tepav
türkiye ekonomi politikaları araştırma vakfı

13-03-2009

Global Crisis Working Group

Economic Policy Research Foundation of Turkey

Crisis Measures for the Turkish Economy: A Framework Proposal

Executive Summary

1. The negative effects of the global crisis on Turkey have gradually become evident. Almost all economic indicators imply that the economy has been going through a period of serious slowdown. As we also stated in the note published in November 2008, the crisis is affecting Turkey through the deteriorations in four different channels: external funding channel, domestic credit channel, foreign trade channel and confidence channel. The effects transmitted through these channels have been continuing and intensifying.

2. As expected, the global crisis shows its impact on the growth performance of the economy. The measures introduced in Turkey so far neither directly aim at the purpose of fighting against the crisis, nor have a systematic coherence. Furthermore, lack of a coherent communication strategy with respect to the effects of the crisis and necessity of precautionary measures limits the efficiency of these measures being taken. Therefore, it is not expected at this stage that the measures control the contractionary trend.

3. If systematic measures are not taken, as we currently observe, it is a high probability that the Turkish economy will contract by 5.5 percent in 2009. The slowdown trend that has already started in 2006, coupled with today's highly unfavorable global trends and the performance of the world economy validate the 5.5 contraction possibility. Under the basis scenario where no systematic economic measure is taken and the IMF agreement is not signed, unemployment rate is predicted to rise from 13.6 percent in December 2008 to 16.6 percent in December 2009. In 2009, 1.2 million people are faced with the risk of losing their jobs. In the same period, inflation rate is expected to be around 5.5 percent. The ratio of current account balance to GNP will be 1.5 percent while budget deficit will rise to 5.6 percent level. Nonetheless, these outcomes pertain to the potential case where no measures against the crisis are taken, i.e. where the economy is allowed to shrink in an uncontrolled way. The objective of this note prepared by TEPAV Global Crisis Working Group is to show that if precautionary measures are taken, these outcomes as well as more unfavorable ones can be prevented to a certain extent.

4. As also expressed above, rapid economic contraction results from four different sources. First is the declining domestic demand. Consumer confidence has been disrupted due to negative expectations within the country. This indicator will show a more unfavorable movement along with the rise in unemployment. Second is the shrinking foreign demand. Export markets for Turkey have been rapidly contracting. Third is the fall in foreign exchange (FX) flows toward Turkey and similar countries. Foreign currency debts of the corporate and banking sectors at high levels will be the second source of risks in the second phase. The damage in the financial system is structural. Mechanisms like hedge funds and private equity funds have evaporated to a large degree. Fourth, domestic credit channels are now tightening. Neither the credit channel based on the banking system nor the commercial credit channel based on post-dated checks is functioning at the moment.

5. As a result of these developments, two important problems in companies' balance sheets can be observed. First, the cash balance of the corporate sector is disturbed permanently. Since the cash inflow assumptions for 2009 are no longer valid, it is inevitable that the corporate sector will face difficultly in repayment unless old contracts are restructured. This is exactly where the primary source of the current transparency problem lies. The second source of the transparency problem is that the quantity of goods and half-finished goods in the inventories of companies and the value of their costs are not known precisely. It is obvious that, due to the steep fall in raw material prices, several companies now keep products produced with raw materials with relatively higher prices as well as raw material inventories purchased at relatively higher prices as compared to current prices. Converting these products and materials to their current market prices will lead to significant losses in balance sheets. It is inevitable that this situation affects the performance of the corporate sector negatively.

6. Because of the current balance sheet transparency problem, confidence loss has risen with respect to the transactions between companies and individuals. Transactions between companies have become to be based on cash payment to a high extent. The mentioned confidence loss played a significant role in the tightening of the bank loans as well as commercial loans based on post-dated checks. This development steeply diminishes the transaction volume in the economy.

7. The framework presented in this report shows that the contractionary trend in the economy can be controlled and employment losses can be limited by means of the measures to be taken in three main policy areas. The first is ensuring the functioning of foreign and domestic credit channel by also utilizing public funds. With a method based on credit guarantee fund mechanism, it is targeted to restructure existing loans as well as to extend new loans. This way, further contraction of the balance sheets of companies will be prevented. Inter alia, placing the principle where the central bank provides the banks with liquidity through the discount window based on the loans they extend to the corporate sector, will further increase the efficiency of the measures taken. Second policy area is stimulating domestic demand through selective public expenditures. The principle here is to identify the public expenditure items that will have the highest impact in the current year and to transfer resources to the most appropriate areas. Third; it is necessary to ensure external fund inflows to the economy immediately during this year. In this context, the IMF agreement to be signed is extremely important in particular with respect to strengthening capital structure of the banking system.

8. Though the body of measures recommended in the context of this study is considered as priority by TEPAV Global Crisis Working Group, other measures that can be taken in other policy areas are not excluded. In this context, the major contributions of the report to the policy dialogue are providing a conceptual framework about how to tackle the crisis and showing that the negative effects of the crisis on the growth performance of Turkey can be limited.

Table E. 1: List of the Measures Recommended in the Report

Measures	Subject of the Measure	Domain of the Measure
T1	Signing IMF agreement. Enabling public foreign debt repayment through this fund	Limiting negative effects transmitted through foreign credit channel
T2	Providing the corporate sector with guarantee for FX loans and liquidity to enable the fulfillment of foreign debt liabilities	Limiting negative effects transmitted through foreign credit channel
T3	Resource transfer by the banks for foreign debt repayments	Limiting negative effects transmitted through foreign credit channel
T4	Providing guarantee for new loans	Enabling functioning of domestic credit channel
T5	Providing guarantee and liquidity for new loans	Enabling functioning of domestic credit channel
T6	Providing guarantee to restructure new loans	Enabling functioning of domestic credit channel
T7	Giving financial aid to retired and needy people	Stimulating consumption, preventing social problems
T8	Facilitating the use of unemployment fund allowance	Stimulating consumption, preventing social problems

Table E. 2: List of Scenarios[1]

Scenarios	Measures	Situation in the World Economy and other Assumptions
S1	Basis scenario: 5.5 percent contraction/ 5.5 inflation	World Economy: contraction by 2 points
S2	T1	World Economy: contraction by 2 points, Foreign Investor: Favorable
S3	T1 + T2 + T3	World Economy: contraction by 2 points, Foreign Investor: Favorable
S4	T1 + T2 + T3 + T4	World Economy: contraction by 2 points, Foreign Investor: Favorable
S5	T1 + T2 + T3 + T5	World Economy: contraction by 2 points, Foreign Investor: Favorable
S6	T1 + T2 + T3 + T5 + T7 + T8	World Economy: contraction by 2 points, Foreign Investor: Favorable
S7	T1 + T2 + T3 + T5 + T7 + T8	World Economy: contraction by 2 points, Tightening of fund flows, Foreign Investor: Favorable
S8	T1 + T2 + T3 + T5 + T7 + T8	World Economy: contraction by 2 points, Tightening of fund flows, Foreign Investor: Confidence shock

[1] As the 6th measure recommendation is not added to the scenarios individually as it is targeted to ensure the functioning of the domestic credit mechanism and leads to similar outcomes with the 4th and 5th measures.

9. In this context, the basic assumptions under eight scenarios, recommended measures and impact on macroeconomic indicators can be summarized as follows:

- **Scenario 1 (basis scenario):** In this case where Turkey does not introduce a coherent economic package, 5.5 percent real contraction, 5.5 percent inflation rate and 16.6 percent unemployment rate is foreseen for the end of 2009. In this scenario, it is assumed that the global crisis will show signs of deepening and consequently expectations will deteriorate. If it becomes evident that the global recession will continue longer than anticipated, it might be necessary to revise the contraction forecast for 2009 at 7.5 percent.

- **Scenario 2 (International Monetary Fund):** In addition to the basis scenario, it is assumed that the IMF agreement is signed, 15 billion USD has been transferred to Turkey in 2009 under the context of this agreement and therefore the confidence channel has been affected positively, in partial. Under such a scenario, it is projected that the economy will contract by 5.4 percent in the short term and by 4.5 percent in the long term. Under this scenario, unemployment rate is expected to be around 16.5 percent.

- **Scenario 3 (Foreign Credit Channel):** This scenario recommends that the fund coming from the IMF, as received under the second scenario, is transferred to the corporate sector in the form of FX loans through the credit guarantee mechanism (CGM). Under this scenario, it is projected that the economy will contract by 5.1 percent in the short term and by 4.2 percent in the long term. Unemployment rate is estimated to be 16.3 percent.

- **Scenario 4 (Domestic Credit Channel):** In this scenario, in addition to the scenario 3, the corporate sector is provided with TL loans through the CGM. In this scenario, the Central Bank is not involved in the mechanism. As a result of this scenario, short term economic contraction is estimated as 5 percent in the short term and 4 percent in the long term while the unemployment rate stands at 16.2 percent.

- **Scenario 5 (Domestic Credit Channel – Central Bank involved in the mechanism):** In this scenario, in addition to the scenario 3, the corporate sector is provided with TL loans via the CGM. In this scenario, the Central Bank is involved in the mechanism. As a result of this scenario, economic contraction is estimated as 4.8 percent in the short term and 3.7 percent in the long term while the unemployment rate stands at 16.1 percent.

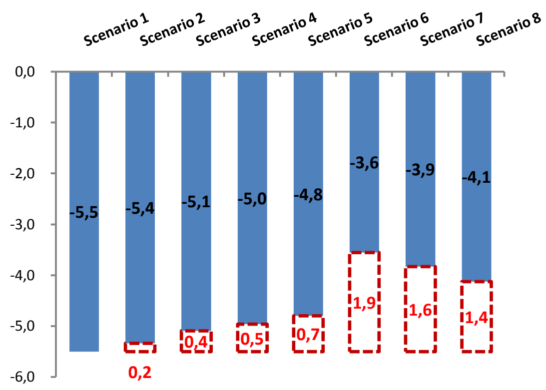
- **Scenario 6 (Stimulating domestic demand):** In this scenario, in addition to the scenario 5, public spending is increased for those social groups with a higher propensity to consume This includes financial aid by 2.7 billion TL for the retired people and by 624 TL for needy people; 6.4 billion TL of additional spending from the unemployment fund. Under this scenario which opens the credit channel as well as stimulating domestic demand, it is expected that short term contraction will be 3.6 percent while long term contraction will be 1 percent. It is estimated that under this scenario, unemployment rate can be limited at 14.9 percent level.

- **Scenario 7 (Deepening of global crisis):** In this scenario, a situation where besides the measures taken, the global crisis deepens and international capital inflows are affected negatively is taken into account. Under such a scenario, short term contraction will be 3.9 and long term contraction will be 1.6 percent. In the light of the said assumptions, unemployment rate is prospected to stand at 15.2 percent.

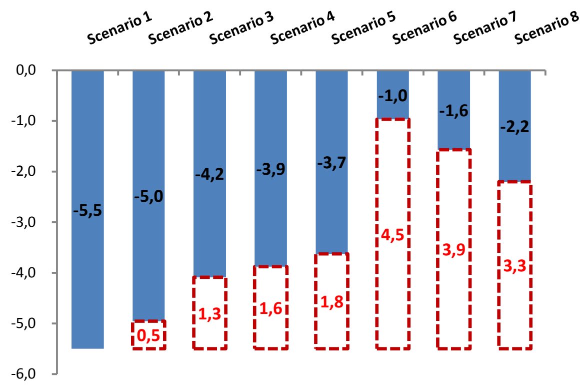
- **Scenario 8 (Investors lose confidence):** In this scenario, it is assumed that, although the measures are implemented, foreign investors go through a confidence shock due to the deepening of the global crisis. As a result of this scenario, economic contraction is estimated to be 4.2 percent in the short term and 2.2 percent in the long term. Unemployment rate is prospected to rise to 15.4 percent level.

10. As can be seen, by means of the measures taken under each scenario, the contractionary trend in the economy and employment loss can be controlled. The table below compares the impact of each scenario in terms of economic growth performance. If all of the recommended measures are implemented (Scenario 6), economic contraction in the short term is limited by 2 points as compared to the basis scenario and is projected to be 3.6 percent. In the long term, the contraction-limiting impact of these measures is predicted to be 4.5 percent.

Graph E.1: Short term annual growth rates for alternative scenarios and difference between growth rate under the scenario and growth rate under the basis scenario (Scenario 1)



Graph E.2: Long term annual growth rates for alternative scenarios and difference between growth rate under the scenario and growth rate under the basis scenario (Scenario 1)



Source: TEPAV Calculations

11. The benefit of the measures to be implemented is reflected on growth and employment figures. The cost of these measures will be fundamentally undertaken by the public budget. It is highly important to adopt a multi-year fiscal discipline framework that includes credible commitments showing how the budget which is already in a process of rapid deterioration due to the economic contraction can again be turned into a credible document by means of the measures to be taken in the upcoming years. New fiscal discipline framework must be based on a multi-year fiscal rule. Putting forth that the administration has the capacity to operate the fiscal rule in a transparent manner is the prerequisite for the credibility of this rule.

12. The global crisis is now the crisis of Turkey. However, it is possible to limit the growth and employment losses. This study aims to contribute to the discussions to determine the conceptual framework on which the economic program devoted to fulfill this target shall be based. The main conclusion to be drawn from this study is that the damage can be limited. Turkey needs a more active economic policy framework.

Table E.3 Impact of the recommended scenarios in comparison with the basis scenario and the previous scenario

	2002-2007 annual average	2008	Basis Scenario		Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
					Short Term						
					In comparison with the basis scenario						
Economic Growth	6,78	0,0 (T)	-5,5		0,15	0,38	0,50	0,66	1,91	1,64	1,35
Budget Deficit (% of GDP)	4,80	-1,82 (T)	-5,7	+	0,05	-0,08	-0,18	-0,21	-0,75	-0,82	-0,89
Unemployment Rate	10,20	10,35	16,6		-0,13	-0,33	-0,44	-0,58	-1,69	-1,45	-1,20
					In comparison with the previous scenario						
Economic Growth	6,78	0,0 (T)	-5,5		0,15	0,23	0,13	0,28*	1,25	-0,27	-0,29
Budget Deficit (% of GDP)	4,80	-1,82 (T)	-5,7	+	0,05	-0,13	-0,10	-0,13*	-0,54	-0,07	-0,07
Unemployment Rate	10,20	10,35	16,6		-0,13	-0,20	-0,11	-0,14	-1,11	-0,24	-0,25
					Long Term						
					In comparison with the basis scenario						
Economic Growth	6,78	0,0 (T)	-5,5		0,52	1,35	1,55	1,80	4,46	3,88	3,27
Budget Deficit (% of GDP)	4,80	-1,82 (T)	- 5,7	+	0,14	0,15	0,07	0,07	-0,14	-0,27	-0,42
Unemployment Rate	10,20	10,35	16,6		-0,46	-1,19	-1,37	-1,59	-3,93	-3,42	-2,88
					In comparison with the previous scenario						
Economic Growth	6,78	0,0 (T)	-5,5		0,52	0,83	0,20	0,45*	2,66	-0,58	-0,61
Budget Deficit (% of GDP)	4,80	-1,82 (T)	-5,7	+	0,14	0,01	-0,08	-0,09*	-0,21	-0,13	-0,14
Unemployment Rate	10,20	10,35	16,6		-0,46	-0,73	-0,18	-0,22	-2,35	0,51	0,54

Scenario 5 is built upon Scenario 3. Therefore, the results of Scenario 5 are compared with the results of Scenario 3.

1. Introduction

The negative effects of the global crisis on Turkey have become highly evident. Turkish economy has contracted considerably in the last quarter of the previous year. As November data indicates, unemployment rate rose by 3 points to 13.6 percent as compared to last year. The downward trend in industrial production, which decreased by 17.8 percent in October, has gradually intensified and industrial production have decreased by 21.3 percent in December. Main indicators on economic activity imply that the mentioned deterioration has been continuing and intensifying since December.

According to the model results as discussed in the fifth part of the report in detail, the economy is expected to contract by 5.5 percent in 2009 if no coherent measure package is implemented. In this context, unemployment rate is estimated to rise to 16.6 percent. However, there exists a downward risk in the growth estimations. It is a high possibility that our estimations on the rate of contraction become optimistic in case it becomes apparent that the global recession will continue longer than anticipated.

In the current context, waiting for the impact of the crisis to become more apparent to announce a comprehensive measure package locks Turkey into a reactive policy framework. In this sense, delayed and sporadic measures decrease the benefits to be derived from the measures as well as leading to a coherence problem. Furthermore, as countries not taking measures are disadvantageous than those taking measures; countries that delay measures are disadvantageous than those taking early measures.

The global crisis, as the period we are in is considered, has become "the crisis of Turkey". The fact that the crisis originated from an external source and transmitted to Turkey through external channels does not remove political responsibility. In an environment where almost every country takes measures to limit the effects of the crisis, putting into practice measures specific to Turkey with proactive timing shall be the main responsibility of the policy makers. In this context, the measures must be taken under a coherent framework and an integrated approach. Moreover, it is also necessary to disclose clearly the need for an economic program involving measures against crisis, as well as potential outcomes and burdens.

This report aims to place the discussions on how to tackle the crisis, in the right context and contribute to the policy dialogue. Unfortunately, until now in Turkey these discussions are not carried out under a concrete and coherent framework. The report also provides recommendations on how the impact of the crisis on Turkey can be limited. However, even if all of the recommended measures are implemented immediately, rate of economic contraction as of the end of seven quarters is expected to stand at 1 percent. Therefore, it appears that the best viable option in the short term is controlled contraction.

It must be noted that the measures recommended in this report can also be addressed in a different framework. This particular conceptual framework has been drawn to facilitate policy dialogue and show that something can be done to tackle the crisis. The diversification of the mentioned framework through adding different measures in different policy areas shall be further elaborated in economic policy discussions.

The following part of the report evaluates briefly the channels through which the crisis affects Turkey and the policy responses taken until now. Third part presents the measures recommended by TEPAV Global Crisis Working Group to limit the negative impact of the crisis. The impact of these measures on main macroeconomic indicators will be addressed in the fourth part of the report.

2. The Effects of the Crisis on Turkey and Policy Responses

External funding channel: Before the global crisis emerged, both banking sector and the corporate sector had received significant amounts of loans from foreign banks which now have damaged balance sheets. The fall in loan volume as a result of the tightening in this channel forces both the banks and companies to scale down their balance sheets. Global tightening in the loan volume also had negative effects on the hedge funds and private equities which in the previous period worked under high leverage rates and ensured a significant amount of fund flow towards Turkey. In the upcoming period, a fall in foreign direct capital investment inflows shall as well be expected. Latest balance of payments data clearly shows the obstruction in external funding channel.

Table 1 Banking Sector New Foreign Borrowing and Repayment (Million USD, monthly averages, 2004-2008)

	Total Net	Long term Net	Long term Usage	Long term Repayment	Short term (Net)
2004	476	197	293	-96	279
2005	771	545	741	-196	225
2006	485	814	1028	-214	-329
2007	467	606	863	-257	-139
2008	242	47	639	-592	196
2008 4th quarter average	-964	-923	354	-1276	-41
2008 last 2 months average	-2053	-1343	267	-1610	-710
December 2008	-1613	-1356	232	-1588	-257

Source: BRSA; TEPAV Calculations

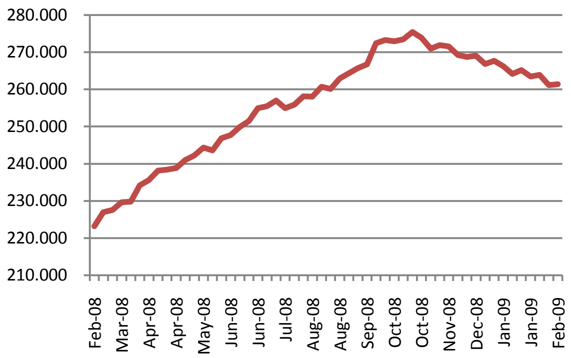
Table 2: Corporate Sector New Borrowing and Repayment (Million USD, monthly averages, 2004-2008)

	Total Net	Long term Net	Long term Usage	Long term Repayment	Short term (Net)
2004	426	397	1230	-833	28
2005	823	793	1732	-939	31
2006	1568	1526	2728	-1201	41
2007	2157	2140	3997	-1857	18
2008	1952	1870	3922	-2052	81
2008 4th quarter average	-145	-144	2484	-2340	1
2008 last 2 months quarter average	-96	-175	2455	-2630	80
December 2008	-567	-394	3260	-3654	-173

Source: BRSA, TEPAV calculations

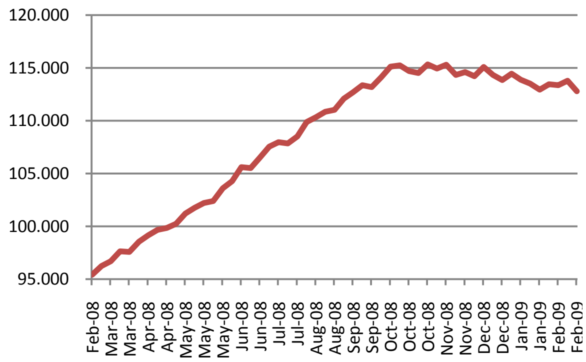
Domestic credit channel: The deterioration in external funding channel, global ambiguities and the loss of confidence in the economy lead to drops in the amount of loans domestic banks extend. In such an environment, supply chains in the economy are affected negatively in particular because of the fall in use of post-dated checks. The distortion of the supply chain is reflected on the performance of SMEs in the form of 'domino effect'. At the same time, the tightening of the commercial loans is deeply felt by SMEs, merchants and employees.

Graph 1: Total Loans by Deposit Banks, Nominal Values (weekly data, 22.02.2008-13.02.2009)



Source: CBRT

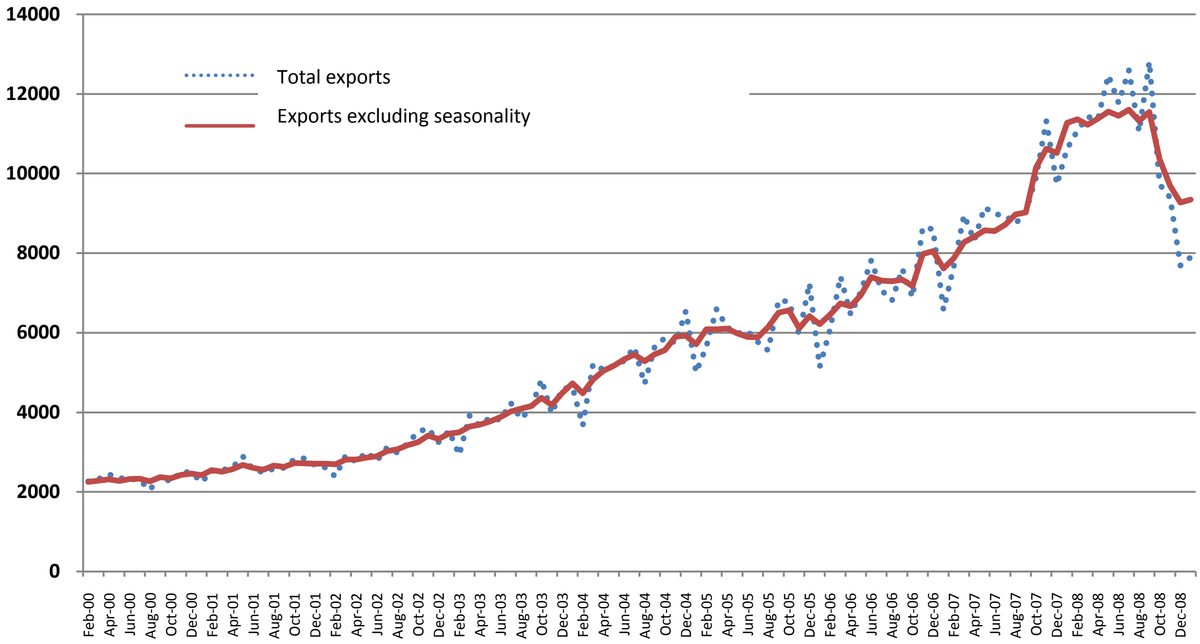
Graph 2: Total Consumer Loans Nominal Values (weekly data, 22.02.08- 20.02.09)



Source: CBRT

Foreign trade channel: The fall in global income, and in particular the economic contraction in the European Union countries, destination 56 percent of total exports of Turkey in 2007, creates negative effects on export performance of Turkey.

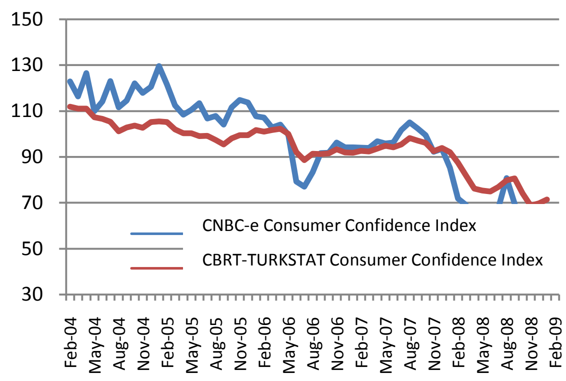
Graph 3: Nominal exports, USD (February 2000, January 2009)



Source: TURKSTAT, TEPAV Calculations

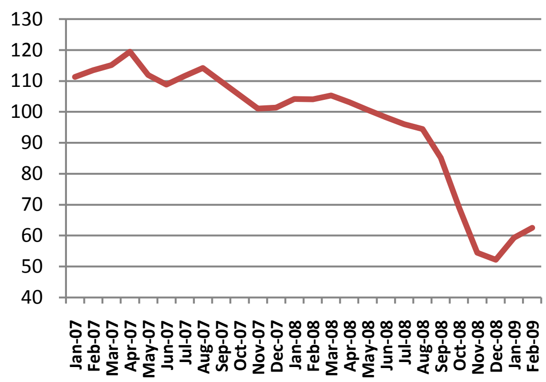
Confidence channel: The role of the consumer and investor confidence in the failure of first three channels is evident. Besides, the negative impact rising from the first three channels in turn further decreases both consumer and investor confidence in the economy.

Graph 4: Consumer Confidence Index (February 2004- January 2009)



Source: CNBC-e, CBRT

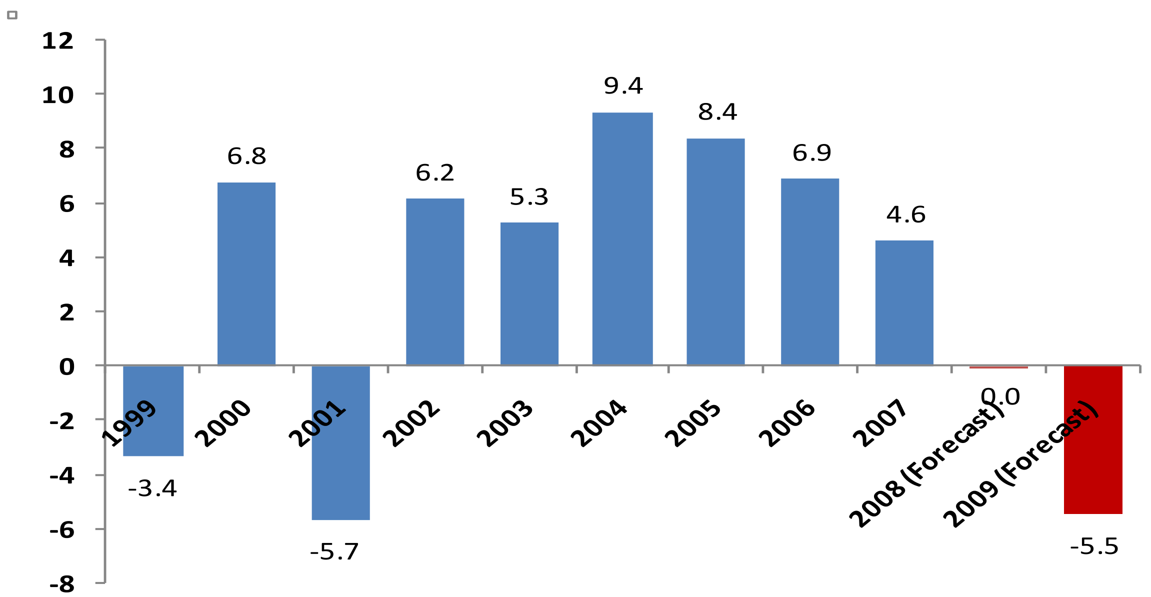
Graph 5: Real Sector Confidence Index (January 2007- February 2009)



Source: CNBC-e, CBRT

It must be kept in mind that the channels addressed are directly interacting with each other. This automatically makes the negative impact on growth and employment deeper than initially expected. In this context, it should be noted that it is a considerable probability that the banking sector, which was healthy at the initial phase, will become troubled over time (in particular due to an increase in non-performing loans (NPL)).

Graph 6: Annual Growth Rates (1999 – 2009)



Source: TURKSTAT, TEPAV calculations

Negative impact of the global crisis on Turkey, as briefly summarized above, were acknowledged and accepted by the policy makers as late as almost at the end of 2008, in other words after many countries announced and implemented measures against the crisis. As a result of this, policy makers have introduced some measures with an apparent delay. However, since the measures taken barely matches with the measured needed and the matching measures are introduced sporadically rather than under an integrated measure package; and due to the lack of an efficient communication strategy, the ability of the measures to produce the desired outcomes is limited.

Though it appears that various measures aiming at different areas are taken in the recent period, in terms of efficiency of monetary policy measures appear to be more dominant. It is evident that monetary policy alone will not be sufficient in limiting the negative effects coming through the channels discussed above. The impact of the monetary policy will be limited unless domestic demand and loan mechanisms are stimulated. Furthermore, monetary policy measures, which can create a positive impact when introduced within a comprehensive economic program, fail to achieve this if not supported with other policies.

In this sense, the policies recently put into effect by the government to fight against the crisis are insufficient with respect to both their content and the method of disclosure to the public. At this point, it is of critical importance in the process of fighting against crisis to prepare, in line with medium term economic program, a set of measures that can directly have impact on the channels that transmit the crisis to Turkey and that solely includes measures against crisis as well as to disclose the set of measures to the public under an efficient communication strategy.

3. Measures against the Crisis: What type of a Framework? [2]

The effects transmitted through the four channels listed above lead to economic contraction as well as a rise in unemployment. This is basically the result of the fall in the consumption and the economic activities of the corporate sector. This situation implies that the banking sector, considered to be healthy now, can face problems after a certain period of time. It is inevitable that the challenge the banking sector is to face will affect the corporate sector further in negative direction. Resultant rise in unemployment, and fall in loan volume and confidence will further deepen the problems contracting the domestic demand. The intensity of this vicious circle shall be diminished to the highest extent possible.

In this section the following framework is proposed to limit the turbulence emerging in the economy:

- In the current climate, the imbalance in the cash flows of the corporate sector increases initially the liquidity risk and then the bankruptcy risk. Therefore, it is crucial to protect and/or expand the current credit portfolios of the corporate sector.
- With the tightening of international fund flows, sustainability of the foreign debt of the banking sector and non-banking real sector has decreased. In developed and developing countries, governments have been introducing measures to lower this risk. A similar structure shall as well be established in Turkey.
- The monetary policy measures recently taken to relieve the markets will not have the expected impact due to the obstruction in the credit mechanism. Measures devoted to open the credit channel are extremely important to attain more efficient results through monetary policy.
- With the aim of ensuring the functioning of the domestic and foreign credit mechanisms, provision of public guarantees for loans must be a policy priority. To ensure the voluntary participation of banks in the new system, additional incentive and confidence building measures shall be taken, such as measures to increase FX and TL liquidity.
- In addition to the measures devoted to ensure the functioning of the credit system, measures aiming to improve household spending opportunities shall be addressed to improve the overall coherence and balance of the measures. In this context, measures to increase disposable income of low-income groups shall be considered.
- Attention should be paid to designing autonomous, transparent and accountable policies to the highest extent possible to minimize the political and moral risks and ensure justice.
- Though the use of public resources under the aforementioned method to expand economic activities or limit recession creates remarkable returns, it might as well lead to the deterioration of the budget balance in the short term. The adoption of a medium-term "fiscal rule" to compensate for the short-term deterioration is a prerequisite for the success of the recommended measures. Furthermore, by means of the commitment that the fiscal loosening in the short term will be compensated in the medium term under the framework of the fiscal rule, room to maneuver concerning

[2] In calculating the ratio of the burden of measures recommended in this part on the budget to the GDP, the GDP levels derived over the basis scenario described in the following part has been used. All macroeconomic effects of the addressed measures are presented in detail in the fifth part.

policies devoted to boost domestic demand will expand. In addition, the conclusion of the negotiations carried out with the International Monetary Fund (IMF) as soon as possible will ensure the reestablishment of confidence and increase the opportunities for borrowing in foreign currency.

The sub-sections below discuss measure recommendations forming the mentioned policy framework. And the fourth part of the report employs comprehensive analysis on the macroeconomic results of these measures.

Table 3: List of Measures Recommended in the Report

Measures	Subject of the Measure	Domain of the Measure
T1	Signing IMF agreement. Enabling public foreign debt repayment through this fund	Limiting negative effects transmitted through foreign credit channel
T2	Providing the corporate sector with guarantee for FX loans and liquidity to enable the fulfillment of foreign debt liabilities	Limiting negative effects transmitted through foreign credit channel
T3	Resource transfer by the banks for foreign debt repayments	Limiting negative effects transmitted through foreign credit channel
T4	Providing guarantee for new loans	Enabling functioning of domestic credit channel
T5	Providing guarantee and liquidity for new loans	Enabling functioning of domestic credit channel
T6	Providing guarantee to restructure new loans	Enabling functioning of domestic credit channel
T7	Giving financial aid to retired and needy people	Stimulating consumption, preventing social problems
T8	Facilitating the use of unemployment fund allowance	Stimulating consumption, preventing social problems

Table 4: List of Scenarios[3]

Scenarios	Measures	Situation in the World Economy and other Assumptions
S1	Basis scenario: 5.5 percent contraction/ 5.5 inflation	World Economy: contraction by 2 points
S2	T1	World Economy: contraction by 2 points, Foreign Investor: Favorable
S3	T1 + T2 + T3	World Economy: contraction by 2 points, Foreign Investor: Favorable
S4	T1 + T2 + T3 + T4	World Economy: contraction by 2 points, Foreign Investor: Favorable
S5	T1 + T2 + T3 + T5	World Economy: contraction by 2 points, Foreign Investor: Favorable
S6	T1 + T2 + T3 + T5 + T7 + T8	World Economy: contraction by 2 points, Foreign Investor: Favorable
S7	T1 + T2 + T3 + T5 + T7 + T8	World Economy: contraction by 2 points, Tightening of fund flows, Foreign Investor: Favorable
S8	T1 + T2 + T3 + T5 + T7 + T8	World Economy: contraction by 2 points, Tightening of fund flows, Foreign Investor: Confidence shock

[3] 6th measure is devoted to ensure functioning of the domestic credit channel and is not involved in the scenarios separately as it leads to similar impacts with the 4th and the 5th measures.

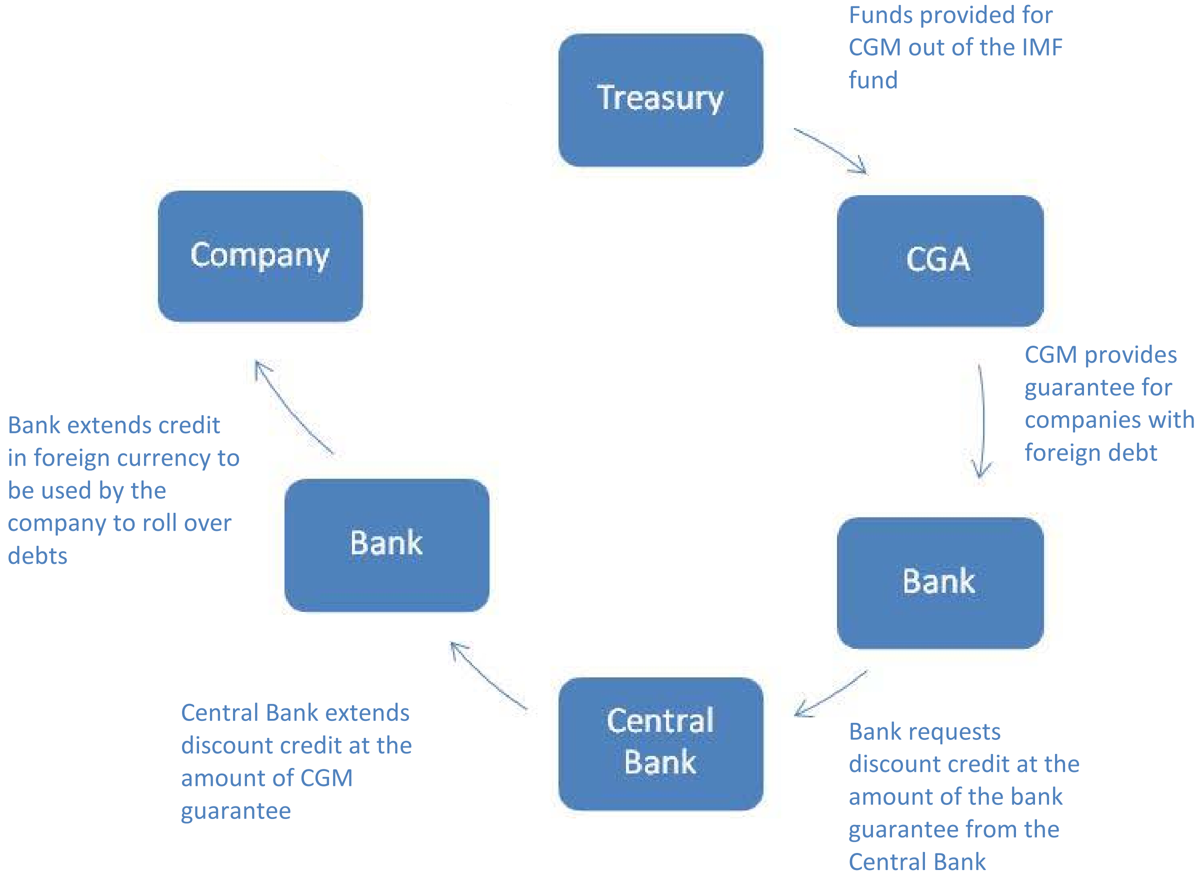
3.1 Foreign Credit

The total amount of foreign debt of the corporate and the banking sectors, repayments of which are due in 2009 is 39.3 and 4.9 billion USD, respectively[4]. Until the end of 2008, both sectors were able to borrow from foreign markets in amounts far above the amount of their foreign debts due. However, in the current crisis period it is predicted that the amount of foreign credit to be received will be lower than the amount of foreign debt due. The inability to roll over foreign credits is expected to be felt more intensely in particular by the corporate sector. The risk of being unable to roll over foreign credits will not be eliminated even an agreement with the IMF is signed, unless mechanisms that transfer the funds to the corporate sector are designed.

3.1.1 Corporate Sector

The system that will enable the corporate sector to benefit from the IMF credit constitutes of the Treasury, Central Bank, corporate sector, commercial banks and an mechanism that provides credit guarantees (Credit Guarantee Mechanism, CGM), and works as shown in Diagram 1 below:

Diagram 1 Credit Guarantee Mechanism



[4] Data is obtained from the periodical CBRT Foreign Credit Debt of the Private Sector (December 2008). Data on non-banking financial institutions were included in the data on the corporate sector.

The operation of the system begins with capital investment by the Treasury to the CGM. As the companies with foreign currency earnings apply to a bank to receive FX loans, the bank assesses the loan application of the company and, if decides that the company is eligible for the loan, applies to the CGM requesting to get partial guarantee. CGM, if decides in favor of the company, provides guarantee for up to 70 percent of the loan in exchange for a commission to be received from the company.

The bank submits the CGM guarantee to the Central Bank and asks for discount credit in the guarantee amount. The Central Bank extends to the commercial bank discount credit in foreign currency with a certain interest rate. The resources for the loan can be the proportion transferred to the Central Bank from the IMF credit to be received. In addition to this, FX borrowing facilities for the banks in the Central Bank can be used. The bank adds 30 dollars per each 70 dollars of discount credit received from the Central Bank and extends the 100 dollars as a loan to the company.[5] The upper boundary of the interest rate on this loan will be set jointly by the Central Bank and the commercial bank and announced to the public.

Total amount of foreign debt of the corporate sector repayments of which are due in 2009 is 39.3 billion dollars, 7.4 billion dollars out of which is of non-banking financial sector companies. Alternative operation methods for the system are given in Table 5.

Table 5: Corporate Sector Foreign Currency Loan Mechanism Option Analysis[6]

	FX Loan Target	Maximum Guarantee Rate	Guarantee Amount	CGM Resource Requirement	Resource Requirement / GDP	CB Discount Credit	Resource Requirement for Banks
Option 1	10,000	50%	5,000	833	0.15%	5,000	4,167
Option 2	10,000	70%	7,000	1,167	0.21%	7,000	1,833
Option 3	15,000	50%	7,500	1,250	0.22%	7,500	6,250
Option 4	15,000	70%	10,500	1,750	0.31%	10,500	2,750
Option 5	20,000	50%	10,000	1,667	0.30%	10,000	8,333
Option 6	20,000	70%	14,000	2,333	0.42%	14,000	3,667

Table 6: Corporate Sector FX Loan Mechanism CGM Fund Balance

	Guarantee Amount	NPL Loss	Commission Revenue	Deposit Interest Revenue	Fund Balance (Profit-Loss)
Option 1	5,000	500	150	42	-308
Option 2	7,000	700	210	58	-432
Option 3	7,500	750	225	63	-463
Option 4	10,500	1,050	315	88	-648
Option 5	10,000	1,000	300	83	-617
Option 6	14,000	1,400	420	117	-863

[5] Figures represent the case where guarantee rate is 70 percent.
[6] The options involved in this mechanism and in the following mechanisms are selected as examples. Similar results can also be derived for other options.

In the table, the values in the 'CGM Resource Requirement' column also show the additional burden on the public budget. It shall be noted that the maximum ratio of this burden to the GDP equals 0.42 percent. When a medium-term lens is employed and it is considered that the recommended mechanisms will be abolished after a certain period, present value of the burden on the budget will in fact be lower. Because, as the mechanism is abolished, the CGM will return the capital back to the Treasury, in case of which the only burden on the budget will be the amount of loss indicated in the 'Fund Balance' column.

In the addressed framework the risks are shared as the following:

- *Central Bank:* Since the commercial bank adds a certain amount of resources in its expense to the amount received from the Central Bank and then extends a loan to the company, FX reserves of the Central Bank will at first decrease, but attain the initial level as the Central Bank collects the loan amounts. Furthermore, the Central Bank receives interest income over the loan extended to the commercial bank. Even in case that the company fails to repay the loan, the Central Bank, collecting the receivables from the involved bank in any case, does not encounter any risk.

- *Commercial Bank:* The risk encountered by the commercial bank equals the proportion of the loan for which the CGM has not provided guarantee. In compensation to this risk, the bank acquires returns from the loan extended. Nonetheless, since the return will correspond to the difference between the loan interest jointly set by the bank and the Central Bank, and the Central Bank borrowing interest rate, interest return for the bank has an upper boundary.

- *CGM and the Treasury:* It is seen that the Treasury encounters a risk if the company the CGM provided guarantee for fails to repay the loan. However, the maximum amount of the risk undertaken by the Treasury is limited with the non-performing portion of the guarantee. It is possible to limit the risk undertaken by the Treasury as a commission amount and some guarantees are received in exchange for providing guarantee.

- *Company:* The system does not pose any additional risk to the company.

3.1.2 Banks

Banks have to feel secure so as for the system above to function. Primarily, banks must not face any trouble in repaying their own foreign debt. Besides other confidence-improving measures, another way to ensure this is the allocation of a certain portion of the loan to be received from the IMF for the use of banks. To do this, the required reserves banks keep at the Central Bank in exchange for foreign currency deposits can be released.[7] In addition, FX borrowing facilities from the Central Bank can be made flexible. The practice can be limited to the banks that participate in the system.

[7] Total amount of required reserves in foreign currency is calculated as 11.6 billion TL (FX deposit * FX deposit required reserve ratio).

3.2 Domestic Loans

To overcome the impacts transmitted from the domestic credit channel, two mechanisms that can be used individually or jointly are recommended: First mechanism is based on the provision of CGM guarantees to new TL loans to be extended. Second mechanism is based on restructuring a certain portion of the current loan stock in a way to prevent the creation of non-performing loans. This mechanism as well works through CGM.

3.2.1 New Loans

The Case where the Central Bank is not involved

The application of the company, if found appropriate by the bank, is submitted to the CGM to receive guarantee for a certain portion of the loan amount. If approves the request, the CGM provides guarantee for the loan the bank extended at the minimum amount set. The bank extends the loan using its own resources.

CGM will receive a certain amount of commission from the company in exchange for the guarantee. Furthermore, it will be entitled to request collateral at an amount not eliminating incentive. The capital of the CGM will be provided by the Treasury. The CGM will deposit the capital to commercial banks investing in interest-bearing instruments. The CGM deposit account will be ensured to be distributed among the banks in line with the rate of loan extended under the system and the resources that the banks will need to extend loans will partially be provided by the CGM.

Current performing loan stock in TL offered to corporate sector is 145 billion TL as of the end of December 2008[8]. Resource requirement and period-end fund balance figures, under the assumption that creating new loans amounting 10, 20 and 30 percent of the existing loan stock is targeted, are presented in Table 7[9].

Table 7: New Loan Mechanism Option Analysis

	New Loan Target	Minimum Guarantee Rate	Guarantee Amount	CGM Resource Requirement	Resource Requirement /GDP	Resource Requirement For Banks
Option 1	15,000	60%	9,000	1,500	0.16%	13,500
Option 2	15,000	80%	12,000	2,000	0.21%	13,000
Option 3	30,000	60%	18,000	3,000	0.31%	27,000
Option 4	30,000	80%	24,000	4,000	0.42%	26,000
Option 5	45,000	60%	27,000	4,500	0.47%	40,500
Option 6	45,000	80%	36,000	6,000	0.63%	39,000

[8] Value is calculated using the monthly BRSA bulletin data.

[9] It is assumed that average credit maturity is 2 years, fund leverage rate is 6, annual guarantee commission is 1.5 percent, nominal rate of return on the CGM deposit is 10 percent and non-performing loan rate is 10 percent.

Table 8: New Loan Mechanism Fund Balance

	Guarantee Amount	NPL Loss	Commission Revenue	Deposit Interest Revenue	Fund Balance (Profit-Loss)
Option 1	9,000	900	270	300	-330
Option 2	12,000	1,200	360	400	-440
Option 3	18,000	1,800	540	600	-660
Option 4	24,000	2,400	720	800	-880
Option 5	27,000	2,700	810	900	-990
Option 6	36,000	3,600	1,080	1,200	-1,320

In Table 7, the values in the 'CGM Resource Requirement' column also show the initial level of additional burden on the public budget. The maximum ratio of this burden to the GDP equals 0.64 percent. As also noted when analyzing Table 6, the burden of the mechanism on the budget in the medium term will be lower. With this respect, even under the option where new loans amounting 45 billion TL are extended and 6 billion TL of resources are transferred to the CGM, the CGM will be able to repay 4.7 billion TL of its equity capital (corresponds to 0.50 percent of GDP) to the Treasury at the end of the period.

The Case where the Central Bank is involved

The system that involves the Central Bank will work similar to the system recommended for FX loans. The bank that extends new loans under the CGM guarantee will be able to use discount credit at the amount of the guarantee from the Central Bank and thus the amount of additional resources required to extend the loan will be the portion not covered by the guarantee.

In this case, the effects on the balance sheet of the Central Bank will be different than the case under the FX loan guarantee system. In the system suggested for the FX loan, only the composition of the assets of the Central Bank changes: While FX reserves fall down by the amount of the loan extended, FX receivables from commercial banks rise by the same amount. If the bank extends discount credits in TL; however, both the asset and liability column of the Central Bank balance sheet will change: In the asset side, receivables from banks in TL terms will rise while in the liability side, monetary base will increase. To put it differently, the Central Bank will inject TL liquidity to the system.

As the Central Bank is also involved in the system, it might be possible to lower the upper bound for guarantee. The only risk this mechanism poses against the Central Bank is the risk of a rise in inflation due to the rise in the monetary base. Nonetheless, in the current climate, the mentioned risk is expected to stay at bearable levels. Similar to the analysis employed in Table 7, the CGM balance, discount credit provided by the Central Bank and the resource requirement for the bank is presented in Table 9. On the other hand, as the monetary base (stand-by definition, January 2009) is 49.9 billion TL, upper boundary for the discount credits is set at 18 billion TL. This way, the monetary expansion and the inflationary pressure that can result from a higher volume of discount credits is prevented.

Table 9: CB Discount Credit Backed New Credit Mechanism

	New Loan Target	Maximum Guarantee Rate	Guarantee Amount	CGM Resource Require.	Resource Require. / GDP	CB Discount Credit	Resource Require. for Banks
Option 1	15,000	40%	6,000	1,000	0.10%	6,000	8,000
Option 2	15,000	60%	9,000	1,500	0.16%	9,000	4,500
Option 3	35,000	40%	14,000	2,333	0.24%	14,000	18,667
Option 4	35,000	60%	21,000	3,500	0.37%	21,000	10,500
Option 5	45,000	40%	18,000	3,000	0.31%	18,000	24,000

Table 10: Central Bank Discount Credit Backed New Credit Mechanism Fund Balance

	Guarantee Amount	NPL Loss	Commission Revenue	Deposit Interest Revenue	Fund Balance (Profit-Loss)
Option 1	6,000	600	180	200	-220
Option 2	9,000	900	270	300	-330
Option 3	14,000	1,400	420	467	-513
Option 4	21,000	2,100	630	700	-770
Option 5	18,000	1,800	540	600	-660

3.2.2 Restructuring Existing Loans

Restructuring of bank loans is recommended as a measure to ensure the sustainability of cash flow of the corporate sector in the crisis period. The biggest challenge for the companies that have planned their cash flow in accordance with the pre-crisis conditions is that they have lost the ability to manage the inflow-outflow balance efficiently under the crisis conditions.

This situation is valid not only for the companies that have non-performing loans. Under the current conditions, companies that do not have non-performing loans might also face challenges. In this context, loan restructuring will be an important step in the direction of solving problems of the corporate sector to a high extent and easing employment problems.

The timing of restructuring is as important as the principles of restructuring. If the loans are restructured after the corporate sector has lost the ability to repay the debt and the loans have moved to the non-performing loan accounts, the contribution to the solution will be quite limited. With this respect, a proactive loan restructuring approach will enable the companies that go under temporary problems to get through the period without encountering loss of prestige and various costs (execution costs, default interest, etc.).

When determining the principles pertaining to restructuring of bank loans, the composition of the credit portfolio of the banks and recent developments shall be followed closely. It is observed that, from September 2008 to February 2009, volume of loans in TL have shrink by 5.7 percent. The TL value of FX loans has increased as the Turkish lira depreciated by over 20 percent. However, when the exchange rate effect is excluded, it is observed that the volume of foreign currency denominated loans has tightened by around 9.4 percent. The fact that almost all of credit portfolio narrowing was driven by the SME loans is a significant indicator of the credit tightening in particular in small and medium sized enterprises[10].

A system where a fund to be established with public resources provides guarantees for restructured loans is recommended. To ensure voluntary participation of banks to the system, the following incentives might be provided for the banks; (1) provision of discount credits by the Central Bank corresponding to a certain part of the loan amount to be restructured, (2) deducting a certain part of the restructuring costs out of the required reserves banks are obliged to keep at the Central Bank, (3) accounting a certain part of the restructuring costs as a provisional rebate item for 2009 under corporate tax base, (4) accounting a certain part of the restructuring costs as a rebate item under saving deposit insurance premium.

Besides the above listed tools directed to the banking sector, policies that are devoted to support directly the companies subjected to loan restructuring might be addressed via tools such as (1) providing access to flexible working allowance and similar employment supports in particular, and (2) restructuring payables like tax, social security and fundamental services (electricity, natural gas, water etc.).

Estimated costs of loan restructuring by guarantee mechanism are given in Table 11 (continued). In the table, the values in the 'CGM Fund Requirement' column also show the additional burden on the government budget. It shall be noted that the maximum ratio of this burden to the GDP equals 0.57 percent. In this context, under the option where loans amounting 92 billion TL are restructured and 5.3 billion TL of resources are transferred to the CGM, the CGM will be able to repay 4.2 billion TL of its equity capital (corresponds to 0.45 percent of GDP) to the Treasury at the end of the period.

Table 11: Loan Restructuring Mechanism[11]

	TL Loans	FX Loans	Non-performing Loans	Total Loan Amount Subject to Restructuring
SME Loans	67,606	7,589	4,805	80,000
Large Business and Corporate Loans	74,131	24,293	4,608	103,033
Total	141,738	31,882	9,413	183,033

[10] Value is calculated using the monthly BRSA bulletin data.

[11] Cost Calculation Method: Credits extended to financial sector and credits extended by overseas branches and subsidiaries are not included in the total credits subject to restructuring. 2 and 1.5 percent annual commission is foreseen to be received in exchange of the fund guarantee provided for SME credits and big business and corporate credits, respectively. Average restructuring period is taken as 2 years.

Table 11 (continued): Loan restructuring mechanism

	Total Loan Amount Subject to Restructuring	Restructuring Rate	Restructuring	Guarantee Amount	CGM Resource Req.	Resource Req. /GDP
Option 1						
SME Loans	80,000	25%	20,000	7,000	1,167	0.13%
Large Business and Corporate Loans	103,033	25%	25,758	9,015	1,503	0.17%
Total	183,033	25%	45,758	16,015	2,669	0.29%
Option 2						
SME Loans	80,000	50%	40,000	14,000	2,333	0.30%
Large Business and Corporate Loans	103,033	50%	51,516	18,031	3,005	0.33%
Total	183,033	50%	91,516	32,031	5,338	0.57%

Table 3: Loan Restructuring Mechanism Fund Balance

	Guarantee Amount	NPL Loss	Commission Revenue	Deposit Interest Revenue	Fund Balance (Profit-Loss)
Option 1					
SME Loans	7,000	700	210	233	-257
Large Business and Corporate Loans	9,015	902	270	301	-331
Total	**16,015**	**1,602**	**480**	**534**	**-587**
Option 2					
SME Loans	14,000	1,400	420	467	-513
Large Business and Corporate Loans	18,031	1,803	541	601	-661
Total	**32,031**	**3,203**	**961**	**1,068**	**-1,174**

3.3 Household Spending Facilities

The measures devoted to stimulating household spending are fundamentally considered under the context of social transfers. With this regard, transfers aiming at low income groups, retired people and needy people as well as the use of unemployment insurance allowances are addressed.

3.3.1 Financial Aid to Retired

Giving one-time bonus payment of 500 TL to people receiving retirement pension less than 1000 TL from Social Insurance Institution (SSK), Social Security Organization for Artisans and Self-employed (Bağ-Kur) and Pensions Fund is recommended. Such plan covers around 97 percent of the retired population. The main objective here is transferring resources to the people with high propensity to consume, who will be affected negatively by the crisis to the highest extent. The number of people to benefit from such aid is estimated to be around 5.4 million and the amount of resources to be allocated from the budget is 2.7 billion TL. This amount corresponds approximately to 0.4 percent of GDP.[12]

3.3.2 Financial Aid to Needy People

Giving one-time bonus payment of 500 TL to old, handicapped and disabled people receiving salary from the SSK as per No 2022 Law is recommended.[13] The number of people to benefit from such aid is estimated to be around 1.2 million and the amount of resources to be allocated from the budget is 623 million TL. This amount corresponds approximately to 0.08 percent of GDP.

3.3.3 Use of Unemployment Insurance Allowance

Under the basis scenario addressed in the fourth part of the report, Turkish economy contracts by 5.5 percent and the unemployment rate jumps to 16.6 percent in 2009. This section primarily forecasts the numeric results of the rise in the number of unemployed people in the existing system. Then, the cost of expanding the scope of the use of unemployment insurance is calculated.

Current Situation: Currently, 244 thousand people are benefiting from unemployment insurance allowance (January 2009). As it is considered that unemployment rate will increase and provided that the system continues to operate under the same course, it is assumed that in 2009, in average 350 thousand people will benefit from the allowance per month.[14] In calculating monthly average wage, wage for 2009 January is taken as basis and it is assumed that the amount calculated will not change during the year. With the information that 12 percent of the total unemployment allowance is accounted as social security premium expenditure, total amount of wage payment and premium expenditures throughout the year is calculated to be 1.7 billion TL.

Expansion of the Unemployment Insurance: Under the basis scenario addressed in the fourth part of the report, it was forecasted that in 2009, national income will grow by 0.02 percent in nominal terms (-5.5 percent in real terms). If the assumption that the contribution of the Treasury will be 0.5 % of 2009 national income is maintained and the unemployment allowance is increased to the level corresponding to 80 percent of the minimum wage, i.e. the legal upper limit, in average 989 thousand people can receive wage, per month.

As another option, unemployment allowance per capita is kept at the current level but the number of people benefiting from the allowance is increased. In this case, though the macroeconomic outcomes remain the same, a wider group of unemployed people consisting of 1.4 million people in average benefits from the allowance per month.

[12] Composition of the people retired from the Pensions Fund and Bağ-Kur as regards the amount of their monthly salaries is not known. For this reason, the share of the retired people from SSK receiving less than 1000 TL per month in total number of people retired from the SSK is assumed to be valid for Pensions Fund and Bağ-Kur. The number of beneficiaries as calculated under this assumption is expanded by using the share of the people retired from SSK in total number of retired people (59.1 percent).

[13] In the current situation, as of 2008, old, handicapped and disabled people that do not have any other income are granted salaries in varying amounts not less than 87 TL. In this context, in total 1,246,213 people receive salaries, 858,860 out of which receive old people salary, 110,741 disabled people salary and 251.999 handicapped people salary as of November 2008.

[14] As Turkish Employment Organization (İŞKUR) does not have a forecast on this issue based on actuarial calculations, the said assumption is formed discretionarily.

Table 13: Use of Unemployment Insurance Allowance

	Initial Situation	If the number of beneficiaries and amount of monthly wage are increased	If the number of beneficiaries is increased but wage amount is kept constant
Average # of people receiving monthly unemployment allowance	350,000	989,285	1,325,958
Average monthly wage	356 TL	533 TL	356 TL
Average monthly unemployment allowance fund expense of the Fund	124,6 million TL	472 million	472 million
Social security premium expenditure	15 million TL	56.6 million TL	56.6 million TL
Annual fund expense	1.7 billion TL	6.4 billion TL	6.4 billion TL
Contribution by the Treasury	0	4.8 billion TL	4.8 billion TL
Share in 2009 national income	0%	0.5%	0.5%
Rise in stimulated consumption in the economy	5.4 billion TL	20.7 billion TL	20.7 billion TL
Share in 2009 national income	%0.5	2.2%	2.2%

4. The Year 2009 in the Light of Recommendations

Upon the recommendations for precautionary measures presented in the previous part, the question on what the general overview of the economy will be in the next period comes on the agenda. The mentioned macroeconomic evaluation is done under the context of the model TEPAV-MAKRO1. In the model, the relations between the macroeconomic variables and political parameters are derived on the basis of earlier academic studies about Turkey and discretionarily. Model coefficients can be adjusted to generate results for both short term and long term. While short term corresponds to three quarters following the implementation of one recommended measure, long term corresponds to seven quarters.[15] In the following parts of the report, the scenarios are addressed individually and their macroeconomic results are presented. Short term results are given in Table 15 and long term results are given in Table 16.

4.1 Scenario 1: Basis scenario

The situation where a coherent economic measure package to tackle the crisis is not announced or implemented constitutes the basis scenario. In this case, 5.5 percent real contraction, 5.5 percent inflation rate and 16.6 percent unemployment rate is foreseen. This significant contraction is mainly driven by the gradual intensification of the effects transmitted to Turkey through the aforesaid channels along with the deepening trend in the global crisis and the consequent deterioration in expectations.[16] In case the global markets are shaken further and it becomes evident that the global recession will continue longer than anticipated, there is a risk that the contraction estimations will become optimistic. Expectations of declining demand and constant commodity prices automatically lead to an inflation rate far below the official target of the Central Bank.

4.2 Scenario 2: International Monetary Fund (IMF)

In addition to the basis scenario, it is assumed that the IMF agreement is signed and 15 billion USD has been transferred to Turkey in 2009 under the context of this agreement. It is foreseen that, thanks to the fund inflow, confidence of foreign investors in the Turkish economy has partially recovered.

Composition of the Funds Used

4.1 billion USD of the fund received from the IMF is used for foreign debt repayment while the remaining is added to the Central Bank reserves.

Impacts in comparison with the Basis scenario

Short term:

- Under this scenario, growth rate is affected positively by 0.2 points in the short term and real tightening of credits decreases by 1 points.

[15] For any policy change, three phases can be considered: design, awareness and adjustment. Introduction of short and long term distinction is explained under the forecast that fulfilling those phases takes time.

[16] For instance, the IMF predicts that the world economy will contract by 0.6 percent in 2009 (WEO, January 2009). Nonetheless, data announced after the date of the IMF estimation leads to the revision of the IMF estimation down by 2 percent. Furthermore, international fund flows are foreseen to diminish as per the estimations by the Institute of International Finance (IIF).

- Inflation rate rises approximately by 0.1 points and current account deficit falls down by 0.3 points in proportion to national income.[17]

Long term:

- Growth performance is affected positively by 0.5 points while inflation is affected negatively by 0.3 points.
- Current account deficit decreases by 0.4 points and real tightening of credits falls down by 1.7 points.

4.3 Scenario 3: Foreign Credit Channel

In Scenario 3, in addition to Scenario 2, it is aimed to transfer a certain part of the fund from IMF in form of FX loans to the corporate sector by the CGM and therefore to support the foreign debt repayment of the corporate sector in 2009.

Composition of the Funds Used

4.1 billion USD of the IMF fund is used to pay the foreign debt of the public sector; 2.2 billion USD is transferred to the commercial banks and 1.2 billion USD to the Treasury while 7 billion USD is transferred to the Central Bank to be used as discount credit and the rest of the fund amounting around 500 million USD is added to the FX reserves of the Central Bank. 1.2 billion USD of funds transferred to the Treasury is transformed into FX loans of 10 billion USD via the CGM. Of this 10 billion USD, 7 billion USD will be extended through discount credits by the Central Bank, 1.2 billion USD through the CGM deposits and the rest will be extended through own resources of commercial banks.[18]

Impacts in comparison with the Basis scenario

Short term:

- Economic contraction decreases by 0.4 points and inflation rate rises by 0.2 points.
- Current account deficit falls down by 0.7 points and real tightening of credits decreases by 2.1 points.

Long term:

- Economic contraction falls down by 1.3 points while inflation rate goes up by 0.7 points.
- Current account deficit decreases by 1 points; real tightening of credits diminishes by 3.6 points.

Impacts in comparison with Scenario 2

If, in addition to Scenario 2, fund coming from the IMF is transferred to the corporate sector in the form of FX loans through the credit guarantee mechanism (CGM):

[17] Unless specified otherwise in the following parts of the report, current account deficit and budget deficit is defined in proportion to the national income.
[18] For details, please see Part 3.1.1.

- Real tightening of credits decreases by 1 and 1.9 points in the short term and long term respectively as compared to Scenario 2.
- Also as a result of this, fall in growth decreases by 0.2 points in the short term and 0.8 points in the long term.
- Due to the increase in growth, inflation rate goes up by 0.1 points and 0.4 points in the short term and in the long term, respectively.
- Current account deficit decreases by 0.4 points in the short term and by 0.6 points in the long term.

4.4 Scenario 4: Domestic Credit Channel

In this scenario, in addition to the scenario 3, the corporate sector is provided with TL loans through the CGM. The Central Bank is not involved in the system.

Composition of the Funds Used

In addition to the foreign credit measures recommended in Scenario 3, the Treasury shall transfer 1.3 billion TL of funds to the CGM in 2009 to ensure the operation of domestic credit channel. As detailed in Part 3.2.1, the CGM will provide guarantees to the 80 percent of the total 10 billion TL of loans extended by banks. 1.3 billion TL of the guarantee provided will be covered by the CGM deposits while 8.7 billion TL will be covered by banks out of their own resources.

Impacts in comparison with the Basis scenario

Short term:

- Fall in growth decreases by 0.5 points while inflation rate rises by 0.3 points.
- Current account deficit decreases by 0.7 points and real tightening of credits falls down by 4.5 points.

Long term:

- Fall in growth is reduced by 1.6 points.
- Inflation rate grows by 0.7 points while current account deficit and budget deficit decrease by 1.1 and 0.1 points respectively.
- Real tightening in the credit volume in the long term decreases by 6.2 points as compared to the basis scenario.

Impacts in comparison with the Scenario 3

- Real tightening in credits decreases by 2.4 and 2.5 points in the short term and long term respectively.
- Fall in growth decreases by 0.1 points in the short term and 0.2 points in the long term.
- Inflation rate goes up by 0.1 points both in the short term and long term.
- Current account deficit does not change considerably in the short term and falls down by 0.1 points in the long term.

4.5 Scenario 5: Domestic Credit Channel – Central Bank is involved in the Mechanism

As explained in detail in Part 3.2.1, Scenario 5 differs from Scenario 4 with the inclusion of the Central Bank in the mechanism.

Composition of the Funds Used

In this scenario, in addition to the foreign credit measures taken in scenario 3, the Treasury shall transfer 2 billion TL of funds to the CGM in 2009 to ensure the operation of domestic credit channel. As detailed in Part 3.2.1, the CGM will provide guarantees to the 60 percent of the total loans amounting 20 billion TL. The Central Bank will extend commercial banks discount credits equal to the guarantee amount (12 billion TL). 2 billion TL of the guarantee provided will be covered out of CGM deposits while 6 billion TL will be covered by banks out of their own resources.

Impacts in comparison with the Basis scenario

Short term:

- Fall in growth decreases by 0.7 points as compared to the basis scenario while inflation rate rises by 0.3 points.
- Current account deficit decreases by 0.8 points and real tightening of credits falls down by 7.4 points.

Long term:

- Economic contraction diminishes by 1.8 points and inflation rate grows by 0.9 points.
- Current account deficit and budget deficit decrease by 1.2 and 0.1 points respectively.
- In the long term, the tightening of credits in real terms decreases by 9.2 points.

Impacts in comparison with Scenario 3

- Real tightening of credits decreases by 5.3 and 5.6 points in the short term and long term respectively.
- Fall in growth decreases by 0.3 points in the short term and 0.4 points in the long term.
- Inflation rate goes up by 0.1 points both in the short term and 0.2 points in the long term.
- Current account deficit decreases by 0.1 points in the short term and 0.2 points in the long term.

4.6 Scenario 6: Domestic Demand is stimulated

In this scenario, in addition to the scenario 5, public spending is increased for those social groups with a higher propensity to consume. This include financial aid by 2.7

billion TL for the retired people and by 624 TL for needy people; 6.4 billion TL of additional spending from the unemployment fund[19].

Composition of the Funds Used

Composition defined for Scenario 5 is valid also for this scenario.

Impacts in comparison with the Basis scenario

Short term:

- This scenario ensures 1.9 points of decrease in economic contraction and 0.9 points of increase in inflation.
- Current account deficit diminishes by 1.3 points and the share of budget deficit in the national income rise by 0.7 points.
- Real tightening of credits diminishes by 7.9 points.

Long term:

- Economic contraction is reduced by 4.5 points while inflation rate rises by 2.1 points.
- Current account deficit increases by 2.1 points.
- Real tightening in credits falls down by 12 points.

Impacts in comparison with Scenario 5

- Real tightening of credits falls down by 0.7 points in the short term and 3 points in the long term.
- Fall in growth decreases by 1.3 points in the short term and 2.7 points in the long term.
- Inflation rate rises by 0.6 points in the short term and 1.2 points in the long term.
- Current account deficit falls down by 0.4 points in the short term and by 0.9 points in the long term.
- Budget deficit rises by 0.5 points in the short term and 0.2 points in the long term.

4.7 Scenario 7: World Economy Deteriorates

In Scenario 7, it is foreseen that the conditions in the world economy deteriorates. This deterioration leads to a fall in international fund inflows below the estimations of the IIF.

Composition of the Funds Used

Composition defined for Scenario 5 is valid also for this scenario.

[19] For the policy recommended for stimulating domestic demand, around 10 billion TL Treasury fund is proposed. By means solely this measure enabled 3.2 point recovery in growth rate over 7 quarters and 1.4 points of recovery over 3 quarters. Under this policy, Treasury funds at the amount allocated for the credit mechanism was allocated for the mechanism to stimulate domestic demand to compare individual effects of the options to stimulate domestic credit channel and foreign credit channel. As a result of this effort, it is observed that both options had similar effects on the economy. Domestic demand mechanism, when implemented alone, lead to 0.04 and 0.25 points of recovery in the growth performance in the short term and long term, respectively.

Impacts in comparison with the Basis scenario

Short term:

- Fall in growth decreases by 1.6 points as compared to the basis scenario.
- Inflation rate rises by 0.8 points. Current account balance falls down by 1.2 and budget deficit increases by 0.8 points.
- Real tightening of credits diminishes by 7.9 points in the short term.

Long term:

- In the long term, decrease in growth is cut down by 3.9 points and inflation rate increases by 1.8 points.
- Current account deficit decreases by 1.9 and budget deficit decreases by 0.3 points.
- Real tightening of credits decreases by 11.5 points in the long term.

Impacts in comparison with Scenario 6

- Real tightening of credits does not change in short term and rises by 0.6 points in long term.
- Fall in growth increases by 0.3 points in the short term and by 0.6 points in the long term.
- Inflation rate decreases by 0.1 points in the short term and 0.3 points in the long term.
- Current account deficit rises by 0.1 points in the short term and by 0.2 points in the long term.

4.8 Loss of Confidence in Foreign Investors

In Scenario 8, in addition to Scenario 7, the assumption that foreign investors lost confidence in Turkish economy is added to the picture.

Composition of the Funds Used

Composition defined for Scenario 5 is valid also for this scenario.

Impacts in comparison with the Basis scenario

Short term:

- Fall in growth decreases by 1.4 points and inflation rises by 0.7 points.
- Current account deficit falls down by 1.1 points while budget deficit increases by 0.9 points.
- Real tightening of credits decreases by 7.8 points.

Long term:

- Economic contraction falls by 3.3 points and inflation rises by 1.5 points.
- Current account deficit falls down by 1.7 points while budget deficit does up by 0.4 points.
- Real tightening of credits decreases by 10.9 points.

Impacts in comparison with Scenario 7

- Real tightening of credits rises by 0.2 points in the short term and 0.8 points in the long term.
- Fall in growth increases by 0.3 points in the short term and by 0.6 points in the long term.
- Inflation decreases by 0.1 points in the short term and by 0.3 points in the long term.

5. General Evaluation

As a result of the most comprehensive set of measures where IMF fund is received and used to pay whole amount of 2009 foreign debt and the rest is transferred to the banking sector and – by means of the support provided by the credit guarantee mechanism involving the central bank– to the corporate sector, and furthermore household spending is stimulated by expansionary fiscal policies; contraction in the economy is diminished from 5.5 percent to 3.6 percent in the short term and to 1 percent in the long term. The mentioned set of measures gives the best outcome possible. On the other hand, it is obvious that these outcomes cannot be reached in case the international conjuncture deteriorates further. In such an unfavorable milieu, national income contracts by 4.2 percent in the short term and by 2.2 percent in the long term even the comprehensive set of policy recommendations are implemented.

As also discussed in detail above, to reach the aforesaid outcomes, budget deficit will inevitably rise by a certain extent in the short term. Nonetheless, since the contraction of the Turkish economy will be lower thanks to the policies implemented, the fall in tax revenue and thus the deterioration of the budget balance will be limited. Furthermore, as the CGM will be liquidated and its capital as well as accumulated profit/loss will be transferred to the Treasury, the burden on the budget will be lower in the long term. This situation is presented in Table 14.

Table 14: Impact of the Recommended Measures on the Budget (% of GDP)

	Scenario 4	Scenario 5	Scenario 6
Initial Fund Transfer	-0,35	-0,42	-1,28
Short Term Impact	-0,18	-0,21	-0,75
Long Term Impact	0,07	0,07	-0,14
Refunding to Treasury at Liquidation	0,11	0,17	0,17

Table 15: Macroeconomic Effects of the Measures (Short Term)

	Basis Scenario Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
Growth, Employment and Inflation				*Percentage, growth rates*				
Real GNP growth	-5.50	-5.35	-5.12	-5.00	-4.84	-3.59	-3.86	-4.15
Private Consumption	-2.88	-2.78	-2.65	-2.51	-2.33	-0.05	-0.16	-0.27
Private Fixed Capital Investment	-15.69	-14.19	-11.78	-11.43	-11.01	-10.30	-11.64	-13.05
Unemployment	16.64	16.50	16.31	16.19	16.05	14.95	15.19	15.44
Inflation (CPI)	5.48	5.56	5.68	5.74	5.81	6.40	6.27	6.14
Balance of Payments				*Percentage. share in GNP*				
Current account balance	1.51	1.23	0.81	0.77	0.71	0.26	0.35	0.46
Financial Accounts	-7.22	-5.46	-3.95	-3.94	-3.94	-3.88	-5.48	-7.19
Net foreign direct investment	2.05	2.31	2.29	2.29	2.28	2.25	2.00	1.74
Net portfolio investment	-1.82	-1.70	-1.68	-1.68	-1.67	-1.65	-1.76	-1.87
Commercial Loans	0.09	0.14	0.14	0.14	0.14	0.14	0.09	0.03
Bank loans	-4.68	-3.59	-2.10	-2.10	-2.10	-2.07	-3.05	-4.10
Public Finance				*Percentage. share in GNP*				
Budget deficit	-5.7	-5.7	-5.8	-5.9	-5.9	-6.5	-6.5	-6.6
Money				*Percentage, growth rates*				
Real change in loans	-17.9	-16.8	-15.9	-13.5	-10.5	-10.0	-10.1	-10.1

Remarks: [1] Short term corresponds to three quarters. [2] Scenario 1 shows the results of the Basis Scenario. [3] In Scenario 2, in addition to the Basis scenario, it is assumed that under the context of the agreement with the IMF, as expected to take place, 15 billion USD of external funding is received; a part of the fund is used to pay 2009 public debt principal amount and the rest of the fund is transferred to the Central Bank and that as a result of these developments the confidence of the foreign investors in the Turkish economy is reestablished. [4] In Scenario 3, in addition to Scenario 2, FX loans are extended to the corporate sector by the CGM out of the funds received from the IMF. [5] In Scenario 4 and 5, in addition to Scenario 2, TL loans are extended to the corporate sector through the CGM. The Central Bank, which is not involved in the mechanism in Scenario 4, is included in the mechanism in Scenario 5. [6] In Scenario 6, expansionary public finance policies (financial aid by 2.7 billion TL for the retired people and by 624 TL for needy people; 6.78 billion TL of additional spending from the unemployment fund are added to the Scenario 5. [7] In Scenario 7 and Scenario 8, international conjuncture worsens. In this context, Scenario 7 assumes that the international fund flows will be affected negatively and Scenario 8 foreign investors will lose confidence in the economy.

Table 16: Macroeconomic Effects of the Measures (Long Term)

	Basis Scenario Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
Growth, Employment and Inflation				*Percentage, growth rates*				
Real GNP growth	-5.50	-4.98	-4.15	-3.95	-3.70	-1.04	-1.62	-2.23
Private Consumption	-2.88	-2.61	-2.20	-2.02	-1.81	2.85	2.61	2.35
Private Fixed Capital Investment	-28.63	-25.36	-20.12	-19.42	-18.57	-16.54	-19.34	-22.29
Unemployment	16.64	16.18	15.45	15.27	15.05	12.70	13.21	13.75
Inflation (CPI)	5.48	5.74	6.14	6.23	6.35	7.59	7.32	7.03
Balance of Payments				*percentage, share in GNP*				
Current account deficit	1.51	1.09	0.46	0.39	0.30	-0.62	-0.42	-0.22
Financial Accounts	-7.22	-5.43	-3.90	-3.89	-3.88	-3.76	-5.34	-7.03
Net foreign direct investment	2.05	2.30	2.26	2.26	2.25	2.18	1.95	1.70
Net portfolio investment	-1.82	-1.69	-1.66	-1.66	-1.65	-1.60	-1.71	-1.83
Commercial Loans	0.09	0.14	0.14	0.14	0.14	0.13	0.08	0.03
Bank loans	-4.68	-3.58	-2.08	-2.07	-2.07	-2.00	-2.97	-4.00
Public Finance				*percentage, share in GNP*				
Budget deficit	-5.71	-5.56	-5.55	-5.64	-5.64	-5.85	-5.98	-6.12
Money				*Percentage, growth rates*				
Real change in loans	-17.94	-16.24	-14.31	-11.77	-8.70	-5.92	-6.45	-7.02

Remarks: [1] Short term corresponds to three quarters. [2] Scenario 1 shows the results of the Basis Scenario. [3] In Scenario 2, in addition to the Basis scenario, it is assumed that under the context of the agreement with the IMF, as expected to take place, 15 billion USD of external funding is received; a part of the fund is used to pay 2009 public debt principal amount and the rest of the fund is transferred to the Central Bank and that as a result of these developments the confidence of the foreign investors in the Turkish economy is reestablished. [4] In Scenario 3, in addition to Scenario 2, FX loans are extended to the corporate sector by the CGM out of the funds received from the IMF. [5] In Scenario 4 and 5, in addition to Scenario 2, TL loans are extended to the corporate sector through the CGM. The Central Bank, which is not involved in the mechanism in Scenario 4, is included in the mechanism in Scenario 5. [6] In Scenario 6, expansionary public finance policies (financial aid by 2.7 billion TL for the retired people and by 624 TL for needy people; 6.78 billion TL of additional spending from the unemployment fund are added to the Scenario 5. [7] In Scenario 7 and Scenario 8, international conjuncture worsens. In this context, Scenario 7 assumes that the international fund flows will be affected negatively and Scenario 8 foreign investors will lose confidence in the economy.

Previous Studies of the TEPAV Global Crisis Working Group

09 November 2008 2007-08 Global Financial Crisis and Turkey: Impacts and Recommendations, TEPAV Policy Note

Major impact channels, changing trends in the world economy, policies appropriate for the case of Turkey

13 November 2008 Search for Ways out of the Global Crisis: What should Turkey do in the G-20 Summit?, TEPAV Policy Note

The role of G-20 in reshaping the architecture of global finance, representation of the private sector in restructuring process under the context of G-20, the roles Turkey can assume in the G-20 November 2008 meeting

18 November 2008 An Example of Measures to Tackle the Crisis: Credit Guarantee System, TEPAV Policy Note

A credit guarantee system draft, operation principles

27 November 2008 A way to turn the economic crisis into an opportunity: Programs to rebuild workforce skills at mass level and Korean experience, TEPAV Evaluation Note

Medium and long term benefits of the programs targeting to rebuild workforce skills, lessons derived from the Korean experience for Turkey

31 December 2008 Policy Experiences of Countries in 2007-08 Global Financial Crisis, TEPAV Evaluation Note

Policy measures 41 individual countries have adopted during the latest global crisis period, classification of measures and the concentration pattern in terms of macroeconomic indicators for individual countries

16 February 2009 Return to 1980s in Private Capital Flows, TEPAV Evaluation Note

Tightening of private capital flows at global level due to the crisis, the shift of system parameters to patterns observed in several decades ago and lessens to be derived

Appendix 1 – General Macroeconomic Framework: TEPAV-MAKRO1

TEPAV-MAKRO1, the results of which are provided in the fourth part of the report, is a macroeconomic framework that allows the control of interrelated functioning of the real sector, balance of payments, monetary sector and public finance as well as the consistency of the outputs of these sectors. Attention was paid to design this macroeconomic framework in a way that will cover all channels that have potential to transmit the global crisis to Turkey and that will involve all mechanisms that will allow the solution of the problems originating from those channels by means of economic policy.

In the following parts, the basis scenario will be presented under the context of the functioning of the framework and the parameters used.

Functioning of the Framework

The framework is formed annually and the figures for 2009 are estimated based on certain assumptions employed for 2008 year-end figures (realizations in general, or expectations turned into annual form). The impact of the policies recommended to tackle the crisis, as presented in the 3rd part of the report, are evaluated over 3 quarters (short term) and 7 quarters (long term). Term analysis is conducted via parameters. The details are given in the parameters part.

i. Real Sector

Real sector growth figure is exogenously fed into the framework. Consumption components of GDP are estimated over some behavioral equations. In this context;

It is assumed that the consumption and investment behaviors of the private sector is in particular affected by the GDP real growth rate and then by consumer credits and commercial credits. Nonetheless, in the crisis periods, the mentioned behaviors are allowed to decrease independent of the named variables.

Under the government final consumption expenditure, compensation of employees, and purchase of goods and services items are directly connected with the expenditures foreseen in the public finance figures.[20]

Fixed capital formation is derived from the implementation of the real growth rate foreseen in budget figures on the expenditure figures for 2008.

Export and import estimations are separately made in balance of payments accounts and are considered as inputs to the real sector.

After modeling the movement in the consumption item under the real GDP foreseen by the growth rate assumed in the first step, value of the variations in inventories is left as residual value. The residual inventory value involved under the basis scenario is taken as a fixed value under other scenarios.

[20] The framework estimates central government budget figures under the public finance section. However, government expenditures related to the real sector involve both local government budgets and the consolidated budget. The difference is included in the framework on the basis or certain coefficients.

Real growth rate, which is assed to the framework as an exogenous variable, also affects import volume excluding energy imports, current transfers, expectation of real exchange rate changes, and foreign capital flows items under the balance of payments; money multiplier and cash and receivables from Central Bank items under the assets of the banking sector as well as other asset components in the monetary sector. Some expenditure and revenue items under the public finance sheet are determined based on nominal GDP growth and some is determined based on nominal consumption growth.

In the basis scenario, under the assumption that government policies will not follow an integrated macroeconomic program and that this will lead to the continuation of the downward trend in growth started in 2008, 5.5 percent contraction is estimated for 2009.

ii. Balance of Payments

Current account balance; It is determined based on the estimations on the growth of the Turkish economy and the expected change in real exchange rate. Among these variables, former feeds into the system in the basis scenario as a variable assumed by us. World growth estimation is assumed as -2 percent[21]. Expected change in real exchange rate is connected to the growth estimations; real exchange rate is foreseen to change at the growth rate level. The variable affected by the real exchange rate is limited with current account balance. Nonetheless, level of nominal exchange rate is estimated based on the real exchange rate and inflation difference assumptions. Nominal exchange rate is used to derive import tax revenue in the public finance sheet, net foreign asset value in the monetary sector sheet and TL value of exports and imports in the GDP sheet.

Financial account; It is assumed that the variations in the said account depend on primary surplus level, presence of an IMF program and the difference of the growth performance of Turkey and the world from the basis scenario. In this context, it is foreseen that global fund flows will decrease to a large extent. Growth performance of Turkey in comparison with the basis scenario, growth performance of the world in comparison with the estimation under the basis scenario, the ratio of the primary surplus of Turkey to GDP and the presence/absence of an IMF program are modeled as variables that affect the share Turkey receives from foreign investment supply, which has been decreasing.[22] In the basis scenario, it is assumed that IMF agreement will not be signed and the expectations of foreign investors are unfavorable. In this sense, estimations for the variation in flow of foreign capital are made in parallel to the estimations of the Institute of International Finance. Under this context;

It is assumed that short term capital which includes portfolio assets and liabilities (equity and debt securities), short term credits of banking sector and the real sector and trade credits will be reduced by 75 percent.

[21] Based on the local market exchange rates for individual countries, the IMF estimates that the world economy will contract by 0.6 percent in 2009 (WEO, January 2009). However, based on the data released after the data of estimation of the IMF, the rate of contraction is assumed as -2 percent in this report.

[22] Ratio of the primary surplus to the GDP above 2.5 percent and the presence of an IMF program (not the fund value, presence or absence of a program) result in a 0.1 point recovery in a decrease in foreign fund flows, each. Furthermore, if the growth performance of Turkey and the world is more positive than anticipated in the expectations under the basis scenario, it is foreseen that the mentioned recovery will increase at an amount two times the difference between the realized recovery in the performance and the expected growth rate.

It is assumed that relatively longer term investments, which include foreign direct investments and long term credits of the banking sector and the real sector, will decrease by 65 percent.

It is assumed that volume of bank credits and deposits will decrease by 55 percent.

iii. Monetary sector

Monetary sector allows us to calculate balance sheet components of the Central Bank and the banking sector.

Balance sheet components of the Central Bank;

It is assumed that the general size of M2 will change in line with the inflation target and general liquidity conditions. The size of the financial sector is calculated under this assumption.

It is foreseen that the money multiplier will vary in accordance with growth rate. This assumption also reflects the willingness of banks to keep excess liquidity depending on general economic conditions.

Monetary base is calculated using money multiplier and M2 assumptions. How much of the calculated monetary base is constituted by domestic assets hold by the Central Bank is derived considering the change in reserves as implied by the balance of payments.

Balance sheet components of the banking sector;

Volume of deposits is calculated based on the finding that Deposits/M2 value has not changed considerably over previous years.

Total deposit volume of banks for 2009 is calculated based on the information that over the previous 3 years, approximately 60 percent of the total liabilities of the banks are composed of deposits. Therefore, the same rate is used for the calculation.

In deciding the composition of the assets of banks, it is assumed that the proportional share of receivables from other banks and securities in total assets will be same with that in 2008.

It is estimated that the cash item and the receivables from the Central Bank item will differ from 2008 in relation to the growth rate that will reflect the general outlook of the economy. Accordingly, it is assumed that the share of cash item and the receivables from the Central Bank and other receivables item in total assets will decrease (increase) when the growth is positive (negative).

The amount of Treasury bills held by banks is calculated in line with the same amount for the previous year and the financing need of the Treasury. Accordingly, based on the information that 94 percent of the Treasury bills banks hold have maturity of longer than one year, public sector borrowing requirement calculated in the public finance sheet was added to 94 percent of the total Treasury bill value in 2008, and the amount of Treasury bills in the balance sheets of banks in 2009 is calculated.

Private sector credits item is a residual value calculated by subtracting the aforesaid asset items from total assets. It is assumed that 30 percent of the private sector credits is consumer credits while the rest is commercial credits.

iv. Public Finance

Expenditures: Among the expenditure items; employee expenditures, government premiums to social security agencies , purchase of goods and services, current transfers, unemployment insurance, shares from revenues, local administrations, funds and other, agricultural aid, treasury aid to local administrations, transfers to social security agencies, public economic enterprises and public banks' duty loss, other current transfers, capital expenditures, capital transfers, lending, and auxiliary allowances items are obtained from 2009 Central Government Budget. The listed items are involved in the framework in a way to respond to all types of measures to be implemented in the area of public finance. Other expenditure items are estimated based on data for the previous period, inflation rate, growth and exchange rate.

Revenues: It is assumed that 25 percent of direct taxes are based on the nominal growth in the previous year and 75 percent is based on the expected nominal growth for 2009. Among indirect taxes, VAT and PCT are associated with the expectations of nominal consumption growth in 2009. VAT on imports is calculated over import receipt under 12 percent active tax rate. Banking and insurance transactions tax, other revenues, enterprise and property revenues and capital revenues are associated with nominal growth.

Financing need: It is assumed that 85 percent of the budget deficit will be financed by domestic investors and 15 percent of the deficit will be financed by foreign investors.

Parameters

i. Reel sector

Household consumption elasticity: Elasticity of the household consumption toward the growth of consumer credits is 0.04 and toward economic growth is 0.4 percent.[23]

Investment expenditure elasticity: Elasticity of private sector investment spending toward the growth of commercial credits is 0.3 and toward growth I 0.5.[24] The mentioned elasticity values are valid for a period of 7 quarters (long term) and the values are reduced by 50 percent for the 3-quarter period (short term). Elasticity for foreign credits is assumed to be 0.1.

Expenditure multiplier: It is calculated on the basis of household budget survey 2003 data and stands at 2.5. The mentioned rate is valid for a period of 7 quarters (long term) and the values are reduced by 50 percent for the 3-quarter period (short term).

[23] Given elasticity values are taken from the study of Fatih ÖZATAY, *"Expansionary Fiscal Consolidations: New Evidence From Turkey" (July 2008).*
[24] ibid

ii. Balance of Payments

Export elasticity (affected by income level): It is assumed that the elasticity of the export items affected by income level toward foreign income level and toward real exchange rate is 0.37 and – 0.2, respectively.

Export elasticity (not affected by income level): It is assumed that the elasticity of the export items not affected by income level toward real exchange rate is – 0.2.

Import elasticity (excluding energy imports): It is assumed that the elasticity of import items excluding energy imports toward national income level and toward real exchange rate is 1.18 and 0.53, respectively.

Import elasticity (energy): Under the assumption that amount of energy imports did not change, the related item is changed by the rate of change in energy prices. Barrel price of oil for 2009 is estimated as 45 USD.

Elasticity of current transfers: A big portion of the mentioned item is composed of remittances. Therefore, 2009 value for this item is calculated using the elasticity of remittances to Turkish growth and the resultant value 0.3.25

Rate of reduction in financial account items: In line with the estimations of the Institute of International Finance, international fund flows are foreseen to decrease. In this sense, in the basis scenario, it is assumed that foreign direct investments decrease by 75 percent while portfolio account asset and liability items, commercial credit and credit usage, change in net foreign assets of banks and the deposits decreases by 15 percent. It is assumed that credit repayments will be completely made. In case the world economy deteriorates, the aforesaid rates are expected to stand at 0.66 and 0.06 percent, respectively.

iii. Monetary Sector

Inflation: It is assumed that there exists 10 percent exchange rate effect, 36 percent domestic demand effect and 56 percent inertia effect on inflation.

iv. Public Finance

Treasury debt stock in terms of creditor: Bon the basis of the data revealed in the Treasury Financing Program26, it is assumed that foreign investors and domestic investors hold 15 and 85 of Treasury bills, respectively. According to the same program, around 80 percent of Treasury bills are held by banks.

[25] The mentioned elasticity rate is taken from the study of Serdar SAYAN and Ayça TEKİN-KORU, *"Remittances, Business Cycles and Poverty: The Recent Turkish Experience", International Migration (in publication).*
[26] "Treasury Financing Program*: developments in 2008 and prospects for 2009" (28/12/2009; No: 2008/224)*