Cross Borders Mergers and Acquisitions:

Currency Appreciation and Labor Regulations

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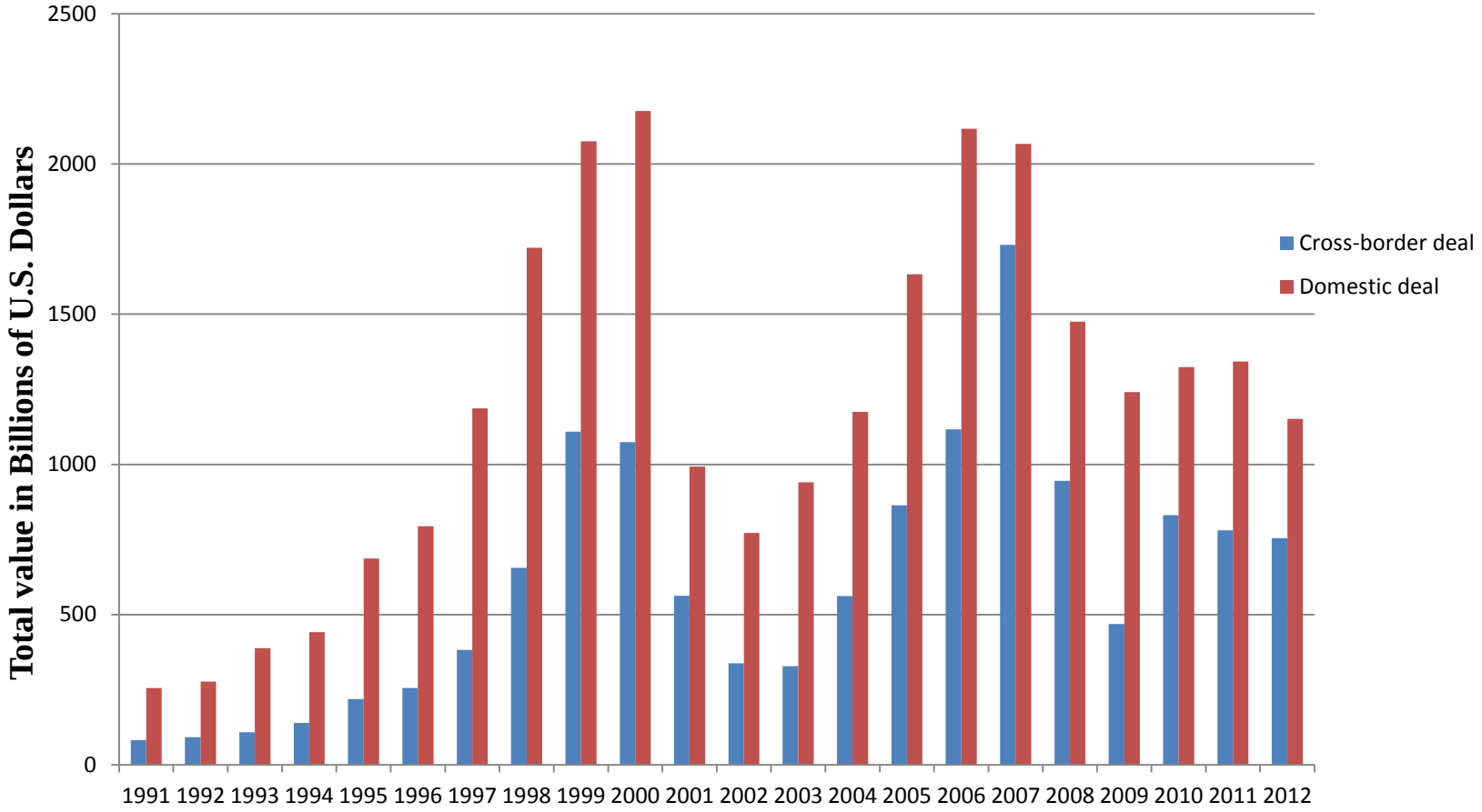
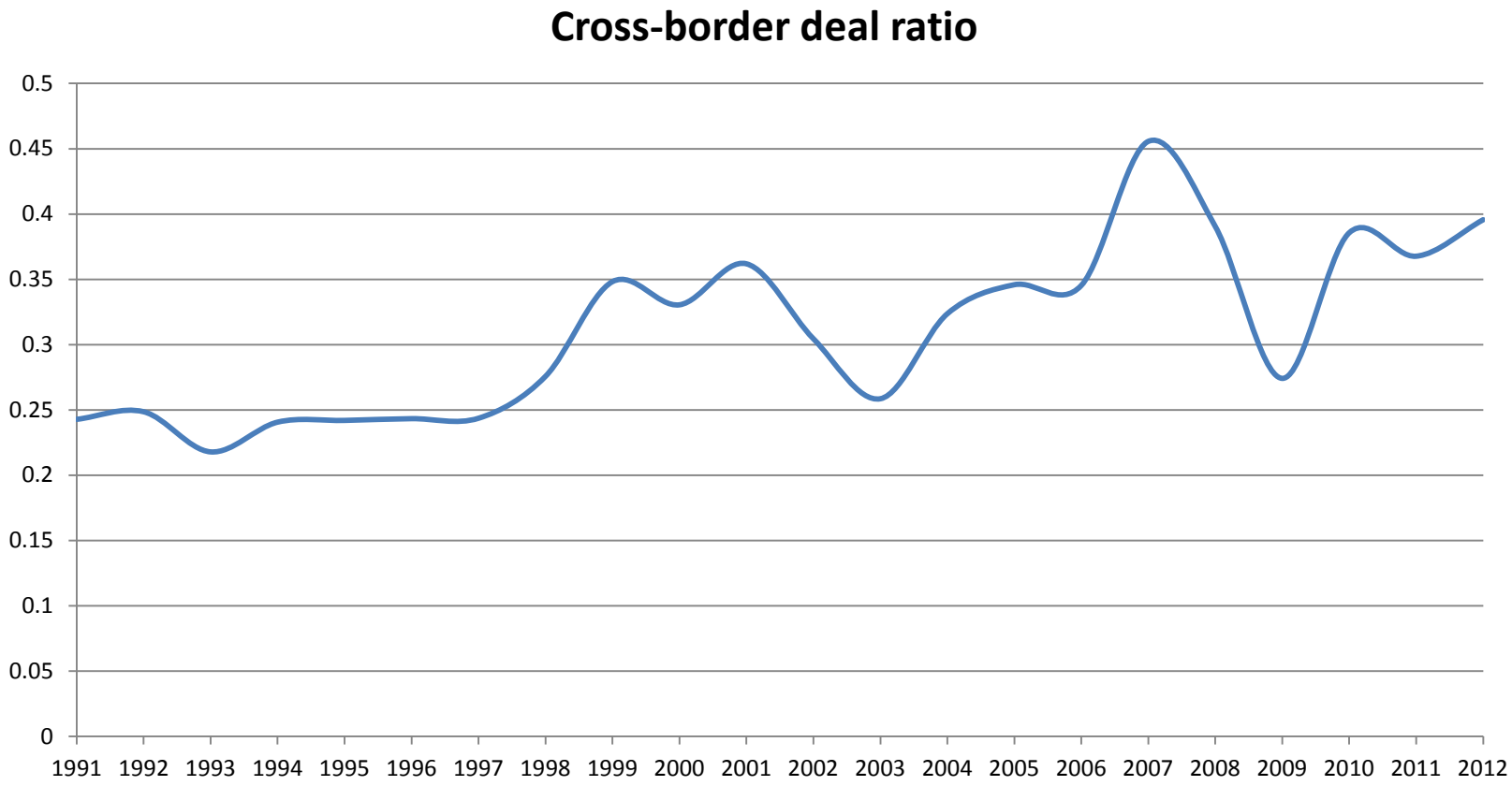
Motivations and Background

- Cross-border acquisitions account for a large and growing proportion of all acquisitions.



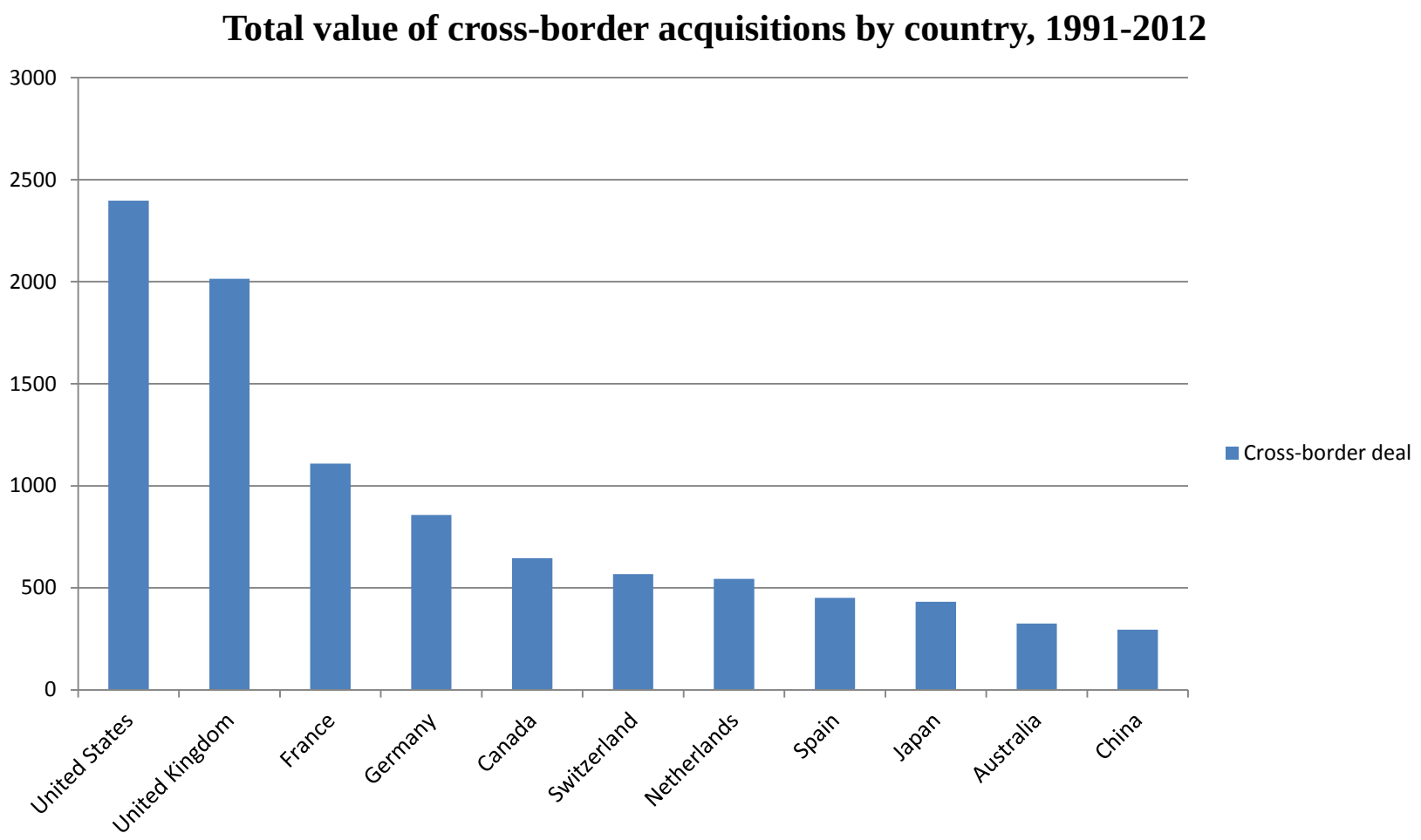
Motivations and Background

- Cross-border acquisitions as a percentage of total acquisitions



Total Value of Cross-border M&A by Country

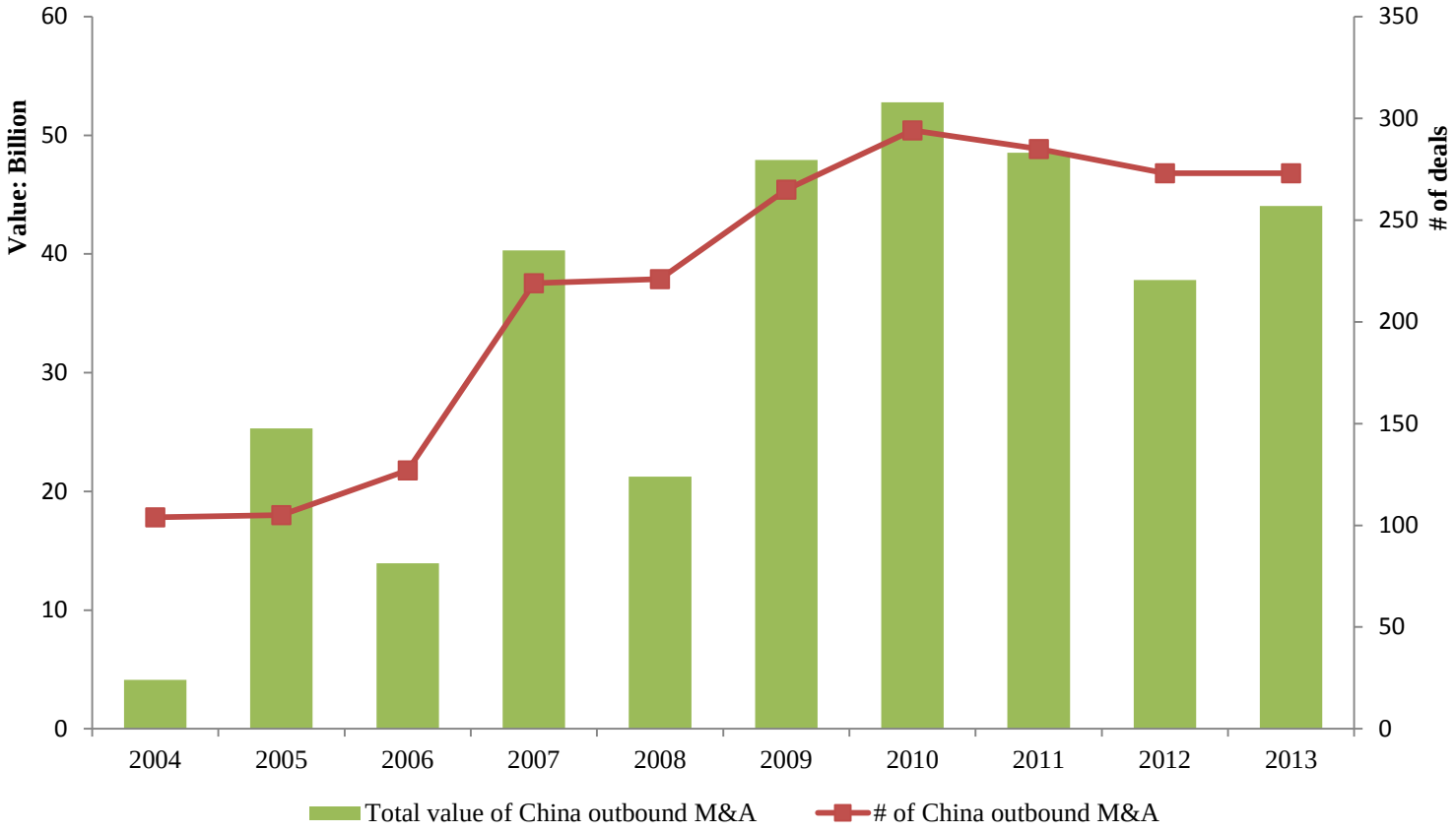
- 1991-2012 Total Value of Cross-border M&A by Country (100billion US$)



Source: Levine et al. (2014)

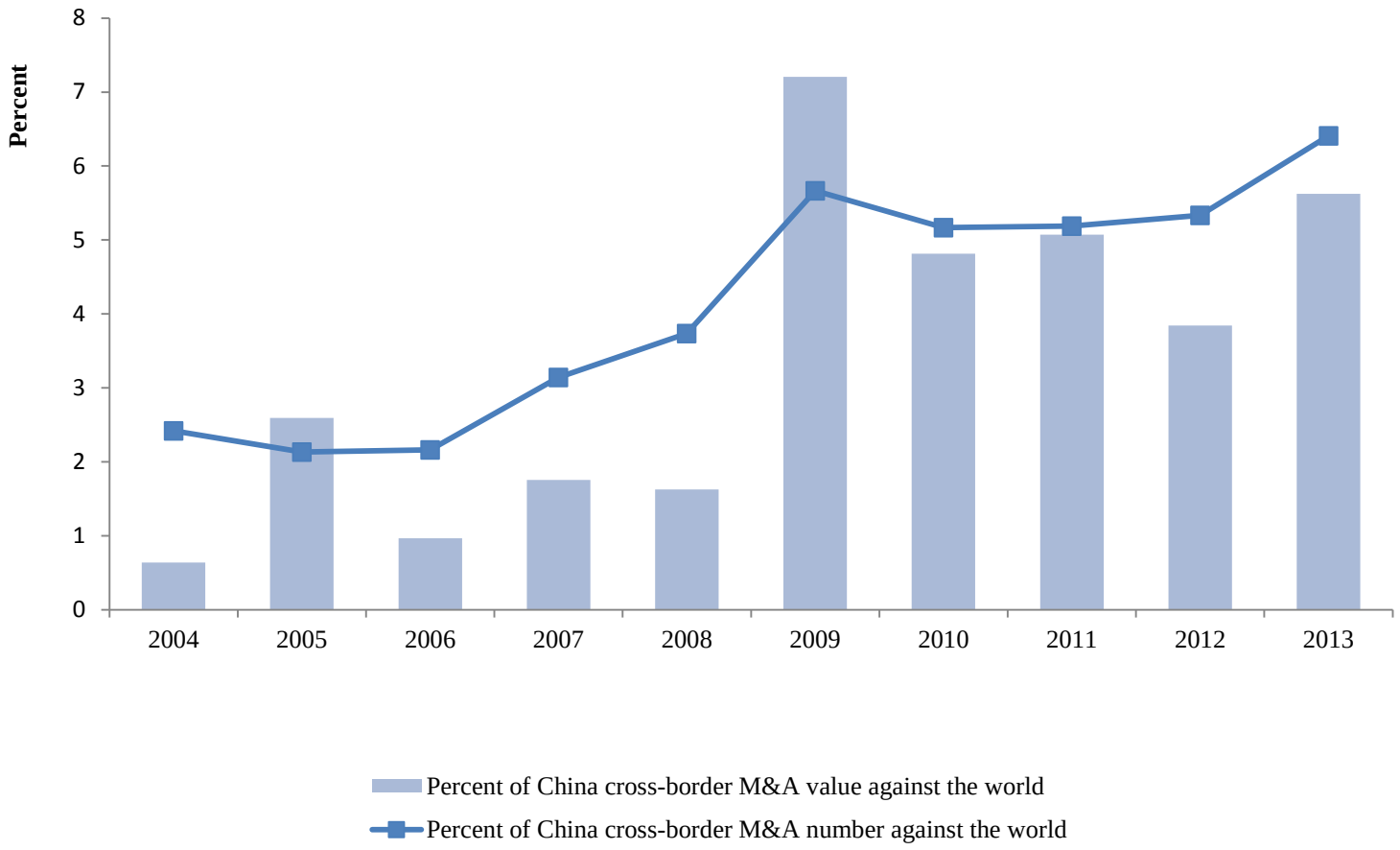
Trend of China Outbound M&A

- China has witnessed a material increase in both the number and the dollar volume of outbound M&As



China vs. the World

- The fraction of cross-border M&A conducted by China-based firms has kept rising against the world



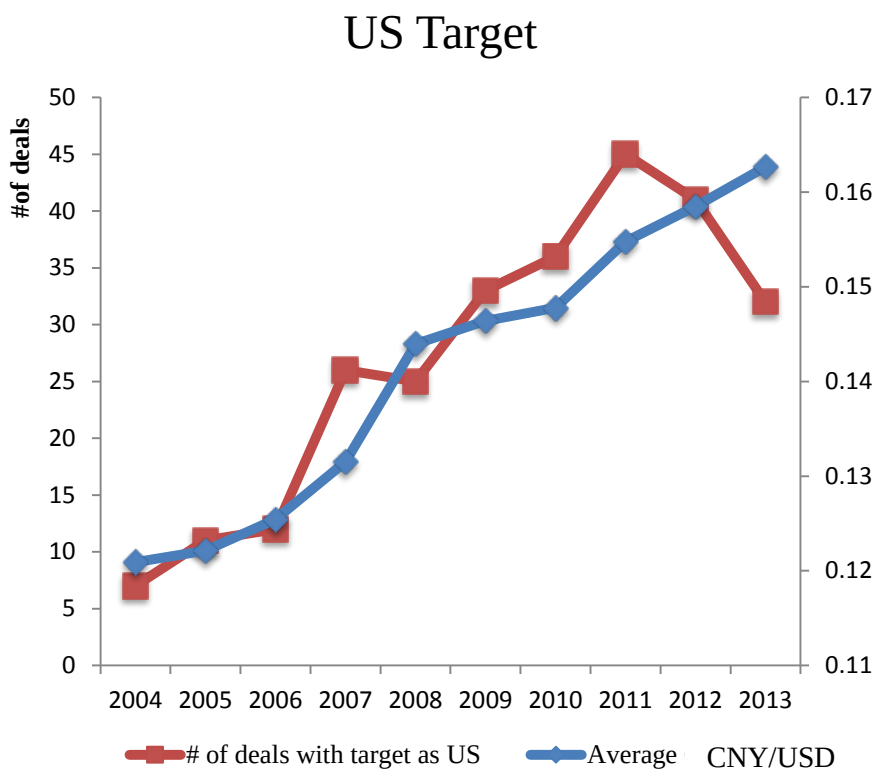
Determinants of Cross-border M&A

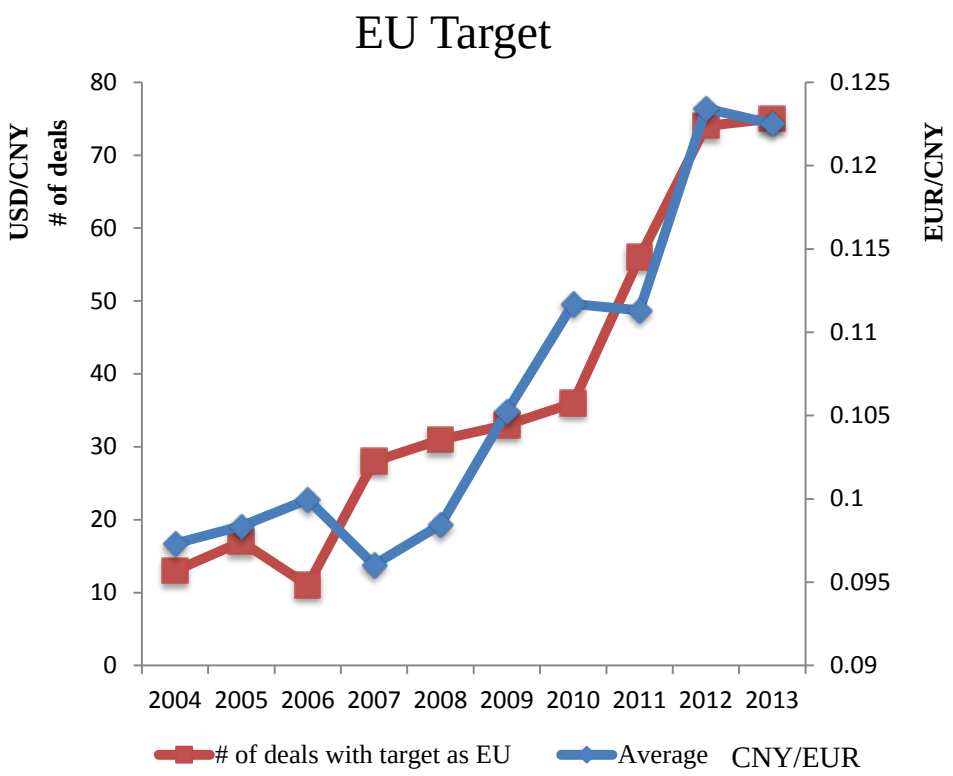
- **Corporate governance / institutional difference** (+)
  - Quality of accounting standards and investor protection (Rossi and Volpin, 2004; Bris and Cabolis, 2004)
  - Corporate control (Chari, Ouimet, and Tesar, 2009)
  - Institutional investors (Ferreira, Massa and Matos, 2009)
- **Firm valuation difference** (+)
  - Stock and currency valuation change (Erel, Liao and Weisbach, 2012)
  - Currency appreciation shock (Lin, Officer and Shen, 2013)
- **Innovation** (Hang, Humphery-Jenner and Powell, 2014) (+)
- **Cultural distance** (Ahern and Fracassi,2014) (–)
- **Economic nationalism** (Dinc and Erel, 2013) (–)
- **Labor market regulation** (Levine, Lin and Shen, 2014) (–)
- **Tax avoidance** (Col and Errunza, 2012) (+)
- **Others**:

  Geographical distance; Financial market development;
  Legal origin of nation; Bilateral trade flows

Cross-border M&A and Exchange Rate

- RMB valuation is positively associated with outbound M&A





The Economist

- “Chinese buyers have accounted for a tenth of cross-border deals by value this year (2010), bidding for everything from American gas and Brazilian electricity grids to a Swedish car company, Volvo”

- “The expected appreciation of the yuan will fuel foreign deals by making them relatively cheaper (just as a strong yen did in Japan’s heyday in the 1980s)”

Large Sample Evidence
(Erel, Liao & Weisbach, 2012)

- *Research question:*

  Does change in firm valuation affect the ***likelihood*** and ***magnitude*** of cross-border merger activity?

- *Source of valuation change*:

  Stock price movements and exchange rate fluctuations

- *Sample:*

  56,578 cross-border mergers covering 48 countries between 1990 and 2007

- *Key findings*:
  - Differences in exchange rate returns, country-level stock returns and country-level market-to-book ratio is positively associated with cross-border merger volume
  - Firms from countries with higher currency valuation, stock valuation ,and market-to-book ratio tend to be acquirers

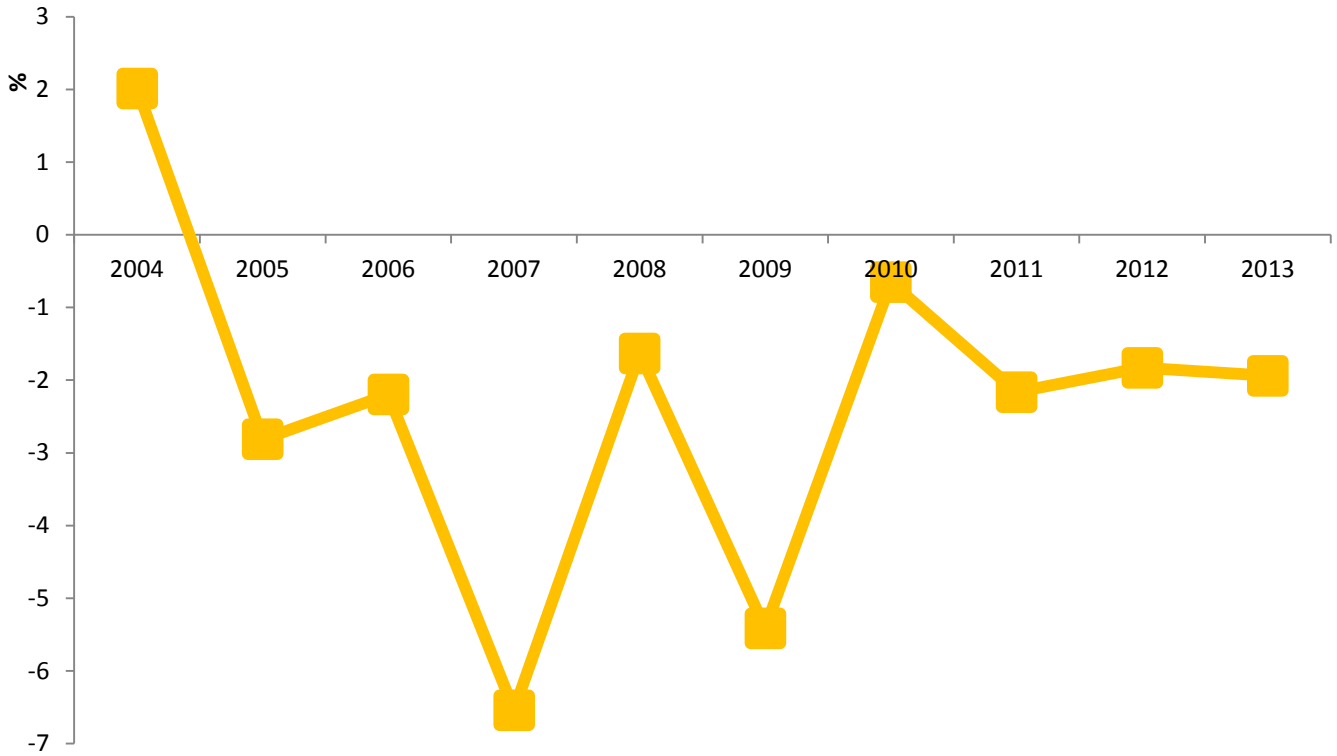
Outbound M&A of China - Average CAR

- Cumulative Abnormal Returns of the Announcement Windows (-1, +1)

	CARs (-1, +1)			
2004~2013	Mean	t	Med	Z
# of deals: 678	-2.4%	-3.96	-0.3%	-2.38

Outbound M&A of China - Valuation Change

- The dynamic of CARs



Motivations and Background

- In this paper, we examine whether cross-border mergers create wealth for acquiring firms' shareholders, especially those acquisitions motivated by changes in exchange rates.

- Stock market misvaluation theory (Shleifer and Vishny, 2003; Rhodes-Kropf and Viswanathan, 2004)

- Taking advantage of currency movements and paying foreign firms with inflated currency could lead to a profitable investment for the acquiring firm.
- If the deal participants believe the currency movements to be temporary, appreciation-motived acquisitions will create wealth for the shareholders of the acquiring firm as long as the acquirer is able to lock in the pre-merger relative currency.

Motivations and Background

- Even if exchange rate changes are permanent, acquiring firms could still create additional value through cross-border mergers and acquisitions (Froot and Stein, 1991; Kang, 1993; Erel, Liao, and Weisbach, 2012).
  - Following a currency depreciation, domestic firms tend to have higher growth rates and expected profits, making them potentially good targets to acquire.
  - Information asymmetries in cross border mergers and acquisitions make external financing more expensive. Exchange rate appreciation increases the relative net wealth (i.e. available internal financing) and lowers the acquirer's cost of capital.

Motivations and Background

- The existing literature provides mixed conclusions about the value implications of stock overvaluation-driven M&A deals (Savor and Lu, 2009; Fu, Lin, and Officer, 2013).

- An overvalued currency might aggravate empire building, or other agency problems.
  - Acquirer managers can use currency appreciation as an excuse to engage in a larger number of cross-border acquisitions to build their empire and extract private benefits.
  - Managers may rush into completing deals with high premiums in order to lock in the potential benefits, without selecting a proper target or making a reasonable estimate of its value.
  - It is more difficult for acquirer firms to manage foreign companies because of geographic distance, cultural differences, or lack of local industry expertise.

Main Findings

- Acquirers from countries experiencing large currency appreciations realize higher abnormal stock returns during both the announcement period and the post-merger period.

- Importantly, this shareholder wealth creation effect mainly comes from those acquirers in countries with strong shareholder rights and those acquirers with better corporate governance.

- Acquirers from countries with weak shareholder rights tend to overpay a foreign target following a currency appreciation.

Data and Sample

- SDC's cross-border M&A sample from 1996 to 2012
  - The acquisition is completed.
  - The acquirer and target are from different countries.
  - The acquirer is a publicly traded company with common stock data available on Datastream or CRSP.
  - We exclude acquirers in the financial services industry (one-digit SIC of 6).
  - The acquirer gains control over the target firm (i.e., acquires more than 50% of the target)
  - The deal value disclosed in SDC is greater than $1 million.

Data and Sample

- Key independent variable: Large currency appreciation
- Datastream: national exchange rates data

- We define a cross-border merger as a "**large currency appreciation**" deal if the difference in the appreciation of the acquirer's (U.S. dollar) real exchange rate relative to the target's during the one year prior to the M&A announcement is one standard deviation above the sample average.

Data and Sample

- Acquirer abnormal returns around the acquisition announcement (e.g. Bris and Cabolis, 2008)
  - We take stock price data from Datastream for non-U.S. firms and from CRSP for U.S. companies.
  - All returns are denominated in U.S. dollars.
  - Two-factor international market model: the local market return (the broadest equity market index available for each country) and the world market return (the MSCI world index)
  - Estimate the market model parameters over the 200-day period from event day –210 to event day –11
  - Five-day cumulative abnormal returns (CARs) during the event window (−2, +2)
  - $R_{ijt} = \alpha_i + \beta_i^m R_{mjt} + \beta_i^w R_{wt} + \epsilon_{it}$

Data and Sample

- Acquirer long-term abnormal returns (e.g. Fu et al., 2013)
  - Market-adjusted buy-and-hold returns
  - We use the first 250, 500, and 750 trading days after the announcement to proxy for 1-year, 2-year and 3-year holding periods, respectively.
  - $BHAR_i[0, H] = \prod_{t=0}^{H}\left(1 + R_{i,t}\right) - \prod_{t=0}^{H}(1 + R_{m,t})$

- Acquisition premium
  - The ratio of the offer price to the target's stock price four weeks before the merger announcement minus one
  - Only available for public targets

Summary Statistics

Variable	N	Mean	Std. dev	P25	Median	P75
CAR(-2,+2) (%percentage)	12030	1.314	7.902	-2.394	0.578	4.202
Prem_4week (%percentage)	988	48.505	50.446	21.305	37.505	63.59
Large currency appreciation	12030	0.127	0.333	0	0	0
Exchange rate return [A-T]_1y	12030	0	0.091	-0.054	0	0.054

- Across all of the cross-border deals, the average five-day CAR is 1.31%.

- 12.7% of the acquisitions in our sample are classified as large currency appreciation deals. The remaining deals involve either modest currency appreciation or currency depreciation (acquirer country relative to target country)

Cross-border M&A announcement returns

- Dependent variable: acquirer's five-day CAR (-2, +2)
- Control variables:
  - Acquirer characteristics (Worldscope): firm size, cash flow, Tobin's Q, leverage, acquirer stock return runup
  - Deal characteristics (SDC): relative size, industry relatedness of the acquirer and target, target ownership status, all cash deal, friendly deal, tender offer
  - Country characteristics (World Bank's World Development Indicators (WDI) dataset): GDP per capita, the annual growth rate of GDP per capita, Mktcap/GDP
  - Acquirer country, year and industry fixed effects

- Acquirers from countries whose currencies have experienced substantial appreciations in the recent one year (relative to the target country) make cross-border acquisitions that significantly increase shareholder wealth.

Table 3
The effect of large currency appreciation on acquirer announcement returns

Dependent variable: CAR(-2,+2)	All	Currency appreciation deals	U.S. excluded	WLS
	(1)	(2)	(3)	(4)
Large currency appreciation	0.609***	0.674***	0.750***	0.607***
	[0.227]	[0.247]	[0.256]	[0.232]
Log [Total Assets]	-0.434***	-0.418***	-0.488***	-0.435***
	[0.053]	[0.080]	[0.038]	[0.045]
Cash flow	-2.999***	-4.339***	-2.940***	-2.997***
	[0.677]	[0.938]	[0.864]	[0.969]
Tobin's Q	-0.019	-0.047	-0.063	-0.020
	[0.047]	[0.048]	[0.055]	[0.052]
Leverage	0.069	-0.397	0.216	0.066
	[0.652]	[0.944]	[0.855]	[0.554]
Stock runup	-1.814***	-1.838***	-1.994***	-1.815***
	[0.229]	[0.291]	[0.221]	[0.185]
Relative size	0.352***	0.336*	0.316***	0.353***
	[0.119]	[0.172]	[0.104]	[0.090]
Unrelated deal	-0.144	-0.229	-0.119	-0.143
	[0.132]	[0.175]	[0.169]	[0.149]
Private target dummy	0.911**	1.176**	0.729	0.907***
	[0.417]	[0.582]	[0.529]	[0.328]
Subsidiary target dummy	1.575***	1.542***	1.352***	1.570***
	[0.356]	[0.428]	[0.423]	[0.318]

Country governance characteristics and shareholder wealth effect of acquiring firms

- According to agency theory, M&As might destroy shareholder value if they are motivated by managerial desires to engage in empire building or increase corporate diversification.
- The positive wealth effects for acquirer shareholders from engaging in M&A deals following large exchange rate appreciations is most prevalent for acquirers located in countries with better investor protection.

Dependent variable:	CAR(-2,+2)			
	(1)	(2)	(3)	(4)
Large currency appreciation * Anti-self dealing index	2.596***			
	[0.615]			
Large currency appreciation * Anti-director rights index		0.485**		
		[0.197]		
Large currency appreciation * Shareholder protection index			1.061***	
			[0.179]	
Large currency appreciation * WGI index				0.134**
				[0.066]
Large currency appreciation	-1.108**	-1.279*	-3.088***	0.483
	[0.431]	[0.745]	[0.648]	[0.533]
Control variables	Yes	Yes	Yes	Yes
Acquirer country, year and industry fixed effects	Yes	Yes	Yes	Yes

Firm governance characteristics and gains to acquirer shareholders (U.S. evidence)

- Institutional ownership
  - Shleifer and Vishny (1997): institutional investors have greater incentives to monitor management and acquire firm information at lower cost.
- Product market competition (Herfindahl-Hirschman index)
  - Hart (1983): product market competition plays a disciplinary role on managerial behavior.
  - Shleifer and Vishny (1997): product market competition is one of the most powerful mechanisms to reduce managerial inefficiency or agency costs.

Dependent variable:	CAR(-2,+2)	
	(1)	(2)
Large currency appreciation * High IO	1.610*	
	[0.946]	
High institutional ownership	0.127	
	[0.334]	
Large currency appreciation * Low HHI		1.710**
		[0.863]
Low HHI index		0.041
		[0.378]
Large currency appreciation	-0.150	-0.737
	[0.676]	[0.650]
Control variables	Yes	Yes
Acquirer country, year and industry fixed effects	Yes	Yes

Large currency appreciation and acquisition premiums / synergies

- Overvaluation of the acquirer's currency can be undermined by the premium paid to the target firm (i.e., paying too much) or the synergies generated from the deal (i.e., getting too little).

- The **premium** paid to target shareholders
  - If the premium is too high, a deal might create no value (or even negative value) for acquirer shareholders.
  - High premiums can be induced by empire building incentives and other agency problems (Lin et al., 2012).
  - Large currency appreciations are associated with an increase in takeover premiums of about 13%-20% for firms from countries with weaker shareholder rights.

Large currency appreciation and acquisition premiums

Table 8

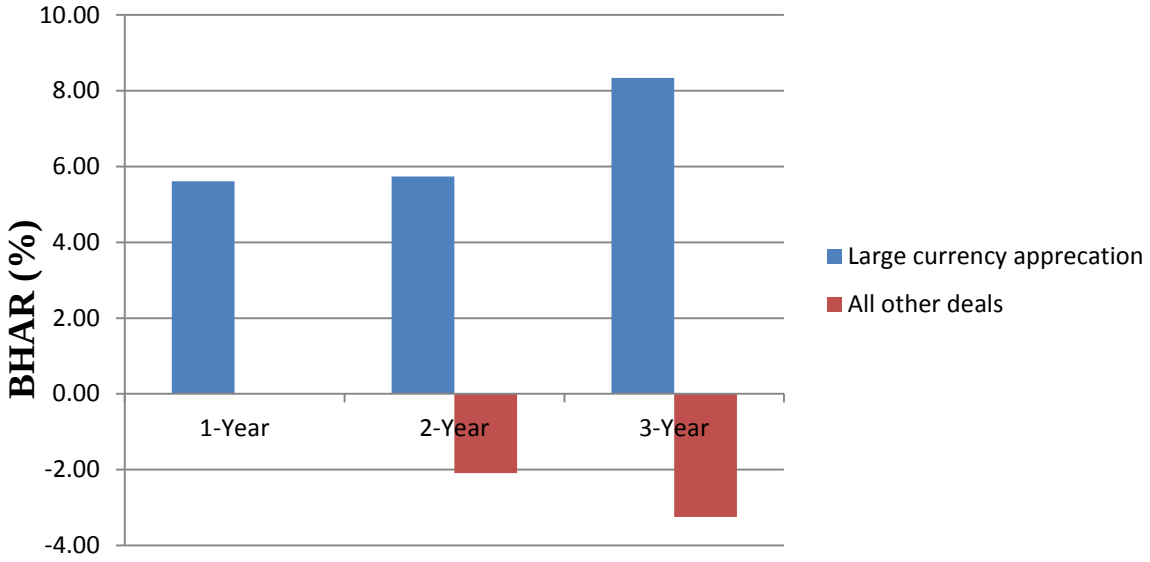
The effect of large currency appreciation on acquisition premiums

This table presents differences in acquisition premiums (Prem_4week (%), defined in Table 1) between large currency appreciation deals by acquirers from weak/strong governance countries, and all other deals. For each governance proxy, countries are considered to have strong (weak) governance if their index value is above (below) the sample median. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	Large currency appreciation & weak governance	Large currency appreciation & strong governance	All other deals	Difference (1)-(3)	t-stat (1)-(3)	Difference (2)-(3)	t-stat (2)-(3)
Governance proxy	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Anti-self dealing index	59.898	56.805	47.168	12.729**	2.21	9.636	1.05
Anti-director rights index	62.974	55.487	47.168	15.806**	2.24	8.319	1.25
Shareholder protection index	65.295	52.918	47.168	18.480***	2.81	6.103	0.83
WGI index	67.242	50.109	47.168	20.074***	2.98	2.941	0.42

Large currency appreciation and acquisition premiums / synergies

- **Synergies** (long-run abnormal returns)
  - It is difficult for acquirers to effectively manage integration of foreign targets given geographic distance, cultural differences, or lack of local industry expertise (Ahern, Daminelli and Fracassi, 2012).
  - As acquiring firms' shareholder protection indices increase by one standard deviation, M&A deals following large exchange rate appreciations are associated with about 9%-12% higher long-term abnormal returns.



Conclusion

- Using a comprehensive sample of 12,030 cross-border mergers over the period 1996-2012, we find strong evidence that cross-border transactions led by acquiring firms with an appreciating currency generate higher abnormal announcement returns.

- In particular, this wealth effect is more pronounced when the acquirer is from a country with stronger protection for outside investors and when the acquirer adopts better corporate governance.

- Acquirers from weak legal environments are more likely to pay higher takeover premiums when buying a foreign target in a country with a weak currency.

- We examine long-term abnormal returns and find that large appreciation acquirers also outperform in the three-year post-announcement period. The outperformance is again more prominent for acquirers from countries with stronger shareholder rights.

Motivations and Background

- Labor laws, regulations, and policies affect the cost of doing business and might therefore influence cross-border acquisitions.
  - Since wages are a large corporate expense, firms will search for lower wage environments.
  - Labor laws, regulations, and policies shape the costs of hiring, firing, and adjusting the hours of workers, with potentially large effects on firm performance (Botero et al., 2004).
  - Acquisitions often involve restructuring target firms to minimize labor costs and maximize synergies.

- In this paper, we address two interrelated questions.

- Do labor regulations influence (1) the stock market reaction to cross-border acquisitions, and (2) firm profitability following cross-border deals?

Motivations and Background

- Our work relates to research on the role of labor in corporate decisions.
  - Corporate cash holdings (Klasa et al., 2009)
  - Capital structure (Matsa 2010)
  - Tax aggressiveness (Chyz et al., 2013)
  - Firm investments (Agrawal 2012, and Faleye, et al., 2006)
  - Managerial performance (Atanassov and Kim, 2009)

Main Findings

- Acquiring firms experience smaller abnormal stock returns and profits when targets are in comparatively stronger labor regulation countries.

- In particular, these effects are more pronounced when the target is in a labor-intensive or high labor-volatility industry.

- Firms make fewer and smaller cross-border acquisitions into countries with strong labor regulations.

Data and Sample

- Three measures of the degree to which laws protect employees
- **Employment law**, an index constructed by Botero et al. (2004)
  - This index is larger when it is more costly for employers to (1) use alternative employment contracts, such as part-time employment, to avoid limits on terminating workers or providing mandatory benefits; (2) increase the number of hours worked, either because of limits on hours worked or because of mandatory overtime premia; and (3) to fire workers, where the costs reflect the notice period, severance pay, and any mandatory penalties, as well as the costs associated with following the procedures associated with dismissing workers
- **Employment protection law index (EPL)** , an index compiled by the OECD
  - This index includes three aspects of dismissal protection: (1) procedural inconvenience that employers face when starting to fire workers, such as notification procedures and consultation requirements; (2) length of the notice period and severance pay, which vary by tenure of the workers; (3) difficulty of dismissal, as determined by the circumstances in which it is possible to fire workers and the compensation and reinstatement possibility following unfair dismissal.
- **Coverage**, the coverage ratio of recipients of unemployment benefits and also the generosity of benefits, and taken from Aleksynska and Schindler (2011)

Data and Sample

- Acquirer abnormal returns around the acquisition announcement (e.g. Bris and Cabolis, 2008)
  - We take stock price data from Datastream for non-U.S. firms and from CRSP for U.S. companies.
  - All returns are denominated in U.S. dollars.
  - Two-factor international market model: the local market return (the broadest equity market index available for each country) and the world market return (the MSCI world index)
  - Estimate the market model parameters over the 200-day period from event day –210 to event day –11
  - Five-day cumulative abnormal returns (CARs) during the event window (−2, +2)
  - $R_{ijt} = \alpha_i + \beta_i^m R_{mjt} + \beta_i^w R_{wt} + \epsilon_{it}$

Data and Sample

- Abnormal operating performance (e.g. Lin et al., 2011 and Harford et al., 2012)
  - Pre-acquisition industry-median-adjusted ROA equals

$$(ROA_a * w_a + ROA_t * w_t) - \left(ROA_{a_{ind}} * w_a + ROA_{t_{ind}} * w_t\right)$$

  - Post-acquisition industry-median-adjusted ROA equals

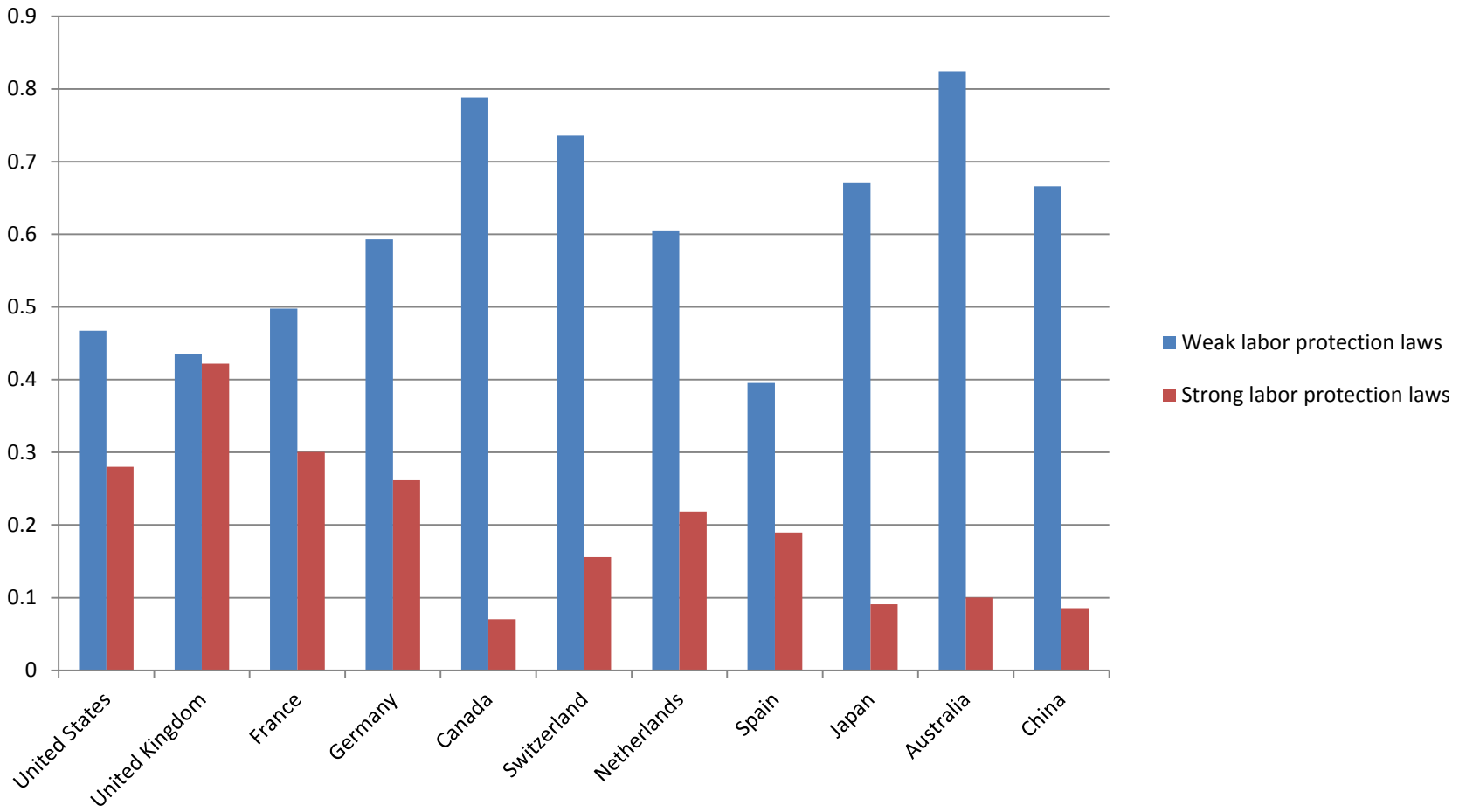
$$ROA_{firm} - \left(ROA_{a_{ind}} * w_a + ROA_{t_{ind}} * w_t\right)$$

  - ROA equals net income divided by the book value of total assets at the beginning of the fiscal year
  - The weights are the respective market value of the firm relative to the market value of the combined firms in the year before the acquisition (year -1)

Data and Sample

- Cross-border acquisition activity
  - **Cross-border Dollar Volume**, Log(1+ Value (a,t)), where Value (a,t) is the total dollar value of all cross-border mergers during the sample period for acquirer firm a, with a target from country t
  - **Cross-border Number**, Log(1+ Number (a,t)), where Number (a,t) is the total number of all cross-border mergers during the sample period for acquirer firm a, with a target from country t
  - **Cross-border Deal Size**, Log(1+ Deal size (a,t)), where Deal size (a,t) is the average dollar value of all cross-border deals during the sample period for acquirer firm a, with a target from country t

Top acquirer country cross-border acquisition flows

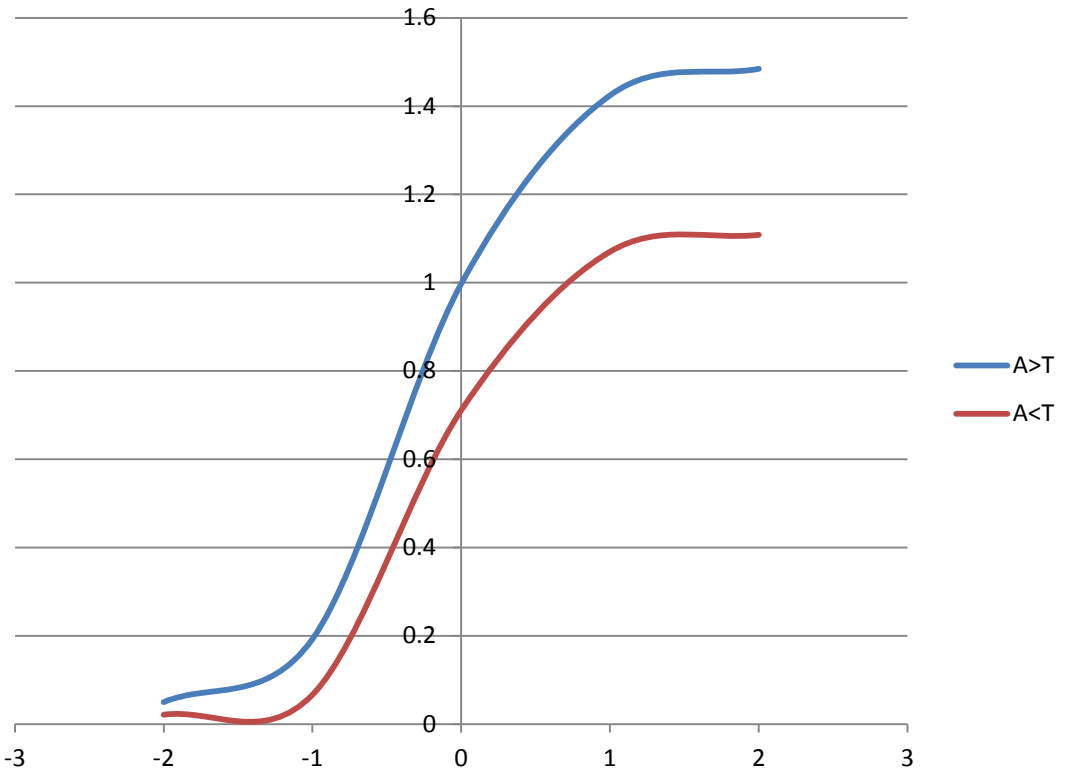


Blue bars (weak labor protection laws) represent countries with below the 25th percentile of the employment law distribution, red bars (strong labor protection laws) represent countries with above the 75th percentile of the employment law distribution.

Do cross-border acquisitions predict changes in labor regulations?

Dependent variable:	ΔUnemployment coverage			ΔEPL		
	(1)	(2)	(3)	(4)	(5)	(6)
Cross-border dollar volume_3y	0.002	-0.000	-0.001	0.002	0.003	0.002
	[0.001]	[0.002]	[0.002]	[0.004]	[0.005]	[0.005]
Lagged Unemployment coverage	-0.018	-0.020	-0.020			
	[0.013]	[0.014]	[0.015]			
Lagged EPL				-0.016**	-0.017**	-0.017**
				[0.007]	[0.007]	[0.007]
Log [GDP per capita]		0.004	0.004		-0.004	-0.004
		[0.003]	[0.004]		[0.005]	[0.008]
Log [Population]		0.002	0.003		0.001	0.001
		[0.002]	[0.002]		[0.004]	[0.005]
GDP growth			0.001			0.003
			[0.001]			[0.002]
WGI			0.000			0.001
			[0.001]			[0.002]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	988	988	988	570	570	570
R-squared	0.034	0.036	0.039	0.050	0.052	0.057

Acquirer CARs around the acquisition announcement



This figure show the average acquirer cumulative abnormal returns (%) from day -2 to day +2 around the acquisition announcement (zero is the acquisition announcement date). A>T represents observations with relatively higher employment law for acquirer country, while A<T represents observations with relatively higher employment law for target country.

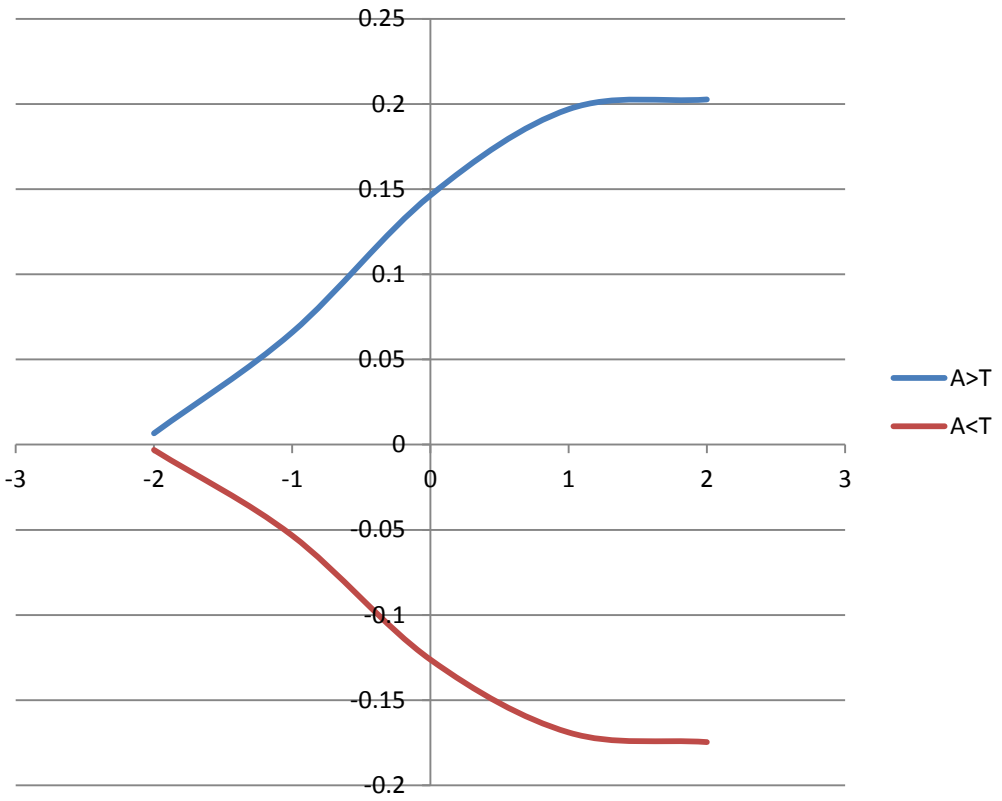
Cross-border M&A announcement returns

- Dependent variable: acquirer's five-day CAR (-2, +2)
- Control variables:
  - Acquirer characteristics (Worldscope): firm size, cash flow, Tobin's Q, leverage, acquirer stock return runup
  - Deal characteristics (SDC): relative size, industry relatedness of the acquirer and target, target ownership status, all cash deal, friendly deal, tender offer
  - Country characteristics (WDI): GDP per capita, geographic distance
  - Acquirer and target country, year and industry fixed effects

Table 3
The effect of labor protection on acquirer announcement returns

Dependent variable:	CAR(-2,+2)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Unemployment coverage_[t-a]	-0.593***			-1.003***			-0.804**	
	[0.113]			[0.299]			[0.331]	
Employment law_[t-a]		-0.862***			-2.711			
		[0.195]			[2.118]			
EPL_[t-a]			-0.230***			-0.363		-0.617*
			[0.048]			[0.371]		[0.358]
Stock runup	1.764***	1.769***	1.689***	1.750***	1.747***	1.670***	1.736***	1.686***
	[0.163]	[0.164]	[0.137]	[0.155]	[0.155]	[0.130]	[0.147]	[0.133]
Relative size	0.634**	0.630**	0.622*	0.609**	0.610**	0.594*	0.588**	0.578*
	[0.252]	[0.253]	[0.317]	[0.245]	[0.246]	[0.308]	[0.257]	[0.314]
Unrelated deal	-0.117	-0.115	-0.146	-0.094	-0.094	-0.110	-0.110	-0.136
	[0.142]	[0.140]	[0.128]	[0.149]	[0.149]	[0.139]	[0.161]	[0.154]
Private target dummy	1.713***	1.760***	1.896***	1.674***	1.671***	1.762***	1.617***	1.738***
	[0.520]	[0.511]	[0.550]	[0.512]	[0.510]	[0.550]	[0.553]	[0.582]
Subsidiary target dummy	2.317***	2.364***	2.612***	2.262***	2.264***	2.464***	2.187***	2.392***
	[0.438]	[0.432]	[0.489]	[0.432]	[0.432]	[0.487]	[0.479]	[0.528]
Other control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Acquirer country dummies	No	No	No	Yes	Yes	Yes	No	No
Target country dummies	No	No	No	Yes	Yes	Yes	No	No
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country pair dummies	No	No	No	No	No	No	Yes	Yes
Observations	11,485	11,480	10,044	11,485	11,480	10,044	11,485	10,044
Adjusted R^2	0.0448	0.0447	0.0407	0.0494	0.0491	0.0424	0.0471	0.0369

Acquirer CAR residuals (CAR-R) around the acquisition announcement



This figure show the average residuals of acquirer cumulative abnormal returns (%) from day -2 to day +2 around the acquisition announcement (zero is the acquisition announcement date). The residuals (CAR-R) are calculated from regression model (2) in Table 3, but exclude the labor regulation variables. A>T represents observations with relatively higher employment law for acquirer country, while A<T represents observations with relatively higher employment law for target country.

Labor regulations and CARs: The target's labor intensity and volatility

- We now assess whether the relationship between acquirer firm CARs and labor regulations differs by whether the target is in an industry whose performance is likely to depend heavily on labor regulations.
  - **Labor intensive** equals one if the target industry's average ratio of labor and pension expenses to sales is greater than the sample median and zero otherwise
  - **High labor volatility** equals one if the target industry's average ratio of the standard deviation of the number of employees relative to the value of PPE assets (plant, property, and equipment) is greater than the sample median and zero otherwise
- Using the U.S. economy to benchmark industries, we construct these two proxies to measure the degree to which an industry (3-digit SIC code) is likely to depend heavily on labor regulations.

Table 4
The effect of labor protection on acquirer announcement returns: labor intensity and labor volatility

Dependent variable:	CAR(-2,+2)				
	(1)	(2)	(3)	(4)	(5)
Unemployment coverage_[t-a]	-0.698**			-0.592*	
	[0.321]			[0.332]	
Employment law_[t-a]		-3.066			
		[1.986]			
EPL_[t-a]			-0.753		-0.998**
			[0.451]		[0.424]
Unemployment coverage_[t-a] * Labor intensive	-0.471*			-0.423	
	[0.238]			[0.257]	
Employment law_[t-a] * Labor intensive		-0.787**			
		[0.384]			
EPL_[t-a]* Labor intensive			-0.206***		-0.207***
			[0.067]		[0.076]
Labor intensive	0.057	0.098	0.109	0.053	0.085
	[0.120]	[0.121]	[0.131]	[0.134]	[0.139]
Control variables	Yes	Yes	Yes	Yes	Yes
Acquirer country dummies	Yes	Yes	Yes	No	No
Target country dummies	Yes	Yes	Yes	No	No
Year dummies	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes
Country pair dummies	No	No	No	Yes	Yes
Observations	10,114	10,110	8,884	10,114	8,884
Adjusted R^2	0.0520	0.0520	0.0470	0.0470	0.0425

Table 4
The effect of labor protection on acquirer announcement returns: labor intensity and labor volatility

Dependent variable:	CAR(-2,+2)				
	(1)	(2)	(3)	(4)	(5)
Unemployment coverage_[t-a]	-0.660**			-0.513	
	[0.301]			[0.321]	
Employment law_[t-a]		-2.258			
		[1.925]			
EPL_[t-a]			-0.740*		-1.058**
			[0.419]		[0.406]
Unemployment coverage_[t-a] * High labor volatility	-0.757***			-0.763***	
	[0.224]			[0.243]	
Employment law_[t-a] * High labor volatility		-0.864**			
		[0.367]			
EPL_[t-a]* High labor volatility			-0.199**		-0.207**
			[0.075]		[0.086]
High labor volatility	-0.041	-0.007	-0.089	-0.065	-0.101
	[0.120]	[0.122]	[0.132]	[0.132]	[0.141]
Control variables	Yes	Yes	Yes	Yes	Yes
Acquirer country dummies	Yes	Yes	Yes	No	No
Target country dummies	Yes	Yes	Yes	No	No
Year dummies	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes
Country pair dummies	No	No	No	Yes	Yes
Observations	10,765	10,761	9,439	10,765	9,439
Adjusted R^2	0.0519	0.0515	0.0459	0.0456	0.0408

Labor market regulations and post-acquisition operating performance

- We examine whether the abnormal ROAs of an acquiring firm varies negatively with the comparative strength of labor regulations in the target and acquiring countries.
- Furthermore, we assess whether the relationship between acquiring firm abnormal ROAs and the target-acquirer difference in the strength of labor regulations varies by the industry of the target firm.

- We use two methods to evaluate abnormal ROAs
  - The first method simply examines changes in the abnormal ROAs of the acquiring firm around cross-border acquisitions. In particular, we partition the sample into “T < A” and “T > A” groups.
  - Following Healy, Palepu and Ruback (1992), the second method for assessing abnormal operating performance following cross-border acquisitions controls for deal and firm characteristics.

Table 5
Pre- and post-acquisition abnormal operating performance

Industry-adjusted ROA	(1)	(2)	(3)	(4)	(5)	(6)
	Target country - Acquirer country					
	Unemployment coverage		Employment law		EPL	
Year	T < A	T > A	T < A	T > A	T < A	T > A
-1	0.0598	0.0833	0.0564	0.0953	0.0565	0.0909
1	0.0616	0.0757	0.0573	0.0880	0.0606	0.0753
2	0.0537	0.0664	0.0537	0.0687	0.0524	0.0611
3	0.0515	0.0647	0.0518	0.0665	0.0479	0.0664
Post 3-year median minus year -1	-0.0064	-0.0181**	-0.0040	-0.0255**	-0.0052	-0.0262**
Observations	230	130	250	110	231	103

Table 6
Pre- and post-acquisition abnormal operating performance: labor intensity and labor volatility

Industry-adjusted ROA	(1)	(2)	(3)	(4)	(5)	(6)
	Target country > Acquirer country					
	Unemployment coverage		Employment law		EPL	
	Labor intensity					
Year	High	Low	High	Low	High	Low
-1	0.1254	0.0565	0.1442	0.0544	0.1513	0.0439
1	0.0899	0.0638	0.1229	0.0619	0.1102	0.0476
2	0.0922	0.0438	0.1037	0.0493	0.1027	0.0362
3	0.0987	0.0382	0.1129	0.0321	0.1153	0.0321
Post 3-year median minus year -1	-0.0383**	-0.0103	-0.0388**	-0.0085	-0.0486***	-0.005
Observations	54	64	40	64	42	54

Industry-adjusted ROA	(1)	(2)	(3)	(4)	(5)	(6)
	Target country > Acquirer country					
	Unemployment coverage		Employment law		EPL	
	Labor volatility					
Year	High	Low	High	Low	High	Low
-1	0.0919	0.0778	0.0937	0.0914	0.1032	0.0770
1	0.0643	0.0803	0.0688	0.1025	0.0689	0.0775
2	0.0737	0.0537	0.0718	0.0736	0.0776	0.0539
3	0.0583	0.0676	0.0560	0.0772	0.0637	0.0719
Post 3-year median minus year -1	-0.0274**	-0.0175	-0.0272**	-0.0159	-0.0315**	-0.0158
Observations	61	63	49	58	46	53

Table 7
The effect of labor protection on acquisition synergies

Dependent variable: ROA_3y	(1)	(2)	(3)	(4)	(5)	(6)
	Target country - Acquirer country					
	Unemployment coverage		Employment law		EPL	
	T < A	T > A	T < A	T > A	T < A	T > A
Intercept	-0.014	-0.104***	-0.018	-0.087***	-0.036	-0.095***
	[0.040]	[0.036]	[0.034]	[0.014]	[0.030]	[0.027]
Industry-adjusted ROA in year -1	0.483***	0.537***	0.519***	0.496***	0.536***	0.486***
	[0.053]	[0.106]	[0.055]	[0.108]	[0.054]	[0.121]
Log [Total Assets]	0.003	0.009**	0.003	0.008***	0.004	0.008***
	[0.003]	[0.003]	[0.003]	[0.002]	[0.003]	[0.002]
Tobin's Q	0.001	0.015	0.003	0.008*	0.003	0.008*
	[0.006]	[0.010]	[0.007]	[0.004]	[0.007]	[0.004]
Unrelated deal	-0.012	-0.016	-0.008	-0.022**	-0.007	-0.020*
	[0.010]	[0.012]	[0.009]	[0.008]	[0.009]	[0.011]
Friendly deal	0.016	0.030**	0.011	0.036***	0.019	0.041**
	[0.017]	[0.013]	[0.015]	[0.011]	[0.015]	[0.019]
Observations	230	130	250	110	231	103
Adjusted R^2	0.411	0.474	0.401	0.484	0.447	0.473

The estimated coefficient on the intercept represents the conditional average change in abnormal operating performance following cross-border mergers.

Table 8
The effect of labor protection on acquisition synergies: labor intensity and labor volatility

Dependent variable: ROA_3y	(1)	(2)	(3)	(4)	(5)	(6)
	Target country > Acquirer country					
	Unemployment coverage		Employment law		EPL	
	Labor intensity					
	High	Low	High	Low	High	Low
Intercept	-0.143**	0.066	-0.095**	-0.061	-0.100**	-0.011
	[0.052]	[0.049]	[0.022]	[0.056]	[0.032]	[0.034]
Industry-adjusted ROA in year -1	0.625***	0.235**	0.640***	0.293**	0.668***	0.287**
	[0.134]	[0.097]	[0.123]	[0.118]	[0.121]	[0.112]
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Observations	54	64	40	64	42	54
Adjusted R^2	0.618	0.251	0.625	0.278	0.618	0.272

Dependent variable: ROA_3y	(1)	(2)	(3)	(4)	(5)	(6)
	Target country > Acquirer country					
	Unemployment coverage		Employment law		EPL	
	Labor volatility					
	High	Low	High	Low	High	Low
Intercept	-0.183***	-0.015	-0.148***	-0.002	-0.108**	-0.029
	[0.053]	[0.056]	[0.031]	[0.023]	[0.034]	[0.068]
Industry-adjusted ROA in year -1	0.521***	0.516***	0.589***	0.510***	0.609***	0.496***
	[0.135]	[0.138]	[0.026]	[0.123]	[0.031]	[0.132]
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Observations	61	63	49	58	46	53
Adjusted R^2	0.495	0.505	0.478	0.548	0.449	0.544

Table 9
The determinants of cross-border mergers: firm-level analysis

Dependent variable:	Log(1+ Number (a,t))			Log(1+ Value (a,t))			Log(1+ Deal size (a,t))		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Unemployment coverage_[t-a]	-0.254***			-0.938***			-0.723***		
	[0.023]			[0.063]			[0.053]		
Employment law_[t-a]		-1.033***			-3.823***			-2.852***	
		[0.110]			[0.435]			[0.408]	
EPL_[t-a]			-0.150***			-0.607***			-0.487***
			[0.012]			[0.036]			[0.033]
Firm size_acquirer	0.008***	0.008***	0.010***	0.077***	0.078***	0.106***	0.074***	0.075***	0.102***
	[0.001]	[0.001]	[0.002]	[0.005]	[0.005]	[0.006]	[0.004]	[0.004]	[0.006]
Log [GDP per capita]_[t-a]	0.213***	0.124***	0.233***	0.825***	0.501***	0.915***	0.659***	0.422***	0.724***
	[0.017]	[0.014]	[0.018]	[0.031]	[0.049]	[0.053]	[0.030]	[0.045]	[0.051]
Log [Population]_[t-a]	0.195***	0.257***	0.101***	0.773***	0.992***	0.408***	0.616***	0.768***	0.333***
	[0.014]	[0.022]	[0.007]	[0.037]	[0.075]	[0.019]	[0.037]	[0.073]	[0.019]
Log [Geographic distance]	-0.038***	-0.039***	-0.044***	-0.143***	-0.147***	-0.159***	-0.123***	-0.127***	-0.136***
	[0.008]	[0.008]	[0.009]	[0.027]	[0.029]	[0.028]	[0.023]	[0.024]	[0.021]
Same language	0.126***	0.126***	0.142***	0.341**	0.341**	0.363**	0.249*	0.249*	0.254*
	[0.022]	[0.022]	[0.029]	[0.129]	[0.129]	[0.142]	[0.124]	[0.123]	[0.130]
Same religion	0.012*	0.013*	0.016*	0.115***	0.122***	0.133***	0.117***	0.124***	0.133***
	[0.007]	[0.007]	[0.008]	[0.038]	[0.041]	[0.042]	[0.037]	[0.040]	[0.040]
Acquirer country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Target country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	26,068	25,536	17,850	26,068	25,536	17,850	26,068	25,536	17,850
Adjusted R^2	0.391	0.391	0.389	0.318	0.318	0.317	0.276	0.275	0.274

Conclusion

- Using a comprehensive sample of cross-border acquisitions from 50 countries occurring between 1991 and 2012, we discover that cross-country differences in labor market regulations affect (1) how the stock price of the acquiring firm responds to the announcement of a cross-border deal, and (2) the profitability of a firm after it acquires a target.

- The abnormal stock returns and profits of acquiring firms increase more when the target country has weaker labor protection laws.

- These effects are more pronounced when target firm is in an industry that relies heavily on flexible labor markets.

- The results are consistent with the view the broad array of labor laws, regulations, and policies that shape the operation of labor markets materially shape the direction, performance, and synergies of deals.