

# Market Access and Debt Maturity: Firm Borrowing Behavior and Crisis Effects

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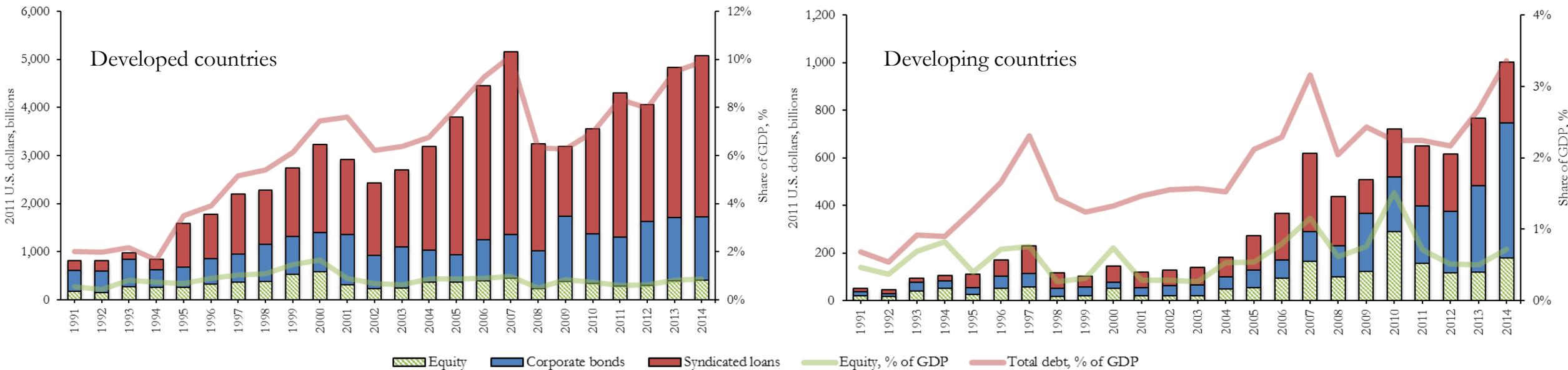
NOVEMBER 9-10, 2017



# Introduction

- Corporate bond and syndicated loan markets around the world – Key sources of external finance
  - Around the world: developed and developing countries
  - Debt issuance activity has grown 5 times faster than GDP (1991-2014) – \$5.5 trillion in 2014

Total Amount Raised in Equity, Corporate Bond, and Syndicated Loan Markets



# Introduction

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- ❑ Four different debt markets: domestic and international (cross-border) corporate bond and syndicated loan markets
- ❑ Beyond the study of only one country and one debt market (literature)
- ❑ Important because financial markets are increasingly globalized
- ❑ But not perfectly integrated: financial frictions - **Focus on debt maturity**
  - ❑ Market segmentation (La Porta et al. (1997), Karolyi and Stulz (2003), Pirinsky and Wang (2006), Japelli and Pagano (2008), Bekaert et al. (2011))
  - ❑ Some firms would alter their financing composition when moving across markets,
  - ❑ While others would be constrained by the market they can access

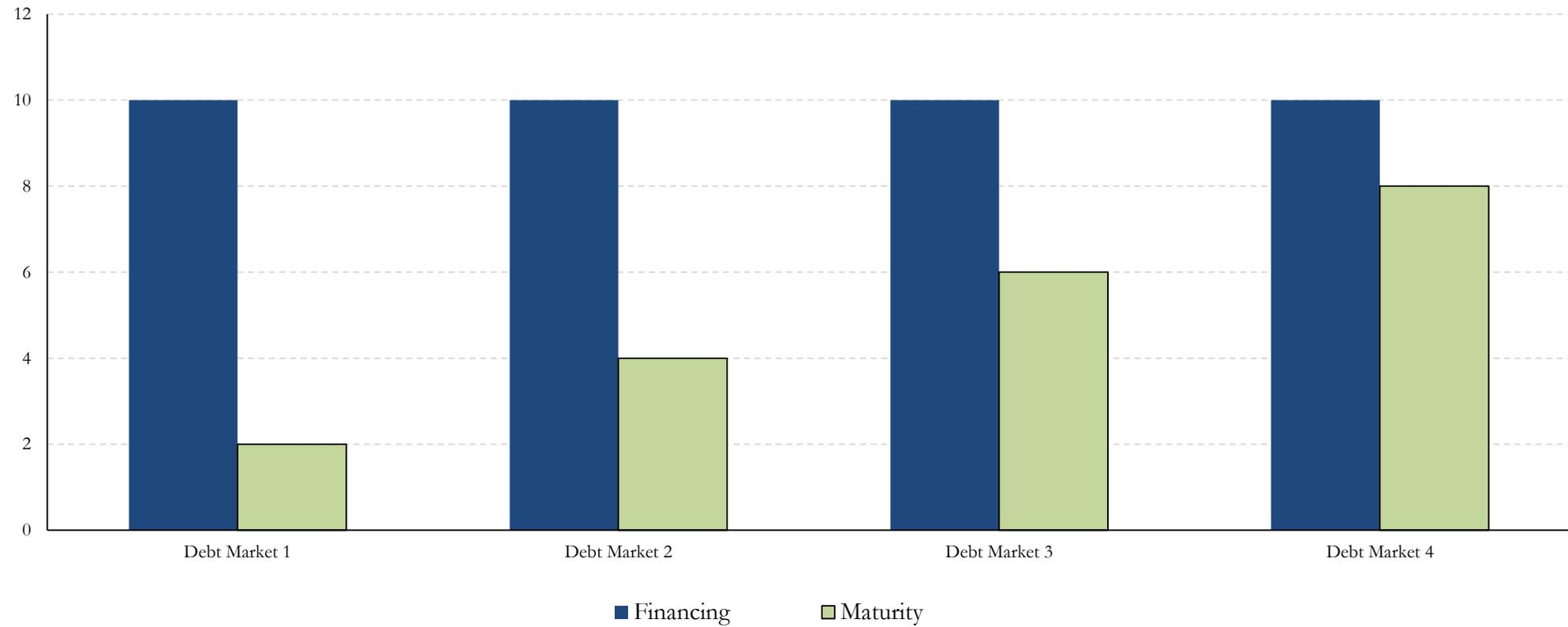
# Introduction

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- ❑ **This paper:**
  - ❑ Simultaneously analyze debt dynamics across four different debt markets around the world
  - ❑ First part of the paper: what extent different debt markets provide financing at different maturity terms
  - ❑ Second, we analyze how firms react when crises hit specific markets
    - ❑ While some firms will be constrained to the market in crisis
    - ❑ Some other firms might be able to counteract the negative supply-side shocks by seeking financing in other markets

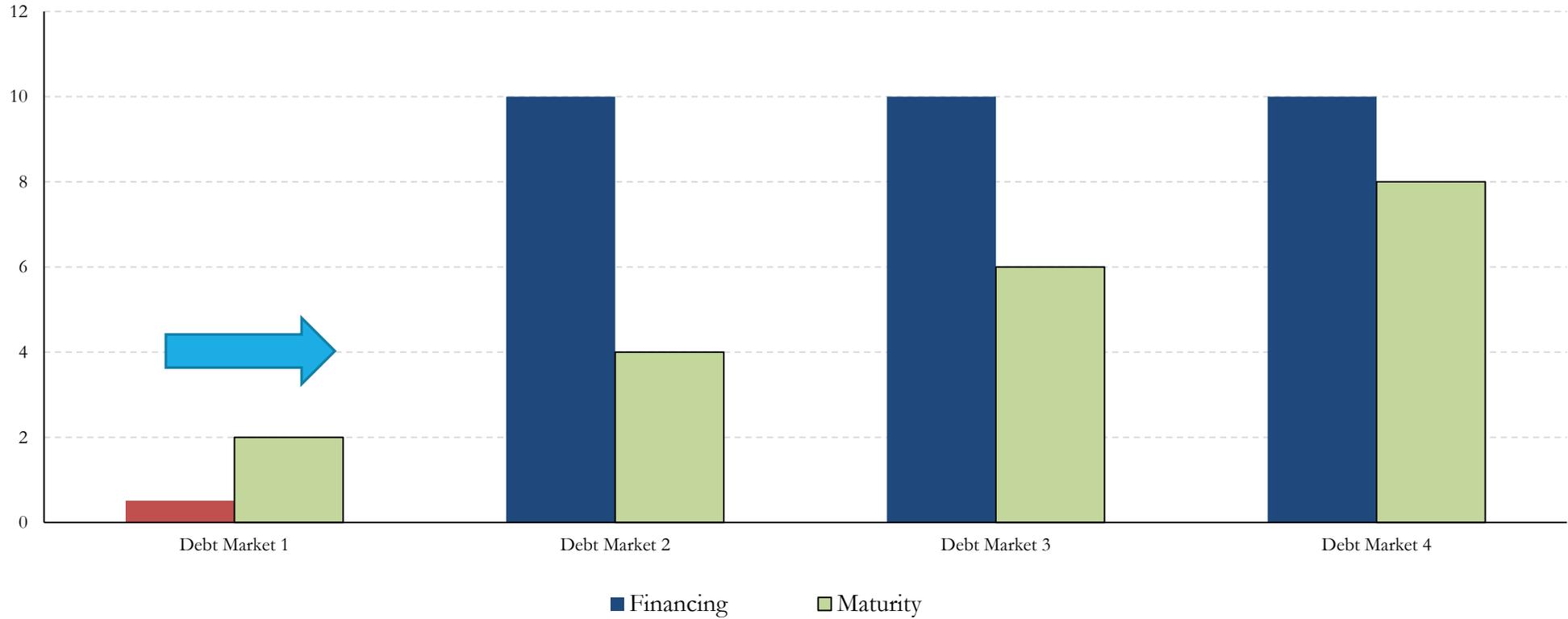
# Introduction

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# Introduction

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# Introduction

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- **Data** for capital raising activity from SDC Platinum
  - 1991-2014
  - 41 developed countries
  - 37 developing countries
  - 57,950 (non-financial) firms
  - 267,382 issuances
    - 108,184 bonds
      - 82,249 domestic / 25,935 international
    - 159,198 syndicated loans
      - 83,689 domestic / 75,509 international

# Introduction

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- Why focus on debt maturity? This work is part of a larger agenda on understanding the extent of long-term finance over the world: G20, IMF, World Bank
  - Benefits of long-term debt: finance long-term investments, reduce roll-over and liquidity risk associated with costly crises
  - Reliance on short-term debt can lead to higher financial constraints during crises. Important real effects (Almeida et al., 2011)
  - A lot of policy discussions to understand debt maturity behavior
  - But, little evidence exists on the actual maturity of firms' liabilities. Especially at the issuance level

# Literature

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1. Cross-sectional determinants of debt maturity, demand side of capital
  - ❑ Agency cost, commitment, growth opportunities, asymmetric information, liquidation risk, taxation -> firm attributes that affect maturity
  - ❑ Predictions for US firms
  - ❑ Balance sheet data: miss most of the action within the long-term range
  - ❑ Issuance data: focus on a single market, typically bonds
  - ❑ This paper
    - ❑ Supply side of capital (type of market) also key for maturity, control for demand factors
    - ❑ More complete markets give very different perspective of firm and country financing

# Literature

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2. Time series behavior of debt maturity: debt maturity shortens during crises
  - ❑ Again, focus on single markets or balance sheet information
  - ❑ Debt from balance sheets shortens because firms do not issue or issue new shorter debt
  - ❑ Crises do not need to involve equally all parts of the financial systems: firms can move across markets
  - ❑ This paper
    - ❑ Debt maturity changes depending on the relative importance of each market as crises evolve

# Literature

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3. Bond-loan substitution to withstand credit-supply shocks, controlling for demand
  - ❑ Focus on U.S., listed firms using one type of debt (for real purposes)
  - ❑ Our paper
    - ❑ All firms from around the world issuing domestic and international bonds and loans
    - ❑ Evidence of firm-level substitution across four different markets
    - ❑ Evidence of how firms react to domestic and external financial crises
    - ❑ Show effect of switches: on maturity and on other firms

# Outline

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- ❑ Debt composition and maturity at issuance
- ❑ Changes during crises
- ❑ Differences across firms
- ❑ Conclusions

# Outline

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- Debt composition and maturity at issuance
- Changes during crises
- Differences across firms
- Conclusions

# Debt Composition and Maturity at Issuance

## Corporate Bonds and Syndicated Loans

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### Summary Statistics

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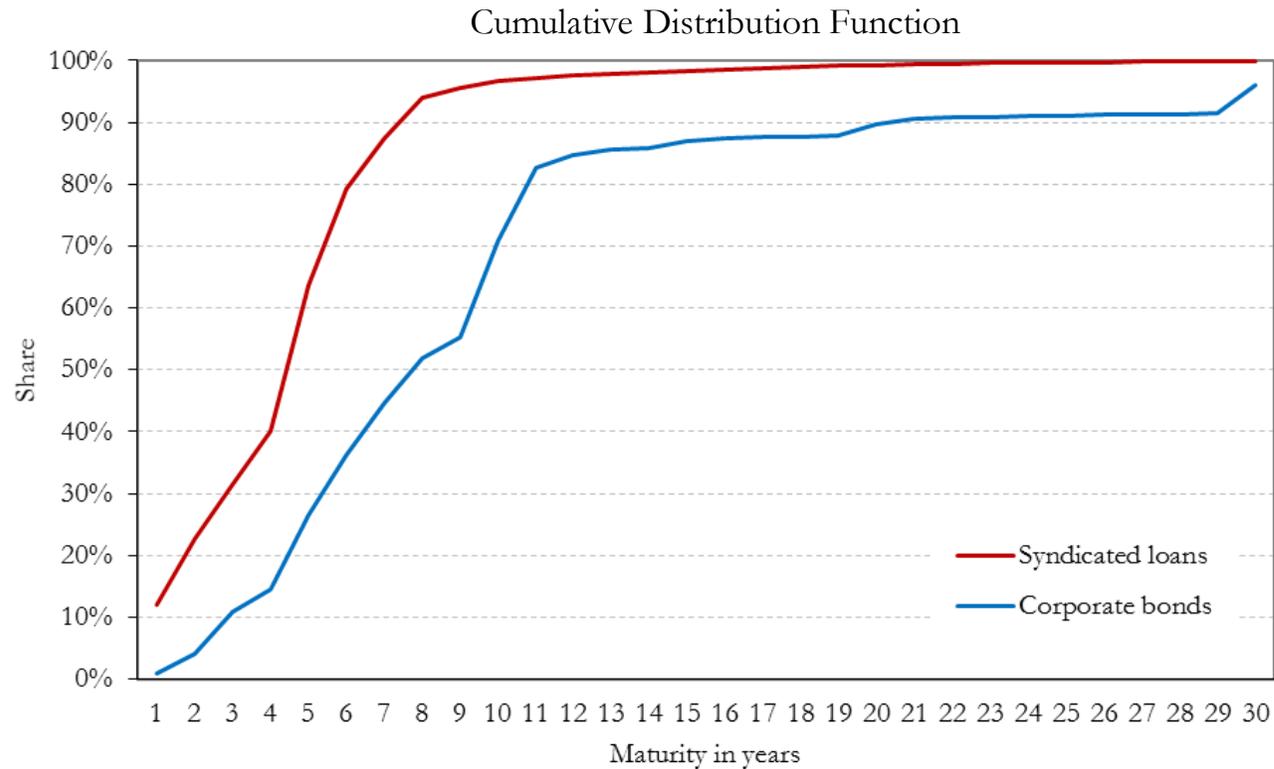
	No. of firms ( a )	No. of issuances ( b )	Amount raised (billions) ( c )	Average maturity ( d )
<b>Total debt</b>	<b>57,950</b>	<b>267,382</b>	<b>68,037</b>	<b>6.6</b>
Corporate bonds	25,213	108,184	22,311	9.8
Syndicated loans	41,746	159,198	45,727	5.1

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# Debt Composition and Maturity at Issuance

## Corporate Bonds and Syndicated Loans

### Maturity of Corporate Bonds and Syndicated Loans Developed Countries



Average Maturity	
Bonds	S. Loans
10.1	4.9

# Debt Composition and Maturity at Issuance

## Corporate Bonds and Syndicated Loans

### Maturity of Corporate Bonds and Syndicated Loans Developed Countries

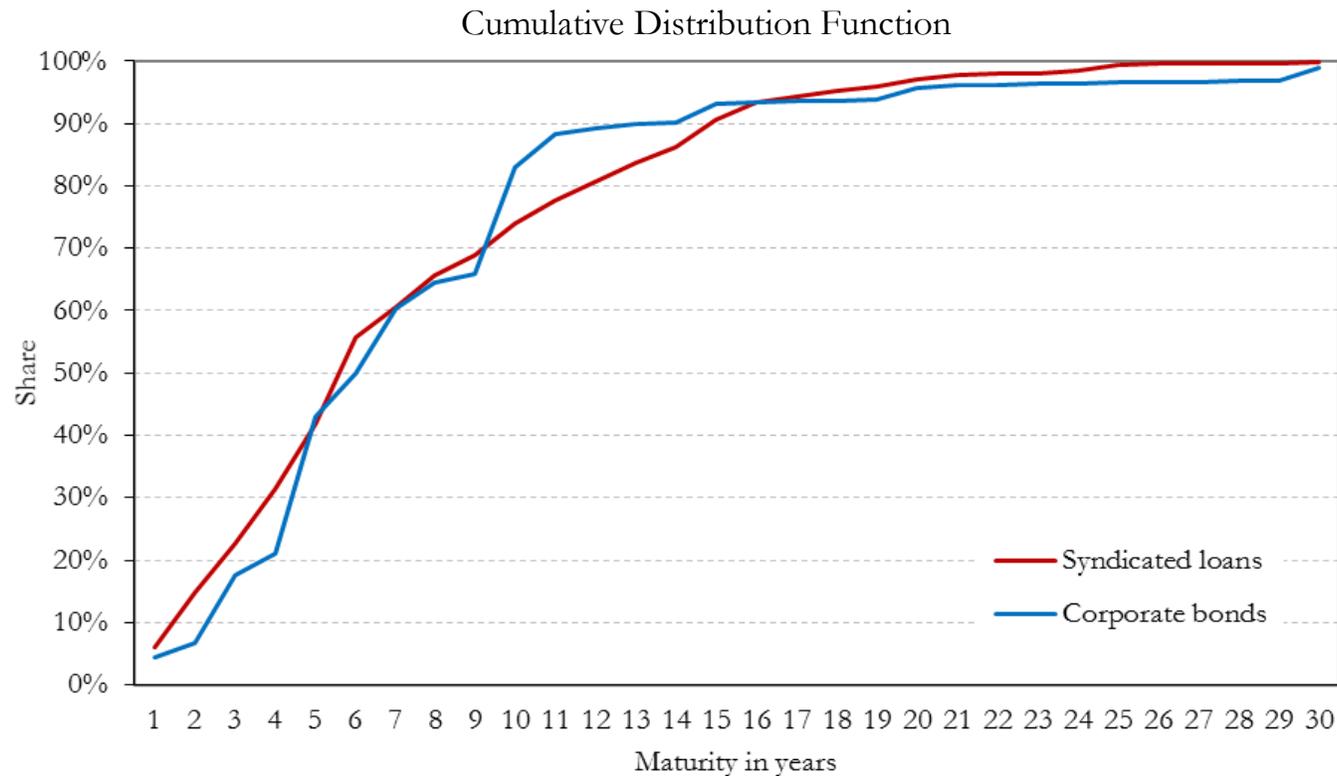
	Year dummies (a)	Country-year dummies (b)	Firm fixed effects and year dummies (c)	Firm fixed effects and country-year dummies (d)
Corporate bonds	2.88 *** [0.09]	4.68 *** [0.11]	5.28 *** [0.08]	5.40 *** [0.08]
Use 2: general corporate purposes		-0.79 *** [0.05]	-0.40 *** [0.04]	-0.33 *** [0.04]
Use 3: others		-2.03 *** [0.10]	-1.76 *** [0.09]	-1.84 *** [0.09]
Use 4: project finance and LT investments		5.00 *** [0.12]	1.82 *** [0.20]	1.85 *** [0.20]
Use 5: refinancing and capital structure management		-0.32 *** [0.04]	-0.27 *** [0.04]	-0.23 *** [0.04]
No. of observations	234,487	234,487	234,487	234,487
No. of clusters	47,767	47,767	47,767	47,767
R-squared	0.078	0.230	0.148	0.159

Firm Level

# Debt Composition and Maturity at Issuance

## Corporate Bonds and Syndicated Loans

### Maturity of Corporate Bonds and Syndicated Loans Developing Countries



Average Maturity	
Bonds	S. Loans
8.0	7.7

# Debt Composition and Maturity at Issuance

## Corporate Bonds and Syndicated Loans

### Maturity of Corporate Bonds and Syndicated Loans Developing Countries

	Year dummies	Country-year dummies	Firm fixed effects and year dummies	Firm fixed effects and country-year dummies
	(a)	(b)	(c)	(d)
Corporate bonds	-0.60 *** [0.14]	1.18 *** [0.13]	1.87 *** [0.19]	1.95 *** [0.20]
Use 2: general corporate purposes		1.02 *** [0.17]	0.98 *** [0.25]	0.87 *** [0.23]
Use 3: others		1.78 *** [0.24]	0.94 *** [0.30]	1.01 *** [0.28]
Use 4: project finance and LT investments		5.67 *** [0.21]	2.95 *** [0.33]	2.93 *** [0.33]
Use 5: refinancing and capital structure management		0.79 *** [0.19]	0.90 *** [0.26]	0.83 *** [0.26]
No. of observations	27,864	27,864	27,864	27,864
No. of clusters	9,274	9,274	9,274	9,274
R-squared	0.019	0.278	0.040	0.110

Firm Level

# Debt Composition and Maturity at Issuance

## Domestic and International Markets

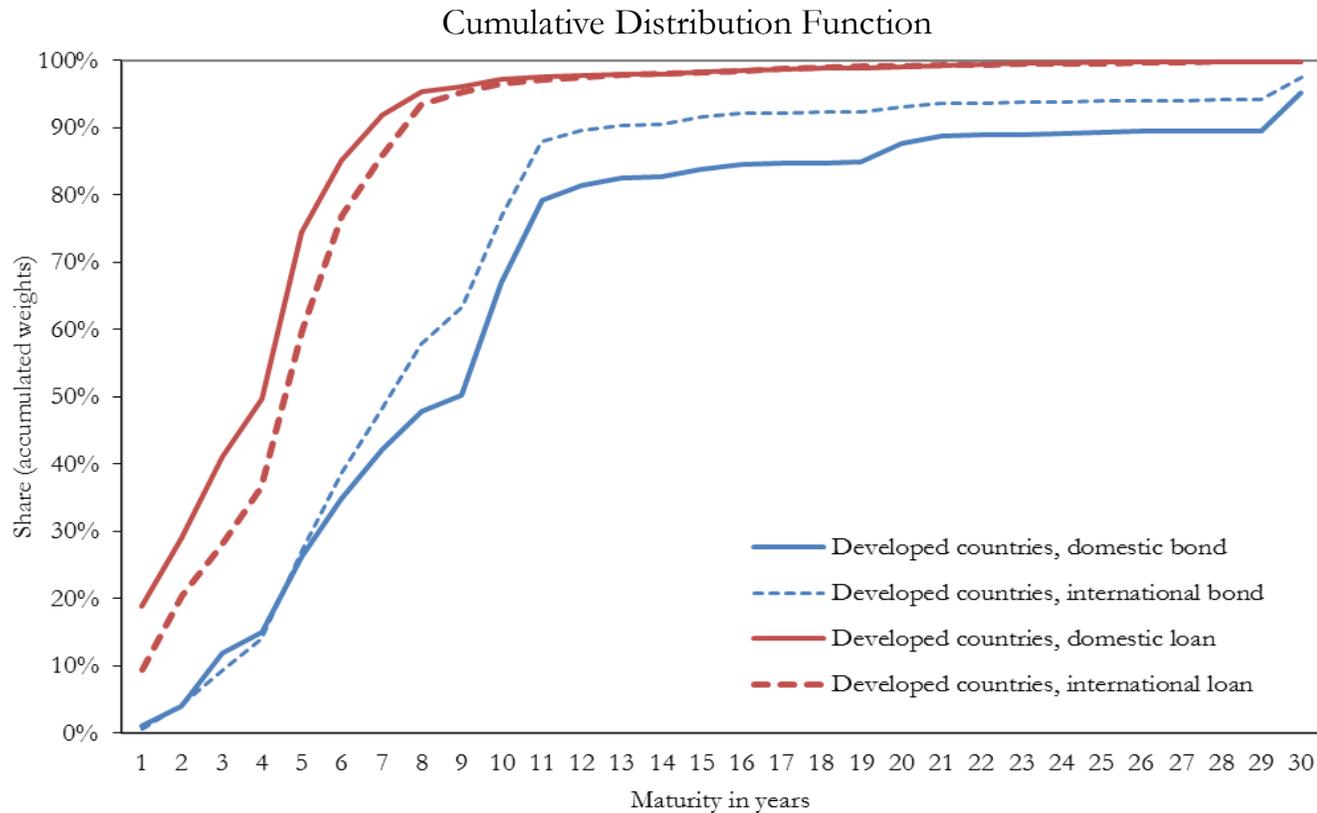
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- ❑ Distinction between domestic and international markets important under globalization
- ❑ These markets can provide different funding options for firms that participate
  - ❑ Funds at different maturities
  - ❑ Also funds of different sizes and currencies (not analyzed here, but controlled for)
- ❑ Domestic and international markets might provide complementary services

# Debt Composition and Maturity at Issuance

## Domestic and International Markets

### Maturity of Domestic and International Issuances Developed Countries



#### Average Maturity

##### Corporate bonds

Domestic markets (a)	International markets (b)	Amount raised internationally, share of the total (c)
10.8	9.0	38.4%

##### Syndicated loans

(a)	(b)	(c)
4.4	5.2	65.5%

# Debt Composition and Maturity at Issuance

## Domestic and International Markets

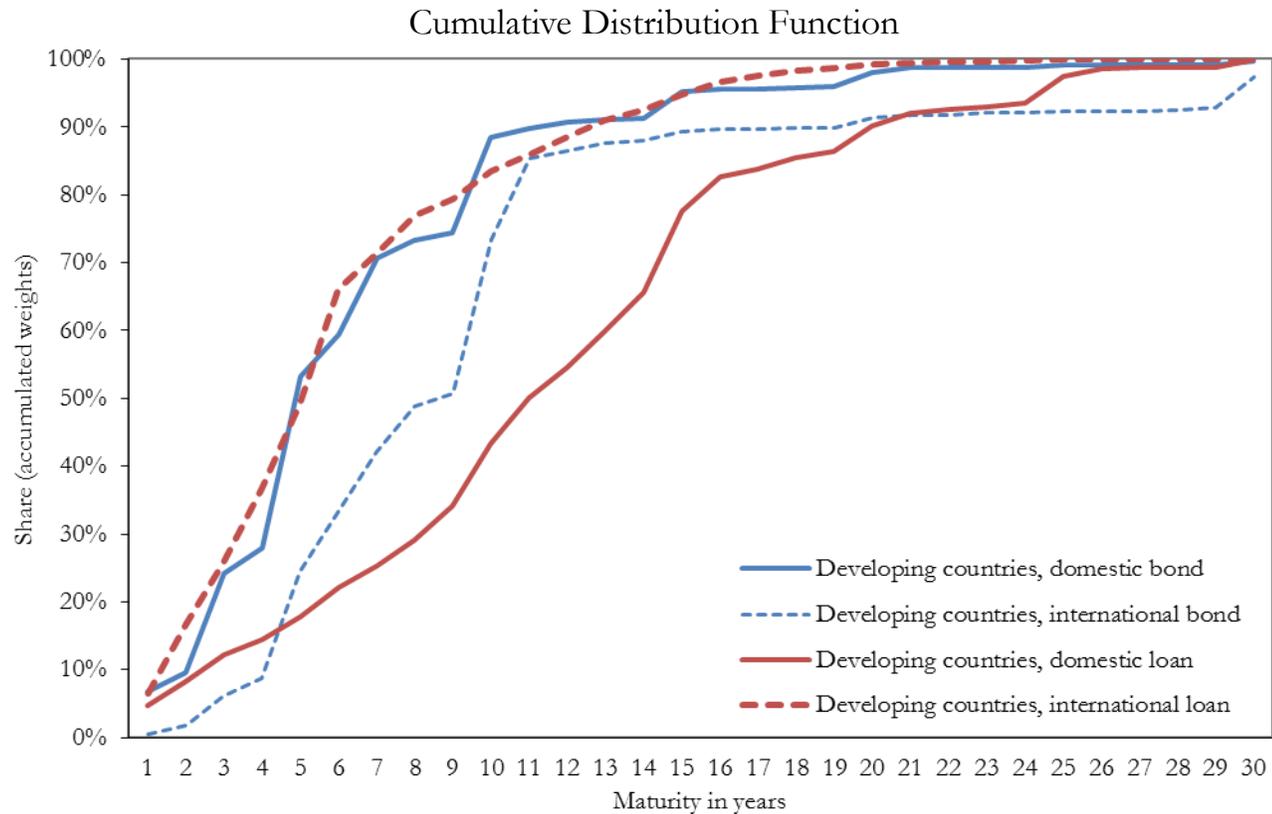
### Maturity of Domestic and International Syndicated Loans Developed Countries

Omitted category: domestic loan	Year dummies (a)	Country-year dummies (b)	Firm fixed effects and year dummies (c)	Firm fixed effects and country-year dummies (d)
International loans <i>(International loans vs domestic loans)</i>	1.10 *** [0.04]	0.21 *** [0.03]	-0.14 *** [0.05]	-0.04 [0.05]
Domestic bonds <i>(Domestic bonds vs domestic loans)</i>	3.44 *** [0.11]	5.11 *** [0.14]	5.48 *** [0.10]	5.64 *** [0.10]
International bonds <i>(International bonds vs domestic loans)</i>	3.45 *** [0.13]	3.97 *** [0.12]	4.47 *** [0.11]	4.67 *** [0.11]
Use of the proceeds dummies	No	Yes	Yes	Yes
Foreign currency dummy	Yes	Yes	Yes	Yes
Floating rate dummy	Yes	Yes	Yes	Yes
No. of observations	234,486	234,486	234,486	234,486
No. of clusters	47,767	47,767	47,767	47,767
R-squared	0.085	0.232	0.150	0.161
Difference in coefficients				
International bonds vs domestic bonds	0.00	-1.14 ***	-1.01 ***	-0.97 ***
International bonds vs international loans	2.34 ***	3.76 ***	4.61 ***	4.71 ***
Domestic bonds vs international loans	2.34 ***	4.90 ***	5.61 ***	5.68 ***

# Debt Composition and Maturity at Issuance

## Domestic and International Markets

### Maturity of Domestic and International Issuances Developing Countries



#### Average Maturity

##### A. Corporate bonds

Domestic markets (a)	International markets (b)	Amount raised internationally, share of the total (c)
6.1	9.9	30.3%

##### B. Syndicated loans

(a)	(b)	(c)
11.6	6.3	76.7%

# Debt Composition and Maturity at Issuance

## Domestic and International Markets

### Maturity of Domestic and International Syndicated Loans Developing Countries

Omitted category: domestic loan	Year dummies (a)	Country-year dummies (b)	Firm fixed effects and year dummies (c)	Firm fixed effects and country-year dummies (d)
International loans <i>(International loans vs domestic loans)</i>	-2.44 *** [0.19]	-2.13 *** [0.20]	-1.61 *** [0.30]	-1.53 *** [0.31]
Domestic bonds <i>(Domestic bonds vs domestic loans)</i>	-3.13 *** [0.18]	-1.01 *** [0.20]	-0.62 ** [0.30]	-0.48 [0.31]
International bonds <i>(International bonds vs domestic loans)</i>	-0.82 *** [0.31]	0.96 *** [0.27]	1.78 *** [0.38]	1.95 *** [0.38]
Use of the proceeds dummies	No	Yes	Yes	Yes
Foreign currency dummy	Yes	Yes	Yes	Yes
Floating rate dummy	Yes	Yes	Yes	Yes
No. of observations	27,864	27,864	27,864	27,864
No. of clusters	9,274	9,274	9,274	9,274
R-squared	0.058	0.300	0.060	0.128
Difference in coefficients				
International bonds vs domestic bonds	2.31 ***	1.97 ***	2.40 ***	2.42 ***
International bonds vs international loans	1.62 ***	3.09 ***	3.38 ***	3.47 ***
Domestic bonds vs international loans	-0.69 ***	1.12 ***	0.98 ***	1.05 ***

# Debt Composition and Maturity at Issuance

## Domestic and International Markets

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- ❑ The differences in maturity across markets remain even after controlling for time-varying country-specific factors, firm-level fixed effects, currency, type of rate (fixed vs. floating), and use of the proceeds raised
- ❑ At least part of the differences in maturity over time, across firms and countries lies on differences in the access to markets

# Outline

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- Debt composition and maturity at issuance
- Changes during crises
- Differences across firms
- Conclusions

# Changes during Crises: GFC

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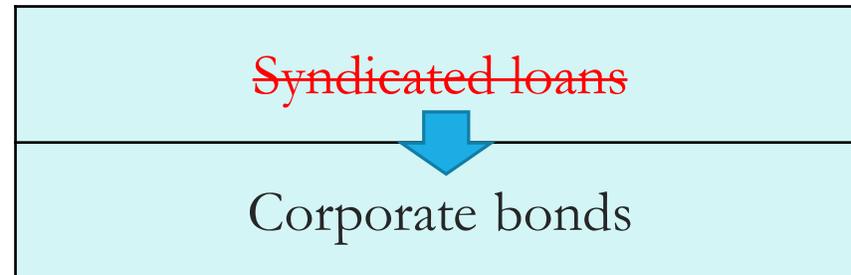
- The relative importance of each market varies over time, especially during market-specific shocks

Domestic loans	International loans
Domestic bonds	International bonds

# Changes during Crises: GFC

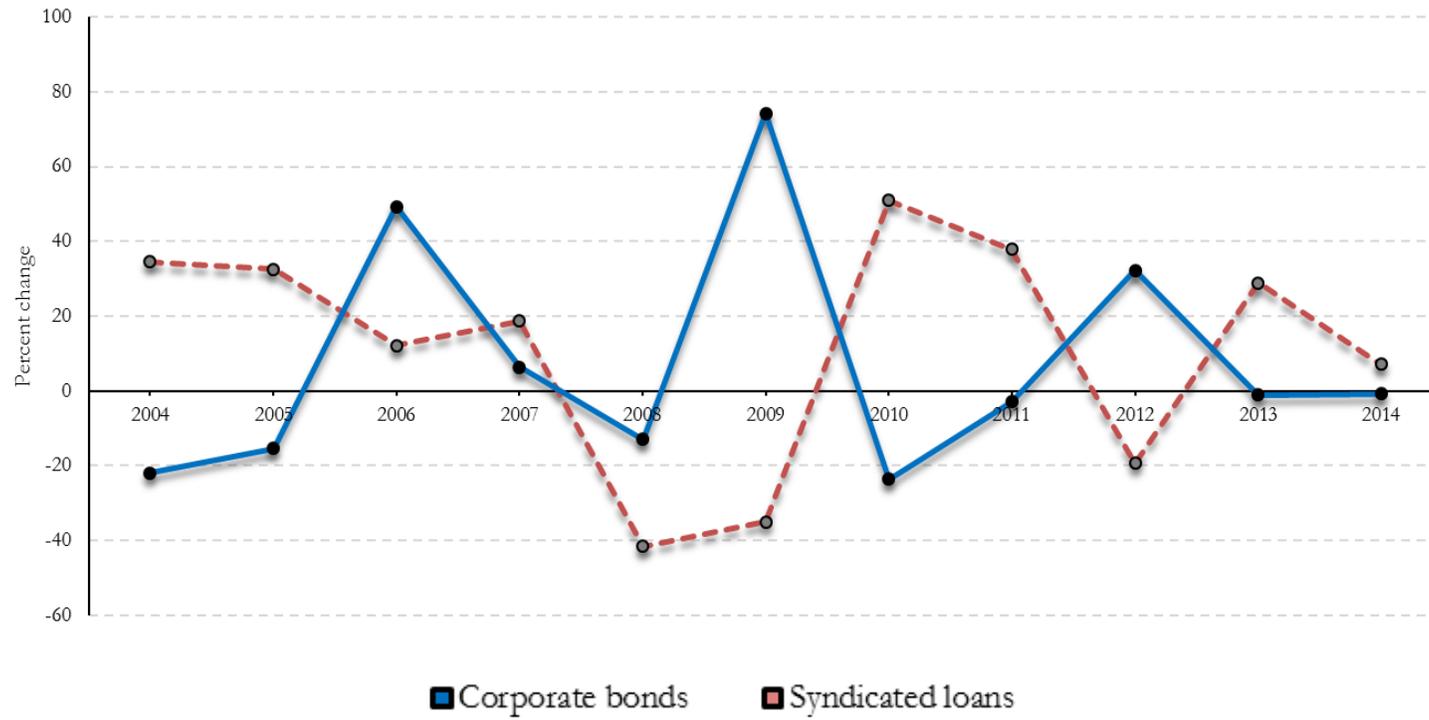
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- ❑ The relative importance of each market varies over time, especially during market-specific shocks - GFC



# Changes during Crises: GFC

Composition of Debt Issuance over Time, Corporate Bonds and Syndicated Loans  
Loans ↓ : Bonds ↑



# Changes during Crises: GFC

<b>Debt Market Choice</b>				
<b>Corporate Bonds versus Syndicated Loans</b>				
Dummy(dit)=1 if the firm issued a bond in quarter t, dummy (dit)=0 if the firm issued a loan in quarter t				
	<b>Developed countries</b>		<b>Developing countries</b>	
Pre-crisis mean (dit)	0.24		0.48	
	Country fixed effects	Firm fixed effects	Country fixed effects	Firm fixed effects
Period	( a )	( b )	( c )	( d )
GFC (2008-09)	0.03*** [0.01]	0.05*** [0.01]	0.05*** [0.02]	0.10*** [0.03]
Post-crisis (2010-14)	0.02*** [0.00]	0.04*** [0.01]	0.08*** [0.01]	0.17*** [0.02]
No. of observations	92,509	33,018	14,476	3,376
No. of clusters	35,046	4,555	7,493	624

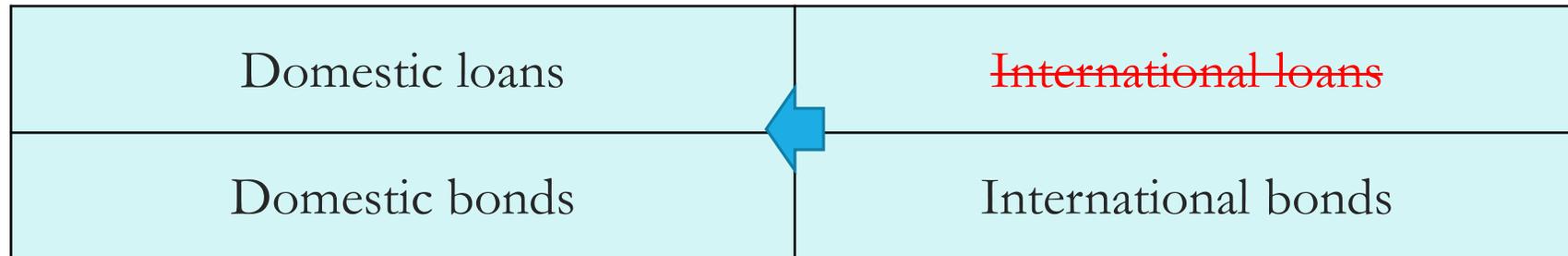
# Changes during Crises: GFC

<b>Debt Market Choice</b>				
<b>Corporate Bonds versus Syndicated Loans</b>				
	Dummy(dit)=1 if the firm issued a bond in quarter t, dummy (dit)=0 if the firm issued a loan in quarter t			
	<b>Developed countries</b>		<b>Developing countries</b>	
Pre-crisis mean (dit)	0.24		0.48	
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No. of observations	92,509	33,018	14,476	3,376
No. of clusters	35,046	4,555	7,493	624

# Changes during Crises: GFC

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- The relative importance of each market varies over time, especially during market-specific shocks - GFC
  - Developing countries



# Changes during Crises: GFC

## Debt Market Choice

### Domestic versus International Corporate Bonds

Dummy (dit)=1 if the firm issued a domestic bond in quarter t,  
dummy (dit)=0 if the firm issued an international bond in quarter t

	Developed countries		Developing countries	
	Country fixed effects	Firm fixed effects	Country fixed effects	Firm fixed effects
Pre-crisis mean (dit)	0.70		0.71	
Period	(a)	(b)	(c)	(d)
GFC (2008-09)	0.06*** [0.01]	-0.003 [0.02]	0.09*** [0.01]	0.25*** [0.03]
Post-crisis (2010-14)	-0.11*** [0.01]	-0.15*** [0.01]	0.08*** [0.01]	0.07** [0.04]
No. of observations	27,596	8,838	8,410	1,360
No. of clusters	10,985	1,531	3,945	250

# Changes during Crises: GFC

## Debt Market Choice

### Domestic versus International Syndicated Loans

Dummy (dit)=1 if the firm issued a domestic loan in quarter t,  
dummy (dit)=0 if the firm issued an international loan in quarter t

	Developed countries		Developing countries	
	Country fixed effects (a)	Firm fixed effects (b)	Country fixed effects (c)	Firm fixed effects (d)
Pre-crisis mean (dit)	0.60		0.12	
GFC (2008-09)	0.04*** [0.01]	0.02 [0.01]	0.31*** [0.03]	0.22*** [0.02]
Post-crisis (2010-14)	-0.05*** [0.01]	-0.13*** [0.01]	0.34*** [0.02]	0.30*** [0.02]
No. of observations	67,927	17,658	5,454	489
No. of clusters	28,842	489	3,652	107

# Changes during Crises: GFC

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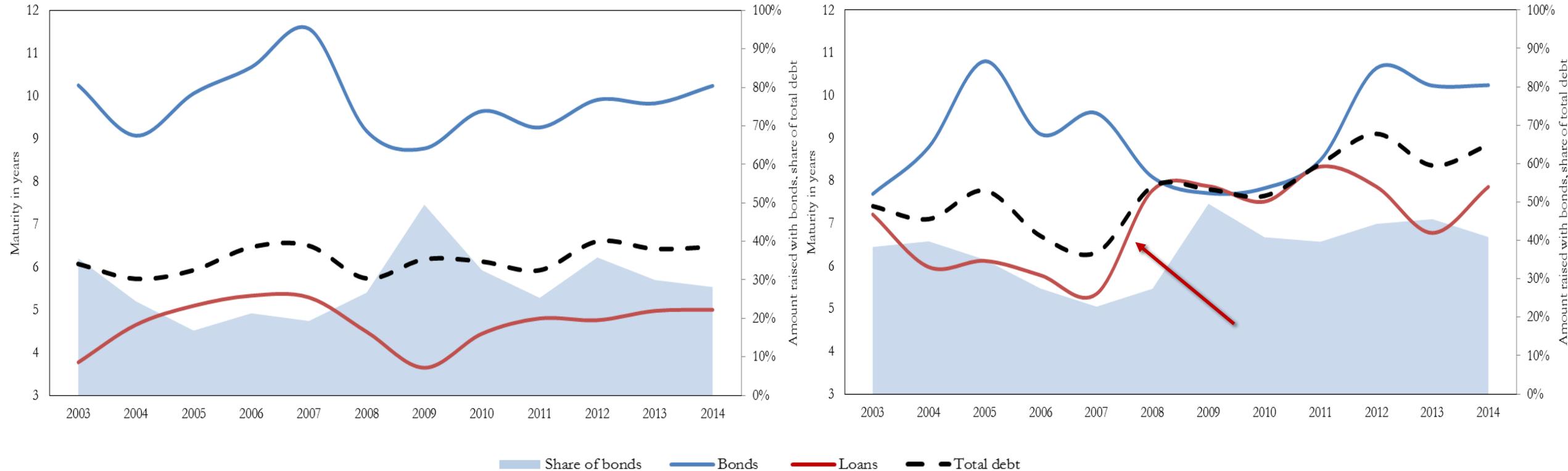
- ❑ Firms with demand for credit during crises switch one type of debt for another, evidencing negative credit supply shocks in the markets they are moving away
- ❑ The literature does not distinguish demand from supply effects
- ❑ To do this type of analysis: several markets at the same time and at the issuance level

# Changes during Crises: GFC

## Effects on Maturity Bonds and Loans, Total Debt

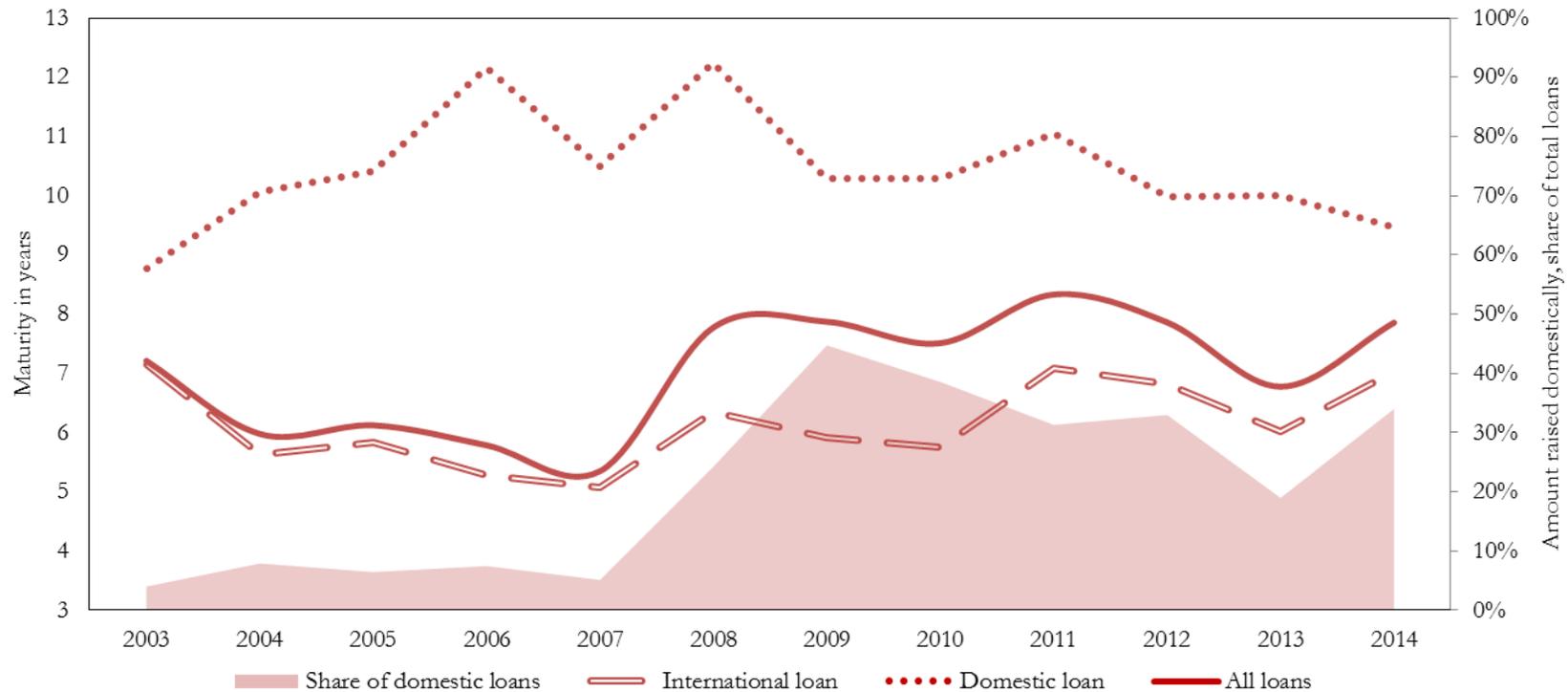
### Developed Countries

### Developing Countries



# Changes during Crises: GFC

**Effects on Maturity**  
Domestic and International Loans  
Developing Countries



# Changes during Crises: GFC

## Developed Countries, Maturity of Debt Issuances

Country fixed effects							
	Total debt (a)	Corporate bonds (b)	Syndicated loans (c)	Domestic bonds (d)	International bonds (e)	Domestic syndicated loans (f)	International syndicated loans (g)
GFC (2008-09)	-0.16 [0.12]	-1.27 *** [0.25]	-0.81 *** [0.10]	-0.96 *** [0.31]	-1.62 *** [0.33]	-0.64 *** [0.10]	-0.88 *** [0.14]
Post-crisis (2010-14)	0.26 *** [0.08]	-0.61 *** [0.21]	0.07 [0.07]	0.02 [0.25]	-0.87 *** [0.32]	0.17 [0.10]	0.00 [0.08]
No. of observations	91,913	27,041	68,316	17,907	9,542	40,840	28,166
No. of clusters	34,716	10,680	29,075	7,435	4,801	18,863	14,199
Firm fixed effects							
	Total debt (a)	Corporate bonds (b)	Syndicated loans (c)	Domestic bonds (d)	International bonds (e)	Domestic syndicated loans (f)	International syndicated loans (g)
GFC (2008-09)	-0.16 [0.21]	-0.89 *** [0.29]	-0.71 *** [0.07]	-0.91 ** [0.44]	-0.57 [0.45]	-0.05 [0.09]	-0.93 *** [0.10]
Post-crisis (2010-14)	0.68 *** [0.17]	0.40 [0.28]	0.52 *** [0.08]	0.06 [0.32]	0.95 ** [0.45]	1.16 *** [0.25]	0.34 *** [0.07]
No. of observations	92,174	27,299	68,318	18,068	9,601	40,838	28,166
No. of clusters	34,736	10,700	29,075	7,449	4,805	18,861	14,199

# Changes during Crises: GFC

## Developing Countries, Maturity of Debt Issuances

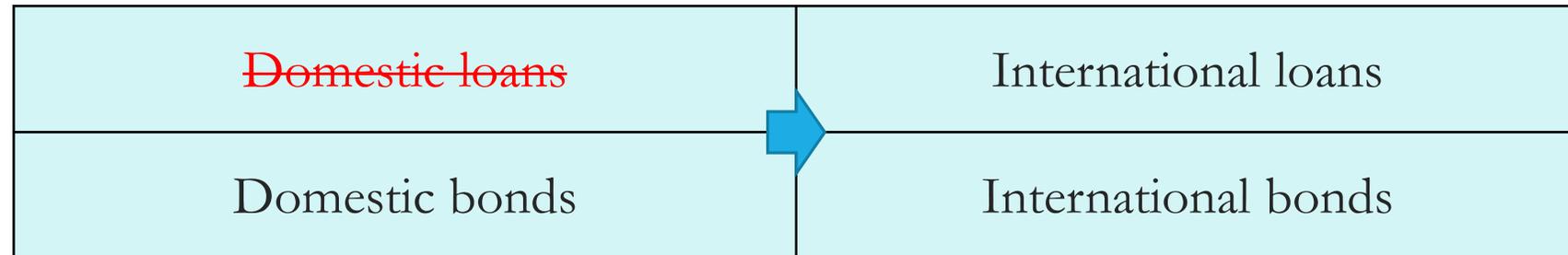
Δ Domestic Loans

	Country fixed effects						
	Total debt	Corporate bonds	Syndicated loans	Domestic bonds	International bonds	Domestic syndicated loans	International syndicated loans
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
GFC (2008-09)	0.43 [0.31]	-1.07*** [0.40]	1.27*** [0.38]	-1.53*** [0.44]	-2.40*** [0.85]	0.64 [1.19]	0.45 [0.32]
Post-crisis (2010-14)	0.79** [0.33]	-0.57 [0.54]	1.28*** [0.32]	-1.76*** [0.59]	0.61 [0.80]	-0.11 [1.12]	0.74** [0.30]
No. of observations	14,489	8,516	6,169	7,176	1,419	2,000	4,220
No. of clusters	7,512	4,025	4,148	3,392	906	1,596	2,695
	Firm fixed effects						
	Total debt	Corporate bonds	Syndicated loans	Domestic bonds	International bonds	Domestic syndicated loans	International syndicated loans
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
GFC (2008-09)	-0.30 [0.29]	-1.41** [0.63]	0.12 [0.27]	-1.97*** [0.69]	-4.53*** [1.07]	0.54 [1.03]	-0.17 [0.26]
Post-crisis (2010-14)	1.40** [0.61]	0.41 [1.04]	0.81*** [0.28]	-1.30* [0.72]	0.06 [1.41]	-0.08 [1.19]	0.88*** [0.30]
No. of observations	14,498	8,523	6,171	7,182	1,420	1,998	4,221
No. of clusters	7,512	4,025	4,148	3,392	906	1,594	2,695

# Changes during Crises: Domestic Banking Crises

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2. Domestic banking crises, another supply-side shock



# Changes during Crises: Domestic Banking Crises

	<b>Corporate Bonds versus Syndicated Loans</b>		<b>Domestic versus International Loans</b>	
	Dependent variable: dummy=1 if the firm issued a bond in quarter t, dummy=0 if the firm issued a loan in quarter t		Dependent variable: dummy=1 if the firm issued a domestic loan in quarter t, dummy=0 if the firm issued an international loan in quarter t	
Mean (dit):	0.41		0.62	
	Country and year dummies	Firm fixed effects and year dummies	Country and year dummies	Firm fixed effects and year dummies
Period	( a )	( b )	( c )	( d )
Domestic banking crises	0.14*** [0.01]	0.15*** [0.01]	-0.18*** [0.01]	-0.19*** [0.02]
No. of observations	111,814	47,643	64,099	19,243
No. of clusters	40,526	6,294	29,176	3,730

# Changes during Crises: Domestic Banking Crises

## Dependent variable: maturity of debt issuances

Period	Country-year dummies				
	Total debt (a)	Corporate bonds (b)	Syndicated loans (c)	Domestic loans (d)	International loans (f)
Domestic banking crises	0.38*** [0.11]	0.02 [0.15]	-0.13 [0.12]	-0.27* [0.14]	0.06 [0.17]
No. of observations	111,557	50,769	64,001	38,873	26,279
No. of clusters	40,376	17,769	29,554	19,211	14,121
Period	Firm fixed effects and year dummies				
	(a)	(b)	(c)	(d)	(f)
Domestic banking crises	0.35** [0.16]	0.32 [0.21]	-0.35*** [0.10]	-0.38* [0.19]	-0.41*** [0.14]
No. of observations	111,686	50,891	64,560	38,878	26,280
No. of clusters	40,390	17,783	29,427	19,211	14,121

# Outline

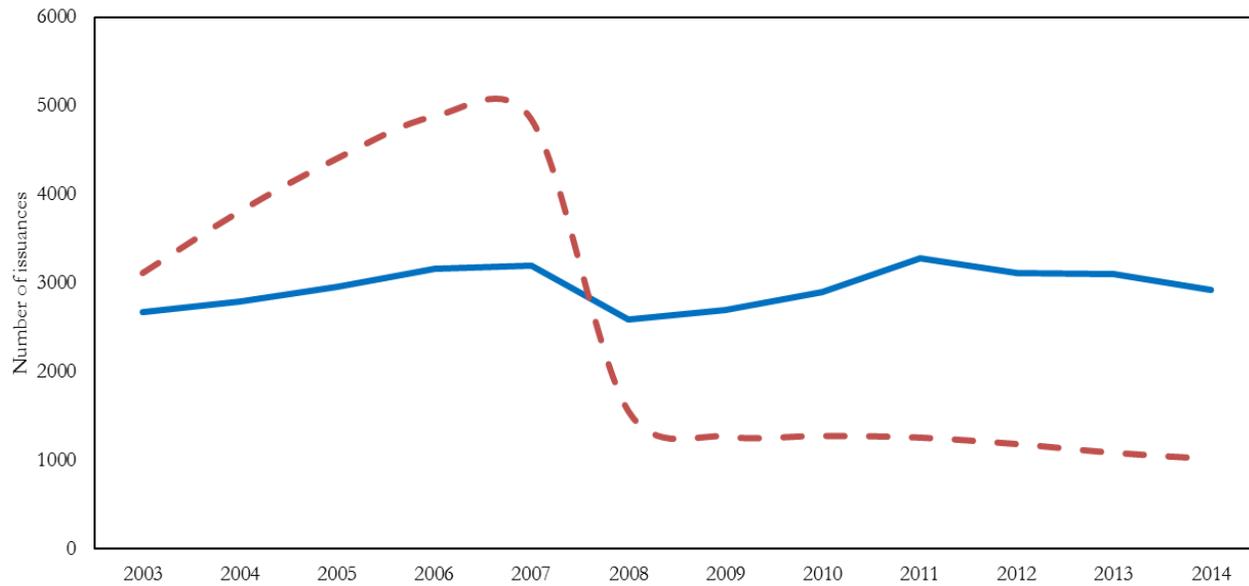
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- Debt composition and maturity at issuance
- Changes during crises
- Differences across firms
- Conclusions

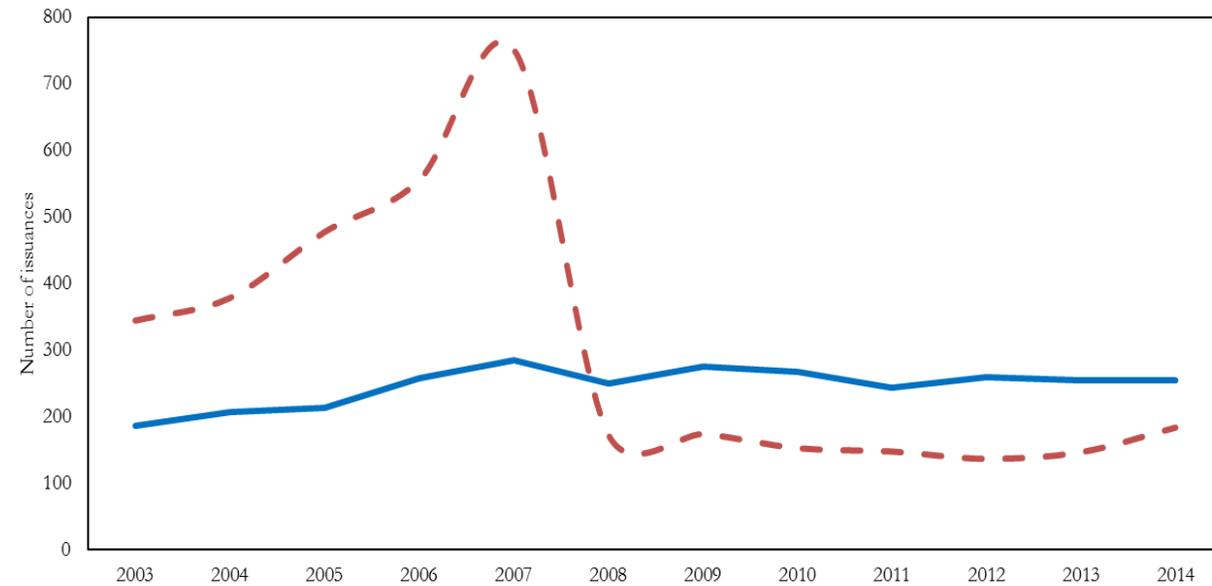
# Differences Across Firms

## Debt Financing by Type of Firm

Developed Countries



Developing Countries



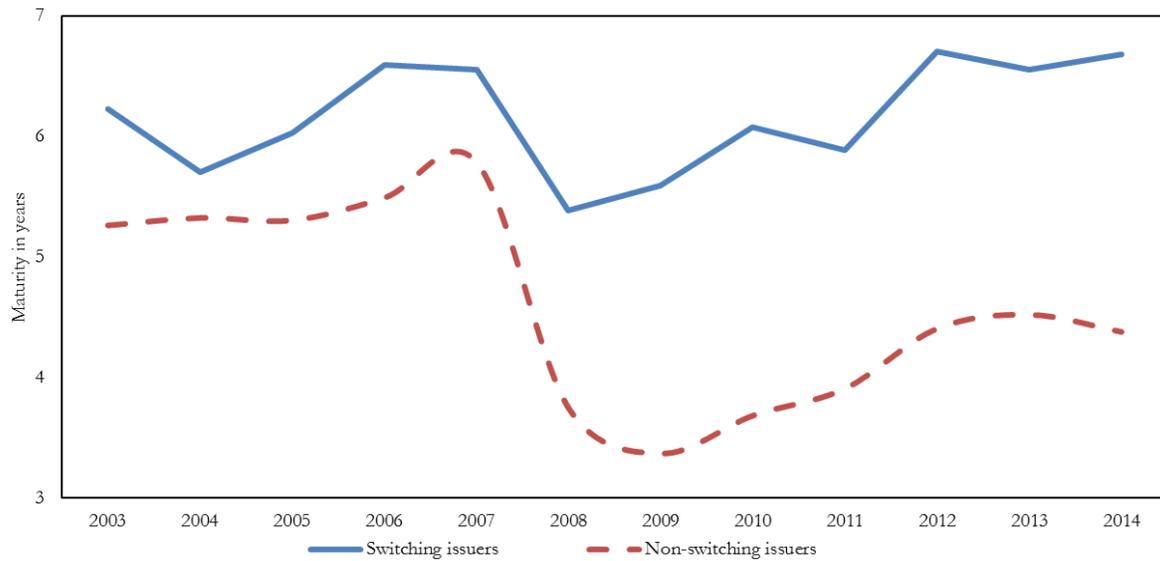
— Switching issuers

- - - Non-switching issuers

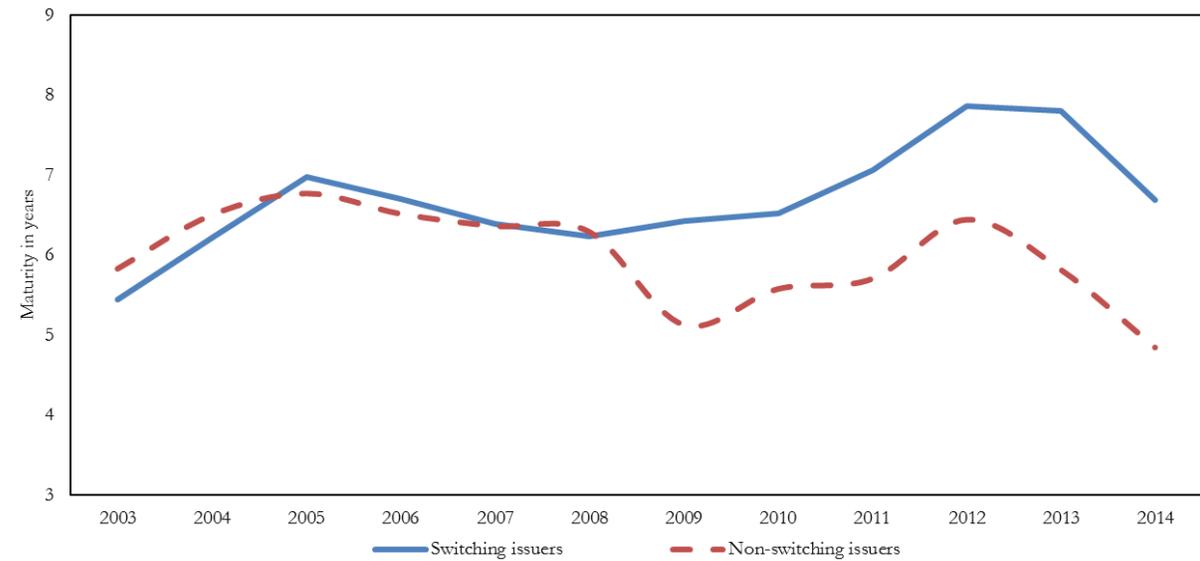
# Differences Across Firms

## Debt Maturity by Type of Firm

### Developed Countries



### Developing Countries



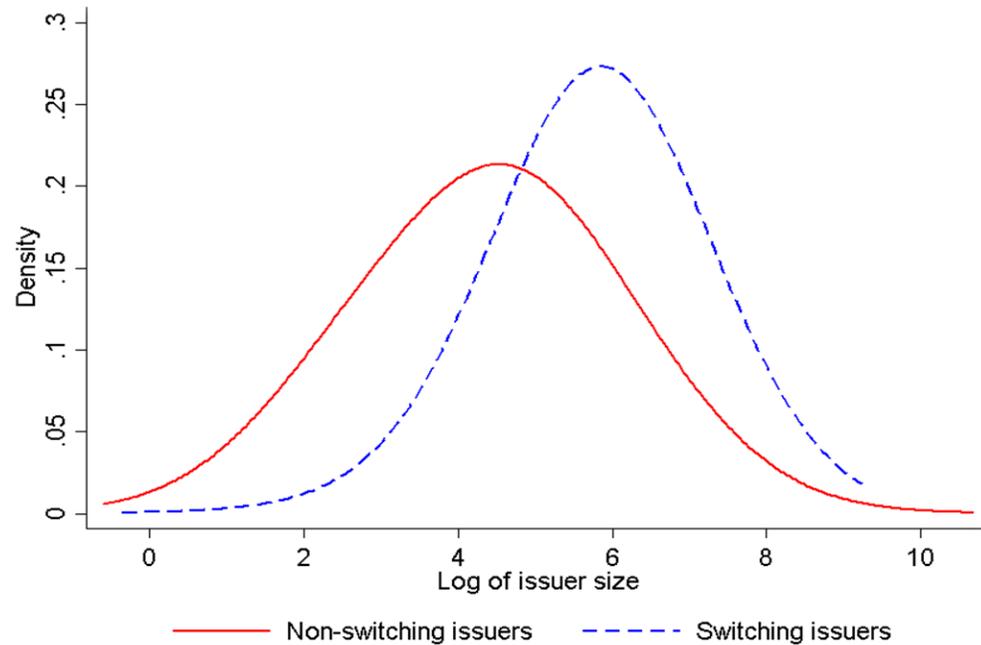
— Switching issuers

- - Non-switching issuers

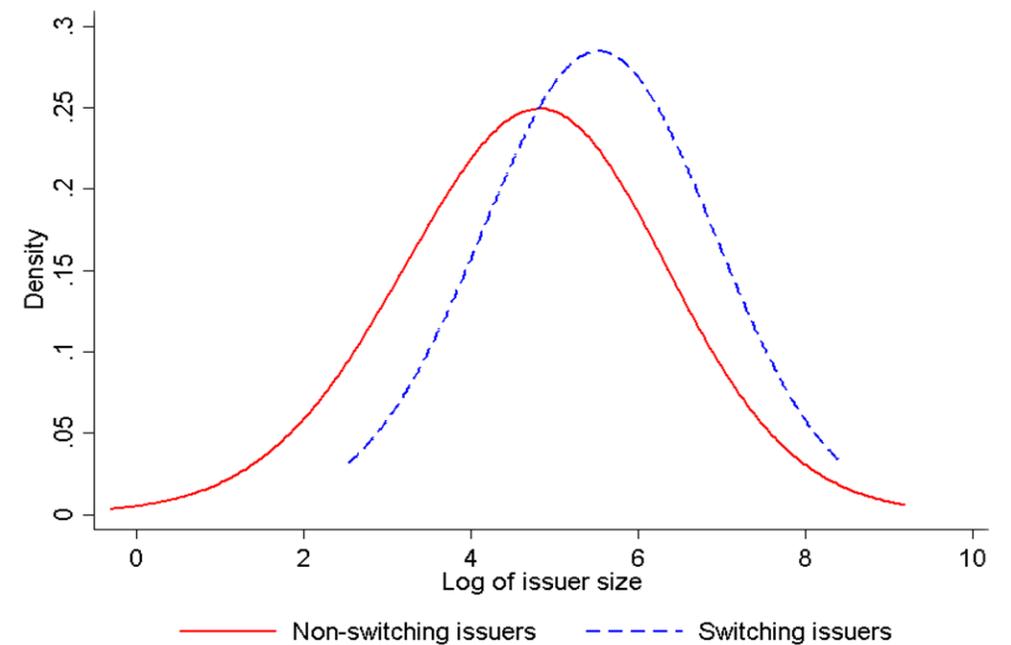
# Differences Across Firms

## Firm Size Distribution of Issuers

Developed Countries



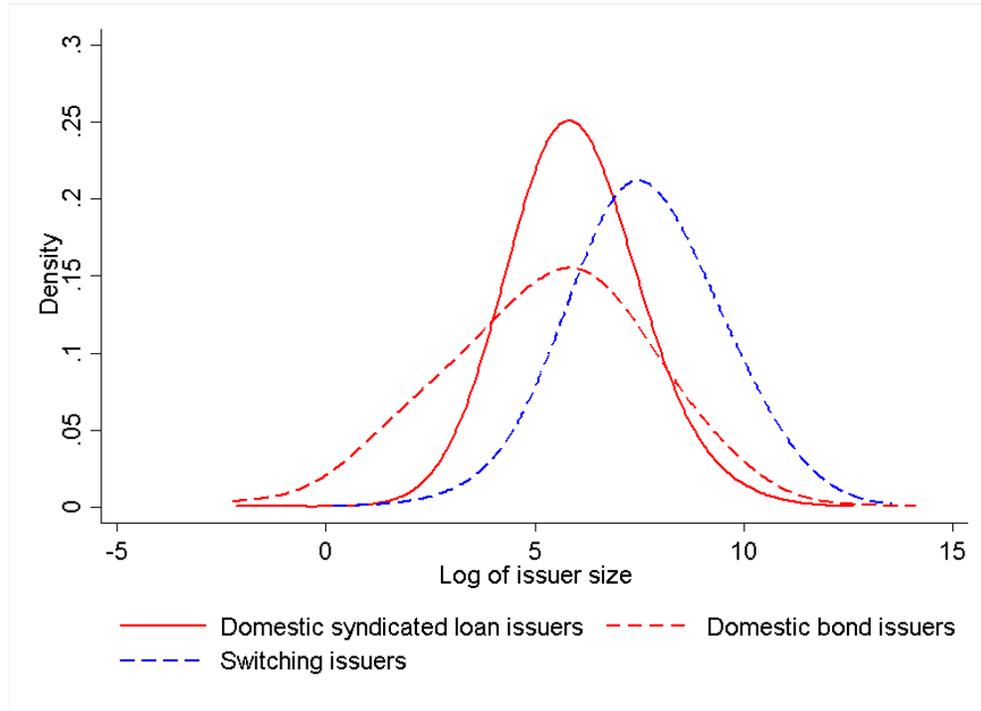
Developing Countries



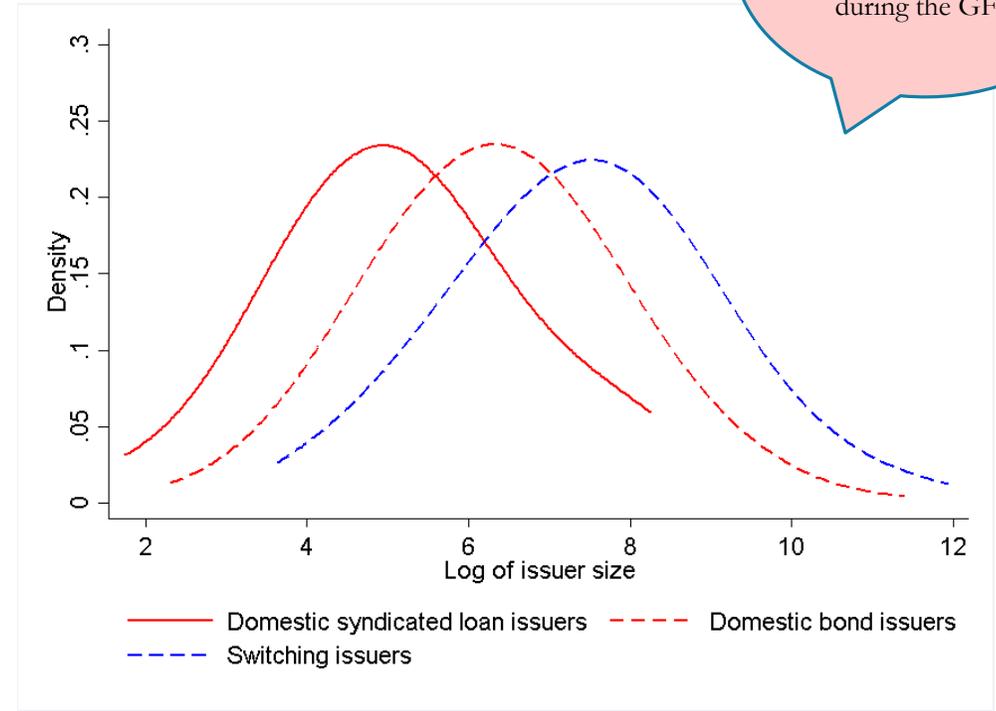
# Differences Across Firms

## Firm Size Distribution of Issuers

Developed Countries



Developing Countries



Switching issuers moved toward domestic markets during the GFC

# Differences Across Firms

## Changes in Debt Issuance during the GFC

Developed Countries				
Type of issuer	Corporate bonds		Syndicated loans	
	$\Delta\%$ Domestic bonds	$\Delta\%$ International bonds	$\Delta\%$ Domestic syndicated loans	$\Delta\%$ International syndicated loans
	( a )	( b )	( c )	( d )
<b>Switching issuers</b>	6.5%	15.4%	-48.3%	-53.9%
<b>Non-switching issuers</b>	-72.5%	5.0%	-72.4%	-85.5%
Developing Countries				
Type of issuer	$\Delta\%$ Domestic bonds	$\Delta\%$ International bonds	$\Delta\%$ Domestic syndicated loans	$\Delta\%$ International syndicated loans
	( a )	( b )	( c )	( d )
<b>Switching issuers</b>	100.4%	-36.5%	25.4%	-70.1%
<b>Non-switching issuers</b>	-15.1%	-83.5%	-90.4%	-88.5%

# Differences Across Firms

## Firm Size in Developed Countries and the GFC

Dependent variable: firm size				
	Domestic bonds ( a )	International bonds ( b )	Domestic syndicated loans ( c )	International syndicated loans ( d )
GFC (2008-09)	0.07*	0.22***	-0.05***	-0.19***
	[0.04]	[0.05]	[0.02]	[0.02]
Post-crisis (2010-14)	-0.02	-0.23***	-0.04***	-0.15***
	[0.03]	[0.04]	[0.02]	[0.02]
No. of observations	14,575	8,015	37,306	25,982
No. of clusters	7,355	4,732	18,788	14,097

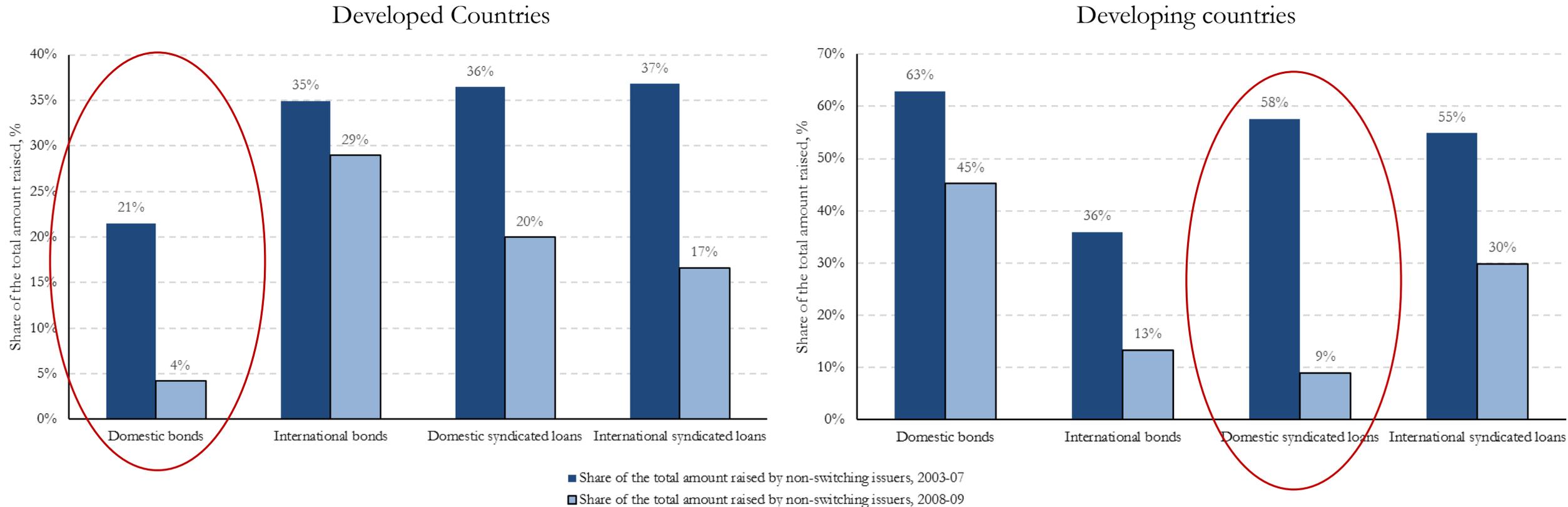
# Differences Across Firms

## Firm Size in Developing Countries and the GFC

Dependent variable: firm size				
	Domestic bonds ( a )	International bonds ( b )	Domestic syndicated loans ( c )	International syndicated loans ( d )
GFC (2008-09)	0.26*** [0.06]	-0.14 [0.13]	0.48*** [0.12]	0.01 [0.05]
Post-crisis (2010-14)	-0.09* [0.05]	0.13 [0.08]	0.08 [0.11]	0.02 [0.04]
No. of observations	5,835	1,326	1,928	3,939
No. of clusters	3,393	909	1,596	2,697

# Differences Across Firms

## Crowding Out Effects in Developing Countries



# Outline

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- ❑ Debt composition and maturity at issuance
- ❑ Changes during crises
- ❑ Differences across firms
- ❑ Conclusions

# Conclusions

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- ❑ Although the demand side can be important for debt maturity, the supply side is also relevant.
- ❑ Firms can obtain financing from different sources. Important of analyzing different sources of finance at the same time – complete markets
  - ❑ Markets used as complements / substitutes. Spare tyre.
  - ❑ First paper that provides evidence of firm-level debt substitution across 4 different debt markets at the global level → impact on financing and maturity structure of firms and countries
  - ❑ This type of analysis → broader picture: how debt composition changes over time. Distinction between supply and demand effects
  - ❑ These effects cannot be observed when studying dynamics within individual debt market.
  - ❑ Conclusions would be different. Partial picture
  - ❑ E.g. maturity at issuance does not decline at the aggregate level during crises, although it does within markets

# Conclusions

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- ❑ Still room for policy action; heterogeneity across firms
  - ❑ Larger firms can overcome the consequences of crises as they can move abroad when there are domestic shocks and move back home when the crisis is abroad.
  - ❑ Firms constrained to one particular market (usually smaller firms) face declining funding, maturities, and may be crowded out by the larger firms switching markets.
  - ❑ Distributional and real effects
  - ❑ Policy makers might want to focus on these constrained firms when implementing policies aimed at mitigating the shocks.

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Thank you!

