How do Equity Markets Complete?

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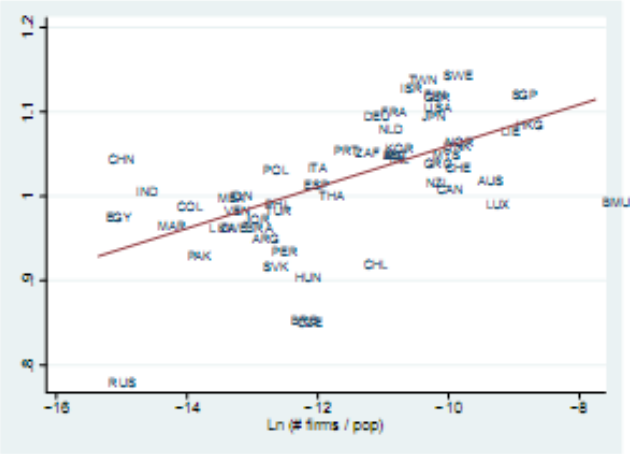
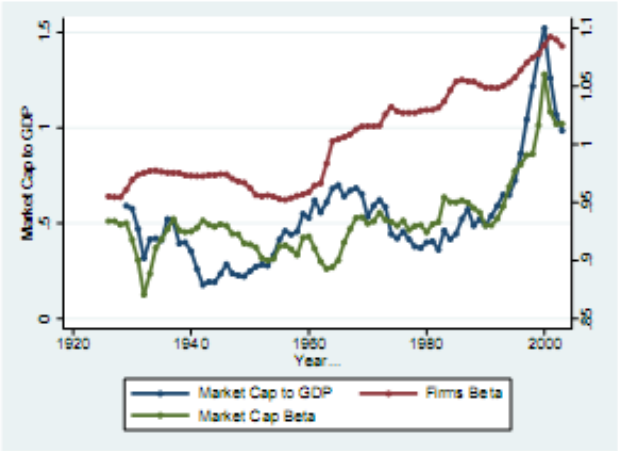
Outline

Summary





The Industrial Composition of equity markets varies greatly across countries

Less developed equity markets exhibit significantly greater concentration. The industries in which listed firms concentrate in less developed equity markets

- are not random, they tend to be the same
- nor entirely explained by the underlying composition of production

There is a strong positive relationship between the average wealth portfolio (or complete market) beta and the degree of development of equity markets

- across countries, and
- in the U.S. time-series

These patterns are consistent with markets completing from the bottom up in terms of the ability of the assets to provide risk sharing

- consistent with rational timing of listing under
- risk-sharing externalities

Literature & Motivation

The development of Stock Markets varies across countries

- Goldsmith (1973), King and Levine (1996) , LaPorta et al. (1997, 1998)

The industrial composition of listed stocks varies across markets.

- This has an effect on how one interprets equity index returns: Lessard (1974), Roll (1992), and Heston and Rouwenhorst (1994)

New lists do have an effect on the pricing of other firms

- In theory, there may be positive externalities of new listings for non-listed entrepreneurs
  - Pagano (1993), new listings increase risk sharing opportunities.
  - Subrahmanyam and Titman (1999), new listings provide "serendipitous" information about non-listed companies.
- In practice, there is an effect on pre-existing listed companies: Braun and Larrain (2008).

This paper argues that the three above are not unrelated and tests a theory of how markets complete over time.

Industrial Composition of Equity Markets

Equity Markets are everywhere highly concentrated in a few industries/firms

- Especially in less developed markets

Equity Markets are everywhere highly concentrated in Manufacturing and Services

- These two industries account for an average of 80-90% of the market by either number of firms or market cap

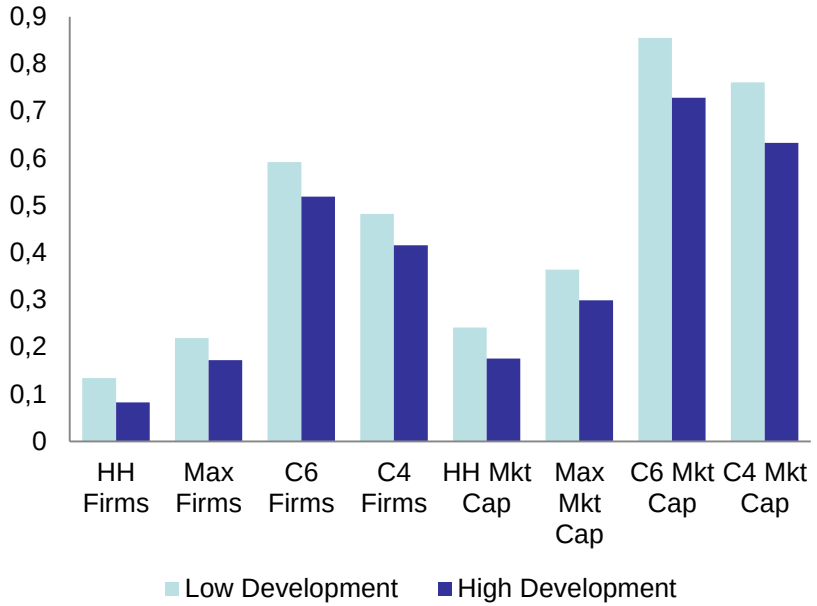


Table 1: Market Composition

	Share of Firms			Share of Market Cap		
	Low Development	High Development		Low Development	High Development	
Agriculture	0.0187	0.0084	*	0.0049	0.0016	**
Construction	0.0238	0.0312		0.0088	0.0101	
Manufacturing	0.3781	0.3656		0.2137	0.3581	***
Mining	0.0582	0.0430		0.1272	0.0432	*
Services	0.4634	0.5327	**	0.5722	0.5451	
Utilities	0.0577	0.0190	***	0.0732	0.0419	**
Observations	28	28		28	28	

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Industrial Composition of Equity Markets

The industrial composition of equity markets is not entirely determined by the composition of the economy

Some industries are

- everywhere underrepresented (agriculture and construction)
- more underrepresented in highly developed markets (services)
- more overrepresented in less developed markets (utilities, machinery, finance)

Table 7: Market vs Economic Composition by Development

	Low Development			High Development		
Sector	Share of Revenues	Share of Output		Share of Revenues	Share of Output	
Agriculture	0.0082	0.1080	***	0.0029	0.0482	***
Chemicals	0.0193	0.0494	***	0.0180	0.0509	***
Construction	0.0206	0.1285	***	0.0258	0.1155	***
Education, health, social work and other	0.0045	0.2464	***	0.0147	0.3560	***
Finance and insurance	0.2081	0.0624	***	0.2275	0.1120	***
Food & Beverages	0.0249	0.1041	***	0.0427	0.0782	***
Machinery & Equipment	0.0199	0.1768	***	0.1077	0.1797	**
Mining	0.2186	0.0330	***	0.0651	0.0310	*
Products & Goods	0.0924	0.1159		0.1075	0.0853	
Real estate	0.0029	0.0626	***	0.0052	0.1117	***
Renting and Business Services	0.0108	0.0124		0.0366	0.0346	
Steel Works	0.0439	0.0393		0.0554	0.0287	
Textiles & Apparel	0.0109	0.0578	***	0.0064	0.0214	***
Transport, storage and communication	0.0961	0.1120		0.0997	0.1272	*
Utilities	0.1240	0.0541	**	0.0319	0.0368	
Wholesale and retail trade, restaurants	0.0803	0.2190	***	0.1235	0.2130	***
Wood, Furniture and Paper	0.0147	0.0472	***	0.0294	0.0609	**
Observations	13	13		21	21	

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Theory

The decision to go public depends on the cost of not doing so (being exposed to idiosyncratic risk) and the benefits of doing it (diversification). If CAPM holds, the price paid by the market is inversely proportional to the beta and the market risk

$$\begin{aligned} \mu_{i,t} &= r_f + \beta_{i,t}\left(\mu_{m,t} - r_f\right) \\ &= r_f + \beta_{i,t}\,\gamma\,\sigma^2_{m,t} \end{aligned}$$

For a given idiosyncratic risk, higher beta firms will always have a lower incentive to list since they will get a lower share of the market once they list.

However, the penalty imposed on higher beta firms, relative to lower beta firms, falls as the market gets more complete and market risk gets reduced. High beta firms have an incentive to wait for a better market. As the market completes, ever higher beta firms find out that it is worth listing.

There is, then, an equilibrium in which the market completes starting with low beta firms and following with higher beta ones.

This implies that less developed (or complete) markets will tend to be more concentrated in low beta industries. That is, the average market beta will increase with development.

It also implies that new lists tend to be of industries with a higher beta than that of the market.

Methodology & Data

$$\beta_j = a + b \log \left(\frac{\text{number of firms}}{\text{population}} \right)_j + \epsilon_j$$

Dependent Variable

total wealth portfolio or complete market beta
US betas (FFrench48), country-specific weights (Worldscope)

$$\beta_j \equiv \sum_{i=1}^{n} \omega_{i,j} \beta_i$$

Dependent Variable

Stock market development

$$\log \left(\frac{\text{number of firms}}{\text{population}} \right)_j$$

Source of Variation

Across markets, in time (US and Chile), and dynamic (IPOs)

Controls

Per capita GDP, composition of economy, etc

Data: Dependent Variable

Industry Betas vary a great deal in the U.S.

- Low Beta: Utilities, Food, Petroleum, Communication, Mining
- High Beta: Recreation, Construction, Machinery, Services

The industry sorting based on the U.S. Beta is highly correlated to that of other developed markets

Betas are quite estable in time

Table 34: Fama French 48 Industry Betas

Fama French Industry	Beta	Fama French Industry	Beta
Utilities	.5088015	Trading	.9983665
Food Products	.6827793	Real Estate	1.029328
Tobacco Products	.7092189	Banking	1.032225
Beer & Liquor	.7307512	Retail	1.04059
Precious Metals	.7504459	Rubber and Plastic Products	1.047716
Petroleum and Natural Gas	.7620296	Miscellaneous	1.048961
Candy & Soda	.8081806	Transportation	1.049358
Communication	.820406	Construction Materials	1.050006
Defense	.821691	Apparel	1.068485
Shipping Containers	.8285516	Wholesale	1.077581
Pharmaceutical Products	.8375176	Personal Services	1.080789
Insurance	.8518447	Aircraft	1.082923
Agriculture	.8814825	Steel Works Etc	1.092455
Medical Equipment	.8952743	Restaraunts, Hotels, Motels	1.101815
Consumer Goods	.9044412	Healthcare	1.131394
Shipbuilding, Railroad Equipment	.9382722	Machinery	1.16812
Textiles	.9474918	Computers	1.177203
Fabricated Products	.9640562	Entertainment	1.203642
Chemicals	.9788598	Electrical Equipment	1.239288
Mining	.979912	Construction	1.2533
Printing and Publishing	.9801971	Business Services	1.391969
Business Supplies	.9814882	Recreation	1.43366
Coal	.9831856	Electronic Equipment	1.446037
Automobiles and Trucks	.9879934	Measuring and Control Equipment	1.45156

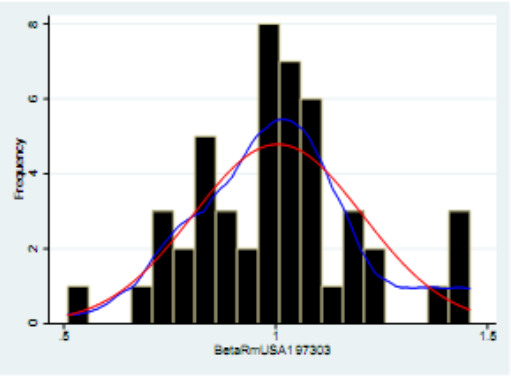


Figure 7: Industry Betas Frequencies

Table 13: Cross Country Beta Rank Correlations

	USA Beta	Germany Beta	Great Britain Beta	Japan Beta
USA Beta	1.0000			
Germany Beta	0.7872*	1.0000		
Great Britain Beta	0.8061*	0.8083*	1.0000	
Japan Beta	0.7697*	0.7361*	0.9273*	1.0000

* $p < 0.10$

Table 14: U.S. Industry Betas Rank Correlations

	Betas 73-03	Betas 63-03	Betas 27-03
Betas 73-03	1		
Betas 63-03	0.9815*	1	
Betas 27-03	0.6474*	0.6153*	1

* $p < 0.10$

Data: Dependent Variable (2)

Aggregate Betas vary a great deal across countries

- High Beta: US, UK, Germany, Singapore
- Low Beta: Argentina, Chile, Russia, Turkey, Slovakia

Table 1: Country Firms Beta

Country	Firms Beta	Country	Firms Beta
Russia	0.7793	Australia	1.0168
Czech Republic	0.8502	Poland	1.0299
Barbados	0.8518	Italy	1.0332
Hungary	0.9026	Switzerland	1.0336
Slovakia	0.9149	Greece	1.0376
Chile	0.9182	China	1.0421
Pakistan	0.9293	Ireland	1.0443
Peru	0.9339	Malaysia	1.0473
Argentina	0.9496	Austria	1.0482
Zimbabwe	0.9609	Belgium	1.0490
Brazil	0.9616	South Africa	1.0504
Sri Lanka	0.9619	Portugal	1.0524
Morocco	0.9651	Republic of Korea	1.0570
Jordan	0.9732	Denmark	1.0598
Egypt	0.9733	Norway	1.0649
Venezuela	0.9825	Liechtenstein	1.0775
Turkey	0.9827	Netherlands	1.0795
Colombia	0.9866	Hong Kong	1.0832
Luxembourg	0.9894	Japan	1.0943
Philippines	0.9911	Germany	1.0944
Bermuda	0.9919	France	1.0982
Mexico	0.9973	United States of America	1.1054
Indonesia	0.9992	United Kingdom	1.1176
Thailand	1.0006	Finland	1.1186
India	1.0064	Singapore	1.1210
Canada	1.0065	Israel	1.1262
Spain	1.0122	Taiwan	1.1371
New Zealand	1.0148	Sweden	1.1418

Beta and Equity Market Dev: Cross-Country

Complete Market Beta Increases with Equity Market Development across Countries

- Highly significant
- Two traditional measures of Equity Market Development
- Not due just to economic development
- Large part of the variation explained

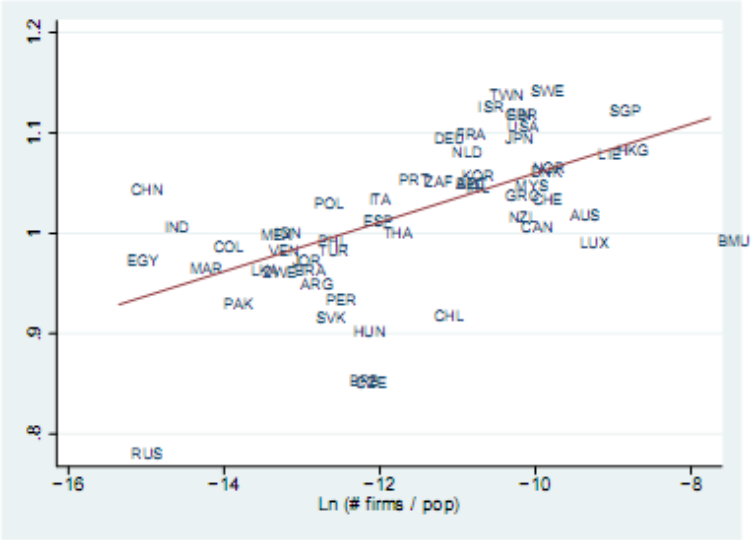
Large Economic Effect

Table 2: Cross Country Betas Regressions

	(1) Firms Beta	(2) Firms Beta	(3) Firms Beta	(4) Firms Beta
Ln (# Firms / Pop)	0.0245***		0.0221**	
	(0.00471)		(0.00899)	
Market Cap to GDP		0.0628***		0.0387**
		(0.0156)		(0.0172)
Ln (GDP pc) PPP			0.00587	0.0335***
			(0.0193)	(0.0125)
Constant	1.305***	0.974***	1.222***	0.679***
	(0.0563)	(0.0135)	(0.276)	(0.111)
Observations	56	54	56	54
R^2	0.333	0.239	0.334	0.333

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$



(a) Firms Beta

Beta and Equity Market Dev: U.S. Time-Series

Complete Market Beta Increases with Equity Market Development in the U.S.

- Highly significant
- Two traditional measures of Equity Market Development
- Not due just to time or economic development
- Large part of the variation explained

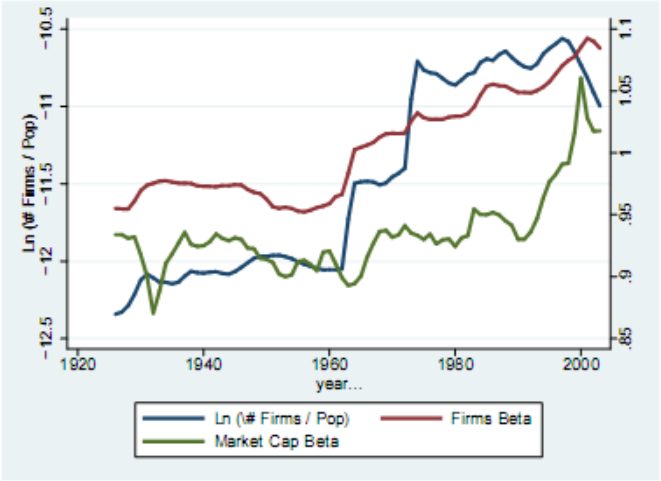
Similarly Large Economic Effect

Table 4: US Time Series Regressions

	(1) Firms Beta	(2) Firms Beta	(3) Firms Beta	(4) Firms Beta	(5) Firms Beta	(6) Firms Beta
Ln (# Firms / Pop)	0.0630***		0.0454***		0.0489***	
	(0.00271)		(0.00712)		(0.00726)	
Market Cap to GDP		0.106***		0.0274***		0.0294***
		(0.0135)		(0.00956)		(0.0104)
Year			0.000528***	0.00154***	0.00203***	0.00111
			(0.000198)	(0.000118)	(0.000632)	(0.000863)
Ln (GDP pc) PPP					-0.0256**	0.00674
					(0.0106)	(0.0134)
Constant	1.728***	0.951***	0.489	-2.026***	-2.739**	-1.102
	(0.0311)	(0.00802)	(0.466)	(0.228)	(1.371)	(1.857)
Observations	78	75	78	75	75	75
R^2	0.877	0.459	0.887	0.839	0.891	0.840

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$



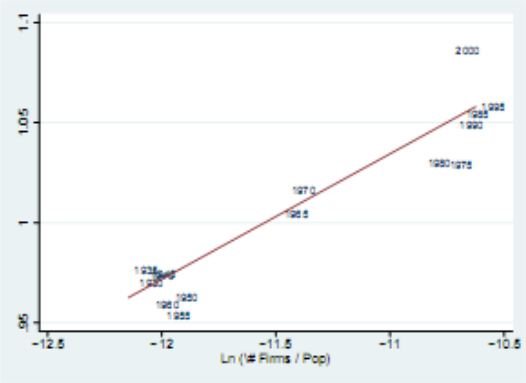


Figure 12: US Market Development - Firms Scatter

Beta and Equity Market Dev: Dynamics

IPOs of higher beta industries list in more developed equity markets

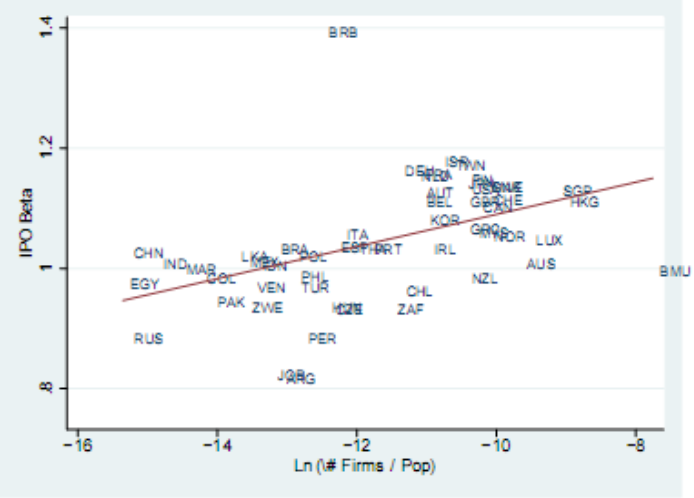
IPO betas are on average larger than the market beta

The Average market beta has generally increased in ten years.

	(1) Firms Beta	(3) IPO Beta	(5) IPO + SEO Beta
Ln (# Firms / Pop)	0.0245***	0.0268***	0.0196***
	(0.00471)	(0.00694)	(0.00693)
Ln (GDP pc) PPP			
Constant	1.305***	1.358***	1.256***
	(0.0563)	(0.0832)	(0.0831)
Observations	56	54	55
R^2	0.333	0.222	0.131

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$



(b) IPO Beta

Table 1: Country Beta vs IPO Beta

Variable	Coefficient	(Std. Err.)
IPO Beta	0.395***	(0.088)
Intercept	0.605***	(0.092)

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8: Market Completing

	1991	2001	
Ln(# Firms / Pop)	-12.442	-11.402	***
Market Cap / GDP	.3503	.7815	***
Firms Beta	.9967	1.0392	***
Market Cap Beta	.9537	.9766	**

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Beta and Equity Market Dev: Not Entirely driven by the Economy Beta

Table 1: Controlling for Economic Composition

	(1) Fama French 48 Firms Beta	(2) Fama French 48 Firms Beta	(3) Fama French 48 Firms Beta	(4) 17 Sectors Firms Beta	(5) 17 Sectors Firms Beta	(6) 17 Sectors Firms Beta
Ln (# Firms / Pop)	0.0245***	0.0259***	0.0251***	0.0238***	0.0219***	0.0214***
	(0.00471)	(0.00661)	(0.00679)	(0.00614)	(0.00556)	(0.00571)
17 Economic Sectors Output Beta		0.0811***			0.0638***	
		(0.0260)			(0.0219)	
17 Economic Sectors Value Added Beta			0.0758***			0.0590**
			(0.0266)			(0.0224)
Constant	1.305***	1.189***	1.187***	1.286***	1.154***	1.154***
	(0.0563)	(0.0934)	(0.0981)	(0.0714)	(0.0786)	(0.0826)
Observations	56	34	34	34	34	34
R^2	0.333	0.476	0.455	0.320	0.466	0.444

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Beta and Equity Market Dev: Cross-Country Instrumental Variables Estimates

The results are robust to instrumenting stock market development with legal origins.

Complete market betas are significantly lower in French (.9984) than in British legal origin countries (1.0242).

Table 32: Instrumenting Legal Origin

	(1) Firms Beta	(2) Firms Beta	(3) Market Cap Beta	(4) Market Cap Beta
Ln (# Firms / Pop)	0.0245***	0.0332***	0.0331***	0.0397***
	(0.00471)	(0.00845)	(0.00709)	(0.0126)
Constant	1.305***	1.409***	1.357***	1.436***
	(0.0563)	(0.101)	(0.0848)	(0.150)
Observations	56	51	56	51
R^2	0.333	0.263	0.287	0.244

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(1) and (3) are benchmark regressions;(2) and (4) are instrumenting legal origin.

Beta and Equity Market Dev: The Case of Chile (1)

Under represented sectors in the market tend to be high beta

- Education, Health, social work and other services, Construction and Renting and Business Services

On the other hand, low beta sectors are over represented in the Chilean market

- Utilities, Products and Goods.

Table 12: Chile 2003: Market vs Economic Composition

Sector	Beta	Share of Value Added	Share of Revenues	Economy vs Market
Utilities	0.5088	0.0301	0.1842	-0.1541
Food & Beverages	0.7406	0.0445	0.0556	-0.0111
Mining	0.8689	0.0889	0.0121	0.0768
Agriculture	0.8815	0.0508	0.0023	0.0486
Products & Goods	0.9093	0.0444	0.0732	-0.0287
Transport, storage and communication	0.9349	0.0969	0.2484	-0.1515
Finance and insurance	0.9608	0.0504	0.1388	-0.0883
Chemicals	0.9789	0.0207	0.0191	0.0015
Wood, Furniture and Paper	0.9808	0.0296	0.0042	0.0254
Textiles & Apparel	1.0080	0.0081	0.0027	0.0054
Real estate	1.0293	0.0837	0.0010	0.0826
Wholesale and retail trade, restaurants and hotels	1.0733	0.1019	0.2097	-0.1079
Steel Works	1.0925	0.0135	0.0330	-0.0196
Machinery & Equipment	1.1184	0.0120	0.0109	0.0011
Education, health, social work and other services	1.1797	0.1672	0.0021	0.1651
Construction	1.2533	0.0727	0.0023	0.0703
Renting and Business Services	1.3920	0.0846	0.0003	0.0843
Weighted Beta		1.0369	0.8854	0.1516

As in the U.S. Time Series, the Chilean Market Beta has increased over time.

- Firm Weighted
- Market Cap Weighted

Still, the Chilean beta is small.

- below 1.

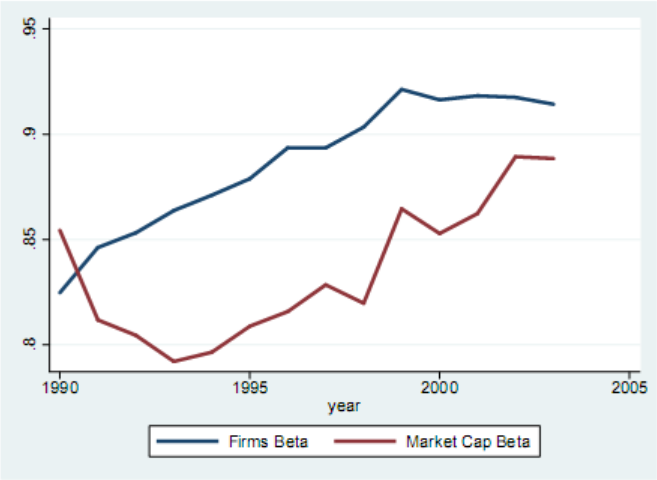


Figure 1: Chile Times Series Beta 1990-2003

Beta and Equity Market Dev: The Case of Chile (2)

Low beta industries tend to be overrepresented in the market when compared to their share in the economy

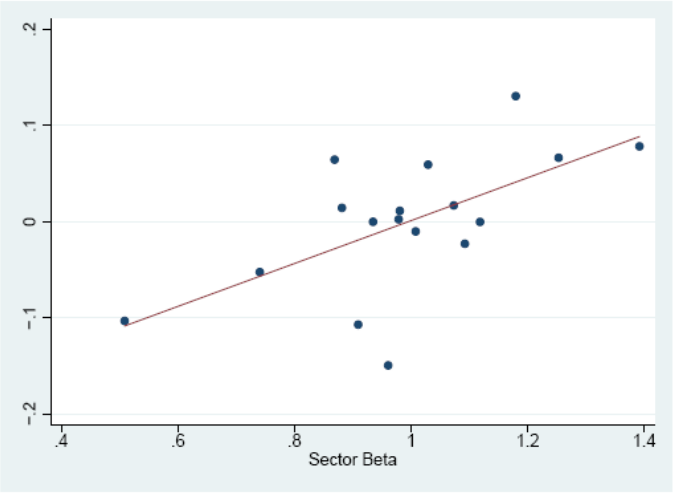


Figure 5: Chilean Economy vs Market (Firms)

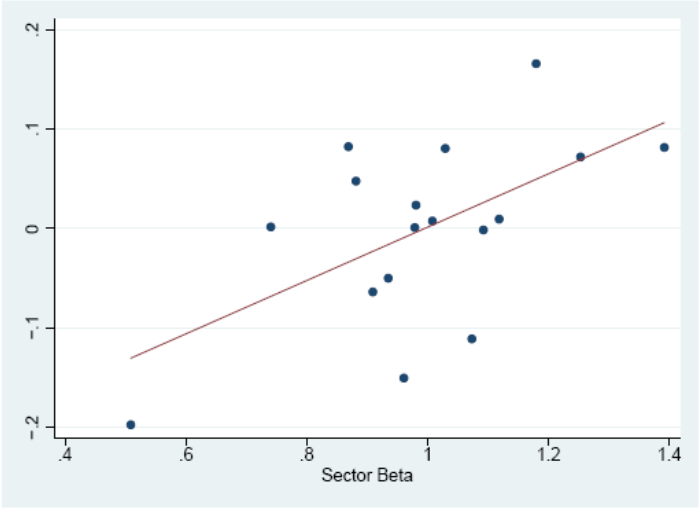
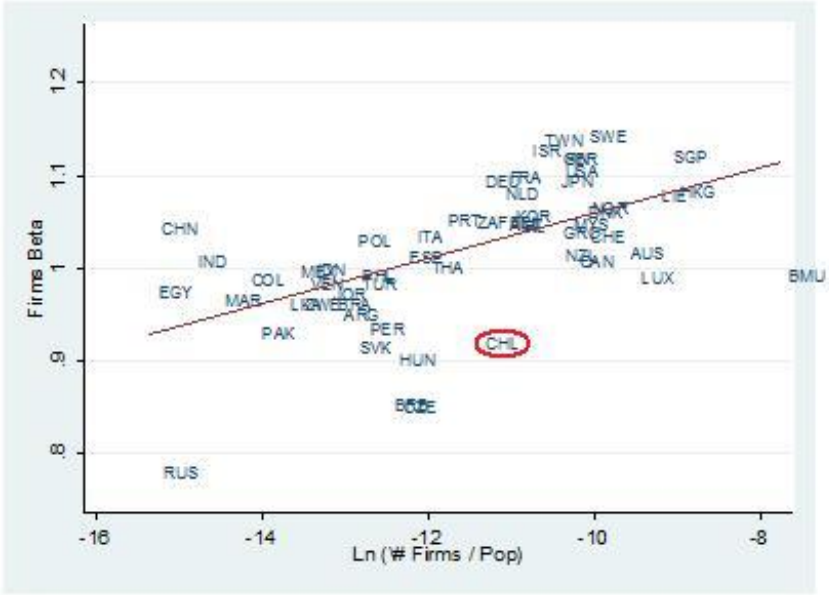


Figure 6: Chilean Economy vs Market (Market Cap)

Beta and Equity Market Dev: The Case of Chile (3)

Judging by its complete market beta, the Chilean Equity Market is much less developed than what its size implies.

- As is the case when using any measure different than size (turnover, ownership concentration, quality of prices, etc.)
- On this dimension Chile is comparable to Slovak Rep, Peru, and Hungary.



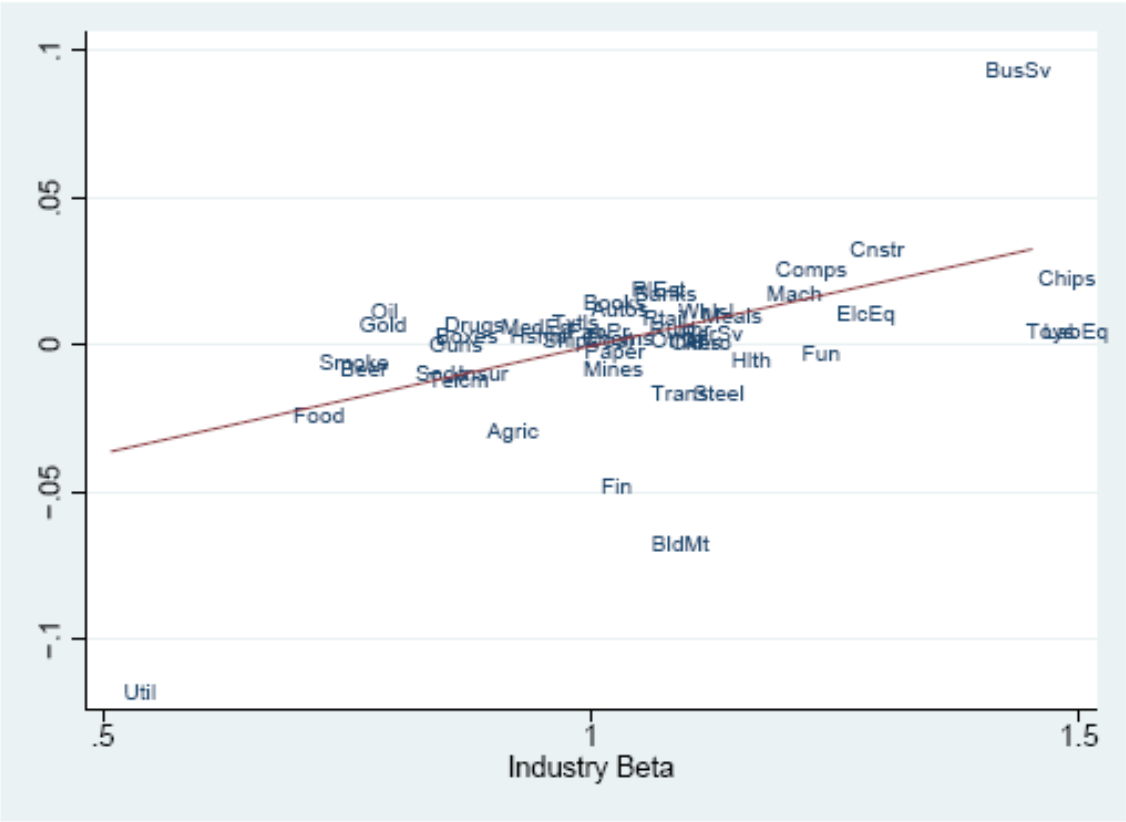
Beta and Equity Market Dev: The Case of Chile (4)

The Chilean market doesn't have the composition that other equally developed countries have (measured with log firms to population).

- More concentrated on low beta firms

The level of development of the Chilean market is not reflected in its composition.

- Average firm and market cap beta of similar countries are 1.055 and .9552 respectively.
- Chilean firm and market cap weighted betas are .9182 and .8624.



Beta and Equity Market Dev: The Case of Chile (5)

Table 1: Chile vs Similar Countries Market Composition FF48

Fama French Industry	Industry Beta	Difference	Fama French Industry	Industry Beta	Difference
Utilities	0.5088	-0.1179	Trading	0.9984	-0.0479
Food Products	0.6828	-0.0235	Real Estate	1.0293	0.0189
Tobacco Products	0.7092	-0.0057	Banking	1.0322	0.0178
Beer & Liquor	0.7308	-0.0083	Retail	1.0406	0.0095
Precious Metals	0.7504	0.0072	Rubber and Plastic Products	1.0477	0.0058
Petroleum and Natural Gas	0.7620	0.0115	Miscellaneous	1.0490	0.0015
Candy & Soda	0.8082	-0.0097	Transportation	1.0494	-0.0163
Communication	0.8204	-0.0115	Construction Materials	1.0500	-0.0678
Defense	0.8217	0.0001	Apparel	1.0685	0.0014
Shipping Containers	0.8286	0.0032	Wholesale	1.0776	0.0115
Pharmaceutical Products	0.8375	0.0073	Personal Services	1.0808	0.0042
Insurance	0.8518	-0.0092	Aircraft	1.0829	0.0012
Agriculture	0.8815	-0.0294	Steel Works Etc	1.0925	-0.0166
Medical Equipment	0.8953	0.0065	Restaraunts, Hotels, Motels	1.1018	0.0103
Consumer Goods	0.9044	0.0036	Healthcare	1.1314	-0.0048
Shipbuilding, Railroad Equipment	0.9383	0.0015	Machinery	1.1681	0.0174
Textiles	0.9475	0.0079	Computers	1.1772	0.0256
Fabricated Products	0.9641	0.0047	Entertainment	1.2036	-0.0027
Chemicals	0.9789	0.0027	Electrical Equipment	1.2393	0.0111
Non-Metallic and Industrial Metal Mining	0.9799	-0.0077	Construction	1.2533	0.0326
Printing and Publishing	0.9802	0.0146	Business Services	1.3920	0.0940
Business Supplies	0.9815	-0.0018	Recreation	1.4337	0.0048
Coal	0.9832	0.0015	Electronic Equipment	1.4460	0.0228
Automobiles and Trucks	0.9880	0.0127	Measuring and Control Equipment	1.4516	0.0051

Robustness (1)

Measurement of Complete Market Beta

- Number of Firms
- Market Cap
- Revenues
- Assets

Industry Aggregation

- FF48
- FF17

Multifactor Market Beta

Equally Weighted

Table 3: Cross Country Betas Regressions 2

	(1) Firms Beta	(2) Market Cap Beta	(3) Revenues Beta	(4) Book Assets Beta
Ln (# Firms / Pop)	0.0245***	0.0331***	0.0318***	0.0190***
	(0.00471)	(0.00709)	(0.00460)	(0.00424)
Constant	1.305***	1.357***	1.338***	1.202***
	(0.0563)	(0.0848)	(0.0550)	(0.0508)
Observations	56	56	56	56
R^2	0.333	0.287	0.470	0.272

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Fama French 17 and 48 Betas

	(1) Firms Beta	(2) Firms Beta	(3) FF17 Firms Beta	(4) FF17 Firms Beta
Ln (# Firms / Pop)	0.0245***	0.0221**	0.0139***	0.0144**
	(0.00471)	(0.00899)	(0.00347)	(0.00663)
Ln (GDP pc) PPP		0.00587		-0.00130
		(0.0193)		(0.0143)
Constant	1.305***	1.222***	1.170***	1.188***
	(0.0563)	(0.276)	(0.0415)	(0.204)
Observations	56	56	56	56
R^2	0.333	0.334	0.228	0.228

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8: Cross Country Betas Regressions - Multifactor

	(1) Firms Beta	(2) Firms Beta	(3) Market Firms Beta Multifactor	(4) Market Firms Beta Multifactor
Ln (# Firms / Pop)	0.0245***	0.0221**	0.00847**	0.0145**
	(0.00471)	(0.00899)	(0.00331)	(0.00626)
Ln (GDP pc) PPP		0.00587		-0.0153
		(0.0193)		(0.0135)
Constant	1.305***	1.222***	1.184***	1.397***
	(0.0563)	(0.276)	(0.0396)	(0.192)
Observations	56	56	56	56
R^2	0.333	0.334	0.108	0.129

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 10: Cross Country Equally Weighted

	(1) Firms Beta	(2) Firms Beta	(3) EW Beta	(4) EW Beta
Ln (# Firms / Pop)	0.0245***	0.0221**	0.0129***	0.0102**
	(0.00471)	(0.00899)	(0.00265)	(0.00505)
Ln (GDP pc) PPP		0.00587		0.00686
		(0.0193)		(0.0109)
Constant	1.305***	1.222***	1.146***	1.050***
	(0.0563)	(0.276)	(0.0317)	(0.155)
Observations	56	56	56	56
R^2	0.333	0.334	0.305	0.310

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Robustness (2)

Worldscope Coverage

- Number of Firms
- Market Cap

Table 11: WScope Sample over WDI Sample Firms

	(1) Firms Beta	(2) Firms Beta	(3) Firms Beta	(4) Firms Beta
Ln (# Firms / Pop)	0.0245***	0.0231***	0.0203***	0.0138*
	(0.00471)	(0.00589)	(0.00608)	(0.00687)
Constant	1.305***	1.291***	1.264***	1.206***
	(0.0563)	(0.0668)	(0.0678)	(0.0742)
Observations	56	43	39	30
R^2	0.333	0.274	0.231	0.126

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

(1)No restrictions,(2) using only countries that had at least 25% representation,(3)50% representation, and (4)75% representation of the number of firms in the country

Alternative Explanations

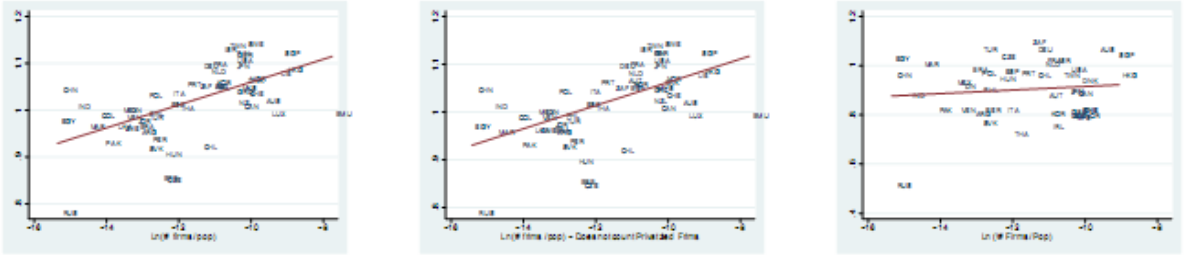
Privatizations
- Number of Firms
- Market Cap

Value/Growth

Tangibility

Accounting Quality

Quality of Prices



(a) Complete Sample (b) Without SIP (c) Only SIP

Figure 6: The effect of Share Issue Privatizations (SIP)

Table 1: Alternative Explanations Cross Country Regressions

	(1) Firms Beta	(2) Firms Beta	(3) Firms Beta	(4) Firms Beta	(5) Firms Beta	(6) Firms Beta	(7) Firms Beta
Ln (# Firms / Pop)	0.0245***	0.00996**	0.0128***	0.0224***	0.0149**	0.0252***	0.0248***
	(0.00471)	(0.00392)	(0.00458)	(0.00468)	(0.00681)	(0.00606)	(0.00607)
Avg. Book to Market Firm Weighted		-0.780***					
		(0.108)					
Avg. Firms Size Firm Weighted			-0.000219***				
			(0.0000442)				
Firms Tangibility Mean				-0.258**			
				(0.126)			
Accall					0.00158*		
					(0.000809)		
Morck's Sinc						0.00141	
						(0.00175)	
Morck's Sinc 2							0.0494
							(0.0764)
Constant	1.305***	1.726***	1.351***	1.353***	1.114***	1.232***	1.314***
	(0.0563)	(0.0709)	(0.0479)	(0.0597)	(0.120)	(0.110)	(0.0665)
Observations	56	56	56	56	39	40	40
R^2	0.333	0.664	0.545	0.382	0.471	0.330	0.326

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Conclusion

The composition of equity markets varies in a predictable way based on the incentives of entrepreneurs to list their companies at different points in the life of a market

There is a strong relationship between complete market beta and the level of development of equity markets.

New listings do depend on market composition.

Endogenous measure of market development.