentioned that some guides for spending units had been developed and noted the intention to send warnings at the budget formulation stage. **Rakhat** asked about the frequency of functional classification changes, the practice of returning documents at the payment authorization stage, and applicable responsibility measures for spending units in case of errors. **Attila** stressed the key role of good classification with short descriptions. Though the treasury can reject payment orders, it does not have time to analyze 15 thousand transactions a day. Another challenge is that some errors stem from the approved budget.

2.4 Automating Payment Authorization and Treasury Controls: Current Practices and Prospects for Further Automation: Group Discussions

During the group discussion session, country delegations prepared short presentations on the current status of automating business processes related to payment authorization and treasury controls and prospects for further automation, including possible use of AI. The discussions demonstrated that payment authorization and processing functions have already been largely automated in most PEMPAL countries.[6] However, some steps still require human intervention (are partially automated) or are performed manually. Examples of these steps are presented in Table 7. Though automating the remaining manual and semi-automated processes is an important priority, some areas (such as processing payments for large construction contracts and sensitive

[6] With the exception of Turkmenistan, where, at the regional level, payments are still being processed using paper-based documents.

payments/contracts (military, national security, secret)) will remain manual in some countries for the near future.

Table 7: Payment Authorization and Processing Steps That Are Not Fully Automated in PEMPAL Countries

Payment authorization and treasury controls: semi-automated procedures	Payment authorization and treasury controls: manual procedures
- Matching commitments with budget allocations (Azerbaijan) - Validation of payments in the system (Georgia*, Romania) - Preparation of payment packages (Romania) - Checking payroll data (Albania) - Checking cases where the system detected an error (Armenia) - Operations for opening/closing of control cash accounts (KCH) (Kazakhstan) - Processing of enforcement documents and collection orders (Kazakhstan)	- Initial data entry by spending units (BiH, Montenegro) or the treasury (North Macedonia) - Manual submission of payment orders by spending units (North Macedonia) - Registration of contracts and invoices (Albania, Hungary, Romania) - Legal review of documents* (Azerbaijan) - Physical verification* (Azerbaijan) - Final approval of payments* (Azerbaijan) - Checking bank guarantees for advance payments (Armenia) - Payments in FX using SWIFT (Armenia) - Treasury control functions (Romania, Kyrgyz Republic**, Moldova***, Tajikistan*)

**except for payments that go through the Green Corridor, **large payments, ***sample control of transactions that do not meet Green Corridor requirements.*

In many PEMPAL countries, the procedures applied for payment authorization and processing differ depending on various factors. Most frequently, plenary participants noted differences in authorization and control procedures depending on the type of payment. Transaction amount, source of funds, sector, and treasury client type also affect the scope of treasury authorization and controls. In some countries, procedures may vary based on other factors, i.e., vendor or payment method (Table 8).

Table 8: Factors Determining Variation in Payment Authorization and Treasury Control Procedures

Factors	Country Examples
Type of payments (salary, social fund, utility payments)	Green channel (payroll, travel costs, utility costs to known providers, foreign debt payments) in Georgia, Azerbaijan, Kazakhstan, Kyrgyz Republic, Moldova, Tajikistan, and Armenia Processing accrual pensions (Armenia) External Debt repayments are executed by retaining indirect taxes and using them to fund the debt – these indirect taxes are withheld for this purpose (BiH) Capital budget payments (Montenegro)
Payment amount	Azerbaijan, Georgia, Kyrgyz Republic, North Macedonia, Serbia,
Sources of funds (budget, special means)	Azerbaijan (budget funds are fully processed through the TSA, extrabudgetary funds are partially automated), Kazakhstan. In Türkiye, payments from special means are executed by the institutions themselves, though the funds are consolidated on the TSA.
Different sectors (i.e. general budget vs.	Special procedures for security/military payments in Azerbaijan, Georgia, Kazakhstan, Kyrgyz Republic, Tajikistan

Factors	Country Examples
military/secret expenditure)	
Different treasury clients (i.e., central govt, local govt, budget organizations, SoEs…)	Armenia, Azerbaijan, Kazakhstan, Moldova. In Türkiye, payments of EBF and SoEs are executed by the institutions themselves, though the funds are consolidated on the TSA.
Other factors	Payment method: Romania (cash payments) Vendor/provider for utility payments: Georgia Results of AI checks: Georgia

Source: summary of group discussions at the TCOP Plenary Meeting in Tashkent

As digital transformation in treasury operations is not complete, all PEMPAL countries plan further activities in this area. The discussions have demonstrated that developing (upgrading) FMIS and its integration with other systems is among the future priorities for 13 PEMPAL member countries (Albania, Armenia, Azerbaijan, Croatia, Hungary, Kazakhstan, Kyrgyz Republic, Moldova, Montenegro, North Macedonia, Romania, Turkmenistan, Uzbekistan), though specific tasks may vary from developing a FMIS from scratch to upgrading selected functionality and integration with other government systems. The interest in piloting new technologies is also high: 11 PEMPAL countries consider using AI in treasury operations (Georgia, Serbia, and Türkiye already pilot AI in various domains), five countries plan to use BI in treasury operations (some countries, such as BiH, Hungary, Serbia, and Türkiye, already use BI functionality). Further digitalization is expected to improve payment authorization and processing, move to risk-based treasury controls, and strengthen public sector accounting and reporting (Table 9).

Table 9: Plans for Further Digitalization of National Treasuries in PEMPAL Countries

Area of Digitalization	Countries
Developing/Upgrading FMIS and Its Integration with Other Systems	
Upgrading FMIS and automating remaining manual processes	Albania (extending AGFIS to new institutions), Armenia, Croatia, Montenegro, North Macedonia (new IFMIS), Kazakhstan and Kyrgyz Republic (automating remaining manual processes), Moldova (process reengineering and removing redundant steps), Romania, Turkmenistan (developing FMIS instead of manual processes), Uzbekistan (automating contract registration)
Integrating FMIS with other systems	Albania (tax system), Azerbaijan (tax, customs, procurement), Kazakhstan, Hungary (budget planning), North Macedonia (new IFMIS), Montenegro (Central Bank)
Unlocking the Potential of Disruptive Technology	
Implementing BI tools, improving reporting	Azerbaijan, BiH, Hungary, Kazakhstan, Uzbekistan
Piloting AI tools	For payment authorization/fraud detection: Azerbaijan, Georgia, Kazakhstan, Türkiye; in other domains: Armenia, Georgia (specifically cash forecasting), Hungary, North Macedonia, Serbia, Tajikistan, Türkiye, Uzbekistan (not specified)
Digitalization of Payment Authorization and Processing	
Improving payment processes	Croatia (introducing automatic recognition of payee in the banking system, rapid payment processes), Romania (introducing online banking)

Area of Digitalization	Countries
Implementing/broadening a risk-based approach for payments and green corridor system	Azerbaijan, Kazakhstan, Uzbekistan
Introducing real-time monitoring	Azerbaijan, Kazakhstan, Romania, Serbia
Strengthening cybersecurity	Serbia (e-signatures for regional offices)
Digitalization of Accounting and Reporting	
Development/enhancement of asset management systems	Albania
Digitalization of accrual accounting, supporting the implementation of IPSAS	Albania, Croatia
Implementing BI tools, improving reporting	Azerbaijan, BiH, Hungary, Kazakhstan
Automating accounting consolidation and preparation of financial consolidated statements	Albania

Source: summary of group discussions at the TCOP Plenary Meeting in Tashkent

The key takeaways from the discussion include the following:

- In most PEMPAL countries, payment authorization and processing functions have been largely automated; however, most participants acknowledged some steps still require human intervention, identifying both the potential for future digitalization and, in some cases, limits to automation.
- The diversity of factors impacting treasury authorization and control procedures in many PEMPAL countries presents a challenge for automation.
- The key prerequisites for further automation of treasury authorization and control procedures include securing political support, developing an adequate regulatory framework, investing in infrastructure and implementing technical upgrades to FMIS, ensuring system interoperability, reliability and accuracy of PFM data, and developing staff capacity. It is recommended to maximize process automation before moving to AI.
- Further digitalization of treasury authorization and control procedures, PEMPAL countries need to address multiple challenges, including the legacy of older FMIS systems and system capacity constraints, insufficient interagency coordination, data reliability issues, cybersecurity threats, and resistance to change. Since treasury automation results in a reduction of human intervention, the issues related to the employment of redundant staff should also be addressed.
- Digitalization of treasury operations, including upgrade (development) of FMIS, its integration with other government systems, and unlocking the potential of disruptive technologies, remains a priority for PEMPAL countries. TCOP activities can inform these reform efforts.

2.5 Expert Recommendations on Further Digital Transformation in Digital Treasuries

Khuram Farooq, Sr. Governance Specialist, World Bank, presented expert comments concluding the sessions on automating treasury business processes. He noted that in many cases, treasury digitalization does not need AI. However, there are several areas where AI could help strengthen treasury controls and improve efficiency and transparency (Table 10).

Table 10: Key Use Cases for AI in Treasury

Control	• **Anomaly detection for treasury payments**
	  • sudden spike in payments into an account,
	  • change in vendor bank, payroll employee bank account,
	  • duplicate invoices,
	  • payment activity, associated with approval by one or a very few employees,
	  • direct payment method to pay for large amounts to vendors without the purchase order, goods receipts or invoice,
	• **Invoices from the same vendor with large payments with rounded amounts, or with sequential invoice numbers**
	• **Triangulation of data to detect fraud and corruption: bid rigging (IFMIS, e-GP), social welfare payments (beneficiary registries, mobile usage, etc.), /VAT refunds (ITAS, customs, sale).**

Efficiency	• **Cash forecasting, BI and Consolidation of financial statements, Invoice processing** • **Harmonizing budget classification and chart of accounts across systems.**
Transparency	• **Update of open data portal through RPA, Chatbots (KSA, Australia, Mexico)**

Source: presentation by K. Farooq at the TCOP Plenary in Tashkent, October 15, 2025.

While many PEMPAL countries continue their digital transformation journey, it is very important to prioritize reform activities. Based on the discussions, **Khuram** suggested considering seven priority areas for further treasury digitalization (Box 3).

Box 3: Prioritizing Future Treasury Digitalization

1. Be cashless, promote digital money – EFT, P-card, mobile money, QR codes
2. Digitize source documents and move away from scanned documents – contracts, invoices, good receipts/inspection or completion certificate, payment orders, budget requests, cash plans; also implement e-signature
3. Simplify and streamline processes – commitments and allotments, cash plans, green corridors, and empowering the line ministries
4. Complete data gaps and strengthen data integrity: IFMIS coverage gaps, end-to-end process digitalization
5. Interoperability – payroll, e-GP, revenue, debt, assets, performance KPIs, budget
6. Use technology for IPSAS transition – dual ledger technology (cash and accrual ledger)
7. Implement consolidation tools and pilot AI selectively: human control, open source, explainability, algorithm impact assessments.

Source: presentation by K. Farooq at the TCOP Plenary in Tashkent, October 15, 2025.

3 Coverage of State-Owned Enterprises by the Treasury: Criteria & Approaches

3.1 State-Owned Enterprises and the TSA: International Approaches and PEMPAL Countries' Practices

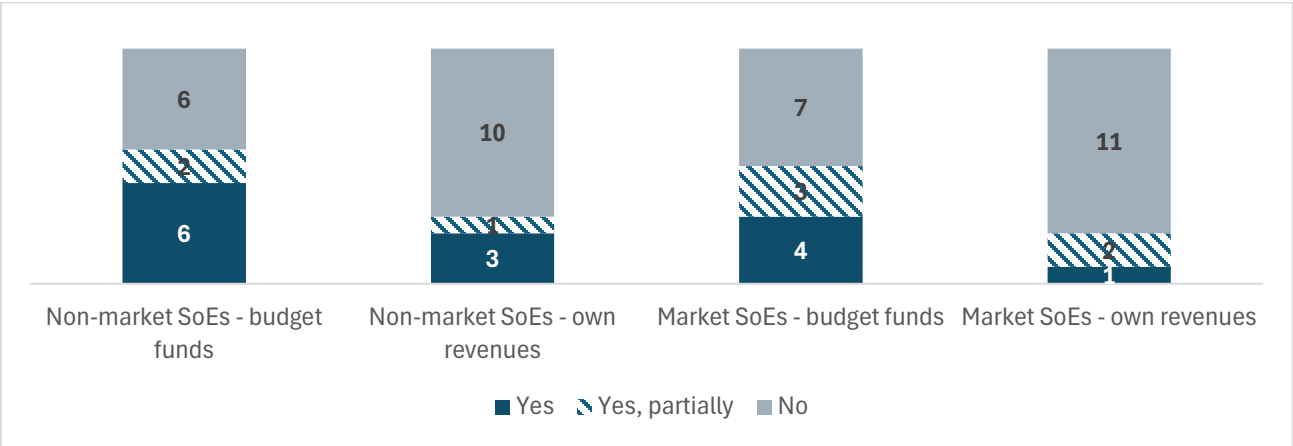
The session started with the TCOP Resource Team presentation on State-Owned Enterprises and the TSA delivered by **Mark** and **Elena. Mark** emphasized that over the past decade, most PEMPAL countries have extended TSA coverage, and the issue of including SOEs in the TSA has become the new focus for further expansion. The issue is complicated by the fact that the SOE definition varies largely by country, and both market and non-market institutions are counted as SOEs. In considering further consolidation, it is recommended to follow the GSM definition of general government that includes non-market non-profit institutions but excludes public corporations (Table 11). To properly classify SOEs into market and non-market institutions, a sectorization exercise should be conducted.

Table 11: Market and Non-Market Institutions

State-owned enterprises (public corporations, market institutions)	Non-Market Not-for-Profit Institutions controlled by Government
- Defined as Corporations in GFS are entities that are capable of generating a profit or other financial gain for their owners, are recognized by law as separate legal entities from their owners, and are set up for the purposes of engaging in market production. SoEs include organizations **that sell their goods and services on the market at economically significant prices**. - They are commercial entities that are owned and/or controlled by a government, which can be full or partial, and engage in commercial activities for the provision of goods and services. These entities can range from large, critical providers of basic services like electricity and transportation to mixed-ownership companies with a commercial focus. - They operate as government-owned businesses, are outside of general government in the broader public sector. Most SoEs will have their own assets and liability management expertise and strategies, and in general it is best they remain at arm's length from government.	- **Non-market institutions (NMIs)** are legal or social entities created for the purpose of producing or distributing goods and services for free or at prices that are not economically significant. - **NMIs are mostly financed by the government**. Nonmarket units also include SoEs that **sell most of their output to government units** (for instance, government-owned IT that provide IT support exclusively, or almost exclusively, to the government). - Only NMIs discharging a government function and designated as government units should be integrated in the TSA and budget. - Many NMIs, which are not commercial, are incorrectly defined as SoEs in PEMPAL countries.

Source: presentation by M.Silins and E.Dobrolyubova at the TCOP Plenary in Tashkent, October 15, 2025 based on GFSM2014

Elena noted that, based on the preliminary TSA Survey results, some PEMPAL countries have already included some SOEs in the TSA. However, there is variation between integrating non-market and market units and also between consolidation of budget funds and SOE own revenues *(Fig. 7)*.



Source: Brief TSA Survey 2025. Data received from 14 PEMPAL countries.

Fig. 7: Including SOEs in the TSA (number of PEMPAL countries)

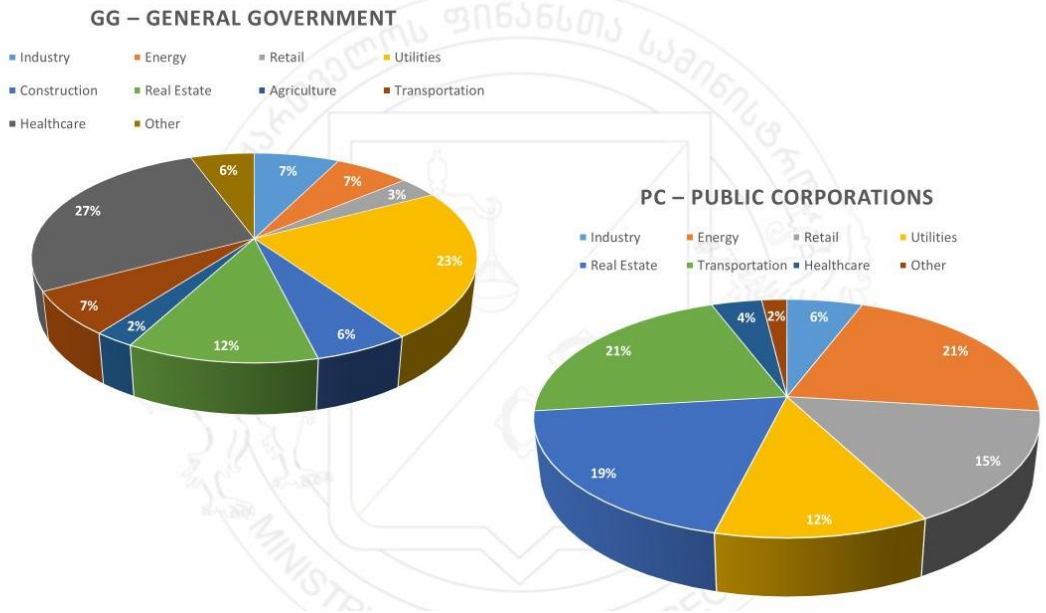
Consolidating non-market SOEs requires several issues be addressed. First, the infrastructure and capacity for further consolidation should be ensured, including the extension of the Unified Chart of Accounts. Second, the type of TSA integration (full integration with FMIS, consolidation of cash balances either directly or through use of Zero Balance Account) should be selected. Third, the type of treasury controls applicable to SOEs should be defined, if any. Fourth, the impact on commercial banks should be factored in. Since consolidation may affect operational flexibility for institutions, treasuries need to conduct direct consultations with institutions and consider service level agreements. Therefore, a gradual approach to consolidating non-market institutions is recommended.

During the Q&A session, **Nazim** raised the issue of consolidating cash without imposing controls. **Mark** noted that the advantages (and disadvantages) of keeping accounts in the treasury compared to private banks should be considered. It is also important to ensure that integrating SOEs does not distract national treasuries from their core functions. **Barış** argued for a nuanced approach and suggested considering some performance metrics, such as dependency on budget subsidies and scope of SOE market activity, to guide consolidation decisions. He also noted the need for shared performance measurement of TSA effectiveness in PEMPAL countries. **Elena** commented that the recent survey contains some data on fund fungibility, and this may be one of the possible indicators. **Rakhat** noted that the process of consolidating SOEs (with over 50 percent state ownership) in the TSA is underway in Kazakhstan. However, the Treasury Committee has faced resistance from commercial banks. He recommended consolidating only budget funds and noted that service levels offered by commercial banks were better. **Abdulaziz** noted that treasury controls applied to SOEs in Uzbekistan differed from those applied to budget organizations. The Treasury Service Committee is working on improving service quality for SOEs. He noted that, so far, some SOEs had been included in the TSA, and the sectorization process was underway.

In the second part of the session, representatives of Georgia and Hungary shared their experiences in integrating SOEs into the TSA. **Irakli Vachnadze, Deputy Head of State Loans and Deposit Operations Department, State Treasury of Georgia,** explained that in Georgia, SOEs, which are being consolidated, are enterprises established with state participation, recorded in the register approved by the Order of the Minister of Finance of Georgia in accordance with the budget classification, and belonging to the general government sector. SOEs can be established at the national, subnational, or local levels. As of January 1, 2024, 114 SOEs

out of 270 were added to the TSA, including 4 central budget SOEs, 8 SOEs funded from the budgets of autonomous republics, and 102 SOEs funded from municipal budgets. The key difficulties faced during the reform included low staff capacity in SOEs and human resource constraints on the treasury side, high numbers of organizations requiring onboarding, diverse accounting standards used by SOEs, and additional load on the eTreasury system due to the increase in transaction volume.

Ilona Rakhmakovi, Project Manager, LEPL Financial Analytical Service, explained that the integration of SOEs into the TSA was based on the results of the sectorization process that used qualitative and quantitative criteria to classify SOEs between the general government and public sector. The criteria included: (i) at lead state equity, (ii) profit generation for the owner, (iii) dependence on budget funding, (iv) type of activity (market or non-market), and (v) importance of price levels (cover or do not cover costs). As a result, 270 SOEs were classified as general government (they are gradually being included in the TSA), and 89 SOEs were classified as public corporations (they will not be covered by the treasury). Notably, the sub-sector of economic activity is not a primary factor affecting the decision: SOEs from the same sector (industry, energy, utilities, etc.) could be classified as general government or as public corporations (*Fig. 8*).



Source: presentation by I. Rakhmakovi at the TCOP Plenary meeting in Tashkent, October 15, 2025.

Fig. 8: Sectorization of SOEs in Georgia

During the Q&A session, **Nazim** inquired how the integration of SOEs into the treasury system affected the right of the institutions to place idle funds in commercial banks. **Irakli** clarified that SOEs have the right to open accounts in commercial banks for deposits to earn interest, but cannot make payments from the accounts in the commercial banks (have to return funds to the treasury). The interest income is reflected in the budget revenue. Another question concerned operations in foreign exchange. **Irakli** confirmed that these operations are also executed by the treasury. In relation to sectorization, **Nazim** inquired about the decision-making process, while **Abdulaziz** asked about any special service conditions offered to SOEs by the treasury and the main risks faced in the process. **Ilona** explained that the decision on sectorization outcomes was approved by an Order of the Minister of Finance. No special service conditions are offered to SOEs, but some temporary concessions have been made to support their integration into the treasury system. For instance,

SOEs can continue to perform accounting using their software and standards. The main transition difficulty was the lack of staff capacity in SOEs, so special training was organized to address this issue. **Aynura** inquired about the plans for integrating SOE into treasury accounting and reporting. **Ilona** mentioned that at the first stage, SOEs would continue using current accounting systems, while the treasury would undertake accounting for General Ledger purposes. The process of including the data on SOEs in the consolidated budget report has not been completed. In the future there may be a need to change the Unified Chart of Accounts to account for SOEs.

András Réz, Advisor to the Vice President of the Hungarian State Treasury, shared the recent developments in extending the scope of the TSA in Hungary. Currently, the TSA in Hungary covers some SOEs (Box 4) and some municipalities. However, in 2025, a decision was made to mandate local authorities and their budgetary institutions to transfer and maintain on the TSA the liquidity exceeding five percent of their annual budgets. In October 2025, the system was applied to the 49 largest municipalities, resulting in additional EUR1 billion liquidity on the TSA. It is planned to expand it to all municipalities in 2027. The new system will also help local authorities to invest idle cash and receive additional revenues.

Box 4: State-Owned Enterprises and TSA in Hungary

In Hungary, several SOEs, such as non-profit institutions, Hungarian National Asset Management Ltd, Student Loan Center Ltd, and National Road Toll Service Ltd, are included in the TSA. Other SOEs, such as state-owned financial corporations, large SOEs offering public services (state railway, Hungarian Post), and the Government Debt Management Agency (ÁKK), operate outside of the TSA. Effective 2025, other companies can be included in the TSA by the decision of the Minister of National Economy, but no such decisions have been taken so far. The rationale for consolidating SOEs in the TSA includes the decrease in net financing needs and the availability of additional funds for cash management. However, consolidation may also increase the liquidity risks and result in increasing the cash buffer. Currently, SOE funds account for some 20 percent of the total TSA balance.

Source: presentation by A. Rez at the TCOP Plenary in Tashkent, October 15, 2025.

During the discussion, **Barış** inquired about the position of the EU towards consolidating local governments' funds on the TSA and asked if the optimal TSA balance was a variable or a fixed value. **András** clarified that the KPIs for the TSA were fixed for a year and revised annually. The minimum TSA balance is estimated as the gross expenditure during two peak expenditure days. The optimal TSA balance is estimated as an average expenditure during 1.5 months. He added that in integrating local budgets into the TSA, Hungary followed the practice used in the Netherlands. **Erekle** inquired about the functions of the EximBank. **András** explained that this bank supported export operations.

3.2 Table Discussions on Including SOEs into the TSA

During the table discussions, the participants identified advantages and disadvantages (risks) of inclusion of SOEs into the TSA (Table 12), formulated the criteria for inclusion, and shared their country practices in this area. The criteria for including SOEs in the TSA, formulated by the plenary participants, included (i) state share in equity (starting from 100% state-owned and then decreasing the threshold to 50% owned), (ii) public companies listed on the stock exchange and export-oriented SOEs (should not be included in the TSA), and (iii) importance of public institutions and their dependence on budget transfers.

Summarizing the discussion, **Mark** pointed out the importance of applying a broader economic view (while integration may increase cash balances of the TSA, this may also result in reduced performance of the state commercial enterprise) on the issue of integrating SOEs in the TSA and considering both potential benefits and potential losses from the cash consolidation. He also reiterated that in general, it was advisable to consider integrating non-market, not-for-profit entities only into the TSA.

Table 12: Advantages and Disadvantages of Including SOEs in the TSA

Advantages	Disadvantages (Risks)
For PFM in general • Increased transparency of SOE revenue and expenditure • Reduced risk of excessive subsidies to SOEs from the budget and more efficient use of public funds • Reduced risk of misuse of budget funds by SOEs • Strengthening budget discipline, preventing fraud and tax evasion • Possibility to control SOE expenditures (for instance, on payroll) • Increased volume of cash on the TSA and increased cash buffer • Reduced borrowing needs • Possibility to integrate SOEs into consolidated financial reporting **For SOEs** • Increased operational efficiency in managing funds • Savings for SOEs on bank commissions • Additional opportunities for SOEs to invest idle funds and earn revenues	**Broad economic consequences** • Excessive controls may contradict market principles • SOE motivation and operational efficiency may deteriorate • Negative impacts on commercial banks' liquidity **For SOEs** • Treasury cannot offer all the services provided by commercial banks, and the quality of treasury services may be lower • Reluctance of SOEs to share information on financial flows • Lack of capacity, special training is needed for SOE staff **For the Treasury** • Amendments to legal and regulatory framework are needed • Increased workload on treasury staff and increased load on treasury information systems • Treasury systems have to be expanded to be able to support new types of transactions • Unified Chart of Accounts needs to be changed • New reporting procedures need to be implemented

Source: summary of discussions

4 News from PEMPAL Countries

Lusine Ayvazyan, Head of Division of State Budget Accounting, Operational Department, Ministry of Finance of Armenia, presented an overview of the evolution of treasury in Armenia. She demonstrated how process digitization helped Armenia to optimize the structure of the national treasury (in 2014, all 44 local treasury offices were closed) and simultaneously to expand the range of treasury clients. Currently, TSA in Armenia covers the funds of the state and local budgets (since 2000), state and municipal extrabudgetary funds (since 2001), international projects PIUs (since 2010), and state non-profit organizations (since 2018). In addition, state and municipal funds (since 2018), municipal non-profit organizations, SOEs (with state or municipal share over 50%) and legal entities established by these organizations (since 2025) may open treasury accounts voluntarily. In 2018, Armenia introduced a single tax account, and from 2026, it is planned to collect state duties through a single account. The 2024 upgrade and expansion of the e-payments system allowed the treasury to accept payments through POS terminals. Future Treasury reform plans include developing the new government FMIS. Using AI in treasury operations is also being explored.

During the Q&A session, several details were clarified. **Nazim** inquired about the staffing of the treasury and the procedures related to the single tax account. **Lusine** noted that the treasury comprised 3 departments in the Ministry of Finance with some 65 staff in total. She explained that if a mistake in the taxpayer's identification number was made, the payment would be returned to the taxpayer. In case the paid amount exceeds the amount due, the taxpayer may choose to request a refund from the treasury or keep the funds for future payments. **Dan Berladean, Moldova,** asked about the infrastructure used for POS terminals and the time for payment processing through POS terminals. **Lusine** explained that a tender among commercial banks had been held, and the commercial bank that offered the lowest commission rate had been selected. It takes one day to receive the funds paid through the POS terminals on the TSA. The e-payments via a website or a mobile application are processed almost instantly. The Uzbekistan delegation asked about credits to budget organizations. **Lusine** commented that credits were provided mostly to non-budget organizations. However, accounting for these credits is not currently automated and is among the priorities for the new IFMIS.

Mimoza Peco (Pilkati), Director of Treasury Operations, Directorate General of Treasury, Ministry of Finance of Albania presented an overview of data flows used to analyze the GG budget execution in AGFIS. Enhanced data flows have enabled notable recent improvements in the cash forecasting process. A rolling cash flow forecast is available daily, projecting three months ahead based on actual data/up to two years ahead using historical trends. In addition, a pilot with three-line ministries and tax and customs authorities has been implemented to complement the top-down forecast with bottom-up information. To strengthen cash forecasting, an inter-institutional working group for cash forecasts was established in 2025. On the cash management side, cash balances of the TSA in the Central Bank are now remunerated on a daily basis.

During the Q&A session, **Dan** and **Erekle** raised a question about the interest rate paid by the Central Bank on the TSA balance. **Aurela Velo, Head of the Treasury, Albania,** explained that the rate was estimated as a weekly REPO rate minus 1 point and was about 2.5 percent. **Khuram** inquired about the cash control used to check invoices before payment processing. **Mimoza** clarified that monthly cash plan ceilings were used to ensure cash controls.

5 Feedback Session

During the feedback session, the participants shared their impressions about the event and discussed possible topics for the next TCOP events. In their reports, all participants thanked the hosts and emphasized that the event allowed them to learn many new things and broaden their contact networks. The participants proposed to further use the practice of Uzbekistan and invite colleagues from other public institutions to cover the topics of common interest. For instance, it would be interesting to invite representatives of the Central Bank or an SOE that is covered by the Treasury. The proposed topics for new events are summarized in Table 13.

Table 13: Topics for Discussion during the Next TCOP Events

Area	Possible topics
Cash management	Investing treasury surpluses Coordination between cash management and monetary policy, economic implications
Using IT in treasury operations	Managing and developing IFMIS Integrating treasury systems with other information systems Integrating AI in IFMIS and AI Development Strategy Risk management in AI implementation Developing early warning systems Digital currencies Foreign exchange operations in countries that are not part of SWIFT
Public Sector Accounting and Reporting	IPSAS implementation Data collection for consolidating financial statements
Other (cross-cutting)	Green budgeting, green bonds, green procurement

Source: summary of discussions

Mark shared the main thematic takeaways from the event (summarized in the Conclusions section). **Fabienne** thanked the participants for their proposals and noted that the next TCOP event is planned for February 2026. In addition, several VCs, including the one on digital currencies, will be organized. **Abdulaziz** thanked everyone for active participation, rich discussion, and the opportunity not only to share experience but also to get new ideas on PFM development from peers. He declared the meeting closed.

Conclusions

The event demonstrated that Uzbekistan has embarked on a broad range of PFM reforms and has achieved significant progress in many areas, including e-procurement, IPSAS reforms, internal audit, and treasury modernization. System integration of procurement and payments in Uzbekistan is exemplary in the region. Uzbekistan has undergone an impressive TSA consolidation, and further automation of business processes will further raise administrative efficiency. Further strengthening of cash management and cash forecasting, as well as moving to selective, risk-based treasury controls, are important priorities for the treasury in Uzbekistan, and digital tools, including AI, could help support this.

Though the interest in implementing disruptive technologies, such as AI and BI, in treasury operations is very high, such technology complements rather than substitutes human involvement. The cases from South Korea and other OECD countries, as well as from Türkiye, Georgia, and Serbia, show that AI can be used to support decision-making in the treasury context by raising the quality of cash forecasting, detecting anomalies in payment transactions, identifying fiscal risks, reducing fraud, and monitoring budget execution. However, implementing AI entails additional technology-related risks that need to be acknowledged and systematically addressed, with many AI initiatives failing or not developing beyond the pilot phase. It is therefore important that digital transformation in the treasury is driven by specific operational needs rather than by a desire to test the potential of new technology.

Most PEMPAL countries have broad TSA coverage, and further cash consolidation raises additional issues. In PEMPAL countries, there are different types of entities which we collectively refer to as SOEs: (i) commercial entities in the public sector and (ii) non-market non-profit institutions (NPIs) in the general government sector. While cash consolidation could be beneficial for non-market SOEs, the benefits of extending coverage to market entities are not so clear, and may impinge on their operations and performance. Integration must therefore have a broader economic view than just consolidation of cash in the TSA. Inclusion of SOEs into the TSA requires a sectorization process that would help differentiate between market and non-market units. The recent experience of Georgia provides a useful example of sectorization for other countries.

The event participants expressed very high interest in various aspects of Uzbekistan's experience and other themes included into the event agenda, and many delegations noted the discussions were directly relevant to their reform priorities.