

## IV. SPECIAL TOPICS

### IV.1. Private Pension System and its Importance for the Financial Stability

Even though individual pension system was recently introduced in Turkey, it has shown significant progress. Individual pension system aims to broaden the coverage of social security, to raise the welfare level of individuals during the retirement period and to improve the living standards in the long term. It has also positive impact on macro economy and financial stability because of the volume and maturity structure of funds collected in the system.

#### *Individual Pension System and Financial Stability*

Funds collected in the individual pension system enable the volume of saving to increase in the country. Maturity savings are high and so accumulation of the funds directed to investment is not enough in countries without pension system. Accumulation of funds that supports the financial development and deepening can be achieved when these small savings are gathered and registered with the system. Moreover, the aim of pension funds to get profit in the long term rather than in the short term helps to increase the longer term institutional investments, which limit fluctuations caused by short-term capital flows, increase resistance of capital markets against crisis and contribute financial stability by making these markets safer for investors.

Private pension system provides regular flow of new and long term funds into the capital markets, which contributes to decline in interest rates and increase the borrowing opportunities for public and private sector. Thus public sector can borrow for longer term at a lower interest rate. In addition, financial system functions better with the support of reduction in budget deficit and borrowing needs due to the cut in social security expenses. Moreover, increasing opportunities for private sector regarding funding resources boosts issuance of securities and investments, while distributing risks among investors.

Savings directed to investments support the growth of production and employment and become an important resource for maintaining stable economic growth. In addition, rising volume of saving because of fall in consumption helps to be kept inflation under control. Also, the higher weight of local currency in funds like in Turkey reinforces the credibility of the national currency.

#### *Private Pension Funds in Turkey*

The Individual Pension Savings and Investment System Law, part of the social security reform and aiming to complement social security system, was published in the Official Gazette no. 24366 on April 2001 and came into force six months later after the publication date. However, the Individual Pension System officially commenced on October 27, 2003 after pension companies started to offer pension products.

The main goal of the system is to direct people's savings, accumulated regularly during working life, into investment and to maintain individual's welfare level during retirement period by providing a supplementary income with these savings.

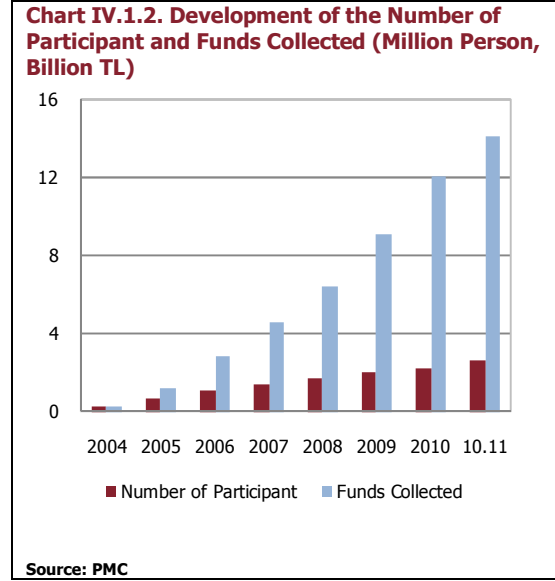
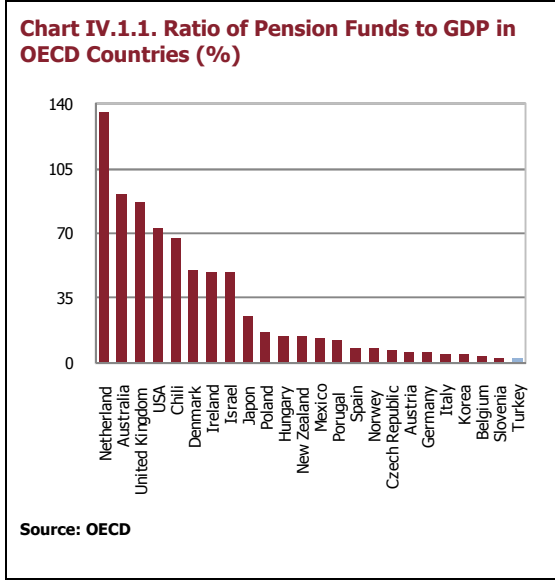
The main features of the Individual Pension System are as follows;

- i. The system functions on the basis of voluntary participation and anybody who is able to use his civil rights can enter the system.
- ii. The contributions are transmitted by the retirement companies, established with permission of Undersecretariat of Treasury, to the pension funds, established as the structure of a mutual fund and authorized by Capital Markets Board (CMB).
- iii. Pension companies are obliged to create at least three funds having different risk and yield structure in case individuals are able to choose a fund according to their personal risk and yield expectations.
- iv. Pension funds may invest in fixed yield capital market instruments, such as repos and treasury bonds, as well as variable yield instruments, such as stocks.
- v. Pension mutual funds are managed by the portfolio management companies established within the Capital Markets Law with the principles of professional portfolio management. At the end of a minimum period, accumulated contributions can be transferred into another retirement company.
- vi. Assets of the fund, disconnected from assets of the retirement company, are deposited in a custodian bank, approved by the CMB. Currently, the custodian is ISE Settlement and Custody Bank in Turkey.
- vii. Different institutions have the responsibility for supervision, monitoring and safety of the private pension system. While the Undersecretariat of Treasury, CMB and independent audit firms are responsible for supervision, Pension Monitoring Center (PMC) and ISE Settlement and Custody Bank have monitoring duty.
- viii. In order to qualify retirement, people have to make contributions to the fund at least ten years and must complete age of 56. Private pension system encourages people to make long term savings due to regular contribution requirement of the system for qualifying retirement.
- ix. Participation to the system is also encouraged with tax incentives by the public. Contributions are tax deductible up to ten percent of income with a cap of annual minimum wage. In investment stage, there is not any withholding tax on earnings of the private pension funds. Where the participant has contributed for more than ten years and is 56 or older, 25 percent of the benefit payment of a lump sum pension is tax free and the remaining part is subject to a withholding tax of five percent.

#### *Development of Private Pension System in Turkey*

In Turkey, the ratio of private pension funds to GDP is relatively low compared to other countries due to its short history and voluntary participation framework (Chart IV.1.1). However, since

2003, the beginning date, system has shown a successful performance and improved significantly. While the number of pension companies, the number of participants and the amount of funds collected was 11, 314 thousand people and TL 296 million respectively in 2004, figures increased to 14<sup>8</sup>, 2.6 million people and TL 14 billion as of October 31, 2011 (Chart IV.1.2). Given the relatively young demographic structure of our country, the growth potential of the system is thought to be quite high. In this context, the PMC expects that the number of participant and funds collected will reach to 4 million people and TL 48 billion at the end of 2015, 5.5 million people and TL 115 billion at the end of 2020.



The share of private pension funds in household financial assets has increased day by day with the growing interest to the system. Private pension funds, which has 1.5 percent share in household financial assets in 2007, grew by 207 percent in nominal terms and the share rose to 2.6 percent due to consistently increasing participants and regular contributions until September 2011 (Table IV.1.1).

When asset distributions of the pension funds are examined, it is seen that public debt securities have the largest share over the years (Chart IV.1.3). While the share of public debt securities in total assets of funds is 63 percent, the share of stocks is 15 percent as of October 31, 2011. High demand for public debt securities indicates that the large portion of the funds accumulated in the system is transferred to the public sector. Thus, reducing the public sector borrowing costs and increasing borrowing opportunities are positive development. However, increasing the amount of funds, transferred from system to the capital markets, is thought to be very important in order to deepen and develop these markets. In addition, the scarcity of foreign currency denominated assets in funds' asset allocation is noteworthy. Indeed, it is seen that while 3.4 percent of contract owner prefers to index their contributions to USD and Euro, 96.6 percent prefers TL.

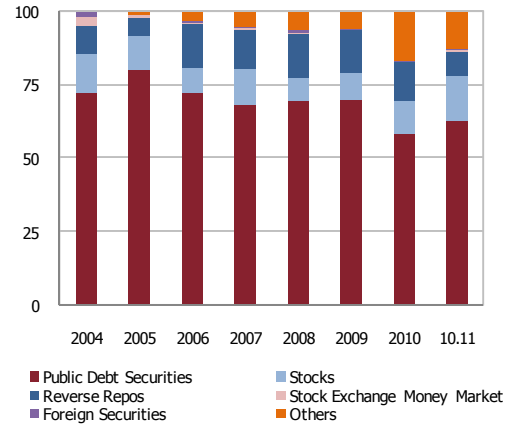
<sup>8</sup> As of October 31, 2011, companies operating in the system are as follows; Aegon Emeklilik ve Hayat A.Ş., Allianz Hayat ve Emeklilik A.Ş., Anadolu Hayat Emeklilik A.Ş., Avivasa Emeklilik ve Hayat A.Ş., BNP Paribas Cardif Emeklilik A.Ş., Deniz Emeklilik ve Hayat A.Ş., Ergo Emeklilik ve Hayat A.Ş., Finans Emeklilik ve Hayat A.Ş., Garanti Emeklilik ve Hayat A.Ş., Groupama Emeklilik A.Ş., Ing Emeklilik A.Ş., Vakıf Emeklilik A.Ş., Yapı Kredi Emeklilik A.Ş., Ziraat Hayat ve Emeklilik A.Ş..

**Table IV.1.1. Composition of Household Financial Assets (Billion TL, %)<sup>1</sup>**

	2007		09.11		2007-09.11
	Billion TL	% Share	Billion TL	% Share	Nominal Change (%)
TL Deposits	142.5	45.4	280.4	52.1	96.8
FX Deposits	78.5	25.0	106.9	19.9	36.2
- FX Deposits (Billion USD)	67	-	58	-	36.2
Currency in Circulation	26.2	8.4	52.1	9.7	98.8
GDDS+Eurobond	19.6	6.3	8.8	1.6	-55.1
Mutual Fund	22.6	7.2	28.3	5.3	25.2
Stocks	17.5	5.6	32.4	6.0	85.1
Private Pension Funds	4.6	1.5	14.1	2.6	206.5
Repos	1.9	0.6	2.2	0.4	15.8
Precious Metal Deposits	0.2	0.1	12.5	2.3	6150.0
<b>Total Assets</b>	<b>313.6</b>	<b>100</b>	<b>537.7</b>	<b>100</b>	<b>71.5</b>

Source: BRSA-CBRT, CMB, CRA

(1) TL and FX deposits include participation funds.

**Chart IV.1.3. Distribution of Private Pension Funds Assets (%)**

Source: CMB

Diminishing yields parallel with the change in the financial markets in recent years make regulatory arrangements, related the use of different investment instruments in the private pension system, an important current issue. It is expected that long-term savings in the system will increase even more by covering the funds based on precious metals, real estate investment trusts and alternative investment vehicles, such as lease certificates. Continuation of works done by relevant authorities about regulations that allow the use of different investment instruments is thought to be crucial for development and growth of private pension system.

Private pension system, by providing long-term funds to economy, contributes positively on reduction of the cost of public borrowing and accession of the long term and low cost borrowing opportunities for private sector. It is considered that development of private pension systems is important for our country and the system has serious contributions for sustainable economic growth and financial stability.

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## IV.2. Leverage and Procyclicality

Banks are institutions that raise funding for financial assets with equity and debt. If leverage ratio is defined as the ratio of financial assets over equity, change in the value of financial assets is reflected in equity, thus it affects leverage ratio<sup>9</sup>. In this context, assuming that the value of debt stays constant, in an environment where an increase in asset prices would lower leverage, on the other hand when asset prices tend to fall, the leverage ratio would increase<sup>10</sup>. This phenomenon is known as counter cyclical leverage, and is the case for economic agents other than financial institutions that do not target leverage. However, for the financial institutions that perform with a specific leverage target the opposite may be the case. For example, Adrian and Shin (2008, 2010) find that the leverage, particularly for the U.S. investment banks, increases during financial expansion, while it declines during contraction, thus they conclude that leverage is procyclical for these banks.

The procyclicality of leverage accelerates the financial cycles. If the balance sheet arithmetic discussed in Adrian and Shin (2010) is considered, to access the leverage target, banks would increase their funding, in turn increase their leverage in the cases where the asset prices are increasing, while in the case of falling asset prices banks tend to reduce their leverage. Therefore, the periods during which bank balance sheet expands and leverage increases overlap with the periods of credit cycles. In this regard, leverage could be used as a macroprudential tool to mitigate credit cycles.

The academic literature does not provide conclusive evidence on the procyclicality of leverage. For example, Adrian and Shin (2008) provide evidence in favor of strong procyclical leverage for the United States, especially for investment banks, while Panetta et al. (2009) find countercyclical leverage for some developed countries. In addition, Kalemli-Özcan et al. (2011) find that the leverage is procyclical for large commercial banks in the United States, but to a lesser extent for the banks in Europe.

### *Leverage and Procyclicality - Overview*

Adrian and Shin (2010), Greenlaw et al. (2008) and Kalemli-Ozcan et al. (2011) associate procyclical leverage phenomenon with countercyclical value at risk (VaR). For example, when VaR per dollar of assets held by a bank is  $V$ , and total equity is equal to total value at risk, then  $\text{Capital} = V * \text{Assets}$ , leverage ratio  $(L) = \text{Asset} / \text{Equity}$ , hence  $L = 1/V$ . In this case, during boom times of financial expansion leverage will be high due to low risk. This implies that there is a relation between the leverage and banks' risk perceptions. At this point, Adrian and Shin (2008) argue that the value at risk is the main determinant of the balance sheet size and leverage, and similarly Greenlaw et al. (2008) argue that, as a result of procyclicality, banks take value at risk rather than regulatory restrictions into account when determining their capital structure.

On the other hand, the countercyclicality of risk and procyclicality of leverage is a fact that could accelerate financial cycles. Banks exhibit a behavior of expanding their balance sheets in an

<sup>9</sup> As shown in Table IV.2.1, depending on the definitions used, increase in the leverage ratio might imply an increase or a decrease in indebtedness. In this section, increase in leverage refers to increased indebtedness.

<sup>10</sup> See Adrian and Shin (2010) for the representation of this arithmetic.

environment of low risk perceptions which increases the demand for assets, in turn, if this situation is accompanied by a market that is not perfectly liquid, such an asset demand would put upward pressure on asset prices. In this case, the balance sheet growth, asset demand and price increases would introduce a structure that feeds each other, and an additional accelerator effect could be seen if there is specific leverage target. Therefore, as a result of an increase in asset prices, banks raise more funds to increase their leverage, and in case of falling asset prices, they reduce their liabilities to lower leverage.

As a result of this cyclical relationship between leverage and balance sheet, periods of rapid growth of bank balance sheet and increasing leverage could overlap with credit cycles. Thus, it is possible to establish a linkage between business cycles and leverage cycles. Indeed, the ongoing economic recession after the global financial crisis is partially attributed to deleveraging of banks and other economic agents.

#### *Alternative Leverage Definitions and Evidence*

In discussions presented so far, without providing specific definitions, asset / equity multiplier was used as a general definition. As shown in Table IV.2.1, it is possible to find alternative definitions of leverage in banking literature. While some of these definitions, such as asset/equity ratio, are widely used in academic literature, other definitions are used by regulatory institutions as a risk indicator in banking system or as an indicator in framework of policies to reduce the macro-financial risks. On the other hand, for example, the Savings Deposit Insurance Fund (SDIF) in Turkey uses definition of Leverage-VI as "capital asset multiplier" in the framework of saving deposit premium. However, without discussing which leverage definition is relevant for any particular purpose, alternative leverage definitions are used to look at procyclical relationship between leverage and asset growth in this special topic.

**Table IV.2.1. Alternative Leverage Definitions**

I	Debt / Equity
II	(Debt+Off Balance Sheet Liabilities) / Equity
III	Asset / Equity
IV	(Tier 1 Capital-Regulatory Deductions) / (Asset+Off Balance Sheet Liabilities)
V	(Tier 1 Capital-Regulatory Deductions) / (Debt+Off Balance Sheet Liabilities)
VI	(Assets + Contingencies + Commitments (except derivatives and revocables)) / Regulatory Capital

Note: For Leverage -IV and Leverage -V definitions, all contingencies are included in off-balance sheet transactions, and only 10 percent of revocable commitments are taken into account. Increase in Leverage -IV and Leverage -V ratios implies reduction of debt, while increase in other leverage definitions implies increasing debt.

Table IV.2.2 presents the descriptive statistics for different leverage ratio definitions. The leverage ratios in the Turkish banking sector are relatively lower when compared to the banks and countries analyzed in Kalemli-Özcan et al. (2011). It is possible to reconcile this with the strong capital and high capital adequacy ratios of the Turkish banks due to the regulations.

Statistics based on business models reveal that commercial and participation banks work with higher leverage ratios than the development and investment banks. This is the consequence of the fact that an important determinant of the leverage is the size of the bank balance sheets.<sup>11</sup> On the other hand, the regulations about the banks' capital adequacy limits the cross sectional and time series variation of the leverage. As Greenlaw et al. (2008) state, however, one should recall the finding that as a result of the procyclicality of the leverage, banks consider internal Value at Risk (VaR) rather than the regulations when utilizing their capital.

**Table IV.2.2. Descriptive Statistics**

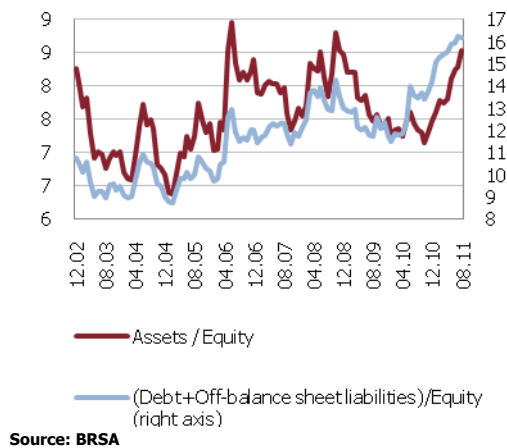
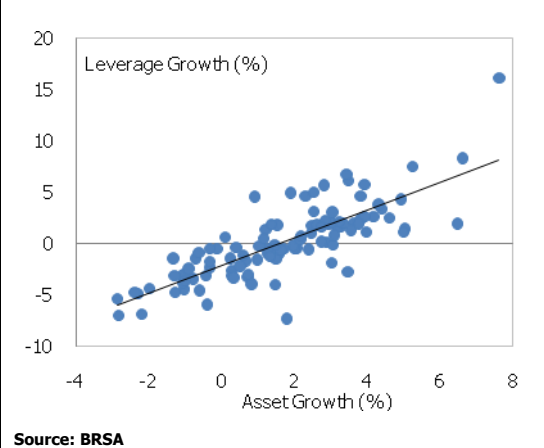
Leverage	Commercial Banks		Participation Banks		Development/Investment Banks		Banking Sector	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
I	7.32	0.68	7.60	1.35	1.22	0.22	6.60	0.56
II	12.79	1.92	18.71	7.14	2.51	0.46	11.72	1.87
III	8.32	0.68	8.60	1.35	2.22	0.22	7.60	0.56
IV	7.03	0.51	6.08	0.67	32.11	3.03	7.80	0.53
V	7.66	0.59	6.50	0.76	48.22	6.74	8.57	0.64
VI	11.41	0.85	15.21	2.10	2.63	0.25	10.40	0.66

Note: All Leverage definitions are in proportions except for IV and V, which are in percentages.

When Leverage II and III definitions are examined for the banking sector, it is seen that Leverage II displays an increasing trend due to the increases in off-balance sheet transactions, whereas the assets/equity ratio (Leverage III) displays cycles that have relatively longer durations and it fluctuates around the mean of 7.6 (Chart IV.2.1). For example, after the last quarter of 2008 in which the global crisis spreads to the emerging markets, there is a clear cycle in the leverage ratio and this cycle overlaps with the credit cycle. Therefore, as discussed earlier, this relationship between leverage and credit cycle might provide an opportunity to the policy makers to use the leverage as a macroprudential tool to smooth the financial cycles.

It is necessary to examine the relationship between various leverage definitions and the asset growth to test statistically whether the leverage is pro-cyclical. As an example, Chart IV.2.2 displays a strong positive relationship between asset growth and assets/equity ratio which is a widely used measure of leverage for the banking sector. Formal estimation results for the banking sector presented in Table IV.2.3 show that the relationship between asset growth and the leverage ratio is statistically significant. These results indicate that the leverage is procyclical for the banking sector, and higher asset growth is associated with higher leverage.

<sup>11</sup> In a panel data analysis, Çalışkan (2011) finds that there is a statistically significant relationship between the growth of the leverage and the size of the bank balance sheets measured by total assets.

**Chart IV.2.1. Time-series behavior of the leverage ratios****Chart IV.2.2. Growth of assets and leverage (III)****Table IV.2.3. Leverage and Asset Growth – Estimation Results for the Sector**

Leverage Definitions	(1)	(2)	(3)	(4)	(5)	(6)
Asset Growth	1.549*** (0.115)	1.332*** (0.126)	1.346*** (0.101)	-0.969*** (0.096)	-1.087*** (0.105)	1.178*** (0.120)
Constant	-2.521*** (0.174)	-1.745*** (0.300)	-2.201*** (0.152)	1.703*** (0.295)	1.896*** (0.320)	-1.996*** (0.248)
N	103	103	103	103	103	103
R-squared	0.63	0.41	0.63	0.34	0.36	0.45

Note: All estimations are done by OLS. Dependent variables are the leverage ratios defined in Table 1. Heteroskedasticity and serial correlation adjusted standard errors are given in the parentheses. \*\*\*, \*\*, and \* show significance levels at 1%, 5% and 10% levels, respectively.

The following model is utilized to see how results change when different business models are considered:

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 (X_{it} \times D_1) + \beta_3 (X_{it} \times D_2) + \varepsilon_{it} \quad (1)$$

where  $Y$  is the leverage growth,  $X$  is the asset growth,  $D_1$  and  $D_2$  are dummy variables for participation and development/investment banks, respectively,  $i$  and  $t$  denote banks and time, respectively, and  $\varepsilon$  is the error term. Commercial banks are the excluded group.  $\beta_1 \neq 0$ ,  $\beta_1 + \beta_2 \neq 0$ , and  $\beta_1 + \beta_3 \neq 0$  indicate a statistically significant relationship between leverage and asset growth for the commercial banks, participation banks, and development/investment banks, respectively. When the estimated values of  $\beta_1$ ,  $\beta_1 + \beta_2$ , and  $\beta_1 + \beta_3$  are positive (negative) for Leverage I,II,III,VI (Leverage IV,V), the leverage is procyclical.

Table IV.2.4 presents results from estimating equation (1). Results from joint hypotheses tests indicate that the leverage of the participation banks is not pro-cyclical, whereas the leverage of the commercial banks and development/investment banks are pro-cyclical.



**Table IV.2.4. Leverage and Asset Growth Relationships According to Banking Groups**

Leverage Definitions	(1)	(2)	(3)	(4)	(5)	(6)
Asset Growth	1.559*** (0.139)	1.313*** (0.139)	1.372*** (0.123)	-0.958*** (0.088)	-1.066*** (0.096)	1.209*** (0.143)
Asset Growth × D <sub>1</sub>	-1.054*** (0.389)	-1.223*** (0.438)	-0.935*** (0.343)	0.709** (0.307)	0.799** (0.327)	-0.906*** (0.331)
Asset Growth × D <sub>2</sub>	0.368** (0.163)	0.320* (0.192)	-0.305** (0.139)	-0.138 (0.156)	-0.608*** (0.216)	-0.211 (0.160)
N	284	284	284	284	284	284
R-squared	0.59	0.10	0.52	0.30	0.36	0.39
<i>Joint Hypotheses</i>						
$\beta_1 + \beta_2$	1.93	0.05	1.87	0.72	0.73	1.03
$\beta_1 + \beta_2$	512.29***	151.73***	28□.45***	72.03***	74.55***	191.19***

Note All estimations are done by OLS. Dependent variables are the leverage ratios defined in Table 1. Heteroskedasticity and serial correlation adjusted standard errors are given in the parentheses. Commercial banks are the base group. Joint hypotheses test results are the values of the  $\chi^2$  statistic. \*\*\*, \*\*, and \* show significance levels at 1%, 5% and 10% levels, respectively.

In conclusion, analysis presented in this section shows that the leverage of the Turkish banking sector is procyclical. Therefore, financial cycles and credit cycles feed each other implying that the leverage can be considered as a financial accelerator.

D'Hulster (2009) argues that the leverage should be used as a macro- and micro-prudential tool. He discusses that the leverage ratio is a useful and easy-to-use policy tool, but it is not a tool to limit the debt and riskiness of the financial system when used alone. In this context, as argued by D'Hulster (2009), some authors think that the use of the leverage ratio together with Basel type capital adequacy ratios might decrease the risks of the banks and the whole financial system originating from high leverage.

Considering the results from the current literature suggesting that the leverage is procyclical and triggers financial cycles (Geanakoplos, 2009), the increases in credit and assets might be limited by employing a dynamic countercyclical leverage rule. That is, lowering the leverage ratio when the asset growth of the banks is high, and raising it in the opposite case should contribute to smoothing credit/financial cycles. Accordingly, a countercyclical leverage ratio interval is a possible policy proposal.

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### IV.3. Over the Counter Derivatives Markets-Regulations

The recent financial crisis has highlighted the importance of significantly grown but not adequately regulated derivatives markets. Since most of the derivatives trading take place in the over-the-counter (OTC<sup>12</sup>) markets, there has been considerable challenge while gathering data for such products and markets, thereby making it difficult for the regulators and market participants to identify the risks associated with the OTC derivatives. Those products, that are traded through bilateral agreements based on mutual needs, have the benefit of facilitating flexibility with their less standard structure and with being subject to less regulatory supervision where they can be used for both hedging and speculation. However, the impacts of those products have far gone beyond the two parties and they have imposed risk on the world economy through contagion. In relation to this, financial engineers have been widely criticized and blamed for triggering the recent financial crisis with their complex mathematical models and being the designers of complex financial products. However, especially considering the impossibility of modeling human behavior, anyone who intends to rely on theories or models must first understand how they work and what their limits are<sup>13</sup>.

Financial derivatives emerged as a consequence of market dynamics. Nevertheless, due to the firm/system-wide failures during the global crisis, regulatory authorities have taken considerable steps in regulating the OTC derivatives, dominating portion of all the derivatives markets. The logic behind the relevant regulations is to provide transparency in OTC derivatives markets and making the risks associated to these markets more manageable. In September 2009, G-20 Leaders agreed in Pittsburgh that: *All standardized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements.* In this way, it is aimed to improve transparency in the derivatives markets, mitigate systemic risk, and limit highly risky transactions that would swell destructive impacts on markets.

The FSB's OTC Derivatives Working Group (ODWG) monitors the implementation of OTC derivatives reforms toward meeting the G-20 commitments. The main topic and findings of the reports prepared so far by the Group are summarized as follows:

**Table IV.3.1. ODWG Reports**

<b>October 2010</b> Implementing OTC Derivatives Market Reforms	FSB made 21 recommendations addressing practical issues that authorities may encounter in implementing the G-20 Leaders' commitments.
<b>April 2011</b> First Implementation Progress Report	FSB warned that in order for this target to be achieved, jurisdictions needed to take substantial, concrete steps toward implementation immediately.
<b>October 2011</b>	It is highlighted that the pace of legislative and regulatory action should be

<sup>12</sup> According to the BIS (2011) "OTC derivatives market activity in the first half of 2011" Report, total notional outstanding amounts of derivative transaction at OTC market equal to around USD 708 trillion as of first half of 2011. OTC interest rate derivatives constitute the largest portion of these global OTC contracts.

<sup>13</sup> Derman (2011): Emanuel Derman and Paul Wimott (2009) indicate that financial models represent simple structures such that they cannot encapsulate human behavior; hence people should never forget that the model is not a world..... in the "The Financial Modelers' Manifesto".

Progress Report on Implementation	increased to ensure that as many frameworks are as possible in place by 2012. The coherent practices regarding OTC regulations among countries are of utmost importance. Many jurisdictions have indicated that final decisions on domestic legislative frameworks will follow to the international baseline established once EU and US legislation and implementing regulations are in place and international standards are finalized. To meet the end-2012 deadline, it is important that all jurisdictions do as much as they can without waiting for finalization of approaches in the largest markets.
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The issues (i) central clearing, (ii) exchange and electronic platform trading, (iii) reporting to trade repositories, (iv) capital requirements and (v) standardization presented in the above-mentioned Reports are summarized as follows:

**Central clearing:** After the global crisis, regulatory initiatives focus more on Central Counterparties (CCPs), which are a vital building block of a well-functioning transparent system. In this framework, all standardized OTC derivative contracts should be cleared through central counterparties by end-2012 at the latest. Although there are both pros and cons of CCPs, in order to mitigate counterparty credit risk CCPs play a crucial role given their effective risk management implementations. In that sense, regulations of central banks and the other authorities, especially the access of CCPs to central bank liquidity without creating moral hazard risk are of great importance. CCPs are very likely to contribute to the OTC derivatives market by applying multilateral netting of trades given their robust risk management standards and the default funds that mutualise losses. Hence, such a system is highly likely to help reduce the spillover of counterparty credit risk. Although CCPs have different waterfall structures to absorb and mutualise losses, the general order is the following: (1) posted collateral of the defaulted clearing member; (2) default fund contribution of the defaulted clearing member; (3) default fund contribution of the CCP; and (4) default fund contributions of non-defaulting clearing members. Such a structure is a significant gain in terms of contagion and systemic risk. FSB members highlight the end-2012 goal and indicate that central clearing of OTC derivatives has increased, particularly in the interest rate and credit asset classes. Nevertheless considering the complex nature of the required rules and the pace at which various jurisdictions are implementing central clearing mandates, central clearing of standardized products would not be met fully, but seems to be met partially by the end-2012. All in all, there are vital regulatory initiatives related with banks, as the most crucial participants in this market, that are required to maintain more capital for their OTC transactions not cleared through CCPs, while encouraging central clearing. In this way, it is intended to help the banks protect themselves against the counterparty credit risk, which will in the end contribute to the health of the financial system. Another point to mention is that there are still discussions ongoing regarding the local and global CCPs.

**Exchange and electronic platform trading:** In general terms, a trading platform is a system or facility that brings together buying and selling interests in one or more financial instruments, leading to the execution of transactions in those instruments<sup>14</sup> (IOSCO's "Report on Trading of OTC Derivatives" published on February 2011 is a very informative international guidance regarding the organized trading platforms). As for the OTC markets, most trading occurs via

<sup>14</sup> IOSCO's "Report on Trading of OTC Derivatives" published on February 2011.

telephone or electronic tools, where the subject of trade is highly structured products depending on the investors' various risk appetite. Considering the G-20 commitments, FSB progress Report indicates that the legislative and regulatory framework implementation is markedly behind the progress made toward other commitments. The United States is the only jurisdiction that has adopted legislation requiring exchange and electronic platform trading of standardised derivatives, and it is working toward putting in place implementing regulation, where the European Commission expects that the proposals will be adopted in 2013. FSB points out that jurisdictions should aggressively push forward to meet the end-2012 deadline in as many areas as possible, including accelerating jurisdictional policy decision-making with regard to organised platform trading.

**Reporting to trade repositories:** Trade repositories, entities that maintain a centralised electronic database of OTC derivatives transaction data, are of great innovation for the markets which will enable authorities to ascertain accurate information concerning OTC derivatives. Such data would be accessible by market regulators and other authorities in order to review overall OTC derivatives activity, or a portion of it, based on counterparty or otherwise. While all parties of the related transaction would store relevant information, reporting to trade repositories would contribute to the health of the financial system to a great extent. Currently, commitment to putting in place by end-2012 the legislative and regulatory frameworks for achieving the G-20 commitment to reporting to trade repositories is maintained as indicated by the FSB. However, there are a number of implementation issues that need to be resolved around ensuring the suitability of the data collected in trade repositories for meeting different regulatory mandates (including financial stability) and authorities' effective access to data stored in trade repositories relevant to their respective mandates. Actual reporting of OTC derivatives contracts to trade repositories is showing progress in the interest rate, credit, and equity derivatives asset classes. Currently, trade repositories are not operational for the commodity and foreign exchange asset classes, although infrastructure is under development. Based on the current state of implementation, the FSB believes that, as is the case with central clearing, the target of having all OTC derivatives contracts reported to trade repositories will not be fully met by end-2012 in all FSB member jurisdictions. Nonetheless, the FSB emphasizes that jurisdictions should aggressively push forward to meet the trade repositories reporting deadline for as many OTC derivatives contracts as practicable.

**Capital requirements:** New regulations are designed to ensure that banks' exposures to CCPs are adequately capitalised, such that regulations require banks to more appropriately capitalise their exposures to OTC derivatives, while creating incentives for banks to increase their use of CCPs. Since the risk embedded in CCPs may adversely affect the clearing members, the exposures to CCPs should be priced in terms of risk and capital, as well. The Basel III capital framework, which strengthens the requirements for counterparty credit risk exposures, will take effect on 1 January 2013. The Basel III capital framework strengthens the requirements for counterparty credit risk exposures including the mark-to-market value of counterparty credit risk which has not been covered under Basel II. When entering into bilateral OTC derivative transactions, banks are required to hold capital to protect against the risk that the counterparty defaults and for credit valuation adjustment (CVA) risk. Banks are not required to hold capital for CVA risk for derivatives that are centrally cleared. Commitment to putting in place by end-2012 the legislative and regulatory frameworks to achieve the G-20

commitment to higher capital requirements for non-centrally cleared derivatives is maintained. BCBS is undertaking a series of quantitative impact studies involving banks and CCPs, including checking whether capital charges appropriately reflect the higher risk of non-centrally cleared transactions. Additionally, BCBS, CPSS, IOSCO and CGFS are participating in a working group to set margining standards for non-centrally cleared derivatives.

**Standardization:** The main concern regarding standardization is the fact that non-standard nature of OTC derivatives is the main reason of the emergence of OTC markets and thus has become key characteristic of these markets. It is important to achieve standardization while maintaining flexibility. Standardisation is a core element for meeting the G20 commitments relating to central clearing, organised platform trading and reporting to trade repositories. To date, coordinated industry action led by the OTC Derivatives Supervisors Group, composed of the supervisors of the main derivatives dealers, has been the main driver of increased standardisation through a series of quantitative and qualitative commitments. The ongoing work has substantial progress and the views and needs of market participants are delicately taken into account. In Turkey, OTC derivatives are mostly composed of swaps, which are vanilla, thus standardization process has less challenge comparing to advanced countries. According to FSB survey responses, most jurisdictions believe that the proportion of OTC derivatives that are standardised will have substantially increased by end-2012.

All in all, FSB mentions that till now there is significant progress in implementation of OTC derivatives regulations, whereas the consistency among jurisdictions is highlighted. ODWG will continue to actively monitor the consistency of implementation, and bring any overlaps, gaps, or conflicts to the attention of the FSB that may prove detrimental to the G-20 reform objectives of increasing transparency, mitigating systemic risk, and protecting against market abuse. With the end-2012 deadline rapidly approaching, the FSB is committed to maintaining its intense focus on monitoring and assessing the adequacy of progress being made to fully and consistently implement the G-20 commitments through the development of international standards and policies, the adoption of legislative and regulatory frameworks, and changes in market structures and activities. Collecting useful and comprehensive qualitative and quantitative data to carry out this monitoring function requires significant effort. Until reporting to TRs and other reforms have been fully implemented, alternative sources of data and metrics need to be identified for tracking progress toward achieving the G-20 commitments. Turkey closely monitors the international developments and continues working towards G20 commitments. However, due to the lack of structured products, especially the secondary market of mortgage loans, Turkey has much less concerns in this issue comparing to the advanced economies<sup>15</sup>.

Global regulations may bring strict rules. However, considering the delicacy of the financial markets, it is crucial to avoid regulations that could cause the market players to exit the markets. Regulations can bring some costs that could lower the cost advantage of OTC markets and may discourage investors to trade in the markets where the main motivation behind the OTC derivatives markets is its nonstandard nature and flexibility. Transparency has a number of advantages which is highlighted, whereas some issues could emerge which may hinder well-functioning of markets.

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<sup>15</sup> In IOSCO (2010)'s Report, "*OTC Markets and Derivatives Trading in Emerging Markets*", the total daily turnover is reported as USD 5,149 billion in 2007, whereas the corresponding figure for Turkey is USD 3 billion.

Especially the transactions done with the central banks are of great importance in that sense. In addition to transparency, to improve firm/system-wide risk management, investor protection and market efficiency, an effective risk management framework for financial firms should involve higher risk-based capital requirements, a better risk management framework with manageable leverage and also a better regulatory/supervisory framework<sup>16</sup>.

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<sup>16</sup> Coşkun (2011) aims to analyze whether increased transparency in OTC markets would contribute to market efficiency and risk management and he concludes that more transparency in the OTC markets may result in sub-optimal consequences. More transparency in OTC market and derivatives trading may support over-reaction and, hence, increase risks of single/systemic failures.

## IV.4. Recent Trends in Macroprudential Policy and the Financial Stability Committee in Turkey

The main objective of the macroprudential policy which is mentioned frequently in the post global crisis era is to prevent and/or mitigate the negative effects of systemic risk on the financial system and whole economy. The features of macroprudential policy and some examples on institutional framework had been mentioned in the previous Financial Stability Report (May 2011, Volume 12) under the Special Topic V.8. In this issue, recent trends in the institutional structure, studies in the international arena together with the current framework and latest developments in Turkey are addressed.

Since macroprudential policies are more flexible, easier to implement and result in a shorter time period and observed with more clarity relative to other policy alternatives, they have been used by an increasing number of countries. Besides, it is observed that developing countries apply macroprudential policies and tools in order to deal with exchange rate volatilities and capital flows more intensively with respect to advanced countries.

Within the framework of the IMF Survey results on "Financial Stability and Macroprudential Policy", which had been applied to 50 countries (including Turkey) and the ECB at the end of 2010, and recent developments in some countries, models in macroprudential policymaking can be classified into three in broad terms and seven in detail. The supranational model in the European Union (EU) is listed as a separate model.

The five criteria which were selected in forming these models were shown below:

- 1- Degree of institutional integration of central bank and financial regulatory functions,
- 2- Ownership of macroprudential policy,
- 3- Role of the treasury,
- 4- Institutional separation of policy decisions from control over policy instruments,
- 5- Existence of a separate body coordinating across policies to address systemic risk.

Stylized models for macroprudential policy which were formed according to these five criteria are shown at Table IV.4.1.



**Table IV.4.1. Stylized Models for Macroprudential Policy**

Features of the model/Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model (EU)
Degree of institutional integration of central bank and supervisory agencies	Full (at a central bank)	Partial	Partial	Partial	No	No (Partial*)	No	No
Ownership of macroprudential policy mandate	Central bank	Committee "related" to central bank	Independent committee	Central bank	Multiple agencies	Multiple agencies	Multiple agencies	Committee (multinational; regional)
Role of MoF/ treasury/ government	No (Active*)	Passive	Active	No	Passive	Active	No (Active*)	Passive (European Commission; Economic and Financial Committee)
Separation of policy decisions and control over instruments	No	In some areas	Yes	In some areas	No	No	No	Yes
Existence of separate body coordinating across policies	No	No	No (Yes*)	No	Yes	Yes (de facto**)	No	No
Examples of specific model countries/ regions	Czech Rep. Ireland Singapore*	Malaysia Romania Thailand U.K.	Brazil* France U.S.A	Belgium The Netherlands Serbia	Australia	Canada Chile Hong Kong* Korea** Lebanon Mexico	Iceland Peru Switzerland	EU (ESRB)

**Source:** Towards Effective Macroprudential Policy Frameworks: An Assessment of Stylized Institutional Models, IMF Working Paper, November 2011

Models in Table IV.4.1 can be classified under three broad classes: Full integration between the central bank and all financial supervisory and regulatory functions (Model 1), twin peaks model in which the central bank retaining prudential functions, while conduct and securities regulation is separate (models 2, 3, and 4) and the central bank is separate from both prudential and securities market regulation (models 5, 6, and 7). Although models within these groups tend to share certain similarities, there are also important differences between models within each group.

Studies in the international arena on macroprudential policy framework and institutional structure have been continuing. It should be emphasized that there is no "one size fits all" model in that sense. The most suitable framework should be established by taking into account the economic, political, institutional and socio-cultural structure of each country, assessing strengths and weaknesses of each model. In this context, determining the main objective of the policies and policy tools to be used are important in designing the institutional structure. In addition to that, designing a communication strategy and accountability mechanisms regarding policies; measuring and assessing the effectiveness of the policies are among significant issues for building a framework.

Establishing a coordinating committee can diminish the weaknesses of models and provide a platform for policies to be implemented effectively. Besides, such a committee is expected to increase information sharing among institutions and encourage initiatives regarding financial stability which is the common objective. Accountability and transparency mechanisms are essential for the success of

the policy; however these mechanisms should be designed in balance in order results and effectiveness of policies not to be affected negatively by third parties.

On the other hand, there is a consensus in the economics literature that central banks should play an important role in determining and applying macroprudential policies whatever their duties and mandates are. Other than carrying out monetary policy, its comprehensive database and information, analytical and macro perspective, technical capability, role in payment systems and being a lender of last resort put central banks forward in designing macroprudential policy.

Benefits of including Treasury/Minister of Finance/Government into institutional structures are mentioned frequently in the academic literature. If distinguishing monitoring systemic risk is separated from taking macroprudential measures and crisis management processes; high representativeness of these bodies will prevent costs which might arise because of their short-term vision and political well-being. Moreover, leadership of these bodies in crisis management is significant by means of their roles in crisis management and resolution, and facilitating decision making processes.

Another important point in policy design is providing authorities to react flexibly against risks. Complex and fragmented regulatory and supervisory structures are unlikely to be conducive to effective mitigation of risks to the system as a whole. Many institutions' involvement in decision making mechanism may lead to delays in decision making process. In order to prevent this, mechanisms such as simple majority/qualified majority could be run instead of unanimity rule. At the same time, it should be noted that another extreme method which is decision making by a single authority only may create important drawbacks.

As a result, it should be emphasized that macroprudential policy framework should define systemic risk, analyze and monitor the risk; use policy tools in timely and effective manner, and provide an efficient coordination among policies addressing systemic risk.

### **Current Institutional Framework in Turkey**

In Turkey, authorities responsible for financial stability take policy measures as part of their duties, mandates and responsibilities, especially in line with macroprudential policies. These authorities' main responsibility areas which are closely related with financial stability are indicated below:

- *Central Bank of the Republic of Turkey (CBRT):* Monetary policy within the framework of price stability, financial stability, and oversight of payment systems,
- *Banking Regulation and Supervision Agency (BRSA):* Regulation and supervision of banks and financial holding companies, leasing, factoring and consumer finance companies,
- *Undersecretariat of Treasury:* Public finance and fiscal policies, regulation and supervision of insurance companies,
- *Capital Markets Board (CMB):* Regulation and supervision of capital markets and intermediary institutions,

- *Savings Deposit Insurance Fund (SDIF)*: Protecting the rights of depositors, and resolution of banks.

Other than these authorities, some institutional structures exist in Turkey in line with systemic risk and macroprudential policies. In this context, Systemic Risk Coordination Committee, Financial Sector Commission and Financial Stability Committee are the important bodies.

#### *Systemic Risk Coordination Committee*

Under Article 72 of the Banking Law No. 5411, Systemic Risk Coordination Committee, whose members are the Undersecretariat of Treasury, the CBRT, BRSA and SDIF, has been established in April 14, 2009 by the "Memorandum of Understanding (MoU) for Cooperation on Systemic Risk regarding the Financial System". In cases where threatening developments that could spread over to the entire financial system occurs, the Committee is responsible for taking measures promptly and efficiently in order to maintain the stability. The Committee is also responsible for assessing the developments in the financial markets and taking necessary measures. Besides, providing the coordination, cooperation and information sharing among the institutions is one of the tasks of the Committee. The mentioned MoU is on crisis management, secretariat mission of the Committee is carried out by the BRSA and the Committee convenes at least twice a year.

#### *Financial Sector Commission*

Another important platform which has a broader representative structure is the Financial Sector Commission. Members of the Commission are the BRSA, CBRT, Ministry of Finance, Undersecretariat of Treasury, CMB, SDIF, and Competition Authority, Ministry of Development, İstanbul Gold Exchange, Stock Exchanges, Derivatives Exchanges and some associations. The Commission shall ensure exchange of information, cooperation and coordination among institutions, propose joint policies and express views regarding the matters that relate to the future of the financial sector, with a view to establishing and ensuring confidence and stability as well as development in the financial markets. The Financial Sector Commission convenes once every six months and briefs the Council of Ministers regarding the results of its meetings.

On the other hand, there exist various MoUs signed by the Undersecretariat of Treasury, the BRSA, CMB, SDIF and CBRT. These MoUs contribute to maintaining financial stability, monitoring and preventing systemic risk by increasing the cooperation, coordination and information sharing among the mentioned institutions.

#### ***Financial Stability Committee in Turkey***

In line with the developments in the international platform and necessities emerged after the global financial crisis, the Financial Stability Committee was established by the Decree Law dated June 8, 2011 and numbered 637 on the Organization and Duties of the Ministry of Economy. Members of the Committee are the Minister in charge of the Undersecretariat of Treasury (Chair), Undersecretary of Treasury and Heads of the CBRT, BRSA, CMB and SDIF; and main tasks of the Committee are

monitoring and preventing systemic risks and ensuring the coordination regarding systemic risk management.

Tasks of the Committee are as follows:

- Determining and monitoring systemic risks which could spill over the whole financial system, and detecting necessary measures and policy proposals for mitigating these risks,
- Warning the concerned parties regarding systemic risks, and following the implementations related to warnings and policy proposals,
- Assessing systemic risk management plans prepared by related institutions,
- Ensuring the coordination regarding systemic risk management,
- With respect to their mandate, providing every kind of data and information from public institutions, and ensuring coordination of the policies and their implementations among institutions,
- Deciding on other issues which legislation authorizes.

Additionally, other ministers and public officials could be invited to the Committee meetings by the Minister when it deems necessary. In addition, the Minister briefs the Council of Ministers regarding the results of the Committee meetings and decisions taken by the Committee.

As of the end of November 2011, six meetings were held. In this context, recent global economic and financial developments, outlook regarding the upcoming period and steps taken so far by the Committee member institutions have been assessed. Furthermore, structural arrangements in related institutions' agenda, which strengthen financial stability in medium and long term, have been reviewed in an integrated approach, and coordinating institutions have been determined. Sub-working groups have been doing some detailed research and studies on issues relating with financial stability.

The Committee is regarded as an important step for Turkey in macroprudential policy design as it ensures a corporate structure for coordination among institutions and an efficient communication channel.

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## IV.5. Progress in the Financial Sector Reform

As a response to the global crisis which started in 2008, the leaders of the G-20 countries met for the first time<sup>17</sup> in Washington in November 2008 in order to restore global economic growth and achieve needed reforms in the world's financial systems. Taking into consideration that the major failures in the financial sector and in financial regulation and supervision were fundamental causes of the crisis, taking actions to build a stronger, more globally consistent supervisory and regulatory framework for the future financial sector constitutes an important part of the G-20 reform agenda. Within that framework, G20, which was set as the primary platform for international economic cooperation, towards the aim of implementing reforms to strengthen the financial markets and the regulatory regimes, committed to introduce policies which are consistent with five common principles.

The leaders agreed on an action plan regarding the implementation of those common principles which are set as:

- Strengthening Transparency and Accountability
- Enhancing Sound Regulation
- Promoting Integrity in Financial Markets
- Reinforcing International Cooperation
- Reforming International Financial Institutions.

Financial Stability Board (FSB) whose mandate has been strengthened and membership has been expanded at the London Leaders Summit in April 2009, was asked to monitor progress in implementing the G-20 recommendations within the framework of the action plan.

Turkey is the member of the Financial Stability Board since 12 March 2009 and is represented by the Central Bank of Turkey at the Plenary<sup>18</sup>.

Below is a summary of the main areas where progress is made by the FSB and its members to promote financial stability and strengthen the resilience of the global financial system.

### **Improving the quality of capital**

The Basel III regulatory framework for capital and liquidity was endorsed by the G20 Leaders at their Seoul Summit and the detailed rules text was issued on 16 December 2010<sup>19</sup>. The framework includes prudential measures that will enhance the quality of capital; increase the level of capital; promote the build-up of capital buffers to mitigate pro-cyclicality; supplement the risk-based capital requirements with a leverage ratio; and introduces a set of global liquidity standards. Phased implementation of the framework will start on 2013 with full application by 2019. Regarding the leverage ratio and liquidity requirements, the Basel III framework includes transition periods that

<sup>17</sup> The subsequent G20 summits took place in April (London) and September (Pittsburg) 2009, June (Toronto) and November (Seoul) 2010 and in November 2011 (Cannes).

<sup>18</sup> Türkiye Cumhuriyet Merkez Bankası (TCMB)-Financial Stability Report Volume:8 Pg.15, May 2009

<sup>19</sup> Basel Committee on Banking Supervision (BCBS)-Basel III rules text and results of the quantitative impact study, 16 December 2010 <http://www.bis.org/press/p101216.htm>

provide for parallel runs and observation. The BCBS was tasked with observing the impact of the new requirements.

**Table IV.5.1. Amendments in the Capital Adequacy Framework**

			Basel II	Basel III	
			Minimum Ratio (%)	Minimum Ratio (%)	Incl. Conservation Buffer
Capital Adequacy Ratio	=	$\frac{\text{Capital}}{\text{Risk Weighted Assets}} \geq$	8	8	10.5
Tier 1 Ratio	=	$\frac{\text{Tier 1 Capital}}{\text{Risk Weighted Assets}} \geq$	4	6	8.5
Core Tier 1 Ratio	=	$\frac{\text{Core Tier 1 Capital}}{\text{Risk Weighted Assets}} \geq$	2	4.5	7

G-20 leaders are committed that all major G20 financial centres adopt Basel II by November 2011. FSB and BCBS agreed that Basel II.5 should be implemented by end 2011. Even though, most countries have made progress in implementation, it is not expected for all major G20 economies to meet the deadlines within the agreed time frame.

In Turkey, Banking Regulation and Supervision Agency (BRSA) announced that there will be a parallel run of both Basel I and II during July 2011-June 2012 period and that the impact studies conducted show that due to the strong capital structure of the Turkish Banking Sector, the Basel III requirements is not expected to have significant effect on the banking sector.

### **Systemically Important Financial Institutions (SIFI)**

At the Seoul Summit in November 2011, the G20 Leaders endorsed the recommendations set out in the October 2010 FSB Report "Reducing the moral hazard posed by systemically important financial institutions"<sup>20</sup>. The report specified that the policy framework for SIFIs should combine:

- A resolution framework and other measures to ensure that all financial institutions can be resolved safely, quickly and without destabilising the financial system and exposing the taxpayer to the risk of loss (includes principles to be met by the national resolution regimes; resolvability assessments and recovery and resolution plans (RRPs) to be prepared by the GSIFIs; and cross border resolution arrangements among related authorities),
- a requirement that SIFIs and initially in particular global SIFIs (G-SIFIs) have higher loss absorbency capacity to reflect the greater risks that these institutions pose to the global financial system,
- more intensive supervisory oversight for financial institutions which may pose systemic risk;
- robust core financial market infrastructures to reduce contagion risk from the failure of individual institutions and

<sup>20</sup> Reducing the moral hazard posed by systemically important financial institutions, FSB Recommendations and Time Lines, 20 October 2010 [http://www.financialstabilityboard.org/publications/r\\_101111a.pdf](http://www.financialstabilityboard.org/publications/r_101111a.pdf)

- Other supplementary prudential and other requirements as determined by the national authorities.

In line with the SIFI framework, in November 2011, BCBS issued a finalised assessment methodology and additional loss absorbency requirements for globally systemically important banks (G-SIBs)<sup>21</sup>. The assessment methodology is an indicator-based measurement approach designed to assess the likely impact of the failure of a bank on the global financial system and wider economy. The selected indicators reflect the size of banks, their interconnectedness, substitutability, their global cross-jurisdiction activity and their complexity (Table IV.5.2). Using this methodology an initial set of 29 institutions has been identified as G-SIBs and the list was publicly disclosed following the G20 Cannes Summit<sup>22</sup>. The BCBS will continue to improve the quality and transparency of the data underlying the assessment methodology in time for implementation beginning 1 January 2016. The list of GSIBs which will be updated every year will be published by the FSB in November each year.

**Table IV.5.2. Indicator based measurement approach for the identification of GSIBs**

Category and weighting	Individual Indicators	Indicator Weighting
Cross-jurisdictional activity (20%)	Cross-jurisdictional claims	10%
	Cross-jurisdictional liabilities	10%
Size (20%)	Total exposures as defined for use in the Basel III leverage ratio	20%
Interconnectedness (20%)	Intra-financial system assets	6.67%
	Intra-financial system liabilities	6.67%
	Wholesale funding ratio	6.67%
Substitutability/financial institution infrastructure (20%)	Assets under custody	6.67%
	Payments cleared and settled through payment systems	6.67%
	Values of underwritten transactions in debt and equity markets	6.67%
Complexity (20%)	OTC derivatives	6.67%
	Level 3 assets	6.67%
	Trading book value and Available sale value	6.67%

The additional loss absorbency requirement will be met with Common Equity Tier 1 (CET1) capital, which is the highest quality capital. Depending on the ranking of the bank according to their systemic importance scores, G-SIBs will be allocated to "buckets" requiring levels of additional loss absorbency ranging from 1.0% to 2.5%. To provide a disincentive for banks facing the 2.5% charge, there is an empty top bucket requiring 3.5% additional capital. The requirement will be phased in between 1 January 2016 and 1 January 2019, in parallel with the Basel III capital conservation and countercyclical buffers (Table IV.5.3).

<sup>21</sup> BCBS-Global systemically important banks: Assessment methodology and the additional loss absorbency requirement, November 2011 <http://www.bis.org/publ/bcbs207.htm>

<sup>22</sup> FSB-Press Release, 4 November 2011. [http://www.financialstabilityboard.org/press/pr\\_111104cc.pdf](http://www.financialstabilityboard.org/press/pr_111104cc.pdf)

**Table IV.5.3. Additional loss absorbency requirements for GSIBs**

<b>Bucket</b>	<b>Score range*</b>	<b>Minimum additional loss absorbency (% of risk weighted assets)</b>
5 (empty)	D-	3.5%
4	C-D	2.5%
3	B-C	2.0%
2	A-B	1.5%
1	Cut-off point-A	1.0%

\*Scores equal to one of the boundaries are assigned to the higher bucket.

Work is underway regarding identification of non-bank systemically important financial institutions. Within this framework, the International Association of Insurance Supervisors (IAIS) is expected to complete its assessment methodology for identifying globally systemically important insurers in time for the G20 Summit in June 2012.

Following the G20 Summit in November 2011, the FSB has finalised the Key Attributes of Effective Resolution Regimes for Financial Institutions<sup>23</sup> which will form an international standard. The attributes apply to all resolution regimes for the resolution of financial institutions whose failures may create systemic risk, and financial market infrastructures (FMIs) where necessary. The principles set out by the FSB aim to minimise disruptions arising from the failure of a financial institution and ensure that national authorities can resolve institutions in an orderly manner that does not expose taxpayers to the risk of loss and their implementation may require legislative changes in many jurisdictions.

FSB SIFI policy measures include cross-border cooperation agreements between relevant authorities and mandatory resolvability assessment and a recovery and resolution plan (RRP) for each GSIFI. The initial group of 29 banks that have been identified will be expected to have RRP by 2012.

As of 2012, the FSB will establish a Peer Review Council (PRC) to review the full and consistent implementation of the G-SIFI measures and, working together with the SSBs, will begin this year to define the modalities to extend expeditiously the policy framework to all SIFIs.

Increasing the intensity and effectiveness of supervision is also a key component of the FSB's framework for SIFIs. Within this framework, the FSB report on Intensity and Effectiveness of Supervision<sup>24</sup> which was prepared in consultation with the IMF and released in November 2010, sets out recommendations aimed at making financial institutions less susceptible to failure. Following the G20 Cannes Summit, a Progress Report<sup>25</sup> assessing the progress by national authorities towards implementation of these recommendations, was published. According to this, many countries are making progress in intensifying their supervision of SIFIs by improving their supervisory tools and methods. To ensure that such changes to supervisory practices endure, the FSB called on supervisors to adhere to higher standards. On the other hand, The BCBS is reviewing the Basel Core Principles for Effective Banking Supervision and plans to issue the revised Core Principles at end-2011.

<sup>23</sup> FSB-Key Attributes of Effective Resolution Regimes for Financial Institutions, October 2011

[http://www.financialstabilityboard.org/publications/r\\_111104cc.pdf](http://www.financialstabilityboard.org/publications/r_111104cc.pdf)

<sup>24</sup> FSB-Report on Intensity and Effectiveness of SIFI Supervision, 20 October 2010.

[http://www.financialstabilityboard.org/publications/r\\_101111a.pdf](http://www.financialstabilityboard.org/publications/r_101111a.pdf)

<sup>25</sup> FSB-Progress report on implementing the recommendations on enhanced supervision, 27 October 2011

[http://www.financialstabilityboard.org/publications/r\\_111104ee.pdf](http://www.financialstabilityboard.org/publications/r_111104ee.pdf)



The robustness of the infrastructure underpinning financial transactions is central to containing contagion in the event of a SIFI failure. Within that framework, The Committee on Payment and Settlement Systems (CPSS) and IOSCO will issue in early 2012 international standards for core financial market infrastructures.

There are no G-SIBs that are headquartered in Turkey and the presence of the GSIBs as branches or subsidiaries of foreign banks is limited. However, due to the interconnected nature of the financial systems and taking into account that the G-SIFI framework will be extended to cover all SIFIs, the developments in the area are being closely monitored by the Turkish authorities.

### **Expansion of the regulatory perimeter**

It is restated in G-20 Seoul Summit that stricter bank regulation revealed the need for oversight and regulation of shadow banking to avoid risky behaviour previously taken on by banks is pushed to that area.

The FSB has conducted an assessment of the progress made by national and international authorities regarding the shadow banking sector. Following that study, in October 2011, the FSB has set out recommendations for a framework to enhance the monitoring of trends and risks in the shadow banking sector and identified five key areas in which regulatory measures should be examined<sup>26</sup>. Those areas are set as: the interactions of banks with shadow banking entities; ways to reduce the susceptibility of money market funds to runs; the regulation of other shadow banking entities on prudential grounds; retention requirements and transparency in securitisation; and the possible regulation of margins and haircuts in securities lending and repos. During the course of 2012 BCBS, IOSCO and FSB are expected to set out additional principles in those areas that are identified by the FSB.

### **Implementation of OTC derivatives reforms**

In September 2009 in Pittsburgh, the G20 Leaders agreed that all standardised OTC derivative contracts should be traded on exchanges or electronic trading platforms, and cleared through central counterparties by end-2012 at the latest; OTC derivative contracts should be reported to trade repositories; and non-centrally cleared contracts should be subject to higher capital requirements. In October 2010, the FSB set out recommendations to address practical issues in implementing the G20 Leaders' commitments. Within that framework, the FSB has been monitoring the implementation of the OTC derivatives markets reforms, with reports every six months.

In Turkey derivatives products' being relatively simple is believed to make it much easier for Turkey to comply with the standardisation commitments.

### **Macroprudential frameworks and tools**

In response to the G20 request of November 2010, the FSB, IMF and BIS published a joint progress report<sup>27</sup> in October 2011 on macroprudential policy frameworks and tools and presented to

<sup>26</sup> FSB-Shadow Banking: Strengthening Oversight and Regulation-27 October 2011  
[http://www.financialstabilityboard.org/publications/r\\_111104.pdf](http://www.financialstabilityboard.org/publications/r_111104.pdf)

<sup>27</sup> FSB, IMF, BIS - Macroprudential Policy Tools and Frameworks, 27 October 2011  
[http://www.financialstabilityboard.org/publications/r\\_111027b.pdf](http://www.financialstabilityboard.org/publications/r_111027b.pdf)

the G20 leaders. According to the Report, effective macroprudential frameworks require institutional arrangements and governance structures, tailored to national circumstances, that can ensure an open dialogue among policymakers on policy choices that have an impact on systemic risk, resolve conflicts between policy objectives and instruments, and mobilise the right tools to limit systemic risk. Even though the development and implementation of macroprudential frameworks is still at an early stage, important steps have been taken nationally and internationally. Efforts to monitor macro risks have focused on closing data gaps and on analysis and models to assess systemic risk. There has also been progress in developing new macroprudential tools and in assessing the effectiveness of existing ones. Basel III's countercyclical capital buffer and the additional loss absorbency requirement for G-SIFIs are examples of new macroprudential tools.

A number of jurisdictions have been adjusting institutional arrangements to support macroprudential policy. In the US, the Financial Stability Oversight Council (FSOC) established by the Dodd-Frank Act, in the EU, the European Systemic Risk Board (ESRB), which is responsible for macroprudential oversight of the financial system has been established. In the UK an interim Financial Policy Committee has been set up to identify, monitor and take action to remove or reduce systemic risks.

In Turkey, the Financial Stability Committee (FSC) was established in June 8, 2011 to monitor and identify systemic risks and to determine macroprudential measures and policies as needed. The FSC is chaired by the Deputy Prime Minister for Economic and Financial Affairs and consists of Treasury, Central Bank of Turkey, Banking Regulation and Supervision Agency, Capital Markets Board and Savings Deposit Insurance Fund (See IV.4).

### **Reducing reliance on credit rating agencies**

Over-reliance on credit ratings, particularly for structured products and build-up of exposures in such instruments before the crisis, lead to "cliff effects" on market prices after the crisis when confidence in the ratings of these products was diminished and investors acted together to exit from those positions. In October 2010, the FSB published a set of principles for reducing reliance on CRA ratings, and requested standard setters and regulators to consider next steps to translate the principles into more specific policy actions. Within that respect, a number of national and regional regulators have begun to take steps to reduce reliance on CRAs in their laws and regulations.

The FSB is given the responsibility to coordinate, monitor and report on the consistent implementation of agreed G20 and FSB financial reforms. Within that framework, the FSB has set up a coordination framework, in collaboration with international standard-setting bodies, to intensify monitoring and public reporting of implementation on a country-by-country basis. This framework will cover the full range of financial regulatory and supervisory reforms, with more intense monitoring in priority areas: the Basel capital and liquidity framework; OTC derivatives market reforms; compensation practices; G-SIFI policy measures; resolution frameworks; and shadow banking.

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## IV.6. Systemic Liquidity Analysis

As no one has adequately defined and quantified liquidity, which is markedly highlighted during the recent global crisis, it remains to be one of the hot topics of the day. This study aims to compare liquid assets with the liabilities which may not rollover, on a cash-flow basis according to their maturities along with an interbank loan analysis. Hence, this analysis is an extension of the liquidity stress test<sup>28</sup> which was presented in the previous Financial Stability Reports, covering now also the contagion effect coming from the interbank market.

In the first stage, the liquidity adequacy ratios of the 2nd maturity bracket, calculated pursuant to the Regulation Relating to the Measurement and Assessment of the Liquidity Adequacy of Banks issued by the BRSA, are simulated 1000 times based on some probability distributions. While doing this, hair-cuts and run-off rates are simulated under conservative scenarios such that these rates are set more severe than the legal ones. Each simulation corresponds to a different scenario covering different shocks coming from market risk factors. Simulation of the hair-cuts and run-off rates is designed considering the dependencies among each of the balance sheet items as well as the linkage between market and funding liquidity in a conservative manner. Banks can get benefit of liquidity facilities of central banks as long as they are able to submit eligible security as collateral. In general, banks' capacity to fund from central banks via repos is limited by their eligible collaterals, thus one of the most important risks in this area is the value fall of the collateral. Moreover, central banks do not accept collateral at more generous terms than the market, which is crucial for a well functioning market and avoiding moral hazard. Hair-cuts are sharp enough to take into account these issues. Also, the fact that the run-off rates of noncore liabilities and the derivatives have 100 percent rollover rate for each of the 1000 simulations supports conservative approach employed in the analysis.

In the second stage, contagion effect that could come from interbank market is examined. When banks are unwilling to fund or incapable of fulfilling their obligations to each other, system could be subject to considerable risk in terms of funding liquidity. In such a situation, banks which cannot rollover their funding or are not able to find new source of fund and/or cannot collect their receivables may tend to sell their securities portfolio. Due to confidence loss and depending on the supply-demand balance, banks may not be able to sell their securities at the price they expect and this may amplify liquidity problems, thereby leading a feedback loop between funding and market liquidity. As the liquidity problems get more severe, liquidity problems may be transformed into solvency problems.

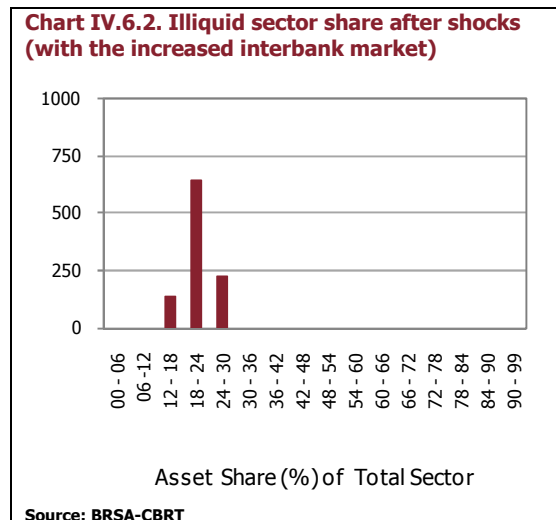
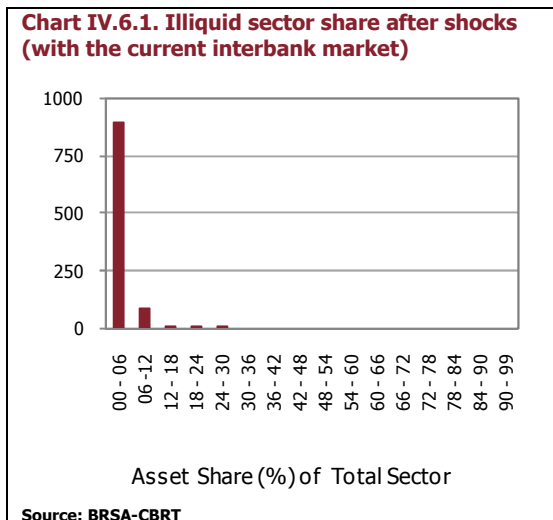
In order to integrate the interbank contagion effect to the liquidity stress test, banks' exposures to each other should be estimated<sup>29</sup>. To do this, banks operating abroad are assumed to be a single bank and the interbank loans among the banks operating in Turkey are estimated according to "Maximum Entropy (ME)" method. Exposures of banks operating abroad, which are taken as a single bank, to each of the banks operating in Turkey are the corresponding receivables/payables from/to the banks operating abroad and the figures regarding their receivables from and payables to the banks operating in Turkey are available data. Hence, it is only necessary to carry out ME for the banks

<sup>28</sup> Financial Stability Report-November 2009, No 9.

<sup>29</sup> Data for banks' exposure are accessible. The reason for RAS algorithm is to investigate various network structures.

operating in Turkey. To do this, given the banks' balance sheet data, assuming various amounts and structures for the interbank market, contagion effect is analyzed using different methods. First category of methods includes simulating the exposures directly based on "uniform" and "beta" distributions in addition to equal distribution. As for the second category total payables are simulated based on "uniform", "beta" and equal distribution assumptions, then bank-to-bank exposures are acquired by using RAS algorithm<sup>30</sup>. To be conservative, collaterals are not considered when a bank becomes unable to pay its obligation according to the simulation analysis. In other words, loss given default (LGD) ratio is set to be 100 percent. In practice, generally collaterals used in the interbank market are high quality and LGD could be taken lower. In the analysis 48 banks are included and policy responses are not taken into account, whereas in real world, policy reactions with effective liquidity actions undoubtedly limit the impacts of the shocks.

According to the findings, based on the fact that the interbank market in Turkey is small in total, contagion effect coming from interbank market is highly limited. As a consequence of this, when the actual total interbank exposures are used, the structural changes in the interbank market do not make any difference in terms of the results. On the other hand, as the interbank market becomes larger, contagion effect turns out be observable. This is due to the domino effect stems from the increased dependencies among banks. As seen from the charts below, around 900 simulations occur within the range of 0-6 percent share of the total sector, meaning that a small portion of the sector is affected by the severe shocks. Whereas, when the interbank market becomes larger, simulations concentrate on larger portion of the system (Charts IV.6.1 and IV.6.2).<sup>31</sup>



All in all, interbank market in Turkey, considering also the presence of the Central Bank, does not constitute an important source of risk, in terms of contagion effect. However, this exercise is carried out since banking sector has a dynamic structure. Stress tests results indicate that using the current interbank market size, the system is affected mainly by the simulated hair-cuts and run-off rates instead of the interbank market contagion. It is worth mentioning that the shocks that could come from international markets is taken into the stress testing analyses by assuming the run-off

<sup>30</sup> RAS algorithm is implemented by converting the VBA codes provided by Petr Jakubik, ECB economist, to Matlab platform.

<sup>31</sup> In the simulations, the criterion to default is 100 percent whereas the criterion to remain in the system is 80 percent.

rates of noncore liabilities as 100 percent and the results imply a robust banking system against severe shocks.

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## IV.7. Markets and Technology

Financial markets have significantly advanced in recent years and this has affected the capacity of market authorities in supervising market effectively. Impacts of technological developments on the financial markets are multidimensional. Developments helped foster globally competitive markets and reduced transaction time and cost. Also, among the benefits brought by technological advancement are generation of electronic audit trails, the enhancement of order and trade transparency, and the ability to develop and apply automated risk controls etc. On the other hand technological innovations pose some risks to the markets. These risks are discussed in the following pages.

Upon the request of G-20 Leaders, International Organization of Securities Commissions (IOSCO) prepared a Report on the *impact of technological developments on market integrity and efficiency* to be reported to the FSB. This Report is to present tools that inform and guide regulators to mitigate the risks of technological developments to market integrity and efficiency, to reach a consistent regulatory framework on a global basis and propose ways to mitigate the risks posed to the financial system by the latest technological developments. It is important for competent authorities to seek to ensure that financial markets continue to fulfill their role of financing the real economy, by channeling investments and savings, facilitating capital formation and efficiently allocating and transferring risks.

This Report focuses on the major technological and market developments and the risks they pose. These are: (i) algorithmic trading, (ii) market fragmentation and dark liquidity, (iii) direct electronic access, (iv) co-location, (v) tick sizes, and (vi) fee structures. In parallel to the said Report, the above topics will be presented briefly and then potential issues raised by high frequency trading (HFT), which is defined as a subset of algorithmic trading will be discussed more elaborately.

(i) Algorithmic trading: Algorithms have been used in trading for many years but their breadth, variety and complexity has continuously evolved and has affected the investors' profile. Algorithmic trading may provide liquidity to the markets in which they operate; however, the presence of high frequency traders discourages some market participants from participating as they feel at an inherent disadvantage to these traders' superior technology. Algorithmic trading has started to dominate markets and algorithms may now be designed to predict the presence and actions of other algorithms, which are redesigned frequently. Interconnections between markets, which may be amplified by algorithms programmed to operate on a cross-market basis, may allow for a shock to pass rapidly from one market to another, potentially increasing the speed at which a systemic crisis could develop.

(ii) Market fragmentation and dark liquidity: The technological advances and regulatory changes have resulted in increased competition and this has yielded a number of benefits, among which are lower trading fees per transaction and enhanced potential for innovation as venue operators aim to compete to attract liquidity. However, competition has also led to fragmentation of markets, both in terms of liquidity and information. This has increased search costs and reduced transparency. Dark liquidity is the trading volume created by institutional orders that are unavailable to the public. Dark liquidity has long existed and endowed with some positive features, however the degree of automation of trading in dark pools and dark orders have raised the concerns regarding especially risks related with transparency price discovery and market fragmentation.

(iii) Direct electronic access (DEA): As the electronic platforms are used more intensively, customers being given direct access to the markets have become a concern for the market authorities. Direct electronic access poses a number of risks to market integrity., such as: without proper controls, for a customer to intentionally or unintentionally cause a market disruption; an increased risk of non-compliance with market rules, especially where those that directly access markets are not familiar with regulatory requirements; credit risk, whereby an intermediary will be held financially responsible for trades that are beyond its available financial resources; a lack of information to the intermediary from the market and/or the clearing house regarding the trading by the DEA customer.

(iv) Co-location: Co-location services exist to house trading systems used by market participants in a location close to trading venue servers. Co-location offers the advantage of extremely low latency, an essential ingredient in certain trading strategies typically used by high frequency traders and other firms wanting high speed access to the markets. Its provision has increased considerably in recent years, in part with the building of sometimes massive out-of-town data centers. The offering and use of co-location services raises potential issues with regard to the costs associated with accessing markets and liquidity.

(v) Tick sizes: A tick is the minimum price movement by which an instrument's price can move. Typically, as the liquidity and price of a financial product decrease, its tick size gets smaller. Tick sizes are determined by regulation in some jurisdictions, and left to market forces in others. Lower tick sizes can benefit retail investors by increasing competition, tightening spreads and lowering trading costs, but it may cause some problems regarding the orders and transactions. Lowering tick sizes smaller tick sizes may inappropriately encourage HFT firms to submit orders that are then cancelled prior to execution.

(vi) Fee structures: Competition between trading venues is reflected in both the structure and the level of fees they charge their members. The main approaches in use at trading venues today include graduated pricing, differential pricing depending on the nature of the order (proprietary versus client account), and maker/taker" pricing. Importantly, the high competition in the market means that fee structures are commonly more complex and more frequently revised. The fee structures in place may have changed market behaviours; for this reason public sector regulators in some jurisdictions regulate trading venues' fee structures. Some types of fee structures may raise questions in terms of the risk of distorting the price formation process. Thus, fee structures should not result in inappropriate discrimination between members or lead to an overt bias in trading methods.

HFT, as a subset of algorithmic trading, has been the focus of discussions especially after the Flash Crash Event of May 2010<sup>32</sup>. Also the high share of HFTs in the market raises the importance of the issue. Especially, HFTs on equity is known to have highly large volume.

As mentioned in the Report, Defining HFT is difficult and there is no single agreed definition. Determining a precise definition may not even be practical for regulatory purposes as it could easily become obsolete or the object of regulatory arbitrage as HFT may be used in different ways across

<sup>32</sup> For detailed information please refer to "Testimony Concerning the Severe Market Disruption on May 6, 2010" <http://www.sec.gov/news/testimony/2010/ts051110mls.pdf>



various markets and asset classes. An additional complexity in seeking to define HFT is that it encompasses many players, different organizational and legal arrangements and, most importantly, a wide number of diverse strategies. HFT is hence a very quantitative trading form. It draws from the latest advances in statistical and econometric techniques and employs state of the art computer and communication systems. Algorithms are used to interpret signals from the market and automatically implement trading strategies that involve round-trip trades that last for just seconds or even milliseconds. HFT firms profit mostly from small price changes and by small but frequent trades executed. The strong focus on speed of execution and portfolio turnover are probably the key characteristics that distinguish HFT from other types of algorithmic trading. The difficulty in distinguishing HFT from other transactions leads to data constraints and causes some challenges for the authorities.

A number of common features and trading characteristics related to HFT can be identified as follows: (i) It involves the use of sophisticated technological tools for pursuing a number of different strategies, ranging from market making to arbitrage; (ii) It is a highly quantitative tool that employs algorithms along the whole investment chain; (iii) A large number of orders are cancelled in comparison to trades executed; (iv) It usually involves flat or near flat positions at the end of the trading day, meaning that little or no risk is carried overnight, with obvious savings on the cost of capital associated with margined positions; (v) It is mostly employed by proprietary trading firms or desks; and (vi) It is latency sensitive, hence it requires much faster execution of trading strategies than its competitors.

The empirical evidence on the impact of HFT on markets is still scarce due both to a limited availability of appropriate dataset. The academic literature has so far mainly focused on some measures of liquidity, price discovery and volatility. Main difficulty related with disentangling the impact of HFT from other factors stem from highly dynamic structure of the trading environment. Indeed, the ongoing emergence of HFT has coincided with a period of high market turbulence, regulatory reforms and regulatory actions. Moreover, HFT is employed in many different strategies, each potentially having different impacts on the markets. These issues call for caution to be exercised in drawing firm conclusions from the existing body of research, and more is needed. In IOSCO's Report the risks posed by HFT are grouped as follows: (i) the efficiency of markets; (ii) the fairness and integrity of markets; and (iii) the stability and resiliency of markets.

1- The efficiency of markets: The main concern is the quality of the price discovery process in the context of a growing share of trading accounted for by HFT firms. The very short term nature of many HFT strategies, coupled with high speed, high volume trading algorithms, might move the market prices away from fundamental values in the short term and impair the price discovery process. Having substantial amount of HFT participation in markets may lead fundamental traders to reduce their participation in such markets and increase their use of dark execution venues. However, the limited empirical evidence and dataset available so far has not clearly identified negative effects of HFT on the efficiency of the price discovery process. Another concern regards the quality of liquidity provided by HFT firms. The events surrounding the May 6 "Flash Crash" suggest that HFT firms, whilst not triggering the crash, rapidly withdrew from the markets as they began to move, thereby

intensifying the liquidity crisis. The main concern is that the fast and automatic operation of algorithms by HFT firms may increase transitory volatility in both normal and turbulent market conditions, for example through an error in the programming of an algorithm causing it to buy or sell heavily and unexpectedly.

2-The fairness and integrity of markets: HFT firms invest heavily in technological infrastructure. The development of successful algorithms also requires very skilled and expensive human resources. A challenge posed by HFT is the need to understand whether HFT firms' superior trading capabilities result in an unfair advantage over other market participants such that the overall fairness and integrity of the market are put at risk. Moreover, the cost to acquire the most advanced technology will bring the concern for the companies that they may not be able to afford to meet that cost at some point. In such a situation the ones who are disadvantageous may leave the markets and this may create the risk of liquidity dry-up and thereby adversely affecting the price discovery process, which will again concern the authorities. Furthermore, with the algorithms, consciously or not, HFT firms may hinder the markets well functioning with various strategies.

3-The stability and resiliency of markets: Stable and resilient markets boost investors confidence and participation, which in turn help make markets more liquid and efficient. However, the nature of HFT contributing to liquidity dry-ups, underlines the importance of regulatory structures. A clear understanding of the degree by which HFT firms may exacerbate the transmission of shocks across markets is still lacking. However this issue has not been also elaborated yet in terms stability and resilience of the markets. The heavy reliance on algorithms for trading decisions and execution may pose serious risk when one or more algorithms behave in an unexpected way. Moreover, rogue algorithms, may trigger a chain reaction and, in turbulent market conditions, withdraw liquidity from the market or impair orderly trading. Furthermore, HFT can lead some problems based on the risks associated with the technological infrastructures.

All in all, HFTs provide significant liquidity to the markets, this liquidity can easily dry up as observed from the past experiences, and finally this issue has intense technological side. All these require the regulations to be designed highly delicately.

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## IV.8. Turkey's Foreign Currency Position

Turkey's foreign currency net general position was calculated in order to monitor Turkey's foreign currency position over time. In order to compute this figure, the foreign currency assets and liabilities of all sectors, namely; public sector, banking sector, non-bank financial sector, corporate sector, CBRT and households; composing Turkey's foreign currency position were calculated individually. The foreign currency asset and liability figures for these sectors were added up to attain Turkey's total foreign currency asset and liability figures. The foreign currency net general position was calculated by subtracting liabilities from assets. One important point to note in this calculation is that an item in an individual sector's assets can be included in another sector's liabilities. For instance, foreign currency deposit that the public sector holds at the CBRT accounts is included in public sector's foreign currency assets, whereas it is included in CBRT's foreign currency liabilities. Similarly, foreign currency deposit of households which is a foreign currency asset for household is an liability item for the banking sector.

Foreign currency assets of the public sector consist of foreign currency deposits and securities of the general budget and special budget institutions, regulatory and supervisory institutions, social security institutions, state economic enterprises, funds, local administrations, revolving funds and other public institutions. Foreign currency liabilities of the public sector on the other hand, consist of external debt of central government and other public and foreign currency denominated as well as foreign currency indexed domestic debt of central government.

In the calculation of CBRT's foreign currency position, the total foreign currency assets and liabilities obtained from weekly statements was utilized.

The foreign currency position data for the banking sector was obtained from the statements reported by banks in accordance with the "Communiqué on the Calculation and Implementation of Foreign Currency Net General Position/Equity Standard Ratio by Banks on Consolidated and Non-Consolidated Basis" published in the Official Gazette No. 26333 dated November 1, 2006. Both on and off-balance sheet foreign currency assets and liabilities were included.

In the calculation of non-bank financial institutions' foreign currency position, unaccrued income was subtracted from the total foreign currency assets of factoring and leasing companies and for consumer finance companies foreign currency indexed receivables were added to total foreign currency assets obtained from their balance sheets. Liabilities on the other hand, were calculated by subtracting foreign currency equity from total foreign currency liabilities of the non-bank financial institutions.

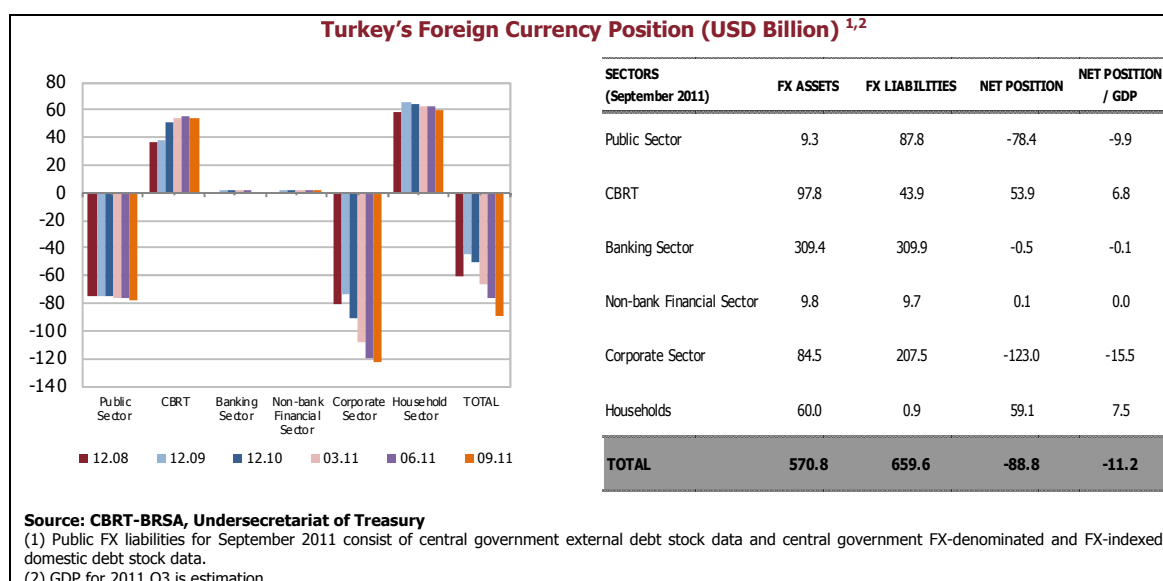
"Foreign Exchange Assets and Liabilities of Non-Financial Companies" data published on CBRT's website every three months was employed for the determination of corporate sector's foreign currency position. The "Assets" and "Liabilities" headings in this table are used for net position calculation.

The foreign currency assets of the household sector consist of household's foreign currency deposits and participation funds held at deposit and participation banks, foreign currency GDDS and Eurobonds held by real persons. Foreign currency liabilities, on the other hand, consist of foreign currency indexed loans extended to households by banks and consumer finance companies.

According to the foreign currency net general position calculation outlined above, Turkey's foreign currency short position which was USD 50.7 billion as of end-2010, increased to USD 66.5 billion as of March 2011 and as of June 2011 USD 76.7 billion, owing to the rise in corporate sector's short position.

The foreign currency short positions of the corporate sector, the public sector and the banking sector were USD 123 billion, USD 78.4 billion and USD 0.5 billion respectively as of September 2011. Households, CBRT and non-bank financial sector, on the other hand, carried USD 59.1 billion, USD 53.9 billion and USD 0.1 billion foreign currency long position. Turkey's foreign currency short position as a percent of GDP is 11.2 as of September 2011.

In Turkey, the public sector and the corporate sector carry foreign currency short position, CBRT and households carry foreign currency long position, whereas the banking sector and the non-bank financial sector carry foreign currency square position. Accordingly, the public sector and the corporate sector are the most vulnerable sectors in Turkey to a depreciation of the Turkish lira.



## IV.9. Financial Consumer Protection

Developing policies on protection of consumers using financial products or services contributes to financial stability, increases competition within financial markets and influences household's risk management in a positive manner. Along with households' informed investment and saving decisions, being protected from potential risks is gaining greater importance while financial products and services are getting more complex and diversified. In this framework, studies regarding strengthening and developing local and international policies to protect consumers' rights have intensified with the global financial crisis majorly attributed to pressure arising from households' increased financial risks in the financial system. Parallel to the international efforts, Financial Stability Board (FSB) has also dealt with financial consumer protection issues covering especially retail credits from financial stability perspective.

At the G20 Summit in November 2010 in Seoul, G20 leaders asked the FSB to prepare a report on financial consumer protection in collaboration with OECD and other international institutions in the field of financial stability and report back by the November 2011 Summit.

With the harmonized collaboration of all related institutions, a comprehensive report analyzing current situation and providing international comparisons concerning regulations and implementations on financial consumer protection was prepared. This report was mainly prepared by the FSB meanwhile the Task Force on Financial Consumer Protection which was established under the Committee on Financial Markets within OECD developed high level principles on financial consumer protection<sup>33</sup>. The report and principles were endorsed by G20 Finance Ministers and Governors and then published in October 2011.

The report analyses consumer credits including mortgages, credit cards, secured and unsecured loans and largely draws on FSB members' responses to the questionnaire sent to them along with the OECD members in May 2011<sup>34</sup>.

While efforts regarding strengthening regulatory and supervisory framework of the financial system against fragilities are on progress, it is emphasized in the report that these studies should be coherent with effective supervision on financial consumer protection. In this framework, this report provides a global overview for policy initiatives improving regulatory scope on consumer protection and authorities' current and planned studies on this issue. The report provides strengths and weaknesses of developed practices with international comparisons including Turkey.

Though institutional arrangements vary across countries, it ranges from a single regulator to two or multiple responsible agencies for protecting financial consumers. Additionally, most of the countries indicate that consumer protection and prudential supervision are complementary factors. In

<sup>33</sup> Turkey was represented by the CBRT in this Task Force. The established principles are listed as; Legal, Regulatory and Supervisory Framework; Role of Oversight Bodies; Equitable and Fair Treatment of Consumers; Disclosure and Transparency; Financial Education and Awareness; Responsible Business Conduct of Financial Services Providers and Authorized Agents; Protection of Consumer Assets against Fraud and Misuse; Protection of Consumer Data and Privacy; Complaints Handling and Redress; Competition.

<sup>34</sup> This questionnaire was responded by the BRSA, the Ministry of Customs and Trade and the CBRT for Turkey.

fact, though many countries do not have explicitly determined mandates on financial consumer protection; macroprudential supervision measures indirectly protect consumers.

Strengthening consumer protection framework mainly concentrates on responsible bank lending practices, disclosures about risks and details for financial transaction and prevention of excessive indebtedness. Besides regulatory framework to protect consumers, it is also emphasized in the report that consumer rights do come with consumer responsibilities.

Assessments and conclusions drawn from this report include policy recommendations and enlighten potential further studies on financial consumer protection. Establishing an international body to coordinate initiatives at both national and international level, review international implications and develop best practices, and strengthen supervisory tools by identifying gaps and weaknesses are proposed as further studies in the report.

Parallel to all these assessments, it is evaluated that financial consumer protection and financial stability are complementary issues and further studies on consumer protection will strengthen financial stability.

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## IV.10. Financial Stability Map

### FINANCIAL STABILITY MAP-INDICATOR SET

<b>Global Economy</b>
OECD Composite Leading Indicator
Confidence Index (US Conference Board, Ifo Pan Germany)
Inflation Volatility
<b>Global Markets</b>
Asset Prices (Equity, Commodity)
Volatilities (VIX, OVX)
Interbank (TED Spread and OIS Spread (US and Euro Zone))
Risk premium (10-year iTraxx Europe Crossover Index and EMBI Global)
<b>Domestic Economy</b>
CBRT Composite Leading Indicator
Confidence Index (Consumer and Corporate Sector)
Inflation (CPI) rate volatility
Loans/GDP
<b>Domestic Markets</b>
FX Rates and Implied Volatilities (TL/USD and TL/EUR)
Risk Premium (Turkey 5-year CDS Premium, EMBI+ Turkey)
ISE30
Benchmark Government Securities Interest Rate
Market Liquidity Index
Benchmark Government Securities Interest Rate Volatility
<b>Balance of Payments</b>
Current Account Deficit/GDP
FDI/GDP
Short Term External Debt/International Reserves
Foreign Trade Rates (TL)
<b>Public Sector</b>
Budget Balance/GDP
Total Debt Stock/GDP
Net New Domestic Borrowing/Domestic Debt Stock
Domestic Debt Interest Payment/Tax Revenues
<b>Corporate Sector</b>
Non-Financial Sector Borrowings/GDP
Non-Financial Sector Net FX Position
Corporate Loan NPLs
Number of Newly Established Companies and Cooperatives (Net)
Ratio of Over-Drawn Cheques
<b>Household Sector</b>
Household Liabilities/GDP
Unemployment Rate
Household Loan NPLs
<b>Banking Sector</b>
<b>Capital Adequacy</b>
Regulatory Capital/RWA
Regulatory Tier 1 Capital/RWA
Non-Performing Loans (net of Provisions)/Capital
<b>Asset Quality</b>
Non-Performing Loans /Gross Loans
Sectoral Concentration in Loan Portfolios
<b>Liquidity</b>
Funding Liquidity
(Narrow) Liquid Assets/Total Assets
(Broad) Liquid Assets/Total Assets
Total Liquidity Adequacy Ratio (7 day)
Total Liquidity Adequacy Ratio (1 month)
Loans/Deposits
<b>Sensitivity to FX and Interest Rates</b>
Net Open FX Position/Capital
Interest Rate Sensitive Gap (TL)/Capital
Interest Rate Sensitive Gap (FC)/Capital
<b>Profitability</b>
ROA (Return on Assets)
ROE (Return on Equity)
Net Interest Margin= (Net Interest Income/ (Net Interest Income+ Non Interest Income)
Non-Interest Expense/(Net Interest Income+ Non-Interest Income)

Although there are intensive discussions, yet there is no final agreed definition for the financial stability concept. However, commonly in analyses, indicators that have the potential to affect financial stability are assessed under an integrated macro approach. One of the best representation ways of such a macro approach is the financial stability map. In this approach, the closer to the center, the more stable the sector is. Analysis allows time series comparisons within each sector. Among the sectors, the comparison can be made in terms of the directional change in position with respect to the center. Each of the sectors in the Map consists of selected variables which enable financial stability analysis. Above indicator set is built after examining international work, reports and CBRT Financial Stability Report as well as the literature review. Taking into account the data constraints and interrelations among the indicators, the indicator set is finalized.

Moreover, to composite the indicators within each sector into a single indicator for each sector, indicators are transformed by using percentile method, and then within each sub category equal weights are applied. Finally, for each sector, time series of indicators are acquired. These indicators presented by using a cob-web presentation to do a macro analysis. Some points to mention regarding financial stability map is:

- Each sector can only be compared within a historical perspective in itself not with the other sectors in terms of the amount.
- The ranking positions of the indicators in the Map show whether there is an increase in risk or not.
- In terms of the distance from the center, sectors cannot be compared directly, however, indirectly they can be compared whether they become closer or distant to the center.
- However, this analysis does not allow any comparison among the sectors in terms of the distance to the center.

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