Credit and Capital Markets, Volume 54, Issue 3, pp. 423 – 446
Scientific Papers

Monetary Policy and Foreign Denominated Debt by Non-Bank Borrowers

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Abstract

This paper analyzes cross border credit from a new perspective: We assess globally aggregated foreign-denominated credit to non-bank borrowers (provided by the BIS) and analyze which factors drive debt denominated in yen, euro and US dollar between 2003 and 2020. The determinants we analyze include global economic activity, global commodity prices and the evolution of assets in the FED balance sheet. We also consider assets in the ECB and the BOJ Balance in a second step. Our results show that global economic activity is the main driver of dollar debt only before the financial crisis while the Fed balance sheet drives dollar debt afterwards. We also identify a crowding-out effect of FED balance activities on debt denominated in yen and euro. On the other hand, effects of changes in the ECB and BOJ balance are qualitatively less important and more stable.

Keywords: global liquidity, debt, VAR models

JEL Classification: C32; E31; E58, F42

I. Introduction

The emergence of unconventional monetary policy has triggered an enormous increase in liquidity with balance sheets of central banks skyrocketing in response to the global financial crisis. The underlying transmission mechanisms and effects have yet to be fully understood. Contrary to conventional wisdom, banks have not fully passed through liquidity to companies and households with the ECB reducing its deposit facility rate into negative territory to prevent banks to park their reserves at the ECB. Since 2008, inflation measured by consumer price index (CPI) have remained low while stock prices and house prices have generally increased, raising questions with regard to the effects of monetary pol-

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icy. At the same time, financing conditions in global financial markets have eased substantially as a results of expansionary monetary policies worldwide.

A large strand of the literature has assessed global liquidity spillovers, analyzing for example whether the monetary policy path of major central banks has affected global prices or other measures. The corresponding liquidity measures are essentially designed to proxy global liquidity from a supply side perspective, that is based on the evolution of money supply. However, an interesting question relates to the drivers of demand for global liquidity, for example in terms of debt denominated in foreign currency. Foreign denominated currency is held for different reasons: The store-of-value function relates to a currency's reserve status. A currency is an international medium of exchange if it is used by non-residents to make payments, for example for goods and services or capital flows. An international currency can also act as a unit of account when contracts are denominated in foreign currency (*Chinn* and *Frankel*, 2005).

Foreign denominated debt also seems to have become more attractive for companies. Global liquidity in the form of dollar-denominated credit has increased substantially since 2008 due to the expansionary monetary path and currency substitution (*Bruno* and *Shin*, 2015a, b; *McCaughley* et al., 2015). From a countries' perspective, foreign debt obligations increase the vulnerability to exchange rate shocks via a financial channel since a domestic depreciation can affect the amount of foreign debt denominated in domestic currency. The resulting effects worsens domestic financial conditions and weakens the balance sheets of domestic borrowers in foreign currency. This contradicts the conventional trade channel which argues that domestic depreciation results in expansive effects on domestic economic activity due to an increase in international competitiveness. *Kearns* and *Patel* (2016) finds that the financial channel potentially dominates the trade channel for emerging market economies.[1]

Against this background, this paper focuses on the level of foreign-denominated debt which reflects a special dimension of global liquidity. We are interested in drivers of demand for currencies as an international unit of account in terms of debt denomination and currencies share in the stock of international debt securities. We focus on debt denominated in dollar, yen and euro based on Data from the BIS which reflects credit to non-bank borrowers. Hence, we do not focus on bank capital flows denominated in different currencies, rather focusing on the question why firms and households hold foreign denominated debt. The determinants assessed in this study includes global economic activity, global commodity prices and the evolution of assets in the FED balance sheet. We also consider changes of assets in the balance sheet of the ECB and the BOJ

[1] In this regard, the term "fragile five" is often used and includes the following countries: India, Brazil, Turkey, Indonesia and South Africa.

and monetary policy uncertainty as outlined in *Husted* et al. (2020) as a robustness test.

The paper proceeds as follows. In Section 2, we relate our contribution to the literature with a focus on studies which focus on global liquidity from the supply-side perspective. Section 3 presents data and the empirical results. Section 4 presents the conclusions of this paper.

II. Literature Review

There is no unique measure of global liquidity. Early studies by *Kim* (2001) and *Canova* (2005) have focused on the transmission of US monetary policy shocks to other economies using traditional VAR techniques. The early literature on global liquidity adopted GDP weights and money supply to determine liquidity spillovers (*Beyer* et al. 2000). The starting point is an aggregation of country-specific time series for OECD countries to create a global liquidity measure. *Sousa* and *Zaghini* (2006) construct a global liquidity measure for the G5 economies and apply a structural VAR approach and focus on the impact on global output and inflation.

Belke et al. (2010b) adopt these measures in a VAR approach where all quantities are considered endogenous. *Giese* and *Tuxen* (2007) and *Belke* et al. (2010) use a similar global liquidity measure in Cointegrated Vector error correction model which distinguishes short-run and long-run dynamics based on a multivariate cointegration (VECM) approach. The cointegrated VAR approach proposed by *Juselius* (2006) has the main advantage that the analysis is carried out without pre-assuming a specific causal structure for long-run relationships.

In the context of global liquidity, the idea is that liquidity share a long-run path with macroeconomic variables, for example in terms of a positive co-movement with real GDP. Deviations from these long-run path signal excess liquidity. *Belke* et al. (2010a) find that global liquidity drives the long-run relationships while commodity prices adjust to such excess liquidity measures. *Belke* et al. (2013) also support the hypothesis that there is a positive long-run relation between global liquidity and the development of food and commodity prices.

Overall, there is rich evidence that global liquidity based on GDP weights significantly affects different commodity prices. An alternative approach is to adopt a factor models to extract global liquidity measures. Such procedures proxy global liquidity via principal components based on the idea that joint increases in money supply reflect increases in money supply. The work by *Bagliano* and *Morana* (2009) illustrates that co-movements in macroeconomic variables do not only concern real activity, but are an important feature also of stock market returns, inflation rates, interest rates and, to a smaller extent, monetary aggregates. *Belke* et al. (2014a) follow up on this idea and adopt a FAVAR introduced by *Stock* and *Watson* (2005a) to assess co-movements among some macro variables across the G7 and the euro area. They show that global shocks related to liquidity, GDP and house prices and shocks affects global commodity prices

Major issues in time series econometrics are structural breaks and nonlinearities. Several approaches exist for tackling the issue of nonlinearities. From a more general viewpoint, *Siklos* and *Granger* (1997) have shown that a cointegration relationship can well be subjected to structural changes by arguing that some common stochastic trends are only present in specific periods. In this respect, they introduce the concept of regime-sensitive cointegration, or "switch on – switch off" cointegration. One obvious way to proceed, therefore, is to apply regime-switching models, for example based on tests for structural breaks in long-run coefficients. Another popular modelling strategy is to rely on a linear model for long-run coefficients and to account for changes in the adjustment coefficient. These changes in coefficients could either be driven by an observed variable or by an unobservable stochastic process, as in the family of Markov-Switching models. We do not consider these methods given the small amount of observations and consider a sample split.

Belke et al. (2014b) account for nonlinearities by applying a Markov-switching vector error correction model (MS-VECM) which allows for a distinction between long-run and time-varying short-run dynamics for a sample period ranging from January 1981 to March 2012. Their set of variables include consumer prices, different commodity prices, real GDP and the interest rate. Their sequential strategy is based on a common factor structure to model cross-section dependence at the first stage which is then analyzed in a MS-VECM at the second stage. Their findings distinguish two regimes, one which approximately accounts for times where no impact is observed while the second regime corresponds to periods where commodity prices adjust to long-run disequilibria.

Overall, our approach differs substantially from the early literature which used GDP weights to calculate global liquidity measures from the supply side perspective while we assess determinants of foreign-denominated debt by non-bank borrowers which constitutes to a demand for global liquidity.

III. Data

Three indicators of global liquidity are provided by the BIS: banks' international claims, banks' total claims on the private non-financial sector, and total credit by currency of denomination (BIS, 2016). The availability of this data restricts the starting point of our period which runs from January 2003 until December 2020.

We focus on total credit by currency of denomination which captures credit to non-bank borrowers from domestic as well as foreign borrowers. Total credit is defined as the sum of bank loans to non-banks and debt securities issuance by non-banks. For each currency, total credit is decomposed into credit to residents of countries for which the selected currency is domestic (e.g. for the US dollar, credit to US residents) and credit to residents of countries for which the selected currency is foreign. This measure is provided for credit in US dollar, yen and euro. Hence, we analyze from the perspective of the borrowing countries, such positions correspond to credit to non-residents. Regarding *credit to borrowers outside the currency-issuing jurisdiction*, we include international debt securities (ids) and locally extended bank loans in foreign currency. The debt measure we adopt does not include cross-border bank loans (xbl). This is appealing since cross-border bank loans are not related to credit demand from households and firms which are important for private consumption and investment demand (*Berger*, 2015). See *Beckmann* and *Comunale* (2020) for further details on the BIS data and an analysis of country-specific dynamics. We use the global economic conditions index of *Baumeister* et al. (2020) and the CRB commodity index. Data on assets in central bank balance sheets are obtained from the national central banks. Using these global measures is important to account for global factors which might drive the international demand for currencies relative to the FED balance sheet. We do not take the interest rate of the FED into account given the limited fluctuation of interest rates along the zero lower bound.[2]

IV. Empirical Analysis

1. Descriptive Evidence

We start our analysis with a descriptive overview of the global liquidity measures under consideration. We consider three aggregated debt measures and illustrate their path for euro, yen and dollar debt over time in Figure 1. The graph shows that the dollar has sustained its role as a leading international currency. The share of US dollar denominated debt has increased over the last decade, in particular during the euro area debt crisis although there is a mild catch-up effect of the euro around the end of the sample.[3] The dominance of the US dollar in parts of Asia offers an explanation for the rather weak international role of

[2] Shadow rates estimates based on the term-structure of interest rates which are for example provided by *Wu* and *Xia* (2016) offer an alternative since they fluctuate in the presence of the zero lower bound. However, such estimates are quite sensitive with regard to underlying modelling and estimation choices (*Krippner*, 2019).

[3] There are regional differences. In 2019, euro-denominated credit overtook for example US dollar-denominated credit as the largest stock of foreign currency credit to emerging europe (BIS, 2020).

the yen. We will focus on drivers of the US debt in the following but we will also consider debt denominated in euro and yen. Unsurprisingly, we find the assets in the balance sheets of all three central banks are highly correlated with the correlation of the FED position with the ECB and the BOJ position 0.87 and 0.83 respectively.

2. *VAR Estimates*

We adopt a Vector autoregression (VAR) based on the general representation in (6):

$$Y_t = B_O + B_1 Y_{t-1} + \ldots \; B_p Y_{t-p} + \epsilon_t, \quad t = 1, \; \ldots \; , \; T. \tag{6}$$

where Y_t includes data on global economic conditions, global commodity prices, the FED balance and the change of debt denominated in foreign debt (either dollar, yen or euro) ($Y_t = [globc_t, com_t, Fedb_t, ddebt_t]$) in our baseline setting. We use differences of foreign-denominated debt since unit root tests show that first differences are still integrated of order one while all other measures are integrated of order one in levels.[4]

We also consider the evolution of assets in the balance sheet of the ECB and the BOJ instead of the FED balance. We do not consider all three balance sheets in one model given the small number of observations in our sample split. We use a recursive Cholesky decomposition and order the variables from slowest to fastest reacting with global economic conditions considered the most exogenous. We also estimate a reduced model over two subsamples where we exclude commodity prices given the small number of observations.

3. *Empirical Findings*

We start the assessment of our results by focusing on the full sample estimates which includes global economic activity, commodity prices, evolution of the FED balance sheet and the percentage change of dollar debt.

The results of Figure 2 show that debt denominated in USD dollars outside the US only reacts to global economic conditions. The positive effects shows that higher economic activity drives up demand for dollar debt. The effect of commodity prices points into the same direction but is insignificant as is the effect of an increase in the FED Balance.

[4] We do not conduct a cointegration analysis given the comparable small number of observations and the subsample we consider as well as the focus of our investigation.

As a next step, we exclude commodity prices and estimate our model for two subsamples: 2003–2008 and 2009–2020 displayed in Figure 2 and Figure 3. The results show remarkable differences. The first sample provides broadly similar effects to the full sample. However, the findings for the second sample change drastically. Global economic conditions do no longer have a significant effects on dollar-denominated debt while an increase in the Fed Balance now drives up demand for dollar debt. To get a quantitative idea of this effect, we consider variance decompositions for the three models in Table 1–Table 3. The results show that global economic conditions have a strong effect over the full sample and the first sample with the initial contribution of the corresponding shocks around 37 % for the first sample and 22 % for the full sample. The effects for the full sample even suggests that shocks to global economic activity are more important compared to self-induced shocks. The effects of the FED Balance is negligible and below 2 % for the first and 5 % for the full sample. This finding is completely reversed for the second sample. The contribution of global economic shocks falls below 3 % while the contribution of shocks to the FED Balance increases to close to 10 %. Hence, evolution of the FED Balance is clearly important although self-induced shocks are the dominant force.

We estimate similar models for debt denominated in euro and yen and find related pattern. The effects are provided in Figure 5–8 for the full and the second subsample. A similar pattern emerges since global economic activity (and commodity prices for yen-denominated debt) are significant for the full sample but insignificant for the second sample. Moreover, we find that an increase in the FED balance reduces demand for debt denominated in both currencies. Findings of the variance decompositions also confirms that the negative effects of shocks to the FED Balance is also stronger in the second subsample. This implies that expansionary monetary policy measures of the FED improve the relative importance of dollar-denominated debt by triggering a substitution effect from debt denominated in other currencies towards dollar-debt.

A natural question emerging from your analysis is whether changes in balances of the ECB and the BOJ have similar effects. We therefore substitute assets in the FED balance by the corresponding positions in the balance of either the BOJ and the ECB. The detailed findings for the two subsamples are available upon request.

Unsurprisingly, one emerging similarity is that balance sheets of both the ECB and the BOJ also become more important for the second sample and hardly matter for the first sample. This implies that asset purchases by all three central banks tend to fuel debt denominated in domestic currency after 2009. The missing effect over the first sample is not surprising given that interest rates and not asset purchases were the most important monetary policy tool prior to the global financial crisis.

Our results also show that balance sheets of BOJ and ECB display less spillover effects with regard to debt denominated in other currencies. The BOJ balance is not relevant for debt denominated in US dollar while increases in the ECB balance also tend to have negative effects on dollar denominated debt.

To disentangle the relative importance of asset evolutions in both central bank balance sheets, we estimate two additional models for the second subsample which include both asset positions. One for dollar-denominated debt and one for euro-denominated debt. The results of variance decompositions in Table 8 and Table 9 show that the FED balance is more important for both debt measures. Interestingly, shocks to the FED balance are 3–4 times more important than shocks to the ECB balance for euro-denominated debt. Evolutions of the FED balance are also more important for dollar debt but the differences become smaller after several periods. Figure 9 provides the corresponding impulse response functions and illustrates that the positive effects of the FED balance are significant while the effect of the ECB balance is borderline insignificant.

Our findings are in line with the result that spillovers of US monetary policy are stronger and more encompassing compared to the ECB (*Ca' Zorzi* et al., 2020). Several explanations for the stronger role of the dollar compared to the euro have been brought forward. One explanation corresponds to highly fragmented financial markets in the euro area compared to the US (*Ilzetzki* et al., 2020). Among the European debt crisis over the second sample period, this is one explanation for the stronger effects from US monetary policy. However, the effects from the ECB balance are still substantial given the temporary collapse in the euro's share in bond positions after the global financial crisis (*Maggiori*, 2017).

V. Conclusion

This paper has analyzed global liquidity measures from a new perspective. We assess globally aggregated foreign-denominated debt measures provided by the BIS and analyze which factors drive debt denominated in yen, euro and US dollar. All these measures correspond to non-bank borrowers which use these three currencies abroad. Our study differs substantially from the early literature which used GDP weights to calculate global liquidity measures from a supply-side perspective.

The determinants we assess includes global economic activity, global commodity prices and the evolution of the FED balance sheet. Our results show that global economic activity is only a main driver of dollar debt before the financial crisis while the Fed balance sheet drives dollar debt afterwards. We also identify a crowding-out effect of FED balance activities on debt denominated in yen and euro. Asset changes of the ECB or the BOJ balance show similar pattern for domestic denominated debt but display less spillovers with the BOJ balance essentially irrelevant for debt denominated in US dollar.

The results overall show that the FED balance has the strongest effects. This suggests that the exorbitant privilege of the dollar is also driven by the path of US monetary policy, a view also in line with the view that a global financial cycle originates from the US. The strong role of the US dollar is likely to continue. Debt denominated in yen plays a minor role and the euro has been unable to catch up so far. The future role of China's currency within the international monetary system remains uncertain. The dollar continues to dominate even in Asia except for trade with the eurozone and the global share of the Renminbi remains quite small relative to the US dollar. The widespread use of the US dollar in trade invoicing also aligns with our results and might explain the strong demand for dollar-denominated debt (*Adler* et al., 2020).

We leave several questions open for further research given the limitations of our data sample. We are only able to shed some light on drivers of foreign-denominated debt at the aggregated level. As a result, we are unable to provide any insights into transmission channels and propagation mechanisms stemming from monetary policy decisions to international debt. The data correspond to credit to non-bank borrowers which raises the question how liquidity injections by the FED are amplified to non-banks via the banking sector. In this context, another interesting avenue is a closer look at the role of capital flows for changes in the composition of international debt. Another interesting question corresponds to the underlying dynamics of currency-debt substitution effects after monetary policy decisions.

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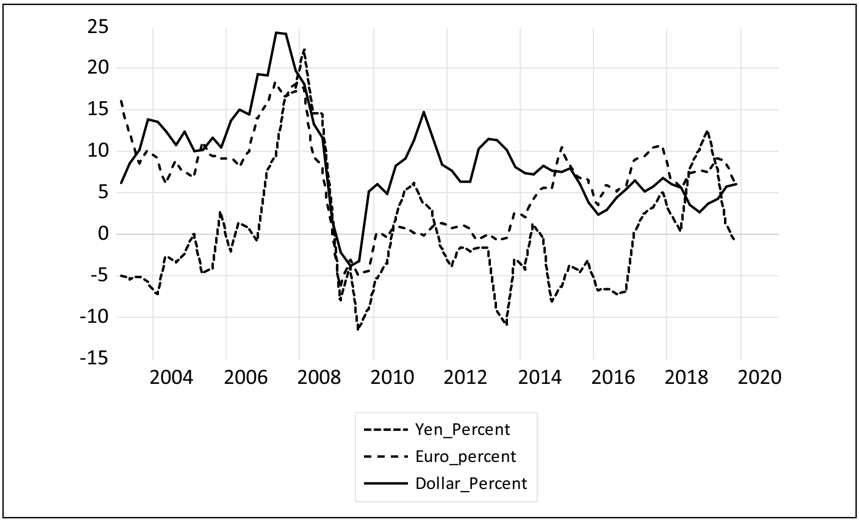
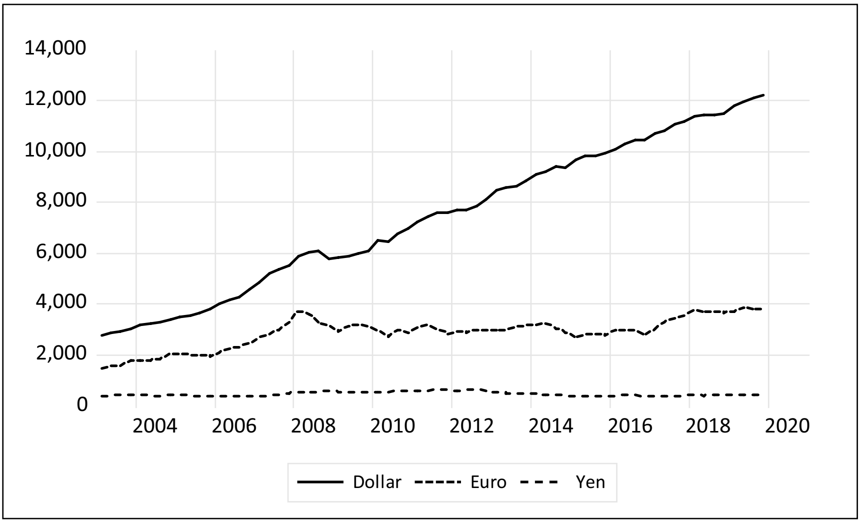
Appendix

Graphs

a) Percentage Change

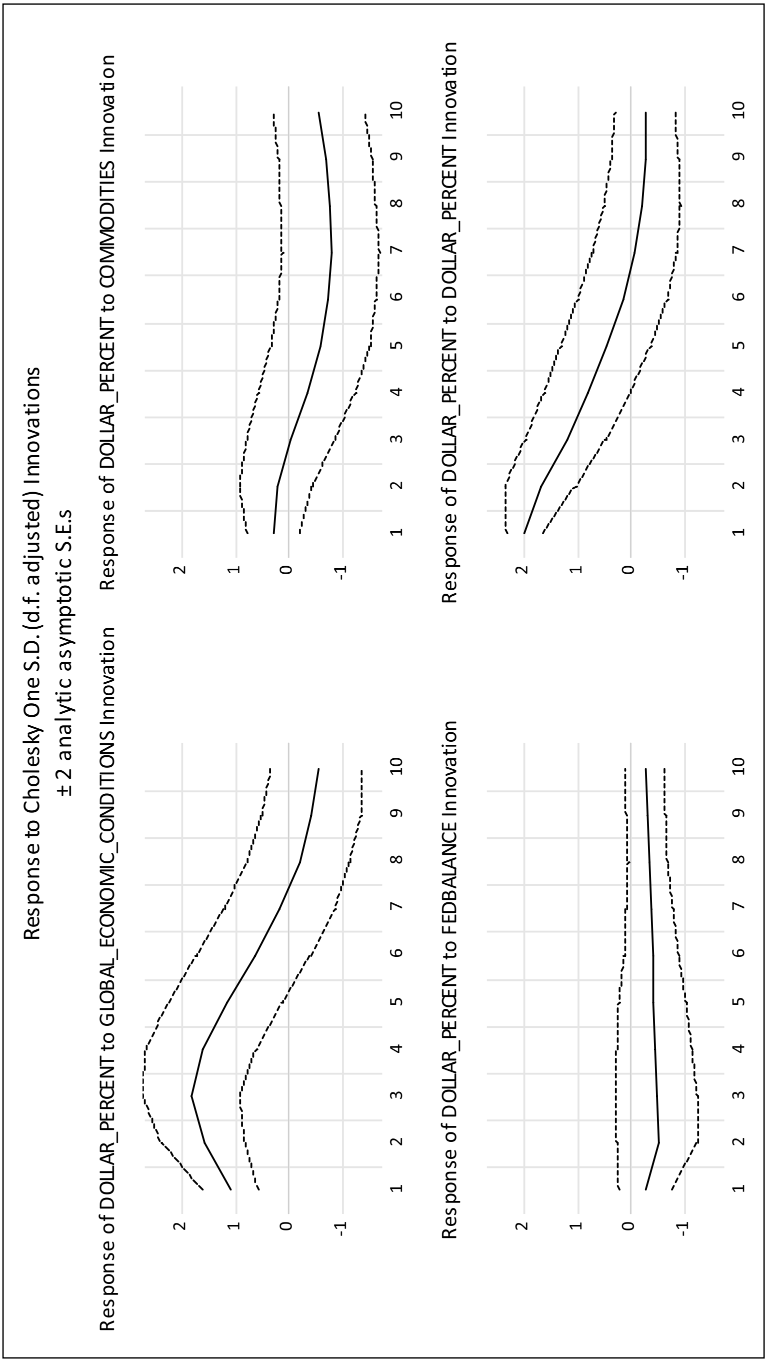


b) In BN US dollar



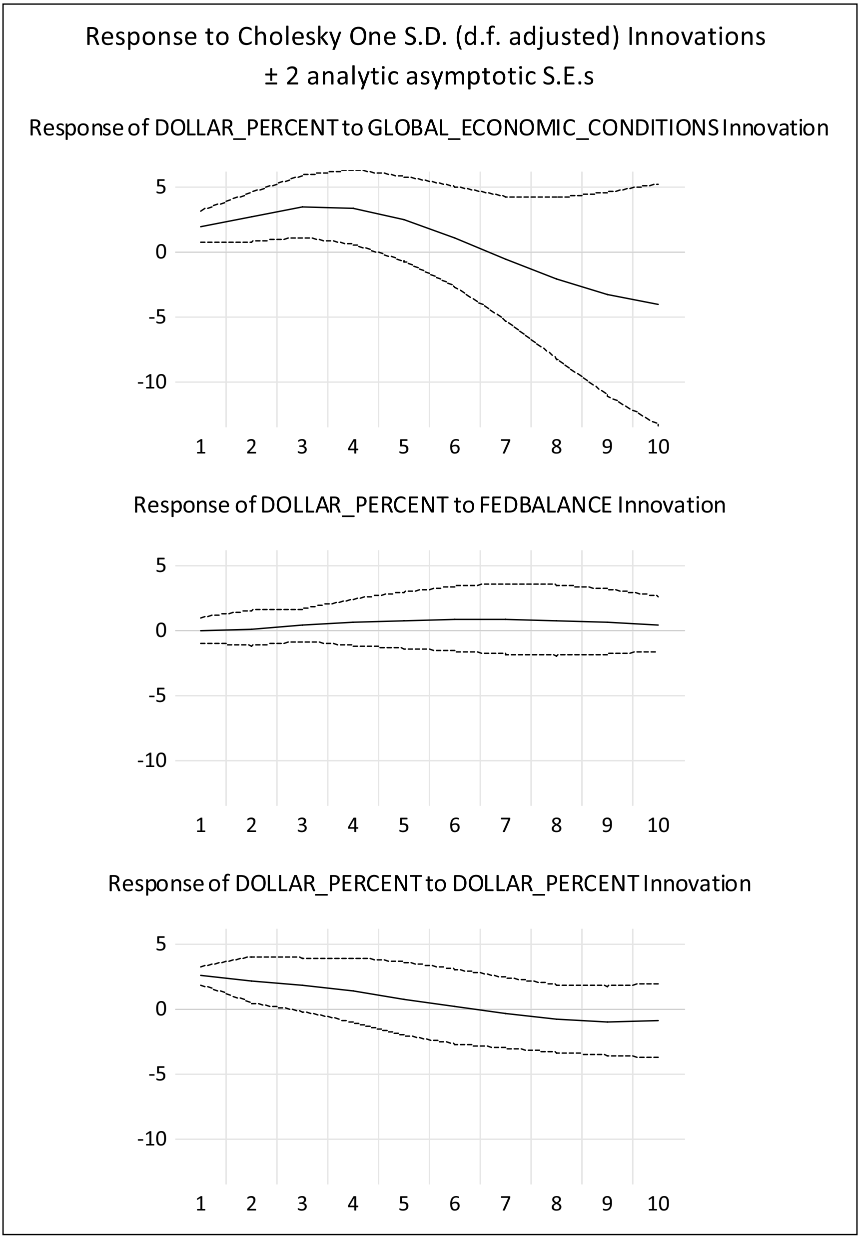
Note: These Figures show the evolution of foreign-denominated debt in percentage changes (Panel a) and levels (Panel b).

Figure 1: Foreign-Denominated Debt



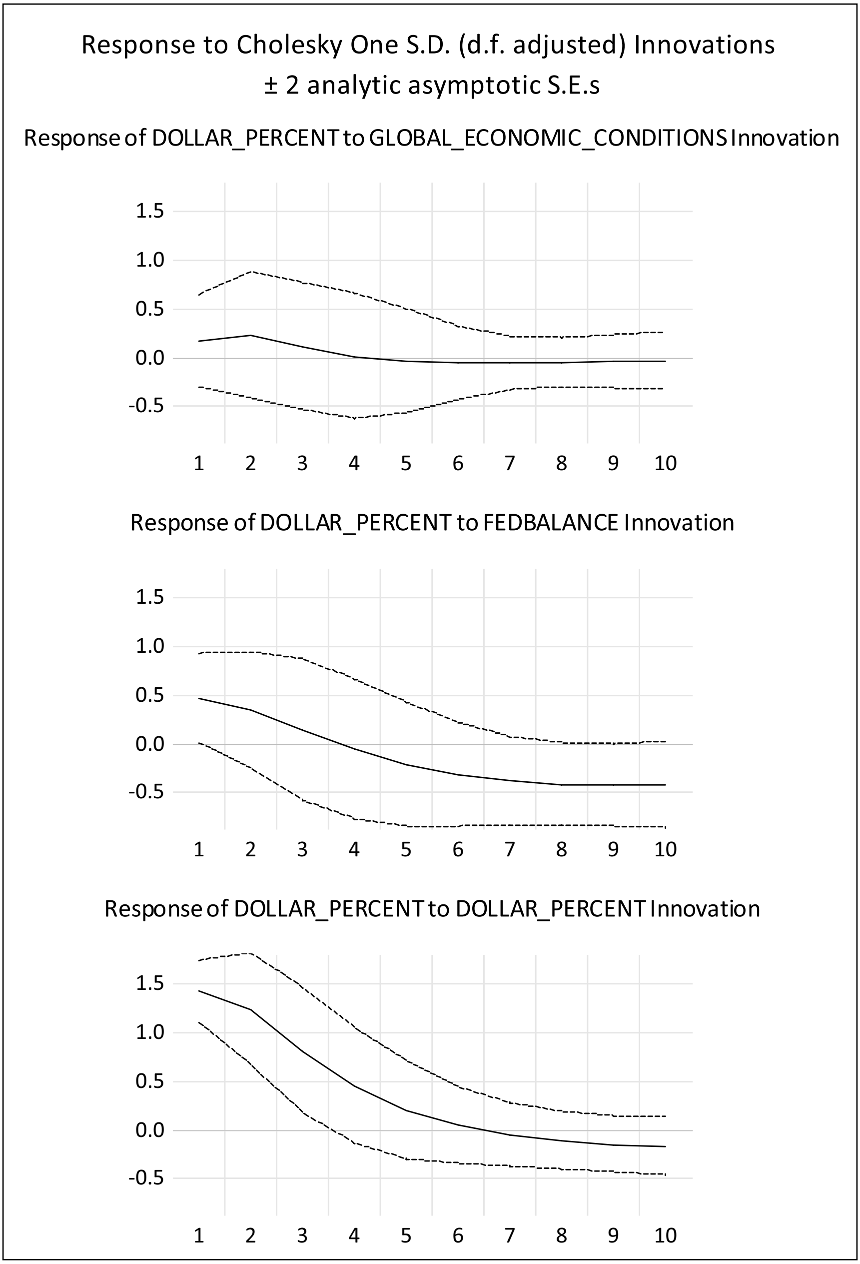
Note: The Figure provides impulse responses for the dollar model over the full sample.

Figure 2: Impulse Response – Full sample



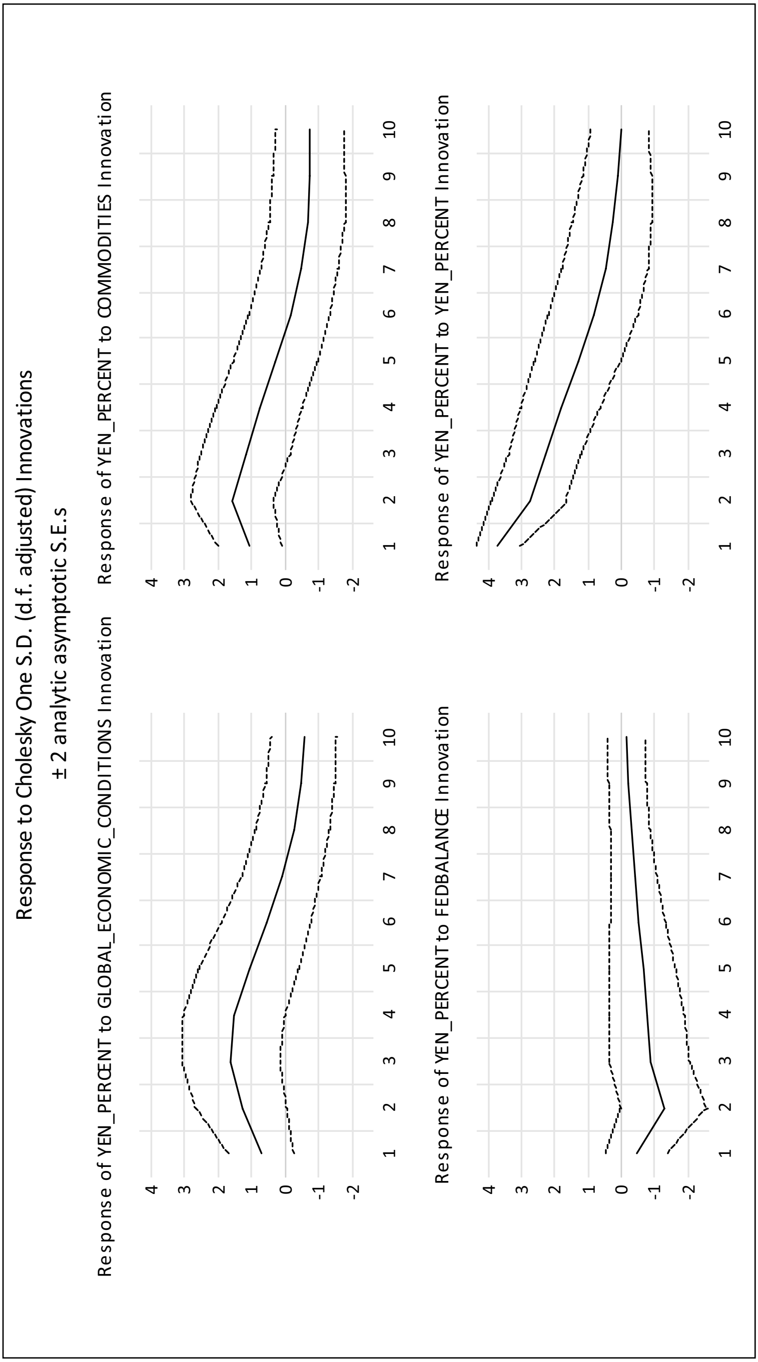
Note: The Figure provides impulse responses for the dollar model over the first sample period.

Figure 3: Impulse Responses – First Subsample



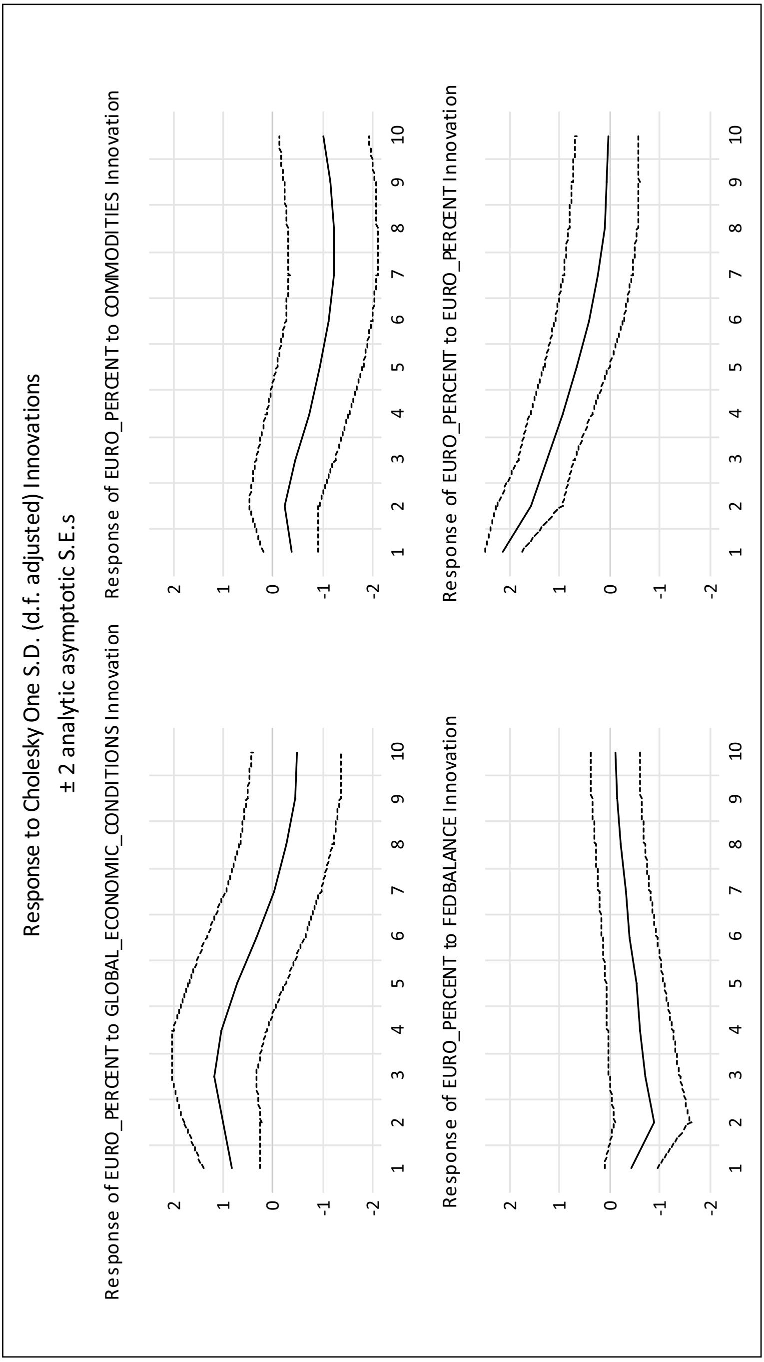
Note: The Figure provides impulse responses for the dollar model over the second sample period.

Figure 4: Impulse Responses – Second Subsample



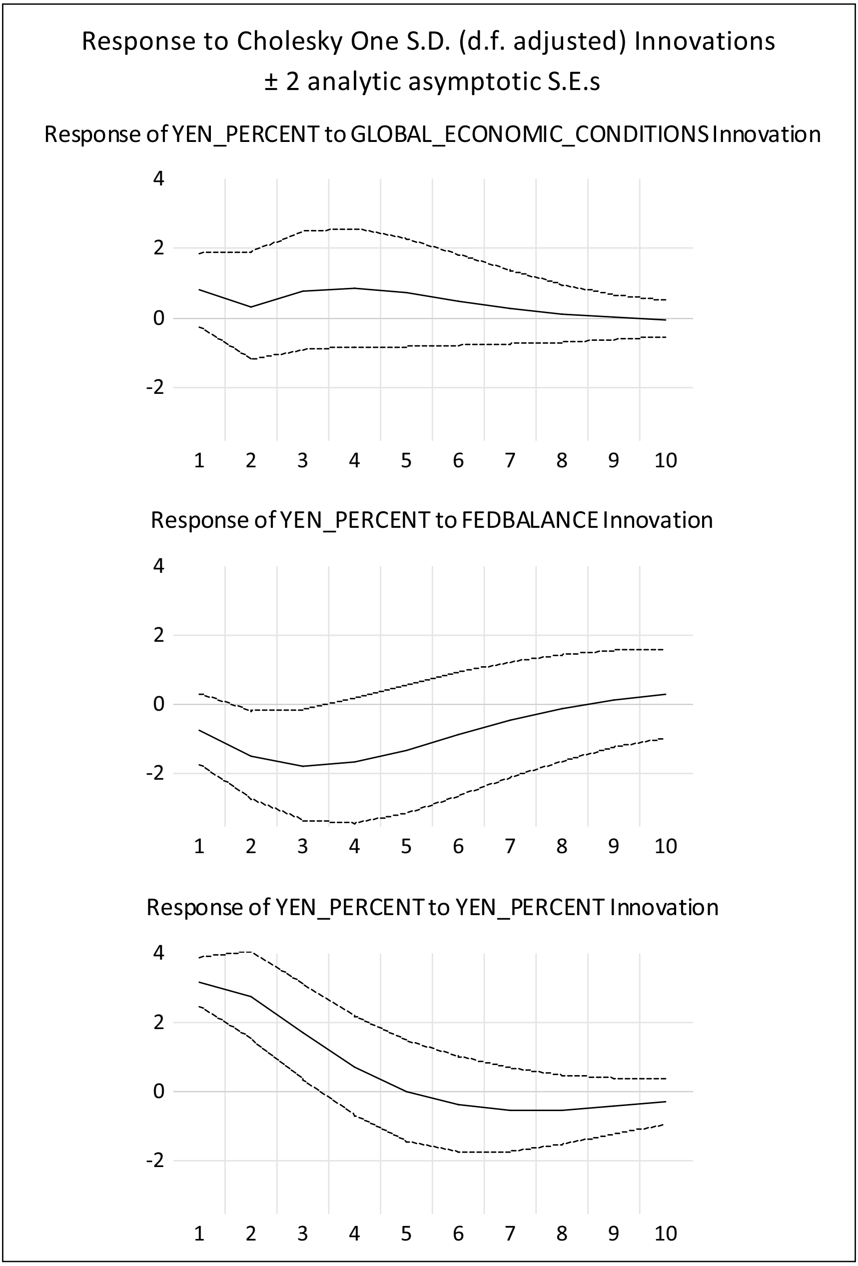
Note: The Figure provides impulse responses for the yen model over the full sample period.

Figure 5: Impulse Responses – Japanese Yen



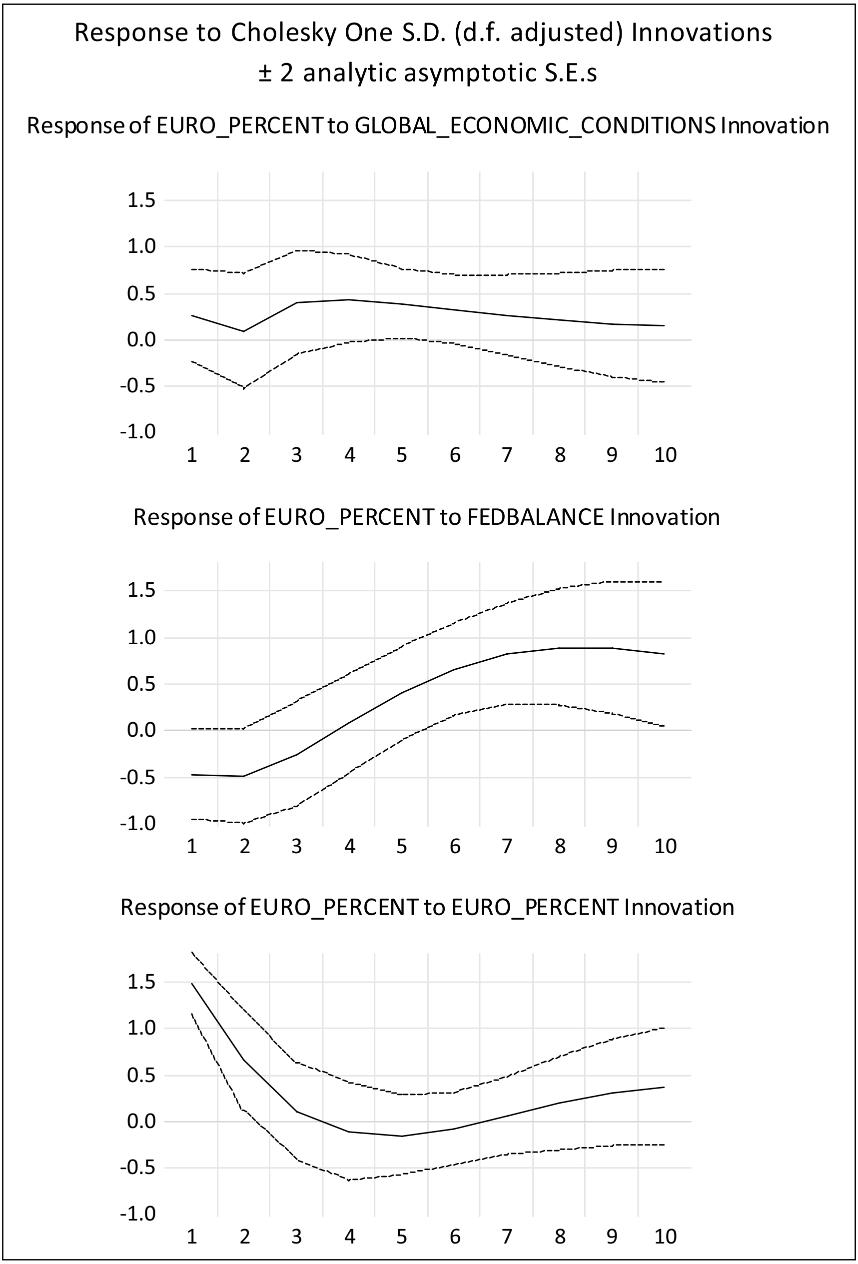
Note: The Figure provides impulse responses for the euro model over the full sample period.

Figure 6: Impulse Responses – Euro



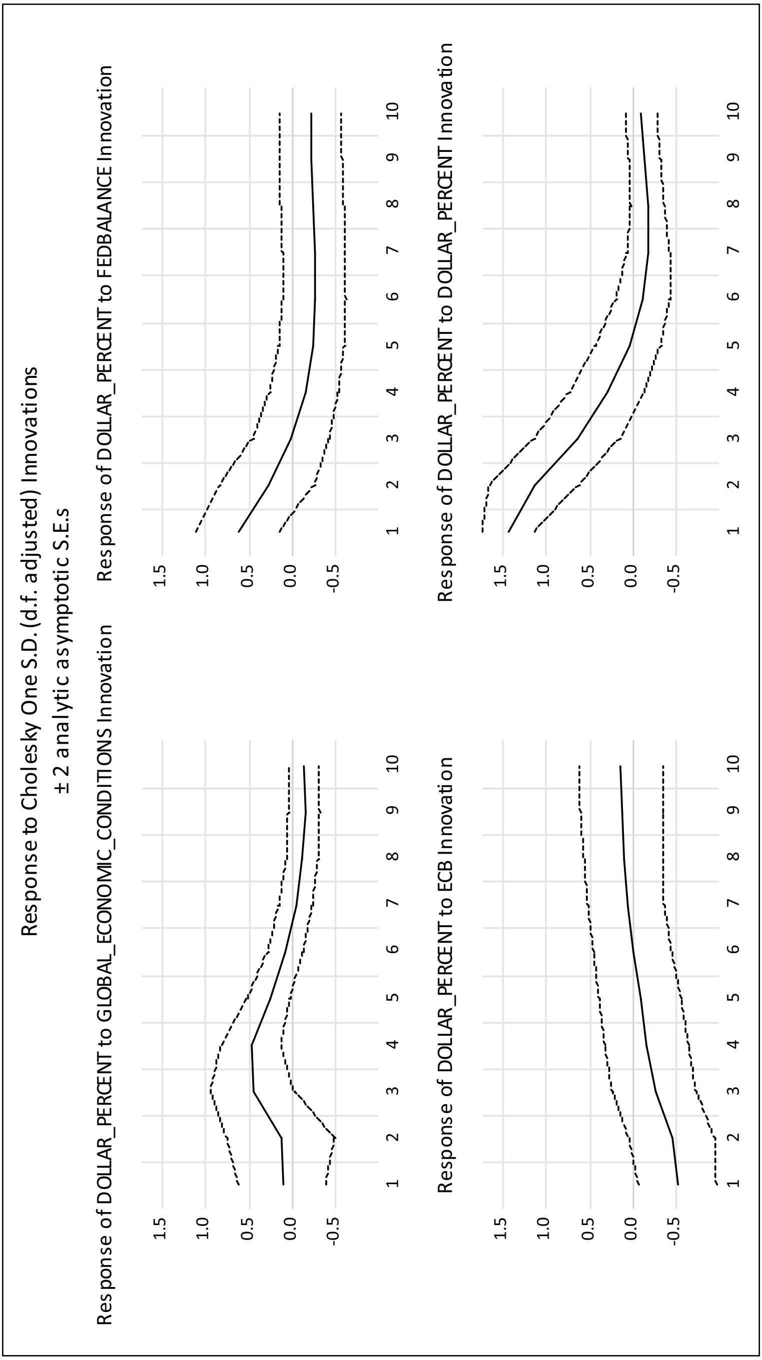
Note: The Figure provides impulse responses for the yen model over the second sample period.

Figure 7: Impulse Responses Japanese Yen – Second Sample



Note: The Figure provides impulse responses for the euro model over the second sample period.

Figure 8: Impulse Responses Euro – Second Sample



Note: The Figure provides impulse responses for the extended dollar model over the second sample period.

Figure 9: Impulse Responses Dollar – Second Sample and Extended Model

Tables

Table 1

Variance Decomposition – Full Sample

Period	S. E.	*Global Conditions*	*Commodities*	*Fedbalance*	*Dollar_Debt*
1	0.638623	22.66010	1.688811	1.426037	74.22505
2	0.786718	34.11518	1.305327	2.920152	61.65935
3	0.825230	44.13659	0.904934	3.413880	51.54460
4	0.853572	49.52990	1.328877	3.741993	45.39923
5	0.888847	51.09563	2.794869	4.157406	41.95209
6	0.923223	50.40660	5.023276	4.608216	39.96191
7	0.949454	48.88772	7.447675	4.994711	38.66990
8	0.965635	47.54303	9.527702	5.265081	37.66419
9	0.973733	46.78543	11.00469	5.428634	36.78125
10	0.977034	46.56112	11.90973	5.526130	36.00302

Note: The Table provides the error variance composition for dollar-debt over the full sample.

Table 2

Variance Decomposition – First Subsample

Period	S. E.	*Global Conditions*	*Fedbalance*	*Dollar_Debt*
1	0.949548	36.47311	0.001141	63.52575
2	1.237640	49.01313	0.117673	50.86919
3	1.313471	60.47975	0.512613	39.00764
4	1.332544	66.48541	1.070267	32.44432
5	1.375145	68.67638	1.890693	29.43292
6	1.464845	68.51045	2.946462	28.54309
7	1.571754	67.73629	3.991811	28.27190
8	1.658106	68.59878	4.518003	26.88321
9	1.704472	71.73484	4.336533	23.92862
10	1.717481	75.66487	3.803944	20.53119

Note: The Table provides the error variance composition for dollar-debt for the first sample.

Table 3

Variance Decomposition – Second Subsample

Period	S.E.	*Global Conditions*	*Fedbalance*	*Dollar_Debt*
1	0.435730	1.317910	9.475259	89.20683
2	0.471943	2.100826	8.449396	89.44978
3	0.480977	2.041650	7.649747	90.30860
4	0.484310	1.959391	7.383832	90.65678
5	0.486016	1.953564	8.147377	89.89906
6	0.486788	1.974559	9.973457	88.05198
7	0.487124	1.976259	12.49255	85.53119
8	0.487327	1.949690	15.24716	82.80315
9	0.487506	1.904744	17.89667	80.19859
10	0.487682	1.853102	20.25733	77.88957

Note: The Table provides the error variance composition for dollar-debt for the second sample.

Table 4

Variance Decomposition Japanese Yen – First Subsample

Period	S.E.	*Global Conditions*	*Fedbalance*	*Dollar_Debt*
1	4.476158	15.73020	5.029653	79.24015
2	6.526313	43.80256	7.975799	48.22164
3	8.181982	50.00743	6.313998	43.67857
4	9.573591	57.08391	6.504466	36.41162
5	10.23668	59.82393	6.037606	34.13846
6	10.60293	61.48281	5.925862	32.59133
7	10.69912	62.04078	5.835478	32.12374
8	10.71385	62.14470	5.819449	32.03585
9	10.71987	62.09703	5.845411	32.05756
10	10.74486	62.11676	5.875969	32.00727

Note: The Table provides the error variance composition for yen-debt for the first sample.

Table 5

Variance Decomposition Japanese Yen – Second Subsample

Period	S.E.	*Global Conditions*	*Fedbalance*	*Dollar_Debt*
1	3.363213	5.600730	4.908105	89.49117
2	4.617859	3.481882	13.09260	83.42552
3	5.291331	4.772491	21.30426	73.92325
4	5.660663	6.425703	27.35009	66.22420
5	5.857683	7.488844	30.66604	61.84512
6	5.957860	7.932623	31.85698	60.21039
7	6.007365	8.024049	31.92148	60.05447
8	6.033469	7.992606	31.67893	60.32847
9	6.050650	7.947635	31.55412	60.49825
10	6.065212	7.914202	31.64097	60.44482

Note: The Table provides the error variance composition for yen-debt for the second sample.

Table 6

Variance Decomposition Euro– First Subsample

Period	S.E.	*Global Conditions*	*Fedbalance*	*Dollar_Debt*
1	3.203388	27.17034	3.019028	69.81063
2	4.716969	39.12951	9.332566	51.53793
3	5.738764	50.99779	6.712164	42.29005
4	6.830590	61.21775	5.043942	33.73831
5	7.550246	66.99259	4.128252	28.87915
6	7.976586	69.93181	3.761491	26.30670
7	8.156456	70.99598	3.767066	25.23695
8	8.200926	71.05358	3.982039	24.96438
9	8.212875	70.85523	4.233381	24.91139
10	8.256064	70.89228	4.408130	24.69959

Note: The Table provides the error variance composition for euro-debt for the first sample.

Table 7

Variance Decomposition Euro– Second Subsample

Period	S. E.	*Global Conditions*	*Fedbalance*	*Dollar_Debt*
1	1.581779	2.609290	8.722931	88.66778
2	1.789257	2.295476	14.52717	83.17735
3	1.852883	6.689645	15.40941	77.90095
4	1.908133	11.50835	14.69087	73.80078
5	1.994418	14.31706	17.50154	68.18141
6	2.126857	14.90477	24.99624	60.09900
7	2.295374	14.07111	34.27530	51.65359
8	2.477987	12.76953	42.30644	44.92403
9	2.652859	11.55089	47.94759	40.50152
10	2.805325	10.60112	51.41923	37.97965

Note: The Table provides the error variance composition for euro-debt for the second sample.

Table 8

Variance Decomposition Dollar– Second Subsample Including FED and ECB

Period	S. E.	*Global Conditions*	*Fedbalance*	*ECBbalance*	*Dollar_Debt*
1	0.456022	0.478050	14.43328	9.315387	75.77328
2	0.498666	0.724734	11.04067	10.56063	77.67396
3	0.505928	4.833062	9.539412	10.35259	75.27494
4	0.513109	8.637877	9.293404	10.12214	71.94658
5	0.516967	9.709093	10.01874	10.00109	70.27108
6	0.518954	9.672078	11.03546	9.851372	69.44109
7	0.519972	9.533971	11.94723	9.761357	68.75745
8	0.520483	9.567482	12.67633	9.786335	67.96986
9	0.520970	9.726709	13.26450	9.918531	67.09026
10	0.521611	9.894172	13.76543	10.12526	66.21514

Note: The Table provides the error variance composition for dollar-debt for the extended model and the second sample.

Table 9

Variance Decomposition Euro – Second Subsample Including FED and ECB

Period	S.E.	*Global Conditions*	*Fedbalance*	*ECBbalance*	*Dollar_Debt*
1	0.448277	3.201151	4.096758	1.587882	91.11421
2	0.482437	2.939548	7.275642	1.490459	88.29435
3	0.494986	3.784584	7.063828	2.044713	87.10687
4	0.499705	5.005043	7.981108	2.043611	84.97024
5	0.500362	5.779542	10.55847	2.134319	81.52767
6	0.500712	6.353120	14.24375	2.919524	76.48361
7	0.501825	6.837801	17.89548	4.587096	70.67963
8	0.503717	7.282200	20.87490	6.879375	64.96352
9	0.506113	7.701298	23.05553	9.369061	59.87411
10	0.508696	8.089902	24.55941	11.70360	55.64709

Note: The Table provides the error variance composition for euror-debt for the extended model and the second sample.