TRANSMISSION MECHANISM OF SHOCKS FOR GLOBAL ECONOMIC CRISIS PERIOD: TURKEY CASE[1]

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ABSTRACT

In the late 2006, crisis was accepted as a temporary shock. However, this optimistic thought gave way to pessimism. When we come to the year 2009, crisis depth effects to the country's economies and precautions are the favorite matters for discussion. Moreover, government intervention and liberalization are coming up again. So, economic system debates are flamed. The paper investigates the transmission mechanism of internal and external shocks to macroeconomic variables, in particular the real exchange rate, using quarterly data for Turkish economy over the period 1991:4 to 2010:2. The analysis is performed using both a formal theoretical model and empirical work based on an estimated Vector Error Correction(VEC) model. The results obtained suggest that there is a long run relationship between the taken variables and long term equilibrium can be maintained in approximately four quarter.

Keywords: Real Exchange rate, Turkey, Crisis, Cointegration, VEC

JEL Classification: F10, F32, G01

GLOBAL EKONOMİK KRİZ SÜRECİNDE ŞOKLARIN AKTARIM MEKANİZMALARI: TÜRKİYE ÖRNEĞİ

ÖZET

2006 yılının sonlarında kriz geçici bir şok olarak kabul edilmektedir. Fakat bu iyimser hava yerini kötümser bir görüşe bırakmıştır. 2009 yılına gelindiğinde krizin derinliği ülke ekonomisini etkilemekte ve bu konuda alınan önlemler tartışma konusu olmaktadır. Dahası, kamu müdahaleleri ve serbestleştirme gündeme gelmiştir. Böylece ekonomik sistem tartışmaları alevlenmiştir. Çalışma reel döviz kuru özelinde makroekonomik değişkenler üzerinde iç ve dış şokların aktarım mekanizmalarını araştırmaktadır. 1991:4 – 2010:2 döneminde üçer aylık veriler Türkiye ekonomisi için kullanılmıştır. Analizde teorik modelin yanı sıra ampirik çalışma olarak Hata Düzeltme Modeli(HDM) kullanılmıştır. Elde edilen sonuçlara göre ele alınan değişkenler arasında uzun dönemli bir ilişki bulunurken, bu ilişkideki sapmalar yaklaşık olarak 4 çeyrek dönem içerisinde dengeye dönecektir.

Anahtar Kelimeler: Reel döviz kuru, Türkiye, kriz, eşbütünleşme, HDM

JEL Sınıflaması: F10, F32, G01

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INTRODUCTION

There is a widespread conviction that financial crisis are rare events. However, their impact is huge. Starting with two distinct phases: a period of financial turmoil and limited spreading from July 2007 to 15 September 2008, followed by a panic phase with global and rapid spreading; recent financial crisis has been of major economic policy concern for years. Its effect includes both financial system and severe consequence for the global economic development (Blundell Wignall et.al, 2008, p.2; Furceri and Mourougane, 2009, p.6). These points have become focus of attention by many researchers in the literature. General consideration about global imbalances is that USA suffers from this problem. As a solution, reducing exchange rate with respect to the dollar provides to sustain balance of current account. Thus, the current account deficit, visibly, decreased through a real depreciation of US dollar. Besides, keeping interest rates low is achieved to prevent risks of capital inflows(Serven and Nguyen, 2010, p.3; Obstfeld and Rogoff, 2009, p.2; Kenc and Dibooglu, 2010, p.5; Bosworth and Collins, 2010, p.5; Krugman, 2007, p.454).

In recent years, many researchers have shown interest to analyze this issue for both developed and developing countries using different methodologies. Empirically, Ozkan (2003), İnandım (2005), Villavicencio and Bara (2008), Bozoklu and Yılancı (2010), Güloğlu and Orhan (2008), Kohler (2010),Fratzscher (2008) have shown that effects of short-term interest rate on RER is going on increasingly. This gives also a long-term relationship between interest rate and exchange rate.

The financial crisis of 2008 brought about a global economic downfall. In responding to the economic situation, various economic policies were adopted to minimize the severity of the situation such as lowering of interest rates and expanding of government expenditures. Emerging countries' financial systems depend on exchange rate movements, so interest rate policies and exchange rate interactions have growing importance (Gülşen et.al, 2010, p.8).

In the late 2006, crisis was accepted as a temporary shock. But these optimistic thought gave way to pessimism. When we come to the year 2009, crisis depth, effects to country's economies and precautions are the favorite matters for discussion. Moreover, government interventions are coming up again. So, economic system debates are flamed.

The paper investigates the transmission mechanism of internal and external shocks to macroeconomic variables, in particular the real exchange rate, using quarterly data for Turkish economy over the period 1991:4 to 2010:2. The analysis performed using both a formal theoretical model and empirical work based on an estimated VEC model.

The rest of the paper is organized as follows. Section 1 presents the analytical framework. Section 2 gives the methodology. Section 3 describes data and empirical results. The summary and concluding remarks are in the last section.

1. Analytical Framework

In spite of their recent rise to prominence in the debate on the roots of the crisis, global imbalances are hardly a new feature of the world economy. The U.S. current account deficit grew virtually without interruption since the mid 1990s, to exceed 1% of world GDP after 1999. It peaked in 2005 and 2006 at over 1.5 % of world GDP. Next, the U.S. external deficit

declined, to about 1.2% of world GDP in 2008. The world economy is obviously a closed system, and the deficits of some countries have to be matched by the surpluses of others. After 2000, however, the situation changed radically. While the U.S. remained the country with the biggest current account deficit relative to world GDP, the biggest surpluses were now those of China and oil exporting countries, in spite of Japan and emerging Asian countries, excluding China in the 20th century. In fact, since 2005 China's surplus has exceeded the combined surpluses of Japan and the rest of emerging Asia, and during 2007-2008 the bilateral deficit with China accounted for 40% of the U.S. overall current account deficit. Therefore, the popular view of global imbalances as a problem of the United States vs. China has started making some sense only in the last years (Serven and Nguyen, 2010, p.3). The trade surplus countries kept their exchange rates low relative to the dollar, which helped sustain the deficit/surplus configurations. The capital inflows kept long-term US interest rates low and made for a robust GDP growth boosting investment, consumption, and imports. So, asset price boomed due to foreign funds. Foreign banks' appetite for assets that turned out to be toxic provided one ready source of external funding for the U.S. deficit. Until around the autumn of 2008, asset-price movements and exchange rate kept U.S. net foreign liabilities growing at a rate far below the cumulative U.S. current account deficit. But then, the rise in asset prices led to an increase in consumer wealth, which further stimulated US consumption spending and imports, and thereby helped sustain the trade deficit (Obstfeld and Rogoff, 2009, p.2; Kenc and Dibooglu, 2010, p.5).

Resultant dollar depreciation has a double effect on the external asset position of the United States. On the one hand, it generates a real adjustment, through an improving trade account balance. On the other hand, it generates a financial adjustment through capital gains (Serven and Nguyen, 2010, p.7).

To sum up, since the onset of the crisis exchange rates have moved gradually. The average absolute monthly change in the exchange rate relative to the US dollar for a sample of major export countries has increased sharply indicating a higher volatility in exchange rate markets (Weber and Wyplosz, 2009:5). On the other side, a real depreciation of the US dollar improved the competitiveness of products in USA, and the current account deficit gradually began to decrease during 2007 and the first three quarters of 2008. (Bosworth and Collins, 2010, p.5; Krugman, 2007, p.454).

When it comes to the Turkey side**,** through the enforced monetary politics first serious shock to inflation targeting was the capital outflow from the developing countries including Turkey in May 2006 due to changes in the international finance conditions. Turkey was affected negatively by the US based 2008 global financial crisis. Interest rate and foreign exchange rate fluctuations intensified for a while after every bad news from US and other countries in the last quarter of 2008 and in the first quarter of 2009. However, contrary to recent financial crises, this time Turkish financial system did not collapse. This is because Turkish economy was caught to the 2008 global financial crisis in a relatively good condition. On the other hand, Turkish real sector have been severed from the negative effects of the 2008 global financial crisis. Sectors that rely on exports heavily had to stop production for a week or more from time to time. Turkey's exports decreased dramatically. Besides, firms and households decreased their

spending and investments under this condition. Thus, internal demand also decreased. As a result of all these developments, Turkish economy contracted 6.2% in the last quarter of 2008[4], industrial capacity usage ratio decreased rapidly and thousands of workers lost their jobs. After all, since there were good signals in the financial system, Turkish economy was expected to start recovering in the last quarter of 2009 (TCMB, 2008; Yılmaz, 2008, p.7; Bastı, 2009, p.93). Exchange rates in Turkey were stationary during 2009. While US dollar depreciated (against TL) 0.4% at the end of the 2009, Euro appreciated 0.9%. Real exchange rate increased 0.8% and 3.4% relative to the CPI and WPI respectively. It (1$=1.50 TL) was not charming but a positive improvement from the side of export at the end of 2009(İSO, 2010, p.73).

Through the year 2010, interest rates were in a reducing trend on the basis of globalization and capital inflows. Deposits, nonphysical money and retail credit interest rates, totally, maintained this downward trend. This common decline in interest rates positively affected the borrowing cost of the government. In this content, while political interest rate was constant at 7%, overnight interest rates were declined to encourage extending the term in TL market transactions. Therefore, possible negative effects of capital inflows were restricted (BDDK, 2010, p.13).

At the beginning of the crisis period, while the central banks of developing countries have been facing drastic exchange rate depreciations due to strong trend in risk aversion, they initiated deliberate policy because of financial instability anxiety. However, central banks of developing countries that had limited risk premium corruption and relatively stable financial markets reduced the interest rates of a high percentage. This is because the global inflation rapidly slow downed due to sudden production slump. Moreover, together with Fed, European Central Bank (ECB), Swiss Central Bank (SCB) and Canada Central Bank also reduced interest rates (TCMB, 2008; TÜSİAD, 2008). By the way, according to Bernanke (2009), in exit strategy of Fed "the management of the Federal Reserve's balance sheet and the conduct of monetary policy in the future will be made easier by the recent congressional action to give the Fed the authority to pay interest on bank reserves. The interest rate paid on reserves to become an effective instrument for controlling the federal funds rate".

Capital inflows (39.5 billion $) in the first three period of 2008 in Turkey would be approximately zero level at the same period of 2009. Depending on this, current account deficit was set off by 5.7 billion $ surplus of net errors and omissions item in the first three quarter of the 2009. At the same period, global markets had liquidity problem together with global financial crisis. Capital inflow in Turkey widely prevented a current account deficit problem. (TÜSİAD, 2009, p.137). However, Kasapoğlu (2007) indicated that, after the negative interest rate shock, national currency depreciated and increased the price of imported goods. Moreover, there would be directly and indirectly cost effect on the pocket price of the imported goods. On the other hand, there would be a positive impact from the side of export. The Central Bank of the Republic of Turkey (CBRT) affected the exchange rate through interest rates and carries out an inflation targeting policy. While declining production costs owing to the exchange rate appreciation were being reflected in prices, inflation would be decreased (Güloğlu ve Orhan, 2008, p.110).

[4] Turkish Statistical Institute

When examining the year 2010, in concurrence with the idea that crisis effect was weakened, CBRT declared an exit strategy that includes normalizing the monetary policies operational framework and withdrawing the liquidity precautions. Both low interest rates on a global scale and report of CBRT about pegging the low level of interest rates caused historically the lowest level of interest rates in 2010. This trend was observed in all terms to maturity. Getting better risk perception, decline in long term interest rates became more evident in Turkey. In collaboration with taken precautions, both deposits and foreign capital flows canalized to longer terms (TCMB, 2010-a; TCMB, 2010-b). Supporting this idea Babacan (2011) emphasized that capital inflow and outflow remained free in Turkey. However, the aim was the capital coming to Turkey would be permanent one and he pointed out that this was encouraged by their government. In addition, increasing liquidity in the market due to Fed's 600 billion $ bond buying decision[5] prompted CBRT. Just after the decision of FED, exchange rate fell back to the level of 1.40 TL. Furthermore, increasing hot money in the financial market and current account deficit risk were the irritating items for CBRT. OKFRAM[6](2011) suggested that interest rate and required reserve ratio might have been useful tools to avoid the risk for CBRT.

It was understood that monetary precautions were not sufficient itself to prevent the destruction owing to global crisis. Thus, expenditure enhancing fiscal measures was announced in many countries. These precautions were divided into two stages. At the first stage it was aimed to save financial firms that might be in bankrupt or have liquidity problem. At the last quarter of 2008, since global crisis spread out from the financial sector to the real sector, second group precautions were performed to intend compensating the extreme demand contraction in the investment and consumption spending of private sector(Çınar, et.al, 2010, p.8). In this concept, the public sector has taken on a much wider role in the crisis, not only as an insurer and lender, but also as an owner of financial companies through preference shares and warrants. While these commitments have led to substantial expenditures, their potential scope was very large indeed (Blundell-Wignall and Atkinson, 2008, p.19). Such expenditure measures may also have advantages over tax cuts or increases in transfers, which operate by raising the purchasing power of households and firms in the economy, given the highly uncertain response of the latter to an increase of their income in current circumstances (Spilimbergo et.al, 2008, p.6).

2. Methodology

A necessary condition for testing the long run relationship between various of variables is these variables are I(1), i.e. stationary in first differences. Examining this we use conventional unit root test, that is Augmented Dickey Fuller(ADF) test(Dickey and Fuller, 1981). ADF test is based on the null hypothesis that a unit root exists in examined time series.

Once it is established that all taken series are I(1), we proceed to test for the long run relationship between the series. If there exist at least one such relation, we will say that these series are cointegrated. We use the cointegration techniques devised by Johansen and Juselius (JJ) (1990). The trace test(TT) and maximum eigenvalue(ME) tests are used to determine the cointegrating vectors in JJ method. In ME test, the null hypothesis r=0 is tested against the

[5] Minutes of the Federal Open Market Committee, December-2010
[6] See OKFRAM (Okan University Research Center for Financial Risks)

alternative that r=1, r=1 against the alternative r=2, etc. In TT, the null hypothesis is that the number of cointegrating vectors is less than or equal to r, where r is equal to 0, 1, 2 or 3. After observing the cointegration, we proceed to find the short run dynamics via Vector Error Correction (VEC). In VEC, all variables are taken on the right hand side as I(0) individually over against the other variables and itself with all lags.

Finally, impulse response functions are employed. Plotting the impulse response functions is a practical way to visually represent the behavior of the time series in response to the various shocks.

3. Data and Empirical Results

3.1. Data

Quarterly time series data are used, and sample period is from 1991:Q4 to 2010:Q2. Data used in the study are gathered from International Financial Statistics (IFS) reported by the International Monetary Fund (IMF) and CBRT. According the economic theory, gross domestic product (GDP), real exchange rate(RER), nominal exchange rate(NER), domestic credit(DC), money supply(M2), real income via production index(PI), interest rate in Turkey(R_TR) and prices via wholesale price index(WPI) are the variables used in this paper. Capital flows effect is determined in real interest rate. DC and M2 are seasonally adjusted and used after dividing domestic credit and money supply by GDP. RER is taken after logarithmic transformation. For WPI, base year is 2005.

3.2. Empirical Results

Before starting it is important to mention that when we use NER instead of RER, we have the same results. Therefore, because of insufficient space we continue with RER only. First of all, unit root tests in level and first differences are performed to determine the univariate properties of all series used in the study. The results are given in Table 1.

Table 1: Unit Root results

	Level (Constant, Linear Trend)		First Difference (Constant, Linear Trend)	
	ADF	Prob.	ADF	Prob.
RER	-2.8167[1]	(0.1962)	-6.964[0]*	(0.000)
M2	-1.2472[0]	(0.8928)	-8.036[0]*	(0.000)
DC	-1.7212[0]	(0.7274)	-7.844[0]*	(0.000)
PI	-2.4393[5]	(0.3567)	-4.564[4]*	(0.0025)
R_TR	-1.5971[0]	(0.4790)	-6.036[4]*	(0.000)
WPI	-2.2906[1]	(0.4334)	-5.704[0]*	(0.0001)

Note: Lag length in [ ] , Test critical values are -4.088, -3.47 and -3.16 for 1%, 5% and 10% respectively. Asterisk (*) shows significance at 5% level. The Critical values are obtained from MacKinnon (1991) for the ADF test.

It is clear that calculated ADF statistics are less then their critical values in all cases, suggesting that the variables are not level stationary. Table 1 shows that these six variables are first difference stationary, i.e. I(1).

Just after establishing that all the variables are integrated of order 1, we proceed with the JJ multivariate cointegration tests that allow us to test the long run relationship of the variables.

Table 2: Johansen-Juselius Cointegration Test Results

Eigenvalue	**Trace Test(TT)**	**%5 Critical Value**	**Prob.**	**No. of CE(s)**
0.564661	168.1379	125.6154	0.0000	None *
0.435420	107.4289	95.75366	0.0062	At most 1 *
0.279491	65.69671	69.81889	0.1020	At most 2
0.267863	41.76745	47.85613	0.1653	At most 3
0.160502	19.00693	29.79707	0.4924	At most 4
Eigenvalue	**Maximum Eigenvalue (ME)**	**%5** Critical Value	**Prob.**	No. of CE(s)
0.564661	60.70899	46.23142	0.0008	None *
0.435420	41.73219	40.07757	0.0323	At most 1 *
0.279491	23.92926	33.87687	0.4607	At most 2
0.267863	22.76052	27.58434	0.1839	At most 3
0.160502	12.77146	21.13162	0.4735	At most 4

Note: * denotes rejection of the hypothesis at the 0.05 level

Both TT and ME test indicates 2 cointegrating equations at the 0.05 level. Thus, our quarterly data from 1991 to 2010 appear to support the proposition that there exist at least one long run relationship between taken macroeconomic variables.

An estimate of long run cointegrating vector is given in Table 3. Firstly, all variables are statistically significant. In the long run, while domestic credit over GDP and real interest rate are increasing, RER depreciates in line with economic literature.

Table 3: Long Run Cointegration Result

Co-integrating Equation:	RER(-1)	DC(-1)	M2(-1)	PI(-1)	R_TR(-1)	WPI(-1)	C
		-0.437052	0.418904	0.010662	-0.00766	-0.004214	
CointEq1	1	(0.06702)	(0.03787)	(0.001157)	(0.00085)	(0.00111)	-0.367923
		[-6.52114]	[11.0616]	[6.78166]	[-9.06602]	[-3.80905]	

Note: Standard errors in ( ) & t-statistics in [ ]

Unlikely, increase in production index causes appreciation in RER again in line with economic literature.

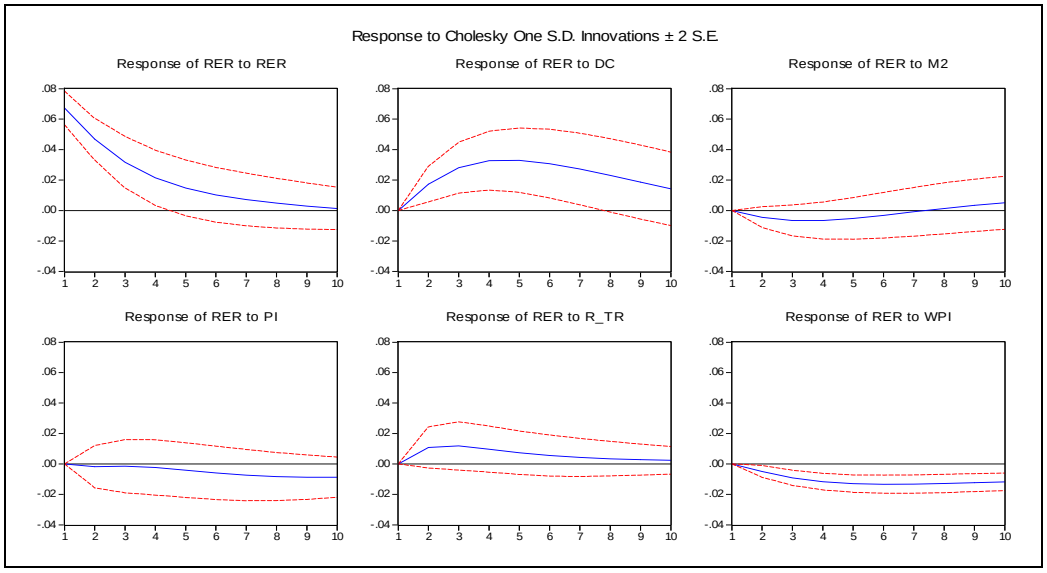
Table 4: VEC Estimate

Error Corr.:	Coint. Eq1	D(RER(-1)	D(DC(-1))	D(M2(-1)	D(PI(-1)	D(RTR(-1)	D(WPI(-1)	C
	-0.2787							
D(RER)		0.1113	0.2419	-0.1209	0.0002	1.07E-05	-0.0061	0.004
	[-2.143]							

Note: t-statistics of error correction term in [ ]

Error correction term is negative and statistically significant. Thus we can say that long term equilibrium can be maintained in a short time (i.e. approximately four quarter).

Figure 1: Impulse –Response Analysis Results



Impulse – response analysis results are given in Figure 1. Evaluation of the time path of RER to a single unitary shock to the given variables follows. It appears that, time path of RER to a single shock to RER itself, DC and R_TR converge to zero. Since we are extremely dealing with the capital flows and interest rate, only interest rate result is examined. RER grows initially after an interest rate shock then declines after the second quarter. This decline lasts until the 8th quarter reaching to the zero convergence.

SUMMARY AND CONCLUDING REMARKS

This study is sought to find out whether there is a long run relationship between economic variables in 1991:Q4 - 2010:Q2. Using various econometric tests, including conventional unit root tests and Johansen- Juselius(1990) cointegration tests; the long run relationship between these variables have been detected. Comparing the latest crisis with two earlier crisis episodes, we find that the role of short-term interest rate in the depreciations has grown over time, perhaps reflecting the increasing role carry trades play in exchange rate movements. There are also pair wise cointegration between interest rate and exchange rate. This factor may have changed the dynamics of exchange rates around crises more generally, affecting a broader set of currencies and leading to more pronounced swings in exchange rates during and after crisis episodes.

REFERENCES

BABACAN, A. (2011), Dünya Ekonomik Forumu 41. Yıllık Toplantısına Hareketi Öncesinde Ankara Esenboğa Havalimanı'nda Düzenlenen Basın Toplantısı(Press Conference)

BASTI, E. (2009), 2008 Global Financial Crisis and the Turkish Financial System. Ç.Ü. Sosyal Bilimler Enstitüsü Dergisi, 18-2, pp.89-103.

BDDK (2010), Finansal Piyasalar Raporu. Bankacılık Düzenleme ve Denetleme Kurumu, Ankara.

BERNANKE, B. (2009), The Crisis and the Policy Response,

(http://www.federalreserve.gov/newsevents/speech/bernanke20090113a.htm)

BLUNDELL-Wignall, A. and P. ATKINSON (2008), The sub-prime crisis: Causal distortions and regulatory reform. (http://www.oecd.org/dataoecd/33/6/42031344.pdf.)

BLUNDELL-Wignall, A., ATKINSON, Paul. and S. H. LEE (2008), The current financial crisis: Causes and policy issues, (http://web.xrh.unipi.gr/attachments/136_370_oecd.pdf.)

BOSWORTH, B. and S. COLLINS (2010), Rebalancing the US Economy in a Postcrisis World. ADBI Working Paper 236. Tokyo: Asian Development Bank Institute.

BOZOKLU, S. and V. YILANCI (2010), Reel Döviz Kurlarının Durağanlığı:E7 Ülkeleri İçin Ampirik bir İnceleme. Maliye Dergisi, 158, pp. 587-606.

ÇINAR, B., ERDOĞAN, Ö., GÜRGÜR, T. and P. TANDOĞAN (2010), Küresel Kriz ve Politika Uygulamaları. Ekonomi Notları Ankara: Türkiye Cumhuriyet Merkez Bankası 2010-12.

FRATZCHER, M. (2008), US Shocks and Global Exchange Rate Configurations. Economic Policy 23-54, pp. 363-409.

FURCERİ D., DAVIDE and A. MOUROUGANE (2009), Financial crises:past lessons and policy implications. (http://www.oecd.org/dataoecd/34/33/42037145.pdf.)

GÜLOĞLU, B. and S. ORHAN (2008), Türkiye'de Parasal Aktarım Mekanizmalarının Makroekonomik Etkileri. İktisat İşletme ve Finans Dergisi, 23-68, pp. 94-118.

GÜLŞEN, E. and KANLI, İ. B. and N. KAYA (2010), Küresel Kriz Döneminde TCMB'nin Faiz Kararlarının Kur Üzerindeki Etkisine Dair Bir Analiz. Ekonomi Notları Ankara: Türkiye Cumhuriyet Merkez Bankası 2010-11.

İNANDIM, Ş. (2005), Kısa Vadeli Sermaye Hareketleri İle Reel Döviz Kuru Etkileşimi: Türkiye Örneği. Uzmanlık Yeterlilik Tezi, Ankara: Türkiye Cumhuriyet Merkez Bankası.

İSO (2010), Türkiye Ekonomisi 2010. İstanbul Sanayi Odası Yayınları, 2010-8.

JOHANSEN, S., JUSELIUS, K. (1990), "Maximum Likelihood Estimated and Inference on Cointegration with Application to the Demand for Money" *Oxford Bulletin of Economics and Statistics* 52: 169-210.

KASAPOĞLU, Ö. (2007), "Parasal Aktarım Mekanizmaları: Türkiye İçin Uygulama" *Uzmanlık Yeterlilik Tezi* Ankara: Türkiye Cumhuriyet Merkez Bankası.

KENÇ, T. and S. DIBOGLU (2010), The 2007–2009 financial crisis, global imbalances and capital flows: Implications for reform. Economic Systems 34, pp. 3–21.

KOHLER, M. (2010), Exchange Rates During Financial Crises. BIS Quarterly Review-March 2010, Bank For International Settlements, pp. 39-50.

KRUGMAN, P. (2007). Will there be a dollar crisis? Economic Policy, 22-51, pp.435-467.

OBSTFELD, M. and K. ROGOFF (2009), Global imbalances and the financial crisis: Products of common causes. *IMF paper*.

ÖZKAN, F. (2003), Denge Reel Kur Hesaplama Yöntemleri ve Reel Kur Dengesizliğinin Ölçülmesi: Türk Lirası Üzerine Bir Çalışma. Uzmanlık Yeterlilik Tezi, Ankara: Türkiye Cumhuriyet Merkez Bankası.

SERVEN, L. and H. NGUYEN (2010), Global imbalances before and after the global crisis. The World Bank. Policy Research Working Paper-5354, Washington D.C.: The World Bank.

SPILIMBERGO, A., SYMANSKY, Steve;BLACHARD, O. and C. COTARELLI (2008), Fiscal Policy in Crisis. IMF Staff Position Note SPN/08/01 Washington D.C.: International Monetary Fund.

TCMB (2008), 2009 Yılında Para ve Kur Politikası. Türkiye Cumhuriyet Merkez Bankası

TCMB (2010-a), 2011 yılında para ve kur politikası. Türkiye Cumhuriyet Merkez Bankası.

TCMB, (2010-b), Para Politikası Çıkış Stratejisi. Türkiye Cumhuriyet Merkez Bankası.

TÜSİAD (2008), 2009 Yılına Girerken Türkiye Ekonomisi. *TÜSİAD* Yayın No: T/2008-12/479 Türk Sanayicileri ve İşadamları Derneği.

TÜSİAD (2009), 2010 Yılına Girerken Türkiye Ekonomisi. *TÜSİAD* Yayın No: T/2009-12/497 Türk Sanayicileri ve İşadamları Derneği.

ÜNAL A. and H. KAYA (2009), Küresel Kriz ve Türkiye. Ekonomi ve Politika Araştırmaları Merkezi, İstanbul.

VILLAVICENCIO, A. L. and J. L. BARA (2008), Short-Run And Long-Run Determinants of Real Exchange Rate in Mexico. The Developing Economies 46-1, pp. 52-74.

WEBER, S. and C. WYPLOSZ (2009), Exchange Rates during the Crisis. Policy Research Working Paper 5059 Washington DC.:The World Bank

YILMAZ, D. (2008), Küresel Mali Kriz ve Türkiye Ekonomisine Etkileri: Nasıl Başladı, Hangi Aşamadayız?. (www.tcmb.gov.tr/yeni/duyuru/2008/TEK_27Aralik2008.pdf)