European Stability Mechanism

DANGEROUS LIAISONS? DEBT SUPPLY AND CONVENIENCE YIELD SPILLOVERS IN THE EURO AREA

Cristian Arcidiacono (University of Bern), Matthieu Bellon (IMF), Matthias Gnewuch (ESM)

PSE Macro Days
26 September 2025

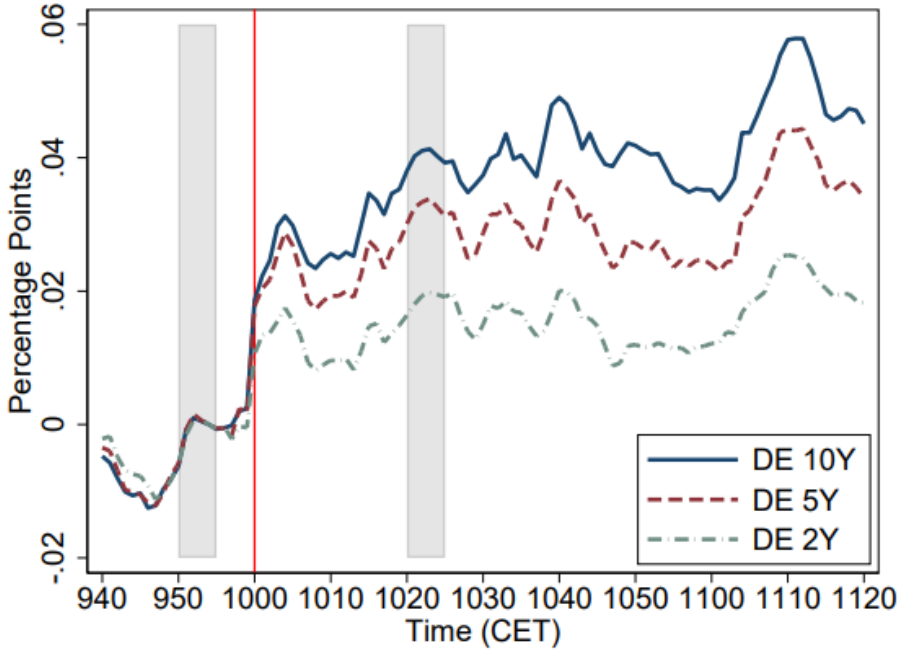
The views expressed here are those of the authors and should not be attributed to any of the institutions with which they are affiliated.

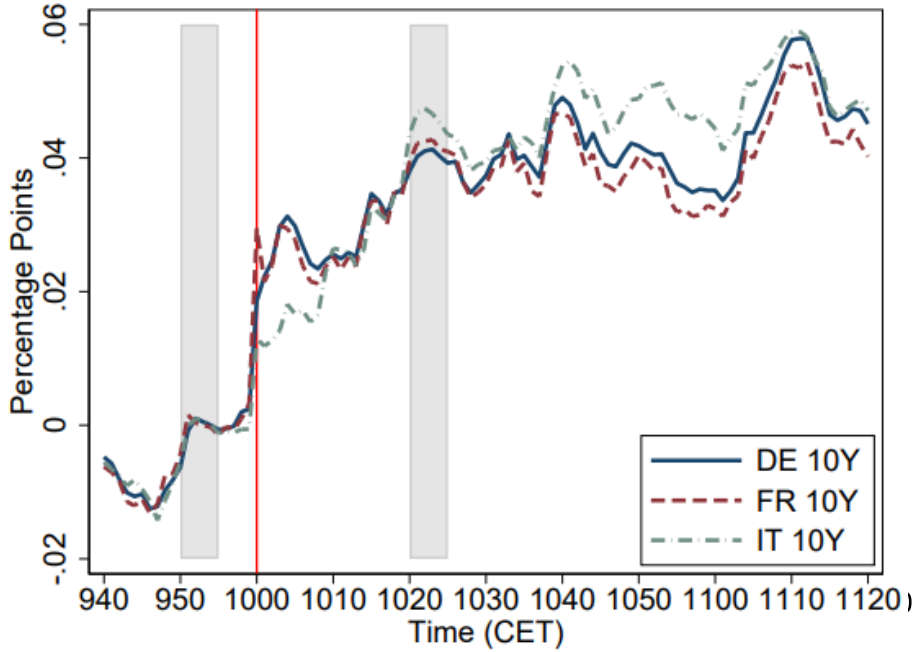
MOTIVATION – WHAT MATTERS FOR LOW SOVEREIGN YIELDS?

- Many sovereign bonds often trade at yields below risk-free rate + default risk premium
  - "Convenience yield"-premium reflects value as collateral, for liquidity, hedge against bad times, …
- When a country issues more sovereign bonds, its convenience yield declines
  - Krishnamurthy & Vissing-Jorgensen 2012; Jiang, Lustig, Van Nieuwerburgh, Xiaolan 2022; Reis 2022
- But does a country's convenience yield also change when another country issues bonds?
  - Spillovers of debt issuance reflect how substitutable the "conveniences" of different bonds are
  - What issuer characteristics determine these spillovers (substitutability)?

DEBT ISSUANCE SPILLOVERS – AN ILLUSTRATIVE EXAMPLE

- On 14 December 2022 at 10:00 CET, the German debt management office („Deutsche Finanzagentur”) published its debt issuance plan for 2023
- Market commentary suggests that the total amount exceeded expectations





MAIN RESULTS: A NEW TYPE OF SPILLOVER

- Two main empirical findings about spillovers of safe-country debt supply shocks

  1) To other “safe” countries (FR, NL, …): Convenience yields fall in “receiving” countries as much as in issuing countries, i.e., spillovers are one-to-one

  2) To “riskier” countries (ES, PT, …): Convenience yields also fall, but spillovers are weaker (around 2/3)

- We explain these findings in a two-country model with heterogeneous default risk
  - All safe bonds are useful to hedge against recessions -> high substitutability & large spillovers
  - Risky bonds are particularly risky in recessions, so not a good hedge -> low substitutability with safe bonds & small spillovers

AGENDA

1. **Data & Empirical Strategy**
2. Empirical Results
3. Theoretical Rationalization

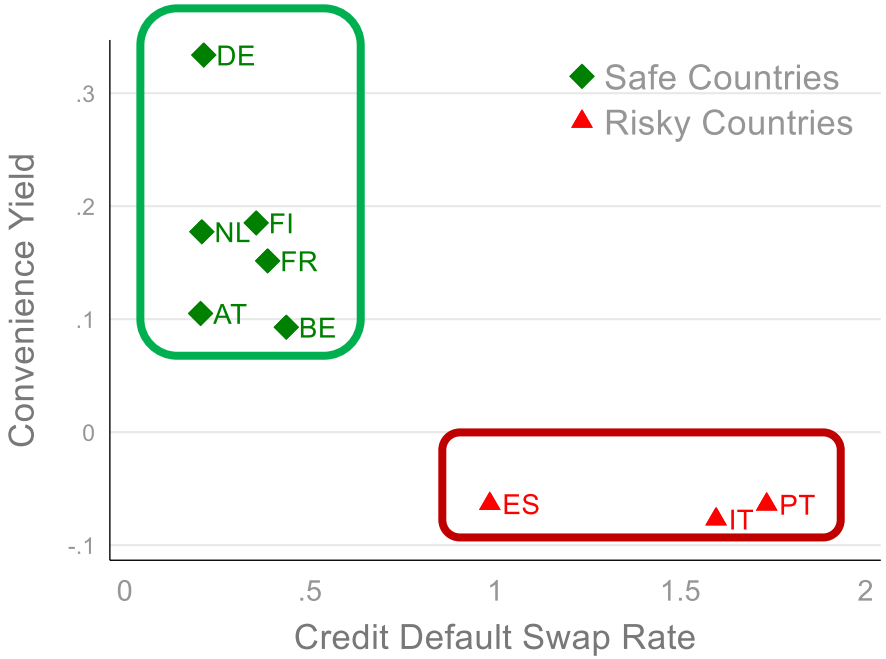
DATA & DEFINITION : CONVENIENCE YIELDS IN EURO AREA

- Convenience yield definition (Jiang et al. 2022):

$$Y_t^i = R_t + \delta_t^i - CY_t^i$$

  - Y: simple (10-year) yield
  - R: risk-free rate reflected in *Overnight Index Swap* rates
  - δ: default risk premia reflected in *Credit Default Swap* rates
  - CY: convenience yield

- Safe countries' bonds earn a premium for being reliably liquid, remaining valuable in recessions, …

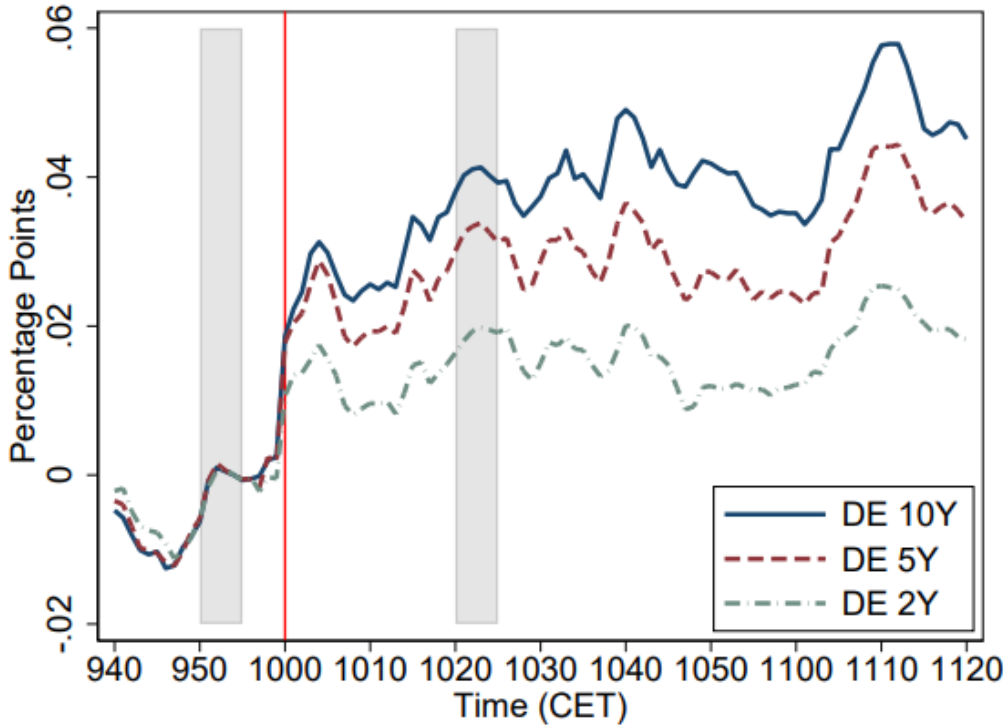


Notes: This figure plots median 10-year convenience yields and median 10-year CDS rates for each country in the main data set. Sample period: 2009-2023.

IDENTIFYING DEBT ISSUANCE SPILLOVERS

- Two key challenges…
  i. Many shocks drive convenience yield correlations up (e.g., global cycles) or down (e.g., flight to safety)
  ii. Changes in actual debt supply well-anticipated

- … addressed with German DMO's communication & high-frequency data
  - Publications of debt issuance plans (and revisions) provide salient news about German debt supply
  - 30-minute yield changes around DMO announcements provide *debt supply shocks*



ESTIMATING DEBT ISSUANCE SPILLOVERS USING 3 METHODS

1. *30-min yield spillovers using OLS*
   - $\Delta Y_{Destination,30min,t} = \beta_0 + \beta_1 * \Delta Y_{DE,30min,t} + \epsilon_t$

2. *1-day convenience yield spillovers using IV*
   - 1st stage: $\Delta CY_{DE,1-day,t} = \gamma_0 + \gamma_1 * \Delta Y_{DE,30min,t} + \delta_t$ *(F-Stat: 12.6, γ_1 = -0.93***)*
   - 2nd stage: $\Delta CY_{Destination,1-day,t} = \beta_0 + \beta_1 * \Delta CY_{DE,1-day,t} + \epsilon_t$

3. *1-day convenience yield spillovers from Rigobon-Sack estimation*
   - $\Delta CY_{Destination,1-day,t} = \beta_0 + \beta_1 * \Delta CY_{DE,1-day,t} + \epsilon_t$
   - Identification from elevated volatility of $\Delta CY_{DE,1-day,t}$ on DMO days vs. preceding days

AGENDA

1. Data & Empirical Strategy
2. **Empirical Results**
3. Theoretical Rationalization

HIGH-FREQUENCY YIELD SPILLOVERS FROM GERMANY

- In 30-min windows around news about German debt supply:
  - French (safe) yields co-move almost one-to-one
  - Italian and Spanish (riskier) yields co-move less
- But what about convenience yields, daily frequency, other countries?

TABLE 1: Intraday Yield Spillovers from Germany (Method 1: OLS)

	Safe Countries	*Risky Countries*	
	(1) ΔY_{FR}	(2) ΔY_{IT}	(3) ΔY_{ES}
ΔY_{DE}	0.88^{***}	0.62^{***}	0.51^{**}
	(0.10)	(0.21)	(0.24)
Constant	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)
Observations	44	43	39
R^2	0.80	0.20	0.20

Notes: Each column displays coefficients from a separate regression: $\Delta Y_{Destination,t} = \beta_0 + \beta_1 * \Delta Y_{DE,t} + \epsilon_t$. *Standard errors are reported in parentheses.* $*\ p < 0.10,\ **\ p < 0.05,\ ***\ p < 0.01.$

CONVENIENCE YIELD SPILLOVERS FROM GERMANY

- Spillovers to safe countries are almost 1-for-1… but smaller and insignificant to riskier countries… unless CDS rates are low

TABLE 2: Daily Convenience Yield Spillovers from Germany (Method 2: IV)

	Safe Countries						*Risky Countries*				
	(1) ΔCY_{FR}	(2) ΔCY_{NL}	(3) ΔCY_{FI}	(4) ΔCY_{AT}	(5) ΔCY_{BE}	(6) Pool	(7) ΔCY_{IT}	(8) ΔCY_{ES}	(9) ΔCY_{PT}	(10) Pool	(11) Pool
ΔCY_{DE}	0.92***	0.97***	1.19***	0.67***	1.14**		0.79	-0.43	1.62		
	(0.23)	(0.25)	(0.21)	(0.24)	(0.56)		(0.85)	(0.90)	(1.05)		
ΔCY_{DE}						0.98***				0.66	0.89***
						(0.22)				(0.65)	(0.25)
$\Delta CY_{DE} \times \mathbb{1}\{CDS_t > 1\}$											-0.48
											(1.19)
Constant	-0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Observations	44	44	44	44	44	220	44	44	44	132	132

Notes: Columns (1)-(10) display coefficients from separate regressions: $\Delta CY_{Destination,t} = \beta_0 + \beta_1 * \Delta CY_{DE,t} + \epsilon_t$ *while column (11) is based on* $\Delta CY_{Destination,t} = \beta_0 + \beta_1 * \Delta CY_{DE,t} + \beta_2 * \Delta CY_{DE,t} * \mathbb{1}\{CDS_t > 1\} + \epsilon_t$. *Daily change in the German convenience yield is instrumented with the 30-minute yield change.*

SIMILAR SPILLOVERS FROM DEBT ISSUANCE IN FRANCE

- Similar spillovers from France: almost 1-for-1 to other safe countries, but smaller to riskier countries

TABLE 3: Daily Convenience Yield Spillovers from France (Method 3: Rigobon-Sack Estimator)

	Safe Countries					*Risky Countries*		
	(1) ΔCY_{DE}	(2) ΔCY_{NL}	(3) ΔCY_{FI}	(4) ΔCY_{AT}	(5) ΔCY_{BE}	(6) ΔCY_{IT}	(7) ΔCY_{ES}	(8) ΔCY_{PT}
ΔCY_{FR}	1.26***	0.85**	0.77*	0.91***	0.95***	-0.19	0.73	1.66
	(0.39)	(0.35)	(0.43)	(0.27)	(0.31)	(0.54)	(0.64)	(4.14)
Constant	0.00	0.00	-0.00	-0.00	-0.00	0.00	0.00	0.02
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.02)
N	44	44	44	44	44	44	44	44
Weak IV	4.57	5.13	3.93	3.95	4.85	3.97	3.99	7.61
Overid.	0.24	0.76	0.48	0.46	0.74	0.83	0.79	0.24

Notes: Each column displays coefficients from a separate regression: $\Delta CY_{Destination,t} = \beta_0 + \beta_1 * \Delta CY_{FR,t} + \epsilon_t$ where we employ the RS estimator. For every column, we use the two-step GMM estimator and the two instrument variables based on the change in the variance- covariance matrix of the origin and destination country convenience yields.

ROBUSTNESS CHECKS & VALIDATING THE MECHANISM

- Robustness checks:
  - Different origin country (news about debt supply from France)
  - Different maturity (5-year instead of 10-year)
  - Longer window for high-frequency instrument (60 min instead of 30 min)
  - Control for background noise (Rigobon-Sack estimator)

- Validation: DMO announcements are interpreted as “news about debt supply” and not as “news about the state of economy”
  - No significant effects on stock prices & volatility, inflation expectations, or sovereign risk premia
  - Instrument 30-min yield changes with debt supply *revisions*

SPILLOVERS BEYOND EURO AREA SOVEREIGN BOND MARKET

- Strong yield spillovers also to issuers of non-sovereign (EU, AAA corporates) or non-euro (GB, DK, SE, NO) bonds in Europe
- No significant spillovers to sovereign issuers beyond Europe (US, JP, CA, AU)

TABLE 4: Daily Spillovers from Germany Beyond Euro Area Sovereign Bonds (Method 2: IV)

	EA Non-Sov.		*European Sovereigns*					*Non-European Sovereigns*			
	(1) ΔY_{EU}	(2) ΔY_{AAA}	(3) ΔY_{GB}	(4) ΔY_{DK}	(5) ΔY_{SE}	(6) ΔY_{NO}	(7) ΔY_{CH}	(8) ΔY_{US}	(9) ΔY_{JP}	(10) ΔY_{CA}	(11) ΔY_{AU}
ΔY_{DE}	0.80***	0.91***	1.03***	1.05***	1.32**	1.35**	0.39	0.46	0.08	0.32	0.41
	(0.12)	(0.18)	(0.28)	(0.12)	(0.56)	(0.53)	(0.26)	(0.37)	(0.09)	(0.33)	(0.55)
Constant	0.00	0.00	0.00	0.00	0.01	0.01	-0.00	-0.01	-0.00*	-0.01	-0.01
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)
Observations	38	44	44	44	44	44	44	44	44	44	44

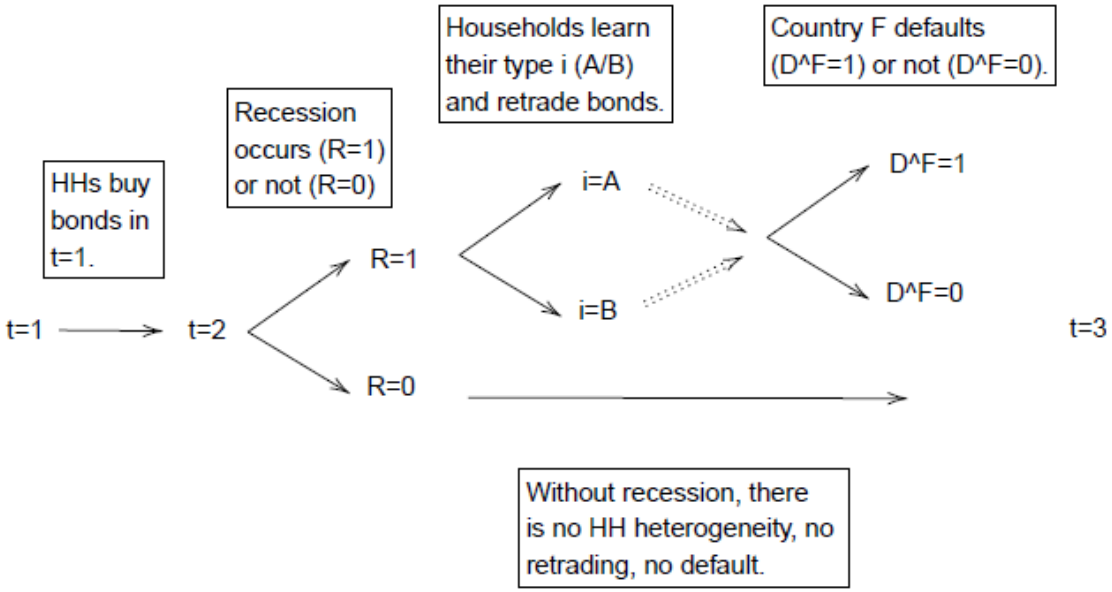
Notes: Each column displays coefficients from a separate regression: $\Delta Y_{Destination,t} = \beta_0 + \beta_1 * \Delta Y_{DE,t} + \epsilon_t$ *where the daily change in the German yield is instrumented with the 30-minute change. Robust standard errors are reported in parentheses.* $*p < 0.10$, $**p < 0.05$, $***p < 0.01$.

AGENDA

1. Data & Empirical Strategy
2. Empirical Results
3. **Theoretical Rationalization**

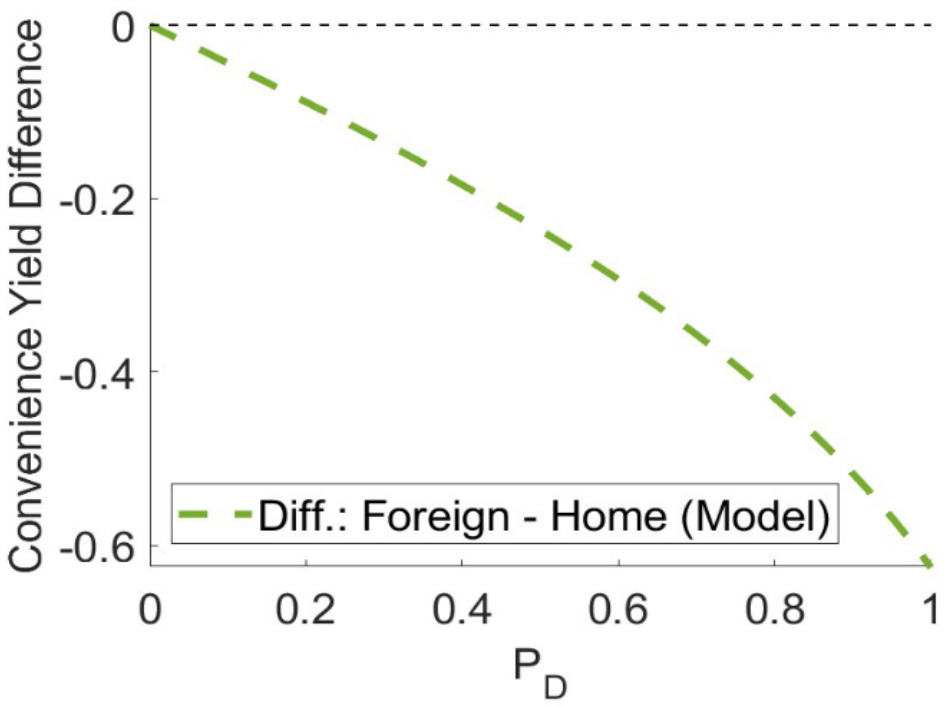
BRUNNERMEIER ET AL. (2024) WITH 2 COUNTRIES & DEFAULT

- Two countries (H, F) issue bonds in t=1
  - H repays in t=3 with certainty, F potentially defaults
- Ex-ante identical households buy bonds
  - Exogenous income, low and heterogeneous if recession hits in t=2 (idiosyncratic income risk)
- Bonds can be re-traded in recessions to alleviate income losses
  - Convenience yields reflect an insurance value ("hedge against bad times")



RESULT (A): CONVENIENCE YIELD FALLS WITH DEFAULT RISK

- F potentially defaults in t=3 if and only if a recession hits in t=2
  - In recessions, price of F bonds falls…
  - … making them less useful as a re-trading object
- Result (A): F earns a lower convenience yield & the differential increases with default risk (P_D) in F.



(A) The Role of Default Risk

RESULT (B): CONVENIENCE YIELDS FALLS WITH BOND SUPPLY

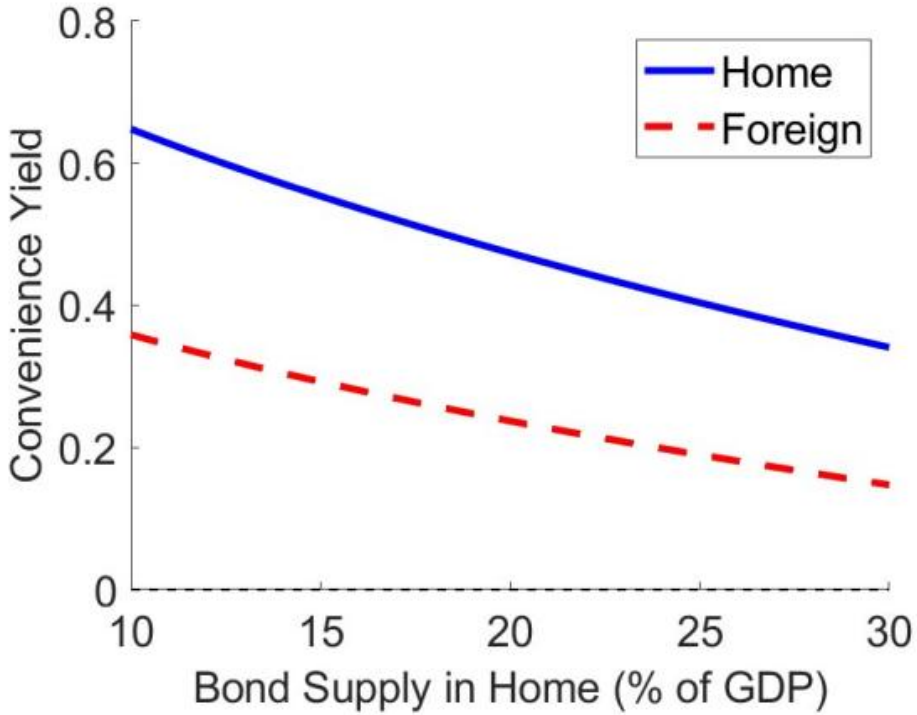
- Result (B): In response to an increase in debt supply in H, convenience yields decline (weakly) in both countries.

- Intuition: When more bonds are available for "insurance"

  → households are better insured

  → the value of further insurance falls

  → convenience yields decline

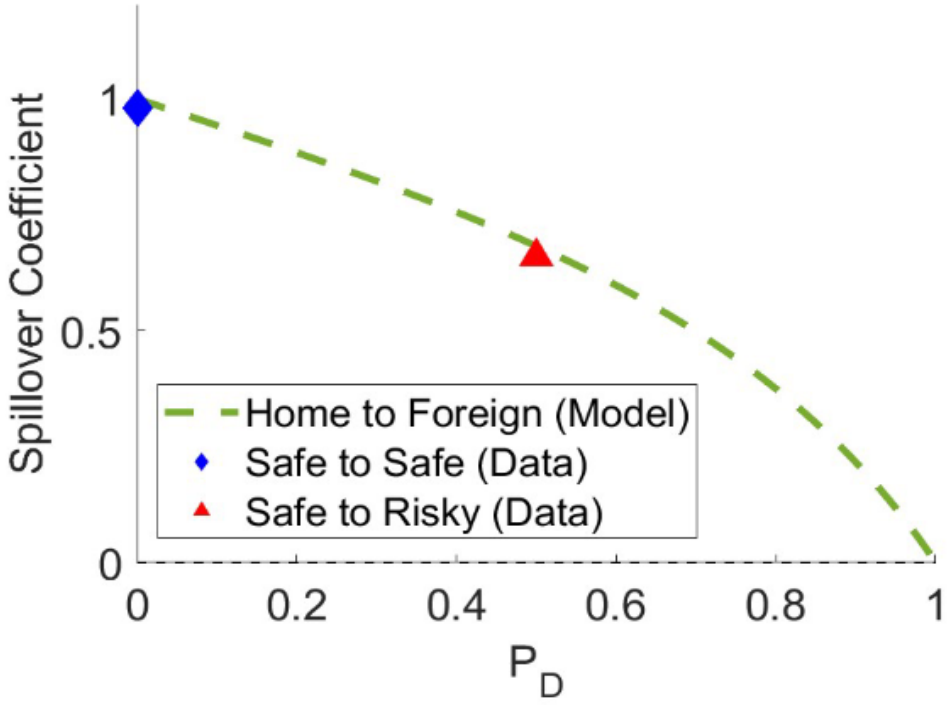


(B) The Role of Bond Supply (at *Home*)

RESULT (C): CONVENIENCE YIELD SPILLOVERS FALL WITH DEF. RISK

- Result (C): In response to debt supply change in H, the relative change in F convenience yield (i.e., the spillover) falls with default risk (P_D) in F.

- Intuition: When default risk in F increases
  - → F bonds are less useful as "hedge"
  - → and hence worse substitutes for H bonds (which are a good "hedge")
  - → spillover is smaller



(B) Spillover Coefficient ($\Delta CY_F / \Delta CY_H$)

SUMMARY & POLICY IMPLICATIONS

- Spillovers of safe-country debt issuance to (convenience) yields of other safe countries are one-for-one, but weaker for riskier countries
  - In line with stylized two-country model of safe asset re-trading à la Brunnermeier et al. (2024)

- For maintaining high convenience yields (low sovereign yields) in the euro area …
  - … it matters **how much debt is issued <u>in total</u>**
  - … it matters **less <u>who</u> issues it** (DE, FR, EU …)

- This underscores the importance of coordinating national fiscal policies
  - Fiscal rules can address negative externalities of debt issuance

ANNEX


European Stability Mechanism
ESM
European Financial Stability Facility
EFSF

DFA ANNOUNCEMENT OF DECEMBER 2022

"Ein Paukenschlag"

Die Experten der Landesbank Baden-Württemberg (LBBW) sprachen von einem "Paukenschlag". "Es war zwar klar, dass der Finanzbedarf des Bundes angesichts der gewaltigen Ausgaben zur Abfederung der Energiekrise auf Rekordkurs gehen würde", sagte Analyst Elmar Völker. "Ein Aufschlag von rund 20 Prozent gegenüber 2022 bei den Gesamtemissionen ist indes beachtlich."

Source: https://www.tagesschau.de/wirtschaft/bund-schuldenaufnahme-rekord-101.html

IV ESTIMATION – FIRST STAGE

TABLE A.3: Decomposition of Effect of Instrument on German Convenience Yield

	(1) ΔY_{DE}	(2) ΔOIS	(3) ΔCDS_{DE}	(4) ΔCY_{DE}
ΔY_{DE}	1.45**	0.74	-0.22**	-0.93***
	(0.66)	(0.66)	(0.10)	(0.26)
Constant	-0.01	-0.01	0.00	0.00
	(0.01)	(0.01)	(0.00)	(0.00)
Observations	44	44	44	44
R^2	0.13	0.06	0.06	0.18
F	4.79	1.29	5.49	12.59

ROBUSTNESS: 1-DAY *YIELD* SPILLOVERS FROM GERMANY

TABLE A.4: Daily *Yield* Spillovers from Germany (Method 2: IV)

	Safe Countries						*Risky Countries*				
	(1) ΔY_{FR}	(2) ΔY_{NL}	(3) ΔY_{FI}	(4) ΔY_{AT}	(5) ΔY_{BE}	(6) Pool	(7) ΔY_{IT}	(8) ΔY_{ES}	(9) ΔY_{PT}	(10) Pool	(11) Pool
ΔY_{DE}	0.99***	0.98***	1.09***	1.03***	1.18***		0.53	0.56	0.88		
	(0.12)	(0.07)	(0.09)	(0.11)	(0.29)		(0.47)	(0.37)	(0.65)		
ΔY_{DE}						1.05***				0.66	0.80***
						(0.12)				(0.43)	(0.24)
ΔY_{DE}											-0.26
$\times \mathbb{1}\{CDS_t > 1\}$											(0.68)
Constant	0.00	0.00	0.00	0.00	0.01	0.00	0.01*	0.01	0.02	0.01	0.01
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Observations	44	44	44	44	44	220	44	44	44	132	132

Notes: Each column displays coefficients from a separate regression: $\Delta Y_{Destination,t} = \beta_0 + \beta_1 \times \Delta Y_{DE,t} + \epsilon_t$, for columns (1)-(5) and (7)-(9); $\Delta Y_{Destination,t} = \beta_0 + \beta_1 \times \Delta Y_{DE,t} + \beta_2 \Delta Y_{DE,t} \times \mathbb{1}\{CDS_t > 1\} + \epsilon_t$, for columns (6) and (10)-(11); where the daily change in the German convenience yield is instrumented with the 30-minute yield change and $\mathbb{1}\{CDS_t > 1\}$ is an indicator variable that take value 1 if the CDS rate is above 1 and 0 otherwise. Robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

ROBUSTNESS: 5-YEAR MATURITY

TABLE A.6: Daily Convenience Yield Spillovers from Germany (Method 2: IV) – 5-Year Maturity

	Safe Countries						*Risky Countries*				
	(1) ΔCY_{FR}	(2) ΔCY_{NL}	(3) ΔCY_{FI}	(4) ΔCY_{AT}	(5) ΔCY_{BE}	(6) Pool	(7) ΔCY_{IT}	(8) ΔCY_{ES}	(9) ΔCY_{PT}	(10) Pool	(11) Pool
ΔCY_{DE}	1.07***	1.06***	1.06***	0.60**	0.84		0.77	0.17	0.81		
	(0.20)	(0.18)	(0.33)	(0.27)	(0.52)		(0.80)	(0.78)	(0.84)		
ΔCY_{DE}						0.92***				0.58	1.00**
						(0.18)				(0.66)	(0.44)
ΔCY_{DE}											-0.84
$\times \mathbb{1}\{CDS_t > 1\}$											(1.08)
Constant	0.00	0.00	-0.00	-0.00	0.00	0.00	-0.00	0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Observations	41	41	41	41	41	205	41	41	41	123	123

Notes: Each column displays coefficients from a separate regression for the 5-year maturity: $\Delta CY_{Destination,t} = \beta_0 + \beta_1 \times \Delta CY_{DE,t} + \epsilon_t$, for columns (1)-(5) and (7)-(9); $\Delta CY_{Destination,t} = \beta_0 + \beta_1 \times \Delta CY_{DE,t} + \beta_2 \Delta CY_{DE,t} \times \mathbb{1}\{CDS_t > 1\} + \epsilon_t$, for columns (6) and (10)-(11); where the daily change in the German convenience yield is instrumented with the 30-minute yield change and $\mathbb{1}\{CDS_t > 1\}$ is an indicator variable that take value 1 if the CDS rate is above 1 and 0 otherwise. Robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

ROBUSTNESS: LONGER HIGH-FREQUENCY WINDOW (1 HOUR)

TABLE OA.10: Daily Convenience Yield Spillovers from Germany (Method 2: IV) – Instrument: 1-Hour Change

	Safe Countries						*Risky Countries*				
	(1) ΔCY_{FR}	(2) ΔCY_{NL}	(3) ΔCY_{FI}	(4) ΔCY_{AT}	(5) ΔCY_{BE}	(6) Pool	(7) ΔCY_{IT}	(8) ΔCY_{ES}	(9) ΔCY_{PT}	(10) Pool	(11) Pool
ΔCY_{DE}	1.07***	0.76	1.62**	1.04*	1.40		0.49	-0.74	2.14		
	(0.30)	(0.52)	(0.61)	(0.56)	(1.23)		(1.25)	(1.33)	(2.41)		
ΔCY_{DE}						1.18**				0.63	0.78*
						(0.55)				(1.36)	(0.42)
$\Delta CY_{DE} \times \mathbb{1}\{CDS_t > 1\}$											-0.28
											(2.32)
Constant	-0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)
Observations	44	44	44	44	44	220	44	44	44	132	132

Notes: Each column displays coefficients from a separate regression: $\Delta CY_{Destination,t} = \beta_0 + \beta_1 \times \Delta CY_{DE,t} + \epsilon_t$, for columns (1)-(5) and (7)-(9); $\Delta CY_{Destination,t} = \beta_0 + \beta_1 \times \Delta CY_{DE,t} + \beta_2 \Delta CY_{DE,t} \times \mathbb{1}\{CDS_t > 1\} + \epsilon_t$, for columns (6) and (10)-(11); where the daily change in the German convenience yield is instrumented with the 1-hour yield change and $\mathbb{1}\{CDS_t > 1\}$ is an indicator variable that take value 1 if the CDS rate is above 1 and 0 otherwise. Robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

ROBUSTNESS: RIGOBON-SACK ESTIMATOR

TABLE OA.5: Daily Convenience Yield Spillovers from Germany (Method 3: Rigobon-Sack Estimator)

	Safe Countries					*Risky Countries*		
	(1) ΔCY_{FR}	(2) ΔCY_{NL}	(3) ΔCY_{FI}	(4) ΔCY_{AT}	(5) ΔCY_{BE}	(6) ΔCY_{IT}	(7) ΔCY_{ES}	(8) ΔCY_{PT}
ΔCY_{DE}	0.93***	2.87*	1.09***	1.33**	0.89	0.54	-0.30	0.08
	(0.29)	(1.60)	(0.37)	(0.53)	(1.03)	(1.00)	(1.20)	(1.32)
Constant	-0.00*	-0.01	-0.00	-0.00	-0.00	-0.01	0.00	-0.01
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)
N	88	88	88	88	88	88	88	88
Weak IV	6.126	5.261	4.025	3.750	3.205	3.172	3.170	3.126
Overid.	0.605	0.866	0.733	0.383	0.510	0.949	0.538	0.125

Notes: Each column displays coefficients from a separate regression: $\Delta CY_{Destination,t} = \beta_0 + \beta_1 \times \Delta CY_{DE,t} + \epsilon_t$, *where we employ the RS estimator described in Section 3.3. Each column corresponds to a different destination country. For every column, we use the two-step GMM estimator and the two instrument variables based on the change in the variance-covariance matrix of the origin and destination country yields. Robust standard errors are reported in parentheses and stars indicate significance levels:* * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. *The before last row shows the Stock-Yogo weak IV statistics while the associated threshold for the 25% maximal IV size is estimated at 7.25. The last row reports the p-value of the Hansen J overidentification test where the null hypothesis is that the instruments are valid.*

STOCK PRICES & VOLATILITY DO NOT REACT TO DEBT SUPPLY NEWS

TABLE A.14: Debt Supply Shocks & Stock Markets

	30-Minute Changes			*Daily Changes*			
	(1) ΔDAX	(2) ΔCAC40	(3) ΔStoxx50	(4) ΔDAX	(5) ΔCAC40	(6) ΔStoxx50	(7) ΔVStoxx
ΔY_{DE}	0.02	0.03	0.01	0.04	0.04	0.04	-8.60
	(0.04)	(0.04)	(0.02)	(0.08)	(0.10)	(0.10)	(13.03)
Constant	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	0.07
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.22)
Observations	44	44	44	44	44	44	44

Notes: Each column displays coefficients from a separate regression: $\Delta X_t = \beta_0 + \beta_1 \times \Delta Y_{DE,t} + \epsilon_t$, where $\Delta Y_{DE,t}$ is the 30-minute change in the German yield around the German DMO announcement and outcome variables are 30-minute changes (columns 1-3) or daily changes (columns 4-7). Outcome variables are in logs (columns 1-6) or levels (column 7). *VStoxx* is the volatility index for the *Stoxx 50*. Robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

INFLATION EXPECTATIONS DO NOT REACT TO DEBT SUPPLY NEWS

TABLE A.10: Effects on Inflation Linked Swap Rates

	(1) EA_{1Y}	(2) EA_{3Y}	(3) EA_{5Y}	(4) EA_{10Y}	(5) DE_{1Y}	(6) DE_{3Y}	(7) DE_{5Y}	(8) DE_{10Y}
ΔY_{DE}	-0.22	-0.08	-0.01	0.09	9.20	0.46	-1.33	-1.55
	(0.76)	(0.60)	(0.58)	(0.51)	(5.51)	(0.86)	(1.06)	(1.10)
Constant	0.00	0.00	0.00	-0.00	0.02	-0.00	-0.01	-0.01
	(0.01)	(0.01)	(0.00)	(0.00)	(0.02)	(0.01)	(0.01)	(0.01)
Observations	44	44	44	44	42	44	44	44
R^2	0.00	0.00	0.00	0.00	0.33	0.01	0.07	0.18

Notes: Each column displays coefficients from a separate regression: $\Delta X_t = \beta_0 + \beta_1 \times \Delta Y_{DE,t} + \epsilon_t$, where $\Delta Y_{DE,t}$ is the 30-minute change in the German yield around the German DMO announcement and outcome variables (X_t) are daily changes in inflation linked swap rates for the euro area (columns 1-4) or for Germany (columns 5-8). Robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

DEFAULT RISK PREMIA DO NOT REACT TO DEBT SUPPLY NEWS

TABLE A.11: Effects on 5-Year Credit Default Swap Rates

	(1) ΔCDS_{DE}	(2) ΔCDS_{FR}	(3) ΔCDS_{NL}	(4) ΔCDS_{FI}	(5) ΔCDS_{AT}	(6) ΔCDS_{BE}	(7) ΔCDS_{IT}	(8) ΔCDS_{ES}	(9) ΔCDS_{PT}
ΔY_{DE}	-0.05	0.05	-0.11	0.08	0.12	0.10	-0.81	0.09	-0.07
	(0.05)	(0.16)	(0.08)	(0.08)	(0.10)	(0.26)	(0.71)	(0.40)	(0.89)
Constant	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.02)
Observations	44	44	44	44	44	44	44	44	44
R^2	0.00	0.00	0.01	0.01	0.01	0.00	0.03	0.00	0.00

Notes: Each column displays coefficients from a separate regression: $\Delta CDS_t = \beta_0 + \beta_1 \times \Delta Y_{DE,t} + \epsilon_t$, where $\Delta Y_{DE,t}$ is the 30-minute change in the German yield around the German DMO announcement and outcome variables are daily changes in 5-year credit default swap rates. Robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

DEBT QUANTITY INSTRUMENT

TABLE A.13: Intraday Yield Spillovers from Germany – Debt Quantity Instrument

	Baseline			*Reduced Sample*			*Debt Quantity Instrument*		
	(1) ΔY_{FR}	(2) ΔY_{IT}	(3) ΔY_{ES}	(4) ΔY_{FR}	(5) ΔY_{IT}	(6) ΔY_{ES}	(7) ΔY_{FR}	(8) ΔY_{IT}	(9) ΔY_{ES}
ΔY_{DE}	0.88***	0.62***	0.51**	0.82***	0.35	0.24	1.00**	-1.11	-0.43
	(0.10)	(0.21)	(0.24)	(0.14)	(0.28)	(0.24)	(0.40)	(1.88)	(1.60)
Constant	0.00	0.00	0.00	-0.00	0.00	0.00	-0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Obs.	44	43	39	32	31	28	32	31	28

Notes: Each column displays coefficients from a separate regression: $\Delta Y_{Destination,t} = \beta_0 + \beta_1 \times \Delta Y_{DE,t} + \epsilon_t$, where changes are 30-minute changes around German DMO announcements. Robust standard errors are reported in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Columns (4)-(6) use the subsample of events for which a *debt quantity revision* is available while also excluding one outlier (June 2020) as explained in Figure A.1. In columns (7)-(9), the 30-minute change in the German yield is instrumented with the debt quantity revision. The first-stage F-stat is 4.98 (column 7).