European Stability Mechanism

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

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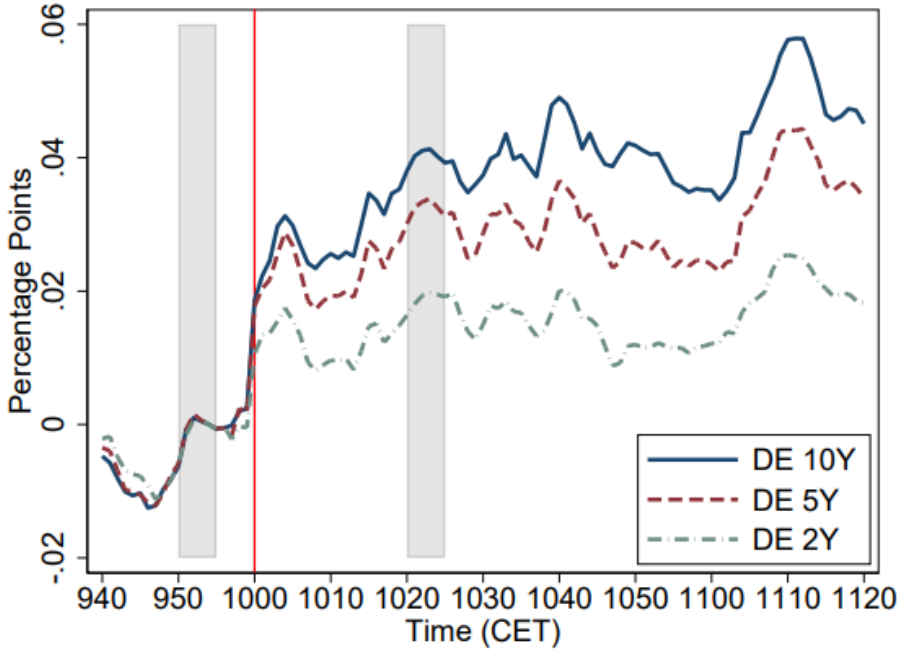
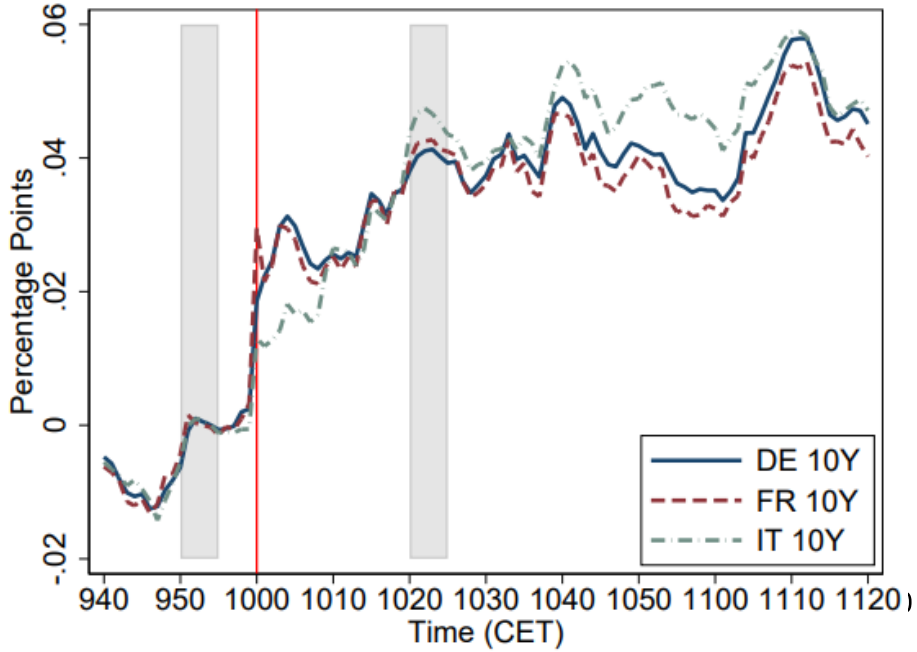
MOTIVATION – WHAT MATTERS FOR LOW SOVEREIGN YIELDS?

- 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

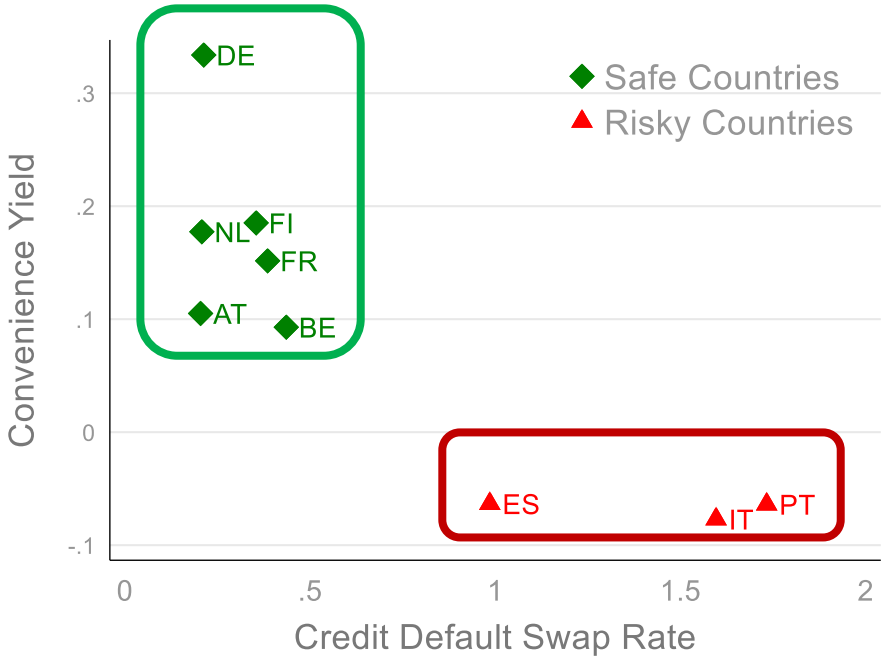
DATA & DEFINITION : CONVENIENCE YIELDS IN EURO AREA

- 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, …

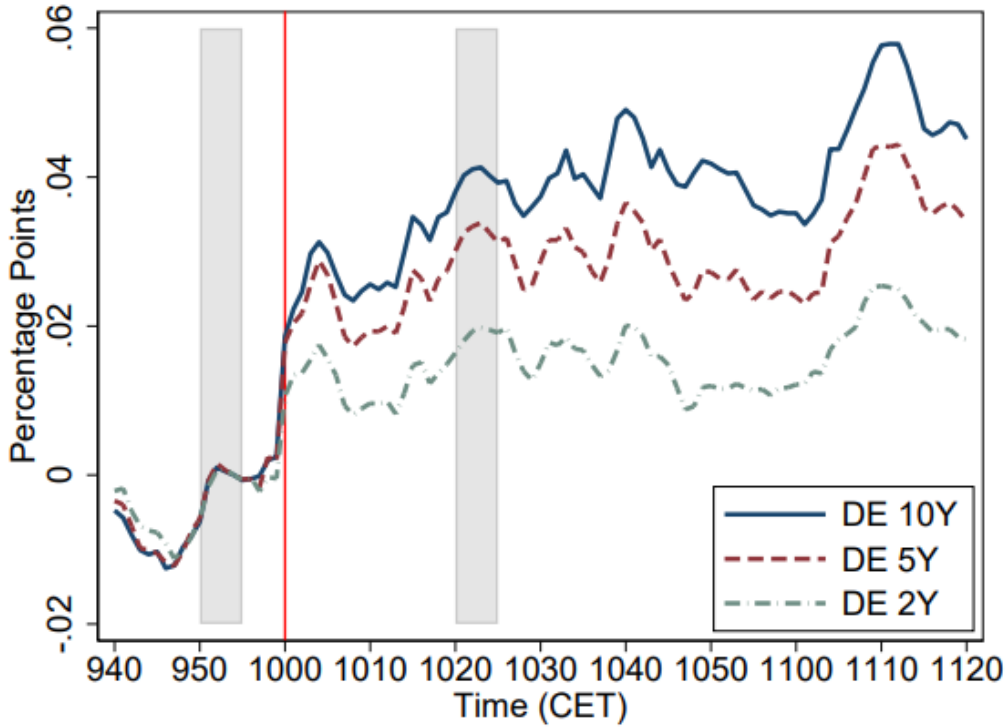


Notes: This figure plots median 10-year convenience yields and median 10-year CDS rates for each country in the main data set. Sample period: 2009-2023.

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

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

- *Method 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: $\Delta CY_{Destination,1-day,t} = \beta_0 + \beta_1 * \Delta CY_{DE,1-day,t} + \epsilon_t$

- *Method 3 (Robustness): 1-day convenience yield spillovers using Rigobon-Sack estimator*
  - $\Delta CY_{Destination,1-day,t} = \beta_0 + \beta_1 * \Delta CY_{DE,1-day,t} + \epsilon_t$
  - 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

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

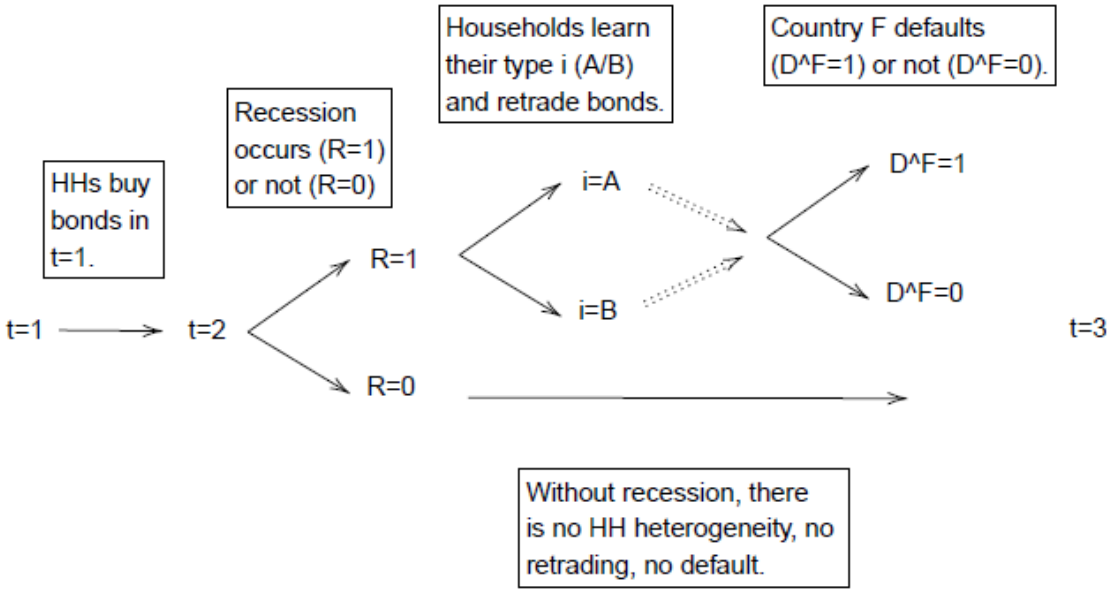
Notes: Each column displays coefficients from a separate regression: $\Delta Y_{Destination,t} = \beta_0 + \beta_1 * \Delta Y_{DE,t} + \epsilon_t$ *where the daily change in the German yield is instrumented with the 30-minute change. Robust standard errors are reported in parentheses.* $*p < 0.10$, $**p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

AGENDA

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

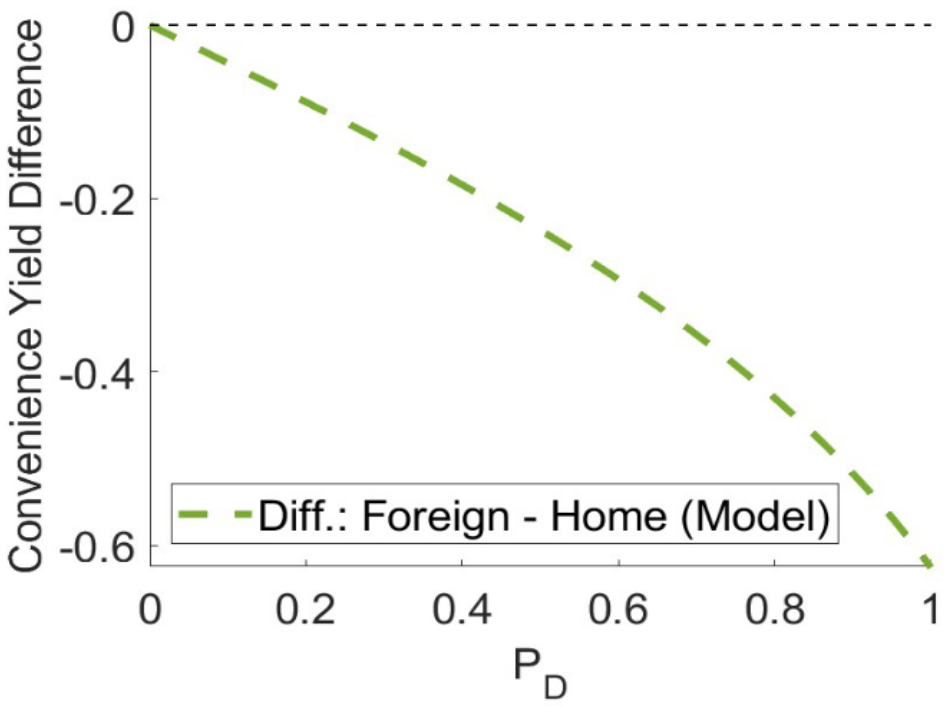
BRUNNERMEIER ET AL. (2024) WITH 2 COUNTRIES & DEFAULT

- 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

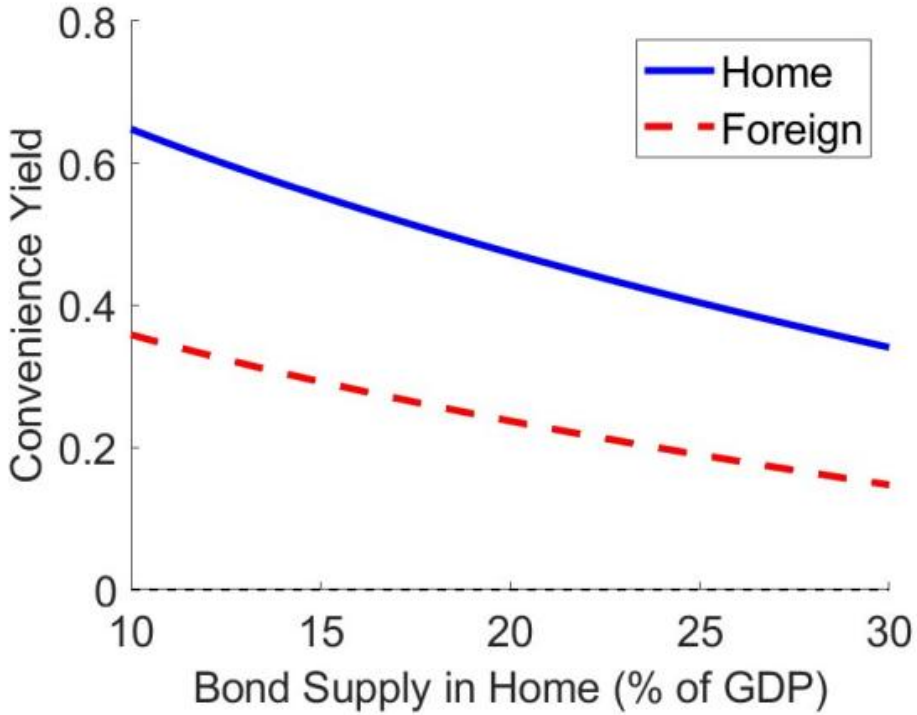
- Result (B): In response to an increase in debt supply in H, convenience yields decline (weakly) in both countries.

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

  → households are better insured

  → the value of further insurance falls

  → convenience yields decline

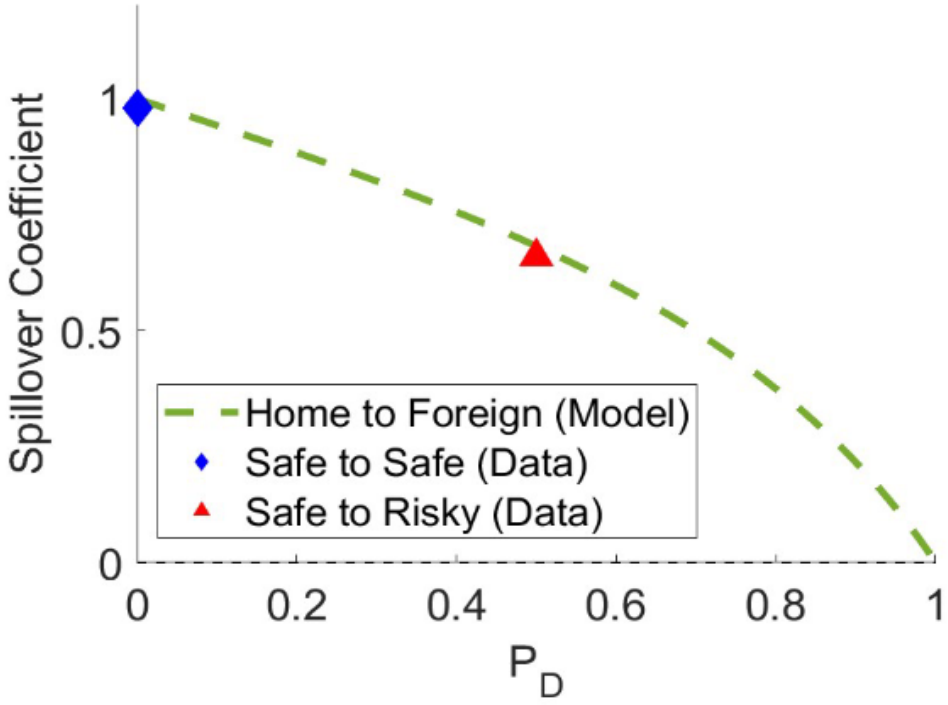


(B) The Role of Bond Supply (at *Home*)

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, EU, [FR], …)

- 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

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)
$\Delta CY_{DE} \times 1\{CDS_t > 1\}$											-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).