OWNERSHIP CONCENTRATION AND MARKET LIQUIDITY

ALVARO PEDRAZA   MIGUEL LEAÑO
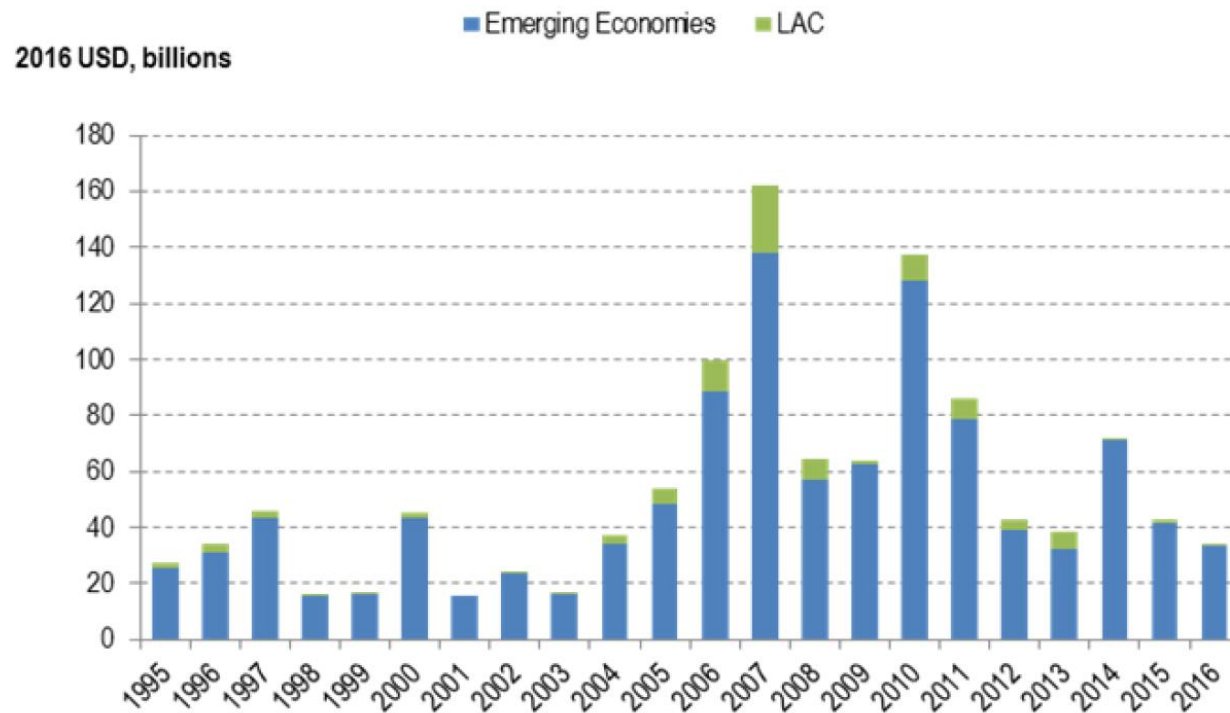
THE WORLD BANK
IBRD · IDA

Development Research Group
Finance and Private Sector

Motivation

- Global shift in the IPO market towards developing countries

- Allocated capital to IPOs in developed countries:
  - 1990-2001: 90%
  - 2008-2016: 53%

Motivation

Region / country	Market capitalization (as % of GDP)		Traded volume (as % of GDP)	
	2007-2011	2012-2016	2007-2011	2012-2016
EAP	67.7%	59.2%	106.1%	133.8%
ECA	40.9%	29.6%	40.6%	17.5%
OECD	81.1%	100.2%	144.9%	124.7%
SA	79.1%	68.0%	60.5%	29.3%
LAC	49.5%	35.8%	22.6%	17.3%
Argentina	13.6%	9.7%	0.8%	0.5%
Brazil	66.0%	39.0%	39.0%	28.9%
Chile	118.7%	93.3%	22.1%	12.1%
Colombia	55.6%	45.9%	8.0%	5.5%
Mexico	35.4%	38.3%	9.4%	10.5%
Peru	55.3%	41.0%	3.8%	1.6%

LAC: Left behind

WORLD BANK GROUP

Motivation

Background Issue Note on Equity Market Development in Latin America, October 2017

15.   The high level of ownership concentration in Latin American markets has been well documented in past OECD work (OECD, 2013). This has resulted in relatively low levels of free float and contributed to lower liquidity than in other regions, as measured by equity trading volumes as a percentage of GDP. Low liquidity in turn can have negative consequences in terms of share price volatility and further inhibit investment. Only OECD countries and the East Asia and Pacific region have on average recovered

Relation between Concentration and Liquidity:

1. Fewer investors share the costs of liquidity provision

2. Adverse selection: Smaller investors either don't trade these stocks or need to be compensated for adversely selected trades.

Question

Does ownership concentration affect stock market liquidity?

Naive specification: $liq_{s,t} = \alpha_s + \gamma_t + \beta CONC_{s,t-1} + X_{s,t-1}\phi + \varepsilon_{s,t}$

1. **Omitted variable bias**

   Corporate policy: Expectations of dividend payments & leverage affect both concentration and liquidity

2. **Reverse Causality**

   Trade-off between maintaining control and the potential intervention from outsiders

Natural Experiment

BUSINESS

BBVA Eyes Sale of Latin American Pensions Business

By Santiago Perez And Christopher Bjork

Updated May 24, 2012 9:42 a.m. ET

MADRID—Spain's Banco Bilbao Vizcaya Argentaria SA said Thursday that it is studying the potential sale of its pensions management operations in Latin America, as part of an effort to focus on its main banking businesses.

ING Completes Divestment of Insurance Latin America

Amsterdam, 29 December 2011

BBVA mulling sale of Latin America pension units

Published: May 24, 2012 2:36 a.m. ET

ING to Sell Latin America Insurance Arm

ING reaches an agreement to sell its Latin American insurance operations for €2.68 billion ($3.85 billion).

The sale, ING said, is the first major step in the divestment of its insurance and investment management activities. It was ordered by the European Commission to sell its insurance arm in order to receive Dutch state aid during the 2008 financial crisis.

WORLD BANK GROUP

Natural Experiment

1. M&A activity between pension funds in Colombia: exogenous to corporate policy of Colombian firms

   - Proteccion-ING: December 2012
   - Porvenir-BBVA Horizonte: December 2013

2. Increased ownership concentration in stocks where target and acquiring AFP had significant amount of common ownership

WORLD BANK GROUP

Natural Experiment

2. **Increased ownership concentration** in stocks where target and acquiring AFP had significant amount of common ownership

Shareholders stock "i"

Before M&A	After M&A
Others: 35%	Others: 35%
AFP B: 5%	AFP A: 10%
AFP A: 5%	
Inv 4: 10%	Inv 4: 10%
Inv 3: 10%	Inv 3: 10%
Inv 2: 15%	Inv 2: 15%
Inv 1: 20%	Inv 1: 20%

Natural Experiment

2. **Increased ownership concentration** in stocks where target and acquiring AFP had significant amount of common ownership

Shareholders stock "j"

Before M&A	After M&A
Others: 40%	Others: 40%
AFP A: 0%	AFP A: 5%
AFP B: 5%	Inv 4: 10%
Inv 4: 10%	Inv 3: 10%
Inv 3: 10%	Inv 2: 15%
Inv 2: 15%	Inv 1: 20%
Inv 1: 20%	

WORLD BANK GROUP

Empirical Strategy

Measure trading activity and liquidity for stocks with high common ownership before and after the M&A

Vis-à-vis

Trading activity and liquidity for stocks with low common ownership before and after the M&A

Preview of Results

One percent increase of ownership concentration implied:

1. **4.0% decrease** in turnover

2. **3.4% increase** in the bid-ask spread

- AFP merger activity was detrimental for trading activity and liquidity

- Our findings question the rationale of allowing concentration in the industry

<u>Caveat:</u> Economies of scale in pension management might be important

WORLD BANK GROUP

Agenda

1. Data

2. Methodology

3. Results

4. Current trends on EM

Data

1. Monthly equity portfolios of Colombian AFPs 2006-2014

2. Quarterly balance sheet and ownership information of listed firms

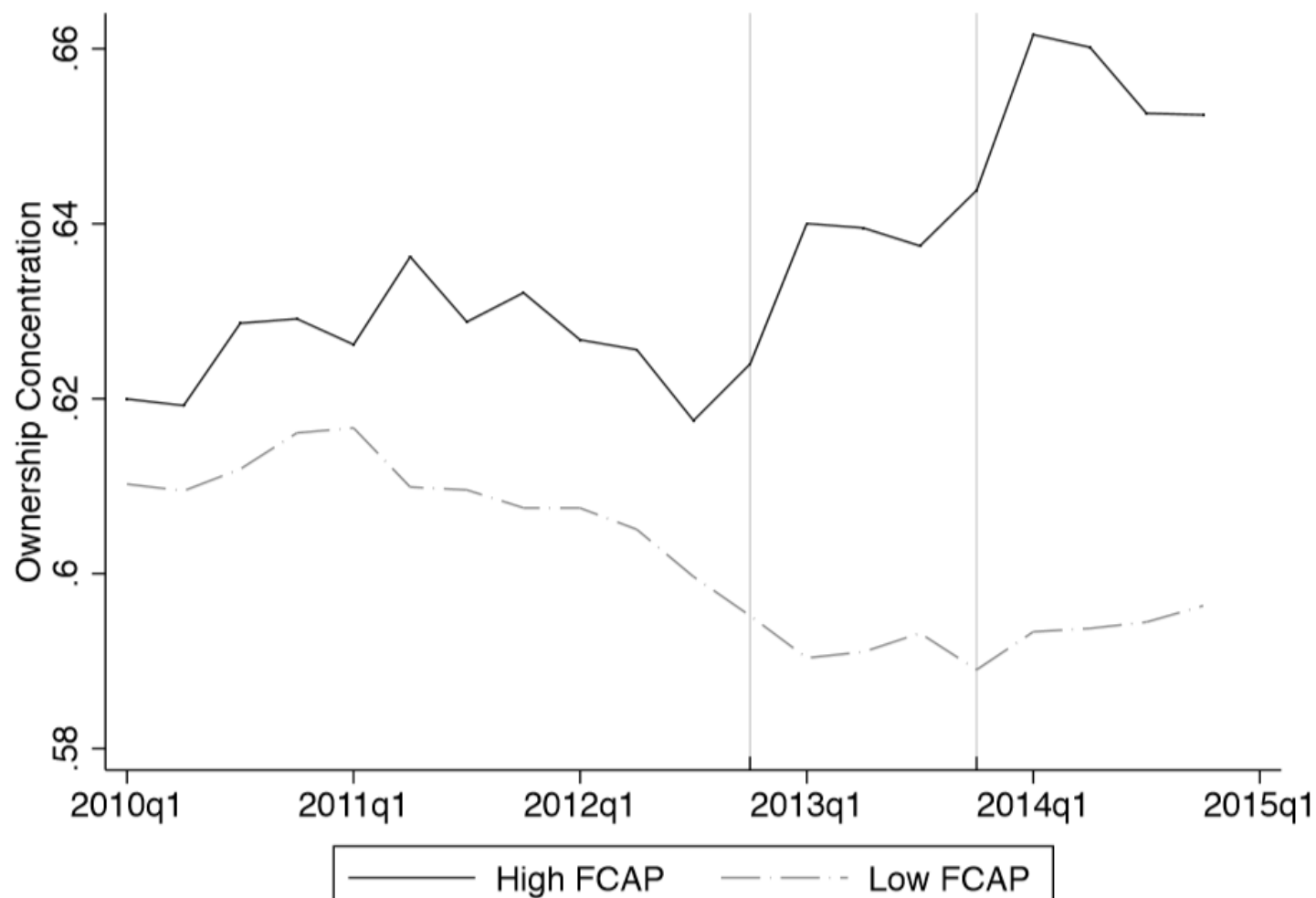3. Daily Price and trading volume

Methodology

1. Geometric average of stock ownership between acquiring (f1) and target (f2) AFP

$$FCAP_{s,k} = (H_{s,f1} * H_{s,f2})^{1/2}$$

2. Measured 6-months and 1-year before the completion of M&A

3. Ownership concentration: Top 5 shareholders

Methodology

Methodology

Two measures of trading activity and liquidity per stock:

1. Quarterly turnover: Total shares traded / shares outstanding

2. Average bid-ask spread: Average of daily bid-ask spread. Normalized by average mid point

WORLD BANK GROUP

Methodology

Two-Stage Least Squares (2SLS)

First Stage: Estimate changes in ownership concentration

$$CONC_{s,t} = \alpha_s + \gamma_t + \sum_{k=1,2} \beta_k d_k + \sum_{k=1,2} \lambda_k d_k \times FCAP_{s,k} + \sum_{k=1,2} \phi_k d_k \times X_{s,t} + \varepsilon_{s,t}$$

Second Stage: Estimate effects on liquidity

$$liq_{s,t} = \alpha_s + \gamma_t + \beta CONC_{s,t-1} + X_{s,t-1}\phi + \varepsilon_{s,t}$$

Results

	Panel B. Second Stage			
	Turnover		Bid-Ask Spread	
	(B1)	(B2)	(B3)	(B4)
CONC	-4.000**	-10.083***	3.403**	3.813***
	(-2.04)	(-4.31)	(2.42)	(2.63)
AFPT	0.186***		-0.159***	
	(4.31)		(-3.41)	
ING		519.598***		-75.061
		(5.83)		(-1.55)
BBVA-Horizonte		-65.542		-18.171
		(-0.64)		(-0.21)
Controls	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes
R^2	0.7261	0.7515	0.606	0.7586
N	1069	1069	1069	1069

Counterfactual
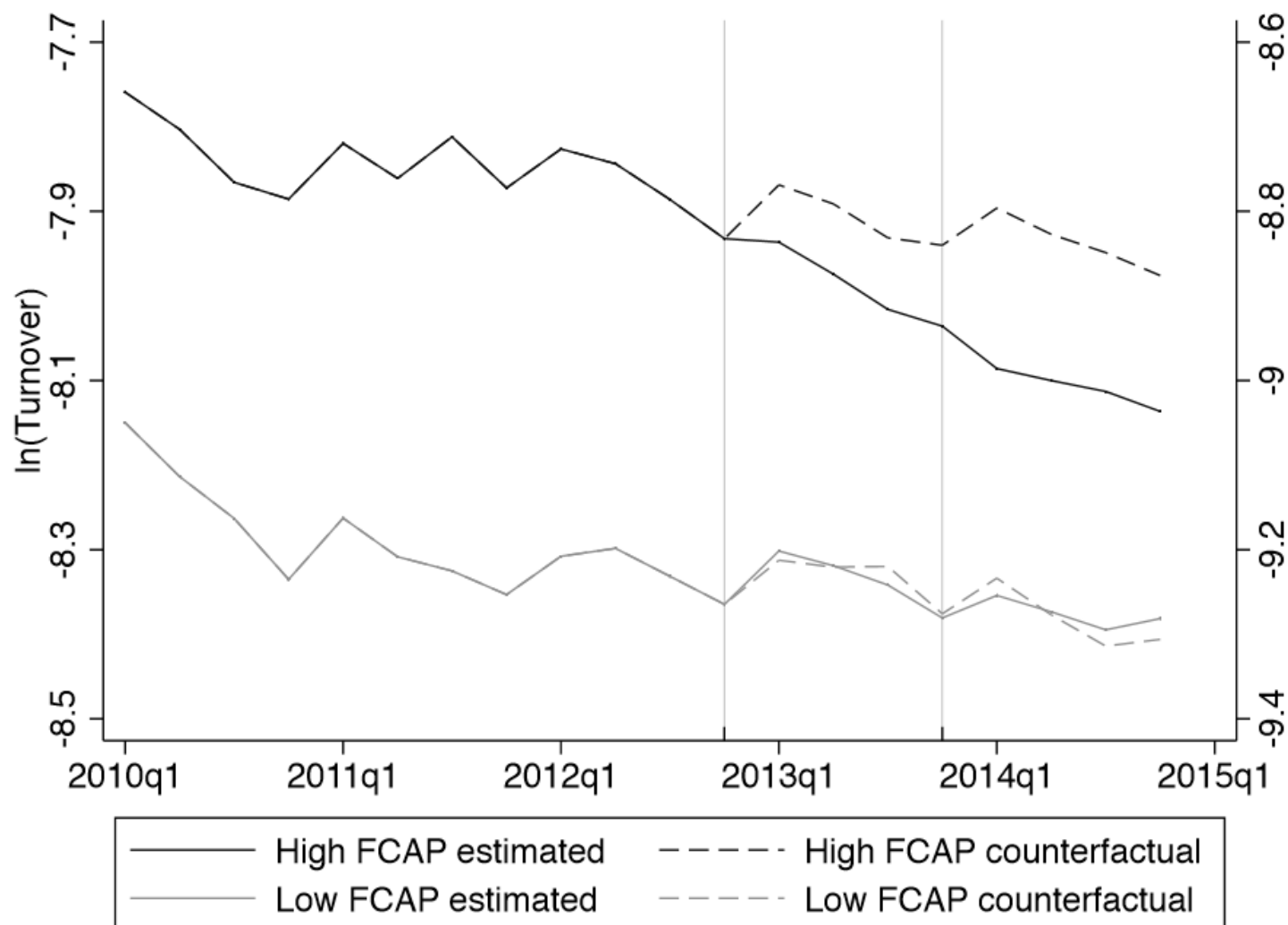
Summary of Results

- AFP merger activity was detrimental for trading activity and liquidity

- Our findings question the rationale of allowing concentration in the industry

- Question: Concentration beneficial for pension contributors?

WORLD BANK GROUP

Trends in Emerging Markets

1. Cross-border portfolio investments represent 35% of world market cap (19% in 2001)

2. Recent growth in passively-managed funds: Index & closet indexers > 50% AUM (Cremers et al., 2016; Williams et al., 2017)

"Passive investing has become investors' default, driving billions into funds that track indexes. It's transforming Wall Street, corporate boardrooms and the life of the neighborhood broker."
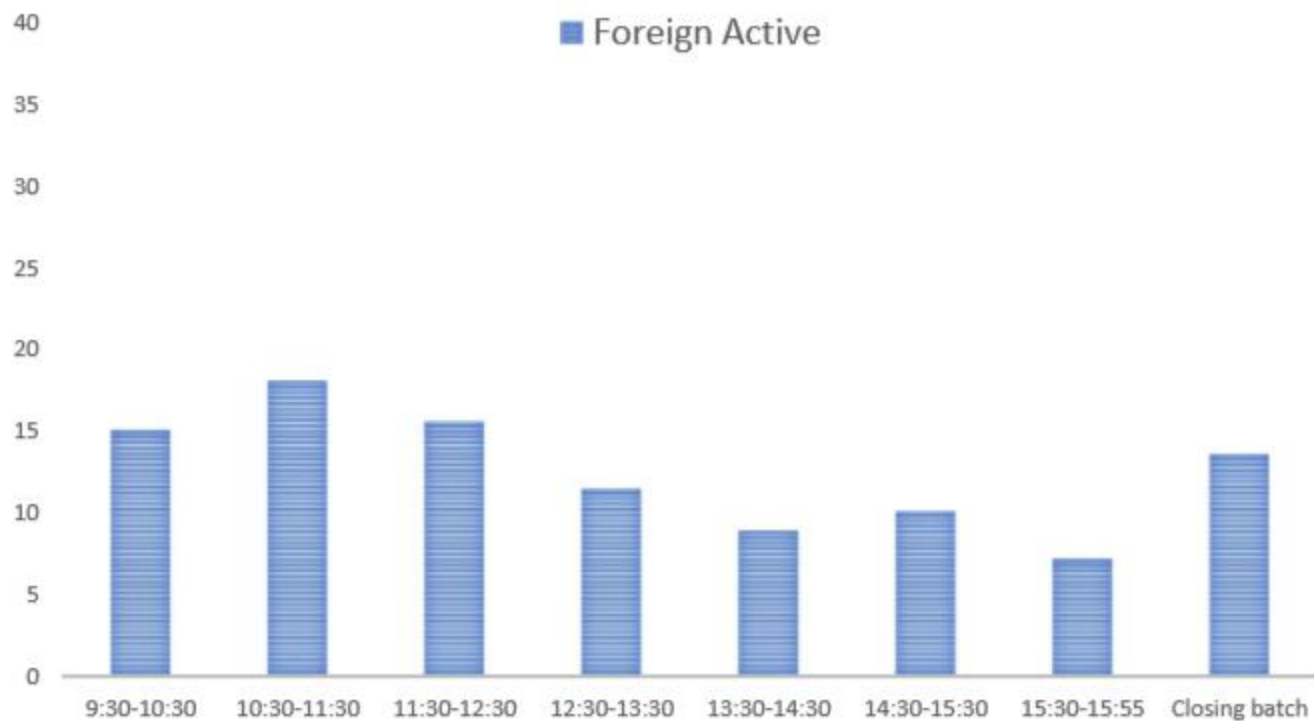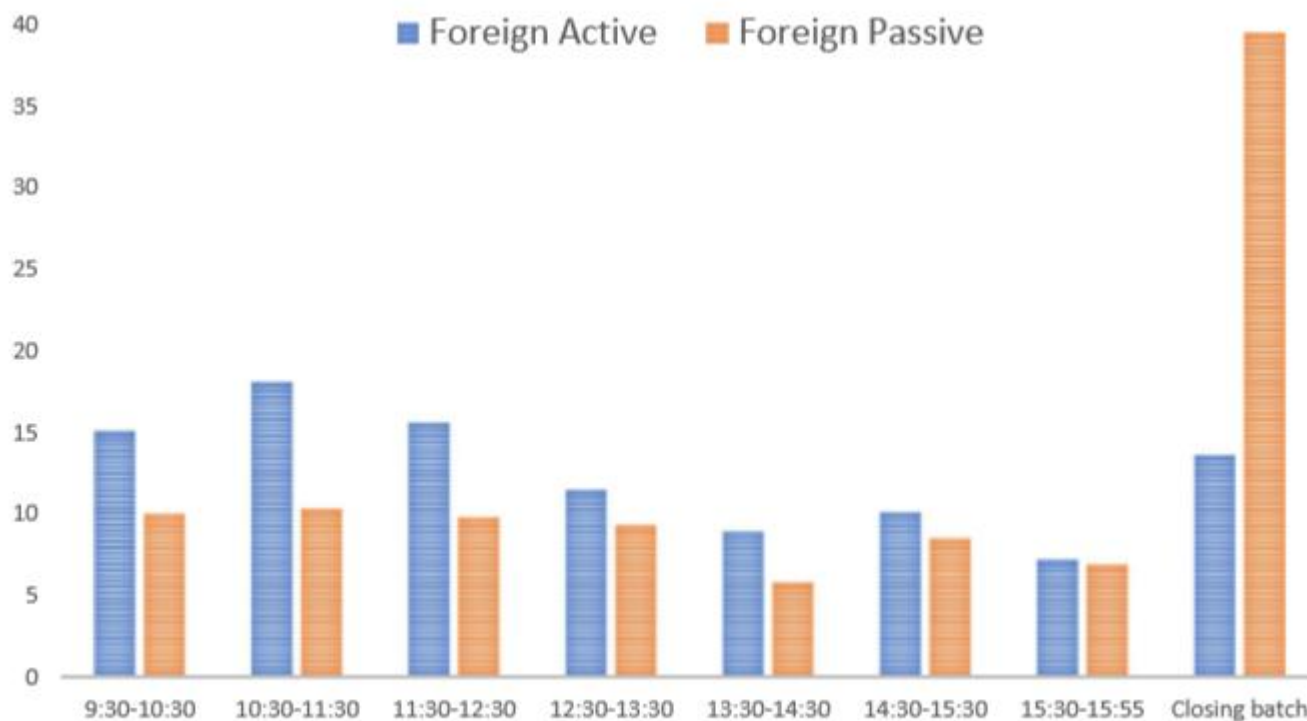**Oct 17, 2016, WSJ**

WORLD BANK GROUP
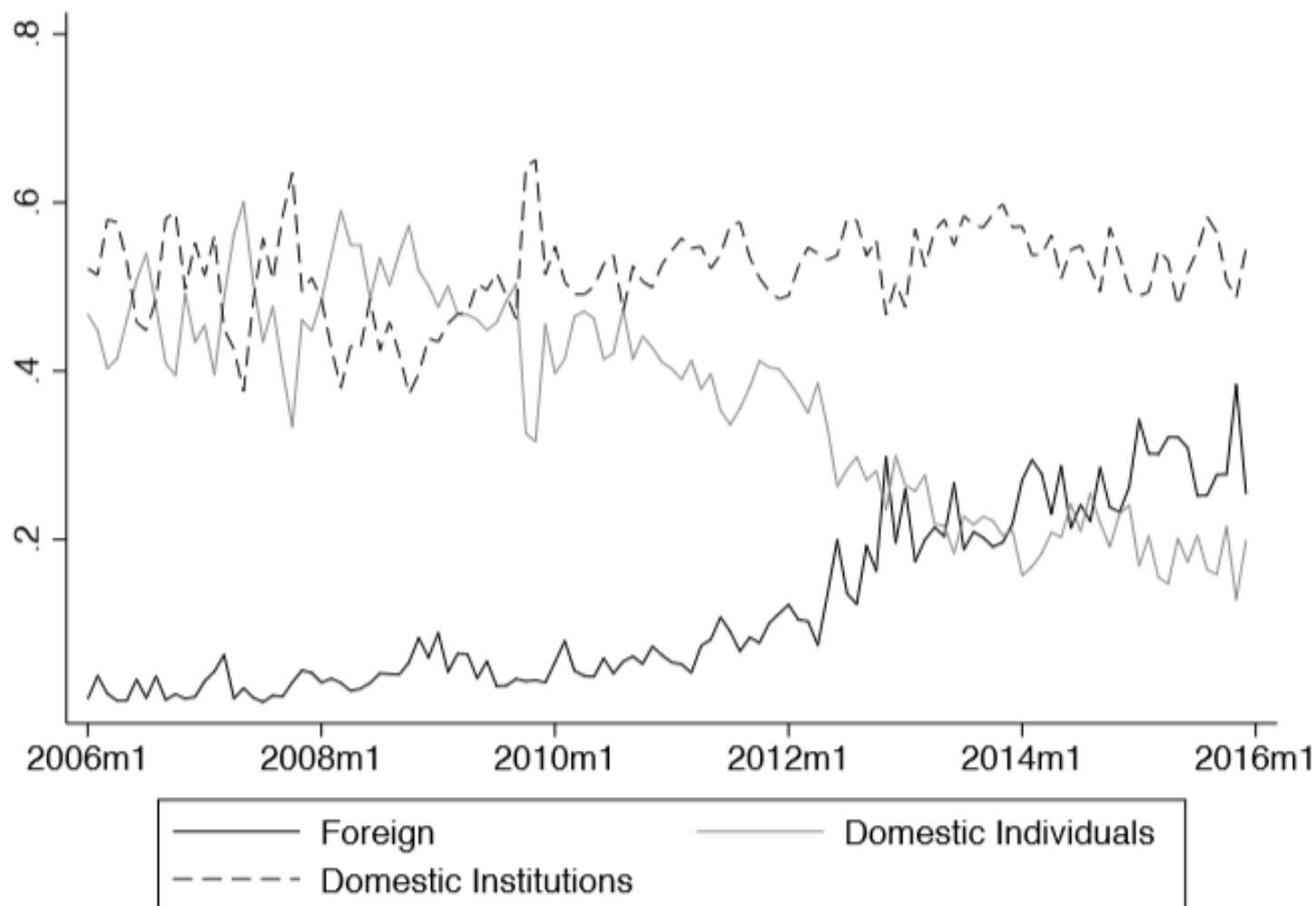
In Colombia

In Colombia

Investor Type	2006 - 2010		2011 - 2016	
	Index	Passive	Index	Passive
Domestic Institutions	4.3	49.5	8.3	63.7
Corporations	-	13.6	-	15.2
Pension Funds	-	97.8	-	85.4
Brokerage Firms	-	45.6	-	74.4
Others	-	15.8	-	22.5
Foreign	4.8	22.9	21.8	42.8

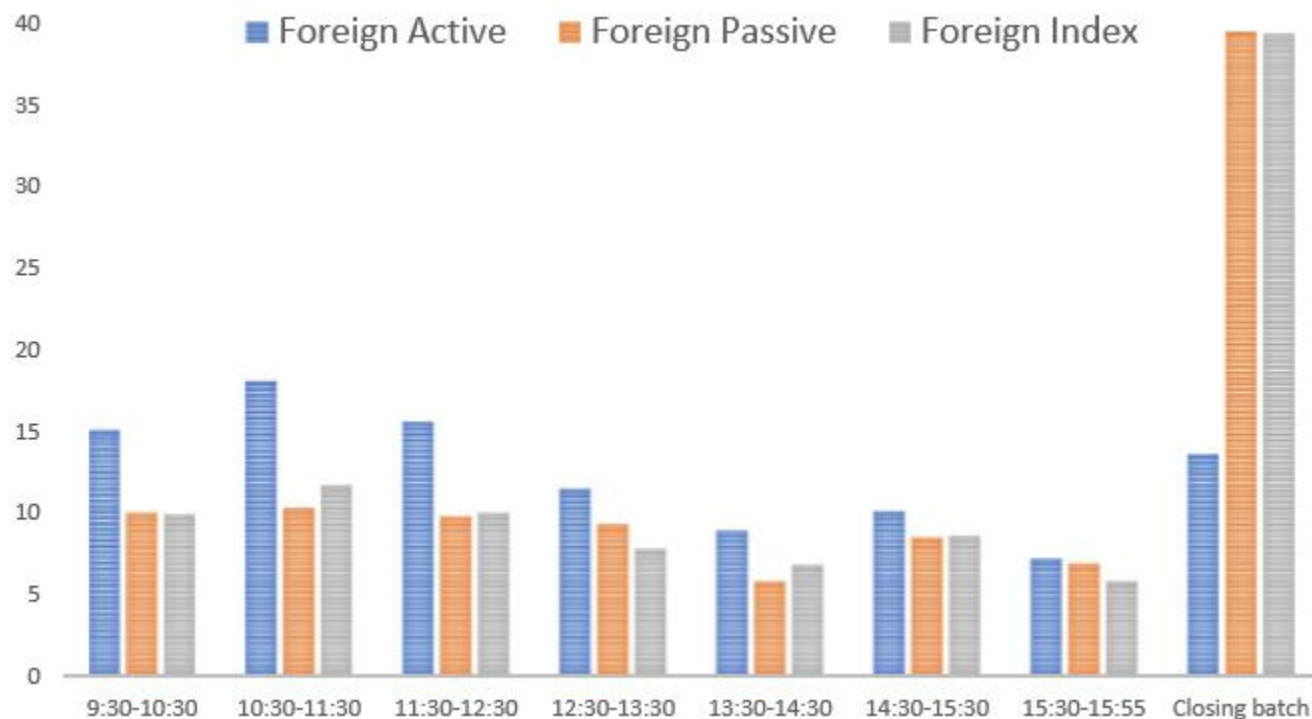# Daily Trading Intervals of Foreign Investors

Daily Trading Intervals of Foreign Investors

Daily Trading Intervals of Foreign Investors

Trends in Emerging Markets

1. Liquidity demands by foreign index and 'passive' funds is different that other market participants

2. These investors are more driven by international news and macro-hedging strategies than by local news

3. Highly sensitive to changes in benchmark (basket and methodology)

4. Currently trade with at 'bad' prices in Colombia

5. Disorderly exit might be problematic for the stock market