

NFCs' offshore debt issuances and within-company loans

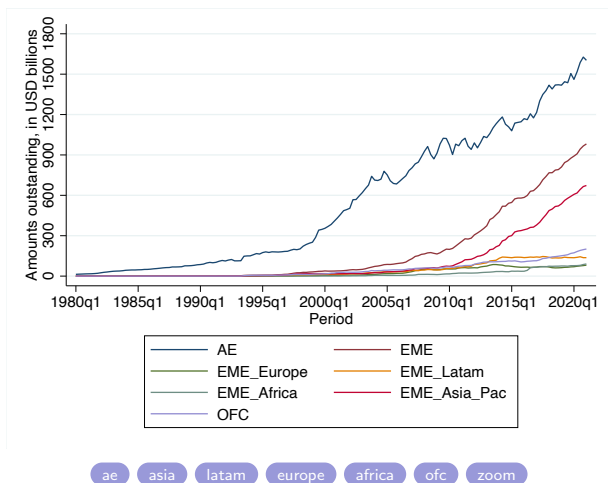
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IEA
Irish Economic Association

Offshore issuance



- ▶ Non-financial corporates (NFCs) have significantly increased issuing debt securities through their offshore affiliates e.g.

Motivation

- ▶ Offshore bond issuance has become more important than onshore bond issuance as a
 - ▶ Transmission channel of global liquidity **exposure**
- ▶ Risk profile of offshore debt is likely to be very different **channels**
 - ▶ The issuing affiliate channels funds to the parent company (Gruić et al., 2014; Gruić and Wooldridge, 2015)
- ▶ Portfolio investment masked as FDI

This paper

Aim

- ▶ Analysing the re-routing activity of offshore affiliates and its link with the economic environment

How?

- ▶ Co-movement between offshore debt issuance by foreign affiliates and foreign affiliates' lending to resident parents

Findings

- ▶ Re-routing external debt by foreign affiliates to their parents is prevalent
- ▶ The striking heterogeneity in re-routing activities
 - ▶ Institutional development
 - ▶ Access to the international capital market
 - ▶ Carry trade motivation

Literature/Contribution

- ▶ In the literature
 - ▶ Internal capital market for German MNC (Goldbach et al., 2021, Egger et al., 2014)
 - ▶ From multinationals' parent to foreign affiliate
 - ▶ From affiliate to other affiliate

Contribution

- ▶ From a foreign affiliate to its parent
- ▶ In the literature
 - ▶ A source of wider financial instability (Kim and Shin, 2021; Aldasoro et al., 2021)

Contribution

- ▶ The first to empirically analyze the link between the offshore issuance of NFCs and their within-company loans

Literature/Contribution

- ▶ In the literature,
 - ▶ Vast difference between portfolio investment based on nationality and on residency (Coppola et al., 2021; Pellegrino et al.; Galstyan et al., 2021)

Contribution,

- ▶ Investigating the drivers of this difference, i.e., offshore issuance

Analytical Framework

- ▶ Non-financial parent corporate is in country i , and its affiliate is in country j
- ▶ The parent company owns
 - ▶ technology $\theta \in [\underline{\theta}, \bar{\theta}]$
 - ▶ fixed assets K_i

$$K_i = E_i + D_i^E + D_{i,j}^I + D_{i,j}^{RE}$$

- ▶ E_i : equity
- ▶ D_i^E : external debt from third party
- ▶ $D_{i,j}^I$: debt from the affiliates
- ▶ $D_{i,j}^{RE}$: rerouted external debt from the affiliates

$$\pi_i = \pi_i^e - t_j \cdot \pi_j^t$$

- ▶ π_i^e and π_j^t are economic and taxable profit in parent i

Analytical Framework

$$\pi_i^e = f(\theta K_i(\theta)) - r_i \cdot K_i(\theta) - \tilde{r}_{i,j} \cdot b_{i,j}^{RE} \cdot K_i(\theta) - C^I(b_{i,j}^I) - C^E(b_i^E, b_{i,j}^{RE})$$

$$\pi_i^t = f(\theta K_i(\theta)) - r_i \cdot (D_{i,j}^I + D_i^E + D_{i,j}^{RE}) - \tilde{r}_{i,j} \cdot D_{i,j}^{RE}$$

- ▶ $b_{i,j}^I = \frac{D_{i,j}^I}{K_i(\theta)}$: internal debt from affiliate j to asset ratio in parent i
- ▶ $b_i^E = \frac{D_i^E}{K_i(\theta)}$: external to asset ratios in parent i
- ▶ $b_{i,j}^{RE} = \frac{D_{i,j}^{RE}}{K_i(\theta)}$: rerouted external debt from affiliate j to asset ratios in parent i
- ▶ r_i : the market interest rate of the country where the parent resides
- ▶ $\tilde{r}_{i,j}$: the interest rate differential between the country where the affiliate resides and the country where the parent resides.

Analytical Framework

- ▶ After examining the first-order condition for rerouted external debt,

$$b_{i,j}^{RE} = [t_i \cdot r_i - \frac{(\delta_i^E + \mu)}{\delta_i^E} \cdot (1 - t_i) \cdot \tilde{r}_{i,j}] \cdot \frac{1}{[\mu(1 + \frac{\delta_j^{RE}}{\delta_i^E} + \delta_j^{RE})]}$$

- ▶ δ_i^E : transaction costs faced by parent
- ▶ δ_j^{RE} : transaction costs faced by foreign affiliate

$$b_{i,j}^{RE} = \frac{\delta_i^E}{\delta_j^{RE}} \cdot b_i^E - \frac{(1 - t_i) \cdot \tilde{r}_{i,j}}{\delta_j^{RE}}$$

Data Source

Offshore Issuance

- ▶ Aldasoro, Hardy, and Tarashev (2021)
 - ▶ NFCs' nationalities: 85 countries
 - ▶ EME: 47
 - ▶ AE: 26
 - ▶ OFC: 12
 - ▶ Offshore locations: 90 countries
 - ▶ Time period (quarterly): 1980Q1 -2021Q1

Within-company loans

- ▶ Outward Debt Instruments Liabilities Positions from CDIS
- ▶ Foreign affiliates' lending to resident parents
 - ▶ Bilateral data with the issuer and holder information
 - ▶ Time period (annual): 2009- 2020

Empirical Approach

Re-routing of external debt

$$\ln(IOWDL_{ij,t}) = \alpha_{it} + \alpha_{jt} + \beta_1 \ln(OFFSHORE_{ij,t}) + \beta_2 \ln(DIST_{ij}) + \epsilon_{ij,t}$$

- ▶ $IOWDL_{ij,t}$: outward debt instruments liabilities position of NFC parent country i in offshore location j at the end of year t
- ▶ α_{it}, α_{jt} : NFC parent country time fixed effects, offshore location country time fixed effects
- ▶ $OFFSHORE_{ij,t}$: amounts outstanding offshore issued by the country of NFC parent i in offshore location j in the year t
- ▶ $DIST_{ij}$: geographic distance between NFC parent country, i , and offshore location country, j

Empirical Approach

Interaction terms

- ▶ Institutional quality
 - ▶ World governance indicators (WGI)

- ▶ Domestic financial market development
 - ▶ Financial development index (FD)
 - ▶ Stock market capitalization (STOCK)
 - ▶ Domestic credit to the private sector (CREDIT)
 - ▶ Corporate bond issuance volume (BOND)
 - ▶ Corporate bond average maturity (MATURITY)

Empirical Approach

Interaction terms

- ▶ Access to international financial market
 - ▶ International financial integration (IFI)
 - ▶ Chin-Ito capital openness index (KAOPEN)
 - ▶ Capital flow management controls index (KACONTROL)

- ▶ Taxation
 - ▶ Corporate income tax (CORPTAX)

- ▶ Risk block
 - ▶ Sharpe ratio (SHARPE)
 - ▶ Derivatives and options market (DERIV)

Results

The correlation between within-company loans and offshore issuance

IOWDL	OLS			PPML		
	All (1)	Advanced (2)	EmeDev (3)	All (4)	Advanced (5)	EmeDev (6)
Offshore	0.431*** (0.067)	0.261*** (0.057)	0.474** (0.177)	0.451*** (0.056)	0.358*** (0.067)	0.956*** (0.066)
Nationality × Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Location × Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,021	1,540	248	2,328	1,685	361
R-squared	0.746	0.822	0.807	0.7139	0.7239	0.8525

- Prevalence of re-lending of funds to the parent

Results

The effects of national factors on re-routing activities

	WGI (1)	FD (2)	STOCK (3)	CREDIT (4)	BOND (5)	MATURITY (6)
Above median subsample	0.115 (0.076)	0.394*** (0.080)	0.307*** (0.090)	0.306*** (0.080)	0.190*** (0.066)	0.380*** (0.058)
Below median subsample	0.627*** (0.068)	0.359*** (0.085)	0.574*** (0.081)	0.433*** (0.077)	0.532*** (0.077)	0.448*** (0.053)
Full sample	0.389*** (0.067)	0.416*** (0.068)	0.490*** (0.064)	0.411*** (0.065)	0.404*** (0.066)	0.437*** (0.067)
Full sample interaction term	-0.089*** (0.024)	-0.092 (0.291)	-0.029 (0.044)	-0.042 (0.079)	-0.159*** (0.046)	-0.002 (0.002)

- ▶ Better legal environment and institutions
- ▶ Higher corporate bond issuance volume

weaken the incentive to channel the funds to the parent

Results

The effects of national factors on re-routing activities

	IFI (1)	KAOPEN (2)	KACONTROL (3)	CORPTAX (4)	SHARPE (5)	DERIV (6)
Above median subsample	-0.156** (0.065)	-0.070 (0.092)	0.512*** (0.071)	0.525*** (0.079)	0.551*** (0.075)	0.413*** (0.085)
Below median subsample	0.633*** (0.067)	0.980*** (0.071)	0.221** (0.113)	0.391*** (0.079)	0.177** (0.080)	0.334*** (0.072)
Full sample	0.328*** (0.064)	0.452*** (0.069)	0.310*** (0.069)	0.480*** (0.062)	0.385*** (0.068)	0.413*** (0.067)
Full sample interaction term	-0.087*** (0.026)	-0.210*** (0.044)	0.846*** (0.235)	0.002 (0.004)	0.067*** (0.021)	0.000 (0.019)

- ▶ Higher international financial integration
- ▶ Greater capital account openness
- ▶ Lower borrowing cost

weaken the incentive to channel the funds to the parent

Empirical Approach

Debt structure

$$\frac{OFFSHORE_{ij,t}}{(OFFSHORE + ONSHORE)_{i,t}} = \alpha_i + \tau_t + \ln(DIST_{ij})\beta + I_{ij,t}\eta + F_{ij,t}\gamma + A_{ij,t}\delta + T_{ij,t}\mu + R_{ij,t}\theta + \epsilon_{ij,t}$$

- ▶ α_i, τ_t : NFC parent country fixed effects, time fixed effects
- ▶ $I_{ij,t}$: institutional development block including, including WGI
- ▶ $F_{ij,t}$: domestic financial market development block, including FD, STOCK, CREDIT, BOND, and MATURITY
- ▶ $A_{ij,t}$: access to the international capital market block, including IFI and KACONTROL
- ▶ $T_{ij,t}$: the taxation block, including CORPTAX
- ▶ $R_{ij,t}$: the risk block matrix, including $\text{vol}(\pi)$, $\text{vol}(\text{ERC})$, and DERIV

Results

Debt structure

OFFSHORE _{SH}	(1)	(2)	(3)	(4)	(5)
DIST	-0.352*** (0.086)	-0.312*** (0.097)	-0.366*** (0.101)	-0.312*** (0.103)	-0.283*** (0.105)
WGI	-0.239*** (0.041)				
FD		-1.387*** (0.270)			
STOCK				-0.068 (0.049)	
CREDIT			-0.228*** (0.063)		
BOND			-0.185*** (0.036)		-0.065** (0.032)
MATURITY	-0.003 (0.002)	-0.004** (0.002)	-0.003* (0.002)	-0.002 (0.001)	-0.002 (0.002)
IFI				-0.536*** (0.142)	-0.564*** (0.169)
KACONTROL		0.746*** (0.155)	0.824*** (0.165)	0.237** (0.099)	0.164 (0.107)
CORPTAX	-0.021*** (0.006)	-0.013*** (0.005)	-0.013*** (0.005)	-0.031*** (0.009)	-0.034*** (0.010)
vol(π)	0.001 (0.001)	0.002* (0.001)	0.002** (0.001)	-0.004 (0.002)	0.003** (0.001)
vol(ERC)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
DERIV					-0.107* (0.059)
Constant	3.461*** (0.771)	3.097*** (0.872)	3.551*** (0.915)	3.089*** (0.926)	2.885*** (0.936)
Observations	27,783	22,910	21,519	16,858	18,376
R-squared	0.038	0.039	0.041	0.050	0.058

Results

Debt structure, Advanced countries

OFFSHORE _{SH}	(1)	(2)	(3)	(4)	(5)
DIST	-0.352*** (0.086)	-0.312*** (0.097)	-0.366*** (0.101)	-0.312*** (0.103)	-0.283*** (0.105)
WGI	-0.239*** (0.041)				
FD		-1.387*** (0.270)			
STOCK				-0.068 (0.049)	
CREDIT			-0.228*** (0.063)		
BOND			-0.185*** (0.036)		-0.065** (0.032)
MATURITY	-0.003 (0.002)	-0.004** (0.002)	-0.003* (0.002)	-0.002 (0.001)	-0.002 (0.002)
IFI				-0.536*** (0.142)	-0.564*** (0.169)
KACONTROL		0.746*** (0.155)	0.824*** (0.165)	0.237** (0.099)	0.164 (0.107)
CORPTAX	-0.021*** (0.006)	-0.013*** (0.005)	-0.013*** (0.005)	-0.031*** (0.009)	-0.034*** (0.010)
vol(π)	0.001 (0.001)	0.002* (0.001)	0.002** (0.001)	-0.004 (0.002)	0.003** (0.001)
vol(ERC)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
DERIV					-0.107* (0.059)
Constant	3.461*** (0.771)	3.097*** (0.872)	3.551*** (0.915)	3.089*** (0.926)	2.885*** (0.936)
Observations	27,783	22,910	21,519	16,858	18,376
R-squared	0.038	0.039	0.041	0.050	0.058

Results

Debt structure, Emerging countries

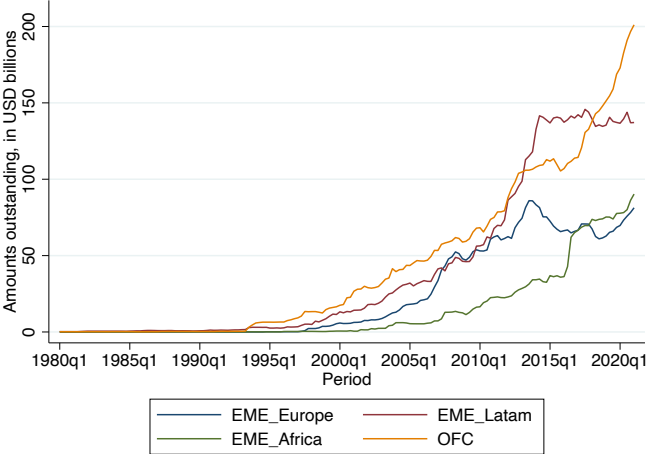
OFFSHORE _{SH}	(1)	(2)	(3)	(4)	(5)
DIST	-0.419** (0.164)	-0.445** (0.190)	-0.489** (0.197)	-0.344** (0.142)	-0.500** (0.225)
WGI	-0.330*** (0.080)				
FD		-2.074*** (0.513)			
STOCK				-0.125 (0.091)	
CREDIT			-0.311*** (0.118)		
BOND			-0.254*** (0.070)		-0.111 (0.068)
MATURITY	-0.002 (0.003)	-0.001 (0.003)	-0.000 (0.003)	-0.002 (0.002)	0.001 (0.003)
IFI				-0.533*** (0.192)	-0.532** (0.224)
KACONTROL		0.967*** (0.262)	1.090*** (0.278)	0.473** (0.193)	0.399* (0.219)
CORPTAX	-0.022** (0.009)	-0.013 (0.009)	-0.013* (0.008)	-0.030** (0.013)	-0.033** (0.014)
vol(π)	0.005 (0.004)	0.006 (0.004)	0.006 (0.004)	-0.007 (0.008)	0.008* (0.005)
vol(ERC)	0.000** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000** (0.000)
DERIV					-0.183* (0.093)
Constant	3.690** (1.439)	4.008** (1.695)	4.431** (1.759)	3.066** (1.260)	4.276** (2.002)
Observations	10,062	8,679	8,289	7,197	7,648
R-squared	0.037	0.041	0.043	0.045	0.058

Conclusion

- ▶ Incentive to channel the funds to the parent for advanced, emerging and developing countries
- ▶ Importance of questioning and monitoring the FDI
- ▶ A double-edged sword
 - ▶ Promote the growth of the domestic market
 - ▶ Increase systemic risk and financial instability
- ▶ Important factors in re-routing activities of offshore affiliates
 - ▶ Institutional features and regulations
 - ▶ Financial integration
 - ▶ Carry trade motivation
- ▶ Highlights the factors determining the weight of offshore relative to onshore issuance
 - ▶ Institutional quality and security of the legal environment
 - ▶ Deepness of the investor base
 - ▶ Capital controls
 - ▶ Risk level of countries

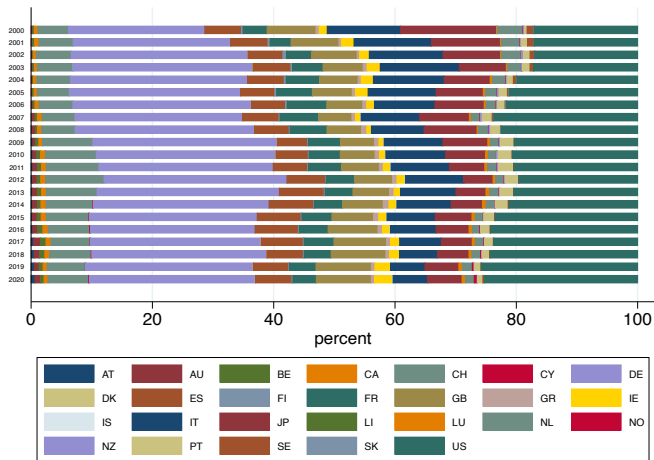
Thank you!

EME without Asia



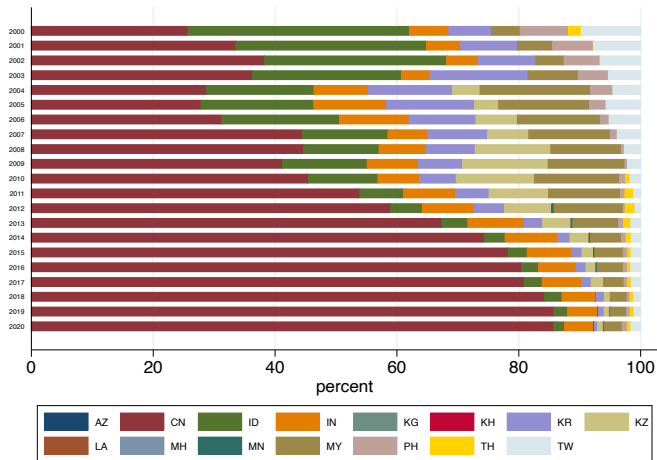
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Advanced Economies



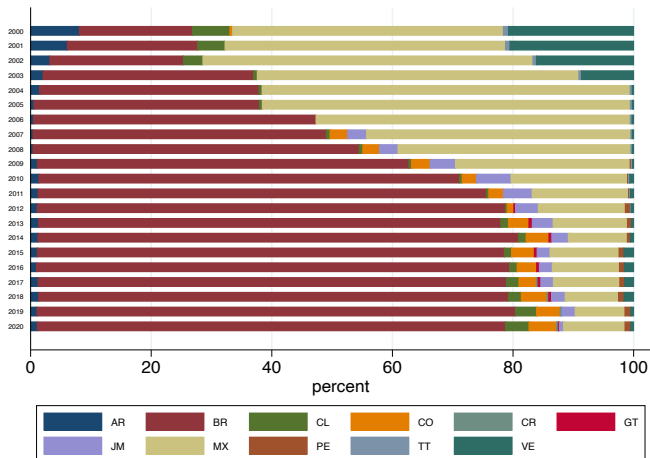
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Emerging Asia/Pacific



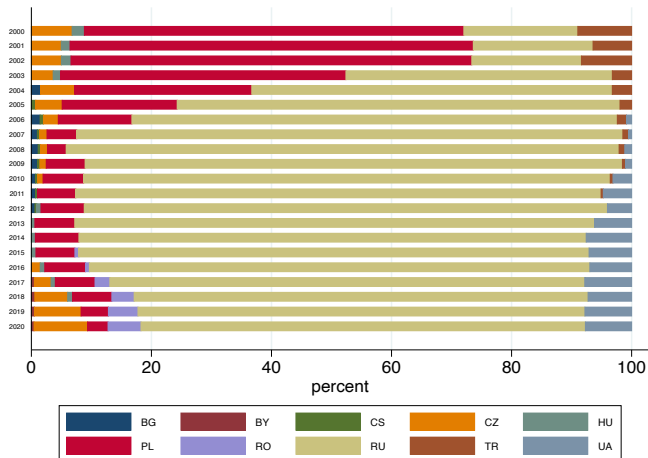
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Emerging Latin America



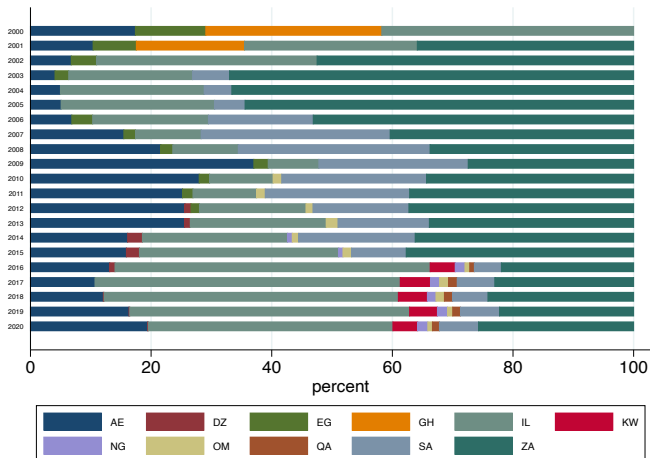
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Emerging Europe

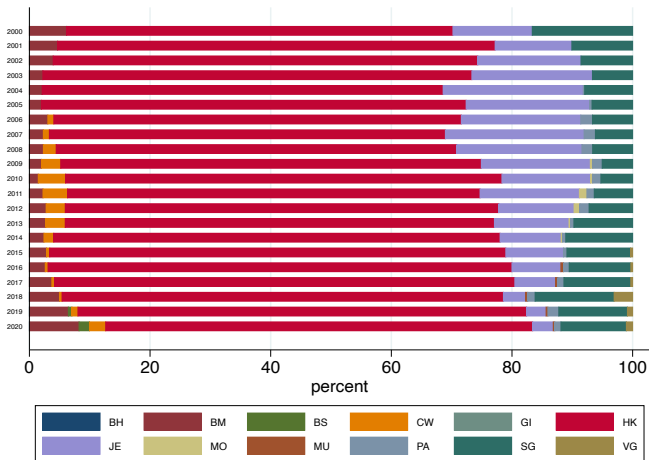


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Emerging Africa



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Example

- ▶ Russia's metals company, EN+ Group International Public Joint-Stock Company, established a financing subsidiary in Ireland called Rusal Capital Designated Activity
- ▶ In 2019, foreign investors bought 1.6 billion USD amounts of bonds issued by this company

Residency-based statistics:

- ▶ recorded as a corporate bond investment in Ireland

Nationality-based statistics:

- ▶ recorded as a corporate bond investment in Russia

THE IRISH TIMES

Markets

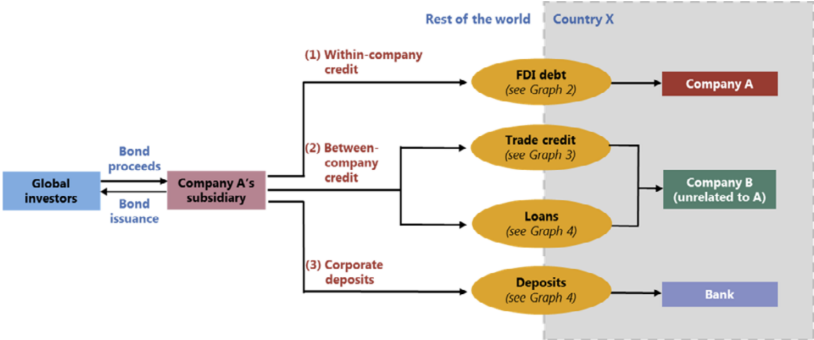
Rusal's IFSC vehicle caught up in US sanctions move

Moody's and Fitch have now pulled their ratings on Rusal and its Irish funding vehicle

Rusal is among a wave of Russian companies to have set up Irish special purpose vehicles in recent years to issue dollar-denominated bonds to fund their operations, using 1997 tax laws designed to make the International Financial Services Centre (IFSC) an attractive place for "tax neutral" international debt securitisation.

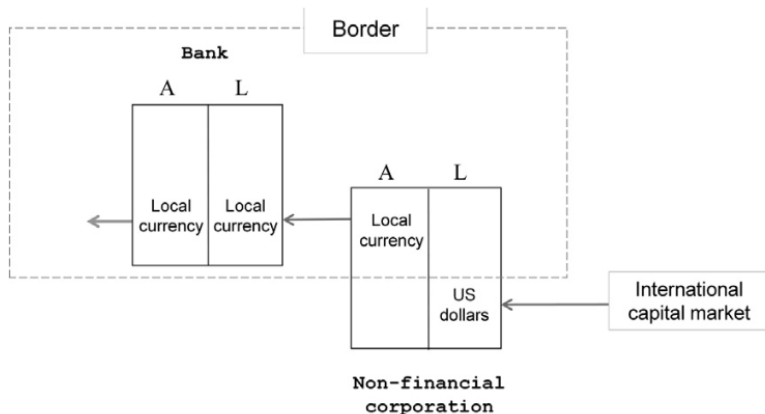
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Channels



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Exposure



Note:Transmission of Global Liquidity through Offshore Debt Issuance. Source: Chung et al. (2013).

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Asset/Liability vs. directional presentations

Country's direct investment assets are equal to

Resident parents' equity in and lending to foreign affiliates
plus
Resident affiliates' equity in and lending to foreign parents

Country's outward investment is equal to

Resident parents' equity in and lending to foreign affiliates
minus
Foreign affiliates' equity in and lending to resident parents

Country's direct investment liabilities are equal to

Foreign parents' equity in and lending to resident affiliates
plus
Foreign affiliates' equity in and lending to resident parents

Country's inward investment is equal to

Foreign parents' equity in and lending to resident affiliates
minus
Resident affiliates' equity in and lending to foreign parents

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Cost Function

$$C^I(b_{i,j}^I) = \frac{\eta}{2}(b_{i,j}^I)^2 K_i(\theta)$$

$$C^E(b_i^E, b_{i,j}^{RE}) = \left[\frac{\mu}{2}(b_i^E + b_{i,j}^{RE})^2 + \frac{\delta_i^E}{2}(b_i^E)^2 + \frac{\delta_j^{RE}}{2}(b_{i,j}^{RE})^2 \right] K_i(\theta)$$

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