

## B Quantifying the “exorbitant privilege” – potential benefits from a stronger international role of the euro

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A much discussed benefit of international currency status is the “exorbitant privilege”.<sup>81</sup> Demand by official investors for safe and liquid foreign currency assets to acquire and hold foreign exchange reserves reduces the financing costs of governments in reserve currency countries. While there is broad consensus that the United States enjoys such an “exorbitant privilege”, as yet there is limited evidence as to how this compares to other major issuers of international currencies. This second special feature aims to fill this gap, focusing on foreign exchange reserve holdings in euro and their effect on euro area sovereign financing costs.

This special feature aims to quantify the “exorbitant privilege” of international currency status for major currencies. It explains that the relevant metric for this purpose is the share of foreign official holdings in the stock of outstanding highly rated debt – a metric for which the euro is at par with the US dollar.<sup>82</sup> Estimates from a simple error-correction model that aims to disentangle long-run stock effects from short-run flow effects of net purchases of sovereign debt by foreign official reserve holders suggest that the “exorbitant privilege” enjoyed by some highly rated euro area sovereigns is economically significant. Foreign official reserve holdings of highly rated debt securities have compressed term premia on euro area long-term yields by around 110 basis points, which compares to around 160 basis points for the United States. But foreign official holdings of euro area government debt are concentrated in a few euro area sovereigns issuing highly rated debt securities. Strengthening the credit quality of outstanding debt, notably by pursuing sound and sustainable fiscal policies, would contribute to increasing the supply of safe euro area debt and raising the euro’s global appeal. This, in turn, would help the euro’s “exorbitant privilege” to be more widely shared across euro area sovereigns.

### The “exorbitant privilege” and sovereign financing costs

**It is often argued that countries issuing an international reserve currency enjoy an “exorbitant privilege”, akin to lower financing costs.** The term “exorbitant privilege” was originally coined by French finance minister, Valéry Giscard d’Estaing, in the 1960s to emphasise the unique role of the US dollar in the Bretton Woods system which, allegedly, allowed the United States to lower external financing costs, since US debt provides international official investors with insurance against volatile capital flows and exchange rate risk. Today, it has acquired a broader meaning, referring to benefits enjoyed by countries in the form of either external borrowing costs or net returns on their international investment position. Measured by the return on net foreign assets, the United States has clearly enjoyed such a privilege over the

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<sup>81</sup> The term “exorbitant privilege” was originally coined in the 1960s (see the discussion below).

<sup>82</sup> By accumulating a portfolio of long-duration assets and extracting duration risk from private price-sensitive investors, foreign central banks (price-insensitive investors) free up risk bearing capacity and spur a rebalancing towards other assets, thereby lowering term premia.

past decades.<sup>83</sup> For other major issuers of international currencies, the evidence is mixed and depends on the period considered.<sup>84</sup> However, under this broader definition, the term might confound different effects, such as international profit shifting of multinational firms, which is not related to international currency status. This special feature therefore focuses on the original definition of the “exorbitant privilege”, namely the ability of sovereigns to issue debt internationally at lower interest rates.

**Such an “exorbitant privilege” in terms of lower external financing costs is often attributed to the US dollar given the currency’s dominant role in global official holdings of foreign exchange reserves (see Chart 23).** Not only do official investors own a large share of outstanding amounts of US Treasury bonds, but their demand for them displays relatively low price elasticity: whatever the price (or inversely the yield) of the bonds in question, demand remains largely stable. Therefore, foreign reserves accumulation should contribute to compress yields by creating excess demand for these securities. This relationship appeared to be particularly strong in the mid-2000s, when the United States experienced strong capital inflows. During that period, emerging market economies, notably China and oil exporters, built up large holdings of foreign exchange reserves, mainly in the form of US Treasuries. This phenomenon – also known as the “global savings glut” – was held responsible for compressing US Treasury yields and keeping them from responding to the tighter monetary policy of the Federal Reserve System after 2004.<sup>85</sup> In investigating the effects of inflows from foreign official investors, several empirical studies suggest that USD 100 billion worth of foreign investor purchases of US Treasuries compressed 10-year yields by around 50 basis points.<sup>86</sup>

**The effect of sovereign debt purchases by (foreign) official investors on yields largely depends on the stock of debt purchased.** With central banks implementing large asset purchase programmes after the global financial crisis, a number of studies have aimed to quantify the transmission effects of central bank bond purchases on

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<sup>83</sup> See Gourinchas, P.-O. and Rey, H., “External Adjustment, Global Imbalances, Valuation Effects”, in Gopinath, G., Helpman, E. and Rogoff, K. (eds.), *Handbook of International Economics*, Vol. 4, 2014, pp. 585-645.

<sup>84</sup> See Habib, M., “Excess returns on net foreign assets – the “exorbitant privilege” from a global perspective”, *Working Paper Series*, No 1158, ECB, Frankfurt am Main, March 2010 for estimates of the “exorbitant privilege” based on returns on net foreign asset positions of the United States and other countries.

<sup>85</sup> See Bernanke, B. S., “[The Global Savings Glut and the U.S. Current Account Deficit](#)”, Homer Jones Lecture, 14 April 2005.

<sup>86</sup> See, for instance, Bernanke, B.S., Reinhart, V.R. and Sack, B.P., “Monetary Policy Alternatives at the Zero Bound: An Empirical Assessment”, *Brookings Papers on Economic Activity*, Vol. 35(2004-2), 2004, pp. 1-100; McCauley, R. and Jiang, G., “Treasury yields and foreign official holdings of US bonds”, *BIS Quarterly Review*, March 2004, pp. 11–12; Rudebusch, G.D., Swanson, E.T., and Wu, T., “The Bond Yield Conundrum’ from a Macro-Finance Perspective”, *Federal Reserve Bank of San Francisco Working Paper*, No 2006-16, 2006; Warnock, F.E. and Warnock, V.C., “International Capital Flows and U.S. Interest Rates”, *Journal of International Money and Finance*, Vol. 28(6), 2009, pp. 903-919; Bertaut, C., DeMarco, L.P., Kamin, S. and Tryon, R., “ABS inflows to the United States and the global financial crisis”, *International Finance Discussion Papers*, No 1028, Board of Governors of the Federal Reserve System, 2011; Beltran, D.O., Kretschmer, M., Marquez, J. and Thomas, C.P., “Foreign Holdings of U.S. Treasuries and U.S. Treasury Yields”, *Journal of International Money and Finance*, Vol. 32, 2013, pp. 1120-1143.

yields.<sup>87</sup> According to these studies, stock effects are more important than flow effects.<sup>88</sup> The latter are defined as the response of yields to ongoing purchases, whereas the former describes persistent changes in yields resulting from movements along the demand curve of the asset. Stock effects thus occur by reducing the free float of assets i.e. the share of outstanding debt in the hands of private, price-sensitive investors.<sup>89</sup> A lower free float of sovereign bonds compresses yields not only of the particular maturity purchased (owing to scarcity effects), but initiates a general repricing of sovereign debt along the yield curve by removing duration risk from the market (the so-called duration extraction channel).<sup>90</sup> The effects of global official holdings of foreign exchange reserves on yields thus depend not only on the additional demand for sovereign assets from foreign official investors, but also on how their purchases affect the whole free float of debt. Hence, demand by foreign central banks for sovereign debt securities needs to be seen in relation to the outstanding amount of government debt.<sup>91</sup>

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<sup>87</sup> The transmission channels of asset purchase programmes are incompatible with the assumption of efficient financial markets. However, in the presence of market segmentation – either in the form of imperfect asset substitutability or preferred-habitat investors – the canonical arbitrage-free model of the term structure breaks down and asset purchases can have an impact on yields. See, for example, Vayanos, D. and Vila, J.. “A Preferred-Habitat Model of the Term Structure of Interest Rates”, *NBER Working Papers*, No 15487, 2009.

<sup>88</sup> See, for example, Krishnamurthy, A. and Vissing-Jorgensen, A., “The Aggregate Demand for Treasury Debt”, *Journal of Political Economy*, Vol. 120(2), 2012, pp. 233-267; D’Amico, S. and King, B.K., “Flow and stock effects of large-scale treasury purchases: Evidence on the importance of local supply”, *Journal of Financial Economics*, Vol. 108(2), 2013, pp. 425-448; Li, C. and Wei, M., “Term Structure Modelling with Supply Factors and the Federal Reserve’s Large-Scale Asset Purchase Programs”, *International Journal of Central Banking*, Vol. 9(1), 2013, pp. 3-39 or Greenwood, R. and Vayanos, D., “Bond Supply and Excess Bond Returns”, *Review of Financial Studies*, Vol. 27(3), 2014, pp. 663-713.

<sup>89</sup> See Coeuré, B., “The euro’s global role in a changing world: a monetary policy perspective”, speech at the Council on Foreign Relations, New York City, 15 February 2019.

<sup>90</sup> In contrast, flow effects refer to how purchases temporarily alter market liquidity and functioning and to which signals markets perceive from the purchases (about the likely path of future monetary policies).

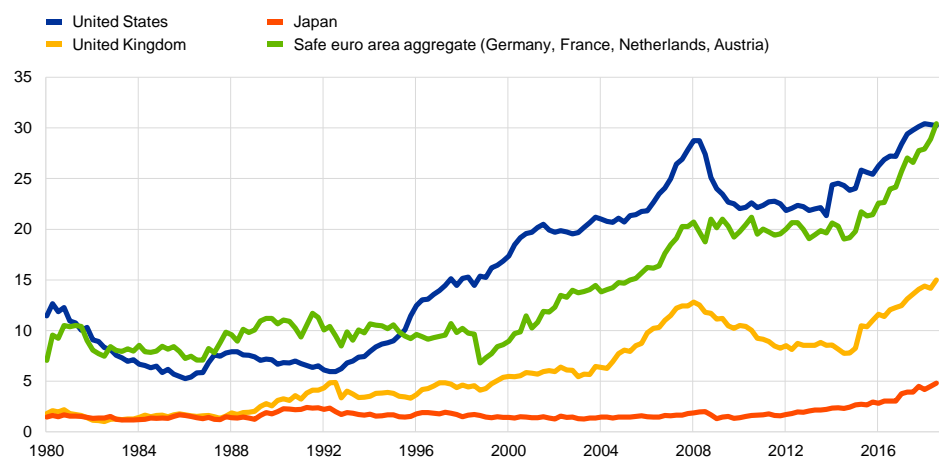
<sup>91</sup> Most studies quantifying the effects of reserve accumulation on yields do not take stock effects into account. An exception is Beltran et al. (2013), op. cit..

### Chart 23

The share of foreign official holdings in outstanding sovereign highly rated debt is broadly similar for the euro and the US dollar

#### Share of foreign official holdings of outstanding sovereign debt

(percentages)



Sources: IMF and ECB staff calculations.

Note: Both central banks' foreign currency holdings and general government debt are in USD millions to strip out valuation effects.

**Based on foreign official holdings relative to the stock of outstanding highly rated debt – the metric used to measure the “exorbitant privilege” – the euro is at par with the US dollar.** Chart 23 shows global holdings of foreign exchange reserves in relation to outstanding debt. In the case of foreign central banks' demand for euro-denominated assets, one constraint is safety. Central bank reserves are typically held in debt securities with high credit ratings, which include only a subset of euro area sovereign debt. Considering the pervasive inertia in the composition of international reserve portfolios, it is assumed that central banks hold sovereign debt only of those issuers which were highly rated for most of their rating history.<sup>92</sup>

Overall, foreign central banks now hold about 30% of both US and euro area highly rated government debt securities, against only 15% and 5% of UK and Japanese government debt securities, respectively.

### Quantifying the effect of foreign central bank holdings on sovereign financing costs

**The “exorbitant privilege” stemming from foreign central bank holdings of outstanding safe debt should be reflected in the term premium.** The term premium corresponds to that component of long-term government bond yields that

<sup>92</sup> This assumption is substantiated by IMF COFER survey data from before the launch of the euro when central banks held significant amounts of debt securities issued by just three euro area sovereigns: Germany, France and the Netherlands. In addition, the sovereign debt of Austria and Luxembourg have been AAA-rated for most of their rating history, in contrast to the debt of Finland which was rated AA for most of the 1990s. Other survey evidence suggests that reserve allocations to sovereign bonds issued by other euro area countries has been limited; see, for example, RBS, *Reserve Management Trends*, 2011. The sovereign debt of France and Austria has been downgraded by one notch after the outbreak of the euro area debt crisis. However, the debt of other sovereigns, including Japan, the United Kingdom and the United States, was downgraded in recent years although their reserve currency status was preserved.

cannot be explained by market expectations of future short-term interest rates. Short-term interest rates (and expectations thereof) are, in turn, largely determined by the outlook for growth and inflation.<sup>93</sup> Exogenous investments in government securities by either domestic or foreign central banks should primarily affect term premia. In particular, increases in global holdings of foreign exchange reserves relative to outstanding debt should translate into lower term premia.<sup>94</sup> Estimates of government bond term premia are therefore well suited to capturing the effects from foreign central bank holdings on yields. **Chart 24** shows term premium estimates for government bonds with a residual maturity of ten years across the four largest currency areas since the 1980s. Developments in term premia estimates do not immediately reveal the effects of foreign official investments, which need to be carefully identified. In fact, term premia estimates for the United States and the euro area have been higher on average than those for Japan and the United Kingdom, although the share of foreign central bank holdings in the latter two sovereigns' outstanding debt is lower.

**An error-correction model can help to quantify the effect of foreign central banks' asset holdings on sovereign debt term premia.** Relatively higher term premia in the United States and the euro area, might be explained by other determinants such as higher compensation of inflation risk, which was particularly pronounced in the United States in the 1980s. Another confounding determinant could be the effect of domestic central banks' quantitative easing policies, which also have an impact on the free float of sovereign debt – bearing in mind that Japan resorted to such policies well before other major economies. To address these identification challenges, a pooled auto-regressive distributed lag (ARDL) model is employed that explains developments in term premia (TP) for the four major currency areas (United States, United Kingdom, Japan and EMU) with developments in foreign central bank holdings (FCBH), domestic central bank holdings (DCBH) as well as country-specific fundamentals (F), including the level and volatility of growth and inflation<sup>95,96</sup>

$$\Delta TP_{i,t} = -(1 - \alpha)(TP_{i,t-1} - \frac{\beta_1 + \beta_2}{1 - \alpha} FCBH_{i,t} - \frac{\gamma_1 + \gamma_2}{1 - \alpha} DCBH_{i,t} - \frac{1}{1 - \alpha} \delta' F_{i,t}) - \beta_2 \Delta FCBH_{i,t} - \gamma_2 \Delta DCBH_{i,t-1} + \vartheta_i + \varepsilon_{i,t}$$

As proposed by Beltran et al. (2013), the distributed lag structure of the model equation makes it possible to distinguish long-run stock effects of foreign central bank reserve holdings,  $\frac{\beta_1 + \beta_2}{1 - \alpha}$ , from short-term flow effects captured by the coefficient  $-\beta_2$ .

<sup>93</sup> See Taylor, J. B., "Discretion versus Policy Rules in Practice", *Carnegie-Rochester Conference Series on Public Policy*. Vol. 39, 1993, pp. 195-214; and Diebold, F. and Rudebusch, G., *Yield Curve Modelling and Forecasting: The Dynamic Nelson-Siegel Approach*, Princeton University Press, 2013.

<sup>94</sup> For this relationship to be similar across countries, a similar degree of market liquidity and investor price sensitivity for all currencies needs to be assumed. Moreover, the impact depends on the maturity structure of official holdings. Holdings of longer-dated assets have a larger impact on the term structure of risk-free yields, in line with the duration extraction channel of asset purchases.

<sup>95</sup> In theory, the level of inflation and growth should determine the future path of short-term interest rates rather than the term premium, see Diebold, F. X., Rudebusch, G. D. and Aruoba, S. B., "The Macroeconomy and the Yield Curve: A Dynamic Latent Factor Approach", *Journal of Econometrics*, Vol. 131, 2006, pp. 309-338.

<sup>96</sup> This error-correction specification is derived from the following pooled ARDL model:  $TP_{i,t} = \alpha TP_{i,t-1} + \beta_1 FCBH_{i,t} + \beta_2 FCBH_{i,t-1} + \gamma_1 DCBH_{i,t} + \gamma_2 DCBH_{i,t-1} + \delta' F_{i,t} + \vartheta_i + \varepsilon_{i,t}$

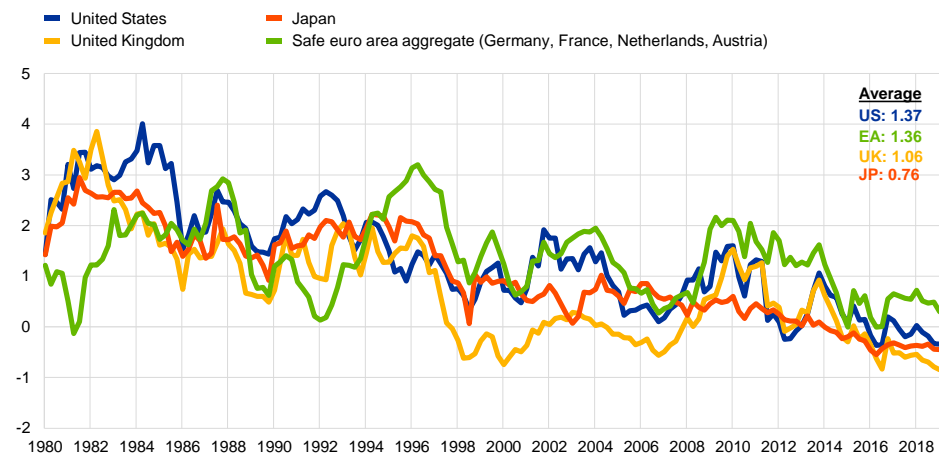
Similarly,  $\frac{\gamma_1 + \gamma_2}{1 - \alpha}$  and  $-\gamma_2$  capture the stock and flow effect from purchases of the domestic central bank in the context of asset purchase programmes. Finally, country fixed effects capture unobserved time-invariant country-specific determinants of the term premium.<sup>97</sup> **Table 3** reports estimates of the model equation using annual data for the period 1980-2018.<sup>98</sup>

### Chart 24

#### Global term premia are on a declining trend

##### Term premia estimates on risk-free government securities with 10-year residual maturity

(percentages)



Sources: Federal Reserve Board, Japan's Ministry of Finance, Bundesbank, Bank of England, ECB and ECB staff calculations.

Notes: Term premia estimates are obtained from a dynamic Nelson Siegel model of the sovereign yield curve using monthly par yields at maturities from one to ten years. The euro area aggregate is derived from the German sovereign yield curve between 1980 and 2004, updated by a debt-weighted country aggregate for the German, French, Dutch and Austrian yield curves since 2005. The term premium corresponds, at each point in time, to the difference between the fitted ten-year yield and the path of projected short-term rates over a ten-year horizon.

<sup>97</sup> The simple model outlined in Equation (1) does not check for cross-country spillover effects, despite the close co-movements observed in international bond yields and the well-documented international spillovers of central banks' asset purchase programmes. However, adding additional regressors to check for foreign and domestic purchases of other countries' safe assets is not feasible due to multicollinearity. The estimated degree of the "exorbitant privilege" may therefore be seen as an upper limit.

<sup>98</sup> The estimates are similar if the sample is restricted to the period 1980-2014 to take into account the fact that China started to disclose the currency composition of its foreign exchange reserves to the IMF.

**Table 3**

Panel estimates of the long-run and short-run determinants of term premia

	(1) Panel
<b>Adjustment term</b>	
Term premium (lagged)	-0.356***
<b>Long-run effects</b>	
Foreign official holdings % of government debt	-0.051**
Domestic central bank holdings % government debt	-0.042***
Inflation volatility	0.489***
Growth volatility	0.185
Inflation	0.146**
Growth	-0.110**
<b>Short-run effects</b>	
Δ.Foreign official holdings % of government debt	-0.001
Δ.Domestic central bank holdings % government debt	0.010
Country fixed effects	Yes
Observations	152
R-squared	0.24
No. of Countries	4

Source: Gräb, J. Kostka, T. and Quint, D., The “exorbitant privilege” – a cross-country perspective, 2019.

Note: Driscoll and Kraay standard errors are used which are heteroscedasticity consistent and robust to general forms of cross-sectional and temporal dependence. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

**Foreign central bank holdings of government debt are found to have a significant impact on term premia.** The estimated long-run effect of foreign central bank holdings relative to outstanding government debt on term premia is negative, in line with expectations, and statistically significant at the 5% level. The coefficient estimates suggest that an increase in foreign central bank holdings by 10 percentage points of the outstanding stock of debt lowers the term premium on average by 50 basis points.

**Stock effects matter, while evidence for flow effects is more limited.** One advantage of the model equation is that it helps to disentangle long-run stock effects stemming from reducing the free float of assets from short-run flow effects, stemming from actual net purchases of the assets in question. The results provide strong evidence for the prevalence of stock effects of asset purchases. By contrast, the estimated short-run flow effect of central banks’ net purchases of government debt, which in the model is captured by the first differences of the share of central bank holdings, is not statistically significant from zero either for domestic or for foreign central banks.<sup>99</sup>

**Moreover, the impact of foreign central bank holdings of government debt on term premia is estimated to be similar to the impact of domestic central bank holdings.** The estimated effect of domestic central bank holdings is similar to the

<sup>99</sup> Fixed effect estimates are economically large and statistically significant for the United States, the euro area and the United Kingdom. For Japan, the deflation era and the persistent and large-scale asset purchases by the Bank of Japan, which made growth and inflation less volatile than in other major countries, may in part explain the persistently lower term premia.

estimated effect of foreign central bank holdings.<sup>100</sup> Hence, the impact on term premia of holdings of sovereign debt securities acquired via large-scale asset purchase programmes undertaken by the major central banks or by foreign central banks building up holdings of foreign exchange reserves is about the same.<sup>101</sup>

**Finally, the marginal impact of central bank holdings on term premia varies somewhat across major economies.** Breaking down the sample by currency suggests that, in particular, stock effects for euro area debt are somewhat smaller than the full sample estimates. In view of the small sample size and given the equivalence of the estimated effects of foreign and domestic central bank purchases, only aggregate central bank holdings are considered for the country-specific regressions.<sup>102</sup> A decline in the free float by 10 percentage points lowers the term premium on euro area highly rated assets by 36 basis points (see **Table 4**). For the United States, the estimates are larger and close to the full sample estimates. Accordingly, this might point to lower price-sensitivity of foreign official investors to US dollar-denominated debt securities relative to debt securities denominated in other reserve currencies. Again, flow effects are statistically insignificant, which suggests that the main channel works via long-run stock effects.

**Overall, the total stock effect of foreign central bank purchases on euro area risk-free yields, which can be interpreted as measuring the exorbitant privilege, is estimated to reach around 110 basis points.** Foreign central banks hold around 30% of euro area safe government bonds outstanding. Considering the country-specific semi-elasticity according to which 10 percentage points of central bank holdings in debt outstanding lowers the term premium by 36 basis points, total foreign central bank holdings would have lowered the euro area term premium by around 110 basis points. In contrast, the US estimates (combined with the stock of foreign holdings of US debt) suggest that the US dollar's "exorbitant privilege" is around 160 basis points.

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<sup>100</sup> A simple Wald test rejects the null-hypotheses that the coefficients are statistically significantly different.

<sup>101</sup> The finding that the impact of foreign central bank holdings on term premia is equivalent to the impact of domestic central bank holdings is in line with the spirit of the duration extraction channel of asset purchases, as described Vayanos, D. and Vila, J. (2009), op. cit. and Li, C. and Wei, M., "Term Structure Modelling with Supply Factors and the Federal Reserve's Large-Scale Asset Purchase Programs", *International Journal of Central Banking*, March 2013. Decreasing bond supply lowers aggregate duration risk and hence term premia across maturities. In this simplistic framework, it does not matter who lowers the supply of safe debt, whether it is domestic or foreign price-insensitive investors. However, there are several reasons why the impact may differ in practice. Most importantly, foreign official purchases of highly rated debt are not likely to influence the inflation risk premium, and should thus have a somewhat lower effect, ceteris paribus. Yet, Beltran et al. (2013), op. cit. find evidence that Federal Reserve asset purchases have a smaller impact on US interest rates than foreign official purchases.

<sup>102</sup> Country-specific versions of Equation (1) are estimated.



**Table 4**

Currency-specific estimates of long-run and short-run determinants of term premia

	(1) United States	(2) Japan	(3) United Kingdom	(4) Euro area
<b>Adjustment term</b>				
Term premium (lagged)	-0.927***	-0.128	-0.740***	-1.375***
<b>Long-run effects</b>				
Total official holdings % of government debt	-0.055***	-0.026	-0.030**	-0.036***
Inflation volatility	-0.005	0.125	0.320**	0.238
Growth volatility	0.398	0.357	0.650***	0.104
Growth	0.027	-0.036	0.021	0.009
Inflation	0.111	0.098	-0.040	-0.143*
<b>Short-run effects</b>				
Δ.Total official holdings % of government debt	-0.025	-0.015	0.010	0.056
Observations	35	35	35	35
Adj. R-squared	0.37	-0.13	0.42	0.42

Source: Gräß, J. Kostka, T. and Quini, D. (2019), op. cit..

Note: The constant is not reported. Driscoll and Kraay standard errors are used which are heteroscedasticity consistent and robust to general forms of cross-sectional and temporal dependence. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

**From a dynamic perspective, the model can be used to explain developments in term premia over time.** In particular, higher foreign official reserves holdings relative to outstanding free float of debt can partly explain the new compression of global term premia observed in the past couple of years. Since late-2015, the Federal Reserve System has gradually increased the federal funds rate, with expectations about a “lift-off” crystallising since early-2014. In addition, the Federal Reserve has started to reduce its holdings of US Treasuries. Term premia on 10-year Treasury yields declined markedly notwithstanding these decisions to normalise the stance of US monetary policy – a phenomenon similar to the previous tightening cycle by the Federal Reserve of the mid-2000s, which the then Chairman Greenspan labelled the low bond yield “conundrum”.<sup>103</sup> But time-varying estimates of the “exorbitant privilege” suggest that a build-up of US Treasury (and euro area debt) holdings relative to outstanding debt markedly have contributed to the decline in US and global term premia since early 2014, helping to explain developments in bond markets (see [Chart 25](#)). Foreign central banks reduced the free float of US Treasuries by around 10 percentage points between 2014 and 2018, thereby lowering US term premia by around 50 basis points.<sup>104</sup> A smaller free float of euro area highly rated debt may have additionally weighed on global term premia in view of the fact that there are large cross-country correlations between term premia on safe assets.

<sup>103</sup> See Bauer, M., “A New Conundrum in the Bond Market?”, *FRBSF Economic Letter*, No 2017-34, November 2017.

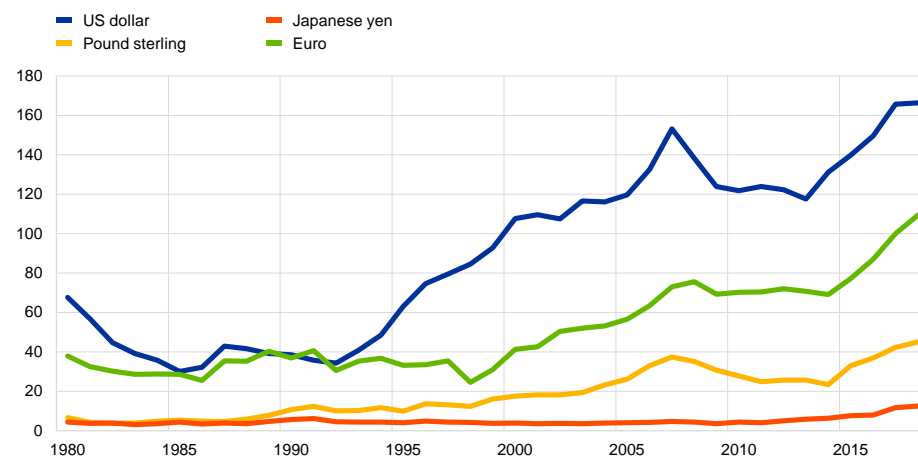
<sup>104</sup> In 2018, foreign central banks continued to accumulate US dollar reserves, despite significant sales of US Treasuries by a number of emerging market economies in summer 2018. Foreign official holdings of US debt also increased markedly in 2015 and 2016, when large-scale Chinese sales of Treasuries, amounting to around USD 1 trillion, were more than offset by other foreign official purchases.

## Chart 25

The exorbitant privilege has gradually increased over time

### Exorbitant privilege

(Q1 1980-Q2 2018; basis points)



Sources: IMF and ECB staff calculations.

Note: The "exorbitant privilege" is calculated by multiplying the country-specific estimates on the long-run effect by the share of foreign central bank holdings of outstanding general government debt.

## Conclusions

**Some euro area sovereigns enjoy an economically significant "exorbitant privilege" stemming from large holdings of foreign central banks relative to outstanding euro area safe debt.** As foreign central bank holdings of euro area government debt are concentrated in a few euro area countries issuing debt that is seen as risk-free, the "exorbitant privilege" can be interpreted as having contributed to widening intra-euro area sovereign bond spreads. One ingredient for a stronger international role of the euro is to have a larger supply of safe assets. This can, for instance, be achieved by maintaining or restoring sound and sustainable fiscal policies throughout the euro area. In the longer term, the creation of a common euro area safe asset, if so decided by Member States, in a way that does not undermine incentives for sound national fiscal policies, could also contribute to this objective. An indirect benefit of a strong international role of the euro would be that the euro's "exorbitant privilege" would be more widely shared across euro area sovereigns.