

The Association between Current Account Deficit and House Prices in Turkey

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Abstract

Current account deficit has been a popular research topic among Turkish economists. The study investigates the relation between current account deficit of Turkey and house prices in the country. This paper uses the classical linear regression model and this is run for three times. The results of the model indicate that current account deficit is positively associated with house price changes in Turkey. Another result is that, GDP per capita growth is not significantly associated with house price changes. Not surprisingly, inflation is also positively associated to house prices. The important outcome of the study is that Turkey might experience similar housing market problems in Spain and US as a consequence of Turkey's effort to decrease its current account deficit. Therefore, the study is expected to attract policy maker's attention and start a discussion on how to maintain the current condition of housing market while decreasing the current account deficit. Even though there have been many research on the relation between macroeconomic indicators and house prices, to our knowledge this is the first research on the impact of current account deficit on house prices.

JEL classification numbers: E30, E44, R10, R30

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1 Introduction

Current account deficit has been a popular research topic among Turkish economists since early 90s. All Turkish economic crises have been associated with sharp capital outflows therefore there has been numerous academic work trying to analyze current account dynamics and its impact on the whole economy. Turkey is not the only one emerging market which is subject to current account deficit/surplus vulnerabilities. [1] mention the falling interest rates and recession in developed economies and explain the change in the course of international capital flows in the beginning of 90s. The capital inflow to a country results in current account deficit in that particular country. [2] state that increasing capital inflows worsen current account deficit. An increase in current account deficit results in appreciation in the real exchange rate hence more foreign currency is available on market. This basic supply – demand rule of economy has a not surprising outcome which is mentioned by [3]. Deterioration in international competitiveness and foreign trade balance while an increase in import dependency is observed. Foreign capital inflows into a country can be compared to corporate debt. Referring to corporate finance literature; a company cannot increase its debt ratio without increasing cost of debt hence the riskiness of the company increases as debt to equity ratio increases. Furthermore, the lenders should have the view that borrower will be adding value to itself through using the debt financing and repay debt. Otherwise, rolling on debts will be recalled and bankruptcy may occur. Even though a comparison between national balance of payments and corporate finance has been made, there exist a significant difference between companies and countries. Countries do not go bankruptcy, at least in theory. Any country, as a whole, which faces difficulties in meeting its financial obligations is called to be in crisis.

There are three local crises in Turkish economy prior to last global financial crisis which triggered in 2008. These three crises were in 1994, 1998 and 2001. Since 1980, Turkey started an initiative to liberalize its economy; therefore barriers against the free movement of capital have been removed gradually. These revolutionary economic acts offered the country to attract international investors and grow its economy but it was offered on the expense of a highly volatile economic environment. Volatility is due to fact that foreign capital inflows appreciated Turkish Lira and decreased the country's international competitiveness and increase its dependency on imports. These deteriorating conditions mean increasing riskiness of the country and eventually foreign capital (hot money) outflows leaving the country with a contracting economy. Turkish GDP contracted by 5 %, 4.7 % and 7.5 % in 1994, 1999 and 2001, respectively.

On the other hand, real estate investments did not account for a significant share in total capital inflows. According to Central Bank of The Republic of Turkey (CBRT) records, net real estate investment is virtually zero prior to 2003. Prior to 2003, even though foreign real estate acquisition was not officially restricted in law, it was so bureaucratic that practically there was no significant amount of acquisitions of real estate by foreigners. Real estate investment is a very long term investment, therefore; it can be considered as a very high quality way of current account deficit finance. Even though during crisis, investors would like to exit the crisis economy as soon as possible, it would be a time consuming process due to nature of real estate business and this lagged exits would help the economy which is already suffering from liquidity. The main purpose of this study is to investigate the relation between current account deficit of Turkey and house prices in the country. The remainder of this paper proceeds as follows. Section two reviews the literature related to classical supply and demand approaches to house prices,

and current account deficit and house prices relation in Turkey. Section three introduces the quantitative analysis of current account deficit and house prices relation. The final section is the conclusion and suggestions for future researches and policy makers.

2 Literature Review

2.1 Literature for Classical Supply and Demand Approaches to House Prices

Like all other asset prices, supply – demand theory holds for house prices too. Models based on supply – demand usually try to explain house price changes through macro-economic variables. Choice of these macro-economic variables depends on the market being analyzed. [4] use population, disposable income, mortgage rates and housing starts for their research on the responsiveness of house prices to macroeconomic forces in a cross-country comparison. [5] use number of households, real housing prices per square meter, real disposable income, real residential investment, growth (six months–on–six months) of real disposable income, mortgage rate, number of housing starts and debt service burden for modeling Spanish housing market.

As mentioned, the choice of variables in the model depends on the market, therefore; [6] use fuel prices and number of tourists in addition to aforementioned macro variables to analyze foreign real estate investments in Spain. [6] claim that increasing fuel prices adversely affect foreign real estate investments in Spain because higher travel costs make the consumption of FREI services more expensive. Number of tourists (lagged) is also mentioned as a relevant variable because visiting a country for holiday is the first step to the decision of buying a house in that holiday destination. Naturally it takes some time to make such a big financial decision, therefore; tourists data used with lags.

2.2 Literature for Current Account Deficit and House Prices Relation in Turkey

Due to high dependence of Turkish economy on foreign capital flows since late 80s, there have been numerous academic works analyzing macroeconomic indicators' relation to current account deficit. Further, most recent academic researches focus on sustainability of current account deficit. [7] shows that current account deficit was sustainable for Turkey between 2000 and 2010 in weak form but not in strong form. [8] findings indicate that current account deficit was sustainable for the period between 1987 and 2004. On the other hand, these graphical findings are not supported statistically. The hot debate becomes more and more popular as credit rating agencies question the sustainability of current account deficit finance for Turkish economy in recent times. The questioning of sustainability of the current account deficit finance is directly related to quality of the finance. Here quality of finance refers long term foreign direct investments and short term portfolio investments, i.e. longer the investment, better the quality. Increasing quality in anything introduces extra costs, in the case of current account deficit finance the cost of quality could be increasing house prices, therefore; decreasing affordability for Turkish residents.

Even though, a rich literature exist on current account deficit issues there is no literature on current account and house prices relation in Turkey. This is not surprising due to two main facts: a-A reliable house price index exist in Turkey only since 2007 provided by a

private real estate information company, Reidin.com³, and since 2010 provided by Central Bank of Republic of Turkey; b-Macroeconomic indicators are highly depended on current account deficit, therefore; the relation between the latter and house prices is measured through macroeconomic indicators. [9] investigates the relationship between house prices and macroeconomic variables in Turkey. [9] also mentions the lack of house price index as a constraint on her research and concludes that there is a positive relation between house prices and GDP and exchange rate while an inverse relation holds between house prices and money supply and short term interest rates. Based on [9] research it can be argued that an increase in current account deficit leads to an increase in house prices.

3 Quantitative Analysis of Current Account Deficit and House Prices Relation

3.1 The model

Classical approaches to analyze house price changes are mentioned in previous section. The purpose of this research is to answer whether current account deficit has a significant impact on house price changes, therefore; a different model will be employed. The main difference of the model will be of course the inclusion of current account deficit. The rationale to emphasize on current account deficit is the dependence of Turkish economy on large foreign capital inflows. This is not surprising considering that [10] identifies run-up in equity and housing prices as the best leading indicator in the financial crisis literature for countries experiencing large capital inflows. [11] confirm that equity market shocks and housing price shocks have been major determinants of the US current account. In addition to these two literatures, [12] study the association between the current account and real estate valuation across countries, during 1990 – 2005. They find robust and strong positive association between current account deficits and the appreciation of the real estate prices deflated by GDP deflator. More recent researches by [13] and [14] also confirm that there is a positive relation between current account deficit and housing prices. Based on mentioned literature, and own research and experience, housing price in Turkey is modeled as:

³The REIDIN House Price Indices (HPI) are designed to be a reliable and consistent benchmark of housing prices in Turkey. The purpose is to measure the average change in house prices in a particular geographic market. Index series are calculated monthly and cover 7 major cities and their 71 districts. The monthly REIDIN HPI uses a stratified median index approach for index calculation—an approach that is widely used for indexing housing prices – which involves dividing a population into groups (strata) such that observations within each group are more homogenous than observations in the entire population. The median of sales of properties in corresponding strata is used for the indexes. Once strata have been defined and medians are calculated, they are weighted together to produce a city index and Turkey composite index by using the Laspeyres price index formula. Outliers and extreme values (as a result of incomplete, inconsistent or erroneous data) are excluded by the outlier detection procedure of the interquartile range (IQR) based on the calculated price per square meter of each property. This commonly used methodology considers any data that is more than 1.5 times the IQR from the upper or lower quartile to be an outlier. Index series are set at 100 starting at the beginning of June 2007 and are calculated by using a moving average algorithm.

$$HP = c + \beta_1 GDPC + \beta_2 INF + \beta_3 FD + \beta_4 MR + \beta_5 CA + \beta_6 INF CA + \beta_7 FD CA + u \quad (1)$$

where;

c : Constant term

HP : Housing price change deflated by consumer price index (% per month, % per year)

GDPC : Growth in GDP per capita (% per month, % per year)

INF : Inflation (% per month, % per year)

FD : Financial depth; Loans / GDP (%)

MR : Mortgage rate (% per year)

CA : Current account deficit / GDP (%)

u : Error term

3.2 Overview of Data

House price index is available since June 2007 on a monthly basis. Consumer price index, loans, mortgage rate and current account data are also available on a monthly basis whereas GDP is available on a quarterly basis. In order to have more data points and to assure consistency, monthly GDP data is produced with the assumption that Loans / GDP ratio changes linearly on a monthly basis between consecutive quarters. In order to produce missing monthly GDP values, an interpolation made between quarterly values of Loans / GDP ratio and the relevant ratios are multiplied by available loans data received from the Banks Association of Turkey.

All GDP and Current Account data refers to last 12 months cumulative values so that seasonality effect in these variables is removed. Another assumption is made concerning GDP per capita. Population data is available on an annual frequency, therefore; monthly populations are estimated through a linear interpolation between year-end populations of consecutive years.

Table 1: Data sources of parameters

Parameter Name	Data Source
House Price Index	Reidin.com
Gross Domestic Product	Central Bank of Republic of Turkey (CBRT)
Consumer Price Index	TurkSTAT
Loans	The Banks Association of Turkey
Mortgage Rate	Central Bank of Republic of Turkey (CBRT)
Current Account	Central Bank of Republic of Turkey (CBRT)
Population	TurkSTAT

4 Main Results

The model described above is run for three times. In the first run, monthly changes (for HP, GDPC and INF variables) are used. In the second run, changes in any given month

relative to the same month in previous year are used. Finally, last 12 month averages of the annual changes are used in the third run. Therefore, the first run (monthly) covers the period between June 2007 and March 2012, the second run covers the period June 2008 and March 2012 and the third run covers the period between June 2009 and March 2012.

4.1 Monthly Changes

Only the results of main model equation (1) will be reported. This is due to fact that even though different combinations of variables and their lags are included in many regressions, the outcomes were not significantly changing the results.

Table 2: Output of the regression run on monthly changes

Dependent Variable: HP

Method: Least Squares

Date: 08/29/12 Time: 13:42

Sample (adjusted): 2007M07 2012M03

Included observations: 57 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.220967	0.033625	6.571540	0.0000
GDPC	0.001900	0.068324	0.027812	0.9779
INF	-1.129063	0.247641	-4.559279	0.0000
FD	-0.447036	0.073875	-6.051247	0.0000
MR	-0.175267	0.039488	-4.438430	0.0001
CA	2.646707	0.420997	6.286753	0.0000
INF_X_CA	-0.945644	3.323325	-0.284547	0.7772
FD_X_CA	-5.882712	0.920647	-6.389757	0.0000
R-squared	0.792214	Mean dependent var	-0.005933	
Adjusted R-squared	0.762530	S.D. dependent var	0.013533	
S.E. of regression	0.006595	Akaike info criterion	-7.075589	
Sum squared resid	0.002131	Schwarz criterion	-6.788845	
Log likelihood	209.6543	Hannan-Quinn criter.	-6.964150	
F-statistic	26.68843	Durbin-Watson stat	0.958979	
Prob(F-statistic)	0.000000			

As reported on the coefficients table, only GDPC and INF_X_CA variables do not have explanatory power in monthly house price changes at a 5 per cent significance level. Even though, inflation has statistically significant coefficient, sign of the coefficient is negative and this does not hold with the model. Inflation is expected to be positively related with real house price changes. Reasons driving such an unexpected result will be examined in the conclusion. The signs of other variables' coefficients are in line with the model definition. Any classical linear regression model (CLRM) has to satisfy 4 main tests in order to be a valid and reliable model. These four tests are namely: a-Goodness of fit test; b-Durbin – Watson Test; c-White's Heteroskedasticity Test; d-Jarque-Bera Normality Test.

The regression run on monthly changes satisfy goodness of fit test hence Prob(F-Statistic) = 0. The model fails to satisfy Durbin – Watson test ($0.958979 < d_L$) which means there is

evidence of positive autocorrelation in the residuals of the regression. However, as [15] states, coefficient estimates are still unbiased but they are inefficient.

The third test to be performed on residuals of a CLRM, is the heteroskedasticity test. EViews statistical software is used for analysis and the following output table is produced. EViews lists three different types of tests for heteroskedasticity. These test statistics are shaded on the output table below. Referring to Brooks, p-values (shaded on table) are higher than 0.05 indicates residuals are homoscedastic.

Table 3: Heteroskedasticity test output of the regression run on monthly changes
Heteroskedasticity Test: White

F-statistic	1.012933	Prob. F(7,49)	0.4340	
Obs*R-squared	7.205501	Prob. Chi-Square(7)	0.4078	
Scaled explained SS	6.173371	Prob. Chi-Square(7)	0.5197	
Test Equation:				
Dependent Variable: RESID^2				
Method: Least Squares				
Date: 08/29/12 Time: 13:46				
Sample: 2007M07 2012M03				
Included observations: 57				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.79E-05	9.83E-05	0.894397	0.3755
GDPC^2	0.006016	0.042374	0.141966	0.8877
INF^2	-0.054048	0.071779	-0.752981	0.4551
FD^2	-0.000332	0.000494	-0.671693	0.5049
MR^2	0.000578	0.001097	0.526368	0.6010
CA^2	-0.003568	0.018693	-0.190857	0.8494
INF_X_CA^2	3.141246	8.053411	0.390052	0.6982
FD_X_CA^2	0.015861	0.075684	0.209573	0.8349
R-squared	0.126412	Mean dependent var	3.74E-05	
Adjusted R-squared	0.001614	S.D. dependent var	5.74E-05	
S.E. of regression	5.74E-05	Akaike info criterion	-16.56389	
Sum squared resid	1.61E-07	Schwarz criterion	-16.27715	
Log likelihood	480.0710	Hannan-Quinn criter.	-16.45246	
F-statistic	1.012933	Durbin-Watson stat	1.145632	
Prob(F-statistic)	0.433965			

The last but most important test to be performed on residuals is the normality test. This test is the most important one because even if previous three tests are satisfied but not the normality then the model fails, i.e. coefficients will not only be inefficient but also biased. Histogram, summary statistics and Jarque-Bera normality test results are provided below (Figure 1).

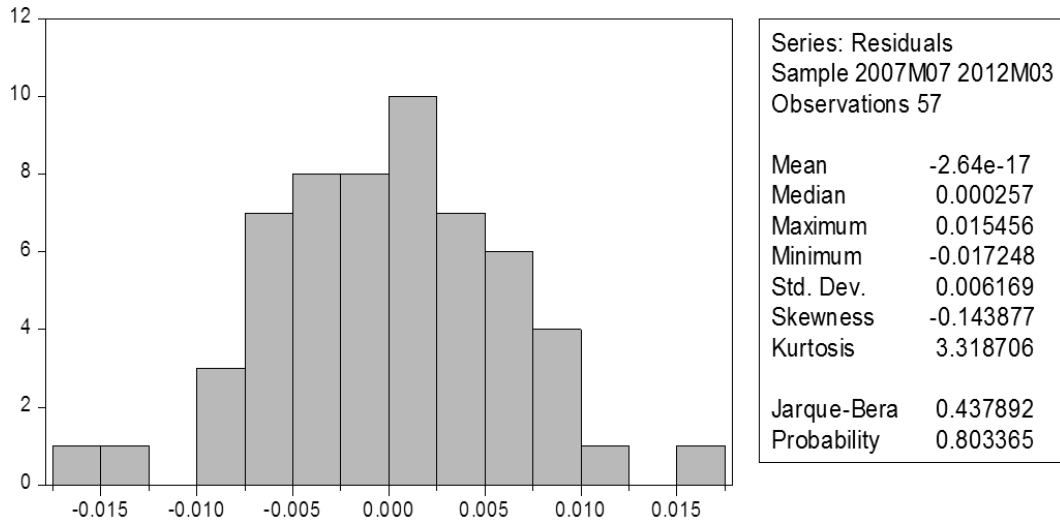


Figure 1: Histogram of the residuals of the regression run on monthly changes

Similar to heteroskedasticity test, probability (p-value) values higher than 0.05 indicate normality of the residuals. This result can also be verified by summary statistics because skewness, kurtosis and mean of the residuals are very close to the normal distribution statistics. Further, the shape of histogram is bell-shaped as a direct consequence.

4.2 Annual Changes

Like in monthly changes, only the results of main regression model will be provided. The regression run on annual changes (price changes relative to the same month in previous year) is not as explanatory as the previous one. Only inflation and mortgage rate have explanatory power at 5.42 % and 1.22 % significance levels. It is worth to mention that the sign of inflation coefficient is now in line with the model description. As Durbin-Watson test statistic indicates, there is positive autocorrelation in residuals.

Table 4: Output of the regression run on annual changes

Dependent Variable: HP
 Method: Least Squares
 Date: 08/29/12 Time: 13:49
 Sample (adjusted): 2008M07 2012M03
 Included observations: 45 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.071874	0.462149	0.155521	0.8773
GDP	0.053838	0.235630	0.228487	0.8205
INF	1.394374	0.701304	1.988259	0.0542
FD	-0.117248	0.975681	-0.120171	0.9050
MR	-1.095261	0.415457	-2.636278	0.0122
CA	6.911032	3.897650	1.773128	0.0844
INF_X_CA	11.44586	10.07321	1.136268	0.2632
FD_X_CA	-15.15587	8.409512	-1.802229	0.0797

R-squared	0.903571	Mean dependent var	-0.077137
Adjusted R-squared	0.885328	S.D. dependent var	0.077779
S.E. of regression	0.026338	Akaike info criterion	-4.275760
Sum squared resid	0.025667	Schwarz criterion	-3.954576
Log likelihood	104.2046	Hannan-Quinn criter.	-4.156026
F-statistic	49.52886	Durbin-Watson stat	0.604000
Prob(F-statistic)	0.000000		

Residuals of the second regression are not homoscedastic and do violate the assumption of $\text{var}(u)=\sigma^2$. On the other hand, scaled explained SS test indicate that residuals of the regression are homoscedastic (Probability Chi-Square=0.0904>0.05) but the other two test do not confirm this, therefore; the test results inconclusive. Even though scaled explained SS test meet the required condition, probability value is not extremely larger than 0.05, therefore; residuals cannot claimed to be homoscedastic.

Table 5: Heteroskedasticity test output of the regression run on annual changes
Heteroskedasticity Test: White

F-statistic	2.405570	Prob. F(7,37)	0.0391
Obs*R-squared	14.07446	Prob. Chi-Square(7)	0.0499
Scaled explained SS	12.32449	Prob. Chi-Square(7)	0.0904

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 08/29/12 Time: 13:52

Sample: 2008M07 2012M03

Included observations: 45

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.006987	0.003715	1.880690	0.0679
GDPC^2	-0.032946	0.073041	-0.451064	0.6546
INF^2	-0.141717	0.103464	-1.369718	0.1790
FD^2	-0.030438	0.017143	-1.775521	0.0840
MR^2	-0.042061	0.034272	-1.227279	0.2275
CA^2	0.737588	0.366536	2.012319	0.0515
INF_X_CA^2	17.81241	14.54948	1.224265	0.2286
FD_X_CA^2	-2.012054	1.374266	-1.464094	0.1516

R-squared	0.312766	Mean dependent var	0.000570
Adjusted R-squared	0.182748	S.D. dependent var	0.000928
S.E. of regression	0.000839	Akaike info criterion	-11.16817
Sum squared resid	2.61E-05	Schwarz criterion	-10.84699
Log likelihood	259.2838	Hannan-Quinn criter.	-11.04844
F-statistic	2.405570	Durbin-Watson stat	1.425040
Prob(F-statistic)	0.039083		

Normality assumption is not violated either as probability value of 0.460542 satisfies this condition.

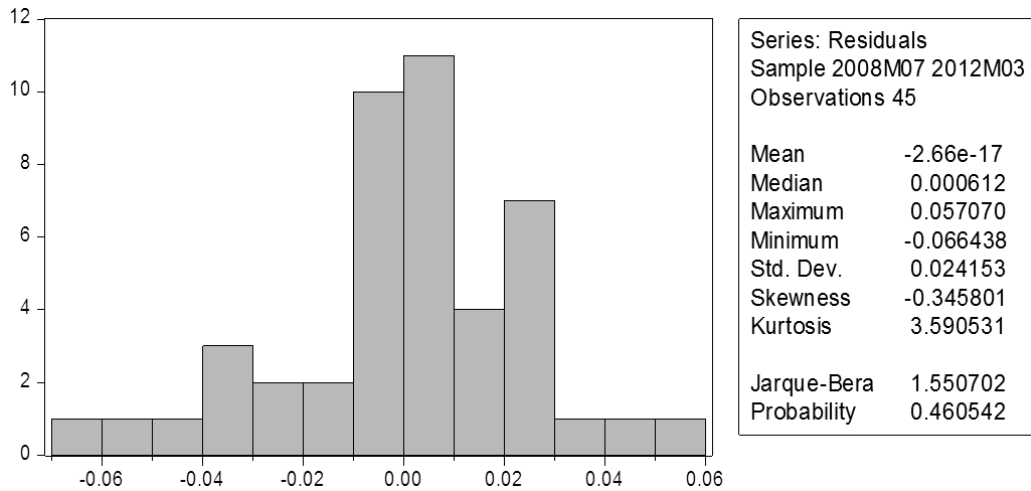


Figure 2: Histogram of the residuals of the regression run on annual changes

4.3 Average Annual Changes

In this version of the regression, averages of the last 12 month annual changes are used. Therefore, this regression has the lowest number of data points, i.e. 34 observations.

Table 6: Output of the regression run on average annual changes

Dependent Variable: HP

Method: Least Squares

Date: 08/29/12 Time: 13:53

Sample (adjusted): 2009M06 2012M03

Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.695760	0.174487	-9.718543	0.0000
GDP	-1.053977	0.180736	-5.831590	0.0000
INF	1.368195	0.625253	2.188225	0.0378
FD	3.201591	0.408591	7.835686	0.0000
MR	0.195234	0.179642	1.086793	0.2871
CA	-12.84459	2.151811	-5.969198	0.0000
INF_X_CA	14.73333	8.713285	1.690904	0.1028
FD_X_CA	23.38743	4.708526	4.967040	0.0000
R-squared	0.987727	Mean dependent var	-0.068275	
Adjusted R-squared	0.984422	S.D. dependent var	0.059990	
S.E. of regression	0.007487	Akaike info criterion	-6.748841	
Sum squared resid	0.001458	Schwarz criterion	-6.389697	
Log likelihood	122.7303	Hannan-Quinn criter.	-6.626362	
F-statistic	298.9127	Durbin-Watson stat	0.647734	
Prob(F-statistic)	0.000000			

Variables MR and INF_X_CA fail to have explanatory power at 5 % significance level. Even though coefficients of variables seem to be statistically significant, GDPC, FD and CA have contradictory signs with respect to the model definition. Autocorrelation in residuals also exist on this regression.

Constant volatility in residuals assumption is not violated. All probability values are higher than 0.05 as seen on the heteroskedasticity test table below.

Table 7: Heteroskedasticity test output of the regression run on average annual changes
Heteroskedasticity Test: White

F-statistic	1.227471	Prob. F(7,26)	0.3237	
Obs*R-squared	8.445176	Prob. Chi-Square(7)	0.2950	
Scaled explained SS	3.902867	Prob. Chi-Square(7)	0.7909	
Test Equation:				
Dependent Variable: RESID^2				
Method: Least Squares				
Date: 08/29/12 Time: 13:54				
Sample: 2009M06 2012M03				
Included observations: 34				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.000122	0.000467	-0.260528	0.7965
GDPC^2	-0.036259	0.023727	-1.528143	0.1386
INF^2	-0.046960	0.047430	-0.990089	0.3313
FD^2	0.001890	0.001875	1.008083	0.3227
MR^2	0.009260	0.005867	1.578337	0.1266
CA^2	0.051776	0.072119	0.717926	0.4792
INF_X_CA^2	0.477759	5.996971	0.079667	0.9371
FD_X_CA^2	-0.235354	0.261225	-0.900961	0.3759
R-squared	0.248388	Mean dependent var	4.29E-05	
Adjusted R-squared	0.046030	S.D. dependent var	5.47E-05	
S.E. of regression	5.34E-05	Akaike info criterion	-16.63389	
Sum squared resid	7.42E-08	Schwarz criterion	-16.27475	
Log likelihood	290.7761	Hannan-Quinn criter.	-16.51141	
F-statistic	1.227471	Durbin-Watson stat	1.694525	
Prob(F-statistic)	0.323691			

The normality assumption is not violated either as evidenced by the histogram and summary statistics table below.

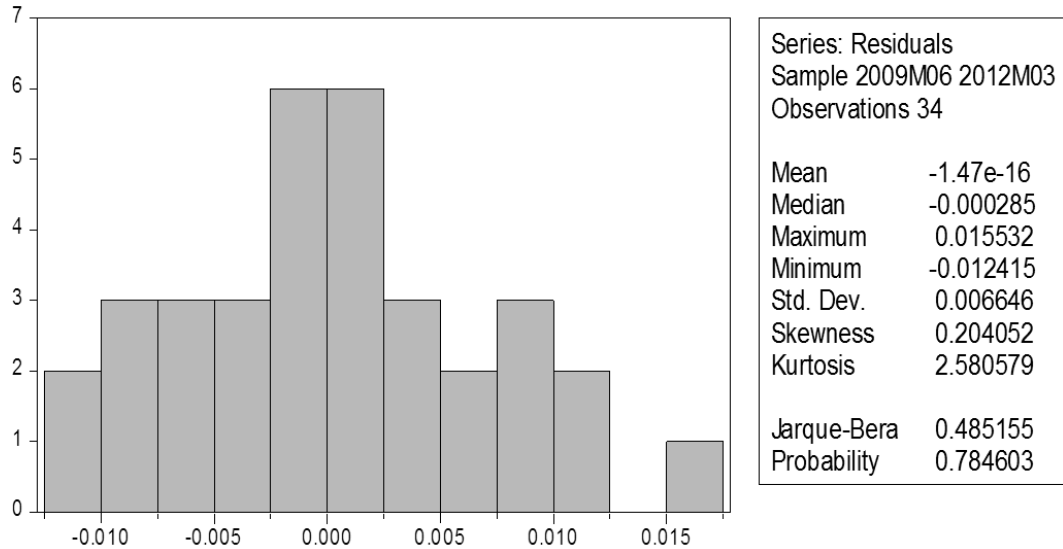


Figure 3: Histogram of the residuals of the regression run on average annual changes

5 Conclusion

Considering the results obtained after three regressions in the previous section, it can be concluded that current account deficit is positively associated with house price changes in Turkey at a 10 % significance level. Even though the coefficient of current account deficit variable is negative in the last regression, considering INF_X_CA and FD_X_CA variables coefficients and the coefficients obtained from the other two regressions, results lead to conclusion of positive association of current account deficit and house price changes. These statistical inferences are in line with mentioned literature on current account deficit – house price relations throughout the text. The purpose of the research is not to define exact relation between current account deficit and house price changes in Turkey but to define the general linkage between the two. At first look increasing house prices, real estate prices in broader sense, seems to be good for a country running a significant current account deficit. This is due to fact that lenders feel more comfortable as loan to value ratios are at satisfactory levels and improving but the problems start as soon as some of the lenders question the quality of collaterals. This is identical to the start of sub-prime mortgage crisis in US and problems occurring in Spain now. Even though there is no secondary mortgage market in Turkey, i.e. no MBS or CMBS issued, banks secure their commercial loans by real estate hypothec. This structure can be named as shadow secondary mortgage market because all Turkish banks rely on syndication credits. Any stress on banks' syndication credits will be directly transferred to underlying assets, i.e. their commercial loans and eventually on real estate market. Of course this is a bilateral relation, therefore; any stress on real estate market can lead to foreign capital outflow through recall of syndication credits.

An important result is that, GDP per capita growth is not significantly associated with house price changes. This might be due to fact that GDP growth variable is measured up to 12 months backward. However, households and lenders would seek longer term assurance of the household income, therefore; prior to decision of buying a house

households are probably monitoring their income for a minimum of 2 years. Further they do need to save some money as well. Annualized growth rate of GDP for the last three years could dissolve this problem and GDP per capita growth variable could also be statistically significantly associated with house prices.

Not surprisingly, inflation is also positively associated to house prices. Graph on Figure 4 reveals this but just looking at the data could confuse the reader because real house price changes have always been negative during the time period analyzed whereas inflation was positive. Long term, since June 2007, negative real capital returns on house price might impose inflationary pressure on house prices in near future. This structure probably led to a negative coefficient of inflation variable in the first regression.

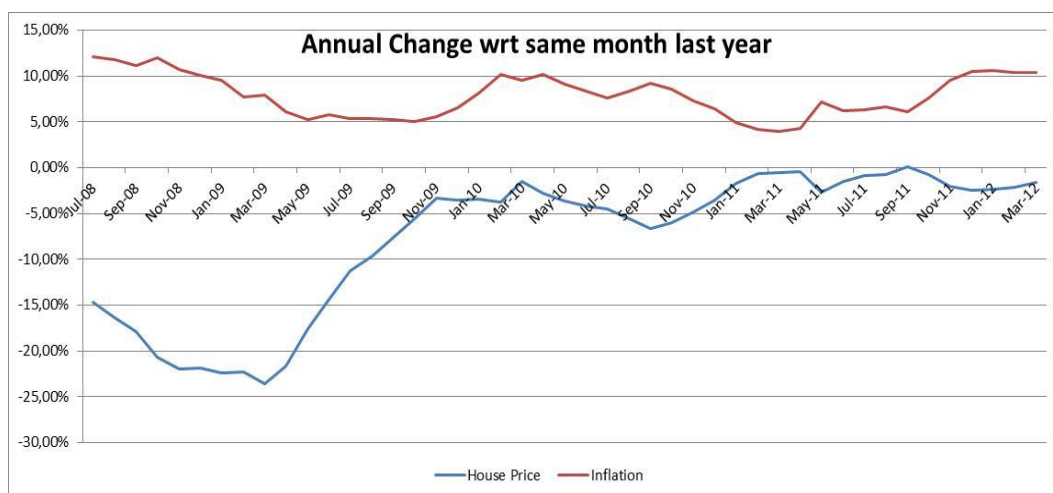


Figure 4: Annual inflation and real house price change

Foreign direct investments in an economy, which suffers from financing its current account deficit, have critical importance. Direct real estate investments could be promoted to increase foreign direct investments and finance current account deficit. Unfortunately, if the funds received through direct investments are not used for policies, investments to increase export and tourism revenues then in the medium run the economy will suffer more severely from increasing current account deficit. This will happen due to fact that appreciating local currency will make imported goods and services more affordable, consequently current account deficit will increase further. Spanish case should be carefully analyzed and Turkey has to draw some lessons from such analysis. The government has to strategically plan a policy to efficiently and effectively manage the funds received through cross border real estate transactions in Turkey. Due to nature of land and property ownership structure in Turkey, majority of the foreign real estate investments will be received by individuals, especially in south of Turkey by villagers. Government shall introduce incentives for those people not to direct those funds for consumption but for savings. Through savings these funds can be used for investments which will increase the country's competitiveness in export and tourism industries. Government should even consider introducing a new real estate investment trust legislation to promote land integration between individual land owners. Such a policy could lead to more value added real estate developments and more efficient management of funds received through real estate sales to foreigners. For example many regional

REITs could be established in the form of Public Private Partnerships so that state takes a certain share in the REITs and also use its planning authority to increase the value added on new developments. It might not be very practical if the state holds a certain share of REITs but promotion of such a structure will definitely lead to higher value added developments and more importantly better management of funds. Otherwise, in the medium run, direct real estate investment inflow speed will slow down as in the case of Spain and even worse case might be experienced, i.e. direct real estate investment outflow. Turkish economic authorities must bear in mind the fact that real estate (land) is a limited source like oil. Today, oil rich countries are well aware of this fact and they are trying to convert their oil income into income generating long term local and global investments.

This research is somehow limited due to lack of data. Similar studies for different countries are run on long term annual data, therefore; in few years it will be possible to exactly define the dynamics between current account deficit and house prices in Turkey. As foreign direct real estate investment is expected to increase, future researches might be concentrated solely on this type of FDI. Exclusion of short term portfolio investments and other types of foreign direct investments will definitely draw a clearer picture.

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