Non-financial sector's foreign exchange risk: new project of foreign exchange position monitoring system in Turkey[1]

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[1] This paper was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

Non-Financial Sector's Foreign Exchange Risk: New Project of Foreign Exchange Position Monitoring System in Turkey[1]

Oya Gençay[2]

Abstract

Non-financial sector's net foreign exchange (FX) open position has risen gradually in Turkey since 2003. Despite the fact that the sector has a high open FX position on aggregate, natural and financial hedge management of firms are not at desired levels. As Turkish Lira (TL) depreciates, balance sheets worsen, which in turn threaten the financial sector, and the whole economy from counterparty and systemic risk perspective. At the Central Bank of The Republic of Turkey (CBRT), a new system that collects net FX and hedging positions of real sector firms is going to be established. One of the expected benefits of the project is to identify risky firms and sectors, i.e. those firms with unhedged open FX positions. This will also allow introducing regulations that would penalize unhedged open FX position and/or promote hedging with financial instruments, if necessary. This study discusses FX position reporting details and potential benefits of the new project from a macro-prudential perspective.

Keywords: credit registry data, net FX open position, FX risk of non-financial sector, hedging positions of real sector firms, natural hedge

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Contents

1. Introduction

The purpose of this paper is to analyze FX position of non-financial corporations (NFCs) in Turkey and present a new project which aims to monitor the FX position of those firms. In the paper, previous and current FX position of non-financial firms in Turkey and studies related to FX position are discussed. After giving an introduction about the general scope of the project, details of the project is discussed.

In Turkey, non-financial firms can hold FX or FX-indexed loans with some limitations. They can get loan from domestic banks or foreign banks directly or through domestic banks. According to Resolution 32 on Protection of Turkish Currency Value, firms without FX revenue are allowed to use FX loan over US$5 million and with at least 1 year average term. FX indexed loans on the other hand can be used for trade and professional purposes. This funding opportunity may result sudden increase in FX open position for the NFCs in case of FX rate fluctuations.

Both positive global trends in value of USD and inflation data resulted in higher USD/TL value between September 2016 and January 2017. In addition to that, geopolitical risks and downgraded rating of Turkey contributed depreciation of TL in this period. As a result, adverse signals started to come out of companies that had open position. This issue has come to the fore in the Financial Stability Committee which turned into «Systemic Risk Data Monitoring Model» and after couple of meetings with public authorities, the project was decided to be run by the Central Bank for the time being. Currently, the determination of the reporting details of the project has not finished yet, but a pilot period was run by Central Bank between April and June 2017.

In line with the developments in the international platform and the needs arising after the global crisis, the Financial Stability Committee, which is composed of the Undersecretary of Treasury and the Central Bank, Banking Regulation and Supervision Agency (BRSA), Capital Markets Board of Turkey (CMB) and Savings Deposit Insurance Fund (SDIF) Heads and whose main duties are monitoring and preventing systemic risk and ensuring the coordination of systemic risk management, has been established under the chairmanship of the Minister of the Treasury.

The duties of the committee are:

- To identify and monitor the systemic risks that may spread throughout the financial system and to propose the necessary measure and policies to reduce such risks,

- To make warnings about the systemic risks to the relevant units,

- To follow the applications related to warning and policy recommendations,

- To evaluate the systemic risk management plans to be prepared by the related institutions,

- To provide coordination regarding systemic risk management,

- Providing all kinds of data and information from public institutions and organizations in relation to the field of duty,

- Ensuring the coordination of policies and practices between institutions,

- Deciding on other issues authorized by legislation

It is a fact that the rapid increase in the FX rate has a significant negative effect on non-financial companies as well as financial sector. Monitoring and acknowledging non-financial sector in order to take required precautions have a huge positive role in preventing systemic crises and from financial stability perspective.

2. Existing Data Related to Open FX Position of Non-Financial Corporations under Turkish Credit Registry System and Central Bank

In this section of the paper, existing data related to FX position of non-financial companies is discussed in order to understand what the motivation behind the initiation of the new project was. It should be understood that currently we have some data related to analyze FX position of the real sector but some of them are not at the firm level. Even if we had all of the required data to calculate firms' open FX position, since different institutions own different part of the required data, compiling it from different institutions may result in mismatches or wrong results. Although it seems feasible, every institution has different regulations for the data content and description. In order to achieve consistency in firm based FX position data, ensuring the compilation of the data under one center is very important.

2.a. Dataset under Credit Registry

Credit registry in Turkey is run by The Banks Association of Turkey (BAT)-Risk Center. Banks Association of Turkey-Risk Center started its operation in June, 2013. Risk Center used to be run by CBRT from 1951 until the end of June 2013.

Risk Center is established as a part of the Banks Association of Turkey in order to gather risk information on customers of crediting institutions and other financial institutions that is approved by the Banking Regulation and Supervision Board, and to share such information with the said institutions and with natural persons or legal entities themselves or subject to prior consent thereof, with legal entities.[3] FX data gathered by BAT-Risk Center contains tax identification number, name of the firm, limit of the loan, maturity information, debt amount, sectoral codes (NACE Codes), type of the loan (cash, non-cash, non-performing, etc.), province and district code, financial institution's code and its name.

The BAT-Risk Center data covers all FX and FX indexed loans granted by domestic and foreign banks through domestic banks, but does not cover "direct external loans". And, this data by itself is not enough to calculate net FX position of NFCs as loans are just one component of liability side of a balance sheet. Additionally, limits and risk amounts within the scope of futures and options contracts and other similar contracts allocated to real and legal persons at banks are notified to Risk Center. However, derivative contracts between firms are not included in this dataset.

2.b. Dataset under the Central Bank of Turkey

According to the CBRT Law, it is authorized to collect data on economic issues and produce statistics by compiling and processing data. With the aim of monitoring the developments regarding real sector firms and providing the public with comprehensive and systematic information on the issue, the "Company Accounts" study has been prepared depending on the annual financial statements since 1990 with participation, cooperation and support of the real sector firms.

Balance sheets and income statements of enterprises on a solo basis prepared for corporate tax purposes in accordance with Tax Procedure Law of Turkey are used in the preparation of Company Accounts.[4]

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[3] https://www.riskmerkezi.org

[4] Methodological Information on "Company Accounts Statistics", Statistics Department, Real Sector Data Division, http://www.tcmb.gov.tr

Despite of the annual information about FX loans in the balance sheets and income statements of the real sector firms, the total FX position of the real sector could not be reached due to the limited participation of these firms.

Regarding derivative transactions of the real sector firms aiming for the hedge of the on-balance sheet open position, banks report their customers' derivative operations on type and amount details to CBRT. However this dataset includes derivative transactions of the firms that subject to transaction only with banks over-the-counter and does not include all derivative agreements.
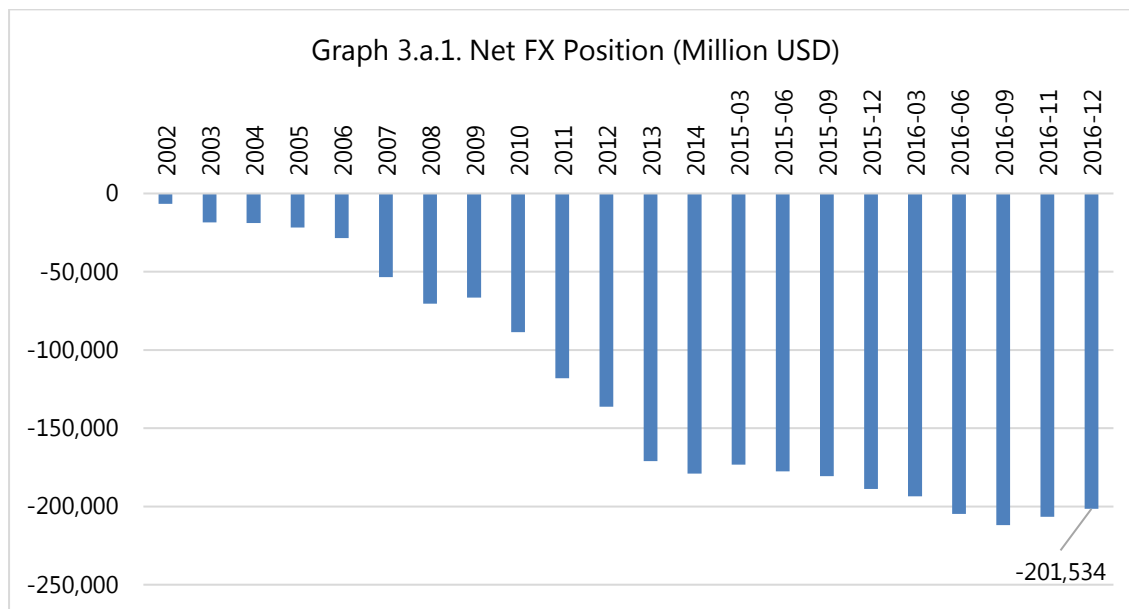
3. Net FX position of Non-Financial Sector in Turkey and Some Related Statistics

3.a. Net FX Position of Non-Financial Sector in Turkey

The net FX position could be defined as the difference between FX denominated assets and liabilities in the balance-sheet. As it shows the FX indebtedness of real sector, monitoring FX position is beneficial from macro-prudential perspective.

Turkey's non-financial firms' net FX position is probably the most cited risk factor recently. The main reason behind this concern is that the depreciation in TL would deteriorate balance sheets of NFCs which could result in mass bankruptcies.

During the last 10 years, the FX open position of non-financial corporations in Turkey has increased dramatically (Graph 3.a.1). As a result of the liability dollarization, total FX-denominated debts of non-financial firms in Turkey are much higher than their FX-denominated assets.[5] The reason for companies' fragility is not just borrowing in terms of foreign currency but the existence of open position due to income, asset and liability mismatch.[6]

Graph 3.a.1. Net FX Position (Million USD)

Source: CBRT

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[5] Hülagü and Yalçın (2014)
[6] Gençay (2007)

Net open FX position of non-financial companies in Turkey has reached to USD$201.5 Billion by the end of 2016. This open FX position has created some concerns in terms of macro-prudential perspective because of volatile exchange rates during the periods of uncertainty. Conversely, this mismatch could also make it possible for firms to grow at higher rates in normal times by easing the financial constraints of firms by serving the facility of borrowing in FX at longer maturity.[7] Besides past macroeconomic instability, due to the lack of financial depth for meeting the financial needs of them, non-financial corporations have intensely preferred to use FX loans in Turkey.[8] However, it should be kept in mind that high financial dollarization could result in a deeper economic crises.[9] As Krugman (1999) argued, the main reason behind the twin crises is open FX position in the real sector.

On the other hand, small firms without FX revenues could not accumulate debt in foreign currency according to current legislation on foreign currency loans in Turkey. Hence, firms with open FX position are generally large-scale firms either having a significant amount of export revenues or dealing with projects which have potential to generate FX revenues. This enhances the financial soundness of Turkey's real sector against FX fluctuations.

In contrast to ongoing negative net open FX position of non-financial corporations, short-term FX position of firms is positive. By December 2016, short-term FX position has reached over US$2 Billion (Graph 3.a.2). The fact that the short-term FX position is positive is an indicator in terms of the resistance of the firms to handle short-term currency shocks.[10]

Graph 3.a.2.Short Term Net FX Position (Million USD)
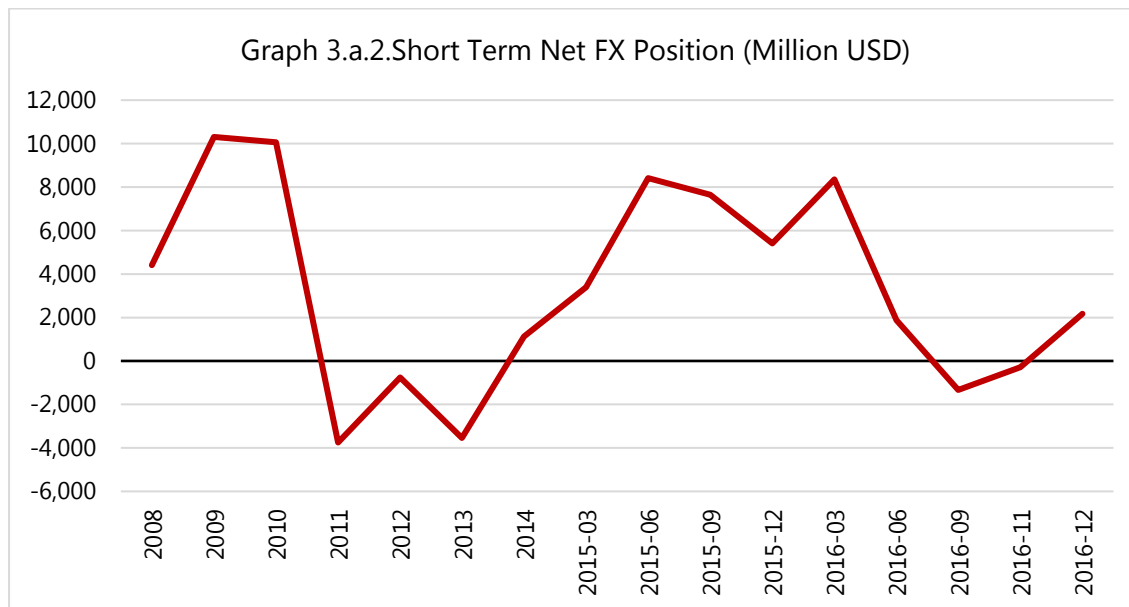
Source: CBRT

Özatay (2006) argues that good supervision of open FX position is very important. Non-financial companies need to be well-evaluated by the banks and only then loans should be granted. With the lack of open FX position supervision, rapid increases in exchange rate would disrupt balance sheets of firms and hence create a lower growth rate.

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[7] Hülagü and Yalçın (2014)
[8] Alp and Yalçın (2015)
[9] Rennhack and Nozaki (2006)
[10] Financial Stability Report, November 2016.

3.b. FX Rates and Weighted Average Interest Rates for Commercial FX Loans

In addition to the volatility in international markets, both geopolitical tensions and domestic uncertainties resulted in exchange rates in Turkey to be affected more adversely compared to other emerging economies during the last quarter of 2016 and reached to historical record levels in January 2017 (Graph 3.b.1).

Graph 3.b.1.Nominal FX Rates

EUR/TRY   USD/TRY

EURO=4.1421 TL
USD=3.8779
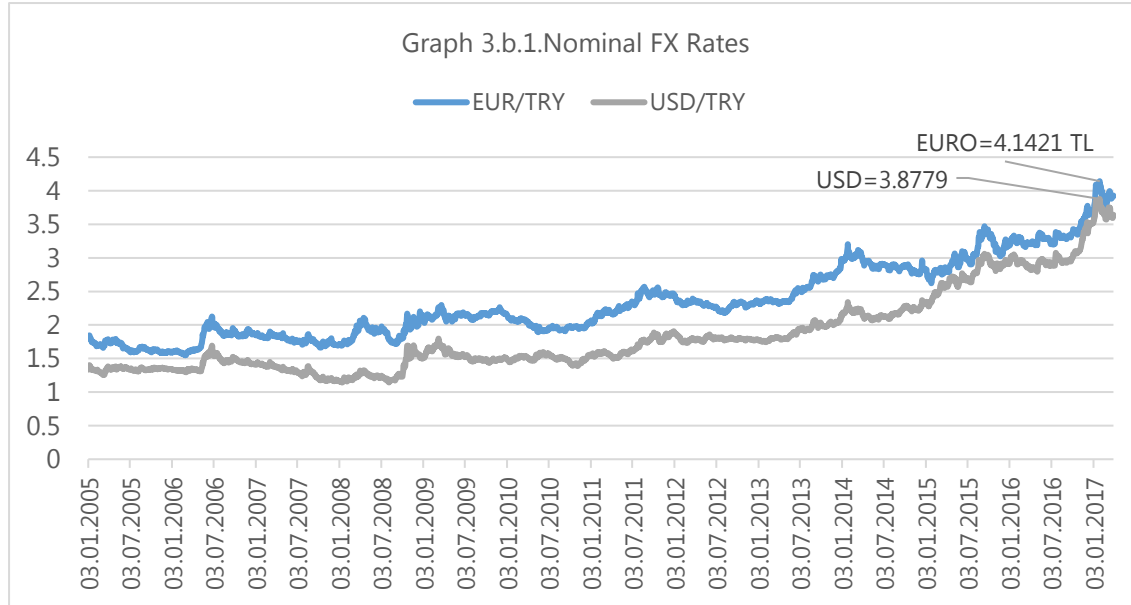
Source: CBRT, Last data: 30.03.2017

Progress in FX lending opportunities and lower interest rates of FX loans have been powerful motivations besides moderate exchange rate levels for firms to use FX loan in the past couple of years. Below weighted average interest rates of Euro and USD loans for commercial purposes are visualized (Graph 3.b.2). As it is seen from the graph, although the gap between TRY, EUR and USD interest rate lines narrows in time, TRY loan interest rate line never intersects with others. Another thing is that TRY line is always higher than those of other currencies.

Graph 3.b.2. Weighted Average Interest Rate for Commercial Loans (%)

TRY   Euro   USD
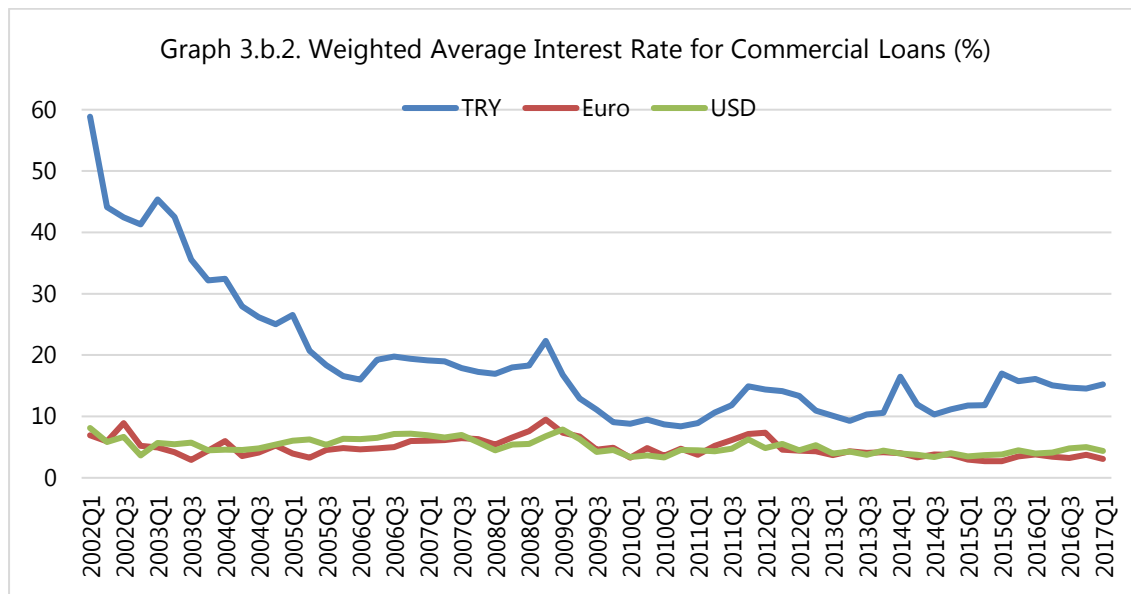
Source: CBRT

3.c. Net FX Position Related to Other Economic Indicators

In order to better understand what the open position numbers mean in Turkey, net open position is compared to some macroeconomic indicators. Net open FX position in Turkey has reached to approximately 27% of GDP as end of 2016 due to the surge in FX debt stock. Export revenues provide natural hedge against FX fluctuations. Net open position to goods and services export ratio shows us to what extent open position can be covered by export revenue. It shows that export is not enough to cover open position as the ratio is around 120%. In the former years, natural hedge was high as the ratio was about 10%. Another ratio is open FX position to Central Bank gross FX reserves. This ratio also reached from 25% to 220% in the last 14 years (Graph 3.c.1).
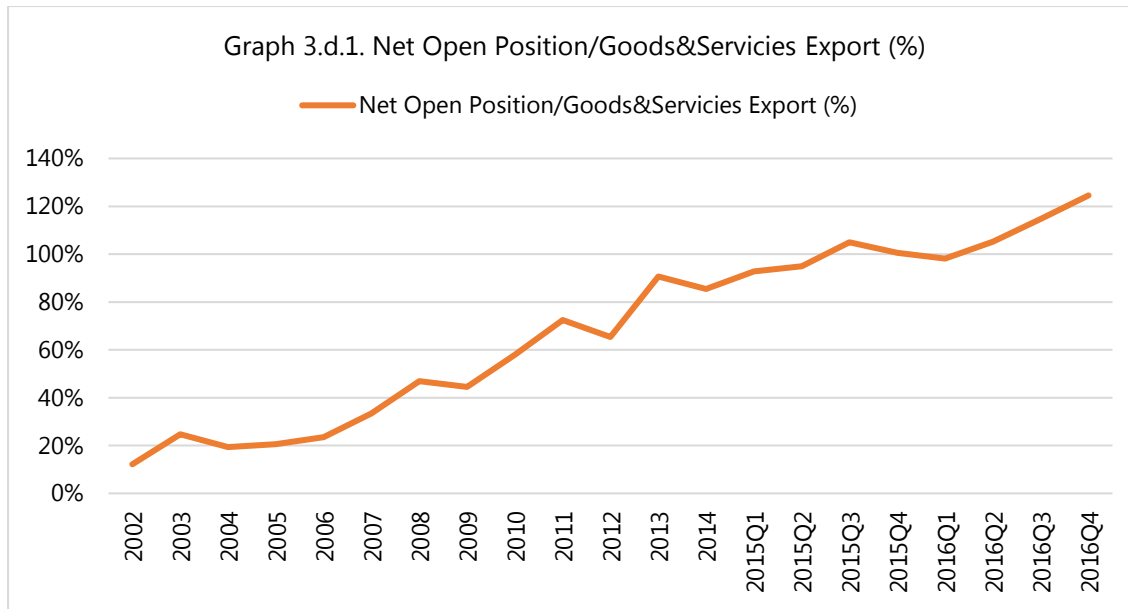

Graph 3.c.1. Net FX Position Related to Other Economic Indicators (%)
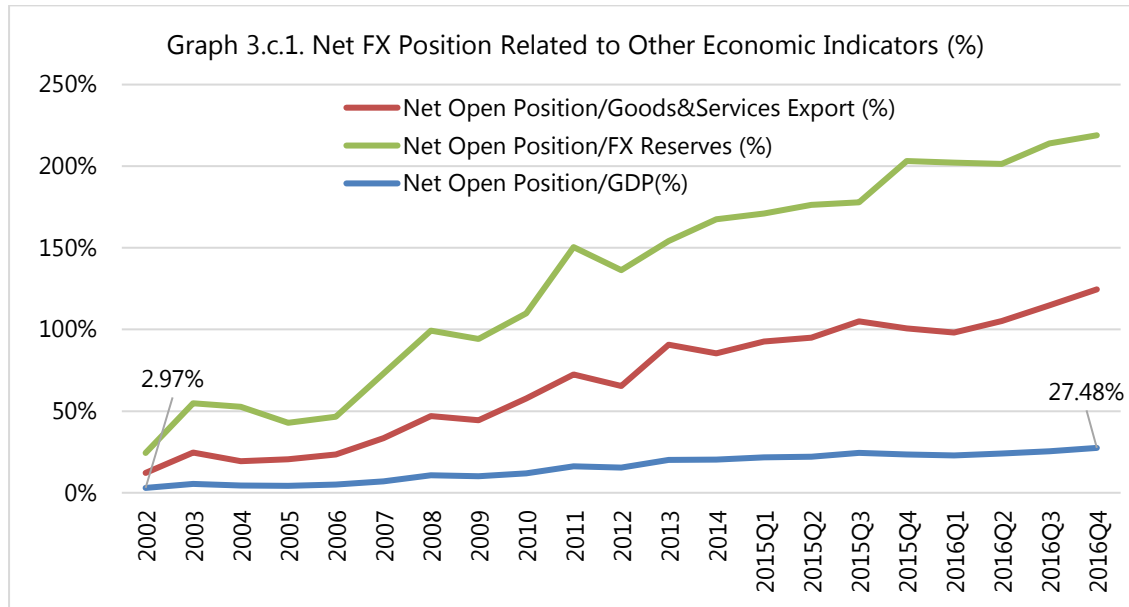
Source: CBRT

3.d. Natural Hedge

A natural hedge is the reduction in risk that can arise from an institution's normal operating procedures. A company with significant sales in one country holds a natural hedge on its currency risk if it also generates expenses in that currency.[11]
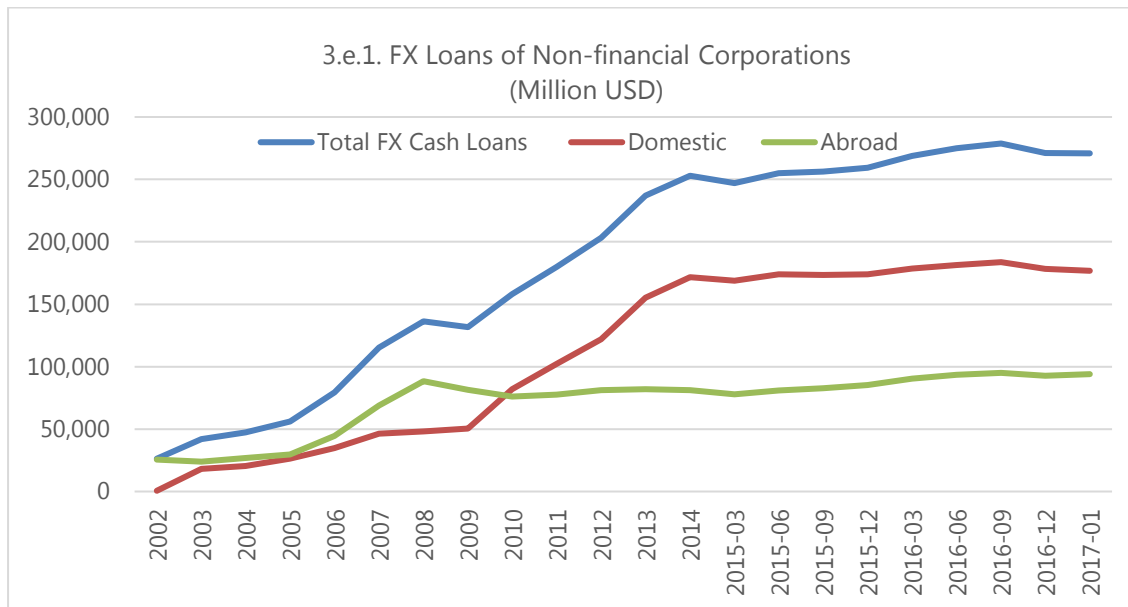
Export is a natural hedge for companies that borrow in other currencies. Natural Hedge position is represented as «a ratio of open FX position to goods and services export». Here it is aimed to see to what extent FX open position is covered by FX income through export of goods and services. As seen from the graph, natural hedge has diminished which means the ratio is increased over time which has climbed from 10%s to 120%s. This ratio tells us that in 2002 FX position was just 10% of goods and services export, but now it is 120% of the export (Graph 3.d.1).

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[11] http://www.risk.net/definition/natural-hedge

Graph 3.d.1. Net Open Position/Goods&Servicies Export (%)

— Net Open Position/Goods&Servicies Export (%)



3.e. Total FX Loans and Maturity of Domestic FX Loans

Amount of total FX loan as a liability component has increased over time. Especially domestic FX loans exceeding external loans after 2010 is a striking development which has been one of the main reasons behind high open FX position (Graph 3.e.1).

3.e.1. FX Loans of Non-financial Corporations (Million USD)

— Total FX Cash Loans   — Domestic   — Abroad

Source: CBRT

On the other hand, from maturity perspective, long-term domestic FX loans have the highest share in the non-financial sector's FX debt distribution. It is worth to mention that FX loans having long term maturity is interpreted as a positive sign. Only about US$30 Billion (18%) of US$165 Billion outstanding loan amount has a short-term maturity as of January 2017 (Graph 3.e.2).

3.e.2. Maturity of Domestic FX Loans (Million USD)
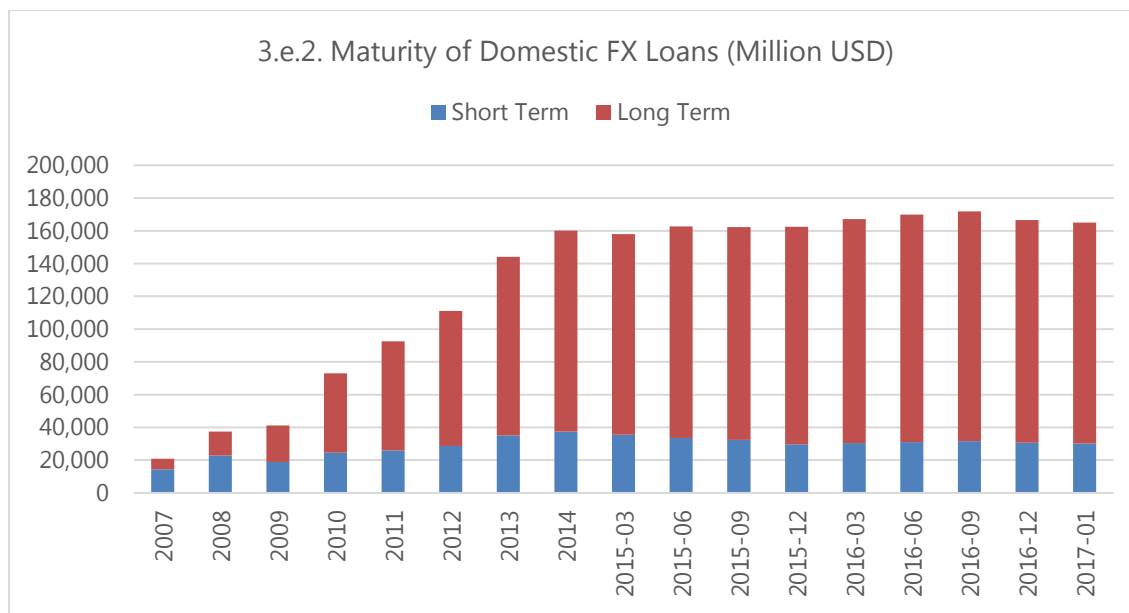
Source: CBRT

3.f. Financial Hedge Position

Though the risk management method of non-financial companies has been the topic of intense theoretical and empirical study, very little is known about the concrete hedging practices of firms.[12]

According to Financial Stability Report (November 2016) where 132 firms are analyzed[13];

- 81 percent of the FX open position belongs to the 16 largest firms by asset size (Figure 3.f.1).
- Protection of FX open position by derivative transactions rate is higher for large firms.
- The ratio of the derivative position/open position of the largest 10 percent of the companies included in sample is approximately 15 percent.
- The ratio of the derivative position/open position of the smallest 50 percent of the companies included in sample is very low, approximately 1 percent.
- For the total number of firms, this ratio is around 15%. So the hedging ratio of firms with derivative transactions is far from closing their open positions.
- Concentration of 80 percent of total open positions in large companies with relatively better protection in derivative transactions is considered positive in terms of financial stability.

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[12] Brown G. W. (May 2001)
[13] Financial Stability Report (November 2016), Results for 132 firms. Last data: Q2.16.

Figure 3.f.1. Share of Open Position and Derivative Transactions
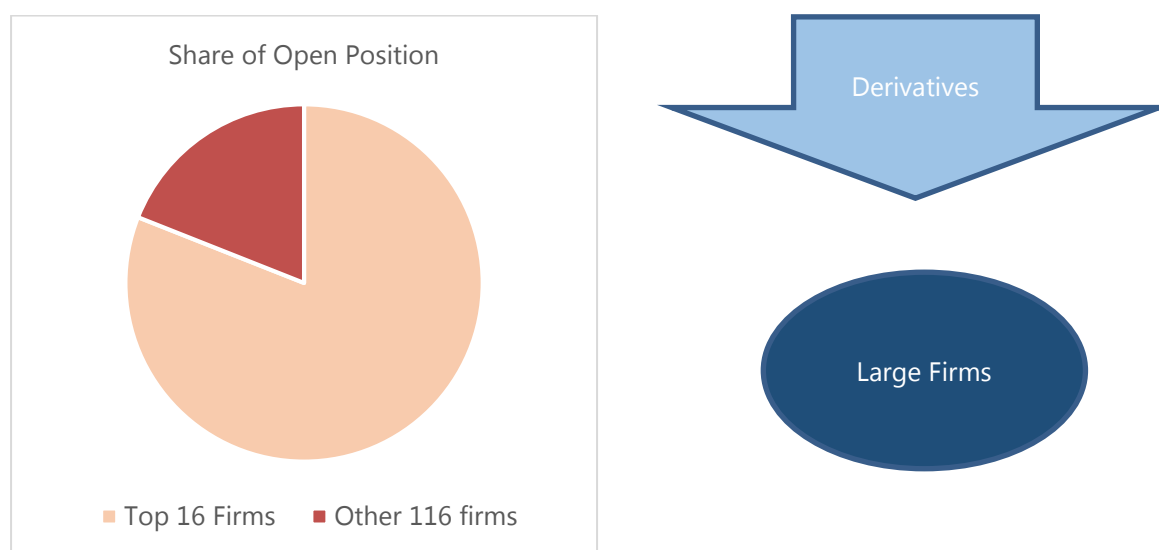
3.g. Results of Former Studies on FX Position of Real Sector Firms in Turkey

According to IMF country report dated April 2016; in Turkey, non-financial corporates have large FX exposures owing to borrowing from the domestic banking system and directly from abroad. Although external borrowing has weakened, there has been a rise in the total FX exposure as the increase in FX borrowing from the domestic banking system is higher than the fall in external borrowing.

Again in the same report, it is specified that credit risk and indirect credit risk connected with FX lending have increased. FX liquidity risk due to the realization of credit risk is important. Again, banks face indirect credit risk resulting from their FX and FX-indexed loans to non-financial corporations.

Reflecting the FX open positions, a scenario concerning depreciation of the Turkish Lira would significantly worsen the NFCs' balance sheet. A 20 percent depreciation of TL would result in an increase in the NFCs leverage by about 44 percentage points, to about 205 percent.

According to findings of Hülagü, T., and C. Yalçın (2014); 87 percent of firms in the dataset either do not borrow in FX or are naturally hedged with export revenues. Same study finds that 1/3 of firms without or limited FX revenue borrows in FX and this in turn generates currency risk. On the other hand; although classified as high risk group, they have higher average FX profits through FX-linked pricing in the domestic market. Even though we see high dollarization at sectoral level and no export as natural hedge, detailed analysis shows the other sources of FX revenues. Therefore, currency risk might be lower than macro aggregates' implications which urges the need for microdata.

Erdoğan (2016) examines the foreign exchange exposure and determinants of risk for different time horizons of Turkish firms from 1997 to 2011. The empirical findings of the study suggest a negative relationship between exposure and asset turnover ratio, and profit margin. However, this study finds a positive relationship between exposure and leverage besides proving connection between higher export rate and higher risk. Additionally, this study finds that large companies are subject to less risk in the short run.

4. Systemic Risk Data Monitoring Model

Foreign exchange position of the non-financial companies is manageable to a large extent. Especially short-term FX position is very well-balanced. Nevertheless, since we don't have detailed data, the comments made about foreign exchange debt of the real sector may affect the risk perception of Turkey negatively during the periods when there are fluctuations in exchange rates.

A 'Systemic Risk Data Monitoring System' is planned to be established so as to create a healthier surveillance against exchange rate risk. It is evaluated that it is beneficial from risk management perspective if there is a framework where foreign exchange position and foreign currency cash flows along with maturity mismatch data is compiled on the firm basis.

In the first phase of the project, companies with US$15 Million total FX loan will be covered which counts about 2000 real sector companies currently holding about 83 percent of total FX debt. A pilot study involving top 111 firms with the highest FX debt has already been started as the first stage of the project under the Central Bank of Turkey.

In the next phases of the project, 23 thousand companies with comparatively lower portion of foreign debt will be handled. As a result, the incentive and regulatory framework might be needed to be revisited in order to contribute to prudent borrowing and risk management.

Below are the important parameters in building the systemic risk monitoring model:

• Contents, quality, and frequency of data: Data must be detailed enough to give true picture of the sector by ensuring high quality on a timely manner.

• Collection of data and consolidation at one center: Consolidating data at one center ensures data consistency.

The examination of the data content to be reported by the accounting professionals will contribute to the data quality. As a result of the experience gained in the reports during pilot stage, it would be appropriate to establish solid reporting standards at the end of the pilot period.

4.a. Legal Issues

In order to run this model we have to look at the legal regulations whether Central Bank can collect data on FX position of non-financial corporations through bank or not. When we look at the regulation whether banks can get FX position of their customers, we see that it is possible according to Law: Article 52 of the Banking Law which is:

Banks are obliged to measure risks to be incurred due to their loans, regularly analyze and monitor the financial strength of the counterparty, provide necessary information and documents, and determine the basis for them. In this frame, loan customers are obliged to provide the necessary information and documents to the bank on consolidated and unconsolidated basis.

Additionally, according to Article 43 of the CBRT Law:

In order to be able to fulfill the duties assigned to it by this Law and legislation, the Bank (CBRT) is entitled to request all kinds of information and documents from the institutions and organizations mentioned in the first paragraph in the framework of the procedures and principles to be determined by itself. The institutions and organizations mentioned in the first paragraph are obliged to give the information requested from them within the time specified by the CBRT.

Acquisition of data collected by banks from their customers by CBRT is also possible. So there is no obstacle behind FX position collection by CBRT from banks.

If the CBRT needs to collect data directly from the companies, Resolution 32 on Protection of Turkish Currency Value includes the sharing of these data.

4.b. Calendar

Below table summarizes the meetings held by stakeholders regarding FX monitoring model. In March 2017 CBRT held a meeting with banks and other public authorities. Basic framework of the model was discussed and contribution of stakeholders has been taken into account to further develop the model and reporting details.

Table 4.b.1. Timeline for Systemic Risk Monitoring Model: Pilot Stage

March, 2017	April, 2017	May, 2017	June, 2017
1st Meeting w/related Banks Preparing FX position reporting form and documentation	Reporting Instructions to Banks Collecting firm-based data	Completing Pilot Period Data Collection	Pilot Term Report

4.c. Data Scope

Comprehensive information at micro level will be collected quarterly by CBRT in order to measure open FX position of real sector. The first phase of the project will include loans over US$15 Million which covers 2,000 firms. However, pilot stage in order to test the reporting details of the model included loans over 1 Billion TL covering 111 firms.

In order to measure net FX position, data scope for the new Project will cover FX assets and liabilities, along with past and future FX cash flows, income statement, and derivative transactions which will give us FX position and also the strength of a company to handle open position.

4.d. Loan Distribution of Firms

The BAT-Risk Center data used in this chart covers all FX and FX indexed loans granted by domestic and foreign banks through domestic banks, as of 30.09.2016.[14]

When grouped by amounts, total FX loan concentrates in firms with high-amounts of FX loan (Figure 4.d.1). Most of the FX risk is held by big firms. 1.100 firms hold 75% of FX loan and average maturity is more than 7 years for those firms.

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[14] Financial Stability Report, November 2016

Figure 4.d.1. Loan Distribution of Firms

FX Loan Amount	Number of Firms
>1 Billion TL	105
100 Million - 1 Billion TL	1.009
50-100 Million TL	836
10-50 Million TL	3.833
0- 10 Million TL	20.779
Total	26.562

4.e.   Pilot Practice

Pilot period has started in April 2017 for 111 firms which have more than 1 Billion Turkish Lira foreign currency denominated loan. The reason behind choosing 111 firms is because of their high portion in total FX loan which is approximately 38% as of December 2016 (Figure 4.e.1). In addition to that, keeping number of firms low makes it easier to compile data in a short period of time. During the pilot period, we expect to see possible obstacles that firms and banks face in filling out the FX position form.

Pilot period is expected to contribute methods for improving data quality and collection process as possible problems in reporting can be determined during this period.

Figure 4.e.1. Coverage of Pilot Stage Reporting

FX Loan Amount >1 Billion TL	Percentage of total FX loan: % 38	# of firms: 111

4.f. Reporting During Pilot Period

Data that is subject to reporting during pilot period is non-financial corporations' financials for the end of December 2016. Firms fill out the form and submit it to the pre-defined bank after necessary controls done by accounting department of the firm. Then, each bank is obliged to send the report of the firms to the CBRT.

5. Potential Benefits of the Project from Macro-prudential Perspective

The analysis of detailed data and the use of it as an input in surveillance processes will enable accurate calculation of risks and effective policy generation. Database will be created first, and then the regulatory bodies will decide on macro precautions if needed.

Another benefit of the project will be the true assessment of the currency risk. Through this reporting practice, we will see exporters which protect themselves against foreign exchange movements with natural hedge. In addition, companies that hedge themselves with derivative transactions will be revealed which are usually large corporations.[15] Therefore, companies that are either not exporting or having derivative transactions will be determined by the practice. So, it is very important to have detailed micro data for those firms which are at risk and as a final step to take precautions for them.

6. Conclusion

Non-financial sector's net FX open position levels have risen gradually in Turkey since 2003. Despite the fact that those companies have a high open FX position, their natural and financial hedge management are not at desired levels. As Turkish Lira depreciates, balance sheets worsen which in turn threaten the financial sector and the whole economy from counterparty and systemic risk perspective. With the leadership of the Central Bank of The Republic of Turkey, a new system that collects net FX, hedging positions and future cash flow of real sector firms is planned to be carried out. One of the expected benefits of the project is to identify the banks that extend loans to the customers with open positions and to introduce additional obligations if necessary. Macro-prudential precautions might come into force after the model establishments and analysis of data at firm-level have finished.

In this paper, FX position of non-financial corporations in Turkey is analyzed and the new project which aims to monitor the FX position of those firms is presented. In Turkey, non-financial firms can hold FX or FX-indexed loans with some limitations. They can get loan from domestic banks or foreign banks directly or through domestic banks. This funding opportunity may result FX open position for the NFCs.

Both positive global trends in value of USD and inflation data resulted in higher USD/TL value between September 2016 and January 2017. In addition to that, geopolitical risks and downgraded rating of Turkey contributed depreciation of TL in this period. As a result, adverse signals started to come out of companies that had open position. As this issue has come to the fore in the Financial Stability Committee, «Systemic Risk Data Monitoring Model» was decided to be run by the Central Bank of Turkey. Currently, the determination of the reporting details of the project has not finished yet, but a pilot period has been run by Central Bank since April 2017.

It is a fact that the rapid increase in the FX rate has a significant negative effect on non-financial companies as well as financial sector. Monitoring non-financial sector and having detailed data at firm level have a huge positive role from financial stability perspective.

When the open position is examined on an aggregate basis, it may be viewed as a risk factor; however, the impacts of these risks will depend on the financial structures of the firms, the maturity of the debt, their hedging position and their pricing power (FSR, November 2016). Therefore, having firm-level data enables true risk analysis and enables authorities to take macro-prudential precautions respectively.

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[15] Financial Stability Report, November 2016.

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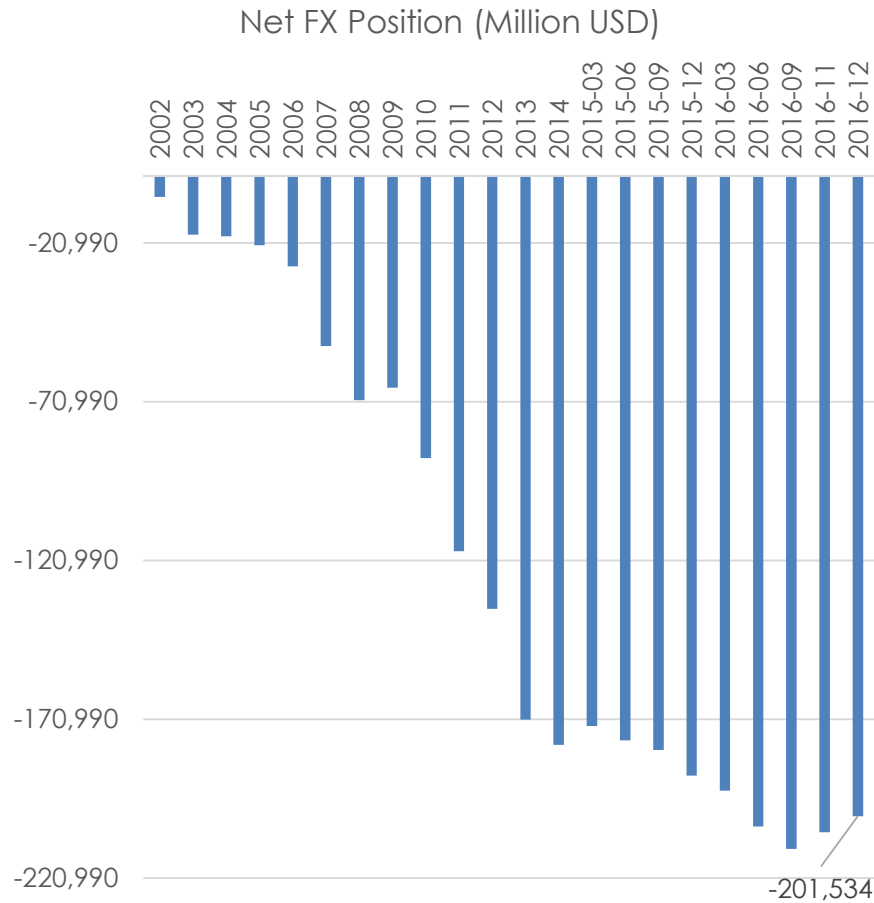Central Bank of the Republic of Turkey

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TÜRKİYE CUMHURİYET MERKEZ BANKASI

Non-Financial Sector's Foreign Exchange Risk: New Project of Foreign Exchange Position Monitoring System in Turkey

Oya Gençay

Central Bank of The Republic of Turkey

Statistics Department

Outline

- Information on FX position of non-financial sector in Turkey and related statistics

- **«Systemic Risk Data Monitoring Model»**

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Net FX Position of Non-Financial Sector in Turkey

Net FX Position (Million USD)

Short Term Net FX Position (Million USD)

Source: CBRT

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FX Rates and Weighted Average Interest Rates

Nominal FX Rate
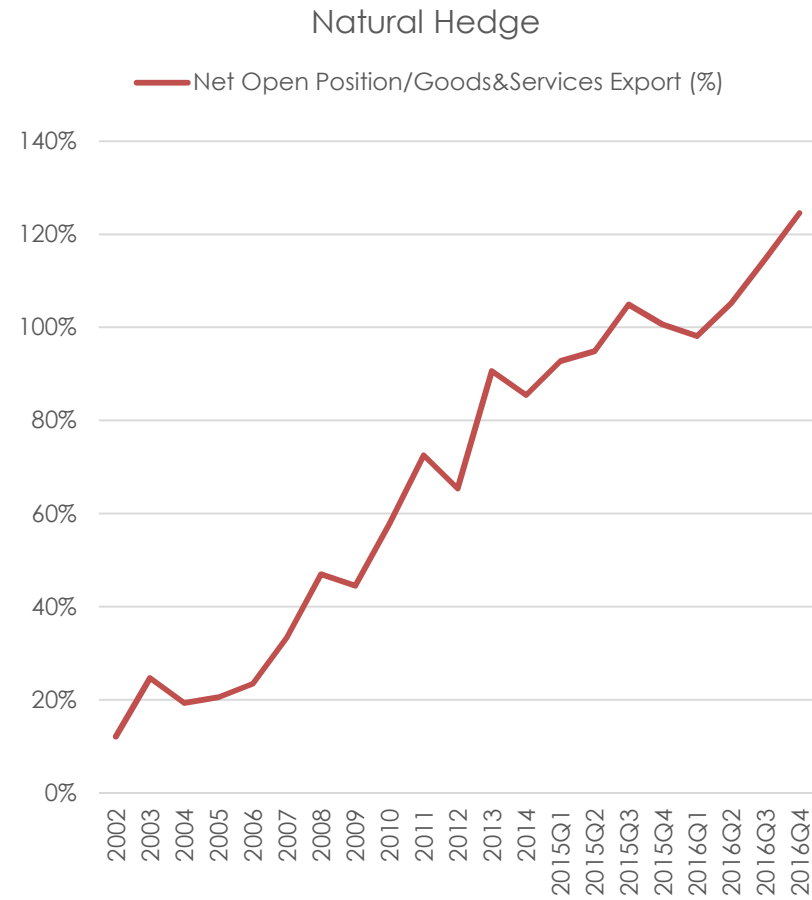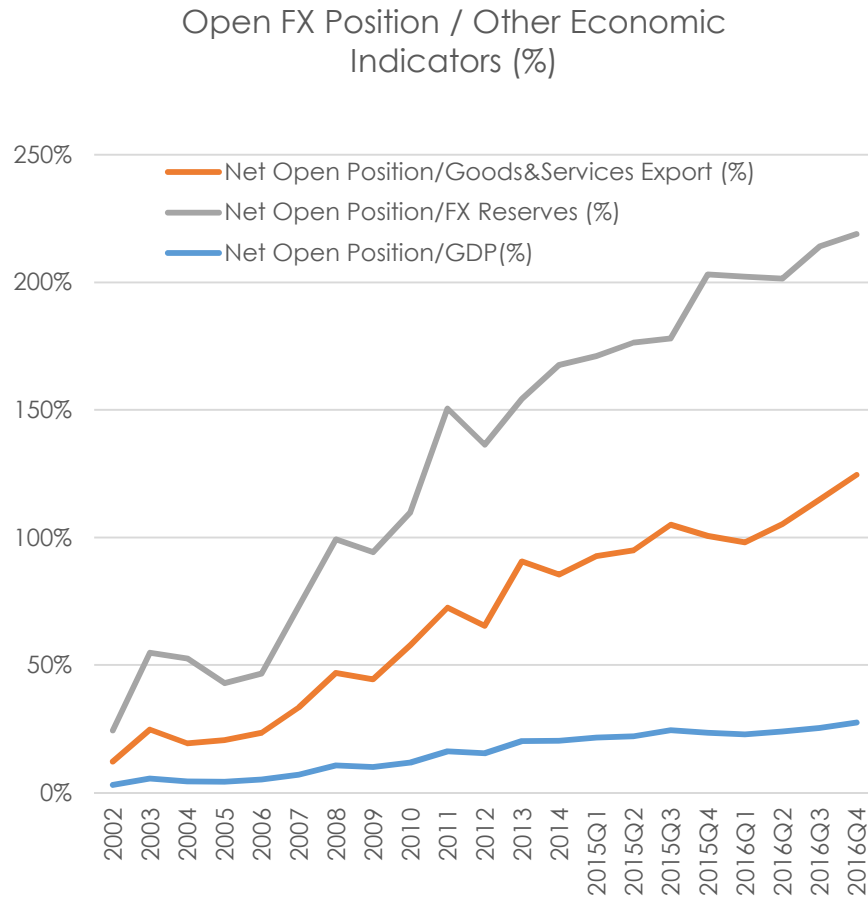
Weighted Average Interest Rate for Commercial Loans (%)

- Euro: 4.14 TRY, USD: 3.87 TRY (30.1.2017). Euro rate increased by 22%, USD rate increased by 27% in the last year.

- Although the gap between TRY weighted average interest rates and other currency interest rates narrows in time, the TRY lines do not intersect with others.

Source: CBRT
Last Data: 30.3.2017 for FX rates

Net FX Position Related to Other Economic Indicators

Open FX Position / Other Economic Indicators (%)

- Net Open Position/Goods&Services Export (%)
- Net Open Position/FX Reserves (%)
- Net Open Position/GDP(%)

Natural Hedge


- Net Open Position/Goods&Services Export (%)

- Net FX position related to some economic indicators has increased over time as open position widens.
- Export of goods and services serves as a natural hedge for FX liabilities. Open position to goods and services export ratio exceeds120% by 2016.
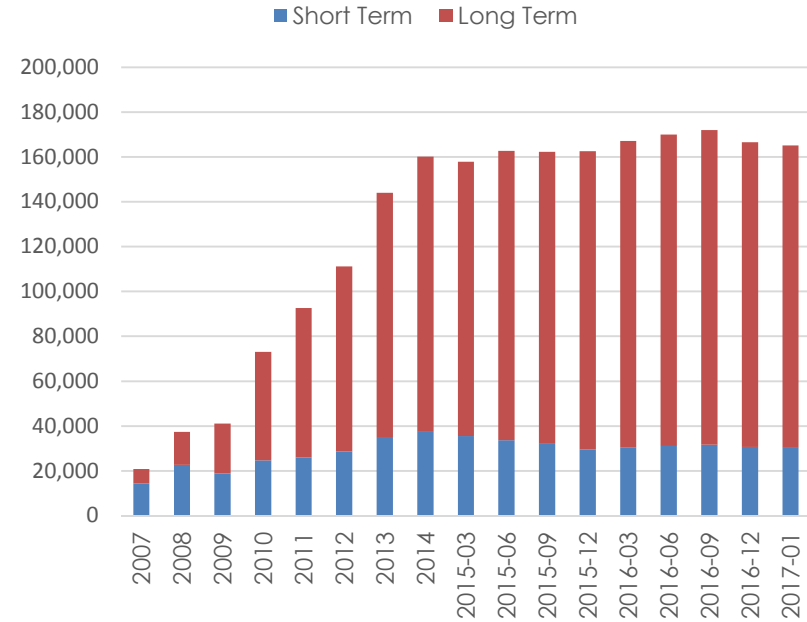
Source: CBRT

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Total FX Loan and Maturity of Domestic FX Loans

FX Loan of Non-financial Corporations (Million USD)
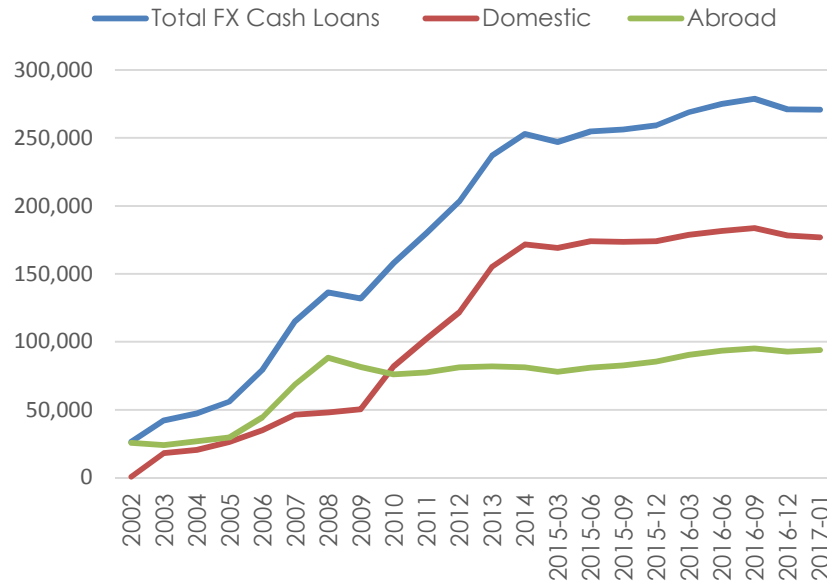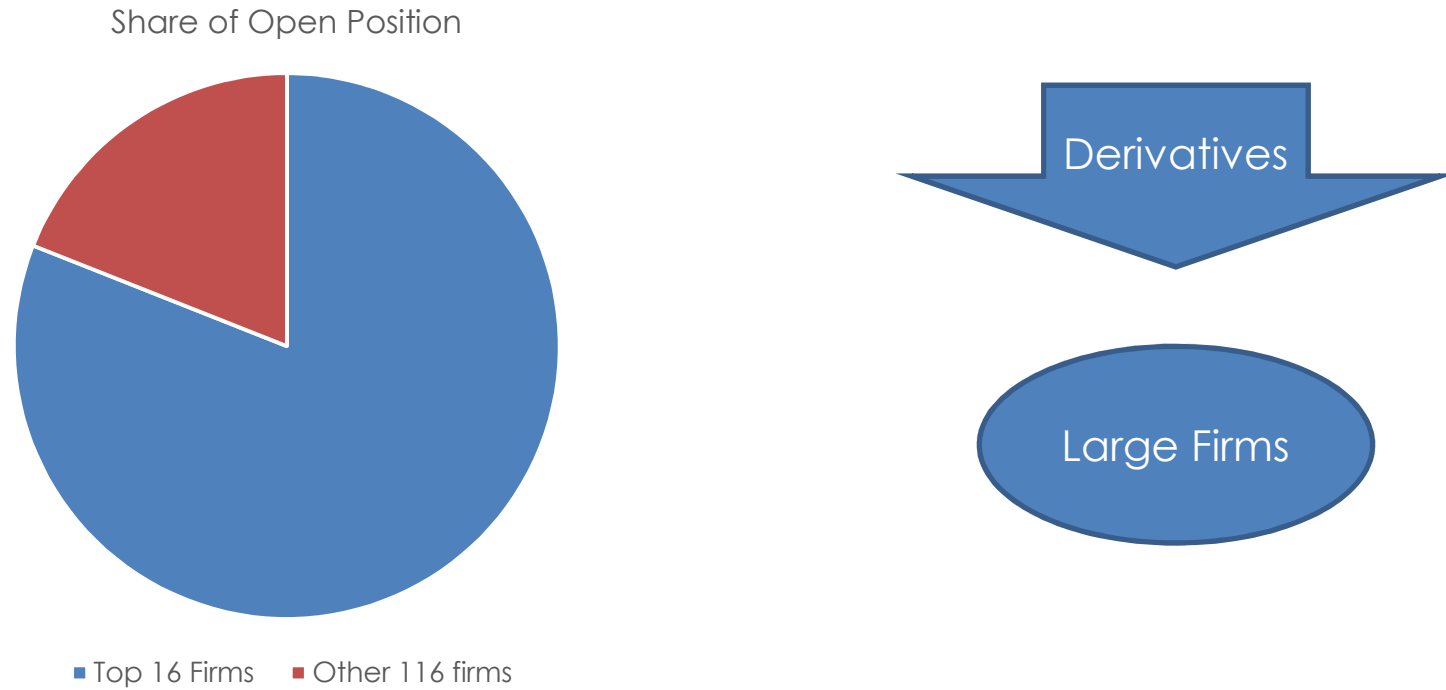

Maturity of Domestic FX Loans

- Total FX loan has increased over time. Especially domestic FX loan exceeded FX loan from abroad after 2010.

- Long-term domestic FX loans have the highest share in the non-financial sector's FX debt distribution

Source: CBRT

Financial Hedge Position*

Share of Open Position

■ Top 16 Firms   ■ Other 116 firms

- 81 percent of the FX open position belongs to the 16 largest firms by asset size.
- Mostly large firms have derivative transactions.

*Results for 132 firms. Last data: Q2.16
Source: Financial Stability Report (November 2016)

Financial Hedge Position*
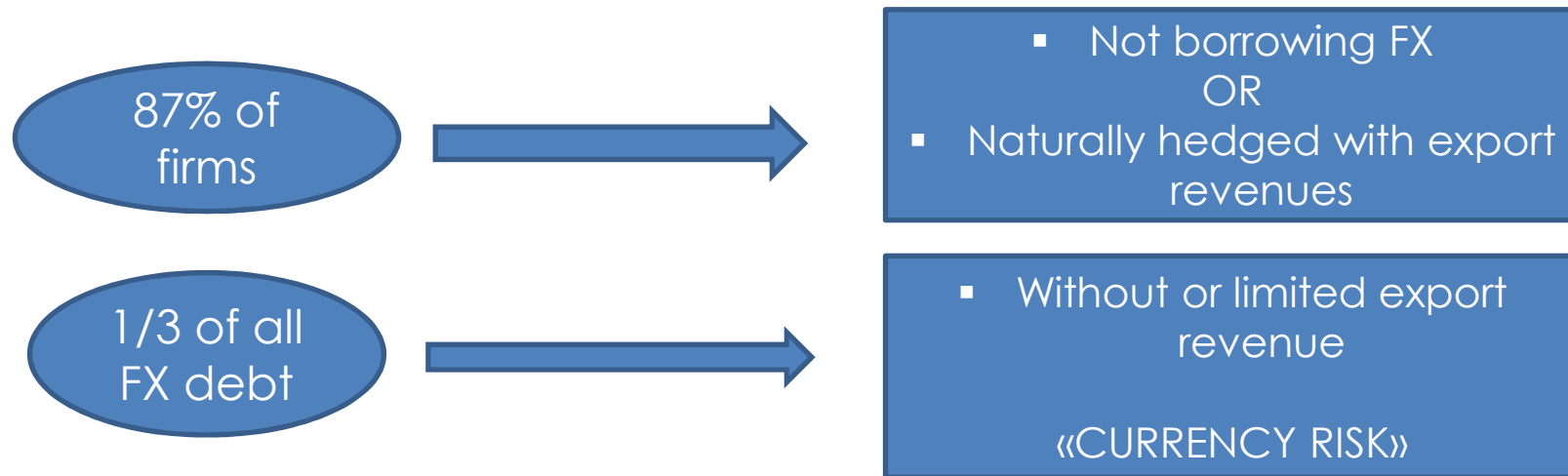
Top 10% of companies;
Derivatives / Open Position-15%

Smallest 50% of companies;
Derivatives / Open Position-1%

Hedging of FX open position by derivative transactions is higher for large firms: positive implication for financial stability since they hold big portion of open position.

*Results for 132 firms. Last data: Q2.16
Source: Financial Stability Report (November 2016)

Results of a Former Study on FX Position of Firms in Turkey-1
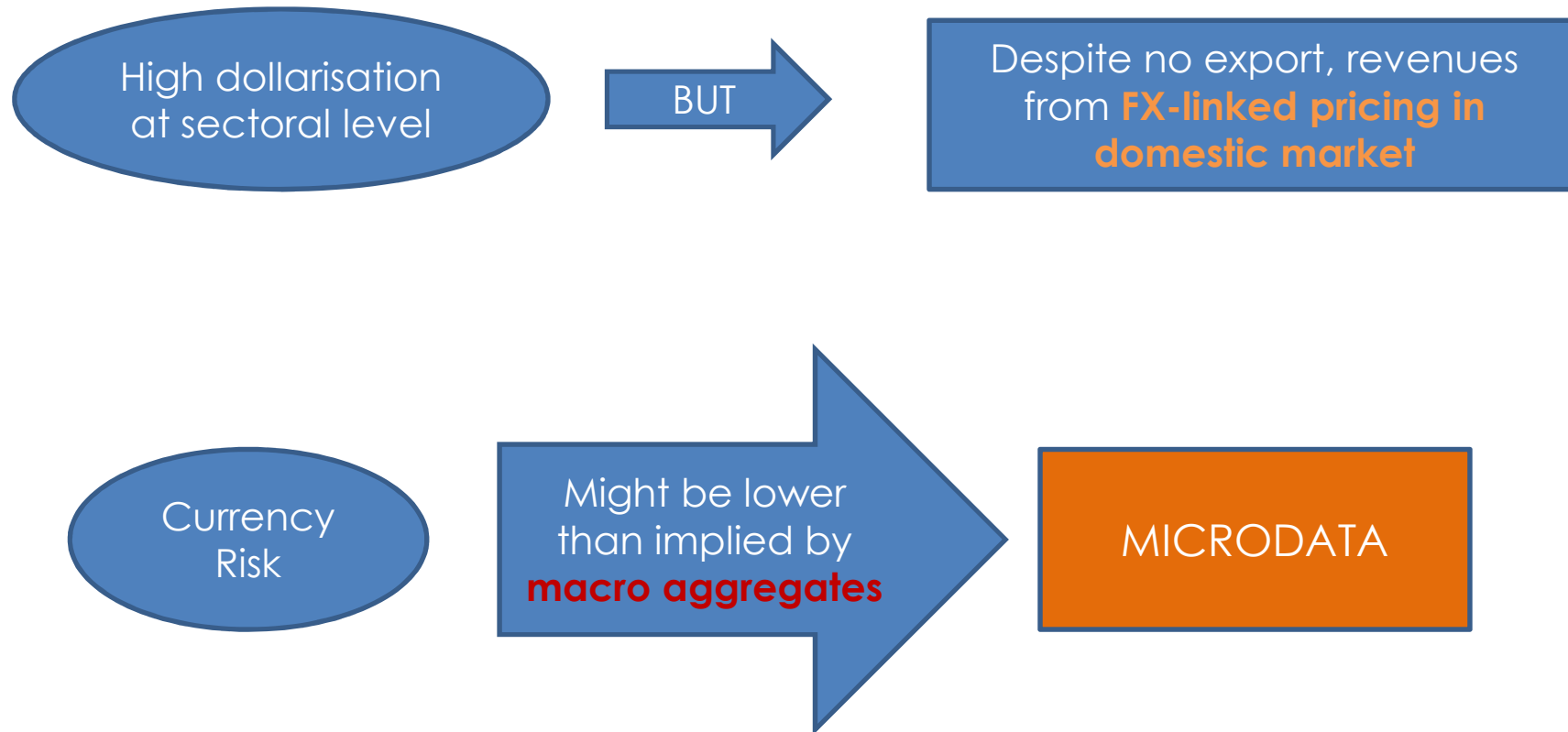
According to findings of Hülagü, T. and C. Yalçın (2014);

87% of firms →
- Not borrowing FX
OR
- Naturally hedged with export revenues

1/3 of all FX debt →
- Without or limited export revenue

«CURRENCY RISK»

On the other hand;

High Risk Group → **Higher Average FX Profits «HOW»**

Data: 31.12.2013

Results of a Former Study on FX Position of Firms in Turkey-2

High dollarisation at sectoral level — BUT → **Despite no export, revenues from FX-linked pricing in domestic market**

Currency Risk — Might be lower than implied by **macro aggregates** → **MICRODATA**

Source: Hülagü, T., and C. Yalçın (2014);

Systemic Risk Data Monitoring Model

Comprehensive information at micro level
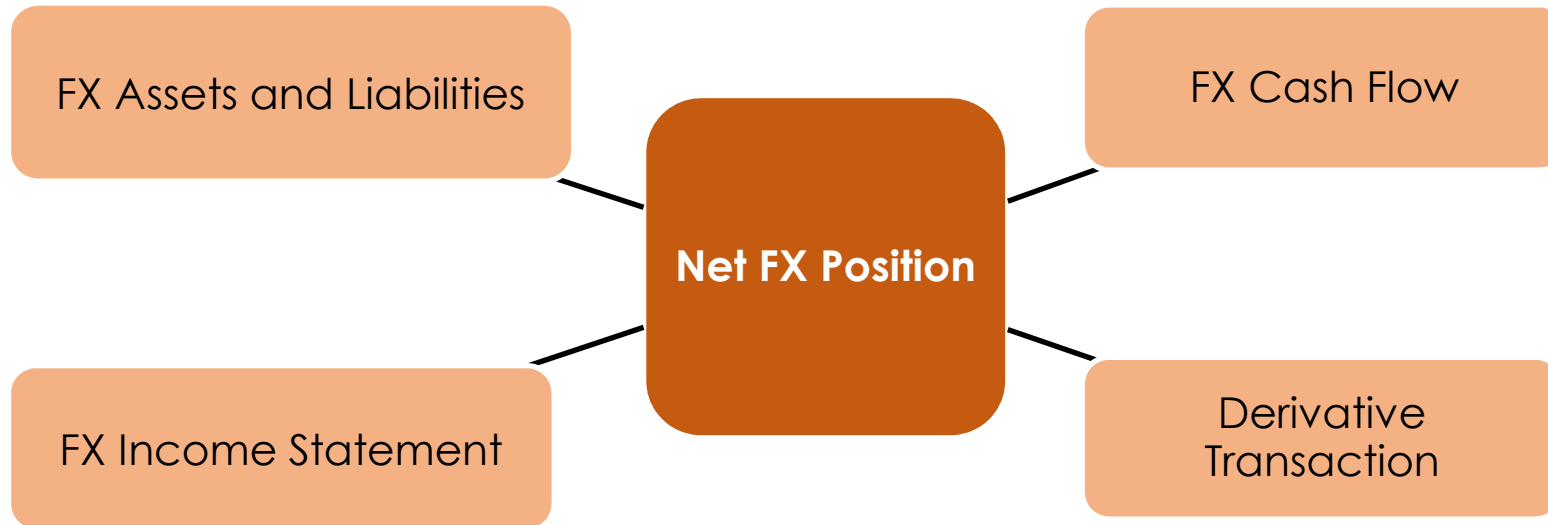
Quarterly data collection by CBRT

1st stage >50 million TL total FX loan: 2000 firms

Pilot stage > 1 billion TL total FX loan: 111 firms

Data Scope

Loan Distribution of Firms

FX Loan Amount	Number of Firms
>1 Billion TL	105
100 Million - 1 Billion TL	1009
50-100 Million TL	836
10-50 Million TL	3833
0- 10 Million TL	20779
Total	**26562**

1100 firms hold 75% of FX loan

Average maturity > 7 years

- Grouped by amounts, total FX loan concentrates in firms with high-amounts of FX loan.
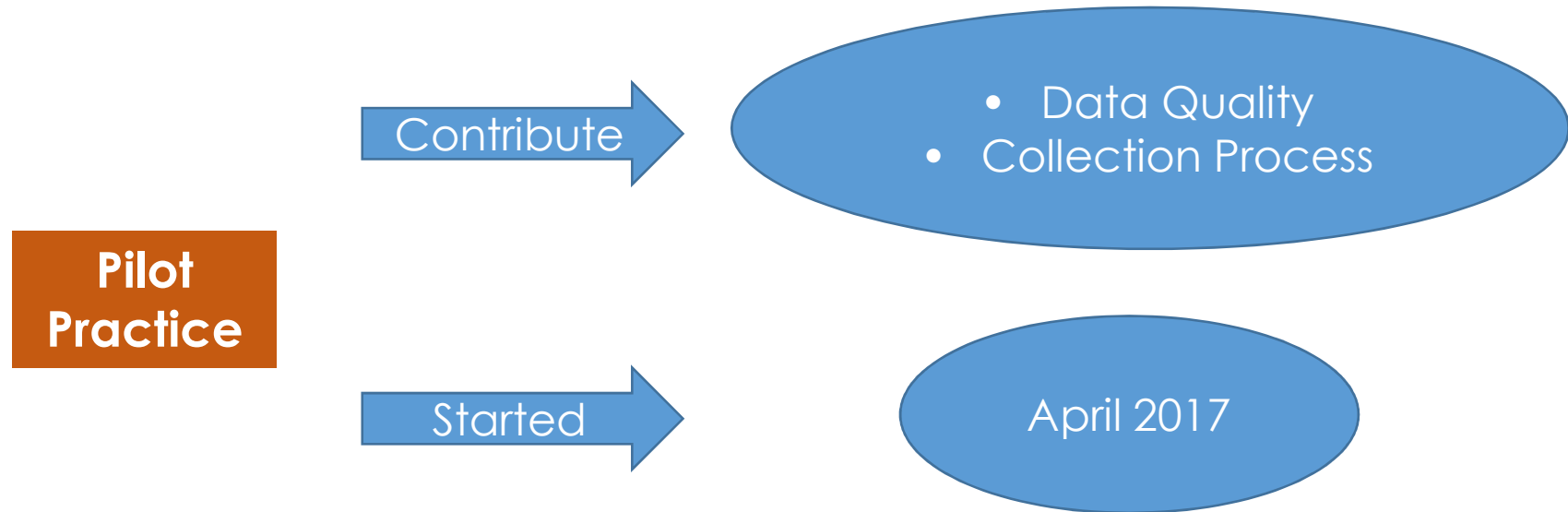
- Most of the FX risk is held by big firms.

Source: BAT Risk Center data used in Financial Stability Report, November 2016.
Data: 30.09.2016

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Reporting During Pilot Period

Firms

Banks
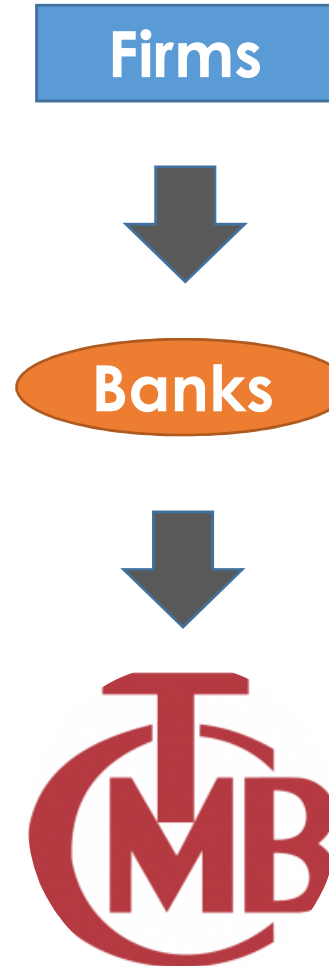
For the pilot period,
firms report their
financial data
by December 2016
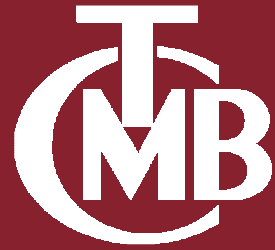
Non-Financial Sector's Foreign Exchange Risk: New Project of Foreign Exchange Position Monitoring System in Turkey

Oya Gençay

(Central Bank of The Republic of Turkey)

Data needs and statistics compilation for macroprudential analysis

IFC / National Bank of Belgium Workshop, Brussels, 18-19 May 2017