

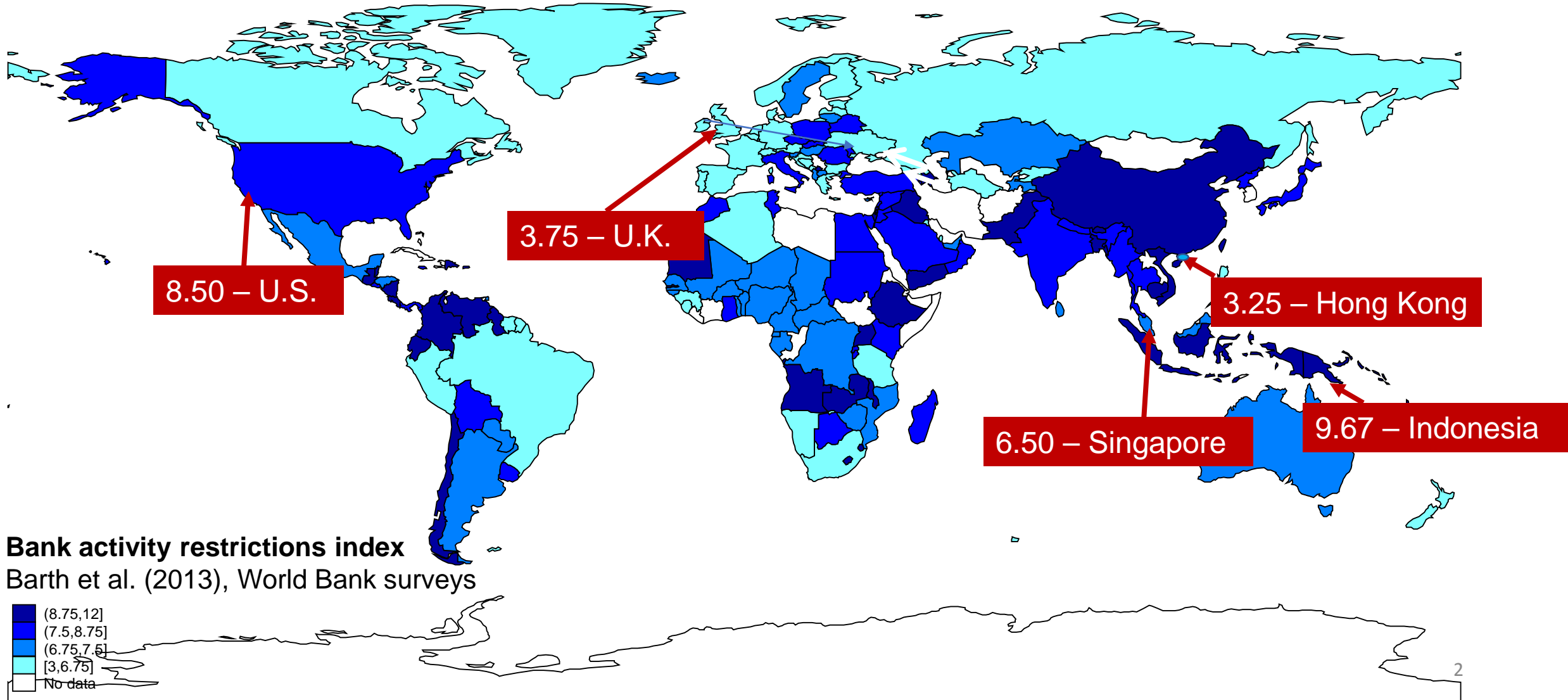
# Uneven Regulatory Playing Field and Bank Transparency Abroad

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# Motivation

## Bank regulations vary around the world



# Motivation

- A few financial institutions dominate global banking.
- Regulatory inconsistency impacts the banks' **capital flow and risk taking abroad** (Houston et al. 2012, Ongena et al. 2013, Karoyi and Taboada 2015).
- Prior research does not examine the effect on bank transparency.



CHINA  
*Delicacy*



MEXICO  
*Delicacy*



FRANCE  
*Delicacy*

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# Research Questions

## Bank transparency

- facilitates outside monitoring and discipline
- mitigates downside risk vulnerability

*RQ1:*

*Do regulatory differences affect the transparency of banks' **foreign subsidiaries**?*

*RQ2:*

*Does **foreign subsidiaries**' transparency affect their stability?*

# Research Setting - Example

Majority-owned foreign sub.

- controlled by parent
- separately capitalized
- subject to host-country regulations

**Parent Bank  
(home country)**

*Reg. rest., home =  
Reg. rest., host*

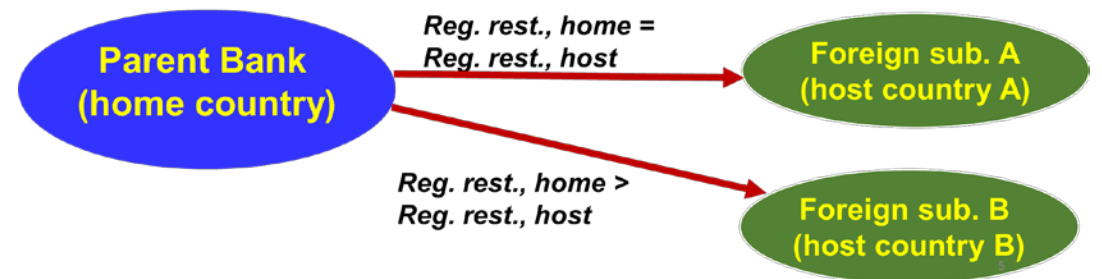
**Foreign sub. A  
(host country A)**

*Reg. rest., home >  
Reg. rest., host*

**Foreign sub. B  
(host country B)**

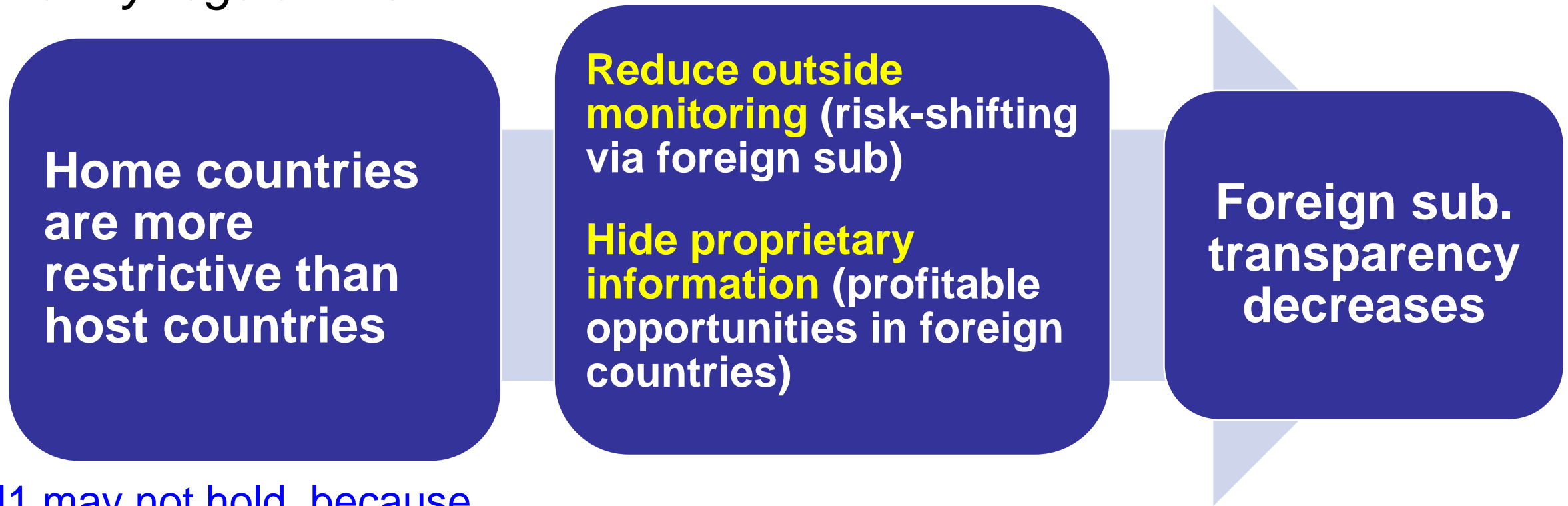
# Summary of Findings

- Foreign subsidiaries reduce disclosures on loans and securities when their home countries have tighter activity restrictions than their host countries.
- Foreign subsidiaries with lower transparency are more likely to fail or experience large deposit withdrawals during the crisis.



# Hypothesis 1

*H1: Foreign subsidiaries' transparency declines when their home-country regulations have tighter activity restrictions than their host-country regulations.*

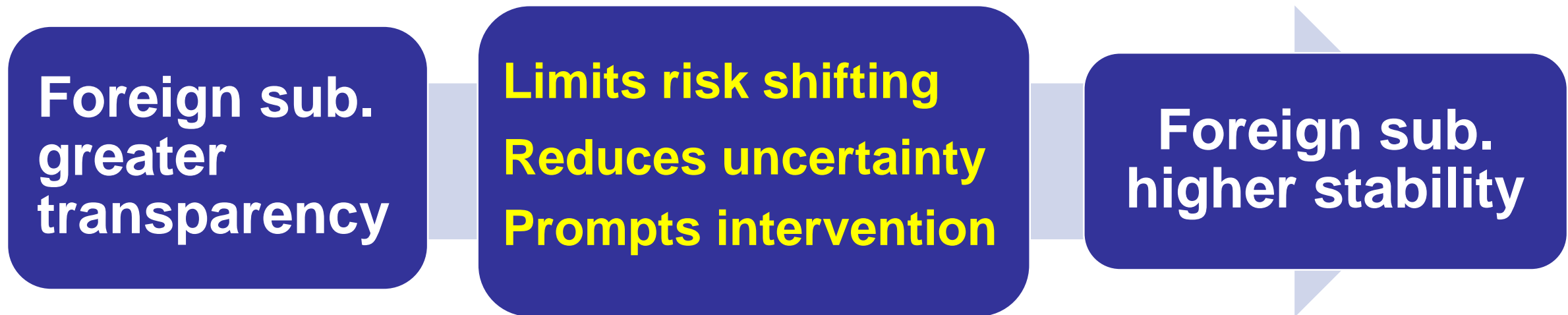


H1 may not hold, because

- consistent reporting practices benefit internal controls (Roth and O'Donnell 1996).
- transparency reduces the cost of capital (Francis et al. 2004).

# Hypothesis 2

*H2: Foreign subsidiaries with greater transparency are less likely to suffer from financial instability.*



The link may not exist, because

- parent banks' capital support (Gilbert 1991; Houston et al. 1997)
- transparency undermines bank stability (Dang et al. 2017)



# Sample Distribution by year and country, Table 1

Panel A: Sample Distribution by Year

Pre-Crisis period (N, sub.-years=1,140)												Crisis period (N, sub.-years=516)			N (sub.-years)	N (subs.)
1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total	
4	25	36	37	50	68	98	179	181	162	155	145	152	167	197	1,656	304

Panel B: Sample Distribution by Home Country

Region	Home country	N, sub.-years	%, sub.-years	N, subs.	Region	Home country	N, sub.-years	%, sub.-years	N, subs.	
<i>Europe</i>	Germany	190	11.47%	26		Singapore	25	1.51%	3	
	France	155	9.36%	29		Hong Kong	23	1.39%	4	
	UK	124	7.49%	26		Israel	17	1.03%	4	
	Switzerland	106	6.40%	18		Kuwait	12	0.72%	2	
	Austria	100	6.04%	20		Turkey	11	0.66%	4	
	Luxembourg	89	5.37%	14		Bahrain	11	0.66%	2	
	Italy	73	4.41%	15		Thailand	10	0.60%	1	
	Spain	66	3.99%	15		Other	43	2.58%	8	
	Netherlands	61	3.68%	10		Subtotal	308	18.57%	59	
	Sweden	55	3.32%	8		<i>Americas</i>	Canada	75	4.53%	10
	Belgium	30	1.81%	8			Brazil	15	0.91%	4
	Russia	26	1.57%	4			US	15	0.91%	5
	Denmark	19	1.15%	3			Other	5	0.30%	4
	Greece	18	1.09%	2		Subtotal	110	6.65%	23	
	Liechtenstein	16	0.97%	2		<i>Africa</i>	South Africa	24	1.45%	4
	Slovenia	14	0.85%	2			Egypt	13	0.78%	4
	Norway	12	0.72%	2		Subtotal	37	2.23%	8	
	Other	11	0.66%	5		<i>Oceania</i>	Australia	36	2.17%	5
	Subtotal	1,165	70.35%	209			Subtotal	36	2.17%	5
<i>Asia</i>	Japan	109	6.58%	23	<b>Total</b>	<b>1,656</b>	<b>100.00%</b>	<b>304</b>		
	South Korea	47	2.84%	8						



# Results for H1 Test

## Regulatory diff. and Foreign Subsidiaries' Transparency, Table 3A

level of disclosures related to **loans** and **securities**

Home-country activity restrictions index minus host-country activity restrictions index

Dep. var.=	Disclosure (1)	Disclosure (2)	Disclosure (3)	Disclosure (4)	Disclosure_ Loans (5)	Disclosure_ Securities (6)
<b>Diff_ActRestrict</b>	<b>-0.084*** (-3.827)</b>	<b>-0.120*** (-8.068)</b>	<b>-0.046*** (-3.106)</b>	<b>-0.289** (-2.036)</b>	<b>-0.092*** (-3.694)</b>	<b>-0.108*** (-2.841)</b>
Size	0.010 (0.353)	0.063** (2.490)	0.005 (0.269)	-0.039 (-0.848)	0.006 (0.189)	-0.009 (-0.216)
ROA	-2.656 (-1.302)	-4.755* (-1.819)	-1.316 (-1.060)	-5.059** (-2.266)	-1.912 (-0.807)	-3.498 (-0.978)
Loan growth	-0.099 (-1.455)	-0.033 (-0.648)	-0.056 (-1.287)	-0.081 (-1.395)	-0.116 (-1.527)	-0.079 (-0.886)
Capital ratio	-0.795 (-1.504)	0.425 (1.152)	-0.420 (-1.291)	-0.178 (-0.282)	-0.907* (-1.734)	0.090 (0.098)
Big 5	-0.474*** (-3.589)	0.053 (0.495)	-0.258*** (-2.896)	-0.635*** (-4.316)	-0.404*** (-2.801)	-0.912*** (-4.883)
Public	0.905*** (4.752)	0.754*** (5.513)	0.498*** (4.331)	0.400 (1.602)	1.048*** (5.038)	0.470 (1.484)
Same language	0.259** (2.072)	-0.075 (-0.794)	0.144* (1.874)	0.054 (0.464)	0.220 (1.589)	0.265 (1.138)
Z_Score	0.107* (1.737)	0.030 (0.652)	0.056 (1.380)	0.130* (1.907)	0.140** (1.995)	-0.022 (-0.305)
External audit		0.013 (0.215)				
Accounting practices		0.068 (0.639)				
Transparency		0.189*** (2.725)				
Entity type fe.	Yes	Yes	Yes	Yes	Yes	Yes
Host-country×Year fe.	Yes	No	Yes	Yes	Yes	Yes
Model	Ordered probit	Ordered probit	OLS	Ordered probit - IV	Ordered probit	Ordered probit
No. of obs.	1,140	1,084	1,140	1,080	1,140	1,140
Pseudo R <sup>2</sup> / Adj. R <sup>2</sup>	0.370	0.095	0.667	0.364	0.415	0.648

# Results for H2 Test

## Transparency and crisis-period bank failure, Table 4A

Indicator=1 if a bank ceases to have financial statements during 2007-2009 and is inactive

Disclosure levels prior to the crisis

	Dep. var.= Bank failure <sub>2007-2009</sub>				
	(1)	(2)	(3)	(4)	(5)
<b>Disclosure<sub>2006</sub></b>	<b>-0.532***</b> (-3.609)			<b>-0.531***</b> (-3.458)	
<b>Disclosure_Loans<sub>2006</sub></b>		<b>-0.568***</b> (-3.518)			
<b>Disclosure_Securities<sub>2006</sub></b>			<b>-0.644**</b> (-2.474)		
Diff_ActRestrict <sub>2006</sub>				0.046 (1.103)	0.089** (2.525)
Size <sub>2006</sub>	-0.155** (-2.195)	-0.156** (-2.447)	-0.189** (-2.266)	-0.148** (-2.087)	
ROA <sub>2006</sub>	-8.468 (-0.711)	-6.743 (-0.564)	-11.378 (-1.141)	-5.252 (-0.414)	
Loan growth <sub>2006</sub>	-1.463*** (-3.498)	-1.545*** (-3.319)	-1.057*** (-3.201)	-1.346*** (-3.896)	
Capital ratio <sub>2006</sub>	-1.530 (-0.650)	-1.765 (-0.702)	-1.687 (-0.817)	-1.830 (-0.708)	
Z_score <sub>2006</sub>	0.430* (1.687)	0.431* (1.825)	0.253 (0.978)	0.440* (1.735)	
Entity type fe.	Yes	Yes	Yes	Yes	Yes
Model	Probit	Probit	Probit	Probit	Probit
No. of obs.	145	145	145	145	145
Pseudo R <sup>2</sup>	0.273	0.266	0.199	0.276	0.096

# Results for H2 Test

## Transparency and crisis-period deposit withdrawal, Table 4B

Indicator = 1 if deposit growth falls below -23.6% (bottom 10% of the distribution)

	Dep. var.=Large deposit withdrawal <sub>2007-2009</sub>				
	(1)	(2)	(3)	(4)	(5)
<b>Disclosure<sub>2006</sub></b>	<b>-0.183*</b> (-1.873)			<b>-0.175*</b> (-1.800)	
<b>Disclosure_Loans<sub>2006</sub></b>		<b>-0.080</b> (-0.631)			
<b>Disclosure_Securities<sub>2006</sub></b>			<b>-0.827***</b> (-3.092)		
Diff_ActRestrict <sub>2006</sub>				0.045 (0.885)	0.030 (0.551)
Size <sub>2006</sub>	0.082 (0.819)	0.067 (0.689)	0.089 (0.892)	0.090 (0.933)	
ROA <sub>2006</sub>	-4.978 (-0.500)	-5.734 (-0.570)	-6.561 (-0.712)	-3.577 (-0.366)	
Loan growth <sub>2006</sub>	0.209 (1.587)	0.194 (1.531)	0.214 (1.539)	0.217 (1.607)	
Capital ratio <sub>2006</sub>	1.015 (0.804)	0.808 (0.643)	1.206 (0.861)	0.858 (0.675)	
Z_score <sub>2006</sub>	-0.231*** (-2.786)	-0.237** (-2.517)	-0.300*** (-3.813)	-0.245*** (-3.295)	
Entity type fe.	Yes	Yes	Yes	Yes	Yes
Model	Probit	Probit	Probit	Probit	Probit
No. of obs.	135	135	135	135	135
Pseudo R <sup>2</sup>	0.066	0.054	0.087	0.071	0.071

# Mechanisms through Which Regulatory Diff. Affect Transparency

## Table 5

	Dep. var.= Disclosure			
	Strong host-country supervisory power	Weak host-country supervisory power	High ROA	Low ROA
	(1)	(2)	(3)	(4)
<b>Diff_ActRestrict</b>	<b>-0.009</b>	<b>-0.165***</b>	<b>-0.066**</b>	<b>-0.095**</b>
	(-0.367)	(-4.433)	(-2.082)	(-2.130)
<i>Test of difference in <math>\beta_1</math></i>		<b>-0.156***</b>		<b>-0.029</b>
Size	0.064	-0.020	0.154**	-0.103*
	(1.607)	(-0.507)	(2.178)	(-1.701)
ROA	-1.984	-3.315	-7.975*	-7.111
	(-1.018)	(-0.893)	(-1.848)	(-1.708)
Loan growth	-0.077	-0.187**	0.054	-0.150*
		(-2.341)	(0.272)	(-1.751)
		-0.477	-0.911	-0.911
		(-0.610)	(-1.010)	(-1.010)
		-0.389**	-0.711	-0.711
		(-2.531)	(-3.211)	(-3.211)
		0.274	1.414	1.414
		(1.015)	(3.414)	(3.414)
		0.127	0.711	0.711
		(0.790)	(3.011)	(3.011)
Z_Score	0.114	0.165**	0.011	0.011
	(1.414)	(1.989)	(0.732)	(2.424)
Entity type fe.	Yes	Yes	Yes	Yes
Host-country×Year fe.	Yes	Yes	Yes	Yes
Model	Ordered probit	Ordered probit	Ordered probit	Ordered probit
No. of obs.	568	572	570	570
Pseudo R <sup>2</sup>	0.375	0.381	0.486	0.425

Stronger results in host countries with weak supervisory power, consistent with risk-shifting incentives.

Results do not differ between high and low ROA subsamples, inconsistent with proprietary information considerations.

# Bank Acquisitions, Diff-in-Diff Setting

## Table 6

	Dep. var.=Disclosure			
	Full Sample	Exclude Event Year	[-2, +2]	Full Sample
	(1)	(2)	(3)	(4)
<b>Diff_ActRestrict</b>	0.151	0.128	-0.178	0.418*
	(1.031)	(0.764)	(-0.610)	(1.834)
Post	-0.382	-0.488	0.087	
	(-0.930)	(-0.987)	(0.132)	
<b>Post × Diff_ActRestrict</b>	<b>-0.534***</b>	<b>-0.501***</b>	<b>-0.609*</b>	
	<b>(-3.378)</b>	<b>(-2.816)</b>	<b>(-1.815)</b>	
Before Year -2				-0.300
				(-0.433)
Year -2				-0.772
				(-1.050)
Year -1				0.521
				(0.741)
Year 1				0.349
				(0.520)
Year 2				-0.624
				(-0.949)
After Year 2				-0.553
				(-0.896)
Before Year -2 × Diff_ActRestrict				-0.471
				(-1.529)
Year -2 × Diff_ActRestrict				-0.360
				(-1.379)
Year -1 × Diff_ActRestrict				-0.195
				(-0.651)
Year 1 × Diff_ActRestrict				-0.379
				(-1.288)
<b>Year 2 × Diff_ActRestrict</b>				<b>-0.760***</b>
				<b>(-2.580)</b>
<b>After Year 2 × Diff_ActRestrict</b>				<b>-0.844***</b>
				<b>(-3.411)</b>
Deal payment controls	Yes	Yes	Yes	Yes
Entity-type fe.	Yes	Yes	Yes	Yes
Host-country×year fe.	Yes	Yes	Yes	Yes
Model	Ordered	Ordered	Ordered	Ordered
	probit	probit	probit	probit
No. of deals	49	49	47	49
No. of acquirer/target countries	22/24	22/24	20/23	22/24
No. of obs.	438	395	193	438
Pseudo R-squared	0.669	0.684	0.788	0.678

Foreign subsidiaries' transparency decreases subsequent to being acquired by banks in countries with more restrictive regulations

The effect materializes after acquisitions



# Additional Tests and Robustness Checks for H1 Test

- Use **foreign branches** as alternative benchmark sample
- Add controls of differences in **other country-level regulation indexes**
- Include differences in **country-level economic/governance factors**
- Use **audit opinion** as alternative transparency measure
- Exclude **influential countries**
- Restrict to **commercial banks**

# Contributions

## The effect of bank regulations on transparency

- Prior studies focus on bank-level setting (Costello et al. 2016, Jiang et al. 2016).
- We examine the cross-border parent-subsidiary setting.

## Consequence of international regulatory inconsistency

- Prior research offers mixed evidence on the economic consequence of regulatory arbitrage (Houston et al. 2012, Ongena et al. 2013, Karoyi and Taboada 2015).
- We provide additional evidence on the cost.

## The effect of bank transparency on financial stability

- First to examine the effect of transparency on the stability of banks' foreign subsidiaries.



**Thank You**