

Discussion on Bartram and Grinblatt (2018): “Global Market Inefficiencies”

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Global point-in-time dataset

A mispricing (intrinsic-to-market $- 1$) strategy works globally

- Intrinsic value as the fitted component from regressing the market cap on a long list of accounting variables (each month), per Bartram and Grinblatt (2018 JFE)

Stronger effect in emerging than in developed markets, evidence interpreted as consistent with limits to arbitrage

Awesome work, global data are the future of empirical finance (Karolyi 2016, “Home bias, an academic puzzle,” RF)

- 1 Economic Interpretation
- 2 Anomalies: Emerging vs. Developed

1 Economic Interpretation

2 Anomalies: Emerging vs. Developed

Generally understood as the “fair” value justified by fundamentals, but Graham and Dodd (1934) never gave a quantifiable definition

- Commonly estimated from dynamic cash flow and residual income models (Penman 2013)

Basic premise: “[T]wo firms with the same accounting data have identical fair values (p. 1)”

Bartram and Grinblatt (2018) appeal to the law of one price: “[T]he values obtained with our approach are the market values of synthetic stocks or replicating portfolios (p. 127).”

Not exactly the law of one price, which says two assets with exactly the same payoffs tomorrow should have the same value today

- The law of one price doesn't say that same accounting data (about the past) should imply the same market value

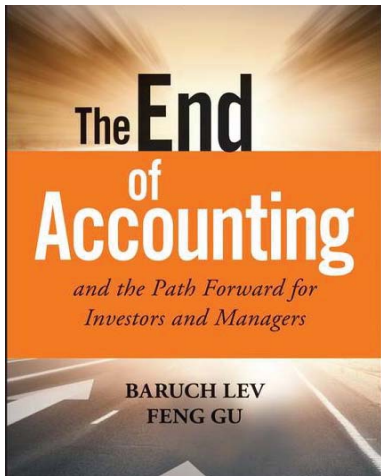
Berk, Green, and Naik (1999):

$$\text{Market value} = \text{Assets in place} + \text{Growth options}$$

The value regression might work better for (backward-looking) assets in place than (forward-looking) growth options

Economic Interpretation

Accounting conservatism: Why growth options are important



1. Value-creating investments in patents, brands, IT, R&D, and other intangibles are expensed
2. Reported earnings combines sustainable earnings and one-time transitory gains or loses
3. Earnings include subjective managerial estimates (stock-option expense, asset write-offs, bad debts, future pension liabilities)

Economic Interpretation

Fama's (1991) joint-hypothesis problem again: Bad model or mispricing?

Growth options nonlinear in fundamentals, large tail errors

	All	Correlation	Q1 (Overvalued)	Q2	Q3	Q4	Q5 (Undervalued)
World							
Mispricing	1.97	1.00	-6.06	-0.43	0.54	1.91	13.91
Market Capitalization	2,823.7	-0.02	4,216.4	5,429.1	3,108.0	1061.4	299.7
Book/Market	0.71	0.12	0.51	0.52	0.61	0.77	1.13
United States							
Mispricing	2.25	1.00	-5.33	-0.13	0.50	1.60	14.63
Market Capitalization	4,072.8	-0.04	7,427.5	7,635.7	3,634.1	1291.2	376.1
Book/Market	0.56	0.19	0.37	0.38	0.47	0.59	0.97

1,391%, 1,463% errors (larger in the US) not particularly credible

- Consider using weighted least squares to control for microcaps?

1 Economic Interpretation

2 Anomalies: Emerging vs. Developed

Anomalies: Emerging vs. Developed

Table 5, Panel B, equal-weighted returns

		OLS						TS					
		Q1		Q5		Q5-Q1		Q5-Q1					
		Coef	<i>t</i> -stat	Coef	<i>t</i> -stat	Coef	<i>t</i> -stat	Coef	<i>t</i> -stat				
Average	Emerging	-0.3164	[-2.51]	**	0.5398	[2.85]	***	0.8562	[4.73]	***	0.8739	[4.95]	***
	Developed	-0.2486	[-5.05]	***	0.2240	[3.95]	***	0.4726	[5.68]	***	0.3545	[4.45]	***
	Difference	-0.0677	[-0.51]		0.3159	[1.63]		0.3836	[1.95]	*	0.5194	[2.66]	***
Americas	Emerging	-0.3477	[-1.46]		1.0486	[2.55]	**	1.3963	[3.38]	***	1.4428	[3.39]	***
	Developed	-0.3151	[-4.63]	***	-0.2085	[-2.70]	***	0.1065	[1.02]		0.2843	[3.49]	***
	Difference	-0.0327	[-0.13]		1.2571	[3.07]	***	1.2898	[3.00]	***	1.1585	[2.67]	***
Asia Pacific	Emerging	-1.1315	[-5.26]	***	0.3887	[1.53]		1.5202	[6.10]	***	1.4490	[5.75]	***
	Developed	-0.3689	[-2.87]	***	0.7266	[5.45]	***	1.0956	[5.97]	***	0.2369	[1.15]	
	Difference	-0.7625	[-3.16]	***	-0.3379	[-1.12]		0.4246	[1.36]		1.2121	[3.79]	***
Europe	Emerging	0.5301	[1.97]	*	0.1822	[0.58]		-0.3479	[-1.18]		-0.2699	[-0.91]	
	Developed	-0.0619	[-1.14]		0.1538	[1.82]	*	0.2158	[2.45]	**	0.5425	[6.73]	***
	Difference	0.5921	[2.12]	**	0.0284	[0.09]		-0.5637	[-1.83]	*	-0.8124	[-2.58]	**

Value-weighted results please? (Hou, Xue, and Zhang 2017)

Anomalies: Emerging vs. Developed

Some indications from Table 2, Panel B

	Firms				OLS					TS					
	Total		Return	Correlation	Signal Quintiles				Q5-Q1 (Undervalued - Overvalued)			Q5-Q1			
	Average	Q1 (Overvalued)			Q2	Q3	Q4	Q5 (Undervalued)	Fraction > 0	p -value	Average	t -stat	Average	t -stat	
Panel A: Equally-weighted Portfolios															
World	25,731	7,040	0.8526	0.0082	0.6334	0.7013	0.8123	0.9495	1.1640	62.1	[0.00]	0.5307	[4.44]	0.5294	[3.88]
World (excl. U.S.)	16,619	4,425	0.7750	0.0104	0.5693	0.5991	0.6881	0.8498	1.1693	64.2	[0.00]	0.5999	[5.95]	0.5915	[5.26]
Developed	20,285	6,213	0.8322	0.0068	0.6469	0.7095	0.8151	0.9168	1.0698	57.4	[0.01]	0.4229	[3.34]	0.4073	[2.82]
Developed (excl. U.S.)	11,173	3,598	0.7352	0.0103	0.5710	0.5990	0.6788	0.7904	1.0367	57.8	[0.01]	0.4657	[4.18]	0.4200	[3.34]
Emerging	5,446	827	1.1748	0.0146	0.8086	0.7883	0.9692	1.2740	2.0418	68.4	[0.00]	1.2332	[6.30]	1.3047	[6.70]
Americas	10,540	2,972	0.9888	0.0039	0.8243	0.8882	0.9935	1.0960	1.1399	52.8	[0.34]	0.3157	[1.87]	0.3570	[1.86]
Europe	6,581	2,011	0.9303	0.0035	0.9155	0.8930	0.9109	0.9360	0.9955	50.0	[1.00]	0.0800	[0.80]	0.3272	[3.36]
Asia Pacific	8,370	2,011	0.5882	0.0255	0.1866	0.2872	0.4490	0.7365	1.2801	67.4	[0.00]	1.0935	[6.54]	0.8509	[4.49]
United States	9,112	2,615	0.9737	-0.0004	0.8179	0.8793	0.9974	1.0933	1.0784	50.0	[1.00]	0.2606	[1.46]	0.3210	[1.62]
Japan	4,249	1,451	0.5181	0.0230	0.1910	0.2314	0.3999	0.6199	1.1474	64.2	[0.00]	0.9563	[4.89]	0.5526	[2.44]
Panel B: Value-weighted Portfolios															
World			0.7278	0.0082	0.6531	0.7713	0.7807	0.8545	0.9586	54.3	[0.15]	0.3055	[1.40]	0.4365	[1.88]
World (excl. U.S.)			0.6044	0.0085	0.4643	0.6822	0.6549	0.7315	0.9527	57.8	[0.01]	0.4883	[2.21]	0.5402	[2.67]
Developed			0.7435	0.0079	0.6781	0.7800	0.8144	0.9047	0.9106	52.1	[0.47]	0.2325	[1.08]	0.3614	[1.53]
Developed (excl. U.S.)			0.6208	0.0099	0.5023	0.6963	0.6891	0.7764	0.9068	55.3	[0.07]	0.4044	[1.86]	0.3977	[1.89]
Emerging			0.7742	0.0092	0.3324	0.6350	0.8982	0.9952	1.5696	61.7	[0.00]	1.2372	[3.76]	1.1237	[3.71]
Americas			0.8586	0.0072	0.8242	0.8276	0.9483	1.1152	1.0284	52.1	[0.47]	0.2041	[0.93]	0.3243	[1.15]
Europe			0.8175	0.0053	0.7883	0.8243	0.7659	0.9110	1.0990	57.4	[0.01]	0.3107	[1.66]	0.3827	[2.18]
Asia Pacific			0.3525	0.0240	0.0485	0.4220	0.5310	0.6850	1.0736	60.3	[0.00]	1.0251	[3.38]	1.0436	[3.67]
United States			0.8621	0.0069	0.8039	0.8169	0.9855	1.1475	1.0294	52.8	[0.34]	0.2255	[0.97]	0.3378	[1.16]
Japan			0.3327	0.0240	0.1254	0.4421	0.5195	0.6741	0.9649	61.3	[0.00]	0.8395	[3.44]	0.8580	[2.95]

Anomalies: Emerging vs. Developed

Other papers all show stronger anomalies in developed than emerging markets: Chui, Titman, Wei (2010), Griffin, Kelly, and Nardari (2010), Titman, Wei, and Xie (2013), Watanabe, Xu, Yao, and Yu (2013), Jacobs (2016), Eisdorfer, Goyal, and Zhdanov (2018)

Panel A: Developed markets			Panel B: Emerging markets		
	WML	<i>t</i>		WML	<i>t</i>
Australia	1.08	4.76	Argentina	0.08	0.12
Austria	0.63	2.70	Bangladesh	1.68	2.75
Belgium	0.89	5.50	Brazil	0.46	0.96
Canada	1.35	6.29	Chile	0.99	3.60
Denmark	0.96	4.29	China	0.26	0.92
Finland	0.98	2.62	Greece	0.59	1.49
France	0.94	4.68	India	1.14	2.91
Germany	0.99	4.41	Indonesia	0.14	0.30
Hong Kong	0.77	3.18	Israel	0.32	1.19
Ireland	0.88	3.06	Korea	-0.34	-0.81
Italy	0.90	4.47	Malaysia	0.10	0.26
Japan	-0.04	-0.18	Mexico	0.69	2.00
Netherlands	0.83	4.40	Pakistan	0.46	1.05
New Zealand	1.58	5.01	Philippines	0.37	0.68
Norway	1.05	3.77	Poland	1.76	3.33
Singapore	0.14	0.47	Portugal	0.31	0.93
Spain	0.63	2.24	South Africa	0.94	3.29
Sweden	0.71	2.27	Taiwan	-0.20	-0.48
Switzerland	0.82	4.39	Thailand	0.48	1.10
United Kingdom	1.13	7.08	Turkey	-0.41	-0.96
United States	0.79	3.44			
Average	0.86		Average	0.49	

Source: Chui et al. (2010, Table 3).

Would be nice to reconcile with the existing literature

Anomalies: Emerging vs. Developed

Why would anomalies be stronger in developed than emerging markets?

What if the consumption CAPM anomalies are the investment CAPM regularities?

In the 2-period investment CAPM (Hou, Xue, and Zhang 2015):

$$\text{Stock return} = \frac{\text{Profitability}}{\text{Marginal costs of investment}}$$

underlying the q -factor model

In developed markets, managers maximize the market value, while in emerging markets, managers might have a multitude of objectives

Anomalies: Emerging vs. Developed

Why the investment CAPM doesn't apply to China, yet



Awesome work, global data as the future of empirical finance

Dig deeper into anomalies across developed and emerging markets

Improve the intrinsic value model