

**PEMPAL Treasury Community of Practice (TCOP)
Strengthening and Measuring Treasury Performance
in Cash Management and Forecasting**

Thematic Meeting



Tirana, Albania

November 4-6, 2024

EVENT REPORT



Table of Contents

Introduction & Opening	3
Day 1: Cash Management and Cash Forecasting in Albania: Achievements and Strategic Priorities	6
Day 2: Measuring Cash Management and Cash Forecasting Performance	10
Day 3: News from PEMPAL Countries	15
Conclusions	18
Planning for the Future	19



Introduction & Opening

On November 4-6, 2024, PEMPAL Treasury Community of Practice (TCOP) held a thematic event in Tirana, Albania on Strengthening and Measuring Treasury Performance in Cash Management and Forecasting. The main objective of the meeting was to discuss the approaches to improving and measuring cash management and cash forecasting performance. The presentations by the host institution, the Treasury Directorate General of the Ministry of Finance of Albania, on its recent modernization efforts and reform plans set the stage for thematic discussions. The meeting also provided an opportunity for all the participants to exchange the latest information on relevant developments in their countries.

The meeting was attended by over 70 participants including 58 officials of 17 TCOP member countries (Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Croatia, Georgia, Hungary, Kazakhstan, Kosovo, Kyrgyz Republic, Moldova, North Macedonia, Romania, Serbia, Tajikistan, Türkiye, and Uzbekistan) and representatives of the European Union and the Embassy of Switzerland to Albania. A representative of the International Monetary Fund joined the plenary remotely.

The meeting was facilitated by the World Bank team, including Elena Nikulina (Senior Public Sector Specialist, PEMPAL TCOP Resource Team Leader), Elena Dobrolyubova (PEMPAL TCOP Resource Team member/Consultant), Mark Silins (PEMPAL TCOP Resource Team Advisor / Consultant), Mike Williams (PEMPAL TCOP Resource Team Advisor / Consultant), Naida Carsimamović Vukotić (PEMPAL Resource Team member / Consultant). Jonida Myftiu (Senior Financial Management Specialist, World Bank Tirana Office) joined the team in Tirana. Galina Kuznetsova (Senior Financial Management Specialist, TCOP Resource Team member) also joined remotely. The PEMPAL Secretariat, including Tetiana Shalkivska and Mikaela Stepanyan, provided logistical support.





The meeting was opened by the General Secretary of the Ministry of Finance of Albania, **Mr. Beja Besmir**. The Minister of Finance of Albania, **H.E. Petrit Malaj**, **Mr. Philipp Arnold**, Deputy Head of Mission, Embassy of Switzerland to Albania, and **Mr. Hubert Perr**, Head of Cooperation, EU Delegation in Tirana, welcomed the participants during the opening session.

In his welcome remarks, **H.E. Petrit Malaj** emphasized the high relevance of strengthening PFM for achieving national developmental objectives and the value of the PEMPAL program in supporting these efforts.



“Our collective goal is to enhance the quality of governance and wellbeing of our people through sound financial policies and practices... I would like to thank the PEMPAL program and all the development partners supporting it for enabling us to share our experience and share lessons learned at events like this one. I also heard that the program is unfortunately approaching the closure of its current phase and very much hope that the donors will continue to support PEMPAL in the future”.

P. Malaj, Minister of Finance of Albania

Mr. Philipp Arnold welcomed the participants on behalf of the donors supporting the PEMPAL program. He pointed out the importance of the PEMPAL program in supporting countries of ECA region in their efforts to minimize fiscal risks, and the crucial role of sound cash management and forecasting practices for this process. Mr. Arnold also highlighted the high impact of the peer learning instruments used by PEMPAL in promoting PFM reforms:

“Peer learning through such communities of practice has proven beneficial for public finance professionals. By sharing direct advice, identifying good practices, and learning about international standards and norms you can better inform policies and implement reforms. Learning from the experience of others helps countries strengthen their approach to PFM reforms and increases the chances for success. We have seen how member countries have obtained knowledge and how they share public finance strategies, improve legal frameworks and modernize business processes”.

P. Arnold, Deputy Head of Mission, Embassy of Switzerland to Albania



In his welcome remarks **Mr. Hubert Perr** highlighted the relevance of public finance management and the treasury for achieving developmental objectives in the challenging economic environment. Improving cash management and forecasting practices is at the heart



of PFM reforms as it helps governments to reduce borrowing costs and raise the efficiency of public spending. He emphasized the importance of peer learning and exchange of experience and acknowledged the impact of PEMPAL in strengthening PFM practices and supporting countries in their developmental efforts.



“PEMPAL is an instrument where in such a dynamic and challenging environment learning from each other in a peer-to-peer mechanism I think is really the most efficient and effective way. And, hence, the European Union places a lot of emphasis on supporting such initiatives”.

“From the European Union's perspective, it's nice to see it brings together EU member states, countries in the EU accession process, and countries that are very relevant, important strategic partners to the European Union. So this kind of group of people coming together and learning from each other is really what brings effectiveness into such a mechanism”.

Mr. Hubert Perr, Head of Cooperation, EU Delegation in Tirana

Following the opening remarks, **Ms. Elena Dobrolyubova**, TCOP Resource Team member, introduced the agenda and participants of the meeting.

Mr. Erekle Gvaladze, TCOP Executive Committee Chair, presented a brief overview of the activities performed by the Cash Management and Forecasting Thematic Group since the last face-to-face meeting in Vienna in November 2023. He emphasized that the Cash Management and Forecasting Thematic Group had been the most active thematic group for the past three years (with one face-to-face and five virtual events) and also had the greatest impact on treasury development in PEMPAL countries.

Mr. Gvaladze also pointed out that the meeting in Tirana was a special meeting, as the agenda cut across two thematic areas: the evolution of the treasury role and functions and cash management. He thanked the hosts and wished the participants fruitful discussions in Tirana.





Day 1: Cash Management and Cash Forecasting in Albania: Achievements and Strategic Priorities

The first day of the plenary was devoted to the experience of the hosting country. **Ms. Aurela Velo**, Director General of Treasury, Ministry of Finance of Albania, opened the session and presented an overview of the Albanian Sectoral Strategy for Public Financial Management 2023-2030 (PFM Strategy). She emphasized that the PFM strategy in Albania entailed an ambitious reform agenda, its implementation supported one of the fundamental pillars for EU membership. The strategy is well coordinated with other strategic documents in the public sector, and the Treasury is responsible for implementing several components under Pillar 4 of the Strategy related to accounting and budget execution, notably accounting, cash management, and asset management.



Ms. Velo noted that the previous PFM Strategy for 2019-2022 had largely achieved its objectives; however, its implementation also faced some challenges which were taken into account when the new PFM Strategy was drafted (Table 1).

Table 1: Implementation of the PFM Strategy for 2019 – 2022 in Albania: Achievements and Challenges from the Treasury Perspective

Achievements	Challenges
<ul style="list-style-type: none"> • HRMIS-AGFIS integration has been completed for the 120 planned budget institutions (BIs), • Web Portal for electronic archive accessible to 300 new BIs, • Migration of fixed assets data in AGFIS completed for two online BIs, • The rate of arrears as a percentage of total expenditure decreased to 1.88% (achieved PEFA score A, below 2%), • Liquidity forecasting improved, and • Medium Term Debt Management Strategy 2022-2026 was approved. 	<ul style="list-style-type: none"> • Lack of resources to acquire AGFIS licenses limited the possibility to roll-out the system to other BIs, • Delays in development of other systems (i.e. customs) for integration with AGFIS, • Challenges in extending commitment controls to BIs that are not direct AGFIS users, • Insufficient cooperation of BIs in bottom-up forecasting, • Lack of instruments to invest excess TSA balance (cash), • Cash buffer definition not reflecting the reality, • Complexity of accrual accounting

Source: adopted from the presentation by Ms. Aurela Velo

It is important to note that each objective of the PFM Strategy for 2023-2030 has specific measurable indicators. In the area of cash management, the accuracy of monthly cash forecasts is targeted to increase from 88% in 2023 to 96% in 2026. It is also planned to include additional detailed components in the forecast of inflows and outflows, and to expand the number of cash management instruments used.



Following the presentation of the new PFM strategy, **Ms. Mimoza Pilkati**, Director of Treasury Operations' s Department, **Ms. Alketa Braçe**, Head of Financial Reporting and Accounting Unit, and **Ms. Alda Gashi**, Head of Treasury Single Account Management Unit, presented on the comprehensive performance system for cash flow forecasting and cash management.

The presentation highlighted the recent improvements in cash management and cash forecasting in Albania, including (i) revision of the service level agreement with the Bank of Albania to increase the limit on local currency deposits, to eliminate the limit on foreign currency deposits, and to facilitate the use of SWAP operations, (ii) introducing a bottom-up approach in addition to the top-down approach in cash forecasting, and (iii) piloting the new CFAT tool for cash forecasting. A new approach for determining the cash buffer has also been developed. While currently the cash buffer is determined based on cash flows (as an average cash flow balance for the three peak days in a month), in the future it is envisaged to use two cash buffers:

- Transactional cash buffer (TCB) will be determined up to 1% of the previous year's GDP,
- Security cash buffer (SCB) will be determined by the amount of external and internal debt service for the next three months.

The Albanian treasury has introduced an elaborate system of performance indicators to measure all core treasury functions, including cash management and forecasting (Table 2).

Table 2: Performance Indicators Used in Albania to Measure Cash Management & Forecasting

Cash Management KPIs	Cash Forecasting KPIs
<ul style="list-style-type: none"> - Failure to process payments in AGFIS at the appropriate time (technical issues) - Failure to perform payments in each payment session in AGFIS (insufficient balance of the TSA) - Cash revenues collected by commercial banks not transferred in time to the Unified Treasury Account (TSA) in the Central Bank in accordance with the bilateral agreement with the banking system (on daily basis) - Rejected payments with errors from banking system 	<ul style="list-style-type: none"> - Timely carry forward of multiyear commitments to the next budget year - Inaccurate daily cash flow forecasting due to a lack of cash liquidity for payments - Number and amount (value) of revisions of the monthly cash plan resulting from line ministries not respecting cash limits - Time of notification about large payments by line ministries

Source: adopted from the presentation of Ms. Mimoza Pilkati.

Mr. Jonas Frank, Regional PFM Adviser, International Monetary Fund, joined the meeting remotely as a discussant and outlined the key lessons learned from the Albanian experience in modernizing cash management and forecasting practices:

- Investment in cash forecasting is very useful as it provides the basis for decision-making in an uncertain world. The three-month cash forecasting horizon used in Albania is plausible and could be considered by other countries.
- After a reasonable time using the top-down approach to cash forecasting it is useful to supplement this with bottom-up forecasting. Albania has approached this strategically by piloting with selected budget institutions before a full rollout.
- Using performance indicators and capturing future cash needs at the commitment stage helps to improve the quality of cash management.



- Strong interaction between cash management and debt management functions, including at the technical committee level, sets the basis for using more active cash management tools.
- Treasury functions are at the core of governance, and Albania presents a good example of emphasizing the role of the treasury in the PFM strategy.

The session on the Albanian experience was concluded by **Ms. Kesjana Halili**, Director General of Debt Management who explained the Albanian approach to the interaction between cash management and debt management functions. Overall, public debt in Albania was on a decreasing path: the debt to GDP ratio dropped from 74.5% in 2021 to 58.9% in 2023 and is expected to fall further by the end of 2024. All domestic debt is issued with fixed rates, and the average term to maturity has increased. The proper interaction between cash management and debt management is important for the following reasons:

- **Debt Servicing:** Regular debt payments (interest and principal) impact available cash flow and liquidity.
- **Debt Issuance Timing:** The timing of issuing new debt can affect cash management, as it may involve large inflows or outflows of cash.
- **Liquidity Management:** Effective cash management helps ensure that debt obligations are met on time, reducing the need for costly emergency borrowing.
- **Surplus Cash Utilization:** Efficient cash management can optimize the use of surplus funds, potentially reducing the need for new debt issuance.

In Albania, a practice of regular communication between debt management and cash management departments was introduced. The Debt and Liquidity Management Committee established in 2017 is an effective mechanism for coordinating decision-making (Box 1).

Box 1: Debt and Liquidity Management Committee in Albania

The Debt and Liquidity Management Committee in Albania was established by the order of the Minister of Finance no. 4 dated 13.01.2017. It is chaired by the Deputy Minister responsible for debt management and budget execution issues, as well as co-chaired by the Secretary General of MoF. The members of the committee are the heads of MoF departments on budget, debt, treasury, fiscal and macroeconomic issues, borrowing, and treasury operations, as well as the Central Bank representatives.

Committee meetings are held every month and the main issues for discussion are focused on:

- flows and liquidity situation for the current month and forecast for the next period,
- borrowing progress in the Internal Market, reporting and expectations for borrowing in the coming periods, and
- other issues related to liquidity and debt management.

The decisions taken are mainly related to the approval of the issuance calendars of government securities in the internal market.

Following the presentations by the hosts, participants discussed the Albanian experience around the tables. The following aspects of the Albanian experience were highlighted as particularly interesting and relevant:

- Impressive system of strategic planning,



- High level of automation, including integration of AGFIS with other systems and the e-archive system for other institutions,
- Expenditure control for all institutions, with linked sanctions,
- The practice of prior notifications of large payments by budget institutions,
- Significant progress in decreasing expenditure arrears,
- Use of various cash forecasting scenarios,
- Practice of preparation of three-month forecasts which are regularly updated,
- Coordination of debt and cash management, including the operation of a Debt and Liquidity Management Committee,
- The policy of replacing external with internal debt,
- Legal definition of the maximum TSA balance,
- Practice of measuring treasury staff performance at an individual level, and
- Significant attention paid to staff training

The participants noted the ambitious roadmap for further reforms in Albania; and made a number of suggestions that could be considered for further development of cash management and forecasting practices in the host country:

- Further encourage the bottom-up approach in cash forecasting,
- Extend direct access to AGFIS (to the extent possible),
- Link the size of the cash buffer to macroeconomic indicators (e.g., GDP), and
- Introduce more active cash management tools, including the temporary placement of idle TSA balances in commercial banks.

Overall, the presentations by the Treasury of Albania demonstrated significant progress of the country's treasury practices for the past years. The strong strategic focus and continuous performance measurement helped the Treasury of Albania to reduce arrears, introduce the practice of forecasting for three months ahead, strengthen the coordination between cash and debt management, and achieve progress in the relations with the Central Bank of Albania. Several issues will require further attention, including the further development of bottom-up cash forecasting practices, cash buffer development, cooperation with the Central Bank, and building active cash management capacity.



Day 2: Measuring Cash Management and Cash Forecasting Performance

The main theme of the second day of the meeting was measuring cash management and cash forecasting performance. To set a framework for the discussions, **Mr. Mike Williams** presented approaches to designing key performance indicators (KPIs) for cash management, and discussed the challenges related to KPI choice and measurement. KPIs are measurable values that show progress towards a key objective. They help to assess and communicate performance – and to help management identify areas for improvement. It is always challenging to design a balanced system of KPIs which, on the one hand, presents all the information necessary for the decision-making process and, on the other hand, is not overcomplicated. Trends in KPI values are often more important than absolute values.

In the area of cash management and cash forecasting, there are four areas on which KPIs can focus. Foremost, cash management KPIs should reflect the high-level objective of ensuring that cash is available to facilitate the smooth execution of the budget. Several KPIs, such as zero arrears, absence of delays in payment processing, a positive balance in the TSA, or the frequency of using the central bank overdraft facility, can be applied in this regard (Fig. 1).



Cash Management: the High-level Objective

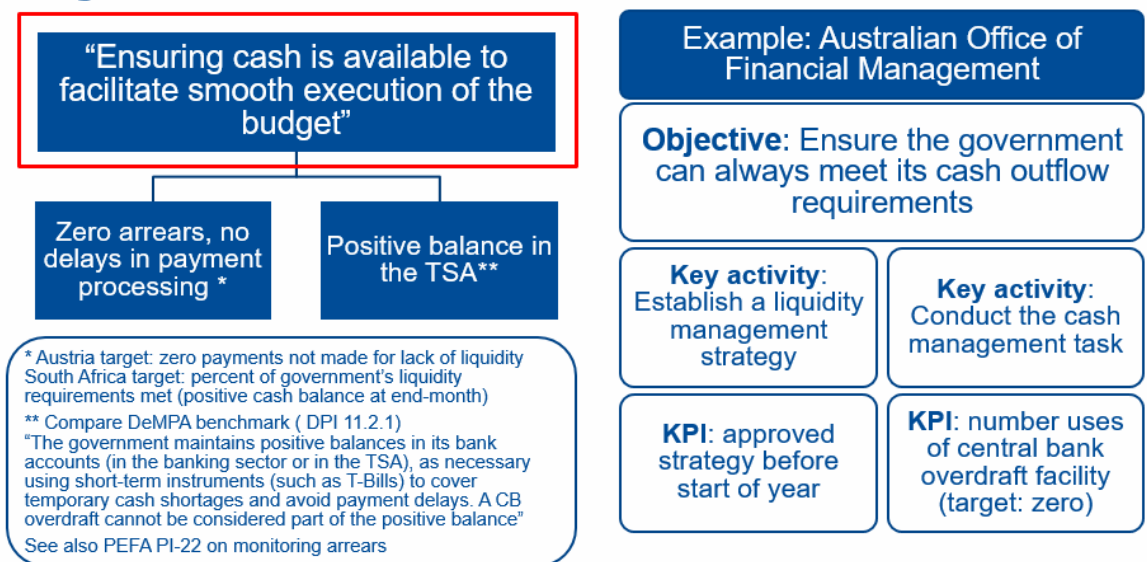


Fig. 1: Measuring High-Level Cash Management Objective

However, the high-level objective metric alone is not sufficient for measuring the efficiency and effectiveness of cash management operations. Therefore, it is advisable to consider KPIs that could be used to measure the performance of constituent pillars of cash management, i.e. the TSA, cash forecasting, and active cash management. Mr. Williams noted that, although some international benchmarks attempt to measure various aspects of TSA, they also have important



limitations. For instance, PEFA 21.1 indicator attempts to measure TSA coverage, but it applies only at the central government level and does not emphasize enough the importance of the fungibility of all balances, including e.g. EBFs. PEFA 21.2 indicator is focused on the process of cash forecasting and especially the frequency of forecasts, but it does not address their quality or accuracy. Measuring active cash management performance is even more challenging: although the deviation from a formal cash buffer can be measured, it is also important to account for the costs of maintaining the cash buffer at the target level. To overcome this challenge, comparing the actual net revenues on cash surpluses (less the cost of temporary borrowing) with the alternative ‘do nothing’ strategy could be considered. Finally, Mr. Williams pointed out that, using KPIs in the treasury context was not limited to cash management functions and should be considered for other functions, such as payment authorization and processing, accounting and reporting, digitization, and HR management.

Following the expert presentation, several PEMPAL country cases on using KPIs to measure cash management and forecasting were presented and discussed. **Mr. Barış Can, Deputy General Director, General Directorate of Public Finance, Ministry of Treasury and Finance of Türkiye** presented the experience of Türkiye in measuring cash management performance. Türkiye has an elaborate cash management performance measurement system: 17 KPIs are used to measure variously cash flow forecasting, TSA systems, cash management, and reporting (Table 3). Most KPIs are measured daily and thus support the decision-making process. While some KPIs are formalized in strategic documents, others are used for internal management purposes only.

Table 3: KPIs for Measuring Cash Management Performance in Türkiye

Area	KPIs	Targets
Cash-flow forecasting	Daily Cash Balance Forecast Deviation	<0.5%
	Monthly Revenue Forecast Deviation	<4%
	Monthly Expenditure Forecast Deviation	<3%
	Monthly Cash Balance Deviation	does not exceed threshold X
TSA system	Coverage of the New TSA* (# of institutions)	defined by law
	Efficiency of the TSA Function	Establishing full-fledge TSA
	Expenditures in the TSA / Total Expenditures	>95% of CG**, >85% of GG**
	Revenues in TSA / Total Revenues	>99% of CG**, >85% of GG**
	The Percentage of Cash Balance in New TSA Used as Cash Buffer	70%
Cash management	Discrepancy Between Accrual and Cash-based Non-interest Expenditures (%GDP)	<0.5%
	Percentage of Expenditure Arrears	<3.5%
	Transaction Costs / Expenditures	<0.025%
	Rate of Return on Cash Holdings	Close to the rate of market return
	Efficiency in Cash Request System	100%
Reporting	Reporting of Treasury Cash Statement	Twice a day
	Reporting of Annual Cash Flow Forecasting and Cash Balance Estimation	Daily
	Reporting of Distribution of Financial Resources of Institutions	Weekly

* extended TSA, ** CG – Central Government, GG – General Government.

Source: adopted from the presentation by Mr. Barış Can



The approach of Hungary to cash management and measuring cash management performance was presented by **Mr. András Réz**. In Hungary, two performance indicators are used to measure cash management performance, the minimum and the optimum TSA balance. The minimum level is a binding benchmark, and the Hungarian debt management agency, ÁKK, initiates borrowing of additional cash if it is not achieved. Non-compliance tends to reflect short-term forecasting errors for large budget expenditures where ÁKK's repo transactions are limited due to insufficient market demand. The optimum balance is not binding and should be reached only if the cost is affordable. Most of the time TSA balances at the end of the month are above the optimum level (Fig. 2).

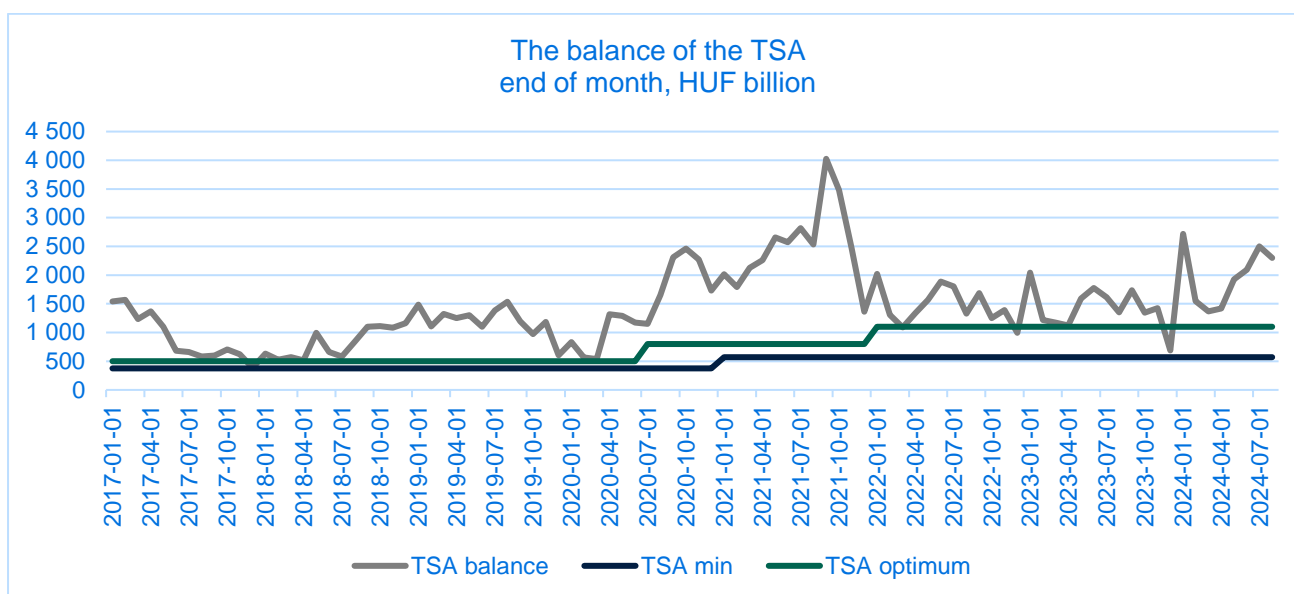


Fig. 2: Meeting Minimum and Optimum Balances in the TSA in Hungary

The presentation by **Ms. Danka Mihaljević, Head of Sector, Ministry of Finance, Republic of Croatia** focused not only on measuring cash management performance but also on broader issues of the treasury role and TSA coverage in the Republic of Croatia. Given the high autonomy of local governments in Croatia, the country operates a two-tier TSA with the central treasury having limited control over the cash balances of local government bodies. At the central government level, the treasury coverage has undergone significant evolution since the TSA was established in 2001 (Fig. 3). In 2023, 98% of central government revenues and receipts and central government expenditures and outlays were in the TSA.

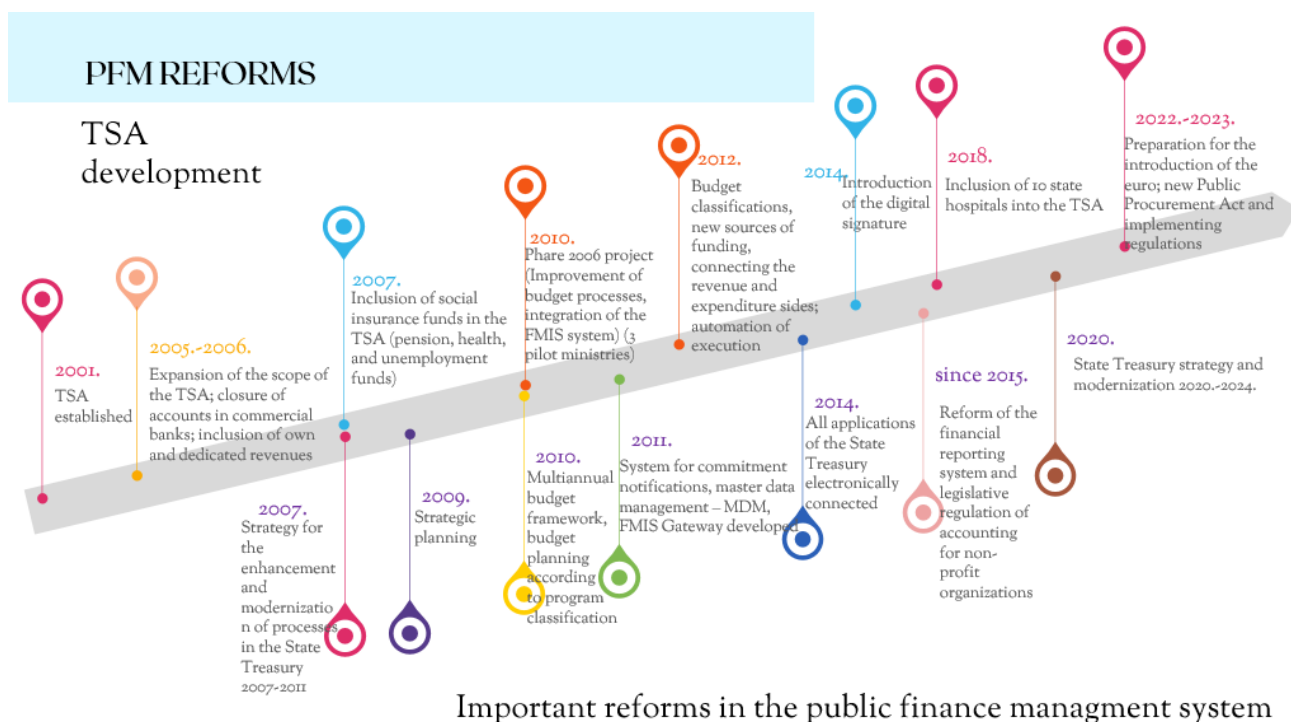


Fig. 3: TSA Development in the Republic of Croatia

Ms. Yeva Grigoryan, Public Debt Management Department Specialist, and Ms. Anzhelika Stepanyan Chief Specialist, Public Debt Management Department, Ministry of Finance of Armenia shared the experience of Armenia¹. In Armenia, the cash management function is closely related to debt management. A stabilization account is used to ensure smooth budget execution, and a formal cash buffer amounting to about 0.1% of GDP has been established. However, several challenges have been identified: deposits with the Central Bank of Armenia (CBA) are the only instrument available for the placement of temporary funds, and daily cash balances in the TSA are not remunerated. Some government agencies provide their cash requests irregularly, but there is no formal requirement for bottom-up information and the changes to budget execution are frequent.

Ms. Elena Dobrolyubova, TCOP Resource Team member, presented interim results of the survey on performance measurement in treasury operations in PEMPAL countries. She noted that the current practice varies: several countries have advanced performance measurement systems (Türkiye, Albania), some use KPIs selectively for specific purposes (Kyrgyz Republic) or at a specific level (Kazakhstan), some use KPIs to measure project/reform activity (Croatia), some only to measure processes (Moldova, Kazakhstan, Uzbekistan), and some do not use them at all (or do not formalize such use). Some countries measure KPIs frequently (i.e., daily, weekly) which helps to use performance data to support management decisions. However, most countries expressed interest in learning about other country experience in using KPIs. Following

¹ The presentation by the representatives of the Public Debt Management Department of the Ministry of Finance of Armenia was part of the News from PEMPAL Countries Session, it was delivered on Day 2 for organizational reasons.



additional clarifications from interested countries, it is planned that the survey results will be finalized by early 2025.

The primary objective of the subsequent group discussions was to test the performance indicators that the resource team proposed for measuring various aspects of cash management and forecasting performance, to share the self-assessment results, and to discuss the wider options for measuring cash management performance.

To measure high-level cash management performance, the countries were asked to report the percentage of the total amount of monthly payments due that are not made on the due date (as a result of the lack of liquidity), and the ratio of outstanding advances or other borrowing from the central bank to total monthly expenditure.

The discussion demonstrated that a minority of countries encountered delays in payments due to the lack of liquidity, and none of the TCOP member countries borrowed from the Central Bank (in some countries, such as the EU member states and Türkiye this practice is illegal). It was also noted that application of the first indicator was not fully comparable across countries as there are variations in determining due dates². Some countries noted that good payment discipline meant that this indicator might be irrelevant, but the resource team explained that it was borrowed from an OECD country (Austria) and that continuously maintaining zero-level delays is a good measure of cash management performance in line with its high-level objectives.

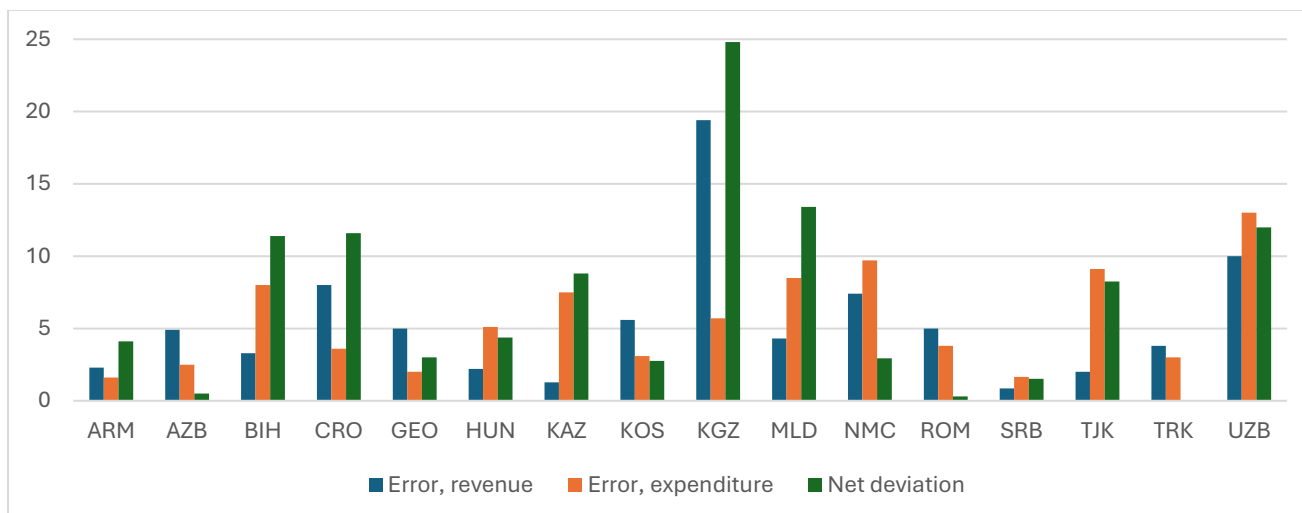
To measure the TSA coverage, the participants estimated the percentage of total general government cash balances in the TSA, and under the control of the Treasury and available to meet commitments. The results revealed large variations in TSA coverage ranging from 4.2% in Kazakhstan³ and 10.9% in North Macedonia to 100% in Romania, 95.8% in Uzbekistan, and 92.1% in Türkiye. These differences are mostly explained by the lack of fungibility of a substantial proportion of general government balances. In some cases (i.e., future funds or two levels of TSAs in BiH and Croatia), the lack of fungibility is well justified; but in other cases, more effort in consolidating cash would be beneficial. Overall, the indicator was found relevant, but a more detailed methodology is needed to ensure that the data on TSA coverage is comparable across countries.

To measure cash forecasting accuracy, countries estimated revenue and expenditure errors of monthly forecasts and the net deviation of the actual TSA balance from the one projected. The estimated results highlight significant variations both across and within countries (Fig. 4).

The meeting participants found the forecasting accuracy indicators relevant for internal management purposes and benchmarking. However, while revenue and expenditure errors were deemed straightforward, different approaches may be applied to measuring the net deviation, since its value also reflects the results of using active cash management. It was also noted that conservative forecasting of revenues by the treasury is less problematic than underestimating expenditure needs.

² Some countries have a 14 – 30-day period to complete payments while others do not have such a period.

³ Extrabudgetary funds' balances are not fungible, but this statistic also excludes balances of the National Fund which, as a sovereign wealth fund, would normally not be regarded as part of a TSA.



Source: estimates of country delegations. Note: the data is averaged for 3 last months, except for Uzbekistan where the annual data is presented.

Fig. 4: Cash Forecasting Accuracy in PEMPAL Countries

Overall, the discussions during Day 2 helped the participants to consider various approaches to measuring treasury performance. Although there is no "one-size-fits-all" solution in this area, using several indicators, and exploring trends rather than absolute values, helps to measure performance and focus efforts on priority areas. Based on the discussions, it might be useful for TCOP to continue the work on developing possible cross-country benchmarks to measure treasury performance in cash management and other areas.

Day 3: News from PEMPAL Countries

The third day of the meeting was devoted to exchanging news from PEMPAL countries in the areas of cash management and cash forecasting.

Mr. Davit Gamkrelidze, Head of Treasury Service of Georgia joined the meeting remotely and shared the experience of Georgia in developing cash management and forecasting practices. He emphasized that, with the extension of TSA coverage in Georgia, the cash management function has become essential. The Treasury of Georgia performs active cash management operations by placing the temporarily available funds on deposits in commercial banks (with collateral in most cases). This approach ensures effective management of excess resources, additional revenues to the central budget, and other benefits. Since 2017, the total additional revenues exceeded GEL 750 mln (Fig. 5).

Strengthening & Measuring Treasury Performance in Cash Management & Forecasting



He also shared his experience with the CFAT tool developed by the IMF (Table 4) and outlined the future plans of the Georgian treasury involving the application of advanced digital technologies in treasury operations. The initiative of using machine learning (ML) in transaction processing which is currently in the pilot phase is expected to increase the ratio of automatically authorized transactions to 90%. The planned initiatives include applying ML in cash forecasting, using natural language processing (NLP) in accounting data processing, and enhancing customer service quality through large language models (LLMs).

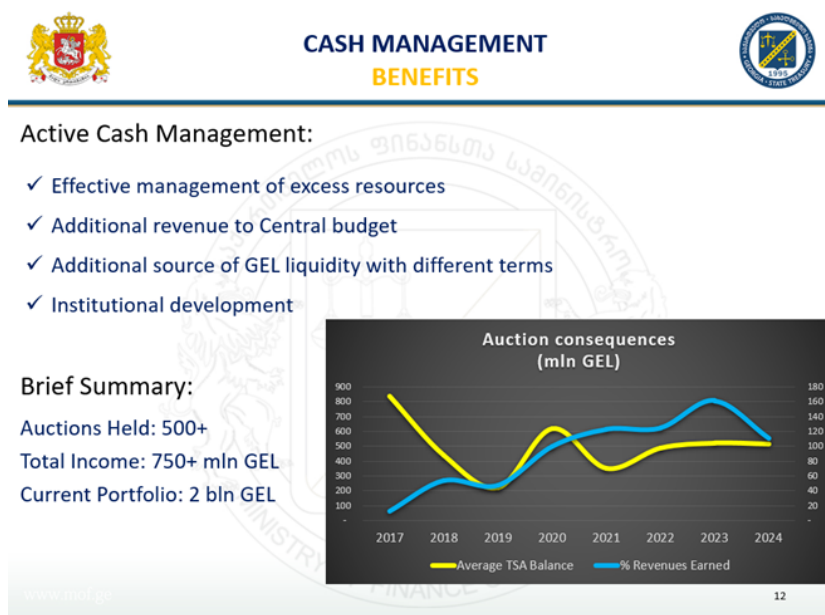


Fig. 5: Active Cash Management Benefits in Georgia

Table 4: Strengths and Challenges of the IMF CFAT Tool

Level	Strengths	Challenges
Technical	<ul style="list-style-type: none"> - Easy-to-use Excel-based spreadsheet—all on one page - User-friendly macros that simplify navigation - Sophisticated formulas and data formats - Information is easy to digest using charts and graphs - simple customization—add rows and columns effortlessly 	<ul style="list-style-type: none"> - limited language availability - bugs in macros (largely addressed) - sensitivity of formulas - difficulties in significant customization
Substantive	<ul style="list-style-type: none"> - Uses current budget year data - Incorporates up to five years of previous budget execution data - Allows for assigning weights to different data points - Provides multiple opportunities to adjust based on actual performance 	<ul style="list-style-type: none"> - Lack of credibility in budget data - Absence of historical data - Timing issues with data compilation - No institutional arrangements for adjustments - No dedicated cash forecasting team - Lack of committees to discuss results

Source: compiled from the presentation by Mr. Davit Gamkrelidze.

The following presentation was delivered also remotely by **Mr. Murodbek Atadjanov, Chairman of Treasury Service Committee, Ministry of Economy and Finance of Uzbekistan** who shared the approach of Uzbekistan to cash management and cash forecasting. Uzbekistan has extensive TSA coverage with all general government funds (except for the Reconstruction and Development Fund) kept in the TSA. Uzbekistan uses a cash buffer to cover the primary

Strengthening & Measuring Treasury Performance in Cash Management & Forecasting



expenditures and places temporarily available funds in commercial banks using auction procedures. Strategic directions for future treasury development include further improvements in cash management based on enhanced interagency coordination and application of business intelligence (BI) technologies (Fig. 6), further digitization of treasury operations (i.e., digitization of foreign exchange transactions and internal business processes), and using risk analysis for treasury control.

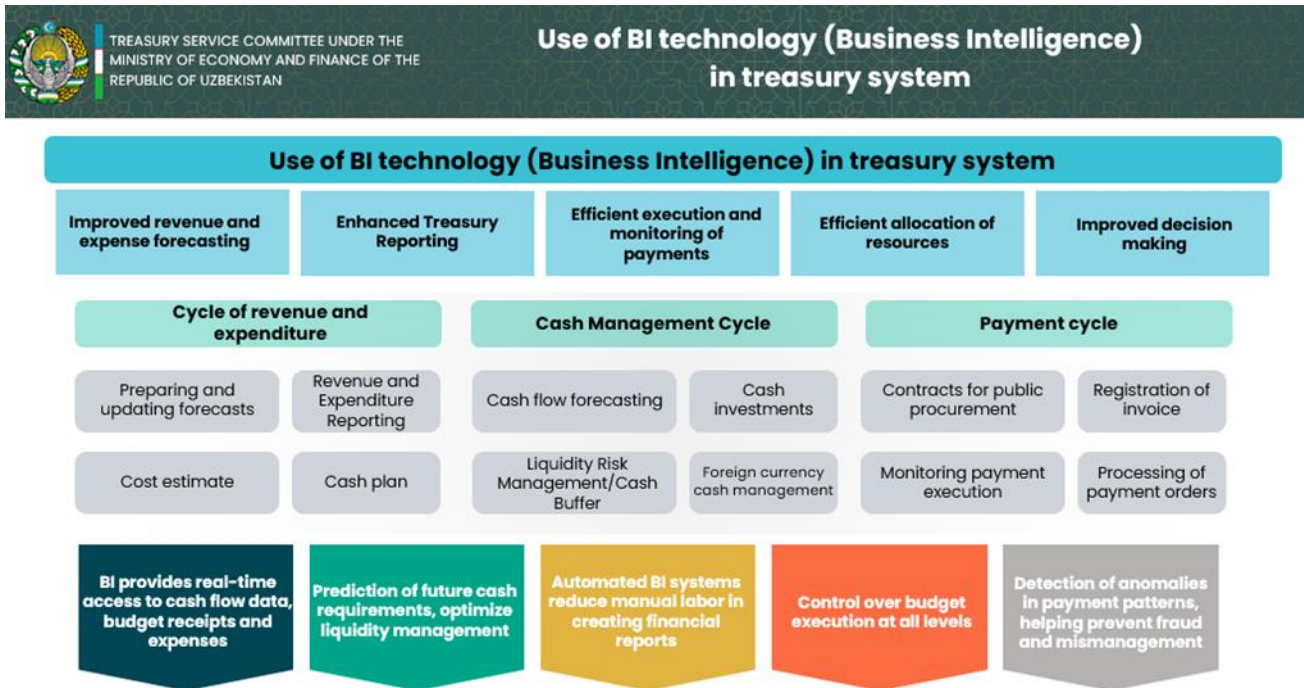


Fig. 6 – Planned Use of BI in Treasury Operations in Uzbekistan

Mr. Bogdan Teju, Expert, Contracting Unit, Front Office Department, and **Mr. Romeo Dumitru, Superior Counselor, Ministry of Finance of Romania** shared their experience of cash management and forecasting. In Romania, all general government revenues and expenditures are collected through a TSA opened in the National Bank of Romania (NBR). The TSA balance is remunerated with the interest rate equal to that on the NBR's deposit facility available to commercial banks. A cash buffer is kept in foreign currency in NBR sufficient to cover 4 months of gross financing needs. The main instruments used for cash management are bilateral or multilateral deposits with commercial banks and/or foreign currency exchange operations. Romania bids for deposits to attract additional funds from the market or uses the cash buffer to cover the temporary gaps between revenues and expenditures.

The final presentation on Day 3 was delivered by **Mr. Bariş Can** who shared the experience of Türkiye in cash forecasting. The current approach entails daily forecasts for a one-month period, accounts for seasonality, and combines top-down and bottom-up data. To inform the cash forecasting process, both revenue trend analysis and expenditure trend analysis are carried out. Analyzing expenditure trends and comparing expenditure patterns across similar institutions helps to evaluate the quality of cash requests submitted by spending units and provides a basis



for adjusting them. To further improve the accuracy of cash forecasting, a project aimed at introducing AI in cash forecasting is currently being implemented (Box 2).

Box 2: Using AI to Enhance Cash Forecasting in Türkiye (ongoing project)

Objective: to analyze historical cash and budget data to improve future cash flow forecasting using AI-based time-series analysis. The project will contribute to the consistent forecasting of cash deficits/surpluses, reduce liquidity risk, and thereby enhance cash management effectiveness.

Resources: implemented internally + collaboration with private tech companies for Proof of Concept (PoC) studies.

Scope: forecasting tax revenues, major local expenditures, and personnel expenditures (1st phase).

Project expected duration: 2 years

Intermediate results: several machine learning algorithms and statistical models were utilized (CatBoost, LightGBM, ARIMAX, SARIMAX, Regression, and Prophet) and LightGBM was found most promising. Further improvements are needed to address the sharp increase in cash flows towards the end of the year, indicating the presence of seasonal cash surges that neither model fully captures.

Overall, the discussions of Day 3 demonstrated that strengthening cash management and cash forecasting remains a priority theme for the community. The meeting participants expressed significant interest in the approaches to active cash management practices demonstrated by Georgia, Romania and Uzbekistan ensuring the continuous availability of funds to meet government needs and additional revenues from the placement of temporary surplus funds. The use of emerging technologies, including AI for enhancing risk-based treasury controls (as shown by the example of Georgia) and improving cash forecasting quality (as demonstrated by the ongoing work in Türkiye) is also highly relevant.

Conclusions

Mark Silins and **Mike Williams** wrapped up the thematic agenda of the meeting.

Overall, the discussions at the meeting demonstrated that the close integration of treasury development issues into the overall PFM strategy exemplified by Albania contributed to the substantial progress achieved in the areas of cash management and cash forecasting. Albania also has a comprehensive reform plan conforming to international best practices, and the performance measurement system will help the country to achieve its goals.



Although the practice of using KPIs for measuring cash management and forecasting performance varies among PEMPAL countries, there is strong interest across the group in developing performance frameworks for treasury operations, both to advance PFM reforms at the national level and for international benchmarking. The discussions demonstrated that KPIs are a difficult subject, but they help to better focus efforts. A system of several KPIs provides more balanced information, rather than separate indicators. Though the optimal set of



KPIs depends on the country context, the exchange of experience among PEMPAL countries in measuring treasury performance is highly relevant.



The results of group discussions confirmed that, although most general government funds are covered by the treasury, fungibility remains an issue in many countries suggesting the need for further cash consolidation. Significant cash flow forecasting errors also suggest the need for further work on improving the accuracy of cash forecasts. To this end, developing forecasting techniques and conducting statistical analysis supporting cash flow forecasting (as demonstrated by Türkiye) are promising areas for further work of the TCOP Cash Management and Forecasting Working Group.

The discussions showed that active cash management practices are high on the agenda of PEMPAL. While the presentations by representatives of Hungary, Romania, Georgia, and Uzbekistan demonstrated various approaches to active cash management, some issues remain relevant for future discussions, including the cost-risk trade-off of maintaining a high cash buffer, broadening active cash management instruments, and improving interaction with the Central Bank.

The meeting showed that PEMPAL countries are on the leading edge in implementing emerging technologies, such as AI for enhancing risk-based treasury controls (as exemplified by Georgia) and improving cash forecasting quality (as demonstrated by the ongoing work in Türkiye). These areas of innovation in treasury operations should remain among the areas of focus for future TCOP activities.

Planning for the Future

The meeting concluded with a wrap-up session during which the participants reflected on their impressions of the meeting and shared their ideas for the themes of future thematic events and knowledge products. Participants pointed out that they received useful information during all sessions and highlighted the presentations by the hosts and representatives of Georgia, Hungary, Romania, Türkiye, and Uzbekistan among the most useful. The following themes of interest were identified for future thematic events (including virtual ones):

- Implementing KPIs in treasury operations,
- Broadening the spectrum of active cash management tools,
- Approaches to covering the budget deficit: what could be used in addition to T-bills?
- Measuring and optimizing borrowing costs,
- Implementing AI in treasury operations: practical experiences and challenges,
- Experience in using CFAT,
- Using various payment systems by the treasury,



- International experience in certification of accountants for the public sector,
- Sustainability accounting and reporting; tagging expenditures and assets to developmental goals (climate, gender, etc.),
- Seamless integration of procurement and budget execution,
- Accounting and reporting in PEMPAL countries,
- Implementing various types of control in the process of budget execution.