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Safe Haven Status and International Shock Transmission*

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Abstract

What are the macro-financial implications if the safe haven status shifts from the US to the euro area? In a two-block DSGE model, a safe haven status of the euro area dampens the effects of flight-to-safety shocks on European domestic aggregate demand and financial conditions. The shock after April 2, 2025, may have been considerably cushioned in the euro area by its safe haven status at the time. However, in a crisis with a relatively smaller international flight to safety, as in 2008–09, the shock attenuation by a European safe haven status would be limited.

JEL codes: C68, E32, F32, F47, G15

Keywords: Safe Haven, Net Foreign Assets, Tariff Announcements, DSGE Model.

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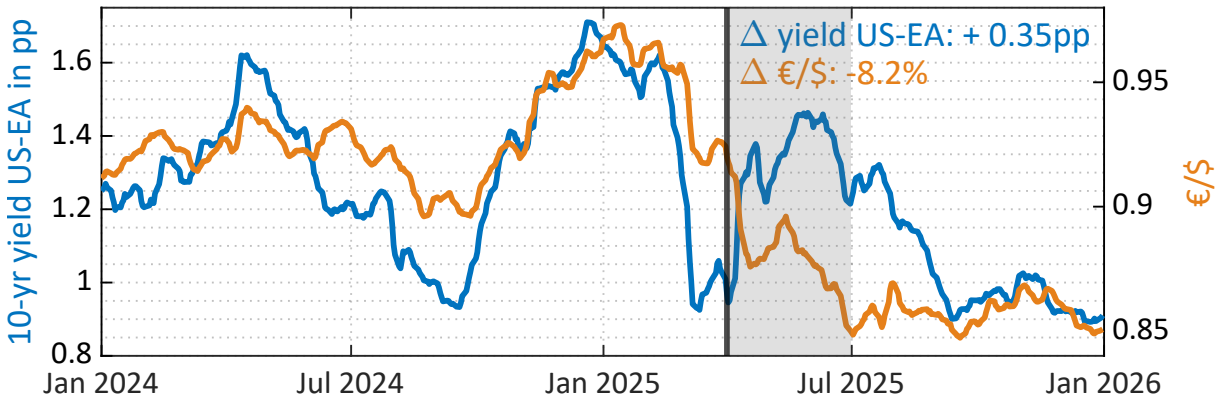
1 Introduction

Periods of heightened global uncertainty and risk aversion are typically characterized by a flight to safety, with investors reallocating capital towards assets and currencies perceived as safe havens. During the last decades, the US dollar and US Treasuries have often taken that role, appreciating in value and experiencing a drop in yields during episodes of financial stress (Krishnamurthy and Vissing-Jorgensen, 2012; Hossfeld and MacDonald, 2015; Gourinchas and Rey, 2022). However, following the US tariff announcements on April 2, 2025, international financial markets exhibited atypical reactions at odds with a safe haven status of the US: In a moment of falling global stock prices and heightened uncertainty, the dollar depreciated markedly, and US Treasury yields rose. At the same time, the euro appreciated sharply against the dollar, behaving more like a safe haven currency, while yields on European government bonds declined, see Figure 1.[1]

Figure 1: EUR-USD exchange rate and US-EA sovereign yield spread after April 2



Notes: 5-day moving averages. Vertical line: April 2, 2025. Grey box: 2025Q2. The €/$ exchange rate dropped by 8.2% during 2025Q2 (orange line). The average spread of 10-year sovereign US yields relative to the (GDP-weighted) yield of the big four EA countries (DE, FR, IT, ES) in 2025Q2 was 0.35 percentage points (pp) higher than on March 31, 2025 (blue line). Source: Datastream (TDEURSP for exchange rate; TRUS10T/TRBD10T/TRFR10T/TRIT10T/TRES10T for yields).

In this paper, we analyze the macro-financial impact of being a safe haven for the transmission of international shocks. In a medium-sized two-country DSGE model calibrated to the US and the euro area (EA), we look at two historical episodes: The aftermath of the tariff announcements on April 2, 2025, and the global financial crisis (GFC) 2008–09, in which flight to safety played an important role (Kekre and Lenel, 2024). The same "global flight-to-safety shock" à la Bodenstein, Cuba-Borda, Gornemann, Presno, Prestipino, Queraltó, and Raffo (2023), which combines a symmetric demand contraction in both blocks with increased relative demand for internationally safe assets, is calibrated to match the observed changes in

[1]The yield differential of 10-year government bonds for US vs EA19 countries rose from 0.97 to 1.30pp p.a. from March to June 2025, see https://fred.stlouisfed.org/series/IRLTLT01EZM156N and https://fred.stlouisfed.org/series/IRLTLT01USM156N.

the euro-dollar exchange rate and in sovereign yields in both regions during the two episodes.[2]

For both the shock on April 2, 2025, and the financial crisis, we consider two scenarios: one in which the EA takes the role of a safe haven (as it arguably did, at least temporarily, after April 2), and one in which US assets retain their traditional safe haven role (as historically during the global financial crisis). We then consider the role of a safe haven status for the shock transmission on European macro-financial variables.

Our simulations yield two central results. First, a safe haven status dampens the effects of global flight-to-safety shocks on aggregate demand and financial conditions. However, it amplifies the negative repercussions on production. Second, the impact of a safe haven status is considerable when the international flight to safety is relatively large (as was the case after the US trade announcements in April 2025). If, in contrast, the symmetric demand contraction dominates (as during the financial crisis 2008–09), a safe haven status will not have a big effect.

Related literature. The special role of the US dollar and US assets in the global financial system in general have received considerable interest over the past decade (Farhi and Gabaix, 2015; Maggiori, 2017; Gopinath, Boz, Casas, Díez, Gourinchas, and Plagborg-Møller, 2020; Eren and Malamud, 2022; Bianchi, Bigio, and Engel, 2021; Chahrour and Valchev, 2021; Chen, Jiang, Lustig, Van Nieuwerburgh, and Xiaolan, 2025).

In particular, this paper contributes to a literature on safe havens. The appreciation of safe haven assets provides investors with protection against losses in riskier asset classes in periods of financial stress (see Ranaldo and Söderlind, 2010, and Habib and Stracca, 2012, for the characteristics of safe haven currencies).[3] Note that this appreciation does not necessarily stem from net foreign asset adjustments – changes in hedging positions suffice to induce substantial exchange rate movements (Shin, Wooldridge, and Xia, 2025). Another related point is the role of the US as the world's dominant issuer of safe assets, mostly in the form of public debt. This "exorbitant privilege" increases the demand for and price of US assets by increasing their convenience yield (Chen et al., 2025). However, the convenience yield of US Treasuries might have receded during the recent years (Du, Keerati, and Schreger, 2025).

Bodenstein et al. (2023) estimate a structural model similar to the one employed below, but in which a flight to safety would always imply US capital inflows from the rest of the world.[4]

[2]While flight to safety played a role in both episodes, the two historical shocks were of course very different in nature. Here, we focus on one shock for comparability. In alternative simulations (not shown), we find that our qualitative findings are robust to employing an intermediary net worth shock for the financial crisis and a tariff announcement shock for April 2, 2025.

[3]The safe haven status of a country should be distinguished from a potential status as reserve currency. In contrast to a safe haven currency, a reserve currency is primarily held by central banks, and its status depends on factors such as its significance in international payments, trade, and financial markets. While the safe haven status describes a currency's protective function during market stress phases, the reserve currency status reflects its institutional and structural role in the global financial system (Habib and Stracca, 2012; Park and Fang, 2025).

[4]See Bodenstein, Cuba-Borda, Gornemann, Presno, Prestipino, Queraltó, and Raffo (2025) for an updated version of their paper.

They document an important role of such global flight-to-safety shocks for international business cycles during 1992–2019. While also other papers have investigated the implications of a safe haven status for the transmission of international shocks (Jiang, Krishnamurthy, and Lustig, 2023; Devereux, Engel, and Wu, 2023; Kekre and Lenel, 2024; Allen, Bems, Boer, and Moussa, 2026), the paper closest to ours is Georgiadis, Müller, and Schumann (2024): The authors also show the effects of a disappearance of the US safe haven status on non-US countries in counterfactuals, but do not focus on the EA nor on April 2, 2025.

2 A two-country model with flight to safety

To analyze the implications of a safe haven status, we use a two-country version of the Federal Reserve's DSGE model "SIGMA" (Erceg, Guerrieri, and Gust, 2006), consisting of two equally sized, identically-calibrated blocks representing the US and the EA as in Lindé and Pescatori (2019).[5] The general model incorporates features like Ricardian and hand-to-mouth consumers (Galí, López-Salido, and Vallés, 2007), price and wage rigidities (Calvo, 1983; Erceg, Henderson, and Levin, 2000), as well as habit persistence (Smets and Wouters, 2003) and investment adjustment costs (Christiano, Eichenbaum, and Evans, 2005). The model also incorporates a financial accelerator mechanism following Bernanke, Gertler, and Gilchrist (1999).

The market reactions both after April 2 and during the financial crisis 2008–09 are replicated using a "global flight-to-safety (GFS)" shock (Bodenstein et al., 2023). The GFS shock incorporates a global demand decline and an increase in demand for internationally recognized safe assets.[6] It thus consists of two components: First, a domestic shock component affects the (log-linearized) Euler equation of forward-looking households symmetrically in both blocks (c_t: consumption, σ: intertemporal elasticity of substitution, r_t: nominal interest rate, π_t: inflation rate; $*$ denotes foreign variables):[7]

$$c_t = E_t\{c_{t+1}\} - \frac{1}{\sigma}(r_t - E_t\{\pi_{t+1}\}) - \xi_t^{\text{GFS}} \tag{1}$$

$$c_t^* = E_t\{c_{t+1}^*\} - \frac{1}{\sigma^*}\left(r_t^* - E_t\{\pi_{t+1}^*\}\right) - \xi_t^{\text{GFS}} \tag{2}$$

Second, an international component increases the relative demand for foreign assets in the safe haven in the uncovered interest parity (UIP) condition (e_t: nominal exchange rate, b_t: net foreign assets, ϕ_b: intermediation cost on international capital flows):

[5] See the Appendix for details on model and calibration.

[6] These safe assets could be (short-term) public debt, but also could be thought of as other money-like highly liquid forms of debt or collateralized private debt (Gorton and Ordoñez, 2014).

[7] For the exact formula employed in the simulation – including external habit formation and consumption taxes – see equation (28) in Appendix A. Hand-to-mouth consumers in the model are not affected by the GFS shock as they never save.

$$E_t\{e_{t+1}\} - e_t = r_t - r_t^* + \phi_b b_t - \gamma_i \, \xi_t^{\text{GFS}} \tag{3}$$

The parameter γ_i, which differs across the simulations for April 2, 2025 and the GFC, governs the relative impact of the shock on the UIP condition and, consequently, the effect on the exchange rate relative to changes in domestic demand. The sign of γ_i determines which of the two blocks is the safe haven.The exogenous GFS shock ξ_t^{GFS} follows an AR(1) process,

$$\xi_t^{\text{GFS}} = \rho_\zeta \xi_{t-1}^{\text{GFS}} - \sigma_i \varepsilon_t, \tag{4}$$

with $\rho_\zeta = 0.9$ throughout and where σ_i differs across the simulations for April 2, 2025 and the GFC.

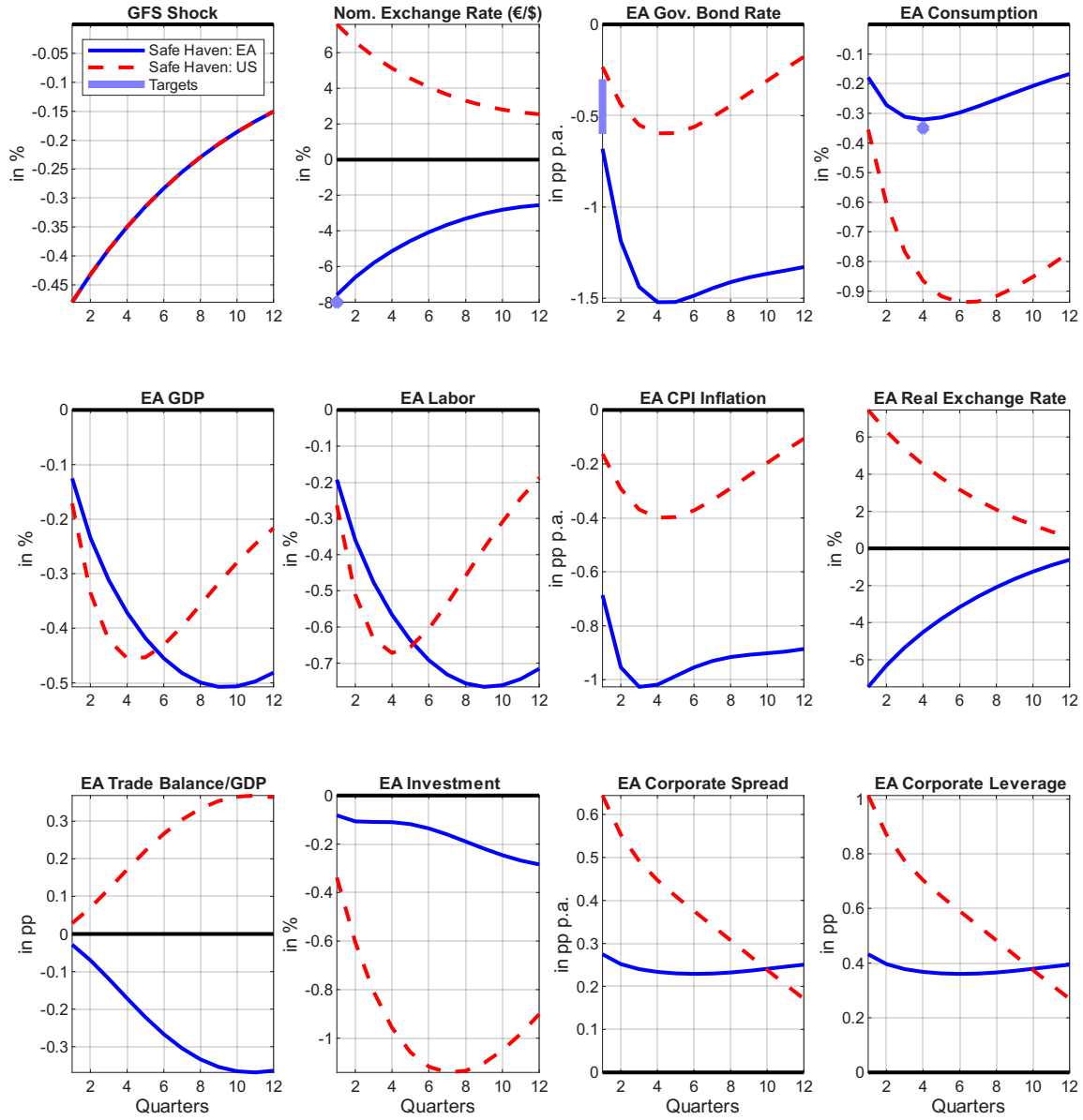
3 Safe haven status and shock transmission

In the first simulation, the shock is calibrated to match the observed appreciation of the euro against the dollar and the relative changes in US and EA sovereign yields after the US tariff announcements on April 2, 2025. Specifically, on impact, the model approximately captures an 8% appreciation of the euro against the dollar, and a decline in the yield differential of about 0.5 percentage points (pp) p.a. of EA relative to US government bonds (see top row of Figure 2). By symmetry, US responses with a EA safe haven equal EA responses under a US safe haven. The simulations slightly overstate the empirical yield difference of 0.35pp, see Figure 1 and footnote 1.

In the linear SIGMA model, the demand decline approximates the effects of heightened uncertainty following April 2, motivated by Leduc and Liu (2016). In particular, European real private consumption declines by approximately 0.32% at its maximum. This aligns with the SVAR evidence provided by Basu and Bundick (2017) that an uncertainty increase measured by a VIX hike of 15% decreases private consumption by roughly 0.17%. As the VIX rose by around 30% after April 2, 2025, this would imply a consumption decrease of 0.34% in our model.To match the target movements, we set $\sigma_i = 0.5$ and $\gamma_i = 2.3$ for April 2, 2025, considerably higher than the estimates for the pre-2025 US sample in Bodenstein et al. (2025). Table 1 summarizes the targeted variable movements and our parameter choices to bring the model dynamics close to them.

Two scenarios are considered: in the first one, the euro, rather than the US dollar, is modeled as the safe haven currency, in line with the empirically observed exchange rate and sovereign yields observed after April 2 (blue lines). In the second, counterfactual scenario, the dollar rather than the euro is modeled as the safe haven currency (red lines), with the described market reactions occurring in the US.

Figure 2: Global Flight to Safety as after April 2, 2025: Effects on EA variables



Notes: Impulse responses for euro area (EA) variables in deviations from steady state. Blue line: EA is the safe haven, in line with empirics after April 2, 2025. Red line: US is the safe haven. Light blue markers indicate target responses of the nominal exchange rate, the yield differential, and private consumption.

Table 1: Targeting a global flight-to-safety shock to April 2, 2025 and the GFC

	April 2, 2025		Global Financial Crisis	
Variable	Δ data	Δ model[1]	Δ data	Δ model[1]
Nom. exchange rate €/$	**8.2**%[2]	**7.6**%	**10.5**%[2]	**11.1**%
Yield differential gov. debt	**0.35**pp[2]	**0.45**pp	**0.73**pp[3]	**0.66**pp
Drop private consumption	**0.34%**[4]	**0.32**%	**2.6**%[5]	**2.5**%
Parameter	Choice to hit targets			
σ_i	0.5		2.3	
γ_i (EA is safe haven)	2.3		0.7	
γ_i (US is safe haven)	-2.3		-0.7	
ρ_{GFS}	0.9		0.9	

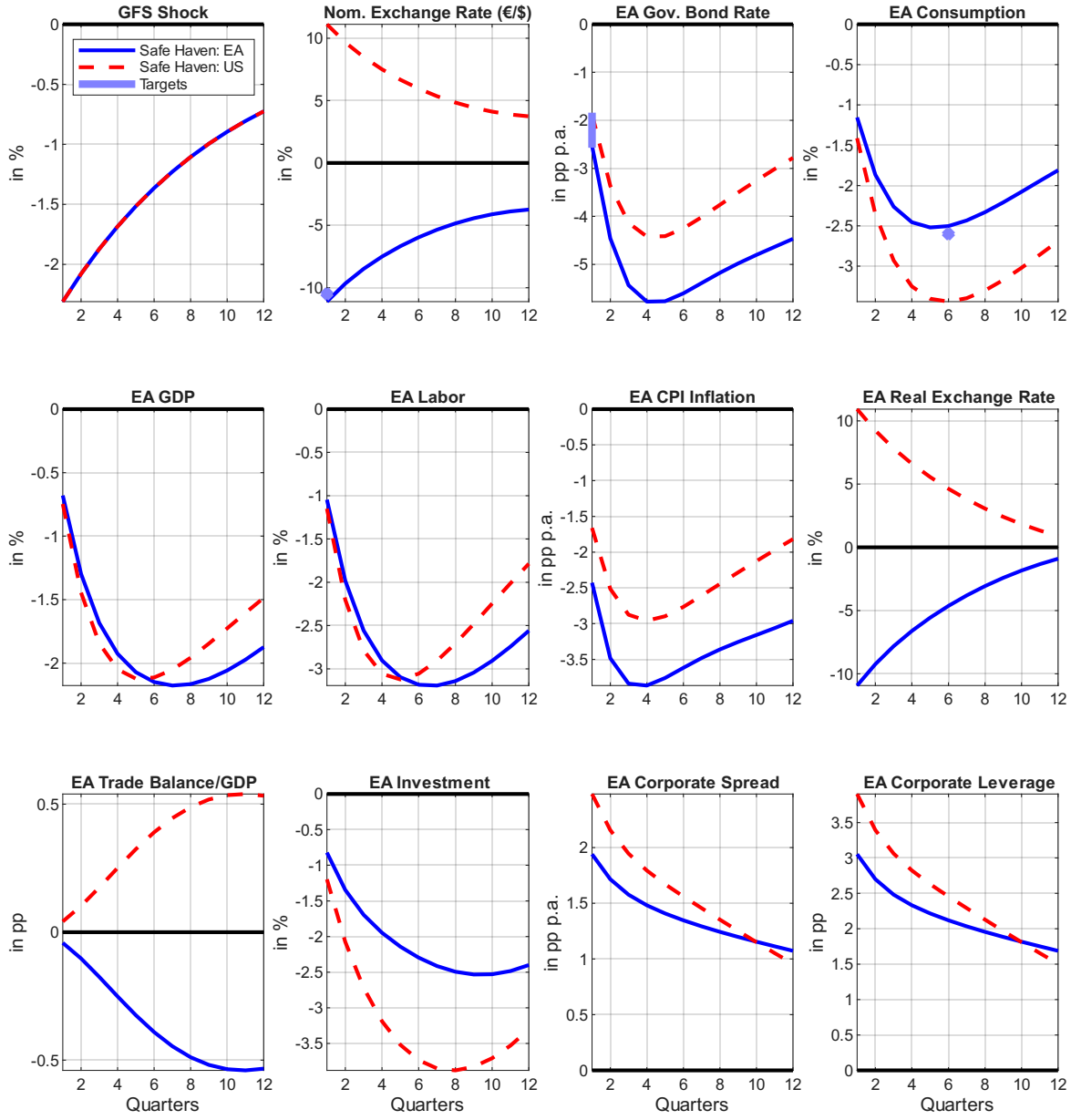
Notes:
[1] Δ within first quarter (impact IRF); for consumption: maximum response.
[2] Difference within one quarter (2025Q2 or 2008Q3)
[3] Difference within 2008Q4 (see text)
[4] SVAR in Basu and Bundick (2017): 15-points VIX hike decreases private US consumption by 0.17%. After April 2, 2025, the VIX rose by 30 points, implying a consumption decrease of 0.34%.
[5] for the GFC: drop peak to trough (2008M5–2009M4)

In response to a flight to safety as after April 2, the euro appreciates in both nominal and real terms and sovereign yields in the EA fall.[8] Real GDP, consumption, investment, labor and inflation in the EA deteriorate, and the trade balance shows a deficit. Firms' financing conditions become strained as corporate spreads widen and leverage increases. However, the safe haven status of the EA after April 2, 2025, likely dampened these negative effects on domestic aggregate demand and financing conditions: Capital inflows into the safe haven EA lead to a euro appreciation and lower interest rates. Both sustain consumption and investment by making imports cheaper, while financing conditions tighten less than otherwise. Import adjustment costs cause imports to rise gradually, which explains why the dampening effects on consumption and investment, and thus the widening of the trade deficit, continue to intensify during the first few quarters after the shock. In contrast, domestic production suffers from the loss of competitiveness due to the exchange rate appreciation. The appreciation allows Europeans to keep up consumption and investment by higher imports instead of by domestic production– in the medium term, GDP and labor supply fall by more with the EA being a safe haven reflecting the trade deficit.

Another GFS shock is then used to replicate movements in exchange rates, government bond yields, and real private consumption during the financial crisis 2008–09. Here, we take

[8]Note that the nominal exchange rate has a unit root in the model and does not exactly return to its steady state in the long run, but its deviations happen to converge to a value close to zero.

Figure 3: Global Flight to Safety as during 2008–09: Effects on EA variables



Notes: Impulse responses for euro area (EA) variables in deviations from steady state. Red line: US is the safe haven, as was the case during 2008–09. Blue line: EA is the safe haven. Light blue markers indicate target responses of the nominal exchange rate, the yield differential, and private consumption for the US (which historically was the safe haven), fitted to the case of the EA being the safe haven.

empirical movements in the US – which constituted the safe haven in that period – and match them to the model counterfactual where the EA is the safe haven. Specifically, on impact the model captures an 11% appreciation of the safe haven currency – from June 30 to September 30, 2008, the USD appreciated by 10.5% against the EUR.[9] The model also features a relative decline in the safe-haven yields by 0.66pp p.a. on impact. Empirically, the yield differential between the US and the big four EA 10-yr government bonds fell by 0.73pp p.a. during 2008Q4.[10] We consider this quarter instead of 2008Q3 in order to account for a lag in the monetary policy response relative to the exchange rate. Additionally, real private consumption in the safe haven declines by 2.5% at its maximum, while real US personal consumption expenditures fell by 2.6% from peak to trough between 2008M5 and 2009M4.[11]

To match these historically observed changes, a much larger global demand decline and a relatively smaller increase in the demand for internationally recognized safe assets are required than in the previous simulation exercise: We now set $\sigma_i = 2.3$ and $\gamma_i = 0.7$ for the global financial crisis (see Table 1). Note that γ_i here is quite close to the posterior estimate for that parameter in Bodenstein et al. (2025) in the sample from 1992 to 2019 (there, $\gamma = 1.1$).

Again, two scenarios are considered: in the first scenario, the US dollar is the safe haven currency, as empirically true during the financial crisis (red lines in Figure 3). In the second, counterfactual scenario, the euro assumes this role (blue lines), with the described market reactions occurring in the EA.

European domestic demand, production, and financial indicators now deteriorate significantly more. However, the impact of a counterfactual safe haven status of the EA would have been much less noticeable in the global financial crisis. The reason is the weaker flight into internationally safe assets relative to the strong global demand decline during that episode. This yields two insights: First, forgoing a safe haven status is unlikely to shield production significantly during global demand shocks that hit countries in a relatively symmetric fashion. Second, being a safe haven is unlikely to provide much insurance for domestic aggregate demand or financial stability against such shocks.

4 Conclusion

A safe haven status tends to dampen the deterioration in consumption, investment, and financial conditions after a global flight to safety in a two-country DSGE model. The reasons are the exchange rate appreciation and decline in interest rates, which shield domestic demand

[9] Source: Datastream: TDEURSP.

[10] Source: Datastream: TRUS10T and TRBD10T/TRFR10T/TRIT10T/TRES10T, EA series weighted by 2024 GDP. The US yield differential relative to the EA19 fell by 0.65pp p.a. from September to December 2008, very close to the value in the model, see: https://fred.stlouisfed.org/series/IRLTLT01EZM156N and https://fred.stlouisfed.org/series/IRLTLT01USM156N.

[11] See https://fred.stlouisfed.org/series/PCEC96.

in the safe haven. In contrast, GDP and labor supply decrease by more in the safe haven, as the trade balance deteriorates. These safe haven effects matter when the international flight to safety is large relative to the domestic one, as after the US trade announcements on April 2, 2025. However, when the domestic flight to safety dominates, as during the 2008 financial crisis, safe haven effects are relatively small.

Here, we model the EA as one homogeneous block. However, it should be noted that a safe haven status might have quite heterogeneous effects *within* European countries. For example, Germany has often benefited from capital inflows during stress phases due to its perception as a safe haven. However, the euro typically did not appreciate in such instances (Hossfeld and MacDonald, 2015). If the euro were to regularly appreciate as a safe haven currency during such stress phases, it could pose challenges for Germany's export-oriented economy. Conversely, this pattern could result in lower inflationary pressures and thus less monetary policy headwind for German firms and households during euro appreciations. Additionally, a strong euro would maintain the purchasing power and, consequently, the demand by European trading partners. These intra-European effects of a potential safe haven status could be an interesting avenue for future research.

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