

V. SPECIAL TOPICS

V.1. Stock Return Co-movement and Systemic Risk in the Turkish Banking System

The financial crisis of 2007–2009 has resulted in widespread failures of financial institutions and freezing up of capital markets, with significant effects on the real economy in both developed and emerging economies. It appears that a full recovery is still underway. The crisis has also demonstrated how closely-knit and interconnected financial institutions and markets are, both within and across countries, with a shock to one financial institution or market spreading rapidly to others, thereby threatening the stability of the whole system. The crisis therefore underscored the relevance of systemic risk, renewed the interest in its measurement, and urged a need for putting in place macroprudential policies to mitigate such risk in financial markets.

Recent research on systemic risk has addressed the issue from various angles which includes defining fine approaches to measure systemic contributions, building sound indicators for systemic risk potential, and identifying systemically important institutions. From policy making perspective, the design of macroprudential policies and regulation to mitigate systemic risk has also been at the center of the discussions by international organizations and financial authorities. For instance, Basel Committee on Bank Supervision (BCBS) and the Financial Stability Board (FSB) have identified global systemically important banks and are currently considering policy options to deal with such institutions. Similarly, the Dodd-Frank Act has also created an institutional structure to identify and oversee systemically important banks that could pose a threat to the U.S. financial system.

There is a vast literature on measuring and explaining stock return co-movement of both domestic and international financial institutions. The earlier studies on co-movement could be classified under the literature on contagion and spillover. For instance, Karolyi and Stulz (2002), and Dungey et al. (2005) provide an extensive review of the earlier studies on contagion and stock return co-movement. From a theoretical perspective, as discussed in Acharya (2009) and Billio et al. (2010), there is a consensus that the likelihood of a major financial disruption depends on the degree of correlation among the assets of financial institutions. Additionally, the sensitivity of such assets to the changes in market prices, and domestic and external macroeconomic conditions, and their concentration on particular sectors or industries are possibly the other sources to which financial shocks could be related to.¹

Among various measures of inter-dependency, asset and stock return correlations have been used as an indicator of systemic risk by Lo (2008), Acharya (2009), Goodhart and Wagner (2012), Patro et al. (2012), among others. Lo (2008) argues that given the complexity of the global financial system, it is necessary to consider a collection of measures, which should be designed to capture different aspects of risk exposure. Thus, among several measures including leverage, liquidity and

¹ For further discussion and references, see Billio et al. (2010).

concentration, he also proposes correlation as a quantitative measure of systemic risk to be followed so that the overall level of risk to the financial system is monitored and managed.

In this study, we measure total inter-dependencies by stock return correlations, and use these correlations as indicators of systemic risk since an increase in stock return correlations possibly signal an increase in the potential for a shock to become systemic. In this context, stock return correlations are relevant because stock prices measure banks' overall performance by reflecting market participants' collective evaluation of future prospects of the firm and its interactions with other institutions. In other words, stock prices reflect investors' perception about a firm's future profitability, thus its potential income, debt and leverage structure, and interaction with the overall system. The forward looking information embedded in banks' stock prices and their movements gives policy makers some direction on determining how systemic risk evolves, and guides them to undertake proactive measures to contain such risk.

Following De Nicolo and Kwast (2002) and Patro et al. (2012), we calculate bi-variate correlations of bank equity returns on a rolling basis to evaluate how systemic risk has evolved in the Turkish banking system over 1990-2011. Our analysis sheds light on the evolution of systemic risk in the Turkish banking industry using a long span of data that covers various systemic events driven completely by domestic policies, such as the crisis of 1994, 2000-2001, and by external shocks such as East Asian crisis, and the crisis following the U.S. sub-prime market collapse.

We use daily stock price data of the 17 banks listed on the Istanbul Stock Exchange (ISE). Thus, our analysis includes all ISE-listed banks which vary across business models, size, and ownership types. The sample size is different for each bank since the date since when a particular share is traded on the ISE changes for each institution. However, the broad sample covers the period 01:1990-07:2011. The total assets of banks listed on the ISE and included in our sample account for approximately 76 percent of the Turkish banking system as of September 2011.

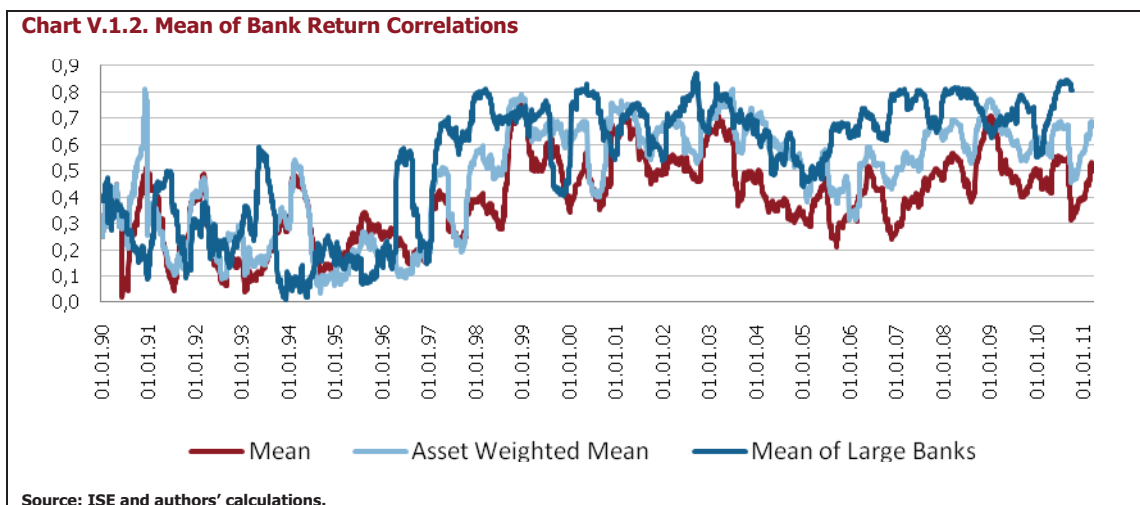
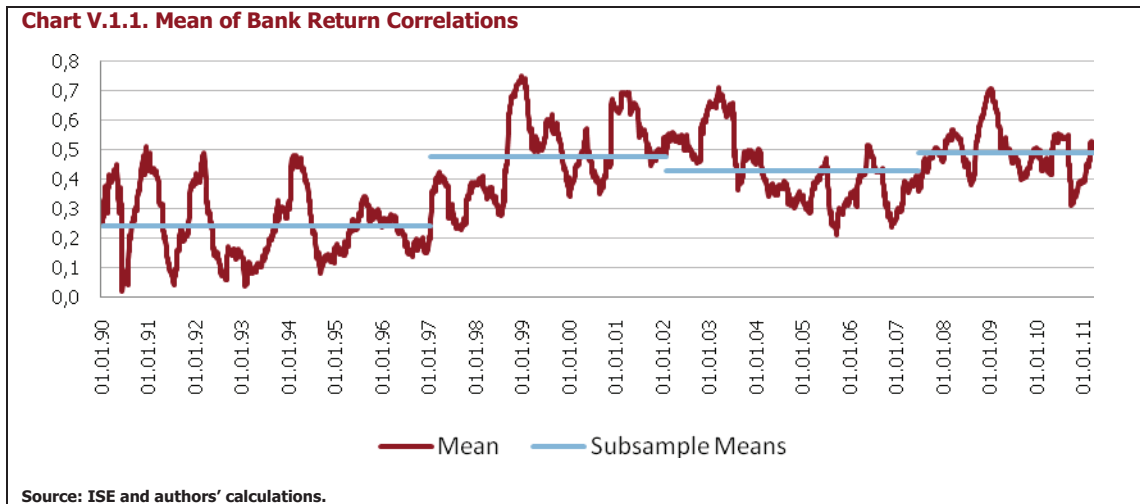
We calculate banks' stock returns by using daily closing prices as $100 * [\log(p_t) - \log(p_{t-1})]$ which are adjusted for dividend payments and changes in capitalization. Summary statistics and pair-wise correlations of banks' daily equity returns for the whole sample period indicates that there is a large heterogeneity in terms of sample size, volatility of stock returns, and correlation of stock returns both within and between bank-groups. For instance, stock return correlations among large banks² are notably larger, overall, than the correlation of their stock returns with those of smaller ones. Similarly, the correlations of returns between small banks are also smaller. This correlation pattern by itself suggests that the size of financial institutions is an important factor that explains the sources of inter-dependencies among them, which is in line with the view that financial consolidation is a driving factor of systemic risk as in De Nicolo and Kwast (2002).

To document the inter-dependency/co-movement among the banks included in our analysis, we first compute daily (Pearson) correlations for all stock pairs using a three-month rolling window throughout the sample period. We then calculate the mean of bi-variate correlations for each day by using at most 136 (=17:2 combination) observations. The number of observations for a specific date

² These are the banks whose share of assets among ISE listed banks are approximately 10 percent or higher.

varies depending on the number of banks whose shares are traded on the ISE on that date. The unconditional correlation measures and their evolution over time would provide some indication regarding whether the banking industry has become more inter-connected, and thus whether the shocks during some of the major events such as the crisis of 1994, 2000-2001 and later during global financial crisis of 2007–2009 had the potential to become a systemic crisis.

Figures 1 and 2 display the time series of inter-dependency among the banks measured by mean of daily stock return correlations as described above. Figure 1 shows that the banking industry has become more inter-connected, indicating that the potential of any major shock to the financial system to become a systemic crisis has increased overtime. In other words, the increase in correlation particularly after late 1990s is indicative of increase in exposure to common factors, which had introduced larger fragility in the banking system. Besides an upward trend in unconditional correlations, Figure 1 also displays large spikes during significant economic event including the crisis of 1994, 2000-2001 and later during international financial crisis of 2007–2009, particularly in the aftermath of the Lehman collapse.



The means of subsamples display significant variation, which likely has been the result of either major external shocks or domestic political events. The sub-sample means are found to be statistically

significantly different from each other, demonstrating a marked change and increase in correlations over these particular periods.

The considerable variation in stock return correlations over time and the increasing trend is more evident for the sub-sample of large banks, and particularly when the bivariate correlations are adjusted with asset size. Figure 2 shows that asset weighted mean of stock return correlation and the correlation of returns among large banks display further increase in recent years compared to the overall correlation index suggesting a size effect.

In conclusion, this paper investigates the evolution of systemic risk in the Turkish banking sector over the past two decades using co-movement of banks' stock returns as a systemic risk indicator. Results show that the correlations between bank stock returns almost doubled in 2000s in comparison to 1990s. The correlations decreased somewhat after 2002 and increased again as a result of the 2007–2009 financial crisis.

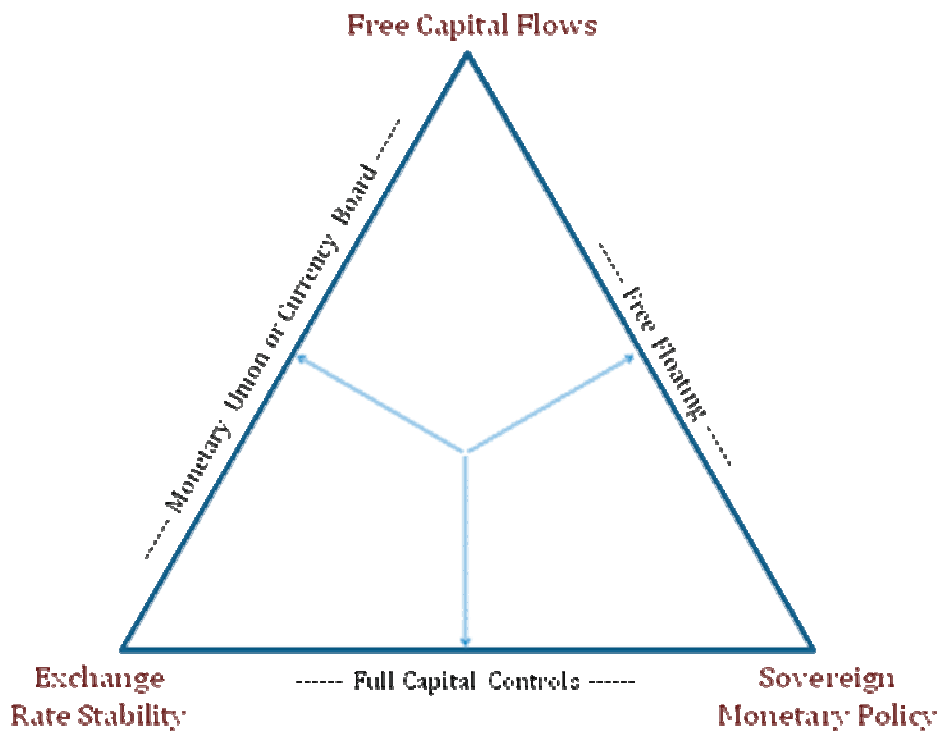
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V.2. The Impact of Required Reserve Ratios and International Reserves on Trilemma Trade-offs: Turkish Case

The macroeconomic policy “trilemma” (i.e. the impossible trinity) which is based on the studies of Mundell (1961) and Mundell-Fleming model, implies that a country simultaneously can choose at most two of the following three goals: monetary independence (MI), exchange rate stability (ERS) and capital account openness (KO). The trilemma policy trade-offs are conveniently represented via a triangle, where each corner of the triangle in Figure V.2.1 represents full attainment of one of the three goals. Therefore, as shown, being at any vertex of the triangle represents attainment of the two goals at the adjacent corners, at the expense of abandonment of the third. In practice, the partial attainment of all three policy goals seems to characterize the general framework of policymaking, especially for emerging market economies. This is a natural consequence as all three goals are potentially desirable and policy makers might attempt to meet all three partially. This is captured in Figure V.2.1 as being at a point somewhere in the interior of the triangle.

Figure V.2.1



Within this context; Aizenman, Chinn and Ito (ACI, 2008 and 2010), developed a new methodology to empirically characterize the mixed approach to the trilemma in practical policymaking. In their approach, ACI initially measure each policy dimension via an empirical index. The theoretical constraint of trade-offs between the three policy goals is then captured by the coefficients in a regression where a constant is regressed on the trilemma indices as shown below:

$$1 = C_1 * \mathbf{MI} + C_2 * \mathbf{ERS} + C_3 * \mathbf{KO} + \text{residual}$$

where MI, ERS and KO represent monetary independence, exchange rate stability and capital openness respectively (The formulas used in order to calculate the indices are shown below)³. Similarly; C_1 , C_2 and C_3 are the coefficients of the corresponding indices.

$$ERS = \frac{0.01}{0.01 + stdev(\Delta(\log(exch_rate)))}$$

$$MI = 1 - \frac{corr(i_{US}, i_{TR}) - (-1)}{1 - (-1)}$$

$$KO^4 = (\text{Absolute sum of foreign direct investment and portfolio flows})/GDP.$$

In the trilemma regression shown above, the dependent variable is a numerical constant, "1", representing the total distance from any point of the triangle to the triangle's sides. Yet, this value is trivial and can take other values such as "2", "3" without changing the relative importance of each policy or the implications of the final outcome. According to this methodology, in order to observe "how much of" the each policy choice has been implemented; relative contributions are calculated by multiplying the estimated coefficients with the actual values of the indices. ACI applied this methodology to a cross-country sample of several countries with time-averages of annual data.

ACI applied this methodology to a cross-country sample of several countries with time-averages of annual data. Cortuk and Singh (2011), however, applied the ACI methodology to a single country, Turkey, with the objective of specifically understanding the detailed evolution of the policy stance toward the trilemma trade-offs. Authors conclude that there is a misspecification inherent with this methodology that needs to be handled when applied to a single country⁵.

Further, they investigate the potential reasons for this misspecification and attempt to overcome them through other possible means. As one possible explanation for such misspecification is the linearity inherent in the OLS analysis, authors recommend taking the classical linear regression into a Kalman filter framework⁶ which allows the regression parameters (C_1 , C_2 , C_3) to change over time.

Finally; Turhan, Cortuk and Akcelik (2012) assess the role of foreign reserves and required reserves in mitigating the trilemma trade-offs by examining their relation with the residuals obtained from the trilemma regression with the Kalman filter approach. Accordingly, authors initially perform a VAR analysis between foreign reserves to GDP ratio and the residuals for the period of 2002-2011, in

³ The scaling ensures that the MI and ERS indices lie between 0 and 1 while the KO index is not theoretically constrained to lie in this range. Yet, this range is not violated during the period analyzed.

⁴ Following Hutchison et al. (2010)

⁵ According to Ramsey RESET test results

⁶ Developed by Kalman (1960)

which they obtain a positive relation between the two variables at the fourth lag. Similar relation is valid between the required reserve ratio and the residuals only after the second half of 2009 at 90 percent confidence level. Augmentation of residuals indicates that sum of the contributions of the trilemma indices become smaller than the numeric constant, one, in the trilemma regression, mitigating the trade-offs among the policy choices of exchange rate stability, monetary independence and capital controls. Furthermore, authors perform Granger causality analyses for robustness issues. These analyses also support that foreign reserves and required reserves have significant impact on the trilemma residuals by rejecting the null hypothesis of no Granger causality.

Vector Autoregression Analysis: Required Reserves Ratios (RRR) (2009:06-2011:12)

	Residual Term	RRR
Residual term (-1)	0.0424 (0.186)	-0.007* (0.004)
Residual term (-2)	-0.404** (0.197)	0.0085* (0.004)
RRR (-1)	-7.995 (6.280)	1.735*** (0.147)
RRR (-2)	12.534* (6.760)	-0.777*** (0.158)
Constant	-0.201** (0.085)	0.0027 (0.0019)

*, **, *** denote statistical significance at 90%, 95% and 99% confidence levels respectively. Standard errors are in parenthesis.

Granger Causality Analysis: Required Reserves Ratios (RRR) (2009:06-2011:12)

	F-Statistic	Prob.
RRR does not Granger cause Residuals.	8.274***	0.007
Residuals do not Granger cause RRR.	5.392**	0.027

*, **, *** denote statistical significance at 90%, 95% and 99% confidence levels respectively.

Vector Autoregression Analysis: Reserve/GDP (2002:01-2011:12)

	Residual Term	Reserve/GDP
Residual term (-1)	0.2464*** (0.089)	0.027 (0.038)
Residual term (-2)	-0.2758*** (0.092)	-0.080** (0.039)
Residual term (-3)	0.1435 (0.094)	0.0670 (0.040)
Residual term (-4)	-0.1481 (0.0928)	0.0005 (0.039)
Reserve/GDP (-1)	0.3475 (0.219)	0.763*** (0.093)
Reserve/GDP (-2)	-0.2015 (0.278)	0.335*** (0.119)
Reserve/GDP (-3)	-0.3252 (0.271)	-0.183 (0.116)
Reserve/GDP (-4)	0.5075** (0.220)	-0.1503 (0.094)
Constant	-0.3639** (0.175)	0.298*** (0.075)

*, **, *** denote statistical significance at 90%, 95% and 99% confidence levels respectively. Standard errors are in parenthesis.

Granger Causality Analysis: Reserve/GDP (2002:01-2011:12)

	F-Statistic	Prob.
Reserve/GDP does not Granger cause Residuals.	2.155**	0.044
Residuals do not Granger cause Reserve/GDP	1.437	0.198

*, **, *** denote statistical significance at 90%, 95% and 99% confidence levels respectively.

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V.3. The Impact of Liquidity Risk on Market Risk

Both the recent global financial crisis and the announcement of JP Morgan Chase's multibillion dollar loss during May 2012 have shown once more that the securities in banks' portfolios which have exposure to market risk can result in huge losses. Moreover, banks' intention to sell financial assets to close their risky positions and/or to acquire liquidity can cause the market liquidity conditions to deteriorate with sudden and severe fashion. This may further create a feedback loop between market and funding liquidity thereby causing liquidity problems and decrease in capital due to losses. Especially, under costly and restricted market conditions, the impacts of the risk may become considerably high. Although liquidity facilities provided by central banks can contribute to the systems' well functioning, presence of a banking system that is capable of funding itself through market sources is essential for maintaining financial stability.

In this context, considering typical characteristics of the crises along with their damages, to some extent the interaction between market liquidity and funding liquidity risk should be integrated to the market risk for the sake of better risk management. Indeed, building technical infrastructure with more prudent risk measurement methods is of great importance for a well-functioning financial system. Expected Loss" (expected shortfall-ES) method, which is a more prudent version of widely used "Value at Risk" (VaR) method, is among the agenda topics of regulatory authorities and market players. Regarding this issue, approach put forward by the regulatory authorities is presented briefly below⁷.

The consultation report (Report) prepared by Basel Committee on Banking Supervision (the Committee) points out that the required capital against the market risk is not sufficient. Works on reducing cyclical of market risk and increasing the required capital mostly focus on products carrying credit risk. In this context, regulations are being introduced to eliminate the weaknesses of risk measurement methods based on internal model-based and standardized approaches,. The report highlights inadequacy of the VaR as the main method for calculating regulatory capital. VaR is the maximum loss of a financial asset or a portfolio at a specified time period with a certain probability. Due to both its convenience in calculating the portfolio risk and its advantage to produce a single figure as a proxy for market risk, VaR is commonly used. On the other hand, since VaR method is insufficient to capture the extreme event" (tail risk), the Committee evaluates the ES an alternative method to calculate capital against low probable but highly damaging situations. Different from VaR that is based on events within a certain confidence level, ES considers the tail events by averaging the losses above a certain threshold corresponding to a confidence level. In this regard, ES can be considered as a step forward in capturing tail risk. Although using ES could bring some operational difficulties, considering the cost-benefit analysis, pros outweigh the cons. Furthermore, another

⁷ BCBS, Fundamental Review of the Trading Book, Consultative Document, May 2012

alternative of the Committee is liquidity enhanced VaR method. So called L-VaR is the VaR in which liquidity is incorporated. L-VaR gauges market risk with additional amount of liquidity risk.

The Committee's another important step towards market risk is the supplementary obligations related to liquidity risk. These additional obligations are considered to be crucial to eliminate the assumption that the trading portfolio products are liquid. Market risk measurement techniques are based on the assumption that banks would close the position or take opposite positions in order to hedge themselves within 10 days. However, one of the important lessons from the crisis is whether this assumption is valid or not. As liquidity conditions deteriorated during the crisis, banks were forced to hold risk positions for much longer than originally expected and were incurred large losses due to fluctuations in liquidity premia and associated changes in market prices. Considering these, the Committee's recommendation regarding the risk of market liquidity is comprised of three elements:

(i) The concept of "liquidity horizons", defined as the time required to exit or hedge a risk position in a stressed market environment without materially affecting market prices. Banks' exposures would be assigned into five liquidity horizon categories, ranging from 10 days to one year.

(ii) Varying liquidity horizons in the regulatory market risk metric to capitalize the risk that banks might be unable to exit or hedge risk positions over a short time period (the assumption embedded in the 10-day VaR treatment for market risk).

(iii) Capital add-ons for jumps in liquidity premia, which would apply only if certain criteria were met.

These criteria would seek to identify the set of instruments that could become particularly illiquid, but where the market risk metric, even with extended liquidity horizons, would not sufficiently capture the risk to solvency from large fluctuations in liquidity premia. Additionally, the Committee is consulting on two possible options for incorporating the "endogenous" aspect of market liquidity. Endogenous liquidity is the component that relates to bank-specific portfolio characteristics, such as particularly large or concentrated exposures relative to the market. The main approach under consideration by the Committee to incorporate this risk would be further extension of liquidity horizons; an alternative could be application of prudent valuation adjustments specifically targeted to account for endogenous liquidity.

Finally, the Committee evaluates the relationship between model-based and standard methods as well as their pros and cons. Accordingly, to strengthen the relationship between the models-based and standardized approaches the Committee is consulting on three proposals: first, establishing a closer link between the calibration of the two approaches; second, requiring mandatory calculation of the standardized approach by all banks; and third, considering the merits of introducing the standardized approach as a floor or surcharge to the models-based approach. The Committee is proposing to break the model approval process into smaller, more discrete steps, including at the trading desk level. This will allow model approval to be "turned-off" more easily than at present for specific trading desks that do not meet the requirements. Taking ES measurement method as the

internal models approach brings significant prudence to the analysis of market risk. On the other hand, the revised standard method is based on partial risk factor. The Committee proposes a “partial risk factor” approach as a revised standardized approach. According to this approach, Instruments that exhibit similar risk characteristics would be grouped in buckets and Committee-specified risk weights would be applied to their market value. The number of buckets would be approximately 20 across five broad classes of instruments, though the exact number would be determined empirically. The Committee also invites feedback on a “fuller risk factor” approach as an alternative. Accordingly, the products will be associated directly with risk factors are determined by regulatory authorities. This capital requirement will be determined by applying shocks to risk factors. In this case, the bank, using an appropriate pricing model within the framework of the risk factors will determine the position of the portfolio of risk for each of the products.

V.4. Financial Trilogy: Financial Inclusion, Financial Education and Financial Consumer Protection

In the international literature, there exist three main concepts which are highly relevant with and contribute to financial stability, and also handle the relationship between individuals and financial system from different perspectives. These are; financial inclusion, financial education and financial consumer protection. The global financial crisis has revealed the importance of these concepts and their relationship with the financial stability.

Many central banks consider financial stability as a supplementary objective along with the primary objective of price stability. This objective is set down in the laws of some of the central banks including the Central Bank of the Republic of Turkey. Thus, central banks stand in the forefront regarding studies on financial inclusion, financial education and financial consumer protection in various ways and dimensions due to legal liabilities on the one hand; and the close relationship of these concepts with financial stability on the other.

Financial Inclusion

Financial inclusion refers to the process of promoting affordable, timely and adequate access to a range of regulated financial products and services and broadening their use by all segments of society through the implementation of tailored existing and innovative approaches including financial awareness and education with a view to promote financial wellbeing as well as economic and social inclusion⁸.

A global financial inclusion database and index (Global Findex) has been generated in a study by Demirgüç-Kunt and Klapper (April 2012). Via a survey, 18 questions have been asked to over 150 thousands adult respondents in 148 economies. Generally in measuring financial inclusion, criterion such as having an account in a financial institution, access to account and its frequency of use, making a payment, having a savings account in a financial institution, credit usage and access to insurance services are taken into account. According to Honohan (2007) and the World Bank, Turkey is a bit above the world average regarding financial inclusion level.

Various studies on this issue are being done in the international arena. After the G20 Pittsburgh Summit on November 2009, Financial Inclusion Experts Group (FIEG) was established in order to work on financial inclusion. With the Action Plan prepared by the Group, nine "G20 innovative financial inclusion principles" have been determined. These are; leadership, diversity, innovation, protection, empowerment, cooperation, knowledge, proportionality and framework. After the G20 Seoul Summit on November 2010, FIEG was transformed into the Global Partnership for Financial Inclusion (GPII) and gained an official statute. GPII, in cooperation with G20 countries and non-G20 countries, private

⁸ OECD, INFE, "Developing a Roadmap on Financial Inclusion and the Role of Financial Education", 8. INFE Meeting Reference Document, October 2011.

sector, non-governmental organizations and various national, regional and international institutions, works for implementing the Action Plan, enhancing systematic coordination and increasing awareness on financial inclusion. Key implementing partners of the GPMI are the Alliance for Financial Inclusion (AFI), Consultative Group to Assist the Poor (CGAP) and International Finance Corporation (IFC). Besides, World Bank has joined to the GPMI on January 2012 as the fourth implementing partner. G20 Troika countries are the co-chairs of the GPMI. There are three sub-groups under the GPMI. They are, "Sub-group on the G20 Principles and Standard Setting Bodies (SSBs)", "Sub-group on SME Finance" and "Sub-group on Financial Inclusion Data and Target Setting". In the sub-group on SME Finance, Turkey is one of the co-chairs, together with the USA, Germany and the UK. Many reports on the issues regarding financial inclusion are prepared and shared with the public as part of the GPMI efforts.

On the other hand, G20 Mexico Presidency gives special attention to financial inclusion and includes the issue into its five⁹ priorities. One of the studies by the G20 Mexico Presidency under the "Financial Inclusion Agenda" is "Financial Inclusion Peer Learning Program". The program covers three phases:

1. Engendering a national commitment to financial inclusion, and creating national coordination mechanisms or councils,
2. Designing a national strategic action plan on financial inclusion,
3. Implementing the action plan, and using the Peer Learning Program to share with other participant nations their experiences in the move towards financial inclusion.

In this context, a seminar was held on April 22, 2012 by the World Bank and Ministry of Finance of Mexico. Other than this, the program is planned to be made official at the G20 Summit in Los Cabos, Mexico on June 17, 2012 by a signing ceremony with the participation of the countries which have commitments on Financial Inclusion Peer Learning Program.

Alongside all, under the leadership of "United Nations Secretary-General's Special Advocate (UNSGSA) for Inclusive Finance for Development" Princess of the Netherlands Maxima, various works are done in many parts of the world by reaching people from every part of the society. In this context, effective policies, strong government leadership, cross-sector partnerships and development of good products are encouraged. As a result of these efforts, it was stated that tangible outcomes are achieved to advance financial inclusion, and an annual report was published on September 2011.

"The Role of Financial Education in Financial Inclusion" sub-group under the Organization for Economic Cooperation and Development (OECD) - International Network on Financial Education (INFE) which was established on October, 2010 and of which the CBRT has a membership, carry on

⁹ The priorities Mexico established: (1) Growth and employment, (2) Strengthening the financial system and fostering financial inclusion, (3) Improving the international financial architecture, (4) Enhancing food security and addressing commodity price volatility, (5) Promoting sustainable development, green growth and the fight against climate change.

its work on financial inclusion with a demand-side perspective. Additionally, World Bank and CGAP execute significant studies on financial inclusion.

Turkey contributes to the international efforts on financial inclusion, especially by gathering data and filling out surveys. The Undersecretariat of Treasury, Capital Markets Board (CMB), CBRT and many other institutions work on financial inclusion issues in Turkey.

Financial Education

Financial education can be defined as “the process by which financial consumers/investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being” (OECD, 2005).

Increased financial awareness and financial education for individuals and society contribute to the working of financial markets more effectively and efficiently, maintaining financial stability, therefore improvement in the whole economy and increasing the social welfare. Financial education supports increasing the awareness and knowledge of individuals on financial product and services, financial risks and investments, therefore the use of financial products and services efficiently and suitably.

In the international arena, INFE under the OECD executes significant studies to advance financial education¹⁰. OECD / INFE “Financial Education National Strategy High Level Principles” draft report is presented to the approval of INFE members. The report, which was examined by the Committee on Financial Markets, and Insurance and Private Pensions Committee will be presented for approval of the G20 Leaders at the Summit in Los Cabos in June. The CBRT is a member of the INFE, supports and is actively involved in the works of the group on financial education¹¹.

Recently, increasing number of countries established or have efforts for establishing “financial education national strategy”. Herein, it should be emphasized that there is no “one size fits all” strategy for all countries, and while establishing strategies, cultural, economic and social diversities between countries should be taken into account. However, best country examples and studies done by international institutions are important guides for establishing each country’s own financial education strategy.

In the study by Grifoni and Messy (2012), steps taken regarding the national strategy on financial education and progress level of the countries’ are examined. According to this study, 14 countries started to implement national strategies, while 19 countries including Turkey consider establishing and designing national strategies, but not yet implemented (Table V.4.1).

¹⁰ <http://www.financial-education.org>

¹¹ CBRT has memberships to the sub-groups “Financial Education National Strategy” and “The Role of Financial Education in Financial Inclusion” established under the INFE.

Table V.4.1. Stages of Development in Establishing National Strategies for Financial Education*

National Strategy	Countries
<i>Countries that have designed and implemented (implementation date)</i>	Australia (2011), Brazil (2010), Czech Republic (2010), Ghana (2009), India (2006/2010), Ireland** (2009), Japan (2005), Malaysia (2003), Netherlands (2008), New Zealand (2008, 2010), Portugal (2011), Slovenia (2011), Spain (2008), United Kingdom (2003), United States (2006, 2011)
<i>Countries that have started considering and/or designing a NS (but not yet implemented it)</i>	Canada, Colombia, Estonia, Indonesia, Kenya, Latvia, Lebanon, Malawi, Mexico, Peru, Poland, Romania, Serbia, South Africa, Sweden, Tanzania, Turkey , Uganda, Russian Federation, Thailand, Zambia

* The information is updated as of February 2012. Denmark does not have a NS as such and it is not considering designing one due to budgetary constraints, however it established a national board with responsibilities for financial education.

** Ireland on the other hand has an approach based on the recommendations of a steering group, but this does not include a NS. Nevertheless it has much in common with national strategies elsewhere and so is included in the following analysis.

Source: Grifoni, A. and Messy, F-A (2012), "Current Status of National Strategies for Financial Education: A Comparative Analysis and Relevant Practices", OECD WP on Finance, Insurance and Private Pensions No. 16.

Although growth rate of the financial sector in Turkey has been high recently, indebtedness ratios are still lower compared to developed countries. On the other hand, CBRT gives special attention to financial education with its "financial education within financial stability" perspective¹². Considering the importance of the issue, individual and social benefits, financial education needs a national policy framework. In this regard, with the task given by the Financial Stability Committee (FSC), a draft "Financial Education National Strategy and Action Plan" has been prepared under the coordination of the CMB, and it is expected to be completed soon and presented for approval of the FSC.

Financial Consumer Protection

Financial consumer protection refers to the regulations for maintaining a fair and equal exchange between financial product and service providers, and consumers¹³.

Rapid growth and diversity in financial products and services and their increasing complexity present many alternatives for individuals on their investment, consumption and saving decisions on the one hand, while increasing burden of risks on consumers on the other. Improving the policies for protecting rights and benefits of financial product and service consumers affect the risk management of individuals positively, and increase competition in financial markets. Financial consumer protection contributes to effective and efficient functioning of financial system by increasing confidence of consumers, especially savers and investors to financial system, and supports financial stability.

After the global crisis, with the pressure of risks on financial system which households face, studies on improving policies for strengthening consumer protection increased in national and international platforms. In line with the request of G20 leaders, a report titled as "Consumer Finance

¹² "International Conference on Financial Education and Financial Awareness: Challenges, Opportunities and Strategies", 9-11 March 2011, İstanbul http://www.tcmb.gov.tr/yeni/konferans/finansal_education/conference.html,

"Access to Financial Services and Financial Education in the World and Turkey" (Dünyada ve Türkiye'de Finansal Hizmetlere Erişim ve Finansal Eğitim) Booklet (only in Turkish), March 2011

http://www.tcmb.gov.tr/yeni/evds/yayin/kitaplar/finansal_egitim.pdf

¹³ BRSA, Financial Consumer Protection Policy Paper Draft, March 2012.

Protection with particular focus on credit” was prepared in coordination of the Financial Stability Board (FSB) together with OECD and other international institutions, and the report was presented to the leaders at the November 2011 Summit.

The OECD does significant studies on financial consumer protection, as well. Under the OECD Committee on Financial Markets, Task Force on Financial Consumer Protection was established and the Task Force defined 10 high level principles, and carries on its work to generate a report (see CBRT Financial Stability Report Volume 13, Special Topic 9). CBRT, together with the Undersecretariat of Treasury and Banking Regulation and Supervision Agency (BRSA) represent Turkey in the Task Force. On the other hand, there are some efforts to establish a network for enhancing cooperation and information exchange on financial consumer protection internationally.

In Turkey, with the task given by the FSC, in coordination of the BRSA “Financial Consumer Protection Policy Paper and Strategic Plan” drafts have been prepared, and they are expected to be completed soon and presented for approval of the FSC.

Conclusion

Budget, income-expenditure, investment, saving and consumption decisions have always been important for individuals and firms, however global financial crisis has created an opportunity for realizing the importance of these concepts better. Recent changes like increasing diversity and complexity of financial product and services, increasing responsibilities of individuals and importance of their awareness about risks, extending lifetime, importance of private pension systems, and high indebtedness ratios among youth population increase the significance of concepts in financial trilogy, which require particular financial knowledge, experience, risk analyzing capacity and awareness.

Considering individual and social benefits, it is thought that financial education, financial inclusion and financial consumer protection concepts need a strong policy framework, policy will and decisiveness. Since all these concepts are closely related with financial stability, studies done on these issues will contribute to financial stability significantly, too. The CBRT, in cooperation with related institutions and with its financial stability perspective, will continue to participate actively and support the works done both in national and international platforms on financial inclusion, financial education and financial consumer protection issues.

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V.5. Bonds/Bills Issues

In Turkey, the degree of development in the securities markets other than government sector has been limited until recent years. Lately, private sector issues began to increase due to the decrease in government borrowing requirement, better macroeconomic indicators and financial stability despite the global crisis. Although most of these security issues are realized by banking sector, non-bank institutions' security issues are also increasing.

In this study, developments in the private sector securities markets will first be analyzed globally and then nationally.

• Global Securities Markets

According to the Bank for International Settlements (BIS) statistics, US financial institutions, due to their developed capital markets, has the highest share in terms of quantity and ratio to assets in the domestic debt securities by sector and residence of issuer. Domestic debt securities issued by financial institutions of EU countries and US to their total assets ratio decreased in the third quarter of 2011. The reasons of the decrease in the ratio are firstly the crisis experienced in US and secondly the banks' preference to apply for central bank resources due to the decrease in the roll-over ratio of securities resulting from the fluctuation in the capital markets caused by EU debt crisis.

In general, contrary to developed countries, an increase has been observed in domestic debt securities issued by financial institutions of developing countries. Capital flows to developing countries in 2010 have an impact on this increase.

Table V.5.1. Domestic Debt Securities Issued by Financial Institutions (Billion US dollar)

	2009	2010	09/11
USA	12,394.0	10,845.0	10381.0
France	1,174.7	1,182.5	1290.1
Spain	934.4	798.8	756.6
Italy	782.6	701.1	744.0
Australia	606.1	659.5	586.0
Brazil	423.8	497.1	510.5
Germany	909.5	530.2	446.8
South Korea	331.0	255.3	237.3
Mexico	123.7	146.5	139.0
Malaysia	34.5	59.2	72.7
Poland	7.1	8.4	11.7
Hungary	9.6	8.6	9.9

Source: BIS Quarterly Review

Table V.5.2. The Ratio of Domestic Debt Securities Issued by Financial Institutions to Banking Assets (%)

	2009	2010	09/11
USA	93.9	74.9	69.4
Italy	42.3	33.6	-
Spain	38.6	29.6	-
Mexico	33.4	33.9	28.9
France	26.4	24.3	-
Brazil	24.6	21.4	21.6
South Korea	22.7	16.7	14.9
Australia	20.6	24.3	19.1
Germany	17.6	8.4	7.0
Malaysia	7.4	11.9	13.6
Hungary	5.9	6.0	7.7
Poland	1.9	2.2	3.0

Source: BIS Quarterly Review and IMF FSI Statistics

Table V.5.3. International Debt Securities Issued by Financial Institutions (Billion US dollar)

	2009	2010	09/11
USA	5,444.5	5,539.3	5445.9
Germany	2,502.2	2,318.3	2393.4
Spain	1,674.6	1,595.4	1680.6
France	1,545.4	1,518.1	1630.0
Italy	1,072.9	1,000.7	1038.8
Australia	525.9	562.6	567.8
Brazil	72.0	95.9	116.5
South Korea	86.9	95.3	105.0
Malaysia	26.5	32.1	31.5
Mexico	28.7	22.6	22.6
Hungary	13.4	10.3	9.9
Poland	3.5	5.2	6.2

Source: BIS Quarterly Review

Table V.5.4. The Ratio of International Debt Securities Issued by Financial Institutions to Banking Assets (%)¹

	2009	2010	09/11
Spain	69,2	59,1	-
Italy	58,0	48,0	-
Germany	48,4	36,7	37,6
USA	41,2	38,3	36,4
France	34,7	31,2	-
Australia	17,9	20,7	18,5
Hungary	8,2	7,2	7,7
Mexico (1)	7,8	5,2	4,7
South Korea	6,0	6,2	6,6
Malaysia	5,7	6,4	5,9
Brazil	4,2	4,1	4,9
Poland	0,9	1,3	1,6

Source: BIS Quarterly Review and IMF FSI Statistics

(1) August 2011 data is used for total assets.

After the analysis of international debt securities issued by financial institutions, it is seen that US financial institutions are well ahead in quantitative terms, while Spain, Italy and Germany are in the first places in terms of international debt securities issued to banking assets ratio. The main factor behind this development is that these countries are more active in European markets due to their inclusion in Euro Area. International debt securities issues of developed countries' financial sectors are more stagnant than their domestic issues and the decrease mentioned above has not been experienced.

When the developing countries are analyzed, Brazil is the major country, whose financial institutions issued domestic and international debt securities, in quantitative terms. In the debt to banking assets ratio, Brazil and Hungary are the countries, which are ahead. While Brazil and South Korea raised the international debt security issues, in other countries security issues have experienced a decline, though limited, compared to the end of 2010 due to adverse market conditions and less risk appetite in the last quarter of 2011 (Table V.5.1 and Table V.5.3).

In the analysis of debt securities issued by the corporates, it is observed that the securities issued by the corporates of developed countries, specifically in U.S., are relatively higher due to deeper capital markets of these countries. From 2009 to mid 2011, both domestic and international debt securities issued by corporates had in an increasing trend. The low interest rates and increased liquidity gave a chance to corporates to get into debt directly from markets by issuing securities instead of getting into debt from banks. In the case of the corporates of developing countries, corporates of South Korea, Mexico, Brazil and Malaysia increased their debt security issues both domestically and internationally in the period of 2009 and July 2011 parallel to increasing capital movements. On the other hand, total stock of issues decreased in corporates of all countries since the second half of 2011 (Table V.5.5 and Table V.5.6).

Table V.5.5. Domestic Debt Securities Issued by Corporates (Billion US dollar)

	2009	2010	09.11
USA	3,025.8	3,143.8	3,244.7
South Korea	309.5	380.6	398.8
Germany	344.7	352.1	388.1
Italy	435.6	363.8	358.5
France	278.1	287.3	294.3
Malaysia	60.5	85.1	86.3
Australia	38.3	44.1	43.3
Mexico	29.2	35.5	35.9
Spain	22.9	22.7	24.2
Brazil	9.8	10.6	9.8
Hungary	0.3	0.4	0.4

Source: BIS Quarterly Review

Among developing countries, Brazil is the biggest issuer in amount terms, while Mexico¹⁴ is the first one according to the ratio of domestic debt securities issued by financial institutions to banking assets. Financial sectors of these two countries are using capital market instruments effectively in addition to deposits, so that their financial sector's funding structure is similar to financial sectors of developed countries. (Table V.5.2 and Table V.5.4).

Table V.5.6. International Debt Securities Issued by Corporates (Billion US dollar)

	2009	2010	09.11	2011
USA	1,245.4	1,631.7	1,882.9	1,959.8
France	403.7	416.7	443.5	448.6
Germany	131.0	127.8	136.8	126.8
Italy	98.6	105.0	100.6	97.4
Mexico	25.7	38.3	50.3	54.7
South Korea	35.2	40.6	46.5	46.9
Australia	23.5	30.3	35.7	38.2
Brazil	16.8	27.4	33.1	34.7
Spain	22.8	21.7	23.9	23.4
Malaysia	5.6	5.7	6.3	7.8
Hungary	1.4	2.3	2.4	2.3
Poland	0.4	0.4	0.4	0.6

Source: BIS Quarterly Review

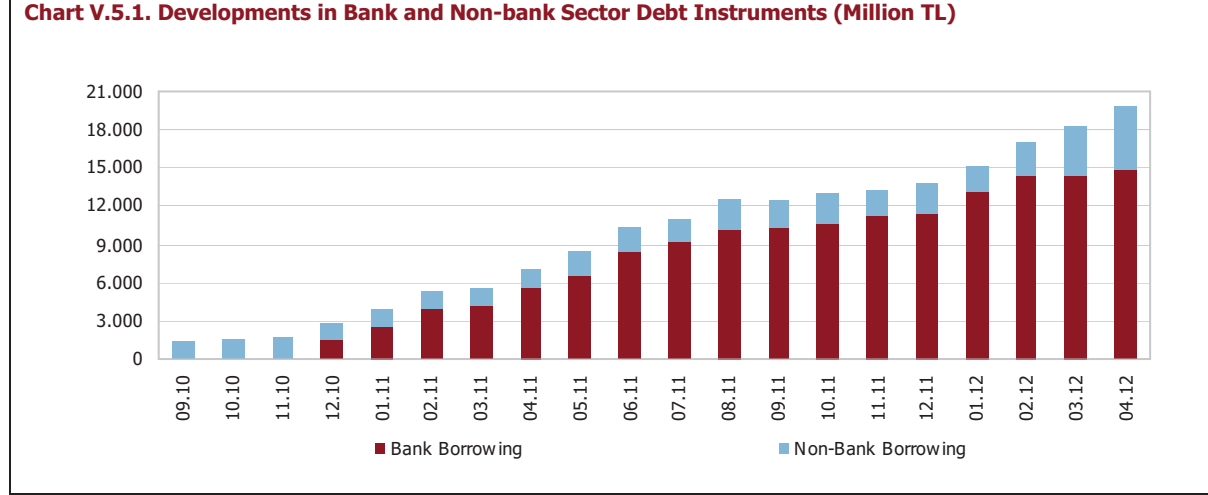
In the case of developed countries, private sector securities markets are more developed than developing countries. On the other hand, it is observed that these markets are getting deeper in developing countries.

¹⁴ In Mexico, since banking assets increased 9 percent and security issues decreased 5 percent in the December 2010 - September 2011 period, the ratio of domestic debt securities issued by financial institutions to total assets decreased by 5 points.

• Turkish Private Sector Securities Markets

According to Central Registry Agency (CRA) statistics, as of April 2012, all private sector security issues including the issues of banking sector amount to almost 20 billion TL. According to the calculations based on the data of CRA and CBRT, while the securities issued by banks reached to 15.1 billion TL, non-bank sector issues are 4.9 billion TL¹⁵ (Chart V.5.1).

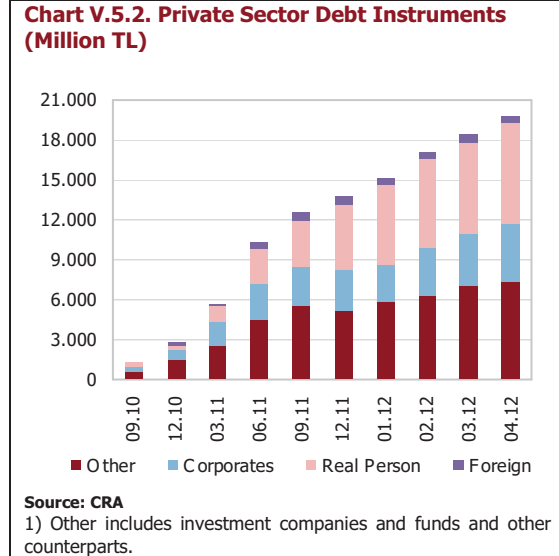
Chart V.5.1. Developments in Bank and Non-bank Sector Debt Instruments (Million TL)



Source: CBRT and CRA

When the distribution of investors of 20 billion TL security issues, including the ones by banking sector is analyzed, it is recognized that 38.3 percent belongs to domestic real person. The 21.7 percent of the remaining amount is owned by domestic corporates, 37.4 percent is owned by domestic investment companies and funds. The share of securities owned by foreign residents is 2.7 percent (Chart V.5.2, Chart V.5.3).

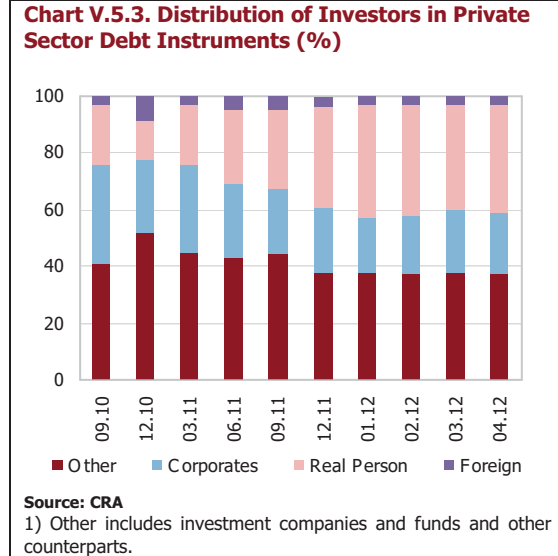
Chart V.5.2. Private Sector Debt Instruments (Million TL)



Source: CRA

1) Other includes investment companies and funds and other counterparts.

Chart V.5.3. Distribution of Investors in Private Sector Debt Instruments (%)



Source: CRA

1) Other includes investment companies and funds and other counterparts.

As of 22 May 2012, TL denominated bond and bill issues by banks reached to 19 billion TL, TL denominated bond and bill issues reached to 5.3 billion US dollar. On the other hand, there is more non-realized issues approved by CMB than realized ones (Table V.5.7).

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In the 4.9 Billion TL amount, other than bond and bills, asset covered bonds, asset-backed securities and rent certificates are also included.

Table V.5.7. Bank Bills/Bonds Issues (Stock)

Nominal Amount	TL Denominated (Million TL)	FX Denominated (Million US dollar)
The realized issues approved by CMB	18,977	5,337
The non-realized issues approved by CMB	24,413	8,856
The applications to CMB	4,740	1,500
GENERAL SUM	48,130	15,693

Source: CMB, Public Disclosure Platform (PDP)

While the average maturity of security issues realized by banks in domestic markets is 294 days, the average maturity of issues done by banks in foreign markets is 5.8 years.

As of 22 May 2012, the securities issued by non-bank institutions in TL currency reached to 2.3 billion TL (Table V.5.8).

Table V.5.8. Non-bank private sector bill and bond issues (Stock)

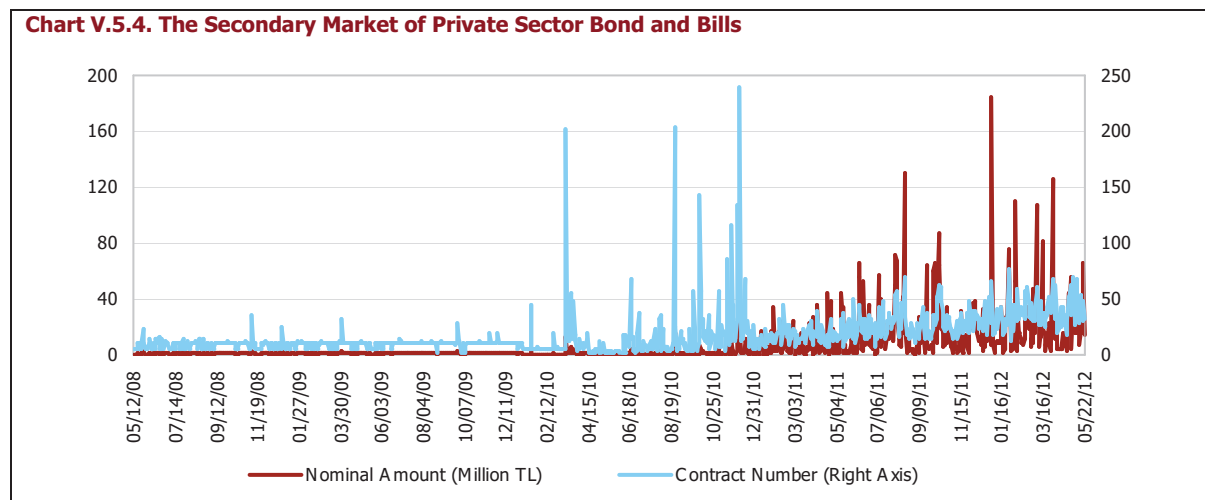
Nominal Amount	TL Denominated (Million TL)	FX Denominated (Million US dollar)
The realized issues approved by CMB	2,263	0.4
The non-realized issues approved by CMB	3,049	857
The applications to CMB	580	0
GENERAL SUM	5,891	857

Source: The calculations relied on CMB, BIS and ISE statistics and PDP and journal news.

The average maturity of security issues done by non-bank institutions is 713 days.

• Secondary Market of Private Sector Securities

The owners of the securities issued by banks may apply to the banks or intermediary institutions, which do not give a formal guarantee to buy. These institutions are able to buy their securities of these owners before the maturity. Despite of the low volume, a secondary market in the ISE Bond and Bill Markets for these bonds and bills is established. (Chart V.5.4).



Source: ISE

Banks act as intermediary in the exchange of the private sector securities. However, these transactions are done rarely. Generally, banks act as intermediary in the trade of their bonds and bills. It is recognized that the transactions are made to establish a price in the secondary market of private sector securities, and the depth of the market is still not sufficient. (Table V.5.9).

Table V.5.9. Benchmark Securities in the Secondary Market As of 22 May 2012

	Code	Interest Rate (%)	Nominal Volume (Thousands TL)	Number of Contracts
Government Securities	TRT120122T17	9.33	120,325	229
Private Sector Bonds	TRSCKKBE1316	12.11	35	3
Bank Bills	TRQAKBK71216	10.43	985	1

Source: ISE

To increase the credit facilities and achieve the investments needed by developing countries, which have low savings due to structural reasons as Turkey has, the attraction of foreign savings is required. Private sector's financing ability from domestic and international markets is important, because these sources have longer maturities and are more stable. From this perspective, it is understood that the security market of Turkish private sector is still small and does not have enough depth. Therefore, to develop these markets healthily, private sector's security markets are monitored carefully and the operations are going on in accordance with other authorities.

V.6. Development in Gold Investments

Gold demand in Turkey has continued its growth gradually in recent years both as an old traditional investment instrument as jewelry and as a sound instrument for the financial investors who are in search for a safe heaven to protect their savings from the deteriorative effects of the ongoing last global financial crisis. In the last three year period between 2009 and 2012, the gold prices tripled in US dollars, due to increased geopolitical risks and the persistence of the security concerns in Middle East.

By rearrangement of related regulations and essentials for opening gold, silver and platinum deposit accounts, extending gold, silver and platinum credits by banks and obtaining precious metal credits from abroad by precious metals exchange intermediary institutions with the Communiqué Numbered 2008-32/35 related to the Decree No. 32 on the Protection of the Value of Turkish Currency published at Official Gazette dated May 29 2008, banks are allowed to open gold, silver and platinum demand or time deposit accounts in favor of real or official bodies. With the positive impact of the said amendment on the precious metals deposit accounts legislation as well as the growing interest for gold as an investment instrument, new projects have been put into practice by a great number of banks. Moreover, CBRT's amendment regarding the facility of holding reserve requirements in gold up to 10 percent of the required reserves on foreign exchange deposits, even though up to total amount for the precious metal deposits which is validated from October 2011, the adoption of the similar application to Turkish lira deposit accounts since November 2011, and the increase of the gold ratio for the required reserves from 10 percent to 20 percent as of April 2012, respectively also are evaluated as having impact on leading the banking sector into the gold banking.

Gold deposits are kept track under precious metal deposits. Gold deposit accounts make up almost total of precious metal deposits.

Table V.6.1. Development of Bank Precious Metals Deposits¹

	Deposit Money Banks			Participation Banks			Gold Price		Development of Precious Metals Accounts (Thousand ounces) (B+D)/E
	FX Accounts in Current Value (Million USD) (A)	Precious Metals Accounts (Million USD) (B)	B/(A+B) (%)	Participation Funds FX	Precious Metals Accounts (Million USD) (D)	D/(C+D) (%)	TL/KG	USD/ounce (E)	
31.12.2008	99.905	313	0,31	5.182	18	0,35	41.300,1	839,4	395
31.12.2009	107.531	780	0,72	6.321	151	2,33	55.778,3	1.143,6	814
31.12.2010	110.355	1.395	1,25	6.781	423	5,87	68.423,5	1.393,0	1.305
30.12.2011	111.373	5.807	4,96	6.221	2.003	24,36	97.814,8	1.628,5	4.796
31.01.2012	116.368	6.112	4,99	6.286	2.058	24,67	97.848,9	1.655,0	4.937
29.02.2012	120.920	6.018	4,74	6.891	2.006	22,55	99.241,9	1.751,6	4.581
30.03.2012	120.206	6.624	5,22	7.190	2.222	23,61	96.440,2	1.676,3	5.277
30.04.2012	122.653	7.006	5,40	7.523	2.250	23,02	94.890,9	1.651,8	5.603
04.05.2012	123.445	6.922	5,31	7.649	2.227	22,55	92.254,1	1.632,2	5.605
11.05.2012	123.608	6.769	5,19	7.653	2.175	22,13	90.909,4	1.580,1	5.660
18.05.2012	122.213	6.859	5,31	7.732	2.185	22,03	93.561,3	1.583,7	5.711
Difference in Years	7.616	4.759		1.046	1.498		17.596	90	3.845
Yearly change (%)	6,6	226,7		15,6	218,2		23,2	6,0	206,1

Source: CBRT, IGE

(1) All precious metals accounts assumed as gold.

While the share of precious metal deposits at the deposit banks was 5.3 percent, the same accounts at the participation banks were 22 percent as of April 18th of 2012. Regarding the development of the gold accounts in ounce value; although there was a considerable increase in gold deposits in the year of 2011, it is getting slower pursuant to the decreasing value of gold. (Table V.6.1).

Table V.6.2. Deposit Money Bank Deposits Maturity Breakdown (Million USD)

Date	Demand Deposits	Up to 1 Month	Up to 3 Month	Up to 6 Month	Up to 1 Year	1 Year and Longer	Total Gold Deposits
30.12.2011	5.357	272	137	24	13	4	5.807
31.01.2012	5.588	301	179	25	15	4	6.112
29.02.2012	5.501	288	180	30	15	4	6.018
30.03.2012	6.102	302	172	29	15	4	6.624
30.04.2012	6.498	280	175	34	15	4	7.006
04.05.2012	6.424	276	170	34	15	3	6.922
11.05.2012	6.260	275	187	29	15	3	6.769
18.05.2012	6.337	285	189	30	15	3	6.859

Source: CBRT

Table V.6.3. Participation Banks Precious Metals Accounts Maturity Breakdown as of May 18 (Million USD)

Private Current Accounts	1 Month	Up to 3 Months	Up to 6 Months	Up to 1 Year	1 Year and Longer	Total Gold Deposits
1.408	0	717	21	29	10	2.185

Source: CBRT

Regarding the maturity breakdown of the gold deposits held both at deposit and participation banks, it is seen that there is an accumulation at demand and special current accounts. As of 18.05.2012, the percentages realized by deposit money banks and the participation banks are 92 percent and 64 percent respectively. (Table V.6.2 and Table V.6.3).

At the same date, 58 percent of the total gold deposits of the banking sector, accumulated in four banks, one of which is a participation bank.

According to a research executed by The Banks Association Of Turkey (TBB) based on the year 2010, it is seen that the outstanding cities holding precious metals gold deposit accounts respectively are: İstanbul (44.4 percent), Ankara (16.5 percent), İzmir (5.0 percent), Bursa (3.2 percent), Antalya (1.8 percent), Konya (1.7 percent).

Required by Uniform Chart of Account (THP), precious metals accounts are kept track in grams. However, by observing the banks which are holding precious metals accounts, it is seen that these accounts are opened in TL and FX. While 7 of total 16 banks, 4 of which are participation banks and are holding gold deposits, never accept physical gold; only 4 banks of remaining 9 banks, 3 of which are participation banks, both accept and deliver physical gold. The remaining 5 banks deliver physical gold, only at the time of closing the account. Since most of the accounts are opened as demand deposits, interest payments are nearly zero, whilst interest payments for the time deposits made in grams and percentages.

Table V.6.4. Development of Type B Gold Funds

Date	Type B Gold Funds (A)			Total Investment Funds (B)			
	Custody Bank Transactions	Investors	Portfolio Value (Million TL)	Custody Bank Transactions	Investors	Portfolio Value (Million TL)	Portfolio Value Ratio (%)
31.12.2008	5	8.521	75	369	3.260.753	29.606	0,3
31.12.2009	8	22.255	313	369	3.260.753	29.606	1,1
31.12.2010	13	36.219	581	485	3.379.426	30.980	1,9
30.12.2011	15	77.519	1.510	590	3.357.719	27.051	5,6
31.01.2012	15	76.679	1.532	598	3.340.643	27.545	5,6
29.02.2012	15	74.179	1.462	608	3.275.340	26.703	5,5
30.03.2012	15	73.500	1.361	617	3.244.253	26.969	5,0
30.04.2012	14	71.683	1.261	623	3.321.143	27.734	4,5
04.05.2012	14	71.631	1.241	625	3.408.671	27.245	4,6
11.05.2012	14	71.161	1.212	626	3.427.372	27.211	4,5
18.05.2012	14	70.334	1.181	630	3.439.275	27.400	4,3

Source: CMB

In addition to the gold deposits, concerning the growth of the secondary market transaction volume of the Type B Gold Investment Funds issued by banks, it is observed that the percentage of the investors increased by 7.3 times, while the number of Custody Bank accounts increased by 1.8 times although their average weight within total investment funds stays at a level of 4 percent (Table V.6.4).

Conclusion

Although the gold deposits increased nearly 2.3 times during last year, it has been estimated that an average of 5 thousands of tons and 260 billion US Dollars value of gold is hoarded in Turkey¹⁶. The gold hoarding in Turkey mainly consists of jewelry, which is defined as scrap at the international gold markets. During the flourishing of gold banking, there are some banks yet accept scrap gold for gold deposits by means of the golden days and similar applications. Although the gold deposits at banks are mainly "immaterialized" demand deposits, they are evaluated as important instruments for dishoarding of gold which would have a positive impact on overall economy.

¹⁶ March 2012 İstanbul Gold and Jewellery Summit

V.7. Data Gaps

Following the global crisis, important steps have been taken towards reforming the financial sector and the regulatory framework has started to be reviewed towards restoring global financial stability. Within this framework, macroprudential tools are being developed for monitoring and removing systemic risk, sectors that are outside the regulatory perimeter are being monitored in order to follow the risks that may arise.

Additionally, the interconnected structure of financial markets, as an important outcome of globalization, made it impossible to deal with financial sectors independently; it became easier for risks to increase and spill over across countries and jurisdictions. Besides, parallel to the technological developments, financial markets became more complex, the diversity of products increased. These required development of new methods for the analysis of emerging risks.

The experiences during the financial crisis underscored that one of the main steps towards improvements in those areas, importance of which increased after the crisis, is increasing the quality and scope of financial sector data. The low quality and insufficient granularity of current data together with the limitations in timely access by related authorities led to incompetence in early identification of problems. Thus, the scope and timing of necessary measures could not be adequately assessed. Moreover, taking into consideration the pace of risk spill over across countries, lack of information which is internationally comparable and shared among related authorities became obvious.

Within this framework, as part of the financial sector reform, G-20 Finance Ministers and Central Bank Governors endorsed in November 2009 the 20 recommendations that are provided to fill the information gaps after the financial crisis (Box V.7.1). In May 2010, a concrete action plan towards addressing those 20 recommendations and a timetable for implementation by the related national/regional authorities were prepared. In June 2011, a progress report was presented to the G-20 Finance Ministers and Central Bank Governors.

Box V.7.1. Recommendations Endorsed by the G-20 to Fill Information Gaps

Recommendation 1: Staff of the FSB and the IMF report back to G-20 Finance Ministers and Central Bank Governors by June 2010 on progress, with a concrete plan of action, including a timetable, to address each of the outstanding recommendations. Thereafter, staff of the FSB and IMF to provide updates on progress once a year.

Recommendation 2: 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.

Recommendation 3: In consultation with national authorities, and drawing on the Financial Soundness Indicators Compilation Guide, the IMF to investigate, develop, and encourage implementation of standard measures that can provide information on tail risks, concentrations, variations in distributions, and the volatility of indicators over time.

Recommendation 4: Further investigation of the measures of system-wide macroprudential risk to be undertaken by the international community. As a first step, 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 Committee on the Global Financial System (CGFS) and the Basel Committee on Banking Supervision (BCBS).

Recommendation 5: The CGFS and the BIS to undertake further work in close cooperation with central banks and regulators on the coverage of statistics on the credit default swaps (CDS) markets for the purpose of improving understanding of risk transfers within this market.

Recommendation 6: Securities market regulators working through IOSCO to further investigate the disclosure requirements for complex structured products, including public disclosure requirements for financial reporting purposes, and make recommendations for additional improvements if necessary, taking account of work by supervisors and other relevant bodies.

Recommendation 7: 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 (HSS). The Working Group on Securities Databases to develop and implement a communications strategy for the HSS.

Recommendation 8: 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. This work must take due account of the important confidentiality and legal issues that are raised, and existing information sharing arrangements among supervisors.

Recommendation 9: 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 work on the systemic importance of financial institutions. Widespread consultation would be needed, and due account taken of confidentiality rules, before any reporting framework can be implemented.

Recommendation 10: 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.

Recommendation 11: The BIS and the CGFS to consider, among 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. The IMF, in consultation with the IMF's BOPCOM, 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.

Recommendation 12: 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.

Recommendation 13: The Interagency Group on Economic and Financial Statistics (IAG) to investigate the issue of monitoring and measuring cross-border, including foreign exchange, derivatives, exposures of nonfinancial, and financial, corporations with the intention of promoting reporting guidance and the dissemination of data.

Recommendation 14: The IAG, consulting with the FSB, to revisit the recommendation of the G-20 to examine the feasibility of developing a standardized template covering the international exposures of large nonbank financial institutions, drawing on the experience with the BIS's IBS data, other existing and prospective data sources, and consulting with relevant stakeholders.

Recommendation 15: 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 Systemic Data Dissemination Standards (SDDS) could be considered.

Recommendation 16: As the recommended improvements to data sources and categories are implemented, statistical experts to seek to compile distributional information alongside aggregate figures, wherever this is relevant. The IAG is encouraged to promote production and dissemination of these data in a frequent and timely manner. The OECD is encouraged to continue in its efforts to link national accounts data with distributional information.

Recommendation 17: The IMF to promote timely and cross-country standardized and comparable government finance data based on the accepted international standard, the Government Finance Statistics Manual 2001.

Recommendation 18: The World Bank, in coordination with the IMF, and consulting with the Inter-Agency Task Force on Finance Statistics, to launch the public sector debt database in 2010.

Recommendation 19: 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.

Recommendation 20: The G-20 economies to support enhancement of the Principal Global Indicators (PGI) website, and close the gaps in the availability of their national data. The IAG should consider making longer runs of historical data available.

Work is ongoing on several platforms for implementation of recommendations, which are classified in two groups as "where conceptual/statistical framework needs development" and "where conceptual/statistical frameworks exist and ongoing collection needs enhancement". The progress by countries towards implementation is being internationally monitored.

Table V.7.1. Classification of recommendations on addressing information gaps

	Conceptual/statistical framework needs development	Conceptual/statistical frameworks exist and ongoing collection needs enhancement
Build up of risk in the financial sector	Recommendations 3, 4 and 6	Recommendations 2, 5, 7
Cross-border financial linkages	Recommendations 8-9 and 13-14	Recommendations 10-11 Recommendation 12
Vulnerability of domestic economies to shocks	Recommendation 16	Recommendations 15, 17, 18 and 19
Improving communication of official statistics		Recommendations 20

In Turkey, related authorities are working in cooperation within their area of responsibility towards enhancing the current datasets and improving their quality or developing new databases. For instance, the House Price Index¹⁷, which started to be published by the Central Bank of Turkey as of January 2010, is considered as an important step taken within this framework. Additionally, progress is being made towards improving the reportings to datasets that are compiled by international financial institutions within the framework of those recommendations.

Costs of steps towards closing the data gaps on national authorities and international financial institutions should be taken into consideration and they should be minimized through building on similar datasets and standardization of data definitions. However, it should be borne in mind that the costs of producing data will be very low compared to the costs of lack of such data during the crisis periods. Datasets, without comprehensive and analytical methods of analysis, will certainly not be sufficient to contribute to understanding of systemic risk. However, it is clear that without high quality, timely and consistently produced data it will not be possible to maintain the required toolbox for financial stability analysis.

Another important issue in filling the data gaps is sharing of data nationally and internationally. National supervisory authorities, central banks and other authorities have a role in the analysis of systemic risk. Additionally, international interlinkages of financial institutions make it impossible to assess the stability of the financial system without taking into consideration the cross border linkages. Therefore, efforts for overcoming the legal constraints towards sharing of new or current datasets by related authorities and for disclosure of data by financial institutions themselves are important.

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FSB-Understanding Financial Linkages: A Common Data Template for Global Systemically Important Banks, Consultation Paper, 6 October 2011.

¹⁷ Central Bank of the Republic of Turkey House Price Index, <http://www.tcmb.gov.tr/yeni/evds/yayin/kfe/hpi.html>

V.8. Public Electronic Payment System (PEPS)

Growing attention has been directed to payment systems owing to enabling of smooth and fast transfer of payments that reach huge amounts. As money continues to function as deposit money electronically, together with the advance of information technology, the idea of electronic payments have arisen and a fast transition to the electronic payment systems has been brought.

Achievement of stability and efficiency of payment systems, measures for the minimization of the risks stemming from the payment systems, providing the changes and the arrangements in the payment systems not to threaten the monetary management policy and contribution to the financial stability through providing the smooth functioning of payment systems have become important targets of central banks.

In this regard, The Central Bank of the Republic of Turkey (CBRT), whose one of the basic targets is providing financial stability, in close cooperation with our financial system, has continue its efforts for the enhancement of payment systems by following the trends globally.

Developments in the electronic payment systems together with the efficient cash management of public, understanding of providing high-quality service and efforts of combatting with black economy, the need for making of public payments electronically has come on stage.

Cash management including the balancing of the income and revenue of the State in terms of place and time has been done by the Undersecretariat of Treasury through Treasury Single Account. In the Treasury Single Account system, used between August 1, 1972 and 2007, the accounting of the domestic payments and collections of the some accounting units of general budget were done in a single account of the Treasury in the Ankara Branch of CBRT through the branches of the Turkish Republic Agriculture Bank (TRAB). Since the payments and collections had been done from the same account, the accounting units used the balances remained in the accounts to make their payments and even in the case of negative balance in this account, the payments had continued to be done through the funding of the TRAB. This situation resulted in unforeseen expenditures by the Treasury.

However, in its press release dated July 27, 2006 number 2006/81¹⁸, the Undersecretariat of Treasury made an announcement regarding the restructuring of public banks and gradual termination of liability and privilege relationship of public sector with these banks. According to this release, Public Treasurership would be rearranged taking into consideration the list annexed in the Public Financial Management and Control Law no. 5018 and Public Administrations within the scope of General Budget annexed in the same law would be planned to keep their funds at their accounts at the CBRT starting from July 1, 2007.

With the efforts right after the press release, it has been planned to gather all of the accounts of the Treasury at the CBRT and execute all the payments of the general budget institutions from this single account. The payments of the general budget public institutions has started to be done through the CBRT via PEPS, based on the "Protocol for Single Treasury Current Account" signed between the

¹⁸ <http://www.hazine.gov.tr/irj/portal/anonymous?NavigationTarget=navurl://d3e718df25b76dbbd779b0f5a5359cd2>

Undersecretariat of Treasury, the Ministry of Finance and the CBRT on July 31, 2007. Moreover, since the CBRT doesn't have widespread network of branches, the "Protocol for Correspondent Bank for Application of Single Treasury Current Account" signed between TRAB as Correspondent bank of CBRT, the Undersecretariat of Treasury and the Ministry of Finance on August 31, 2007 for the execution of payments and collections of accounting units belong to Single Treasury Account until they are included within the PEPS.

Accounting units having accounts by the CBRT demand cash for their payments from the Treasury Domestic Payments Accounting Unit through PEPS the day before. The Treasury Domestic Payments Accounting Unit transmits the payment orders for the next day payments to the Ankara Branch of CBRT via fax and the Branch executes the transfers to the accounts of central accounting units. By this way, transfer of payments which are not in the daily cash program of Treasury is prevented and the transfer of collections directly to the Treasury without being used for payments was made possible.

The regulatory infrastructure of the system was reshaped by the "The Procedures and Principles Regarding the Execution of the Payments and the Collections of Public Administrations within the scope of General Budget Electronically" published in the Official Gazette No. 27968, dated June 18, 2011. In this regard, the determination and meeting of cash needs of public administrations within the scope of general budget, execution of payments and transfer of collections to Single Treasury Account electronically were regulated and the gathering of province accounting units other than central accounting units within the PEPS was anticipated.

With PEPS, all of the public payment transactions, including the ones of province accounting units that executed by TRAB will start gradually to be done electronically until June 18, 2012. In this respect, PEPS will continue to operate as an automation system based on "end to end" principle that can be a model for the global applications. In this system, every step of the public payment transactions can be monitored by the Undersecretariat of Treasury and the Ministry of Finance simultaneously through the infrastructure prepared by CBRT using secure IT architecture.

Moreover, within the system that started with 9 central accounting units in 2008, the payments of 19 central accounting units as well as the payments of province accounting units of which has been gradually put into application, have been successfully done through CBRT. In this sense, from January 2011 to April 2012, 503,017 and roughly TL 201 billion payment order and 1,576,137 transactions executed through PEPS.

Within the scope of the protocol that will be signed between CBRT and TRAB, the collections of province accounting units will be executed by TRAB as the CBRT's correspondent bank.

With PEPS, the electronic execution of all of the payment transactions of central and province accounting units through CBRT without original signature ensures the minimization of operational risk as well as being transactions fast and reportable, and also, the minimization of the financing needs of the Treasury due to the efficient cash management and in this way contributes to the financial stability.

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V.9. Principles for Financial Markets Infrastructures (PFMI)

The cooperative efforts of the Committee on Payment and Settlement Systems (CPSS) and the International Organization of Securities Commissions (IOSCO) for updating the standards regarding the Financial Markets Infrastructures (FMIs) have been finalized.

Although no problems, arising directly from FMIs, has been experienced during the last financial crisis, critical lessons regarding effective risk management have been learned during those periods. In this context, the standards in the reports "Core Principles for Systemically Important Payment Systems (CPSS, 2001)"; "The Recommendations for Securities Settlement Systems (CPSS-IOSCO, 2001)"; and "The Recommendations for Central Counterparties (CPSS-IOSCO, 2004)" have been gathered together; updated and strengthened by the new Report on FMIs in accordance with the requirements arisen after last financial crisis.

Systemically important payment systems, central securities depositories (CSD), securities settlement systems (SSSs), central counterparties (CCPs) and trade repositories (TR) are being defined as FMIs in the "Principles For Financial Market Infrastructures Report" which has been issued for public consultation first in March 2011, and the final version of which has been published in April 2012.

It is possible to define "payment systems" as the set of instruments, procedures, and rules established for the transfer of funds between participants.

In the PFMI Report SSSs are defined as systems, which enable the transfer and settlement of securities between participants by book entry in accordance with a set of predetermined rules.

CSDs serve their participants in many ways like providing securities accounts and central safekeeping services, and ensuring the integrity of securities issues. A CSD can hold securities either in physical form or in dematerialized form. In practice, it is possible that a CSD knows about who is the direct owner of each security or just traces the securities on the accounts of its participants and does not have any data about the real owners of the securities. Although CSDs also operate securities settlement systems in many jurisdictions, in the PFMI Report the functions of SSSs and CSDs are sorted and regulated separately from each other.

CCPs interpose themselves between counterparties and become the buyer to every seller and the seller to every buyer for contracts traded in one or more financial markets. By this method CCPs eliminate counter party risk, which is the risk that a party of a financial transaction does not / cannot fulfill its obligations, despite the other party of the transaction fulfills its obligations. After the last financial crisis, CCPs' importance has increased especially for the realization of over the counter derivative transactions. Within this context, the PFMI Report includes critical standards regarding the credit and liquidity risks, and collateral and margin practices of CCPs.

The last entity that is classified as FMI is TRs in the Report. TRs are entities that maintain the centralized electronic record of transactions realized in the financial markets.

FMIIs provide the clearing, settlement and recording of money and other financial transactions or just facilitate those transactions. In this context, FMIIs can strengthen the markets they serve and play critical roles in fostering financial stability. On the other hand, when they are not properly managed, it is possible that FMIIs pose significant risks on financial system and function as a source of contagion for problems especially during market stress periods.

In this context, the actions taken intend to achieve consistency all over the world regarding the oversight and supervision of FMIIs, to mitigate the risks arising from both FMIIs and transactions realized via FMIIs, and to support the objectives of G-20 countries and Financial Stability Committee to increase the safety and soundness of financial markets.

The leading innovations brought by the PFMI Report can be summarized as; i) detailed assessment of and setting principles for the CCPs via which over the counter (OTC) derivative transactions will be realized and ii) defining the "Trade Repositories" which will keep the records of transactions made within OTC derivative markets which could not be monitored previously, and setting standards for those TRs.

The PFMI Report, which has been prepared in accordance with those issues mentioned above, includes 24 principles for FMIIs, and 5 key responsibilities for overseers and supervisory authorities. Some of those principles will be implemented only for specific FMIIs, while some of them will be implemented for all of the FMIIs (Table V.9.1).

Key Principles:

1- Legal Basis: The legal basis of all activities performed by FMIIs should be well-founded, clear, transparent, and enforceable.

2- Governance: The governance arrangements of FMIIs should be clear and transparent, and designed in a way that promote the safety and efficiency of the FMI, and support the stability of the financial system, public benefit, and the objectives of other relevant stakeholders.

3- Framework for the Comprehensive Management of Risks: The risk-management framework of FMIIs should be sound and comprehensive in order to manage legal, credit, liquidity, operational, and other risks.

4- Credit Risk: FMIIs should effectively measure, monitor, and manage their credit exposures to participants and those arising from their payment, clearing, and settlement processes. In addition to this, CCPs should have additional resources in order to ensure that the transactions are realized even if the participants cannot fulfill their obligations.

5- Collateral: When FMIIs require collateral to manage their or their participants' credit exposure, they should accept collateral with low credit, liquidity, and market risks. Additionally, these FMIIs should also have appropriately conservative haircuts and concentration limits.

6- Margin: FMIs should apply a margin system, which is risk-based and regularly reviewed, and ensures that FMIs cover their credit exposures to their participants for all of the transactions realized.

7- Liquidity Risk: FMIs should effectively measure, monitor, and manage their liquidity risk. FMIs should maintain sufficient liquid resources in all relevant currencies in order to be able to cover high liquidity needs arose as a result of potential stress scenarios, which assess the default of the participant that would generate the largest aggregate liquidity obligation for the FMI and extreme but plausible market conditions, and to ensure the settlement (same-day or intra-day) even in those conditions.

8- Settlement Finality: FMIs should provide clear and certain final settlement of transactions, at a minimum by the end of the value date. Where necessary or preferable, FMIs should provide final settlement intraday or in real time.

9- Money Settlements: FMIs should conduct their money settlements in central bank money where practical and available. If central bank money is not used for the settlement transactions, FMIs should minimize and strictly control the credit and liquidity risk arising from the use of commercial bank money.

10- Physical Deliveries: FMIs should clearly state their obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.

11- Central Securities Depositories: A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimize and manage the risks associated with the safekeeping and transfer of securities.

12- Exchange of Value Settlement Systems: If an FMI settles transactions that involve the settlement of two linked obligations, the risk of the party, who fulfills its obligation, that the other party will not be able to fulfill its obligations (principal risk), must be eliminated by the way of conditioning the final settlement of one obligation upon the final settlement of the other (by the usage of methods like DvP (Delivery versus Payment) or PvP (Payment versus Payment)).

13- Participant-Default Rules and Procedures: FMIs should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that FMIs can take timely action to contain losses and liquidity pressures and continue to meet their obligations during the stress time periods.

14- Segregation and Portability: CCPs should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to CCPs with respect to those positions.

15- General Business Risk: FMIs should identify, monitor, and manage their general business risk. In this context, FMIs should hold sufficient liquid net assets funded by equity to cover potential general business losses so that they can continue operations and services as a going concern.

16- Custody and Investment Risk: FMIs should safeguard their own and their participants' assets and minimize the risk of loss on and delay in access to these assets. FMIs' investments should be in instruments with minimal credit, market, and liquidity risks.

17- Operational Risk: FMIs should identify all the plausible sources of operational risk both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should ensure a high degree of security and operational reliability and should have scalable capacity. Business continuity management should aim for timely recovery of operations and FMIs' fulfillment of their obligations, including in the event of a wide-scale or major disruption.

18- Access and Participation Requirements: FMIs' criteria for participation should be objective, risk-based, and publicly disclosed, in a way that they provide fair and open access to the systems.

19- Tiered Participation Arrangements (i.e. Indirect Participants): FMIs should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.

20- FMI Links: An FMI that establishes a link with other FMIs should identify, monitor, and manage risks related to this link.

21- Efficiency and Effectiveness: FMIs should meet the requirements of their participants and the markets they serve in an efficient and effective way.

22- Communication Procedures and Standards: FMIs should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.

23- Disclosure of Rules, Key Procedures and Market Data: FMIs should have clear and comprehensive procedures and sufficient information should be provided to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI.

24- Disclosure of Market Data by Trade Repositories: TRs should provide timely and accurate data to relevant authorities and the public in line with their respective needs.

Responsibilities of Central Banks, Market Regulators, and Other Relevant Authorities for FMIs

Responsibility A- Regulation, Supervision, and Oversight of FMIs: FMIs should be subject to appropriate and effective regulation, supervision, and oversight by a central bank, market regulator, or other relevant authority.

Responsibility B- Regulatory, Supervisory, and Oversight Powers and Resources: Central banks, market regulators, and other relevant authorities should have the powers and resources to carry out effective regulation, supervision, and oversight of FMIs.

Responsibility C- Disclosure of Policies With Respect to FMIs: **Central banks, market regulators, and other relevant authorities should clearly define and disclose their regulatory, supervisory, and oversight policies with respect to FMIs.**

Responsibility D- Application of the Principles for FMIs: Central banks, market regulators, and other relevant authorities should adopt the CPSS-IOSCO Principles for FMIs and apply them consistently.

Responsibility E- Cooperation with Other Authorities: Central banks, market regulators, and other relevant authorities should cooperate with each other, both domestically and internationally, in promoting the safe and efficient operation of FMIs.

Table V.9.1. Application of Principles for FMIs

	Payment System	Central Securities Depository	Securities Settlement System	Central Counterparty	Trade Repository
1- Legal Basis	X	X	X	X	X
2- Governance	X	X	X	X	X
3- Framework for the Comprehensive Management of Risks	X	X	X	X	X
4- Credit Risk	X	O	X	X	O
5- Collateral	X	O	X	X	O
6- Margin	O	O	O	X	O
7- Liquidity Risk	X	O	X	X	O
8- Settlement Finality	X	O	X	X	O
9- Money Settlements	X	O	X	X	O
10- Physical Deliveries	O	X	X	X	O
11- Central Securities Depositories	O	X	O	O	O
12- Exchange of Value Settlement Systems	X	O	X	X	O
13- Participant Default Rules and Procedures	X	X	X	X	O
14- Segregation and Portability	O	O	O	X	O
15- General Business Risk	X	X	X	X	X
16- Custody and Investment Risk	X	X	X	X	O
17- Operational Risk	X	X	X	X	X
18- Access and Participation Requirements	X	X	X	X	X
19- Tiered Participation Arrangements	X	X	X	X	X
20- FMI Links	O	X	X	X	X
21- Efficiency and Effectiveness	X	X	X	X	X
22- Communication Procedures and Standards	X	X	X	X	X
23- Disclosure of Rules, Key Procedures and Market Data	X	X	X	X	X
24- Disclosure of Market Data by Trade Repositories	O	O	O	O	X
	X: Applied				
	O: Not Applied				

Source: CPSS – BIS, IOSCO

Reference

Committee on Payment and Settlement Systems, Bank for International Settlements – Technical Committee of the International Organization of Securities Commissions, 2012 “Principles For Financial Market Infrastructures”, April 2012.

V.10. Innovations in Retail Payments

Many innovations in retail payments have emerged due to technological developments and market-driven and regulatory developments in recent years.

In this framework, the Committee on Payment and Settlement Systems (CPSS) has been monitoring innovative payment instruments, especially electronic money products since 1996.

Many innovative retail payment instruments have been developed since the last CPSS publication in 2004, as a result of technological developments and proliferation of e-commerce. The CPSS formed a Working Group on Innovations in Retail Payments in which CBRT actively participates, to look into retail payment innovations in the CPSS countries during the past decade. A survey has been prepared by the working group and sent to 30 central banks. As a result of the fact finding process conducted by the working group, innovations in retail payments report has been prepared and published recently. The report aims to catalogue innovative developments in retail payments in the CPSS countries, identify common characteristics among those innovations and appropriate ways of classifying them, identify drivers for and barriers to innovation and identify potential issues and challenges for central banks.

The survey on innovations in retail payments which covers 122 innovations reveals that although the market is dynamic, only a few innovations have so far had a significant effect on the market. Cash continues to be the most frequently used payment instrument for both proximity and person to person payments. Most innovations are developed for the domestic market but similar products and categories have emerged worldwide. In line with the development of technology and user demands, about half of the innovations are intended to speed up payment processing, with a view to speeding up interbank settlement. This type of improvement generally facilitates faster retail account to account transfers between customers and businesses. Moreover, more than half of the reported innovations in card payments are related to the use of contactless payment technology.

In Table V.10.1, some examples of innovations from survey are presented.

Table V.10.1. Selected Innovations in Retail Payments

Country	Name of Innovation	Description of the Innovation
S.Arabia	SADAD	Electronic bill presentment and payment system which offers three different services: Post Paid (for bill payments), Prepaid (eg to reload mobile phones) and the selling of the eVouchers that can be used like scratch cards. This system can be accessed via different banking channels.
United Kingdom	Faster Payment Service	Retail payment system allowing payments to be processed on a 24/7 basis, usually within two hours. The systems settles three times a day on a multilateral net basis.
Hong Kong	Octopus Card	A contactless multipurpose prepaid card that can be used for making micropayments eg. transportation.
Kenya	M-PESA	A system that aims at financial inclusion for unbanked/underbanked population who can access to basic banking services without the need to hold an actual bank account. Based on SMS technology, M-PESA lets users make P2P transfer, P2B transfer, cash deposits and withdrawals at designated outlets and loan receipts or repayments.

Netherlands	iDEAL	Online payment scheme for online purchases via credit transfer from a regular online banking application. There is real time settlement guarantee for retailers.
Singapore	Cheque Truncation /Clearing System	Online image-based cheque clearing system. Cheques are truncated by the payee's bank and only the images are transmitted through the entire clearing cycle, eliminating the delivery of physical cheques to the ACH.
Turkey	Mobile Payment	GSM operators' mobile payment service for micropayments via SMS. The expenses are charged as bills for mobile phone subscribers or reduced from the available prepaid balance.
Switzerland	Mobile Buy	Mobile phone payment solution linked to a user's credit card. The user can pay by dialing a toll-free number or by sending an SMS with a defined keyword along with a PIN. The payment is charged to the user's credit card. (eg for parking meters, in unattended roadside shops or for the purchase of lift passes in ski resorts)
Australia	BPAY	Bill payments initiated via telephone or internet banking platforms of financial institutions, using a biller code to identify the payee and a customer reference number to identify the customer.
International (27 countries)	Paysafe	Electronic money scheme for internet payments used for purchases in online shops. Paysafe card vouchers can be purchased at corner stores, kiosks, vending machines and ATM's.

Source: CPSS - BIS

According to the report, financial inclusion has served as an important driving force for innovations in many countries. Some innovations aims at the unbanked/underbanked segments of the population that have no access to banking services. Surveys results show that the role of non-banks has been increasing in recent years, owing in part to the growing use of innovative technology that allows non-banks to compete in areas not yet dominated by banks. About half of the reported innovations are owned by banks or central banks, the remaining half, mostly immobile and internet payments, are either owned by non-banks or bank and non-bank partnership.

The report presents some predictions on the retail payments over the next five years:

- Technical developments will blur product categories.
- Near Field Communication (NFC) has the potential for future growth.
- E-commerce continues to grow rapidly and it has the potential for innovations. Especially growing use of internet and mobile phones leads to use of e-commerce, thus new instruments have emerged in this field. With the advance of technology for security issues, trade without security concerns, has become widespread.
 - The role of globally active players might increase because of their advantage of leveraging their coverage and market power.
 - Since many innovations represent only incremental movements to existing and established payment services, users' payment habits change slowly and since the payments market need long transition periods; innovations in retail payments represent only small steps rather than a large leap. On the other hand, developing countries with an underdeveloped payment infrastructure may have a higher potential for introducing innovative payment solutions from scratch.
 - New payment schemes such as virtual currencies that are currently mostly single-purpose and accepted only in virtual community may become multipurpose and widely accepted thanks to

large base of customers who are familiar with new technologies and predisposed to adopting innovative payment solutions.

- Significant differences between regions will continue to exist. For example in Africa and in some parts of Asia, several mobile money schemes have been successfully used in money transfers in bill payments whereas in Japan mobile phones are used mainly as a contactless access device at the POS for electronic money payments and as an access device for online banking. Therefore, an innovation that is successful in one country will not necessarily perform as well in other countries.

Central Banks have various responsibilities on innovations in retail payments within the framework of their roles in promoting financial stability and maintaining the confidence in national currency. It is evident that a fragility in security of retail payments that constitute majority of payments in number, has the potential of affecting financial system and the economy negatively. Thus, central banks aim to improve the robustness, effectiveness and security of retail payments. In this respect, central banks typically address legal and regulatory impediments to market developments and innovation, provide for competitive market conditions, support effective standards and infrastructure arrangements and make available their own services in the manner that is most efficient for the relevant market. Although significant differences in central banks activities regarding retail payments can be observed depending on the different legal mandates, objectives, policies and instruments, the common elements on how innovation in retail payments influences central bank activities are listed below:

- Central banks generally attach great importance to innovations in retail payments and they promote innovative payment instruments and cashless retail payments.

- In some countries, payment systems' oversight function has been reassessed to take into account of the new developments in retail payments.

- In recent years, increasing attention has been directed towards non-banks. In many countries new regulation has been enacted with regard to innovations and non-banks.

- In their respective roles as catalysts (like sharing payments policy with the market, doing research on the issue, having strong relationships with all parties involved in innovations in retail payments and constituting legal framework); overseers and/or operators of the payment system, central banks can both influence the payments market and can be influenced by innovations in payments.

In the report, the challenges and issues for central banks about the innovations in retail payments are identified:

- **Monitoring and assessing the relevant developments:** Data collection difficulties, adequacy of statistical surveys, difficulty in assessing the potential of new products or processes, need for collaboration of central banks with authorities that monitor or oversee relevant technological components of innovative products.

- **Communication, publication and transparency:** Difficulty in balancing the views of all market participants, reputational problems of central banks if their communication efforts are not successful or if their assessment and guidance are proved wrong.

- **Interoperability and interconnectivity between different payment systems:** Increase of overall risks as a result of interoperability, involvement of central banks for increasing pressures of standardization.

- **Effective payments oversight and cooperation with other authorities:** The need for a balanced regulatory approach and a level playing field for banks and non-banks to avoid competitive distortions, the non-flexibility of legal framework of regulation for innovative developments.

- **Impact on the operational activities of central banks:** The difficulty in identifying the boundaries between large value and retail payment systems because of the trend towards real time and near real time processing, the desire of central banks' to reconsider their operational involvement in the light of new developments.

- **Impact on cash:** The need to investigate how innovative electronic retail payment products will affect the use of cash and in consequence seigniorage, cash operations and banknote counterfeiting.

- **Impact on monetary policy:** The desire of central banks' to monitor recent developments like increasing the popularity of virtual currencies offered by social networks or other web-based networks, which might have a substitution effect on cash or central bank deposits and the requirement of central banks' to study the implications of these developments for monetary policy operations.

As a result, innovations in retail payments are proliferating but the legal framework has difficulty in keeping pace with this progress. At the same time innovations in retail payments has caused central banks' to reconsider their oversight role in retail payment systems and instruments.

References

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