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U.S. Fiscal Policy and Asset Prices: The Role of Partisan Conflict

Rangan Gupta[a], Chi Keung Marco Lau[b], Stephen M. Miller[c], and Mark E. Wohar[d]

Abstract

Fiscal policy shocks exert wide-reaching effects, including movements in asset markets. U.S. politics have been characterized historically by a high degree of partisan conflict. The combination of increasing polarization and divided government leads not only to significant Congressional gridlock, but also to spells of high fiscal policy uncertainty. This paper adds to the literature on the relationships between fiscal policy and asset prices in the U.S. economy, conditional on the degree of partisan conflict. We analyze whether a higher degree of partisan conflict (legislative gridlock) reduces the efficacy of the effect and response of fiscal policy on and to asset price movements, respectively. We find that partisan conflict does not significantly affect the relationships between the fiscal surplus to GDP and housing and equity returns. Rather, if important, partisan conflict affects the actual implementation of fiscal policy actions.

Keywords: Quantile structural VAR, fiscal policy, stock prices, house prices, partisan conflict

JEL Classification: C32, E62, G10, H30, R30

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1. Introduction

Fiscal policy shocks exert wide-reaching effects, including movements in asset markets [e.g., Blanchard and Perotti (2002), Mountford and Uhlig (2009), Ramey (2011a, b), Mertens and Ravn (2014), Ellahie and Ricco (2014), Ricco (2014), Linnemann and Winkler (2016)]. These studies concur that fiscal policy does exert significant effects on the real economy, but the fiscal multiplier fell in magnitude after 1980.

While research on the linkages between economic policy and asset markets typically focus on monetary policy [Simo-Kengne et al., (2016) provide a review], the zero lower bound on interest rates after the Great Recession precipitated a recent literature that analyzes the bidirectional effect of fiscal policy and asset prices [e.g., Jaeger and Schuknecht (2007), Afonso and Sousa (2011), Tagkalakis (2011a, b), Aye et al., (2012), Agnello and Sousa (2013), Gupta et al., (2014), Liu et al., (2015), El Montasser et al., (2015), Ruiz and Vargas-Silva (2016), Mumtaz and Theodoridis (2017)].[1] These papers generally conclude that bidirectional causality exists between fiscal policy and asset prices, with expansionary fiscal policy positively affecting asset prices and increases in asset prices resulting in contractionary fiscal policy.

The U.S. political process historically experiences a high degree of partisan conflict. Increasing polarization and divided government lead not only to significant Congressional gridlock, but also to spells of high fiscal policy uncertainty [Azzimonti, (2015)]. Alesina and Drazen (1991) note that legislative gridlock negatively affects the optimal response to adverse shocks and the quality of policy reforms aimed at preventing them.

Our paper adds to the literature on the interaction between fiscal policy and asset prices of the U.S. economy, conditional on the degree of partisan conflict, of analyzing whether a higher degree of partisan conflict (legislative gridlock) reduces the efficacy of fiscal policy on asset price movements, and vice-versa. We empirically investigate the relationship between asset (house and stock) returns, government surplus as a percentage of GDP (our fiscal policy measure), and a measure of the degree of partisan conflict based on the index developed by Azzimonti (2015), covering annual data from 1891 to 2013.

Azzimonti (2015) uses a semantic search approach to measure the frequency of newspaper coverage of articles reporting political disagreement about government policy (both within and between national parties) normalized by the total number of news articles within a given period to measure the partisan conflict index (PCI). While a monthly version of the PCI

[1] Tavares and Valkanov (2001) and Eschenbach and Schuknecht (2002) provide some earlier analysis involving fiscal policy and asset prices.

is available from 1981, we use the annual the index, since its movement proves consistent with the slow-moving political process variables (Azzimonti, 2015).

We use a quantile structural vector autoregressive (QSVAR), which, in turn, allows us to analyze the effect and response of fiscal policy on and to asset prices based on impulse response functions, conditional on the degree of partisan conflict at different quantiles of the PCI. This is the first paper to analyze the relationship between fiscal policy and asset prices in the U.S. economy conditional on low and high levels of partisan conflict.

The degree of partisan conflict does not significantly affect the effects of fiscal surplus shocks on asset returns. Partisan conflict may only affect the ability of Congressional legislators to implement policies that lead to fiscal surplus shocks. A positive shock to the fiscal surplus to GDP affects the house and stock returns negatively, whereas only the house return effect proves significant. Conversely, while positive shocks to house and stock returns positively affect the fiscal surplus to GDP, only the stock return effect proves significant.

2. Data description

Azzimonti (2015) describes the computation of the annual historical PCI from news articles in five major newspapers that have been digitalized since 1890 for the whole sample period: The Wall Street Journal, The New York Times, the Chicago Tribune, the Los Angeles Times, and The Washington Post. Azzimonti (2015) counts the number of articles that discuss disagreement between political parties, branches of government, or political actors in a given year. Specifically, Azzimonti conducts the search for articles containing at least one keyword in the following two categories: (i) political disagreement and (ii) government, with focus on articles including keywords at the intersection of those two categories. In addition, Azzimonti carries out the search for specific terms related to partisan conflict, such as “divided party”, “partisan divisions”, and “divided Congress”. Note that the search involves terms related to the political debate, as well as the outcome of the partisan warfare.

Because the volume of digitalized news varies over time, Azzimonti (2015) scales the raw partisan conflict count by the total number of articles in the same newspapers over the same time interval. Specifically, Azzimonti divides the raw partisan conflict count by the number of articles every year that contain the word “the”, rather than “today," since early in the sample, delays exist between the date of the event and the date of reporting. Finally, without any loss of generality, Azzimonti normalizes the PCI to an average score of 100 in the year 1990. Azzimonti reports a HP filter of the PCI to extract the trend and notes that the HP filtered PCI trends downward from 1891 through the early 1920s, remained relatively constant and did not trend up or down from the early 1920s through the mid-1960s, and trended upward from

the mid-1960s through 2013 (see Azzimonti, 2014, p. 7-8). For further details regarding the construction of the PCI, see Azzimonti (2014, 2015).

Our variables include the real U.S. house price index (RHP), real Standard and Poor's S&P 500 (RSP) index, and the U.S. primary surplus as a percent of Gross Domestic Product (FP), besides the PCI.[2] We use annual data from 1890 to 2013, because data only occur at this frequency over this long-sample, with the start and end dates being governed by the availability of data on the historical PCI. Since the application of the QSVAR requires mean-reverting data, we use yearly growth rates (log-differences) for the real house and stock prices, which approximate real house and stock returns (RHR and RSR, respectively), as well as the PCI (GPCI), which generates a total of 123 observations, covering the period of 1891 to 2013. The level of FP (i.e., the primary government surplus as a percent of GDP) and the transformation of the two asset prices into returns, besides the growth rate of the PCI, generate stationary series based on standard unit-root tests. Details of the unit-root tests are available upon request from the authors. Figure 1 plots the variables of interest.

3. Methodology

As indicated earlier, this paper uses a quantile structural vector autoregressive (QSVAR) model to estimate quantile impulse responses of real asset returns (stock and housing) following a shock to the fiscal policy variable (government budget surplus as a percentage of GDP), and also the response of the fiscal policy to asset returns shocks.[3] More importantly, we examine these dynamic responses by conditioning on various quantiles of the growth of the PCI that allows us to capture the various levels of political disagreements. See Koenker and d'Orey (1987), Cecchetti and Li (2008), Kilian and Park (2009), and Linnemann and Winkler (2016) for details on the methods.

For the Kilian and Park (2009) decomposition procedure, we order the variables from most exogenous to least exogenous with growth of the PCI first, followed by real housing returns, the primary surplus as a percentage of GDP, and then equity returns. This ordering of the fiscal policy and asset returns variable is theoretically justified (Gupta et al., 2014), since it

[2] The nominal surplus and GDP data come from the Global Financial Database while the RHP and RSP data come from the Online Data section of Professor Robert Shiller's website: http://www.econ.yale.edu/~shiller/data.htm. The data on the PCI come from the website of Professor Marina Azzimonti: http://marina-azzimonti.com/working-papers/.

[3] Our measure of fiscal policy variable is stationary by design, naturally we cannot use a vector error correction model (VECM), which in turn requires all endogenous variables to be integrated of order one. Besides this, the theory on quantile VECM is not yet developed either. Hence, we rely on a QSVAR, which is based on variables that are all stationary. But in any event, there was no evidence of cointegration amongst the log-levels of the PCI, real house and stock prices, i.e., the I(1) variables in their untransformed forms. Naturally, our QSVAR is not misspecified.

implies that the house price does not respond contemporaneously to fiscal policy and equity price shocks, while fiscal policy reacts with a lag to equity price shocks. Thus, the equity return appears fourth in the ordering after the house return and measure of fiscal policy. The ordering of the growth of PCI first follows Azzimonti (2015) and Cheng *et al.*, (2016), who suggest putting this index before macroeconomic and financial variables in the VAR.

We use the impulse response analysis to plot the effect of a one standard deviation increase in the innovation of the fiscal policy variable and real asset returns at time *t* on another variable at time *t*+*s*, by conditioning the impulse response functions on quantiles (τ=0.10, lower levels of political discord, and τ=0.90, higher levels of political discord) of the PCI growth.[4] We use the Schwarz information criterion (SIC) to select the optimal lag order in the QSVAR model with the lag-lengths equal to 1 at $\tau = 0.10$ and 0.90.[5,6]

4. Results of the Analysis

We now turn to the QSVAR model to analyze the response of asset returns to fiscal policy shocks as well as the response of fiscal policy to asset return shocks,[7] conditional on lower and higher degrees of the PCI.[8]

Figures 2a and 2b show that both house and equity returns respond negatively to a fiscal surplus shock (as in El Montasser, 2015) under $\tau = 0.10$ and 0.90 over a ten year horizon. That is, contractionary fiscal policy leads to higher asset returns, which is consistent with the existing literature. Figure A1 in the Appendix presents the results separately across the two quantiles with confidence bands. The response of real house returns to a fiscal shock is persistent and significant over the entire ten years of impulse response analyzed with the

[4] Our results are qualitatively similar if we use τ=0.25 and 0.75 to characterize the lower and higher levels of partisan conflict. Complete details of these results are available upon request from the authors.

[5] The Akaike information criterion, Hannan-Quinn and final prediction error Criteria also chose one lag as optimal. Complete details of the lag-length tests are available upon request from the authors.

[6] Based on the suggestions of an anonymous referee, we also filtered the variables for possible breaks and the World War I and World War II periods. Our results were quantitatively and qualitatively similar to those reported in Section 4. Complete details of these results are available upon request from the authors.

[7] We rely on impulse response analyses and suppress the estimation results to save space. Besides, impulse response functions are more informative in tracking the dynamic behaviour of variables following a shock, i.e., an unexpected change in a specific variable (fiscal policy and asset returns). Complete details of the estimation results, however, which understandably convey the same information, albeit the dynamics, are available upon request from the authors.

[8] Since a monthly version of the PCI also exists starting in 1981, we also conducted our analysis at this high frequency, with fiscal policy being measured by annualized surplus to debt. Using the sample period of January 1981 to October 2016 (i.e., data available at the time of writing the paper), we were however, unable to detect any significant effect of the fiscal surplus shocks on asset returns and also asset return shocks on the fiscal surplus. Similar observations also occurred when we converted the PCI to quarterly data, and the analysed the effect of fiscal surplus shocks on asset returns, and the response of the fiscal surplus to GDP variable to asset return shocks over the quarterly period of 1981Q1 to 2016Q3. Complete details of these results are available upon request from the authors.

strongest effect in third year after the shock. While the effect on stock returns is also negative and persistent with the strongest effect felt in the first year, the effects are insignificant with the exceptionally wide confidence bands.

This negative response to fiscal surplus shocks reflects a standard market outcome. That is, when the primary surplus increases, or more likely the primary deficit decreases, the supply of government debt falls, driving up the price of government debt and lowering its interest rate. As such, the quantity demanded of government debt declines, moving to the housing and equity markets, lowering the returns in these markets. Only the effect on the housing return is significant, possibly reflecting a more important link between mortgage financing and housing returns than between margin financing of equity purchases.

The impulse responses of Figures 2c and 2d show how the primary balance as a percent of GDP reacts to asset return shocks under $\tau = 0.10$ and 0.90 over a ten year horizon. Both house and equity real return shocks lead to an increase in primary surpluses (as in El Montasser, 2015), with the effect exhibiting high persistent and reaching a peak at the second year after the shock. That is, a positive shock to house or equity returns leads to contractionary fiscal policy. Figure A2 in the Appendix presents the results separately across the two quantiles with confidence bands. Only the effect of equity return shocks proves significant, however.

We expect increases in house and equity returns, *a priori*, to increase automatically the revenue collected from these tax bases. At the same time, we also expect countercyclical spending from government during periods of buoyant growth, which probably results from the wealth effects of asset prices on consumption leading to higher aggregate demand and, hence, higher growth (Simo-Kengne et al., 2015).

Finally, Figures 2a and 2b also show that the negative effects of the fiscal surplus shock on house and stock returns do not differ significantly across different levels of partisan conflict (significance bands appear in Figure A1). Similarly, Figures 2c and 2d also show that the positive effects of the housing and equity return shocks on the fiscal surplus as a fraction of GDP do not differ significantly across different levels of partisan conflict (significance bands appear in Figure A2).

5. Conclusion

This paper considers the interaction between fiscal policy and asset prices of the U.S. economy, conditional on the degree of partisan conflict, with the objective of analyzing whether a higher degree of partisan conflict (legislative gridlock) reduces the efficacy of the effect and response of fiscal policy on and to asset price movements, respectively. That is, we empirically investigate the relationship between asset (house and stock) returns, the government surplus as

a percentage of GDP (our fiscal policy measure), and a measure of the degree of partisan conflict based on the index developed by Azzimonti (2015), covering historical annual data from 1891 to 2013.

We find that the degree of partisan conflict does not significantly affect the effects of fiscal surplus shocks on asset returns. The role of partisan conflict may only affect the ability of Congressional legislators to implement policies that lead to fiscal surplus shocks. While we find that a positive shock to the fiscal surplus to GDP affects the house and stock returns negatively, only the house return effect proves significant. Conversely, while we find that positive shocks to house and stock returns positively affect the fiscal surplus to GDP, only the stock return effect proves significant.

The major difference between housing and equity assets relates to each asset's liquidity, whereby equity assets are much more liquid than housing assets. Put differently, the markets can transact equities more quickly and more frequently than houses. That is, the market for equities proves much more efficient than the market for houses. Houses, because of their relatively low liquidity, provide a market environment for unrealized capital gains whereas the capital gains from equity holding probably get exercised much more frequently.

Thus, on the one hand, it seems reasonable that equity return shocks significantly affect the fiscal surplus to GDP while house return shocks do not. That is, changes in equity returns are more likely realized and cause changes in the fiscal surplus. Housing returns more likely remain unrealized. On the other hand, fiscal surplus shocks lead to significant effects on house returns but not on equity returns. That is, a fiscal surplus shock leads to changes in interest rates, which more closely links to prices and returns in the housing market.

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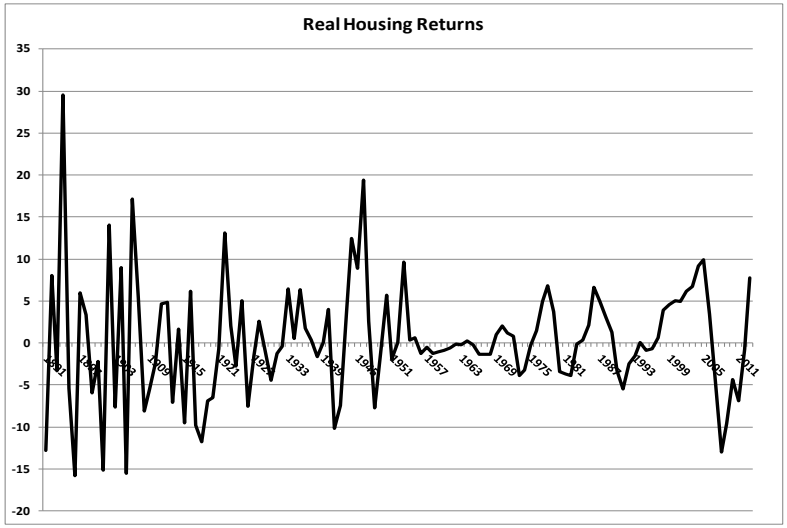
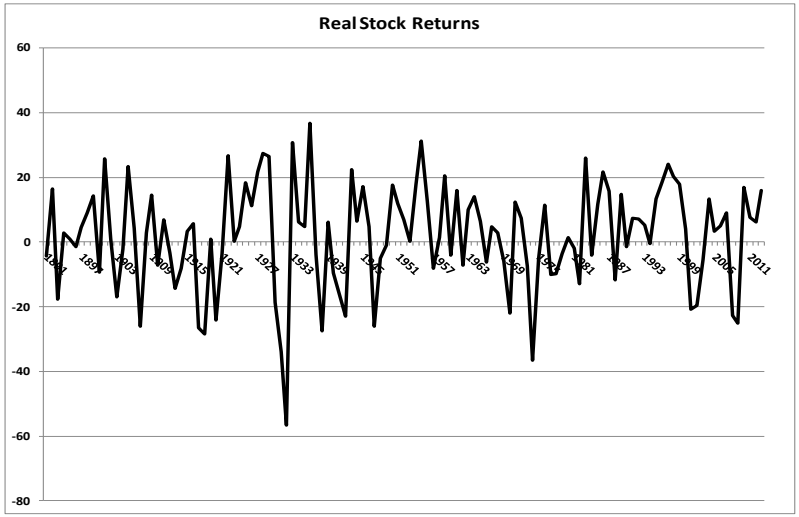
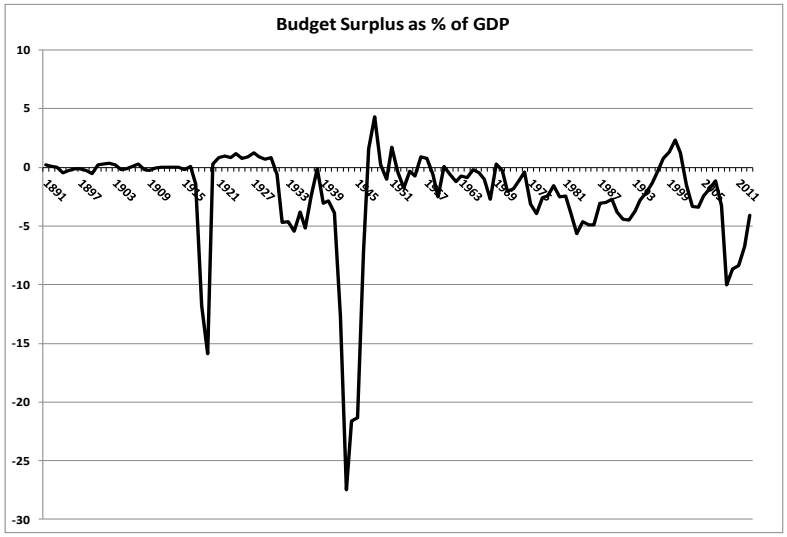
Figure 1: Data



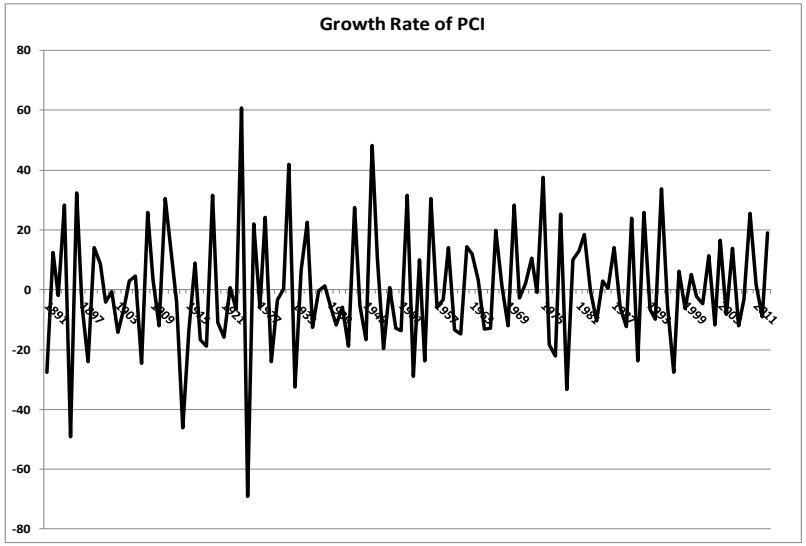
a. Real House Return



b. Real Stock Return

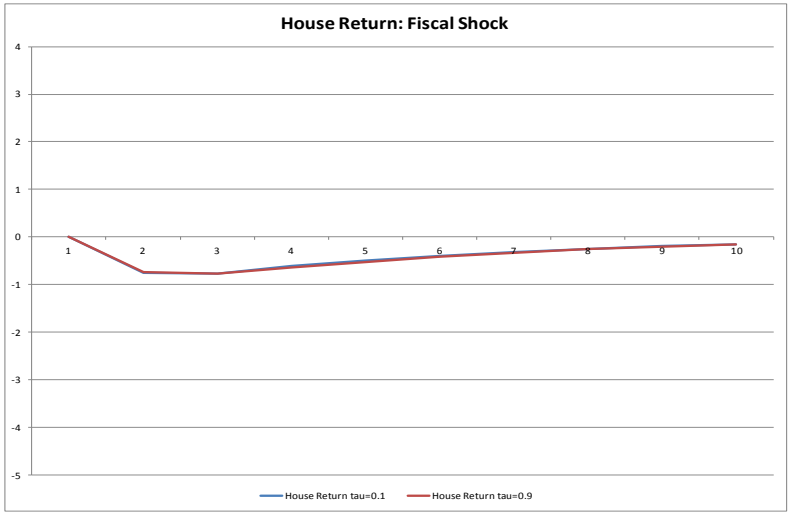


c. Fiscal Surplus to GDP

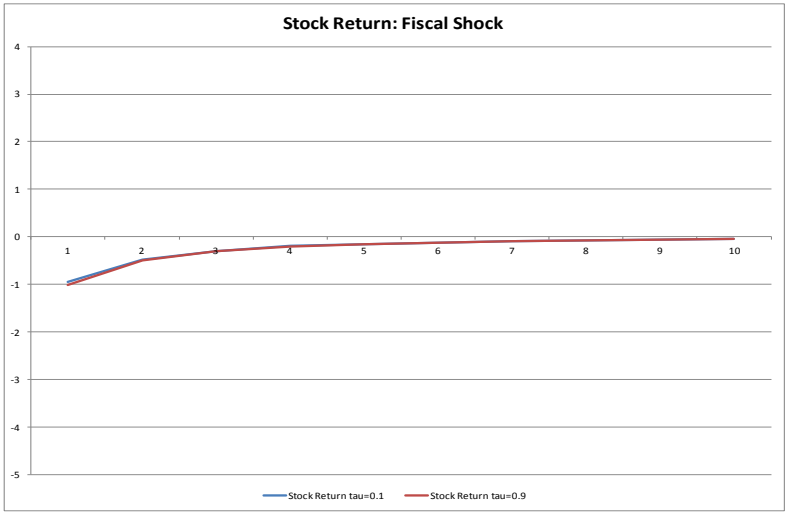


d. Growth Rate Partisan Conflict Index

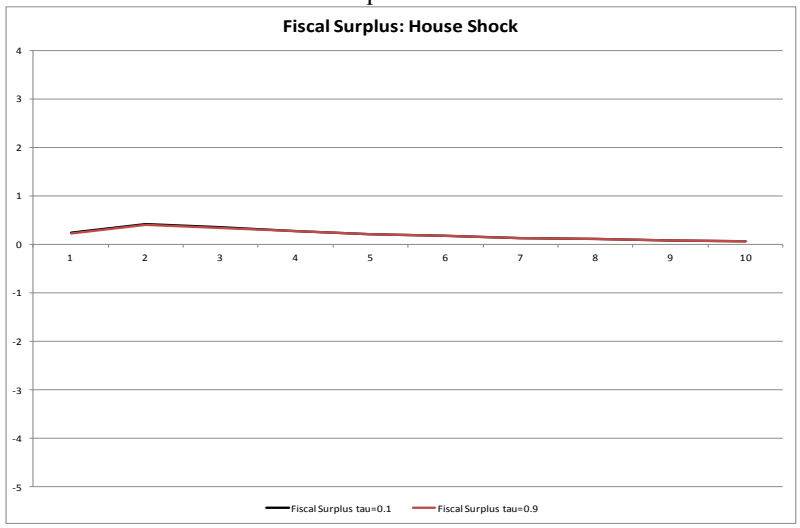
Figure 2: Response of House and Stock Returns to Fiscal Shock and Fiscal Surplus to House and Stock Shocks



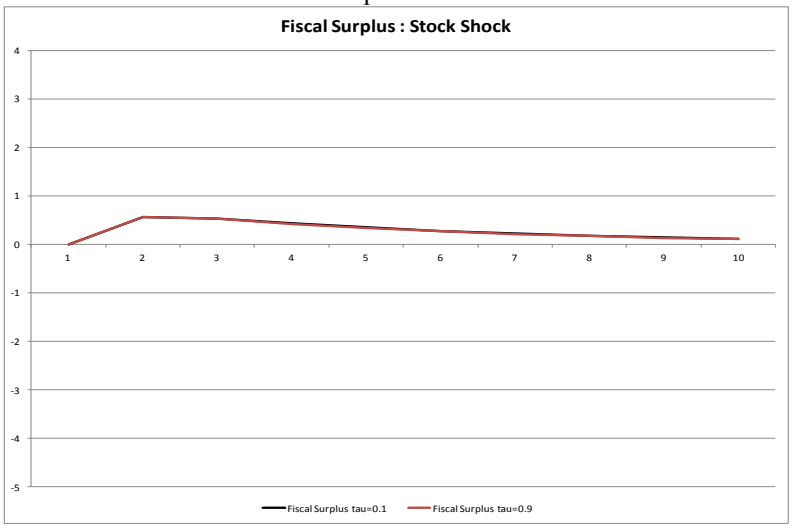
a. House Response: τ=0.1 & 0.9



b. Stock Response τ=0.1 & 0.9

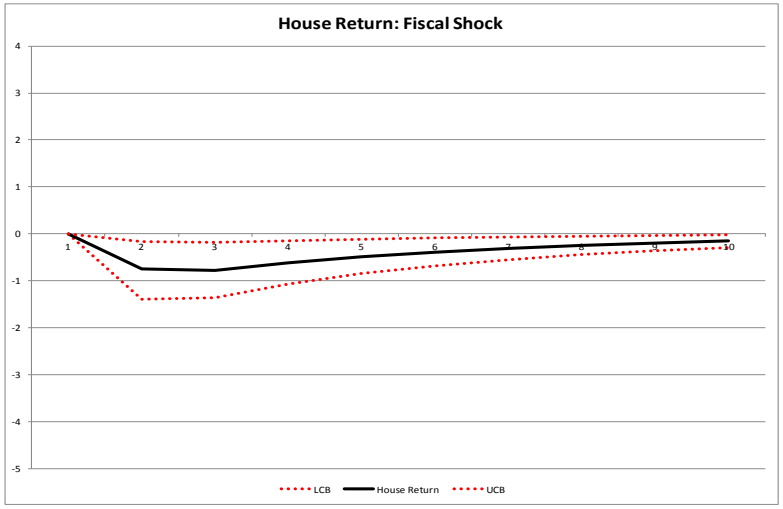


c. Fiscal Surplus Response: τ=0.1 & 0.9

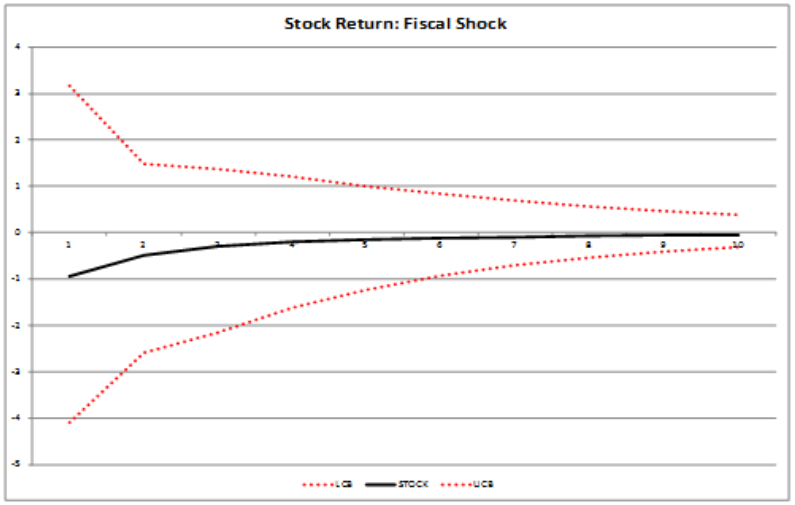


c. Fiscal Surplus Response: τ=0.1 & 0.9

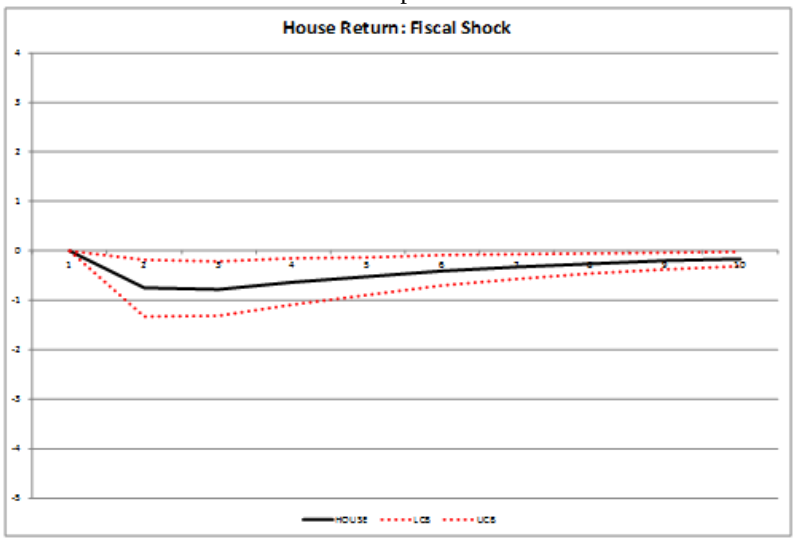
Figure A1: Response of House and Stock Returns to Fiscal Shock



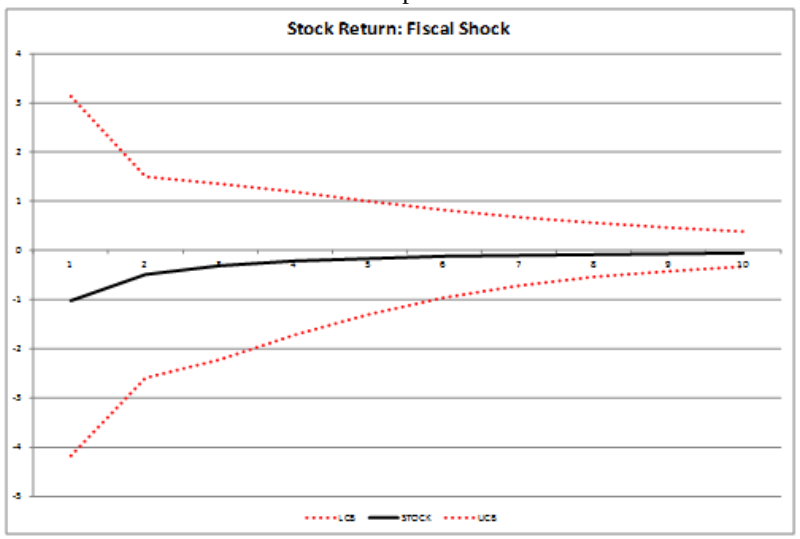
a. House Response: τ=0.1



b. Stock Response τ=0.1

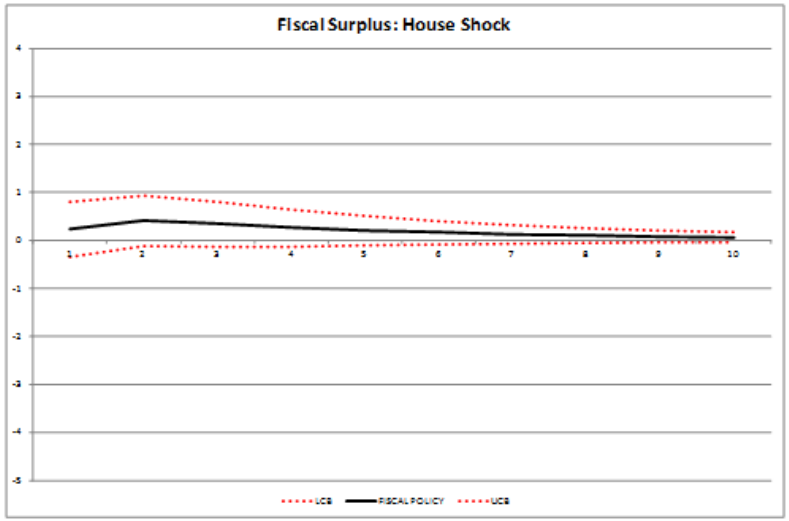


c. House Response: τ=0.9

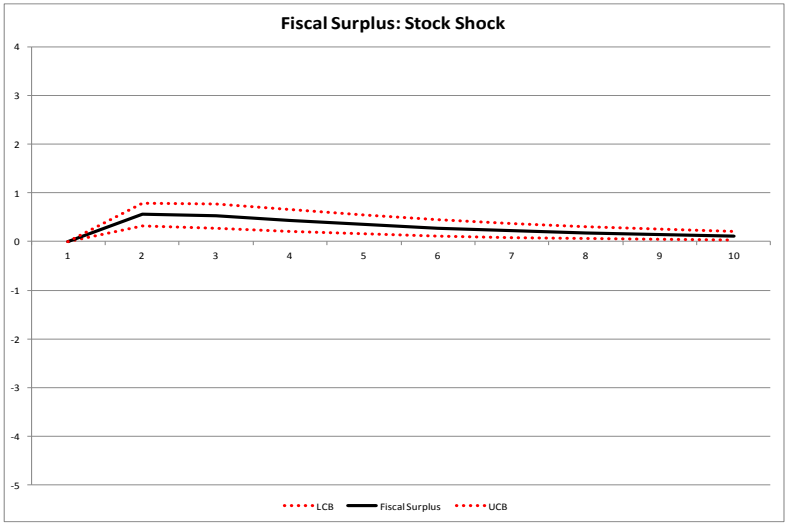


d. Stock Response τ=0.9

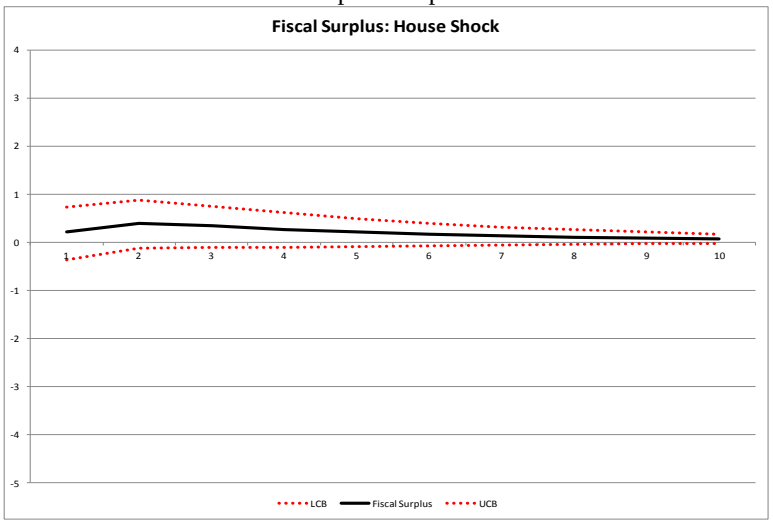
Figure A2: Response of Fiscal Surplus to Stock and House Return Shocks



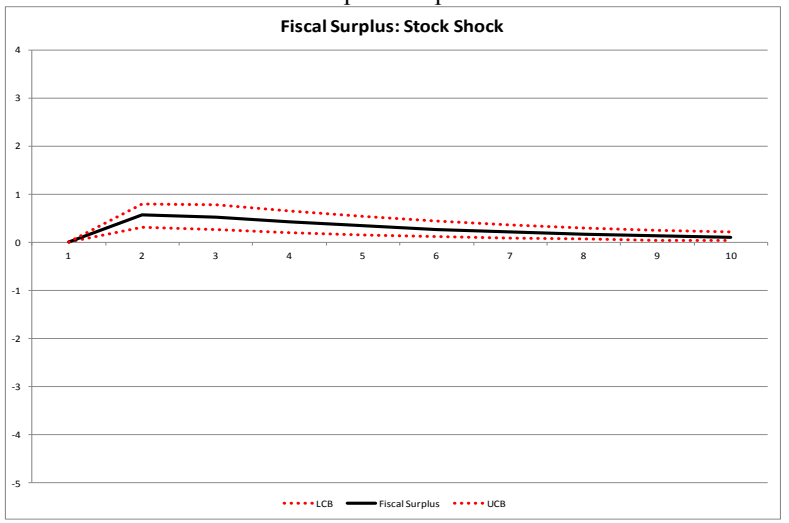
a. Fiscal Surplus Response: τ=0.1



b. Fiscal Surplus Response: τ=0.1



c. Fiscal Surplus Response: τ=0.9



d. Fiscal Surplus Response: τ=0.9