

# EMERGING STATISTICAL NEEDS AFTER THE CRISIS: A CENTRAL BANKING PERSPECTIVE

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## 1. Introduction

The financial crisis has revealed, once again, the importance of information. Today, there is a consensus that better statistics could have helped moderate the global crisis, and could also lead to its better management. Availability of a wide range of economic and financial statistics that are timely, consistent, and—in a globalized world—comparable across economies and borders is essential to public and private sector decision-making. One more lesson the recent crisis has shown is that new approaches in data compilation should be flexible enough to anticipate future challenges. This means databases should be compatible with and as innovative as the financial system. International initiatives addressing the data gaps that individual countries have to close, reflect our awareness of the importance of these issues.

From a central banking perspective, as the international agenda gradually focuses on coordination of macro-prudential policy at an international level, the role of central bankers as statisticians becomes more significant given the core responsibility of central banks in the compilation of monetary and financial statistics. The financial crisis has proved that there is room for improvement in the quality of central banking statistics, covering different phases of data servicing such as construction, interpretation and communication. Therefore, the changing environment after the crisis has increased central bank data requirements while adding to the pressures on central bank statisticians.

The impact of the financial crisis has varied across countries depending on the different initial conditions of their economies. Therefore, in addressing data gaps, priorities should be set by considering the different needs and capacities of the countries and institutions. In Turkey, domestic banks dominate the financial system. Moreover, because of the comprehensive

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measures taken since domestic financial crisis almost a decade ago, Turkey's banking sector seems relatively well-prepared for the current global financial tensions. However, domestic financial institutions are not totally immune to the second round effects of the financial crisis which in 2008 and 2009 led to a global recession and directly affected the Turkish real sector. Although the presence of a relatively sound financial system has limited the relevance and the scope of the data gap initiatives in Turkey, especially compared to other emerging economies, partner institutions—like the Turkish Treasury, Central Bank, Banking Regulation and Supervision Agency, Turkish Statistical Institute and the Capital Market-Board—have taken coordinated efforts and individual responsibility within the scope of their areas of expertise, to meet these new data requirements and to improve the quality and dissemination of monetary and financial data in Turkey.

This paper focuses on the current practice of the Central Bank of Turkey (CBT) in compiling and disseminating monetary and financial statistics, sharing the new approaches and methods implemented in recent years, as well as outlining the projects underway to strengthen the CBT's data service. First, we give examples of how and where the CBT has improved coverage and dimension of statistical applications, with a special focus on the G-20 data gap initiative — recommendations 10,11 and 15 (Annex 1)—. In that regard, adjustments for expanding the coverage of financial sector data and providing the breakdown of new instruments are detailed. The following sections describe our studies on improving data quality and the major challenges we face in obtaining clear and reliable monetary and financial statistics, at both domestic and international levels. Studies on national financial accounts and security-by-security database on government issues are specifically discussed. The last section concludes.

## **2. CBT's experience: What has been done so far?**

As the main compilers of monetary and financial statistics, central banks are now adjusting their traditional data collection and dissemination systems. In the past, central banks typically would aggregate the balance sheets of banks and other financial institutions, and then publish detailed data sets both in flows and stocks based on the main balance sheet items. However, considering the emerging statistical needs, there has been a widespread consultation with official users of economic and financial data in G-20 countries and with other international institutions. A broad consensus has emerged over the information gaps that need to be filled.

One key recommendation is to monitor the vulnerability of domestic economies to shocks. Doing this means strengthening the sectoral coverage of national balance sheet and flow of funds data, and promoting more timely and comparable financial statistics, standardized across countries. Data on non-bank financial institutions is an additional priority (IMF and FSB 2009, pp.4-5). Central banks, functioning in a changing globalized economic environment and facing a more sophisticated financial sector, have taken on new responsibilities as producers of statistics, and need to address financial stability and systemic risk assessment issues. In this section, CBT's recent actions to improve monetary and financial statistics are described (see: Annex 3).

## **2.1. Expanding monetary sector coverage**

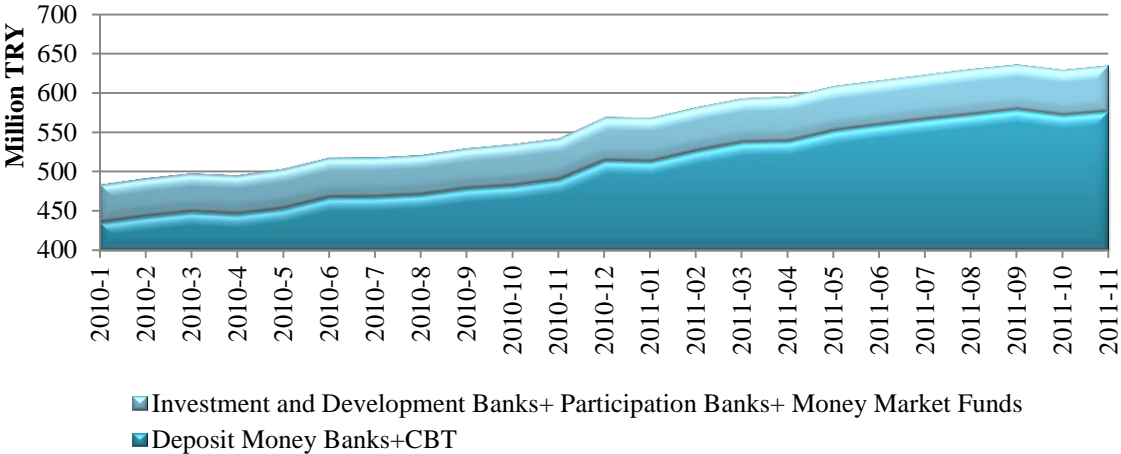
Traditional classification of monetary aggregates followed the incorporation of claims in the order of liquidity—that is going from cash to illiquid items such as demand deposits—, and thus capturing the ease of settlement of transactions. In addition to the traditional motivations for compiling monetary statistics —links to the real economy and to inflation—there is a need for better-designed monetary aggregates that capture financial stability issues. In line with developments in financial markets and harmonization efforts to internationally accepted statistical standards, the CBT has expanded its monetary sector coverage. Before, the monetary sector comprised monetary liabilities of the CBT and deposit money banks resident in Turkey. Coverage has been extended to include investment and development banks, participation banks which operate with Islamic banking rules and money market funds since 2007.<sup>1</sup> Although investment and development banks (IDB) do not receive deposits, they are money creators as they issue bonds and grant loans for their own account. Participation banks (PB) receive deposits in the form of participation accounts. Money market funds (MMF) also issue close substitutes for deposits in the form of short-term capital market paper fulfilling transferability, convertibility, certainty and marketability criteria. Thus; by extending the

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<sup>1</sup> The expanded coverage is based on the definition of Monetary and Financial Institutions (MFI) set in the Regulation (EC) No 2423/2001 of the European Central Bank of 22 November 2001: "...all financial corporations and quasi-corporations ... which are principally engaged in financial intermediation and whose business is to receive deposits and/or close substitutes of deposits.... and for their own account, to grant loans and/or to make investments in securities".... "Money market funds are defined as those collective investment undertakings of which the units are, in terms of liquidity, close substitutes for deposits and which primarily invest in money market instruments and/or in other transferable debt instruments with a residual maturity up to and including one year, and/or in bank deposits, and/or which pursue a rate of return that approaches the interest rates on money market instruments."

coverage to include IDBs, PBs and MMFs, monetary liabilities of money creating sector — excluding inter sector transactions—increased by almost 10 percent (Figure 1).

**Figure 1. Turkey: Monetary Aggregates - Institutional Breakdown**



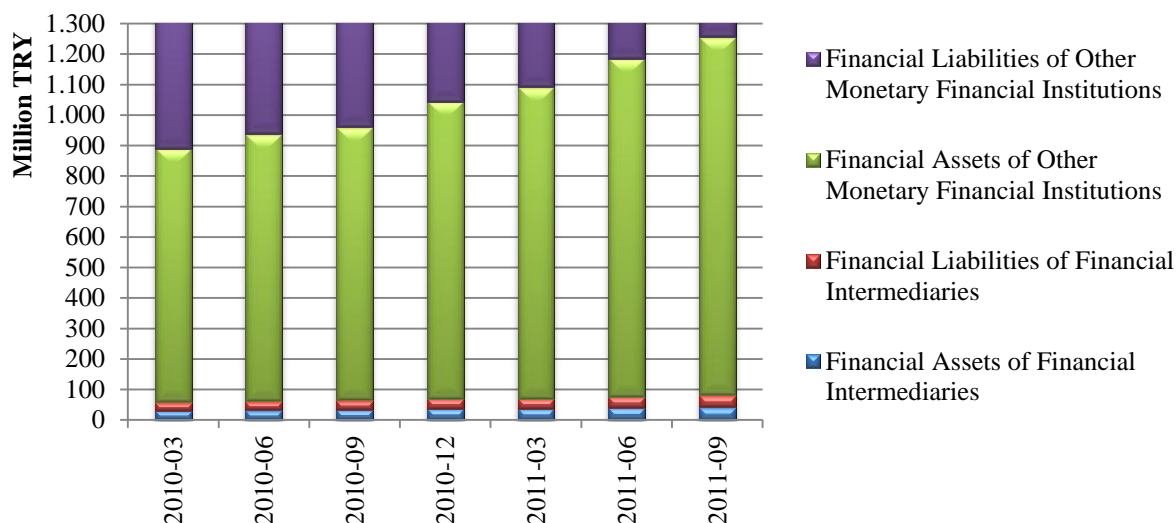
Source: CBT.

**2.2. Statistics beyond the monetary sector**

The G-20 data gaps initiative supports data collection for institutions falling beyond the regulatory perimeter in the overall flow of funds. Besides obtaining from-whom-to-whom information beyond the monetary sector, the CBT also compiles statistics on non-bank financial institutions, namely leasing, factoring and finance companies. According to ESA 95, these institutions are classified as “financial intermediaries” engaging in financial intermediation by incurring liabilities in forms other than currency, deposits and/or close substitutes of deposits. Data compilation process encompasses data flow from the Banking Regulation and Supervision Agency (BRSA) and converts them to an internationally comparable format. The data set gives information on the size of financial intermediaries and financial flows with other sectors of the economy (Figure 2).

Another effort to compile statistics beyond the monetary sector is to reconcile the OECD’s work to prepare quarterly Institutional Investors’ Questionnaire that is traditionally on annual basis for the aim to measure and analyze increasing role of institutional investors in capital markets. Within this questionnaire, CBT compiles and reports data on investments funds, insurance companies and pension funds compiled from Capital Market Board (CMB) and the Treasury. Additionally, liabilities (loans) of households are gathered from CBT data sources.

**Figure 2. Turkey: Financial Flows by Financial Intermediaries**



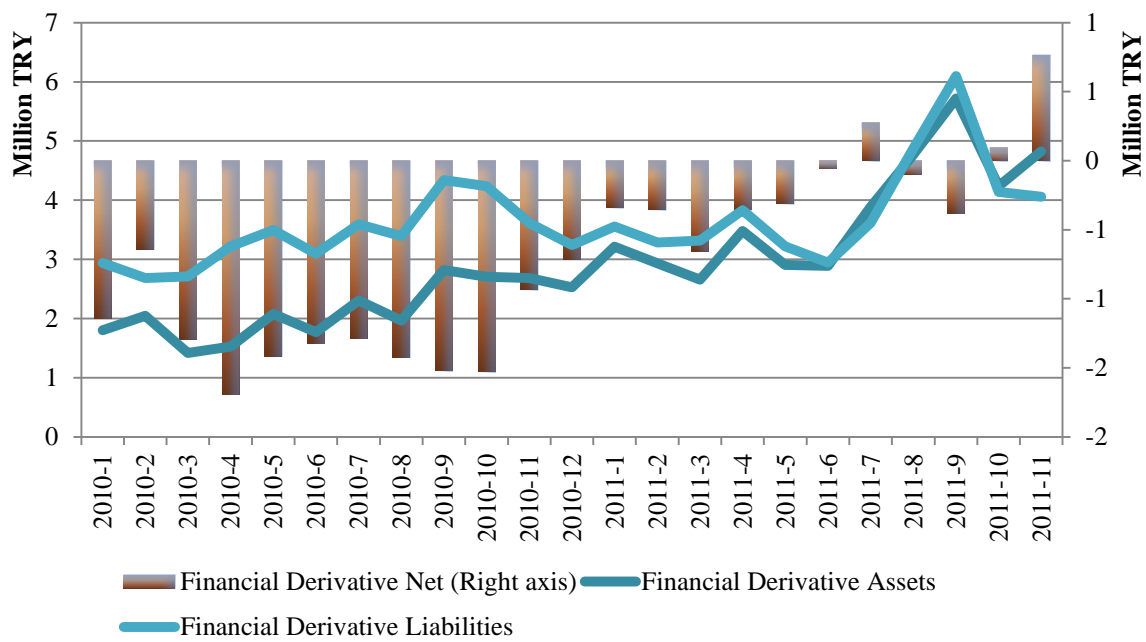
Source: CBT.

### 2.3. Expanding instrument coverage

#### - *Financial derivatives*

Valuation differences of financial derivative assets and liabilities have been covered as an on-balance-sheet item in Uniform Chart of Accounts of banks since 2007. However, data on separate financial instruments have not been available in the monetary statistics, but rather included in “unclassified” items. This issue was highlighted by the 2009 IMF-ROSC mission of Turkey as a high priority area for harmonization (Annex 2a and 2b). Starting 2009, a pilot project has been carried out and test studies were successfully completed enabling the CBT to define financial derivatives as separate financial instruments both on the asset and liability side of banking sector balance sheets. Counterpart information has been compiled to indicate sectoral accounts. The CBT started publishing the data at instrument and sector level as of October 2011.

**Figure 3a. Turkey: Financial Derivative Assets and Liabilities**

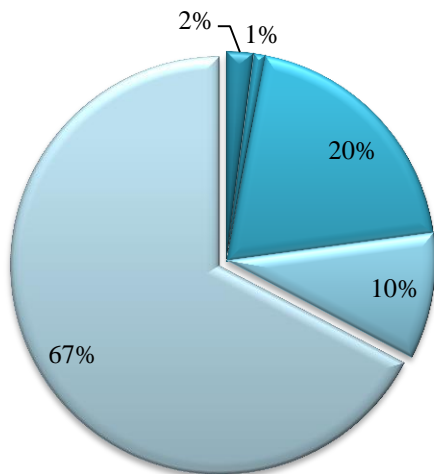


Source: CBT.

**Figure 3b. Turkey: Financial Derivatives by Counterparts (as of November 2011)**

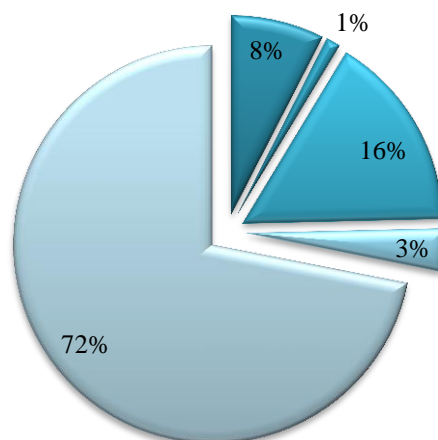
**Financial Derivative Assets**

- Banks
- Non-bank financial institutions
- Non-financial companies
- Households
- Abroad



**Financial Derivative Liabilities**

- Banks
- Non-bank financial institutions
- Non-financial companies
- Households
- Abroad



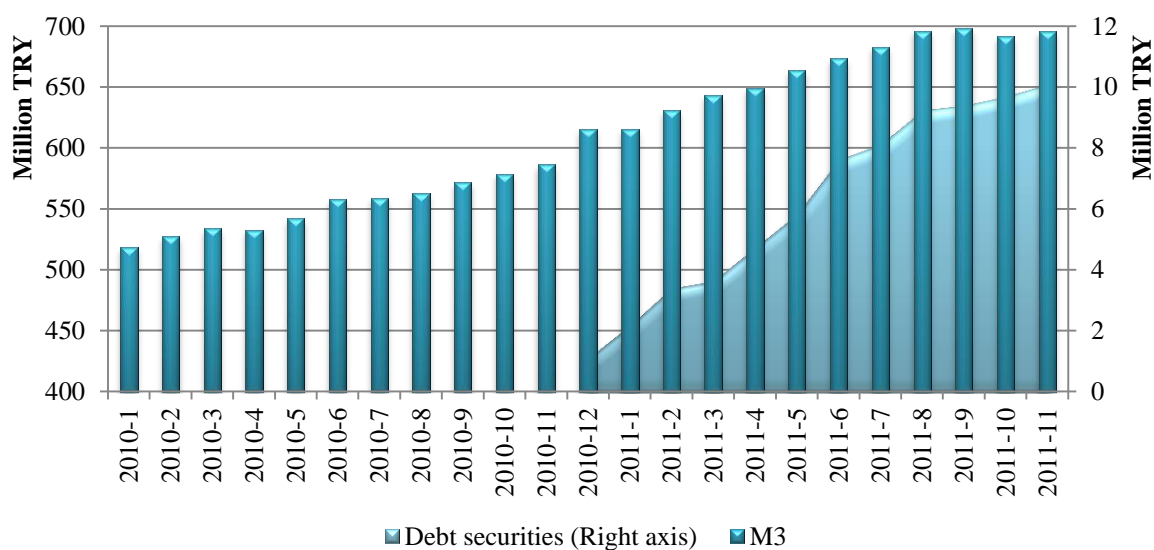
Source: CBT.

Financial derivatives have a small share in financial transactions in Turkey (0.4 percent of total banking sector assets and liabilities), while the figures totaled a net liability position throughout 2010, but turned into a net asset position by end-2011. Transactions abroad dominate the market. Unlike the foreign sector, domestic sectors incurred net assets where the non-financial corporations are the major domestic players (Figure 3a and 3b).

- *Debt securities of banking sector*

Turkish banks, until recently, have been infrequent issuers in the domestic capital markets. Mainly funded by large and stable retail deposits and with highly liquid balance sheets, with a large proportion of assets invested in government debt securities, they felt little need to issue debt securities. However, in order to take advantage of rapid growth in demand for mortgages and other consumer credit, and also to spur competition for project finance business, there has been room to improve long-term funding. In that respect, Turkish banks have begun issuing Turkish lira-denominated bonds on the domestic market by the BRSA's permit in October 2010. Although, this bond issuance is relatively small in size and secondary trading is still low, this source of funding is likely to increase. On the statistical front, due to the high degree of liquidity and low price fluctuations in the debt securities issues of banks, the CBT expanded the coverage of monetary aggregates in 2011 to include those with a maturity up to 2 years being component of M3 broad money (Figure 4).

**Figure 4: Turkey: Debt Securities of the Banking Sector**



Source: CBT.

## **2.4. Improve timeliness of banking statistics**

The G-20 initiative supports the work of the IMF to promote Standardized Report Forms for monetary and financial statistics, targeted to improve timeliness, frequency, and country coverage of the related data sets. According to the IMF's Special Data Dissemination Standards (SDDS), the required timeliness for the analytical accounts of the banking sector is 1 month following the reference period. For Turkey, in the past banking sector data were compiled based on complete set of reporting files—Banks' Supervisory Reporting Package—which banks reported within 23 business days after the reference period, and which were then disseminated with a 2-month lag. With the close cooperation of Turkish banks, in 2011, the CBT shortened the submission period for monetary statistics to 15 business days, so that dissemination is fulfilled within 1 month, achieving also the SDDS criterion (Annex 1).

## **3. Tasks ahead**

### **3.1. Completion of national financial accounts**

Recent global financial turmoil has demonstrated the importance of financial stability analysis, and of identifying the links between sectors and the channels through which shocks may propagate via the financial system. Awareness of the need to understand the network of interlinked exposures—which can reveal the vulnerabilities of interconnected sectors—is growing (Castren and Kavonius 2009, pp. 5-7). From balance sheet data, information on vulnerabilities from maturity mismatch, currency risk and the capital structure of individual sectors can be determined. Information on sectoral financial accounts and balance sheets can improve the analysis of systemic risks and vulnerabilities, and also our understanding of the interrelationship between the real and financial sectors. The importance of sectoral data, including from-whom-to-whom information, has also been highlighted by the crisis and is being addressed by the G-20 data gaps initiative (IMF and FSB 2009, pp. 24-25). While financial balance sheets enable an assessment of financial interrelationships within the domestic economy and vis-à-vis the rest of the world, financial accounts can serve as an important instrument to monitor the transmission process of monetary policy due to their link with the capital and use of income accounts (European Commission Eurostat 2011, pp. 8).



For Turkey, another motivation for compiling financial accounts is the opening of negotiations with the EU in the context of EU Acquis Communautaire in statistics, which entails compilation of financial accounts of Turkey. The CBT is the coordinating agency for reporting of the consolidated national financial accounts (Turkish Statistical Institute 2008, pp.53-57). The following institutions are responsible for each sector: (i) The CBT for financial corporations excluding insurance companies and pension funds, households, non-profit institutions serving households, and the rest of the world; (ii) the Treasury for insurance companies and pension funds; (iii) Ministry of Finance (MoF) for the general government; and (iv) the CBT and the Turkish Statistical Institute (Turkstat) jointly for non-financial corporations (Chart 1).

Compiling these financial accounts requires matching different data sources from various institutions, requiring the implementation of unique statistical standards and accounting principles. This is laborious and has many steps:

1. Identify accurate data sources for each sector and/or instrument
2. Build bridge tables to codify source data under ESA 95 codes and sectors
3. Derive stock data from source data
4. Compile counterpart information and flow data
5. Consolidate figures at the instrument and sector levels
6. Report and publish data

The CBT has established a working group of experts with the partner institutions and set out a multi-year agenda. The group meets regularly and shares details of their individual work processes in fulfilling the sectoral coverage of the national financial accounts in line with ESA 95 codes and classifications. Currently, data on the financial assets and liabilities of the CBT, other monetary financial institutions, and financial intermediaries are compiled and reported annually to Eurostat and quarterly to the OECD. For the financial auxiliaries sector that engages in supplementary financial activities closely related to financial intermediation, CBT is collecting financial accounts for the major players and consolidation should be completed by the end of 2012. In that respect, data on capital market dealers are compiled in cooperation with the Association of Capital Market Intermediary Institutions of Turkey in line with ESA 95 instrument and sector classifications. Although those institutions are essentially providers of services or active on financial and capital markets only on behalf of their customers, and

thus, their direct holding of financial assets is quite limited, still the data give clues about the behavior of investors, mainly the households. In addition to dealer companies, to complete financial auxiliaries sector, balance sheet data on Savings Deposit Insurance Fund will be adjusted according to ESA 95 classifications.

The studies conducted with partner institutions cover insurance companies and pension funds, and general government sectors. The former is studied with the Turkish Treasury who is the supervision authority for the sector, while for the central and local government, a coordinated study is pursued with the MoF; stock data have already been compiled and converted into ESA 95, figures should be disseminated by end-2012 (Chart 1).

**Chart 1. Turkey: National Financial Accounts – Sectoral Breakdown**

Financial Institutions					Non-Financial Corporates	Households	Non-Profit Institutions	Rest of the World	General Government
Central Bank	Other Monetary Financial Institutions	Financial Intermediaries	Financial Auxiliaries	Insurance Companies & Pension Funds					
Step 6	Step 6	Step 6	Step 4	Step 3	Step 4	Step 4	Step 1	Step 1	Step 3

- CBT is in charge. Data are available and regularly reported to OECD and Eurostat.
- MoF and Treasury are in charge. Compilation studies are continuing.
- CBT (with Turkstat for Non-Financial Corporations) is in charge. Compilation studies are continuing.
- CBT is in charge. Compilation studies are continuing.

Source: CBT.

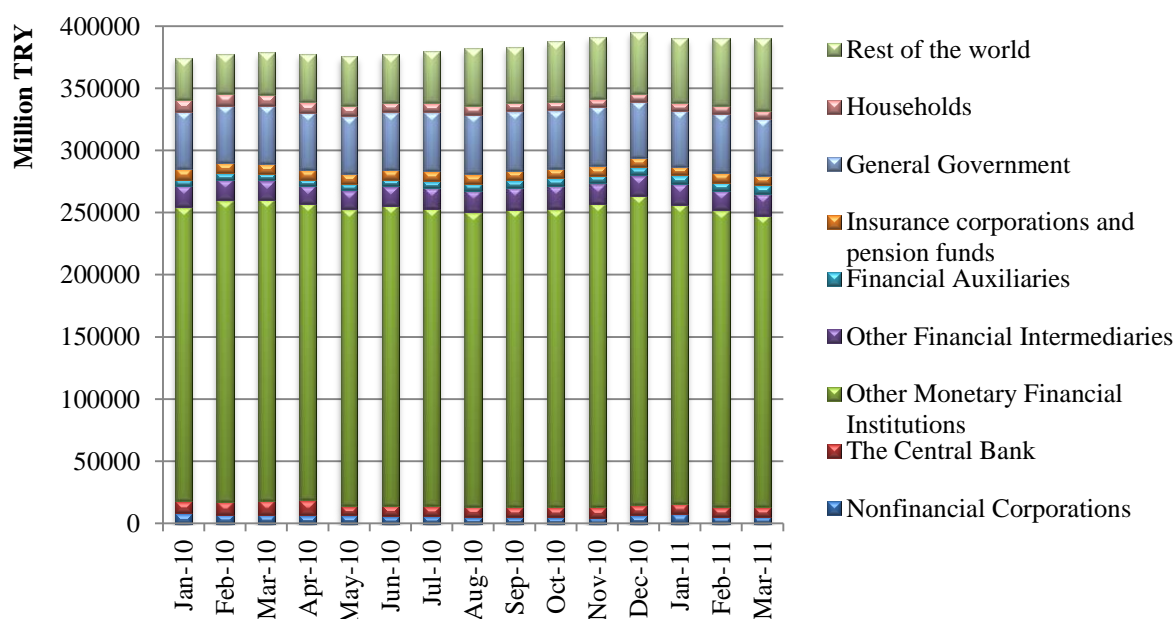
Concerning the remaining sectors; the CBT has provided preliminary tables on household financial accounts identifying the counterpart information mainly from the MFI sector data, CBT’s internal securities database, Central Registry Agency (CRA), international investment position statistics and statistics on non-bank financial institutions. The study also derives information from the “Questionnaire on Households Financial Assets and Liabilities” compiled by the OECD where the CBT provides data for loans from banking sector, insurance companies and pension funds from Treasury data and investment funds from Capital Market Board sources. For non-financial corporates, the CBT and Turkstat jointly are working on determining appropriate data sources and methodology. Rest of the world figures will be compiled from balance of payments statistics (Chart 1).

### 3.2. Security-by-security database project: Holdings of government securities

Statistics on the issuance of securities complement monetary statistics and are an essential tool for understanding of the flows in the financial system, and thus for guiding monetary policy. The transmission mechanism of monetary policy (in particular, the “credit channel”) can be affected by the shifts between direct finance (via securities market) and indirect finance (via bank-lending), where these shifts may reflect structural changes in the country’s financial system. The database reveals the sectoral breakdown of the issuer that distinguishes demand for government and private sector debt, while data on the outstanding stock of securities reveals the depth of the market.

In this context, the CBT and the Treasury have initiated a joint project aimed at establishing a comprehensive security-by-security database on government securities. Within this study, as required by ESA 95, flow data on government securities by holder on the asset side of the financial accounts, as well as stock data on the liabilities of the central government at market value, are derived. The CBT’s database on government securities by holder, compiled from data from monetary financial institutions and dealer companies, is matched with detailed Treasury information on the interest rate, coupon rate and payment period of each security. Aggregated figures form the sectoral information at investor level (Figure 5).

**Figure 5. Turkey: Holders of Government Securities**



Source: CBT.

### **3.3. Improvements to the BIS IBS**

The recent financial crisis brought new set of questions and monitoring needs about banks' balance sheets. The BIS (Bank of International Settlements) IBS (International Banking Statistics) are a widely used dataset for monitoring the cross-border balance sheet positions of internationally active banks. The four main IBS datasets are grouped as Locational by Nationality, Locational by Residency, Consolidated on an Immediate Borrower basis and Consolidated on an Ultimate Risk basis. The CBT started contributing to the BIS IBS in 2000 and provides banking statistics on both consolidated and locational basis.

As a result of the increased demand for better data on banking system's funding and lending patterns, cross currency investment and funding concentrations of banks and country level linkages that can lead to international transmission of shocks became increasingly important. Accordingly, the significance of the BIS IBS is mentioned in the Financial Crisis and Information Gaps Implementation Progress Report by the IMF and the FSB (Financial Stability Board). Recommendation 10 of the report emphasizes the need for increased participating in the BIS IBS and encourages the BIS to continue to improve the coverage of significant financial centers in the IBS while Recommendation 11 requires improving current information to track funding patterns in the international financial system (IMF and FSB 2011, pp. 9). Consistent with these, the BIS designed a 2 stage approach for improving the IBS. Stage 1 enhancements focus on broadening the coverage of the statistics by adding banks' domestic currency positions against residents, further refining the currency breakdown and adding a full counterparty matrix to the Locational by Nationality statistics to make it possible to see the entire geography of banks' assets and liabilities. Stage 2 enhancements are designed to improve the IBS to better monitor the credit exposures of national banking systems and track trends in the supply of bank credit and banks' funding patterns. As the responsible agency for the IBS, the CBT is currently working on complying with these new requirements. Priority is given to Stage 1 enhancements since they are to be reported for June 2012 quarter. In this context, the CBT is performing studies to determine the IT specifications to be met and data requirements to be collected from banks. After fulfilling the duties for Stage 1 reporting, technical skills and data needs required for Stage 2 enhancements will be determined.

## **4. The challenges**

### **4.1. Methodological revisions**

Banking system transactions between residents and between residents and non-residents dominate flows in the financial system. Classifying assets and liabilities by sector, and then tracking financial transactions between sectors, provides an important tool for examining the circulation and distribution of economic resources. The System of National Accounts (SNA) offers an internationally agreed and standard set of recommendations for classifying transactions and sectors, which can be integrated into statistical systems across countries. The changing economic environment, which has become increasingly globalized since the 1990s, has required methodological changes and more advanced measurement in national accounts, so the SNA has had to be revised and improved. In the 2008 SNA, although the definition of institutional units is similar to the 1993 SNA, the sub-sectors of financial corporations are more detailed, and financial instruments and assets have been more broadly defined to cover innovations in financial services and markets.

In CBT's current practice, the overarching framework of monetary statistics is based on the 1993 SNA, but revisions required by other international statistical systems (IMF - Monetary and Financial Statistics Manual and European Commission - ESA) have been incorporated. The institutional coverage and sectors used for monetary statistics are in broad conformity with the respective international guidelines of IMF and EC, and outlined in the "Institutional Sector List (ISL)" published by the CBT. The ISL was last updated in June 2010 in consultation with Turkstat, MoF and the Treasury and reporting banks were informed. At present, although recommended by the 2008 SNA, there is no separate reporting to distinguish between money market funds (MMF) and non-MMF investment funds. Similarly, the ISL does not cover sub-sectoring of insurance companies and pension funds.

### **4.2. Data quality**

Data quality covers various aspects of data collection, processing and dissemination. The international standard—the IMF's Data Quality Assessment Framework (DQAF)—sets uniform standards for the assessment of data quality, and suggests improvements for data compilation and dissemination. Main criteria include: assurances of integrity, methodological

soundness, accuracy and reliability, serviceability, and accessibility (IMF 2003, pp.i-iii). The DQAF also forms the basis for the data module of the “Report on the Observance of Standards and Codes (ROSC)” which summarizes the IMF’s assessments of the observance of selected standards in data dissemination and transparency.

During the most recent Turkey - ROSC mission, monetary statistics was one of the 6 datasets assessed using these criteria: 19 out of 22 key practices were considered as meeting the DQAF statistical standards without any significant deficiencies. The remaining 3 practices were classified as largely covering DQAF standards, where the departures were not substantial. CBT has taken concrete steps to address these concerns and to improve the data (Annexes 2a and 2b).

There are additional issues not fully covered by DQAF, but relevant for the CBT. The changing legal and institutional environment as well as production costs and burdens on respondents form additional constraints on data quality:

- In compiling financial accounts, several data sources are involved: public accounts, balance of payments data, and balance sheets of financial and non-financial corporations, whereas residual and counterpart sectors are estimated. Therefore, any change either in the legal framework or the institutional structure requires adjustments in the related datasets which are quite time spending and costly. For instance, when there is a change in an outer data source, sectoral classification of institutional units in central government have to be revised, requiring the adjustment of the bridge tables and also the financial accounts. In cases where various data sources are involved in construction of a single set of accounts, it is crucially important to have flexibility in reporting to adjust according to the changes in statistical standards.
- The CBT’s compilation of monetary statistics relies on banking sector supervisory datasets developed for both supervisory and statistical purposes, and which banks report to the CBT and BRSA simultaneously. The size and number of branches constrain the flexibility of banks in reporting to changing reporting requirements and more timely statistics.<sup>2</sup> Although the report forms for compiling monetary statistics are collected directly by the CBT from banks, the CBT cooperates with the BRSA when

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<sup>2</sup> Turkish banking system consists of 47 resident banks where there exists 10,441 domestic branches as of December 2011. 3 public banks have almost 30 percentage shares in total assets, covering 2,877 branches.

there is a need to change the report forms and/or the associated instructions. In spite of the close collaboration between the CBT and the BRSA, the banks are currently reporting in different formats to the respective institutions (in text/csv to the CBT and in excel/xls to the BRSA), and thus, the separate submission processes not only lead to further reporting burden, but also create possible areas of mis-reporting. Therefore, the CBT and the BRSA have initiated a comprehensive project that will streamline data reporting and create a common database.

## **5. Concluding Remarks**

The global crisis of 2008 and 2009 has widened the scope of the monetary policy framework as concerns over financial stability have deepened and the coordination of macro-prudential policy at an international level has become a top priority. Central bankers, as the main compilers of monetary and financial statistics, face a more complicated and closely integrated financial system and have had to adjust their traditional ways of collecting and presenting data. Moreover, new statistical needs have emerged at a global level, as internationally coordinated initiatives have formed to identify and address the information gaps individual countries need to close.

In Turkey, in line with the evolving international statistical standards, the Central Bank has already adjusted its data compilation practices to improve the quality of financial statistics, so that data could better support the changing monetary policy framework, taking into account the goal of financial stability. In that regard, monetary aggregates have been extended to include other MFIs other than CBT and deposit money banks, whereas data on non-bank financial institutions are provided on a whom-to-whom basis. The instrument breakdown has become more detailed to include financial derivatives and the debt securities of the banking sector. Moreover, the CBT also coordinates and contributes to the multi-agency task force on the national financial accounts, where the data for major sectors should be published in 2012. The compilation of security-by-security information for holdings of government securities is another comprehensive database project that the CBT is carrying out, together with the Treasury. Last but not least, the CBT is working closely with the BRSA to create a common monetary and financial database, to improve the efficiency of data collection and to reduce reporting burden on banking sector.

## References:

Castren, O. and I. K., Kavonius (2009), “Balance Sheet Interlinkages and Macro-Financial Risk Analysis in the Euro Area”, European Central Bank Working Paper Series No. 1124, December, pp. 5-7.

European Commission and Eurostat (2011), “Manual on Sources and Methods for the Compilation of ESA95 Financial Accounts 2nd edition 2011 update”, pp. 8.

European Commission and Eurostat (1996), “European System of Accounts”, June 1996, pp. 25-26.

IMF (2003), “Data Quality Assessment Framework (DQAF) for Monetary Statistics”, July 2003, pp.i-iii.

IMF (2009), “Turkey: Report on Observance of Standards and Codes—Data Module, Response by the Authorities, and Detailed Assessment Using the Data Quality Assessment Framework (DQAF)”, IMF Country Report No. 09/286, September 2009, pp. 19, 143-144.

IMF and FSB (2009), “The Financial Crisis and Information Gaps”, Report to the G-20 Finance Ministers and Central Bank Governors, October, pp. 4-5, 24-25.

IMF and FSB (2011), “The Financial Crisis and Information Gaps Implementation Progress Report”, July 2011, pp. 9.

Stevens, G.R. (2005), “The Changing Statistical Needs of Central Banks”, *IFC Bulletin* 22, September, pp. 5-7.

Turkish Statistical Institute (2008), “Official Statistical Programme 2007-2011, Revision 3”, Official Statistics Programme Group, pp. 53-57.



## ANNEX 1. G-20 DATA GAPS INITIATIVE - SELECTED RECOMMENDATIONS

	CBT'S ACTIONS (By February 2012)
<b>Monitoring Risk in the Financial Sector</b>	
R2.	
The IMF to work on increasing the number of countries disseminating Financial Soundness Indicators (FSIs), including expanding country coverage to encompass all G-20 members, and on other improvements to the FSI website, including preferably quarterly reporting. FSI list to be reviewed.	BRSA is the leading agency in collecting and disseminating data on FSIs. The CBT and the Treasury contribute in related areas.
R4.	
Further investigation of the measures of system-wide macro prudential risk to be undertaken by the international community. The BIS and the IMF should complete their work on developing measures of aggregate leverage and maturity mismatches in the financial system, drawing on inputs from the CGFS and the BCBS.	CBT, the Treasury, BRSA and SDIF signed a Memorandum of Understanding (MOU) and related protocol on systemic risk management in order to strengthen coordination, cooperation, and exchange of information among related parties in identifying systemic risk.
R5.	
The CGFS and the BIS to undertake further work in close cooperation with central banks and regulators on the coverage of statistics on CDS markets for the purpose of improving understanding of risk transfers within this market.	Turkey participates to the triennial BIS survey.
R7.	
Central banks and, where relevant, statistical offices, particularly those of the G-20 economies, to participate in the BIS data collection on securities and contribute to the further development of the BIS-ECB-IMF Handbook on Securities Statistics (Handbook). The Working Group on Securities Databases to develop and implement a communications strategy for the Handbook.	As part of an ongoing project, CBT reported government debt securities issues by the breakdowns on issuing sector, currency, and market. Moreover, CBT continues to actively participate in the review group on the <i>Handbook on the Securities Statistics</i> .
<b>International Network Connections</b>	
R8.	
The FSB to investigate the possibility of improved collection and sharing of information on linkages between individual financial institutions, including through supervisory college arrangements and the information exchange being considered for crisis management planning.	
R9.	
The FSB, in close consultation with the IMF, to convene relevant central banks, national supervisors, and other international financial institutions, to develop by end 2010 a common draft template for systemically important global financial institutions for the purpose of better understanding the exposures of these institutions to different financial sectors and national markets. This work should be undertaken in concert with related. Widespread consultation would be needed, and due account taken of confidentiality rules, before any reporting framework can be implemented.	The CBT contributes to the work of working parties and committees tackling the issues related to G-SIFIs. A representative of CBT was on secondment with the FSB and participation in the working group of Data Gaps and Systemic Linkages is still continuing.

## ANNEX 1 (Cont'd). G-20 DATA GAPS INITIATIVE - SELECTED RECOMMENDATIONS

R10.	CBT'S ACTIONS (By February 2012)
<p>All G-20 economies are encouraged to participate in the IMF's Coordinated Portfolio Investment Survey (CPIS) and in the BIS's International Banking Statistics (IBS). The IMF and the BIS are encouraged to continue their work to improve the coverage of significant financial centers in the CPIS and IBS, respectively. The IMF, in consultation with the IMF's Committee on Balance of Payments Statistics, to strive to enhance the frequency and timeliness of the CPIS data, and consider other possible enhancements, such as the institutional sector of the foreign debtor.</p>	<p>(i) CBT has been participating in the CPIS since 2001 and reports the portfolio investment assets by sector of the holder country of nonresident issuer and currency breakdown on quarterly basis.</p> <p>(ii) CBT has been contributing to the BIS banking statistics since 2000: i) on locational basis; by gathering quarterly data on international financial claims and liabilities of bank offices in the reporting countries. Breakdowns by currency, sector, country of residence of the counterparty, and nationality of reporting banks are provided. ii) on consolidated basis; by gathering quarterly data on immediate borrower and ultimate risk bases. Data are available by sector, maturity and country breakdowns.</p>
<p>R11.</p> <p>The BIS and the CGFS to consider, amongst other improvements, the separate identification of nonbank financial institutions in the consolidated banking data, as well as information required to track funding patterns in the international financial system.</p>	
<p>R12.</p> <p>The IMF to continue to work with countries to increase the number of International Investment Position (IIP) reporting countries, as well as the quarterly reporting of IIP data. The Balance of Payments and International Investment Position Manual, sixth edition (BPM6) enhancements to the IIP should be adopted by G-20 economies as soon as feasible.</p>	<p>CBT plans to implement the BPM6's methodological standards starting from 2014 for the data of reference year 2013, both for balance of payments and IIP statistics.</p>
<p><b>Sectoral and Other Financial and Economic Datasets</b></p>	
<p>R15.</p> <p>The IAG, which includes all agencies represented in the Inter-Secretariat Working Group on National Accounts, to develop a strategy to promote the compilation and dissemination of the balance sheet approach (BSA), flow of funds, and sectoral data more generally, starting with the G-20 economies. Data on nonbank financial institutions should be a particular priority. The experience of the ECB and Eurostat within Europe and the OECD should be drawn upon. In the medium term, including more sectoral balance sheet data in the data categories of the Special Data Dissemination Standard could be considered.</p>	<p>Balance sheets and financial accounts are not compiled for complete set of sectors. The CBT has established a working group including representatives from Turkstat, the Treasury and the MoF to produce full set of financial accounts. The coordinated studies are continuing.</p>
<p>R19.</p> <p>The Inter-Secretariat Working Group on Price Statistics to complete the planned handbook on real estate price indices. The BIS and member central banks to investigate dissemination on the BIS website of publicly available data on real estate prices. The IAG to consider including real estate prices (residential and commercial) in the Principal Global Indicators (PGI) website.</p>	<p>The CBT will publish Residential Property Price Index (RPPI) on March 2012 based on appraisals of real estate companies. Commercial banks provide the CBT monthly information on houses sold with mortgage financing. The data start at January 2010.</p>

Source: IMF and FSB (2009), IMF (2011) and CBT expert evaluations.

## ANNEX 2a. Summary of IMF's Data Quality Assessment - Turkey: Monetary Statistics

Key to symbols: O = Practice Observed; LO = Practice Largely Observed; LNO = Practice Largely Not Observed; NO = Practice Not Observed; NA = Not Applicable

Dimensions Elements	IMF's Assessment (Sept. 2009)	CBT's Response (February 2012)
<b>0. Prerequisites of quality</b>		
0.1 Legal and institutional environment	O	
0.2 Resources	O	
0.3 Relevance	O	
0.4 Other quality management	O	
<b>1. Assurances of integrity</b>		
1.1 Professionalism	O	
1.2 Transparency	O	
1.3 Ethical standards	O	
<b>2. Methodological soundness</b>		
2.1 Concepts and definitions	O	
2.2 Scope	O	
2.3 Classification/sectorization	LO	Financial derivative assets and liabilities of banking sector are classified as separate items. Data are available from January 2010.
2.4 Basis for recording	O	
<b>3. Accuracy and reliability</b>		
3.1 Source data	O	
3.2 Assessment of source data	O	
3.3 Statistical techniques	O	
3.4 Assessment and validation of intermediate data and statistical outputs	O	
3.5 Revision studies	O	
<b>4. Serviceability</b>		
4.1 Periodicity and timeliness	LO	Timeliness for monetary statistics has been improved to one month meeting the SDDS criterion.
4.2 Consistency	LO	Consistency checks with government finance statistics are performed in the context of the national financial accounts project.
4.3 Revision policy and practice	O	
<b>5. Accessibility</b>		
5.1 Data accessibility	O	
5.2 Metadata accessibility	O	
5.3 Assistance to users	O	

**Practice observed:** current practices generally in observance meet or achieve the objectives of DQAF internationally accepted statistical practices without any significant deficiencies.

**Practice largely observed:** some departures, but these are not seen as sufficient to raise doubts about the authorities' ability to observe the DQAF practices.

**Practice largely not observed:** significant departures and the authorities will need to take significant action to achieve observance.

**Practice not observed:** most DQAF practices are not met.

**Not applicable:** used only exceptionally when statistical practices do not apply to a country's circumstances.

Source: IMF (2009), pp.143-144 and CBT.

## ANNEX 2b. IMF's Assessment of Data Quality - Turkey: Monetary Statistics

2. Methodological soundness	3. Accuracy and reliability	4. Serviceability	5. Accessibility
<p><b>Concepts and definitions.</b> Monetary statistics are broadly consistent with the Monetary and Financial Statistics Manual (MFSM) albeit some different terminologies are used. The CBT disseminates the monetary survey, which is similar to the depository corporations survey as defined in the MFSM.</p> <p><b>Scope.</b> The scope of the monetary statistics is consistent with the MFSM. This is because the monetary statistics cover the CBT and the other depository corporations (ODCs) — commercial banks, participation banks, investment and development banks, and money market funds (MMFs) issuing “Type B” liquid funds.</p> <p><b>Classification/sectorization.</b> The principles used are largely in line with the MFSM. Although each published individual table does not cover all details as presented in the MFSM formats, all published tables combined provide most details. However, financial derivatives as well as positions vis-à-vis MMFs are not separately identified.</p> <p><b>Basis for recording.</b> Valuation of assets is broadly consistent with the MFSM except that monetary gold is valued only on a quarterly basis and accrued interest is not included in the value of the underlying instruments.</p>	<p><b>Source data.</b> Data for both the CBT and banks are obtained electronically via a comprehensive system. Owing to extensive and rigorous reporting requirements, data for banks are often available only after 23 business days. Also, MMFs’ liabilities are assumed to be to households as a sectoral breakdown is not available.</p> <p><b>Assessment of source data.</b> The reporting forms are occasionally revised to reflect changes in the accounting records and the compilers’ need. The data processing and production is fully computerized. Problems with source data are resolved directly with reporting banks.</p> <p><b>Statistical techniques.</b> Monetary statistics are derived electronically, thus minimizing errors. If data for some banks are not available on time, the previous month’s data are used. Generally, source data are not adjusted.</p> <p><b>Assessment and validation of intermediate data and statistical outputs.</b> The quality of source data is controlled through a computerized cross-check program. The data accuracy is also checked against secondary data sources, such as data for supervisory purposes and data compiled by other CBT departments.</p> <p><b>Revision studies.</b> Revision studies are conducted occasionally and taken into account by staff in their work. Revised data are archived.</p>	<p><b>Periodicity and timeliness</b> Turkey meet the SDDS requirements on periodicity, <i>but take a flexibility option on the timeliness of the banking sector data, which are published with a lag of over two months.</i> Data are disseminated according to an advance release calendar.</p> <p><b>Consistency.</b> Consistent time series are available for a long period. Changes to data series are explained in the footnotes of the statistical tables. However, <i>consistency checks with government finance statistics are rarely conducted. There are some inconsistencies between published fiscal data and monetary data on government accounts. Data on transactions between the CBT and ODCs are not fully consistent.</i></p> <p><b>Revision policy and practice.</b> Any revision is taken into account in compiling data for the subsequent periods. Starting in mid-December 2008 revision practices are made public.</p>	<p><b>Data accessibility.</b> The monthly monetary statistics are disseminated in the CBT’s website and the Quarterly Bulletin, available in Turkish and English. Weekly data are disseminated in “Weekly Press Bulletin,” which is also available in website. Publication contains tables of major categories of assets and liabilities with further breakdown by detailed components. Users can download data series from the website as far back as January 1986. Data are disseminated to all users at the same time based on the advance release calendar, which is posted on the CBT’s website.</p> <p><b>Metadata accessibility.</b> SDDS metadata and summary methodologies on the DSBB are updated on a regular basis. Footnotes explaining the changes to data are provided under each statistical table. Information on the methodology used to compile monetary statistics was made available at the CBT’s website starting in mid-December 2008.</p> <p><b>Assistance to users.</b> Data users can reach a contact person using the address and e-mail provided on the CBT’s website, and by direct contact with the CBT. A subscription form is available on the website.</p>

Source: IMF (2009), pp.19.

### ANNEX 3. Checklist for the Statistical Needs of the CBT and Their Rationale

	Harmonization with ESA 95	Harmonization with IMF's MFSM2000	Harmonization with ECB Statistics	G-20 Data Gap Initiative	IMF SDDS Requirement	Explanation
<b>WHAT WE HAVE DONE SO FAR</b>						
Expanding Monetary Sector	√	√	√			Better designed monetary aggregates serving better for financial stability.
Statistics Beyond Monetary Sector	√	√		√		Enabling sectoral data for financial intermediaries.
Disaggregation of Financial Derivatives	√	√	√	√	√	Enabling sector information and separate financial instrument.
Defining Debt Securities			√			Better designed monetary aggregates serving better for financial stability.
Improving Timeliness of Banking Statistics				√	√	More timely data for users.
<b>TASKS AHEAD</b>						
Financial Accounts	√	√	√	√		Compilation of sectoral accounts with whom-to-whom information allows to identify links for financial stability purposes and highlights analysis of systemic risk.
Security-by-Security Data Base for Government Securities	√		√			Measuring flow data on government securities for the aim of compilation of financial accounts.
Improvement to the BIS International Banking Statistics				√		Provide global data on the balance sheets of internationally active banks and enable better data on banking systems' funding and lending patterns

Source : CBT