Determinants of Private Equity Capital in Emerging Markets

Evidence from Macroeconomic and Development Variables

Master Thesis in Economics and Business Administration
Major in Finance

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Supervisor: Carsten Bienz

Preface and Acknowledgements

The motivation for this topic is my interest in market-driven solutions for economic development. I am passionate about solutions that can help emerging market nations continue to progress forward, and my experience and studies have gradually directed me to explore how business, and the market can spur inclusive growth. It's the reason why I studied at HEC Paris to earn an MSc in Sustainability and Social Innovation, and coupled it with an MSc in Economics and Business Administration at the Norwegian School of Economics (NHH). I believe that private equity is an investment vehicle uniquely suited to tackle the needs of many emerging market firms, who are in need of financing and will benefit greatly from the professional standards private equity funds demand.

I am grateful to the many people who have contributed to the thinking behind my thesis, both at HEC Paris and at NHH. I first thank my supervisor, Prof. Carsten Bienz, who was quite flexible and helped point me in the right directions during my year in Bergen, Norway studying at NHH. Prof. Liam Brunt was also instrumental in guiding my analysis, who was always willing to provide advice and insight into my thinking outside of class. I also would like to thank Kevin Horvath and Luke Moderhack at the Emerging Market Private Equity Association (EMPEA), who provided me with access to the EMPEA private equity capital flow dataset that facilitated my entire analysis. Without their willingness to provide data and answer my inquiries about the dataset, my analysis would not have been possible. Finally, I would like to the plethora of my classmates, roommates, friends, and family who discussed my topic at length with me throughout the process.

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Abstract

This paper examines the determinants of private equity capital fundraised and invested for a panel dataset consisting of 34 emerging market nations. My analysis considers the impact of 12 macroeconomic and development variables, finding 7 of 12 to be significant in some capacity. Of these, Investment as a % of GDP was particularly significant for fundraised capital, while Control of Corruption was particularly significant for invested capital. Unsurprisingly, emerging markets are markedly different from developed nations, and this difference is manifested in the characteristics of private equity in emerging markets vs. developed nations as well. Emerging market nations require a different type of capital to aid their development, and offer up a unique opportunity for both impact and profit. My analysis shows that there are differences in the determinants for Invested and Fundraised capital, and investigating further into both forms of capital is a worthwhile future undertaking. In addition, while development variables are considered as a part of this analysis, there is a significant lack of data available for analysis on all the nations, and as more data is collected more significant research should be undertaken to understand the impact of development variables on private equity capital, and vice versa.

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Abbreviations

PE: Private Equity

VC: Venture Capital

IPO: Initial Public Offering

R&D: Research and Development

OECD: Organization for Economic Cooperation and Development

DAC: Development Assistance Committee

ODF: Official Development Financing

SDG: Sustainable Development Goal

UN: United Nations

ODA: Official Development Assistance

MSME: Micro, Small, and Medium Enterprise

SDG: Sustainable Development Goals

CEE: Central and Eastern European

WE: Western European

1. Introduction

Economic development is a tricky subject. It is difficult to pin down exactly what path a nation should proceed on in order to achieve greater prosperity, especially in the face of the reality that not every nation in the world can be as prosperous as the US or many European nations. Yet, beginning from a bottom-up perspective of the world, it is a proven reality that private equity backed firms generally fare better than those that are not private equity backed. PE backed firms have been shown to have lower probabilities of defaulting, better management ratings, improved operations and financial health, amongst other characteristics (B. Cohn & Towery, 2013; Bloom, Sadun, & Van Reenen, 2015; Kaplan & Stromberg, 2009). The macro level effects of private equity capital are less explored than the micro-effects, but one can infer that the more healthy businesses a nation has, the stronger its economy is likely to be. When this concept of the micro-level benefit of private equity investment is married with the growing opportunity presented by emerging market investment opportunities, a win-win situation begins to take shape.

Now more than ever, emerging markets represent more and more attractive investment opportunities for investors across the globe. Many emerging market nations such as Kenya, India, or South Africa are home to thriving startup ecosystems, and also offer more opportunity for private equity investors to invest into growth to buyout capital investments. The opportunity to earn solid return by investing into emerging market firms (Mudaliar, Bass, & Dithrich, 2018) is complemented by the dire need for additional capital in emerging market nations, where access to finance is the number one obstacle for firm progression (World Bank Enterprise Surveys, 2017), and management expertise often lags behind developed nations.

In this thesis, I explore the opportunity presented by emerging market nations for private equity investors, and the unique characteristics about private equity that make it particularly well-suited for an emerging market situation. Yet my primary purpose is then to analyze the determinants of private equity capital, both fundraised and invested, into emerging market nations. Similar analysis has been already conducted such as that of Jeng and Wells (2000) or Balboa and Martí (2003), but oftentimes focus on venture capital and/or developed nations. My research primarily builds on the work of Groh and Wallmeroth (2015), who are responsible for publishing the VC and PE Country Attractiveness Index, a measure of the attractiveness of a particular nation for VC or PE investment.

My results indicate that for both invested and fundraised private equity capital, GDP is the most significant variable, unsurprisingly. Yet when controlling for GDP, Investment as a % of GDP is the most significant variable for fundraised private equity capital, whereas Control of Corruption is the most significant variable for invested private equity capital. Other significant variables include %Δ in Exports, ODF as a % of GDP, Mobile Subscriptions per 100 People, and Inflation as a % of GDP. In doing so, I demonstrate there is a difference between fundraised and invested capital determinants.

This paper is organized as follows: Sections 2 contains an overview of the global private equity market and the differences between emerging market and developed world private equity. The unique opportunity presented by emerging market private equity is also covered. Section 3 offers a review of the impact of private equity investment on the firm level and the macro level. Section 4 surveys the existing literature, covering literature on determinants of private equity capital, the intersection of law and finance, and case studies on private equity investment into specific emerging markets. Section 5 explains the dependent and independent variables analyzed in this publication, alongside the rationale for selecting the 34 nations included in the panel examined. Section 6 is an overview of the methodology utilized in analyzing the data. Section 7 displays the output of the regressions performed, while Section 8 discusses the results in greater detail. Section 8 also contains a comment on future research and the limitations involved with this study. Section 9 concludes.

Table 1: PE Fundraising by Country ($M, 2017)

Country	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total by Country
Cambodia	-	-	-	38.93	-	-	-	-	-	-	-	38.93
China	4,823.54	8,035.03	16,633.82	7,489.17	9,077.88	23,330.93	12,106.81	10,976.59	11,067.06	12,479.84	21,243.22	137,263.89
India	4,270.31	4,325.44	7,169.79	1,921.00	4,673.00	2,915.14	2,750.85	1,075.96	1,731.73	4,316.77	3,311.53	38,461.54
Indonesia	-	234.74	64.50	7.99	320.56	972.24	812.80	199.29	551.19	531.56	209.32	3,904.18
Malaysia	32.40	29.34	77.10	9.71	-	108.46	-	37.93	-	-	30.63	325.57
Pakistan	61.08	185.45	-	-	-	-	-	-	-	-	100.58	347.11
Philippines	-	-	-	-	-	-	-	126.94	-	-	-	126.94
Thailand	-	-	86.55	-	-	-	-	-	26.25	36.48	-	149.27
Vietnam	194.58	442.35	297.95	-	85.71	290.25	56.91	-	-	338.65	155.00	1,861.39
Bulgaria	-	-	-	-	-	-	-	27.65	48.69	-	36.03	112.37
Kazakhstan	-	257.02	680.14	-	-	-	-	-	-	41.69	-	978.85
Poland	82.27	156.06	-	-	-	65.58	69.25	238.53	25.01	47.10	28.60	712.40
Romania	-	-	-	-	-	-	40.94	-	-	-	-	40.94
Russia	607.03	1,597.65	692.63	253.43	84.36	286.21	617.38	636.05	332.46	-	-	5,107.18
Slovenia	-	-	34.68	-	-	-	-	-	-	-	-	34.68
Turkey	-	1,063.72	-	279.20	56.40	167.92	2,130.25	158.24	-	97.06	841.42	4,794.20
Brazil	1,380.28	2,726.14	3,943.67	754.13	2,440.09	7,050.89	1,835.53	1,138.20	4,120.08	847.44	153.72	26,390.19
Chile	99.44	-	-	-	119.79	-	32.21	49.72	57.74	52.11	46.97	457.98
Colombia	-	135.56	41.98	18.27	116.98	151.78	-	-	16.80	72.96	-	554.32
Mexico	23.94	407.28	178.24	192.96	400.75	469.69	1,115.90	827.74	2,210.20	541.12	447.74	6,815.58
Peru	-	58.38	318.35	-	103.48	496.78	53.69	1,018.10	-	-	-	2,048.76
Egypt	186.91	23.47	23.45	34.82	9.79	-	-	-	-	312.68	71.48	662.60
Jordan	-	-	-	-	-	-	-	17.87	-	16.82	-	34.69
Kuwait	-	46.95	-	-	-	-	-	-	-	-	-	46.95
Morocco	30.54	-	123.60	23.09	103.92	9.16	104.85	-	-	-	-	395.17
Tunisia	-	8.95	-	-	15.75	-	-	11.15	5.43	-	-	41.28
Angola	-	-	-	-	31.49	12.02	-	-	-	-	45.95	89.46
Ethiopia	-	-	-	-	-	-	-	-	90.81	52.11	-	142.93
Ghana	12.22	11.74	-	11.42	4.50	-	3.22	-	-	-	-	43.09
Nigeria	-	36.39	-	-	-	-	-	-	57.74	52.11	10.21	156.45
Rwanda	-	-	-	-	-	7.87	-	-	-	-	-	7.87
South Africa	1,319.36	105.01	257.26	36.87	504.42	42.48	906.91	-	84.47	-	318.50	3,575.26
Zambia	-	-	-	-	1.69	-	2.47	-	-	-	-	4.16
Kenya	-	16.55	-	-	-	-	-	-	-	-	-	16.55
Total by Year	13,123.90	19,903.23	30,623.70	11,071.00	18,150.55	36,377.37	22,639.96	16,539.96	20,425.66	19,836.51	27,050.91	**235742.75**
% of Global Total	**71%**	**56%**	**68%**	**73%**	**81%**	**90%**	**81%**	**72%**	**74%**	**72%**	**86%**	**75%**

Table 2: PE Investment by Country ($M, 2017)

Country	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total by Country
Cambodia	1.99	2.28	5.17	15.73	5.05	6.18	-	-	1.02	37.42
China	7,497.39	7,520.81	9,678.40	12,459.46	7,215.07	7,877.61	17,973.89	14,446.67	8,585.77	93,255.07
India	4,986.11	1,795.26	3,334.02	5,041.42	3,580.88	3,891.22	3,855.89	6,182.06	6,203.60	38,870.47
Indonesia	390.73	594.08	356.89	778.17	407.24	41.25	150.87	801.15	890.26	4,410.65
Malaysia	1,043.12	228.62	19.57	53.83	259.67	529.07	1,476.44	289.77	1,245.22	5,145.31
Pakistan	8.56	-	-	-	11.49	-	-	6.77	12.30	39.13
Philippines	356.95	1.14	148.94	174.84	61.63	360.00	72.76	7.82	6.64	1,190.71
Thailand	107.70	94.64	72.66	-	135.61	3.07	88.96	42.45	94.43	639.52
Vietnam	91.94	84.48	30.26	494.31	29.31	525.21	10.50	168.35	405.48	1,839.83
Bulgaria	-	397.57	118.10	21.19	249.31	26.45	7.27	15.50	4.39	839.79
Kazakhstan	111.40	-	-	6.01	55.98	-	10.50	10.42	-	194.31
Poland	118.28	442.95	418.95	688.20	370.01	532.64	252.10	59.78	554.96	3,437.86
Romania	89.47	179.42	32.51	20.75	27.92	-	7.21	5.65	82.79	445.70
Russian	1,936.29	356.80	681.61	1,732.00	762.12	264.75	74.13	99.80	230.39	6,137.88
Slovenia	66.66	191.56	-	-	-	2.12	25.79	233.37	37.35	556.85
Turkey	2,231.07	243.37	172.12	744.42	386.48	460.65	298.27	98.55	110.48	4,745.41
Brazil	1,844.77	1,158.65	3,600.99	1,880.83	3,067.55	2,017.50	2,425.21	1,839.80	1,461.47	19,296.78
Chile	38.93	49.54	116.98	13.00	256.56	224.47	3.99	12.92	45.79	762.18
Colombia	156.90	53.31	53.54	424.94	78.49	45.70	39.79	414.84	125.77	1,393.28
Mexico	191.96	160.05	189.92	180.08	470.77	423.50	185.82	374.51	695.92	2,872.53
Peru	265.90	9.13	110.11	229.19	203.41	67.90	0.31	31.37	122.22	1,039.55
Egypt	652.46	53.88	79.70	96.13	37.69	120.65	186.80	47.63	41.34	1,316.29
Jordan	175.90	-	6.19	6.55	10.74	-	17.69	10.63	7.45	235.15
Kuwait	131.69	-	22.50	-	2.15	-	-	-	0.20	156.54
Morocco	72.05	87.46	35.82	149.09	370.31	71.23	148.44	72.52	22.60	1,029.52
Tunisia	88.59	25.47	10.45	28.27	51.57	96.72	95.29	126.11	7.75	530.23
Angola	-	-	-	98.43	10.74	-	40.39	5.21	-	154.76
Ethiopia	5.63	-	-	-	109.63	31.73	209.98	6.77	-	363.74
Ghana	23.45	7.28	11.25	13.00	42.84	28.19	60.37	5.94	61.27	253.59
Nigeria	90.02	19.06	219.72	145.14	203.90	90.02	337.42	177.08	387.66	1,670.02
Rwanda	2.34	-	4.50	-	2.58	2.33	-	-	27.57	39.32
South Africa	1,075.41	589.74	34.98	627.73	291.35	182.19	432.74	339.79	329.93	3,903.86
Zambia	1.08	1.26	1.12	4.70	27.49	3.21	2.82	8.49	0.87	51.04
Kenya	52.77	75.00	45.34	70.23	111.42	33.00	155.08	16.98	76.77	636.58
Total by Year	23,907.52	14,422.83	19,612.29	26,197.64	18,906.95	17,958.57	28,646.71	25,958.73	21,879.67	**197,490.89**
% of Global Total	**76%**	**72%**	**87%**	**94%**	**82%**	**71%**	**83%**	**84%**	**79%**	**69%**

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2. The Private Equity Context

2.1. Private Equity Definition

Private equity is an investment into a private (unlisted on the stock exchange) firm or an investment into a public firm with intention of making it private. It is a pooled investment vehicle managed by a private equity firm, who takes money from their clients, typically accredited investors (high income and high net worth individuals) and institutional investors (insurance companies, pension funds, mutual funds, etc.). As an asset class, it is relatively new compared to public equities or many debt investments, with the first modern private equity firm appearing only in the aftermath of World War II, with the foundation of the American Research and Development Corporation (ARD) in 1946 (Fenn, Liang, & Prowse, 1996). The ARD was founded out of the concern for the inadequate rate of new business creation and the lack of long-term financing available for them, and over its lifetime of 25 years managed to return 15.8% in annual returns to investors while also adding significant value to portfolio firms through managerial advisory (Fenn et al., 1996). However, given that it was only considered a moderate success at best by the mainstream, there were no immediate attempts to imitate this form of investment company after ARD merged into Textron in 1972.

Private equity experienced explosive growth during the 1980s and 1990s, especially following the passage of the "prudent expert rule" by the US Department of Labor in 1978, allowing pension funds and other large institutions to invest into the private equity market (Vanguard Investment Counseling & Research, 2006). In fact, from 1980-82, commitments to private equity funds in the United States totaled over $3.5 billion, a 250% greater commitment to private equity than during the entire 1970s, subsequently reaching a peak of $17.8 billion in 1987 (Fenn et al., 1996). During this early period, private equity financing was going almost exclusively towards venture capital stage funding, or early stage funding. However, as the 1980s continued onwards, more and more funding was directed towards non-venture private equity, or later stage investments. This was exemplified through the rising popularity of Levered Buyout (LBO) investments during the 1980s, a form of investment often associated with the cutthroat profiteering reputation private equity has taken on in much of the public eye.

In the present day, private equity is a booming industry, with nearly 8000 private equity firms in operation globally today, investing in almost every nation (Bain & Company, 2018). Whereas private equity activity was primarily concentrated in developed markets such as the

United States and the United Kingdom during the nascent years of the industry, emerging markets have increasingly emerged as a viable destination for investment. There are a fair amount of emerging markets nations such as China and South Africa which now are even capable of playing host to private equity funds raised specifically for investment only into them, as opposed to their region (i.e. – West Africa). Currently, the private equity market can be segmented into several categories:

Table 3: Breakdown of Private Equity Stages

Type of PE	Size of Typical Investment	Type of PE Firm	Description
Venture Capital	$50K - $5M	VC	Typically, investments in companies that are early stage and cash flow negative. Requires convincing of market potential since not proven.
Growth Capital	$5M - $50M	Small – Mid-Tier	Typically investments in equity and/or debt instruments as these companies are growing and require increasing amounts of working capital, capital expenditures, or an acquisition.
Mezzanine Financing	$5M - $50M	Small – Mid-Tier	Typically subordinated debt or preferred equity investment into a company that falls between equity and senior debt on the balance sheet.
Leveraged Buyout	$2M - $200M+	Buyout (all sizes)	Acquisition of an operating company with a significant amount of borrowed funds to create value by realizing opportunities and improving efficiencies, etc. (debt as financial leverage).
Distressed Buyout	$2M - $200M+	Buyout (all sizes)	Typically, investments in equity or debt securities of financially distressed companies. Investors can look for corporate restructuring or turnaround of business, for example.

Source: Street of Walls

*2.2 Emerging Market vs. Developed World Private Equity*

The fundamental private equity model does remain quite similar when comparing emerging markets and developed markets, but there are key differences between geographies that are worth noting. The landscape of emerging markets is quite different than from developed markets, and thus requires a private equity model that is tailored for the environment. In addition, emerging market private equity does have a rather unique opportunity to contribute to the development of emerging market nations by way of investments that positively transform companies and subsequently on the micro level, provide jobs, and on the macro level, modernize economies.

Private equity deals in emerging markets tend to have less leveraged buyouts (LBO), which are focused on the transfer of ownership and use significant debt financing to purchase a firm

with the plan of raising the firm value and selling it off. LBO deals are often associated with the poor image private equity tends to have in the eyes of the mainstream public in developed nations, but such is not necessarily the case in emerging markets.

In emerging markets, private equity investors tend to take minority positions rather than majority positions, with value creation driven by growth rather than high leverage (eFront, 2018; Pries, Berla, & Emerson, 2012; Wilton, 2012). This is also driven by a well-documented an unwillingness by business owners in emerging markets to sell majority stakes in their business in many cases (Lerner, Ledbetter, Speen, Leamon, & Allen, 2016; Wilton, 2012). Furthermore, to perception of limited exit opportunities, whether they be in the form of IPOs or M&A opportunities, a simple buy and dump strategy could be less likely to be effective in emerging markets. It should be noted that analysis from Lerner et al (2016) show that exit opportunity performance in emerging markets are comparable to those in developed markets, with the primary difference being a greater reliance on IPO exits in emerging markets. In developed markets, IPO exits comprise roughly 10% of exits, as opposed to 49% in emerging markets (Lerner et al., 2016). When removing the BRIC nations (Brazil, Russia, India, and China) from the analysis, the share of IPO exits drops to 33%, but that is still significantly greater than the proportion in developed markets. This reliance on IPO exits also helps to explain the relative lack of LBO deals, which more often than not end in trade or secondary sales rather than IPOs.

Figure 1: Exit Route Shares in Developed and Emerging Markets
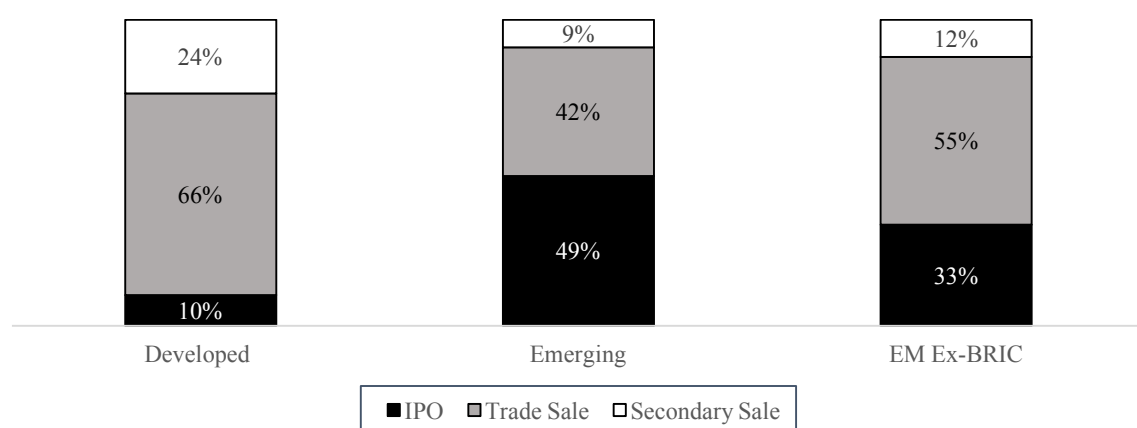
Note: Based on 18,095 developed market exits, 2,817 emerging market exits, and 1,221 non-BRIC emerging market exits between 2005 and 2015

Source: Lerner et al. (2016), VentureXpert

The possibility of taking a minority stake in emerging market companies might be off putting to some investors as well, especially given the risk already involved in investing into an emerging market. Emerging market businesses are often reluctant to sell majority shares in their businesses, which could lead to two potential concerns: 1) the businesses willing to sell greater shares in their businesses are desperate and are more likely to be worse investment opportunities 2) the minority investor will not have the final say in strategic and operational decisions affecting the business (Lerner et al., 2016; Wilton, 2012). In response to these concerns, it is worth noting that emerging markets are well documented to have a significant problem with access to finance for SMEs, so finding businesses that are more willing to give up majority shares may have more to do with access to finance rather than indicating a potential problem with the business itself. In addition, by implementing effective covenants when negotiating contracts, private equity firms can mitigate the risk of being pushed to the side as minority investors by the majority shareholder(s) (Lerner et al., 2016). However, in order to do so, it is absolutely necessary for the host nation to have effective legal systems in place to enforce contracts, which is relevant to the intersection of law and finance, a topic further touched on later in this paper. In closing, data from the private equity investments the IFC has engaged in show that holding majority positions does not significantly affect returns, and minority positions can in fact have better returns, depending on how the data is viewed.
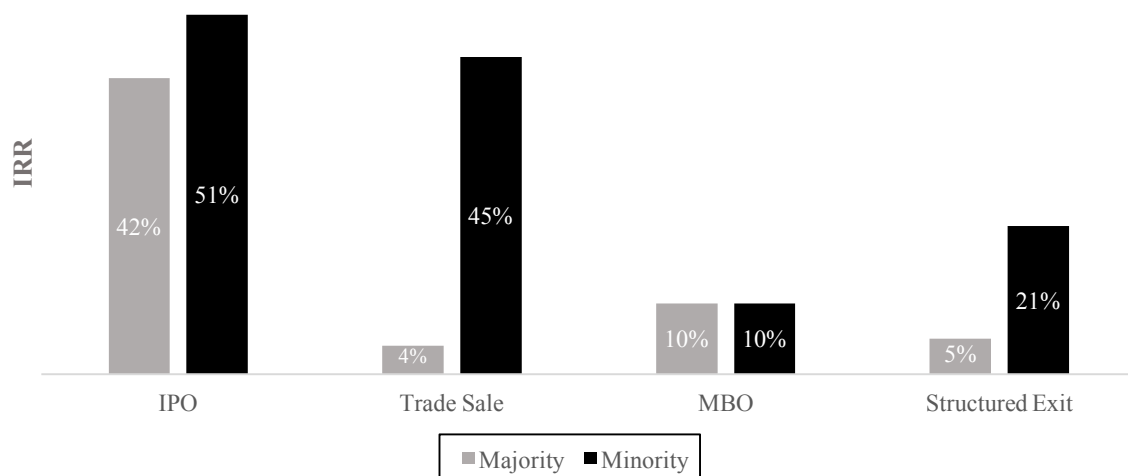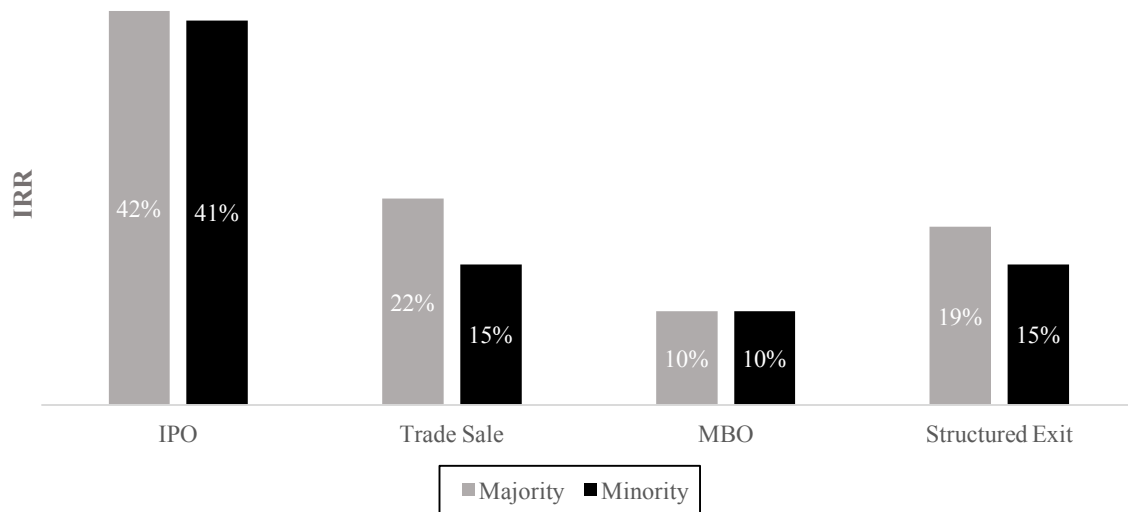
Figure 2: Average IRR of IFC Exits

Figure 3: Median IRR of IFC Exits

Note: Based on exits of 61 majority positions and 251 minority positions from the IFC. The IFC actively invests into companies and fund of funds in emerging market nations as part of their work as a member of the World Bank Group.
Source: Lerner et al. (2016), IFC

Emerging markets tend to see more growth equity opportunities, where investors are invested in portfolio firms for relatively longer periods of time. In fact, Pries et al. (2012) argue that Environmental, Social, and Governance (ESG) practices have been integral to the development of a sustainable private equity sector in the developing world, especially due to the involvement of Development Finance Institutions (DFI) such as the International Finance Corporation (IFC) and Norfund (Norwegian Development Institution) in helping fund and support private equity firms.

Emerging market private equity began to fully take off in the early 2000s, after a period of significant development across the board for emerging market nations during the 1990s. The 90s saw a host of emerging market nations begin shifting towards market based economies, followed by a further shift during the 2000s to open economies (Wilton, 2012). This was especially exemplified by shifts in China, with establishment of stock exchanges in Shanghai and Shenzen in 1990, and the opening of Eastern and Central Europe starting in 1989 with the fall of the Iron Curtain (Lerner et al., 2016). These broad macro level shifts were accompanied by economic growth, a natural increase in entrepreneurial activity, and a greater need for financing to grow individual companies. This growth then paved a path towards more willingness by the owners of these emerging market firms to sell control stakes to obtain said financing. Private equity firms thus had more reason to invest significant resources into

emerging market nations, as more qualified opportunities began to appear on their radars. Yet, just like any market, emerging markets have not been without their fair share of struggles. Shocks such as the Asian Currency Crisis of 1997 and the 2001 Argentina Debt Default scared away many investors and proved that the risk posed by emerging markets was not to be underestimated (Lerner et al., 2016). Even in the 2000s, after fund managers learned from the crises and mistakes made in the 1990s, emerging markets still experienced cyclical boom and bust cycles that affected fundraising across the private equity industry. It is interesting to note the inverse relationship between developed and emerging market private equity fundraising from the aftermath of the 2008 financial crisis to 2012, with emerging markets experiencing a boom when developed market private equity was on the decline.

Figure 4: Private Equity Fundraising by Year in Developed vs. Develpoing Markets
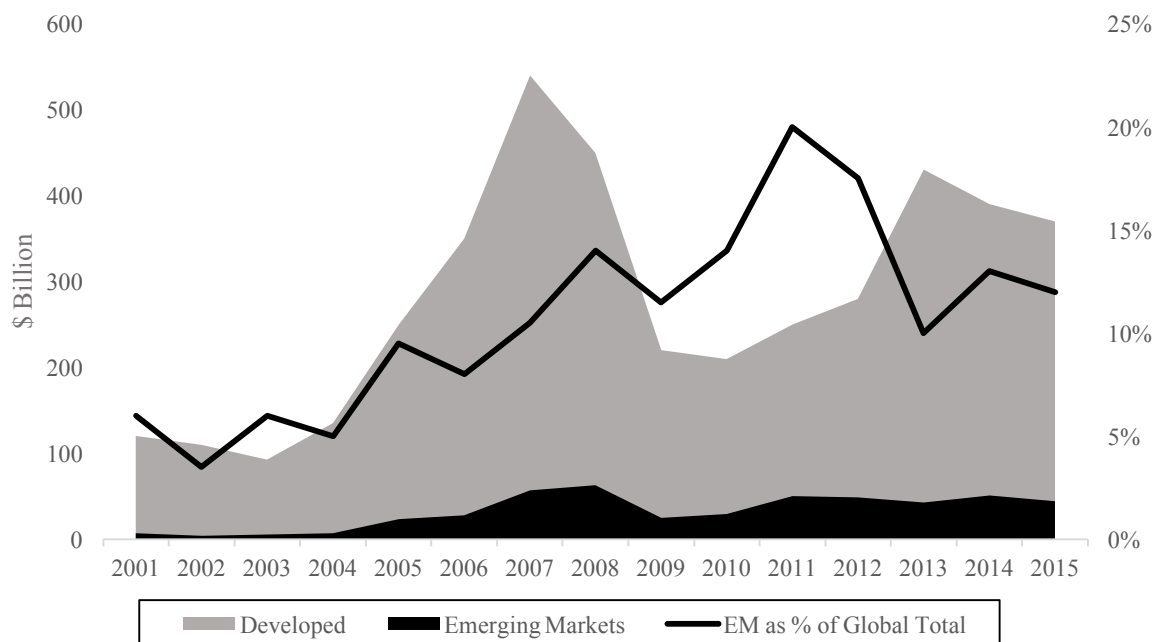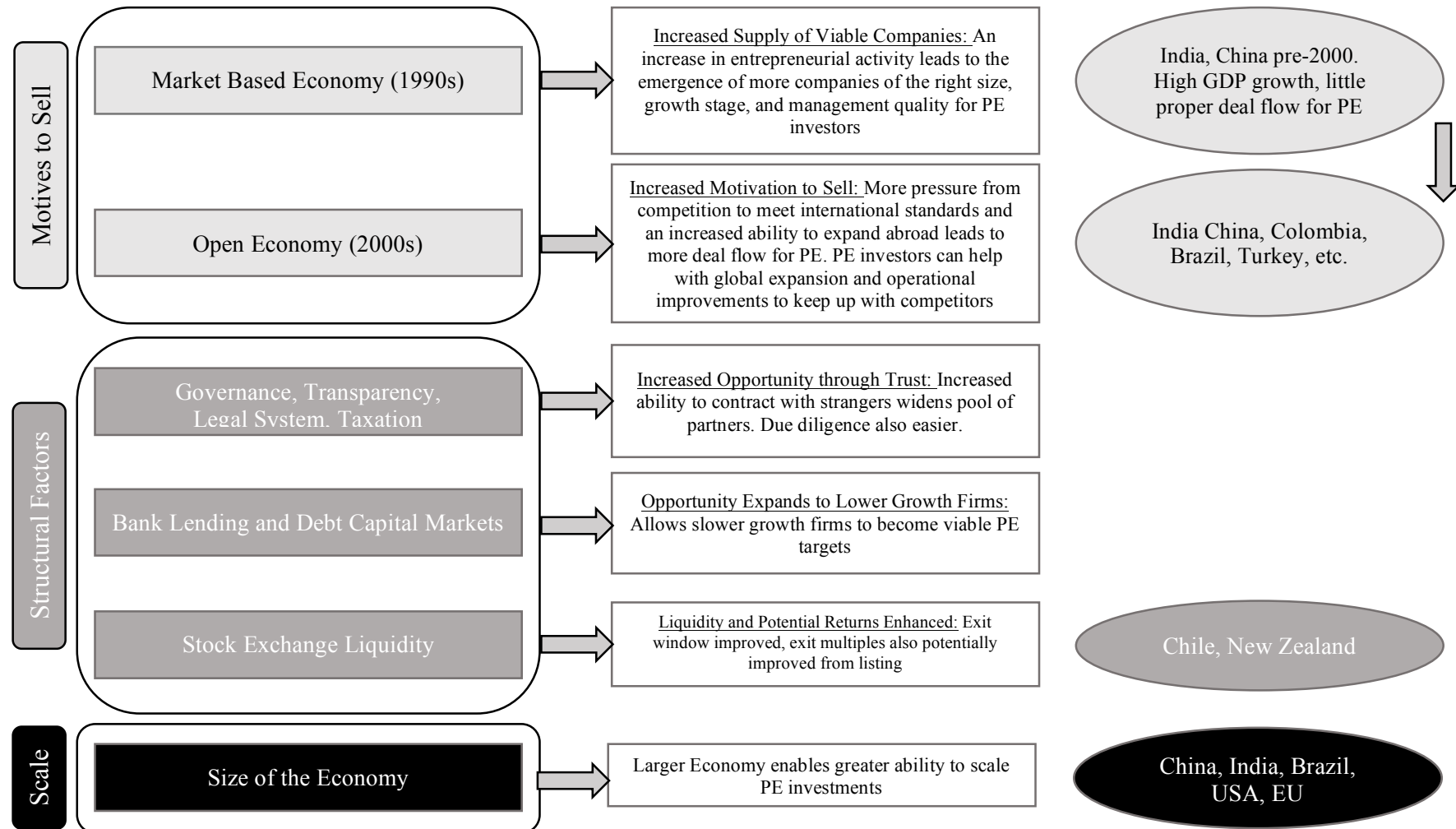

Note: 2001-2005 data are from EMPEA Industry Statistics 2012. 2006-2015 data are from the EMPEA Year-End 2015 Industry Statistics. PE investments include growth, mezzanine, special situations, and venture capital strategies, and exclude real estate funds, fund of funds, and secondary investments

Source: Lerner et al. (2016), EMPEA

Below in Figure 6 is a layout of the building blocks given by David Wilton, Chief Investment Officer of the IFC, for maximizing the market for private equity in a nation. The building blocks Wilton proposed are also taken into account in the analysis of this thesis, while also standardizing for size of the economy and taking into account some micro level variables.

Figure 5: Framework for Private Equity Investment

Motives to Sell

| Market Based Economy (1990s) | → | Increased Supply of Viable Companies: An increase in entrepreneurial activity leads to the emergence of more companies of the right size, growth stage, and management quality for PE investors | India, China pre-2000. High GDP growth, little proper deal flow for PE |
| Open Economy (2000s) | → | Increased Motivation to Sell: More pressure from competition to meet international standards and an increased ability to expand abroad leads to more deal flow for PE. PE investors can help with global expansion and operational improvements to keep up with competitors | India China, Colombia, Brazil, Turkey, etc. |

Structural Factors

Governance, Transparency, Legal System. Taxation	→	Increased Opportunity through Trust: Increased ability to contract with strangers widens pool of partners. Due diligence also easier.	
Bank Lending and Debt Capital Markets	→	Opportunity Expands to Lower Growth Firms: Allows slower growth firms to become viable PE targets	
Stock Exchange Liquidity	→	Liquidity and Potential Returns Enhanced: Exit window improved, exit multiples also potentially improved from listing	Chile, New Zealand

Scale

| Size of the Economy | → | Larger Economy enables greater ability to scale PE investments | China, India, Brazil, USA, EU |

Source: Wilton (2012)

2.3 The Emerging Market Private Equity Opportunity

In the developing world, there exists a large gap in funding for MSMEs, which has played a significant role in constraining their growth. Access to finance is consistently cited as the biggest obstacle to growth these firms, according to the World Bank Enterprise Survey Data (2017), which contains records of data on individual firms in 139 developing markets. Across all countries, Access to finance is listed as the number one obstacle for 15.5% of firms, followed by Corruption at 7.6%. Unsurprisingly, when breaking the data out regionally, Sub-Saharan Africa leads the world in need for financing, with 23% of firms indicating Access to Finance as their biggest obstacle, higher than any other region.

Table 4: Obstacles to Firm Growth

Country	Access to Finance	Access to Land	Business Licensing and Permits	Corruption	Courts	Crime, Theft, and Disorder
All Countries	**15.5%**	3.5%	2.6%	7.6%	1%	3.9%
Middle East & North Africa	9.6%	2.7%	3.8%	7.1%	1%	1.8%
East Asia & Pacific	11%	6.4%	4.1%	8.7%	1.2%	2.9%
South Asia	12.4%	5.3%	1.8%	9.3%	0.4%	2.6%
Latin America & Caribbean	13.2%	1.3%	3.3%	7.7%	1.1%	8.1%
Europe and Central Asia	13.7 %	2.7%	2%	6.4%	1.6%	1.7%
Sub-Saharan Africa	23%	5%	1.8%	7.8%	0.5%	3.4%

Source: Enterprise Surveys, The World Bank

According to the SME Finance Forum, there are a total of 162 million MSMEs in the developing world, 67% of which is accounted for by Brazil, China, and Nigeria (IFC, 2017). Of these 162 million MSMEs, 141 million are microenterprises (firms with less than 10 employees) and 21 million are SMEs (firms with 11-250 employees). For formal MSMEs, there is estimated to be a demand for $8.9 trillion in financing, while the current supply available sits only at $3.7 trillion, indicating a financing gap of $5.2 trillion (IFC, 2017). This of course signifies that there is a sizable problem to be addressed, but also a potential opportunity for investors such as private equity firms to earn outsized returns while also contributing actively to the Sustainable Development Goals (SDG) laid out by the United Nations in 2015, in particular goals: 1 (No Poverty), 8 (Decent Work and Economic Growth), 9 (Industry, Innovation, and Infrastructure), and 10 (Reduced Inequalities).

In keeping with the risk-return tradeoff, investing into emerging markets has potential for more outsized return than average, but this of course comes with more risk. Emerging markets often pose higher risks for challenges such as political instability, currency fluctuation, inflation hikes, social turmoil, and more. It is this risk that keeps many potential investors from investing into emerging markets, despite the fact that there is a significant need for financing there.

In addition, while the entrepreneurial spirit exists in abundance across the developing world, the fact remains that many business owners and entrepreneurs are not as well educated and trained as their developed world counterparts. Thus for investors coming from the developed world, this poses a potential risk at the micro level, but again goes to show how private equity investment can potentially fit better into the needs of emerging market businesses than other forms of finance such as bank financing.

While the aforementioned statements may hold true in the eyes of many in the public, in order gain a better idea of the truth of the matter, one can turn to the Annual Impact Investor Survey conducted by the Global Impact Investing Network (GIIN). The 2018 version of the survey analyzes the responses of 229 impact investors, made up of an array of for-profit and non-profit fund managers, foundations, development finance institutions, banks, pension funds, and more. The investors hail primarily from the developed world, with 82% of respondents headquartered in developed markets but 56% of the total AUM of the respondents invested into emerging markets (Mudaliar et al., 2018). Private equity focused investors made up 24% of the respondents, and unsurprisingly targeted market-rate returns at higher rates (80%) than the average of the total sample (64%).
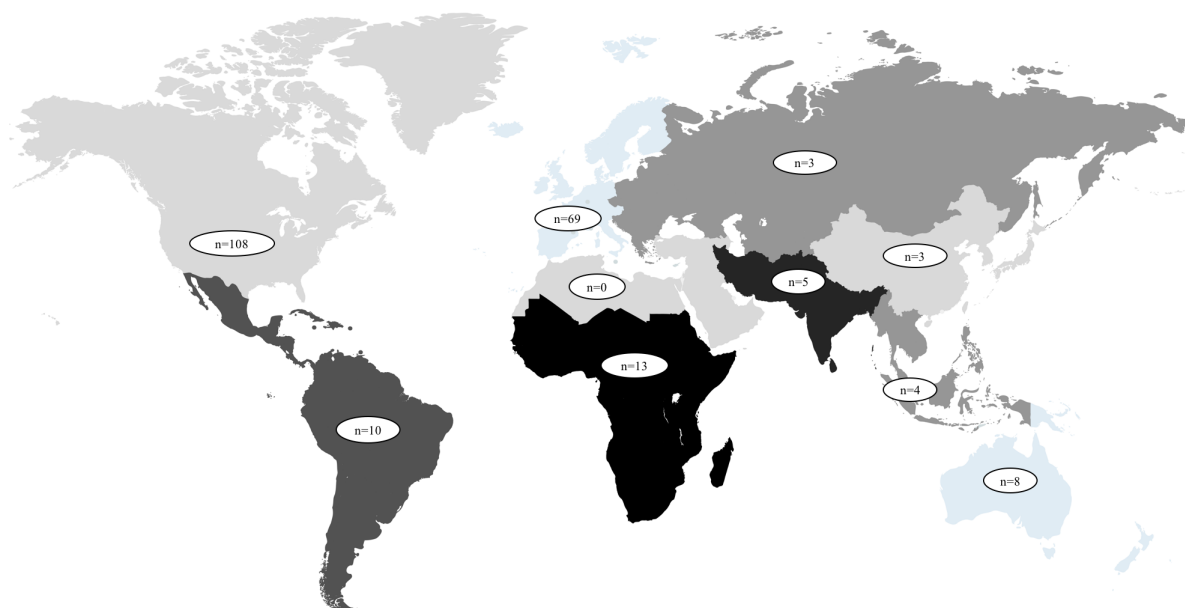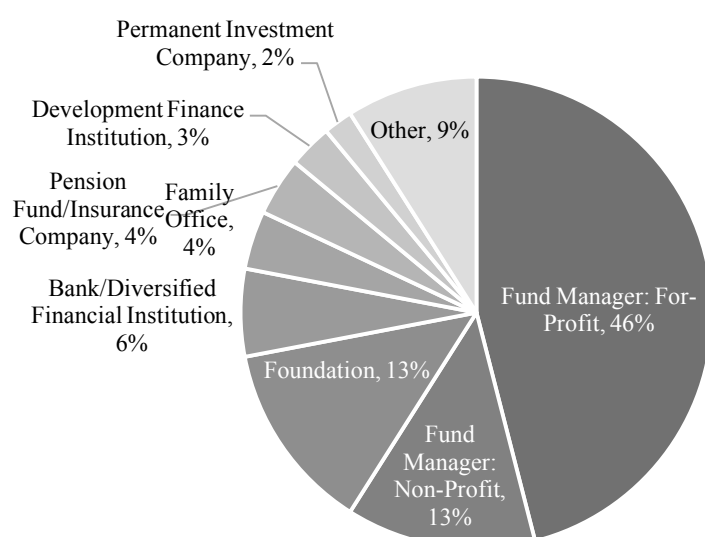
Figure 6: Breakdown of 2018 GIIN Annual Impact Investor Survey Respondent HQ Locations			
US & Canada	47%	South Asia	2%
West/North/South Europe	30%	South East	2%
Sub-Saharan Africa	6%	East Asia	1%
Latin America & Caribbean	4%	Eastern Europe & Central Asia	1%
Oceania	4%	No Single HQ	3%

Source: GIIN

Figure 7: Breakdown of 2018 GIIN
Annual Impact Investor Survey Respondents

Note: 229 Total Organizations. "Other" organizations include community development finance institutions, NGOs, and advisors, incubators, and technical assistance providers that also make impact investments
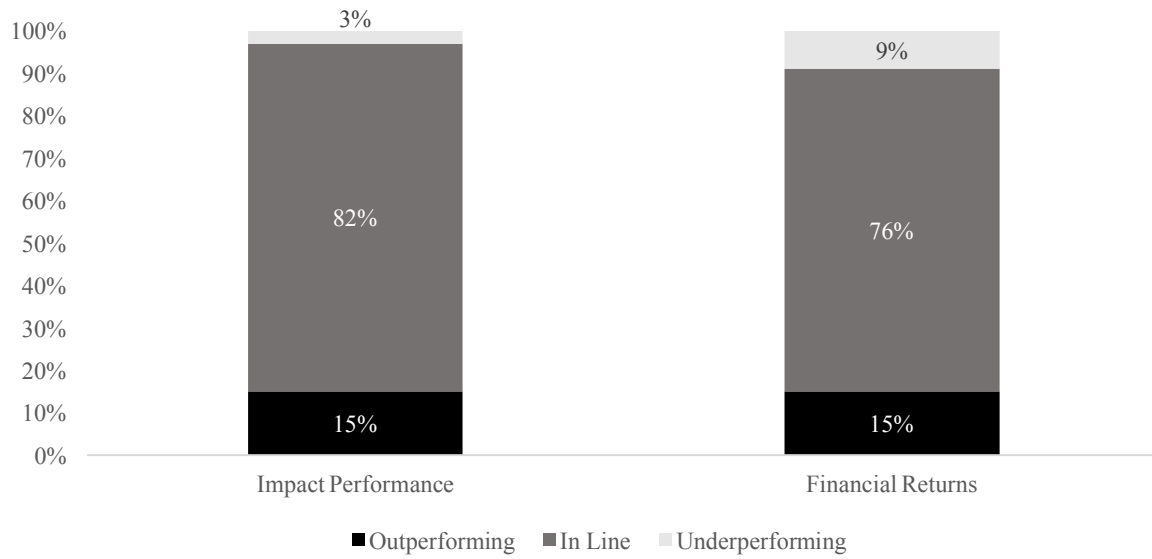
Source: GIIN

The 2018 version of the Annual Impact Investor Survey found that the vast majority of impact investors were quite satisfied with their fund returns, with 91% of respondents indicating their financial return expectations were met or exceeded (Mudaliar et al., 2018). In the same group, 97% of respondents indicated that their achieved impact through their investments were in line with expectations or exceeded them, with these high dual satisfaction rates going to show that attaining win-win situations may not be as far-fetched as some critics believe. This figure of course includes impact investors who target below-market rate returns as well, but when breaking down the figures by investors who target market rate returns, the proportion of investors whose expectations were satisfied or exceeded actually jumps up to 94%, as indicated in Figure 8. For private equity focused investors in the survey, the figure is 92%. This indicates a rate of recovery potentially above what some in the mainstream might expect, given the stigma of risk associated with many emerging markets. Yet, the stigma of riskiness still remains amongst impact investors, as the number one challenge facing the growth of the impact investing industry was cited as having "appropriate capital across the risk/return spectrum", primarily due to the lack of risk capital (Mudaliar et al., 2018).

Figure 8: Financial Return Satisfaction Rates Relative to Expecations
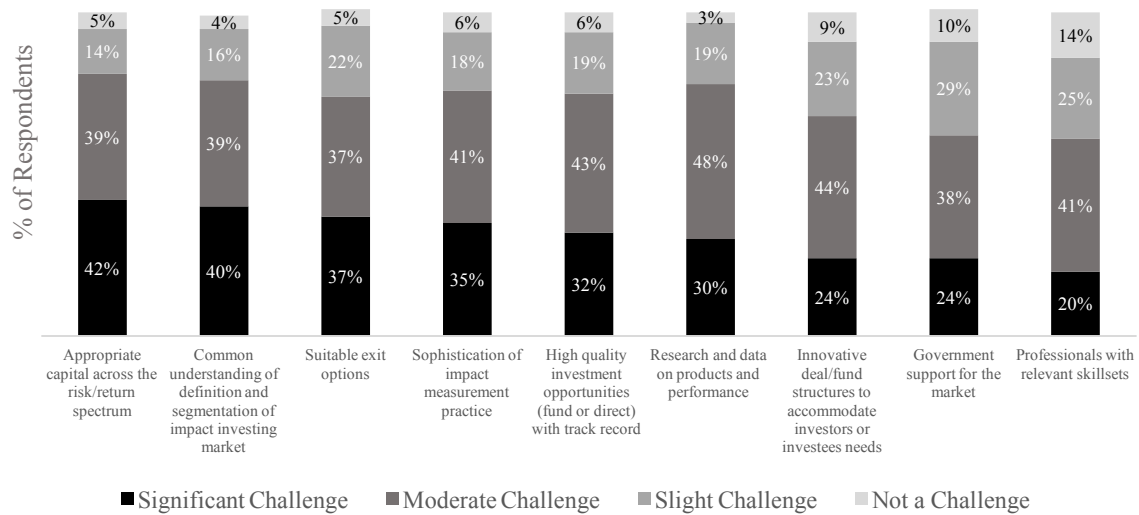by Target Returns, Asset Class, and Geography
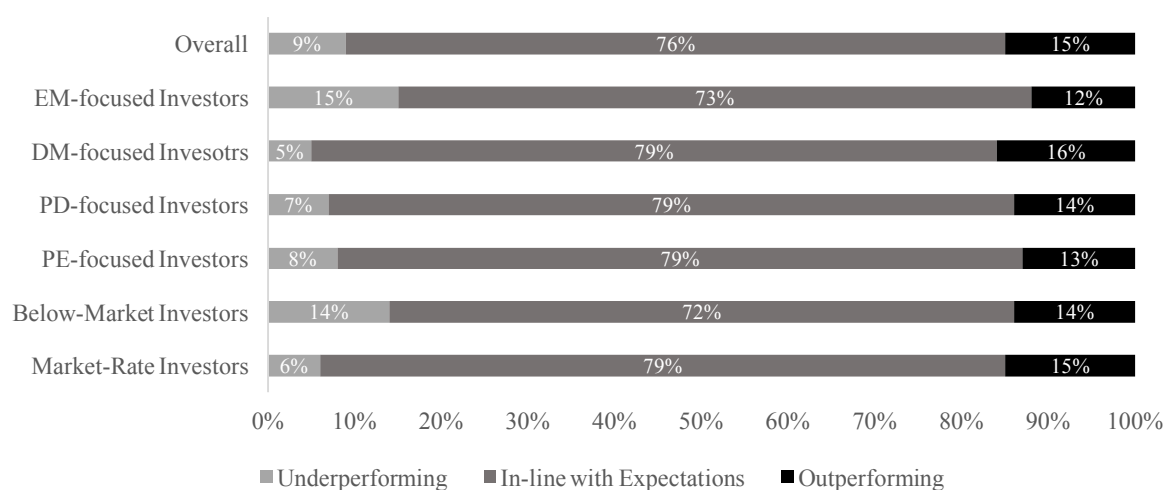
Note: EM = Emerging Market, DM = Developed Market, PD = Private Debt, PE = Private Equity
Source: GIIN

Figure 9: Impact and Financial Performance Relative to Expecations

	Impact Performance	Financial Returns
Underperforming	3%	9%
In Line	82%	76%
Outperforming	15%	15%

■ Outperforming   ■ In Line   ■ Underperforming

Figure 10: Challenges to the Growth of Impact Investing Industry

% of Respondents

	Appropriate capital across the risk/return spectrum	Common understanding of definition and segmentation of impact investing market	Suitable exit options	Sophistication of impact measurement practice	High quality investment opportunities (fund or direct) with track record	Research and data on products and performance	Innovative deal/fund structures to accommodate investors or investees needs	Government support for the market	Professionals with relevant skillsets
Not a Challenge	5%	4%	5%	6%	6%	3%	9%	10%	14%
Slight Challenge	14%	16%	22%	18%	19%	19%	23%	29%	25%
Moderate Challenge	39%	39%	37%	41%	43%	48%	44%	38%	41%
Significant Challenge	42%	40%	37%	35%	32%	30%	24%	24%	20%

■ Significant Challenge   ■ Moderate Challenge   ■ Slight Challenge   ■ Not a Challenge

Moreover, impact investors cited "business model execution & management risk" as the most severe risk for their portfolios, with 29% of respondents indicating it as a severe risk, more than any other risk (Mudaliar et al., 2018). That figure increases to 39% when isolating the responses of private equity investors, which is somewhat unsurprising given the focus private equity has on effective management teams. Yet on the flip side, this also represents a potential opportunity for private equity investors to add significant value to their portfolio companies by providing the human capital support that many of these emerging market firms need. There are other factors at play to consider too, but entrepreneurs in developing nations are on average less educated, and thus on average could be less competent businessmen and women due to their lack of formative experience in comparison to their developed world counterparts.

After considering the micro-level business risk, Country & Currency risk and Liquidity & Exit risk come in as the most severe, with 22% of respondents citing each as severe risks. These risks are quite important to consider, especially since they directly relate to the aforementioned risks of why investors are often hesitant to invest into emerging markets in the first place. The fact that people already invested into emerging markets cite these as important to consider validate their significance, but the data on return satisfaction suggests that the risks are possibly not as dangerous as one might think, and the opportunity is larger than one might expect.

Figure 11: Contributors of Risk to Impact Investment Portfolios
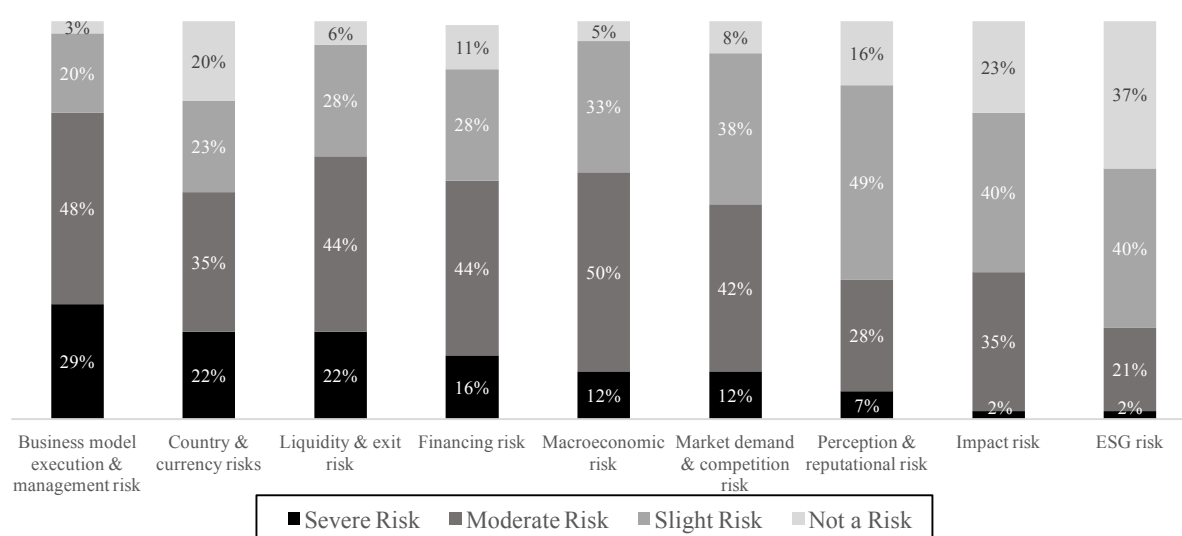
Source: GIIN

3. The Impact of Private Equity

Private equity may not have the best reputation amongst the general public, but there is ample empirical evidence speaking on the benefits of private equity investment at the micro level, as private equity investment will come with assistance outside the bounds of financial investment. This is one of the reasons why equity investment is sometimes preferred over debt investment, as equity investment aligns the profits of the investor with the profits of the investee, whereas debt investment simply demands a fixed payback regardless of the degree of investee success. Yet, it should be noted that equity investment is considered the most costly according to the Pecking Order Theory in Corporate Finance (Borad, 2017). Managers of a firm will give first preference to internal sources of funding, as this also signals to outsiders that the firm is in a position to finance its own growth, a strong positive signal for the future. When turning to external sources of financing, debt financing is always going to be cheaper than equity financing in terms of the return required by investors, as debt investments are considered less risky than equity investments.

Nonetheless, private equity investments have been found to have much positive impact on the micro and macro level. There are numerous studies that analyze the impact of private equity on investee growth and success, and while there are negative examples, much of the evidence points in the direction of positive impact.

3.1. The Impact of Private Equity: Micro

Much of the debate over the impact of private equity is most relevant on the micro level, where the general population gets this notion of cutthroat investors that invest money into a firm, fire many of the employees, and then jack up the price on their investment to squeeze all the money they can out of the company. While situations like the one just described have happened, are happening now, and will continue to happen, the academic research on the topic usually skews towards supporting the other end of the spectrum. Moreover, within the context of an emerging market, private equity could be viewed differently than in developed nations due to the different set of problems facing businesses in emerging markets. Businesses in emerging markets stand to greatly benefit from the strategic and operational expertise that private equity investors can bring to the table beyond financial investment.

Serwaah and Baah-Peprah (2017) found that in Ghana, firms with higher percentage of private equity ownership achieve higher return on equity (ROE) and growth rates than those with lower

private equity ownership shares. Moreover, private equity backed firms that involved the founders in the management of the firm, irrespective of ownership share of the private equity investors, were found to perform better in terms of ROE than listed firms too.

In India, firms that received private equity investment were more likely to survive and also experienced greater increases in revenues, assets, employee compensation, and profits (Smith, 2015). Interestingly, firm productivity and return on assets were not found to increase after investment in India, supporting the notion that private equity capital backs firms which already have high productivity rather than reviving low productivity firms. On a macro-level, this logic could potentially apply to which markets private equity firms choose to fundraise for or invest into, as private equity capital will flow into markets which offer already existent promising opportunities rather than flowing to markets which might need financing the most. Smith also found that private equity investment in India was more likely to go towards larger, more successful firms, further cementing the previously stated logic. According to Smith (2015), private equity in India does not typically focus on changing up operations, but rather focuses on easier to implement growth, with private equity investment found to often ease expansion barriers and encourage managers/owners to increase firm scale and size. Moreover, when comparing the first 5 years post-investment, private equity backed companies in India posted a 8.7% CAGR in the number of jobs, while non-private equity backed companies achieved only 2.9% (Pandit, Tamhane, & Kapur, 2015). This in turn has a positive impact on the Indian economy as a whole.

The positive impact of private equity investment on firms in developed markets is unsurprisingly much better documented than for their emerging market counterparts. In the UK, firms which experienced private equity backed buyouts had superior performance both before (2003-2006) and during the 2008 financial crisis (2007-2010), in comparison to firms that didn't experience private equity backed buyout deals (Wilson, Wright, Siegel, & Scholes, 2012). Private equity backed buyout firms achieved 5-15% more productivity and 3-5% more profitability than non-buyout firms, while also posting positive revenue and employment growth during the same periods. Interestingly, the finding about greater productivity growth in private equity backed buyouts in the UK is in contrast to the Smith's finding on firm productivity in India not significantly increasing following a private equity investment.

Similarly, evidence from 263 US buyouts from 1995 – 2009 shows that private equity buyouts both improve operations in struggling firms and help to ease financial constraints that prevented healthier firms from growing previously (B. Cohn & Towery, 2013). This is consistent with the findings in the study by Wilson et al. (2012) examining the UK, with private equity investment targeting both healthy and distressed firms, while in an emerging market like India, private equity investment seems to target healthy firms to a higher degree. The difference between emerging market and developed world private equity deal types likely factors into this observed difference between the UK/US and India as well, as LBOs are much rarer in emerging markets, where minority stake growth and venture capital investments are far more common (eFront, 2018; Pries et al., 2012; Wilton, 2012). Thus, it may not be wholly appropriate to compare the experiences of emerging and developed market private equity as like for like, since the type of private equity deals conducted in the two types of markets do slightly differ. In addition, much of the literature on developed nations concerns the US and the UK, the two most prominent common-law nations, where capital and credit markets are very well developed.

Perhaps, a nation like France would be more appropriate to examine, as while still considered a developed market, France much less developed capital and credit markets than the US and the UK. There are also many family-owned businesses which at times lack the necessary managerial and financial skills which would allow them to take full advantage of potential growth opportunities (Boucly, Thesmar, & Sraer, 2011). Analysis of a market such as this might be more comparable for emerging markets, such as that conducted by Boucly, Sraer, and Thesmar (2011) on the French market using a dataset of 839 LBO deals from 1994 – 2004. Their study concluded that targets become more profitable and grow faster than non- private equity backed comparable firms, with private equity firms playing a significant role in easing credit constraints that firms may have previously had. In emerging markets, LBOs are of course much less common, but access to credit is a serious problem, and many businesses are also family owned.

Not only does private equity investment aid portfolio companies to grow, but on the foundational side of business, private equity involvement helps firms to incorporate better governance and managerial practices, and even to simply survive. A review of over 17,000 private equity backed companies across the globe from 1970 – 2007 concluded that private equity-backed firms have a 25% lower probability of defaulting than non- private equity

backed firms (Kaplan & Stromberg, 2009). To provide more context to this figure, a 2008 report from the Bank for International Settlements (2008) conducted with data from North America and Europe on the same topic concluded when private equity is involved there is a 5% lower chance of default. In contrast, Thomas' (2010) study analyzing the 2008 financial crisis found that in the US, private equity-backed companies defaulted at a rate of 2.84% versus to 6.17% for comparable firms, translating to a 50% lower chance of default for private equity-backed firms. On the topic of managerial practices, private equity owned firms were found to have the highest management scores, particularly in regards to operations management practices. Bloom et. al (2015) examined a sample of 15,038 manufacturing firms ranging from 50-5000 employees across Europe, Asia, Africa, South America and North America and found that private equity owned firms have management scores greater than almost all ownership types, especially compared to government owned and family run businesses. The scores were calculated by collecting data on 18 separate measures grouped into three categories: 1) Performance Monitoring 2) Effective Targets (using stretching short and long-run targets) and 3) Performance Incentives.

Figure 12: Average Management Scores Across Ownership Types
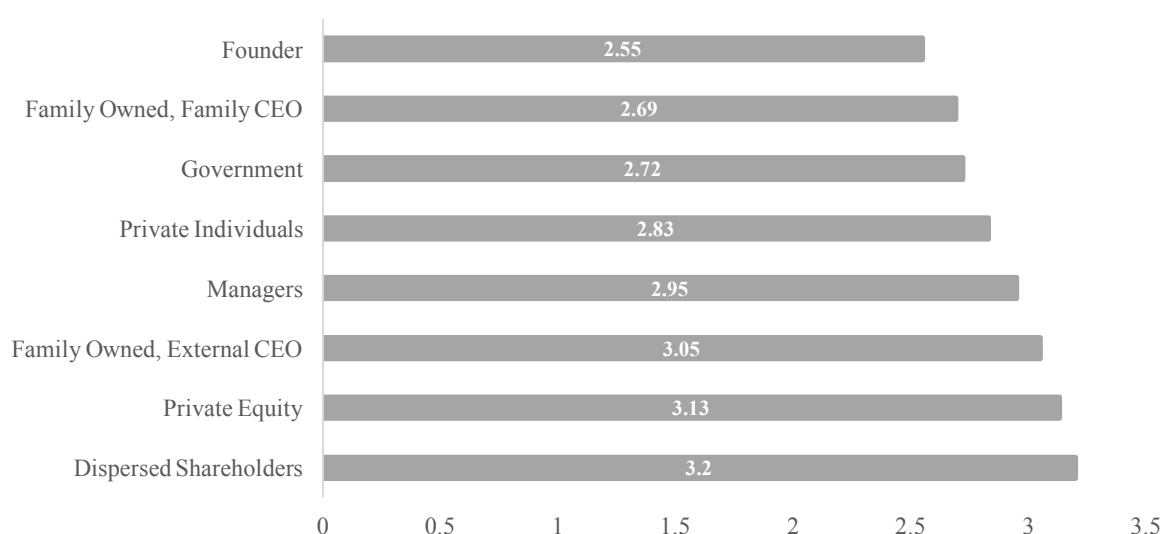
Source: Bloom et. al (2015)

3.2. The Impact of Private Equity: Macro

Private equity capital flow has consistently been linked with positive results on the national stage. In India, the private equity industry has continued to contribute more and more to overall capital fundraised by businesses across the nation. From 2001 to 2015, private equity fundraising steadily grew in terms of the proportion it contributed to total capital fundraised by

businesses across India; growing from 20% in 2001-2005 to 46% in 2011-2014 (Pandit et al., 2015).

Figure 13: PE Fundraising as % of Total Capital Fundraised in India
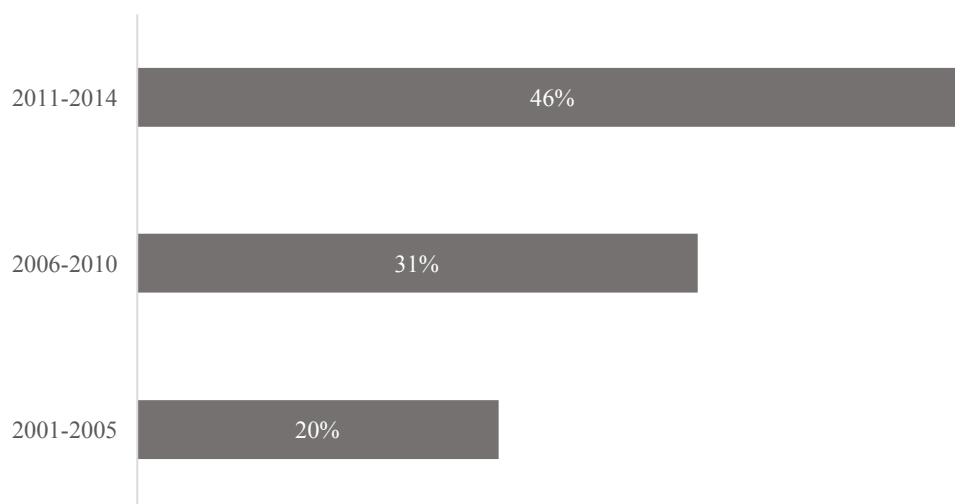
Source: Pandit et al. (2015)

Pandit et. al also found that private equity was the most stable and reliable source of funding in that same time period, with a standard deviation of 76%, compared to 100% for foreign institutional investment and 103% for IPOs. From 2001 – 2014, $103 Billion was invested by the Indian private equity sector into 3100 companies across 12 sectors, with early-stage to mid-size companies ($0 - $125 Million in Revenues) comprising 80% of all deals and 46% of total deal value. Notably, 4 of the top 10 telecom companies, 7 of the top 9 tower operators, and 6 of the top 15 information technology companies were funded by private equity capital during this period. This track record in funding significant companies seems to mimic the historic impact that the venture capital industry has historically had on the US economy, with VC funding 43% of US public companies since 1979 (Strebulaev & Gornall, 2015). This also translates to 57% of total US market capitalization, 38% of employees of public firms, and 82% of R&D.

In Europe, Popov and Rosenbloom concluded that private equity backed investment accounted for 8% of industrial investments, but those firms accounted for 12% of industrial innovation (2009). Their study of private equity investments from 1991 – 2004 in Europe also found that $1 of private equity investment is roughly 9 times more effective than $1 of non-private equity investment in leading to innovation, measured by the number of patents. An argument could

be made in the name of causality here, but this finding on private equity investments spurring growth and innovation is supported by Bernstein et al. (2014) who found that industries that received more private equity investment experienced more growth in productivity and employment, controlled for reverse causality as well. In a separate analysis of 21 European nations, Popov and Rosenbloom (2009) also found that private equity investment has a positive impact on new business creation, a conclusion further supported by Samila and Sorenson (2010) who found that from 1993 – 2002 in the US, each venture capital investment in an early stage firm resulted in the creation of up to 10 additional firms.

4. Literature Review

Although private equity is an industry that generates a significant amount of interest, there has not been a significant amount of research performed even on the determinants of private equity flows in developed nations, and understandably less so on private equity going into emerging market nations. This could well be due to the lack of quality data available for many emerging market nations, both on the dependent and independent variable sides of the equation. Moreover, much of the work in this field focuses particularly on VC financing, as opposed to private equity funding as a whole.

4.1. Origins of Research into Private Equity Determinants

Perhaps the seminal work in the field is that of Jeng and Wells (2000), who wrote about the determinants of VC financing across 21 countries, creating a panel dataset using 15 of those nations over a period of 10 years (1986-1995). They found that total market value of IPOs proved to be the strongest determinant of VC investment, alongside Accounting Standards, defined as the ratings on Accounting Standards from the Center for International Financial Analysis and Research. Somewhat surprisingly, market capitalization growth and GDP growth were not significant factors in their analysis. Notably, the countries analyzed in their work are all developed nations, for whom plenty of data was and is available.

Moreover, although this paper was the catalyst for future research examining private equity capital flow determinants across countries, it is worth noting that Jeng and Wells (2000) built off of the work of Black and Gilson (1998), who established the importance of well-developed stock markets for attracting VC, contrasting stock-market led financial markets such as the US with bank led markets such as Japan and Germany. Gompers and Lerner (1998) also conducted an important analysis on the factors influencing VC fundraising from 1972 to 1994 in the

United States, finding that regulatory policies (i.e. – capital gains tax laws, clarification of the "prudent man rule" by the Department of Labor), overall economic growth, R&D expenditure, and firm specific performance to be significant for VC fundraising. They also noted the importance of interest rates, as bonds are an alternative investment to VC, meaning that if interest rates rise, VC attractiveness as an investment option should decrease (Gompers and Lerner, 1998). Yet interestingly in the case of Gompers and Lerner, their results actually indicated that interest rates have a positive impact on VC funds raised and invested.

4.2. Law and Finance

The importance of enabling regulatory policies for financial development is also well documented in much of the literature concerning law and finance. La Porta et al. (1998) published an important work establishing the empirical link between legal systems and investor protection, notably contrasting Common and Civil Law systems in 49 countries. Their analysis revealed that French Civil Law systems have the weakest investor protection, while Common Law systems have the strongest, with German and Scandinavian Civil Law systems falling in between the other two. This is not very surprising, given that the French and German Civil Law systems are argued to have been constructed as a way to consolidate state power (Beck, Demirgüç-Kunt, & Levine, 2005). On the other hand, Common Law system developed as an independent institution that protected private property owners against the English crown, allowing private citizens to become more confident in conducting financial transactions.

Acemoglu and Johnson (2005) found that Property Rights institutions, institutions that protect private citizens against expropriation by the government, have a positive effect on economic growth, investment and financial development. In a separate work, Beck et al. (2003) found that legal traditions also significantly differ in adaptability to changing economic conditions, which in turn has an impact on financial development. In line with the analysis of La Porta et al. (1998), French Civil Law was the most rigid system, contrasting with British Common Law and German Civil Law, with increasing rigidity having a more negative impact on financial development. Financial development in turn is found to have a positive effect on economic growth (Khan & Senhadji, 2003). Superior legal rights have also been empirically linked to many benefits on the micro level for individual VC firms. More favorable investor legal rights have been shown to positively impact deal screening, deal origination, a higher probability of syndication, a lower probability of negative co-investment, and better VC performance (Cumming, Schmidt, & Walz, 2010; Nahata, Hazarika, & Tandon, 2013).

However, it's worth noting that there is research done that would contradict these analyses on the intersection of law and finance, such as that of Allen, Qian and Qian (2005). They noted that although China has relatively underdeveloped legal and financial systems, with weak investor protection, it has one of the fastest growing economies in the world. They found that the Chinese Private Sector, despite having less effective legal and financial institutions, was actually growing faster than both the State Sector (firms where the gov't has ultimate control) and the Listed Sector (publically listed firms), and provided most of the nation's growth. The private sector was relying heavily on alternative financing channels and informal governance mechanisms that did the work a proper legal and financial system should do. An analysis of the Indian market, which also suffers from weak investor protection and institutions, revealed similar results, where alternative finance proved to be the most important source of external finance for firms, above bank and market sources of financing (Allen, Chakrabarti, De, Qian, & Qian, 2009). Moreover, firms with access to bank and market financing opportunities were not even associated with higher growth rates, indicating that alternative finance that goes outside the bounds of legal systems can be viable in fast growing emerging markets such as India and China.

4.3. Summary of Existing Literature

To date, the most impactful recent work on private equity determinants by country is from Groh and Wallmeroth (2015), writing specifically on the determinants of VC investments in emerging markets, analyzing 118 countries in total from 2000 to 2013 – although roughly 1/3 of the dataset from year to year is comprised of developed nations. The researchers found that M&A activity, good governance, innovation, and unemployment are significant determinants of VC investments, discovering that bribery, corruption, and innovation are especially important in emerging markets. Groh and Wallmeroth (2015) acknowledge in their paper the work of Jeng and Wells (2000), noting that they were the initial researchers into this field of VC/PE determinants. While Groh and Wallmeroth are among the first to exclusively focus on emerging market nations as part of the analysis, however like much of the literature in the field, it focuses only on VC funds than private equity as a whole, a reality that Groh and Wallmeroth (2015) acknowledge in their section speaking on future research. Yet, it's worth noting that Groh is currently actively involved in publishing the Venture Capital & Private Equity Country Attractiveness Index alongside IESE Business School and EMLYON Business School, a useful ranking of 125 nations (as of the 2018 version) on their attractiveness for VC/PE investment ("The Venture Capital & Private Equity Country Attractiveness Index," 2018). This ranking is

a culmination of much of the research in this field, with the team behind it analyzing numerous factors such as economic activity, governance, size and liquidity of capital markets, social environment, the entrepreneurial culture, and more to produce an annual ranking. As of 2018, the United States is at the top.

A useful framework would be to conceive Jeng and Wells (2000) and Groh and Wallmeroth (2015) as the two bookends of the research into this field thus far. No research before Jeng and Wells (2000) deals specifically with the topic of VC/PE capital determinants across countries, and no research after Groh and Wallmeroth (2015) has proven to be as impactful and all-encompassing, particularly so when it comes to the Venture Capital & Private Equity Country Attractiveness Index, recently having published its ninth edition in February 2018.

4.4. Determinants of VC/PE for a Panel Dataset

The vast majority of research in this area focuses on developed nations, namely Europe and North America. Amongst the first to tackle the question after Jeng and Wells (2000) were Balboa and Martí (2003), who diverted slightly from Jeng and Wells (2000), electing to similarly analyze a dataset of 17 European nations from 1987 – 2000. Interestingly, the authors found that the value of private equity investments and divestments (exits) in the previous year were significant in determining the current year private equity capital fundraised normalized by GDP (PE Invested/GDP), alongside the macroeconomic variables touched on initially by Jeng and Wells (2000). Balboa and Martí (2003) argue that the significance of investment and divestment in the previous year confirm the importance of availability of deals and the presence of a liquidity effect. Their results also revealed the significance of GDP growth and a lag of gross domestic savings on fundraising. Notably, these authors chose to focus on a country fixed effects approach, employing a Fixed Effects OLS regression rather than the Random Effects OLS approach employed by most other authors in this field.

Leleux and Surlemont (2003) dealt with a topic that is not dealt with by any other researchers mentioned in this literature review. Their analysis concentrated on the relationship between public and private sources of VC in Europe, examining the effect of "public intervention" (i.e. – government participation) in the venture capital industry. The debate central to their topic is whether or not public sector funding in VC could actually crowd-out private funds, as public funding is usually cheaper for entrepreneurs, which might then inhibit the formation of private sector funds. On the other hand, public funding could be used to seed the venture capital

market, to get it off the ground. Their analysis on panel of 15 European nations from 1990 – 1996 indicated that public intervention arose in response to the development of the venture capital industry, which contradicts the seeding theory. On the other hand, Leleux and Surlemont also concluded that in a Granger Causality sense, more money invested from public intervention actually led to more money invested into the industry overall, indicating that public intervention can serve as a stamp of validity for private sector investors as well. Given the intersection of law and finance and between favorable legal rights and investment, studying the implications of government finance in the VC sector adds an important, yet subtle perspective to the conversation.

Romain and La Potterie (2004) wrote on the determinants of VC in 16 OECD countries from 1990-2000, and found that VC intensity (VC funds/GDP) is positively and significantly influences by GDP growth, which is in direct contrast to Jeng and Wells, who found GDP growth to be insignificant in their analysis. They also found that short/long term interest rates had a positive impact on VC intensity, alongside technological opportunity, represented by variables such as R&D expenditure growth rate and R&D capital stock. The impact of technological opportunity was also found to be much stronger in nations where the rate of entrepreneurship was higher.

Félix et al. (2007), studied the determinants of VC funding across a panel of 23 European nations from 1992 to 2003, analyzing many of the same variables found in previous articles such as R&D expenditure, GDP growth, interest rates, and market capitalization. They added to the then existing literature by investigating the impact of unemployment, trade sale divestments, and the price/book ratio of individual companies. Their results indicated a positive significant impact of IPO exits, confirming the conclusion reached by Jeng and Wells (2000). Interest rates were also shown to be positively and significantly correlated with VC fundraising, along the lines of Gompers and Lerner (1998) and Romain and La Potterie (2004). These authors also arrived at a positive and significant result for market capitalization growth, confirming again Gompers and Lerner (1998) and Black and Gilson (1998), but contradicting Jeng and Wells (2000), who did not obtain a statistically significant coefficient for this factor.

Cherif and Gadzar (2011) assembled a panel of 21 European nations, analyzing VC investment from 1997 – 2006. Their study concluded that GDP growth, market capitalization, R&D expenditures, and unemployment were the most significant factors in driving European VC

investments, while interest rates were not found to be significant, contradicting several other authors such as Félix et al. (2007), Gompers and Lerner (1998) and Romain and La Poterrie (2004).

Bernoth and Colavecchio (2014) conducted an analysis of the determinants of private equity activity in European nations, assembling a panel of 16 Central, Eastern, and Western European nations from 2001-2011. Their analysis yielded results consistent with other authors who wrote about exclusively VC financing, finding that economic activity (i.e. – GDP growth) inflation rates, stock market capitalization, unemployment, regulatory environment are all significant for private equity investment. Interestingly, they used a fixed-effects methodology, pooling the panel into two groups, Central and Eastern European (CEE) and Western European (WE). This is similar to the technique employed by Balboa and Martí in their 2003 paper. The purpose was to compare the two regions as a whole, and the authors found in their analysis that in WE nations, GDP growth positively affects private equity investment, but in CEE nations, the faster the economy is growing, the less private equity capital the country attracts. Moreover, inflation was found to only have a significant impact on private equity investment in WE markets, as was unemployment and stock market capitalization.

4.5. Case Studies of VC/PE Flows into Individual Nations
A common topic of discussion for many policy makers is how their nation can attract more foreign investment, with more investment often seen as positive for development. In emerging market nations, private equity capital usually arrives in the form of foreign investment, as domestic private equity firms are often few in number and size. Thus, there are numerous analyses that engage with one specific nation with the purpose of taking them as case studies. The form of analyses varies from academic research papers to briefs put out development organizations.

Jover and Mlambo (2014) studied the factors that render Angola an attractive nation for private equity investment, surveying 18 private equity funds that have either invested or were considering investing into the nation, as well as 10 expert interviews. They found that most private equity funds were drawn to investing into Angola due to its rapid economic growth, potential for high returns, and lack of supply for private equity investments. However, the surveyed investors were still wary of the unfavorable regulatory environment in Angola, where there is much unnecessary red tape that poses a challenge for foreign investors entering into

the market. Weak accounting standards and poor investor protection were also cited as factors worrying to potential investors. The findings in this country level study of Angola are in line with much of the research done at the macro, panel-data level by other researchers, with GDP growth proving to significant in other analyses such as those done by Romain and La Potterie (2004), Bernoth and Colavecchio (2014), Félix et al. (2007), Balboa and Martí (2003), Gompers and Lerner (1998), and Cherif and Gadzar (2011).

Ramalho (2017) wrote a case study of Brazil, examining the Determinants of private equity and venture capital Fundraised capital in Brazil. The author wrote that their study was based on the work of Gompers and Lerner (1998), who tested the determinants of private equity and venture capital activity in the United States. The results from this particular case study on Brazil were consistent with much of the already existing literature, with the time series analysis of fundraising from 1992 – 2009 revealing that interest rates, stock market returns, IPO activity level, industry regulation, and taxation having statistically significant effects on fundraising in Brazil.

5. Data

The dataset analyzed contains a panel of 34 emerging market countries: Angola, Brazil, Bulgaria, Cambodia, Chile, China, Colombia, Egypt, Ethiopia, Ghana, India, Indonesia, Jordan, Kazakhstan, Kenya, Kuwait, Malaysia, Mexico, Morocco, Nigeria, Pakistan, Peru, Philippines, Poland, Romania, Russian Federation, Rwanda, Slovenia, South Africa, Thailand, Tunisia, Turkey, Vietnam, and Zambia. These nations were chosen because of their status as emerging market nations, as chosen by the Emerging Markets Private Equity Association (EMPEA), as well as the availability of data for both Fundraised and Invested PE Capital. Emerging markets as defined by the scope of this thesis also refers to Africa, Asia, Central and Eastern Europe, Latin America, and the Middle East.

Moreover, the dataset is comprised of a wide range of nations that cover all continents and differing levels of development, ensuring that it would be a fairly representative sample of the emerging market. All data on capital flows was obtained from the EMPEA, who maintain the most accurate database of private equity activity in emerging markets. For Fundraised Capital, data was available from 2006 – 2017 for 65 emerging market nations, while for Invested Capital data was available from 2008 – 2017 for a set of 107 nations. The amounts were provided in nominal terms, and converted to inflation adjusted figures for relevant parts of the

analysis. The relative lack of individual nations for which Fundraised Capital data is available is unsurprising, because many Funds raised are not specific to a nation, rather choosing to focus on a region, such as Sub-Saharan Africa. Investments on the other hand, are rarely, if ever, targeting a region rather than an individual nation.

5.1. Dependent Variable Overview

The dependent variables in this analysis, the Fundraised and Invested Capital data, were each used in 4 different forms to test how different forms of each would be impacted by the independent variables in the analysis. The end result was 8 total models, 4 for Fundraised Capital and 4 for Invested Capital:

Transformation	Explanation
Capital/GDP	Nominal capital flow figures divided by the nominal GDP
Inflation Adjusted Figure	Dollar amount of capital fundraised or invested, adjusted to Dec. 2017 USD
Capital/Regional	Proportion of regional capital fundraised or invested
Capital/Global	Proportion of global capital fundraised or invested

Table 5: Types of Models Used to Analyze Fundraised and Invested Private Equity Capital

Most authors in previous literature used only the Capital/GDP form of the capital flows, due to the fact that this method allows one to control for the relative size of a nation. It provides a way to more accurately compare the differences between nations, and is should thus be considered the most meaningful of the 4 forms.

5.2. Panel Selection

The nations that were a part of the dataset from the EMPEA were also filtered and sorted by their Human Development Index (HDI), a measure created by Pakistani economist Mahbub ul Haq that is used today by the United Nations (UN) to measure average achievement in number of key dimensions of human development: 1) Long and healthy life 2) Knowledge 3) Decent standard of living. The final index is calculated as a geometric mean of normalized indices for the three dimensions ("Human Development Index (HDI) | Human Development Reports," n.d.). The latest measure of HDI dates to 2015, and it is this latest measure was used to get a sense of where the nations in the dataset ranked in terms of development. The 2015 version was used rather than a historical average because the methodology for the HDI has changed

over time, limiting the ability for one to compare HDI scores and rankings across years. The dataset analyzed in this paper has an average HDI (.689) slightly higher than that of the developing countries (.668), largely due to the fact that emerging markets for private equity are not always going to be considered traditional developing nations. For example, Slovenia, a nation ranked 25th in terms of HDI in 2015 with an HDI of .890 (out of 1.000), is still a frontier market for private equity investors, given its inclusion in the EMPEA dataset and research scope. Table 6 provides an overview of the HDI of nations in this dataset, and the relative position of this dataset compared to developing nations as a whole. Moreover, in order to balance having more data to work with versus keeping the dataset strictly limited to developing nations, a decision was made to keep nations such as Slovenia, Poland, and Kuwait in the analysis.

Table 6: 2015 HDI Scores and Rankings for Nations Included in Dataset

HDI Ranking	Very High Human Development	Avg:[1] 0.892	HDI Ranking	Medium Human Development	Avg: 0.631
25	Slovenia	0.890	111	Egypt	0.691
36	Poland	0.855	113	Indonesia	0.689
38	Chile	0.847	115	Viet Nam	0.683
49	Russia	0.804	116	Philippines	0.682
50	Romania	0.802	119	South Africa	0.666
51	Kuwait	0.800	123	Morocco	0.647
	High Human Development	**Avg: 0.746**	131	India	0.624
56	Bulgaria	0.794	139	Ghana	0.579
56	Kazakhstan	0.794	139	Zambia	0.579
59	Malaysia	0.789	143	Cambodia	0.563
71	Turkey	0.767	146	Kenya	0.555
77	Mexico	0.762	147	Pakistan	0.550
79	Brazil	0.754		**Low Human Development**	**Avg: 0.497**
86	Jordan	0.741			
87	Peru	0.740	150	Angola	0.533
87	Thailand	0.740	152	Nigeria	0.527
90	China	0.738	159	Rwanda	0.498
95	Colombia	0.727	174	Ethiopia	0.448
97	Tunisia	0.725			
	Dataset Avg.	**0.689**		OECD Avg.	0.887
	Developing Country Avg.	**0.668**		Global Avg.	0.717

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[1] Average of all nations in this category, not just those included in the dataset

5.3. Independent Variables Overview

Data for the independent variables came from a variety of sources. The data for the many of economic variables was sourced from the IMF World Economic Outlook Database, April 2018 version. Measures of GDP in USD, GDP per Capita, Investment as % of GDP, % Change Volume of Exports, and Inflation were obtained from the IMF, and were available from 2006 – 2017. These were all included because of their availability and their importance to indicating the health of an economy.

In a similar vein of thought, Investment as a % of GDP and the % Change in Exports were also included in the dataset due to their importance for indicating economic health and activity. Investment, also known as gross capital formation, consists of additional purchases of fixed assets and net changes to inventory levels, which often relates to current account balance. The growth of Exports from a nation year over year is not always necessary to have a strong economy, but it certainly can help indicate that an economy is growing and on the right track.

The rest of the data obtained for independent variables were only available from the years 2006 – 2016, and thus the analysis itself only covered the years 2006 – 2016 for Fundraised Capital and 2008 – 2016 for Invested Capital.

Data regarding Foreign Direct Investment as a % of GDP, Bank Credit to the Private Sector as a % of GDP, Mobile Subscriptions per 100 people, Personal Remittances Received as % of GDP, and Population Growth % came from the World Development Indicators, the primary collection of development indicators published by the World Bank Group.

While it's true that private equity capital can help to promote development in a nation, as the biggest obstacle for MSMEs across emerging markets is access to finance (IFC, 2017), it's no secret that most private equity investors are investing into emerging markets with the primary purpose of gaining market rate or above market rate returns. If they feel that a nation or a particular investment opportunity will not be able to provide that due to riskiness or some other factor, then it is not likely that they will choose to invest anyway. This is the case even amongst impact investors (Mudaliar et al., 2018). Its logical to assume that the more developed a nation is, the more stable it is, and that a lower amount of risk should be associated with investing into it. Thus, from a theoretical standpoint, the more developed a nation is, the more attractive it should be for investors from a risk standpoint, even though emerging markets might offer

greater opportunity for outsized return. The VC and Private Equity Attractiveness Index published by Groh et al. (2018) via IESE and EMLYON, can serve to confirm this as developed nations tend to occupy higher spots on the list than developing nations.

Control of Corruption is interpreted as the extent to which public power is used for private gain and the extent to which elites and private interests can control public sector interest (Kaufmann & Kraay, 2017). To measure this accurately, data from the World Governance Indicators published by the World Bank Group were used. The World Governance indicators were published starting in 1999, but cover the time range from 1996 to 2016. They capture the opinions of enterprise, citizen, and expert sources across 200 nations, rating nations on: Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. Control of Corruption was selected due to its particular relevance to emerging markets and in particular business in emerging markets. Scores from each nation are reported on a scale from -2.5 to 2.5, ranging from weak to strong governance.

Regulatory Quality is another significant variable in the World Governance Indicators that is relevant in attracting private capital, as legal support for investors to enforce contracts and ease the repatriation process for their invested capital is integral for foreign private investment. However, Regulatory Quality was excluded from this analysis due to concerns of collinearity with Control of Corruption.

The Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD) has been collecting data on foreign aid statistics for decades. The goal of the DAC is to promote collective action that progresses the world towards completion of the Sustainable Development Goals (SDG) laid out by the UN. This is the source of the Official Development Financing (ODF) data used in this analysis, which made use of the figures from 2006 - 2016. The figures were taken from the DAC as nominal dollar amounts for each year, and prior to analysis were transformed into % of GDP numbers in order to standardize the amounts. According the DAC, ODF is defined as the "receipts of bilateral ODA, concessional and non-concessional resources from multilateral sources, and bilateral other official flows made available for reasons unrelated to trade, in particular loans to refinance debt." ("Total official development flows by country and region (ODF)," 2018). ODA, or Official Development Assistance, is defined by the DAC as "government aid that

promotes and specifically targets the economic development and welfare of developing countries".

There is much debate about the effectiveness of aid, with some studies finding that there is a positive correlation between aid and long run economic growth (Minoiu & Reddy, 2010), while others find no significant relationship between the two (Doucouliagos & Paldam, 2011; Dreher, Eichenauer, Gehring, Langlotz, & Lohmann, 2015). However, regardless of the existence or non-existence of a link between foreign aid and economic growth, it's no secret that there is a significant amount of aid that is pushed towards developing nations every year. Moreover, its logical to assume that the more aid a nation receives proportional to its size, the more reliant it would seem to be on outside help, due to a relative inability to support itself. Thus, less relative aid implies a higher degree of independence, and is grounds for including this variable as a proxy for relative level of development. Foreign aid has also been found to be linked with the level of corruption in a market, with the most corrupt nations receiving the most foreign aid (de la Croix & Delavallade, 2014). More corrupt nations are also the poorest, which could explain why they receive more aid, and thus also establishes a somewhat self-evident but nonetheless important link between development and foreign aid, with less developed nations receiving more foreign aid.

Table 7: Breakdown of Independent and Dependent Variables

Variable	Description	Time Periods	Sources
Invested Capital	Private equity investments into firms in emerging markets, reported by in primary and secondary sources or directly by fund managers	2008 – 2017	EMPEA
Fundraised Capital	Officially closed funds for emerging markets reported in primary and secondary sources or directly by fund managers	2006 – 2017	EMPEA
Gross Domestic Product (GDP)	Monetary value of all goods and services produced, measured in USD ($)	2006 – 2017	IMF World Economic Outlook Database
GDP/Capita	GDP divided by population, measured in USD ($)	2006 – 2017	IMF World Economic Outlook Database
%Δ in Exports	The percentage change in export of goods and services from last year to the current	2006 – 2017	IMF World Economic Outlook Database
Population Growth	Percentage growth in population	2006 – 2017	World Bank World Development Indicators
Investment/GDP	Total investment into fixed assets across the nation, as a % of GDP	2006 – 2017	IMF World Economic Outlook Database
Inflation	A general increase in prices in an economy, measured as a %	2006 – 2017	
Inward FDI/GDP	Direct investment equity flows into an economy. Ownership of 10% or more of the ordinary shares of voting stock is the criterion for determining the existence of voting relationship.	2006 – 2016	World Bank World Development Indicators
Official Development Flows (ODF)/GDP	All development related financial flows, measured as a % of GDP	2006 – 2016	OECD Development Assistance Committee
Bank Credit to Private Sector/GDP	Total credit from the financial sector to the private sector, measured as a % of GDP	2006 – 2016	World Bank World Development Indicators
Mobile Subscriptions per 100 People	The number of mobile phone subscriptions reported per 100 people	2006 – 2016	World Bank World Development Indicators
Received Personal Remittances/GDP	Personal remittances received as a % of GDP	2006 – 2016	World Bank World Development Indicators
Control of Corruption	The extent to which public power is used for private gain, measured on a scale from -2.5 to 2.5	2006 – 2016	World Governance Indicators

6. Methodology

I employed a random effects panel data analysis, in line with many of the other authors who previously researched this topic, most notably Jeng and Wells (2000), who were noted as the pioneers into this field, conducting the first significant study of the determinants of VC activity in a panel data analysis. There are analyses out there that employ fixed effects techniques, such as those of Bernoth and Colavecchio (2014) and Balboa and Martí (2003), but these control for the country fixed effects, and thus theoretically would not be the right technique for my analysis. This theoretical decision was confirmed by conducting a Hasuman Test to help decide between the random effects and fixed effects models.

The model specified combined a number of development and economic variables together, while also controlling for potential collinearity between the variables – most notably because some micro level variables (i.e. – Number of Mobile Phone Subscriptions per 100 People) could potentially have been related to other macro level variables (i.e. – GDP per Capita). In total, there were 8 models specified, 4 for Fundraised Capital and 4 for Invested Capital – detailed further in the Data section.

Of the models specified, the two most significant are undoubtedly those that control for GDP, as they allow for a more accurate comparison between nations. They are numbered as Model 2 and Model 6 in the results section.

Model 2: Fundraised Capital/GDP

$$= \beta_0 + \beta_1 \, GDP/Capita_i + \beta_2 \, \%\Delta \text{ in Exports}_i + \beta_3 \text{ Population Growth}_i$$
$$+ \beta_4 \text{ Investment/GDP}_i + \beta_5 \text{ Inflation}_i + \beta_6 \text{ Inward FDI/GDP}_i$$
$$+ \beta_7 \text{ ODF/GDP}_i + \beta_8 \text{ Bank Credit to Private Sector/GDP}_i$$
$$+ \beta_9 \text{ Mobile Subs per 100 People}_i + \beta_{10} \text{ Received Personal Remittances/GDP}_i$$
$$+ \beta_{11} \text{ Control of Corruption}_i$$

Model 6: Invested Capital/GDP

$$= \beta_0 + \beta_1 \, GDP/Capita_i + \beta_2 \, \%\Delta \text{ in Exports}_i + \beta_3 \text{ Population Growth}_i$$

$$+ \, \beta_4 \text{ Investment/GDP}_i + \beta_5 \text{ Inflation}_i + \beta_6 \text{ Inward FDI/GDP}_i$$

$$+ \, \beta_7 \text{ ODF/GDP}_i + \beta_8 \text{ Bank Credit to Private Sector/GDP}_i$$

$$+ \, \beta_9 \text{ Mobile Subs per 100 People}_i + \beta_{10} \text{ Received Personal Remittances/GDP}_i$$

$$+ \, \beta_{11} \text{ Control of Corruption}_i$$

7. Results

Of the models tested, perhaps the most significant are the two that standardize the Invested Capital and Fundraised Capital absolute amounts by dividing them by the GDP of the nation (Model 2 and Model 6). This allows for standardization for the relative size of the nation, allowing for a more realistic comparison between nations. The R^2 for the models varies from .2350 to .9724, with the GDP standardized model for both Fundraised and Invested Capital posting the lowest R^2 numbers. For Fundraised Capital/GDP, Investment/GDP and ODF/GDP proved to be significant determinants of private equity capital, while for Invested Capital/GDP Inflation, ODF/GDP, and Corruption proved to be significant. GDP proved to be a significant determinant in the three other types of models that did not standardize for GDP, but unsurprisingly was not significant in the GDP standardized models. In addition, when interpreting the data, it is important to confirm the units of measurement in order to properly understand the messages conveyed. Models 1 and 5 are measured raw dollars, while the rest of the models are portrayed as percentages.

The full results for all regressions are displayed in Tables 8 and 9 below:

Table 8: Fundraised Capital Regression Models	1. Fundraised Capital ($M, 2017)	2. Fundraised Capital/GDP (Nominal)	3. Fundraised Capital / Regional	4. Fundraised Capital / Global
R^2 (Between)	.9724	.3405	.4114	.9615
GDP	**1.362**[***]	8.43e-08	**0.0000470**[***]	**0.0000425**[***]
	(0.000)	(0.305)	(0.000)	(0.000)
GDP/Capita	-0.0146	-3.61e-09	0.00000153	-0.000000688
	(0.271)	(0.834)	(0.628)	(0.209)
%Δ in Exports	**1219.8**[*]	0.00122	-0.0466	0.0255
	(0.074)	(0.158)	(0.638)	(0.199)
Population Growth	6516.7	-0.00483	-1.818	0.0845
	(0.356)	(0.599)	(0.320)	(0.782)
Investment/GDP	**3410.3**[***]	**0.00315**[**]	0.0154	**0.150**[***]
	(0.004)	(0.041)	(0.948)	(0.001)
Inflation	238.0	0.00111	-0.111	-0.0439
	(0.866)	(0.536)	(0.610)	(0.309)
Inward FDI/GDP	-1406.1	-0.00113	-0.293	-0.104
	(0.462)	(0.646)	(0.383)	(0.106)
ODF/GDP	-2696.3	**-0.00564**[*]	-0.672	-0.127
	(0.302)	(0.096)	(0.228)	(0.207)
Bank Credit to Private Sector/GDP	458.2	-0.000249	0.0342	**0.0298**[**]
	(0.147)	(0.545)	(0.637)	(0.020)
Mobile Subscriptions per 100 People	**-5.766**[***]	-0.00000402	**-0.000981**[***]	**-0.000295**[***]
	(0.007)	(0.138)	(0.004)	(0.000)
Received Personal Remittances/GDP	532.7	-0.000292	-0.378	-0.0602
	(0.763)	(0.899)	(0.370)	(0.415)
Control of Corruption	209.1	0.000226	-0.00789	0.00255
	(0.210)	(0.298)	(0.845)	(0.714)
Constant	-602.1	0.000300	**0.227**[***]	-0.00681
	(0.154)	(0.582)	(0.010)	(0.668)
N	374	374	374	374

p-values in parentheses
[*] $p < 0.10$, [**] $p < 0.05$, [***] $p < 0.01$

Table 9: Invested Capital Regression Models	5. Invested Capital ($M, 2017)	6. Invested Capital/GDP (Nominal)	7. Invested Capital / Regional	8. Invested Capital / Global
R^2 (Between)	.9489	.2350	.3243	.9437
GDP	**1.046*****	-2.49e-08	**0.0000236****	**0.0000295*****
	(0.000)	(0.714)	(0.014)	(0.000)
GDP/Capita	-0.0118	-1.98e-08	0.000000262	-0.000000221
	(0.377)	(0.192)	(0.905)	(0.650)
%Δ in Exports	470.0	-0.0000108	-0.0152	0.0190
	(0.336)	(0.986)	(0.795)	(0.233)
Population Growth	-78.85	-0.00133	-2.132	-0.181
	(0.992)	(0.870)	(0.113)	(0.517)
Investment/GDP	**2191.5****	0.00205	0.118	**0.114*****
	(0.048)	(0.113)	(0.468)	(0.004)
Inflation	78.23	**0.00239***	0.0232	-0.0166
	(0.939)	(0.067)	(0.854)	(0.622)
Inward FDI/GDP	-611.6	0.00126	0.0675	-0.0556
	(0.767)	(0.612)	(0.810)	(0.433)
ODF/GDP	-1819.0	**-0.00677****	-0.454	-0.0581
	(0.506)	(0.031)	(0.276)	(0.551)
Bank Credit to Private Sector/GDP	194.0	0.000474	-0.0297	0.0137
	(0.540)	(0.180)	(0.571)	(0.239)
Mobile Subscriptions per 100 People	-2.985	-0.00000183	-0.000113	**-0.000148****
	(0.158)	(0.494)	(0.673)	(0.036)
Received Personal Remittances/GDP	1259.2	0.00278	-0.181	0.0186
	(0.555)	(0.234)	(0.620)	(0.815)
Control of Corruption	154.9	**0.000455****	0.0170	0.000478
	(0.368)	(0.017)	(0.565)	(0.940)
Constant	-208.7	0.000335	0.143**	-0.00701
	(0.627)	(0.502)	(0.032)	(0.647)
N	306	306	306	306

p-values in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

8. Discussion

8.1. GDP

GDP is found to be significant in more models than any of the other variables tested, 6 out of 8 to be exact. Unsurprisingly, the two models it is insignificant for are Model 2 and Model 6, which both aim to standardize fundraised and invested capital for GDP. Yet for all other models except Model 7, GDP is significant at the 1 percent level. It is positively correlated with private equity capital flow across all 6 models, indicating that the larger the GDP of an emerging market nation, the more private equity capital it will attract, both in terms of fundraising and investment. This should come as no surprise, and falls in line with conventional economic logic which states that the larger the GDP, the larger the economy, and therefore the more opportunities available for private equity investment. When interpreting the figures, it is important to note that GDP is measured in billions, while private equity capital flow was measured in millions. Thus, for Model 1, for every $1B increase in GDP, a $1.362M increase in private equity capital fundraising is expected for a particular nation. However, for Models 3,4,7, and 8, the unit of measure is a percentage, rather than absolute numbers. This means that Model 3 implies that a $1B increase in GDP would imply a .0047% increase in the proportion of the private equity capital fundraised across a nation's region. Put slightly differently, if Country A has a GDP of $100B and Country B has a GDP of $200B, then Country B should be expected to comprise .47 percent more of their region's fundraised private equity capital.

Many sources in reviewed in existing literature actually do not include GDP as a factor in their analysis, but this may have more to do with the desire to standardize for GDP in analysis rather than the unimportance of GDP as a factor. Moreover, Wilton (2012) includes the size of an economy as one of the three key pillars that can foster an environment conducive to private equity capital inflow, for which GDP is certainly a viable measure.

8.2. GDP/Capita

Interestingly, GDP/Capita was not found to be significant across any of the models tested. The degree of significance for the coefficient never crossed higher than around the 20 percent mark. This result is somewhat out of line with my initial intuition, but is somewhat in line what many authors in the literature. Many authors did not even test for GDP/Capita as a variable in their analyses, and of those that did, there were not any that found GDP/Capita to be a significant factor for attracting private equity capital.

8.3. %Δ in Exports

The % Change in in the volume of exports of goods and services was significant positively for one of the models, Model 1, at the 10 percent level. The coefficient indicates that a 1% increase in exports from one year to the next would imply that private equity fundraising should also increase by $12.20M. This positive result is in line with expectations, as an increase in exports can signal to outsiders that companies are growing and/or more companies becoming available to invest into. This logic is confirmed by Cumming et al. (2014), who found that entrepreneurship has a statistically significant impact on GDP/Capita, Exports/GDP, and Patents per Population, alongside a negative impact on unemployment. Moreover, given that foreign private equity investors often add value in developing nations by helping companies to access global markets, growing exports can be a positive signal to investors who are prepared to help in this manner. This finding is slightly in line with that of Groh and Wallmeroth (2015), who also found that exports were significant in attracting venture capital. However, their results indicated that it was only significant for developed economies, as their analysis contained a mixture of both developed and emerging economies. Their hypothesis for this result was that developing nations focus less on maximizing their imports than developed nations.

8.4. Population Growth

Population growth was not found to be significant amongst any of the models tested, although for Model 7 it was close to be significant at the 10 percent level. Population and the size of an economy are often related, given the simple fact that more people provides more opportunity for scale and more human capital to take advantage of. Developing nations often have relatively higher rates of population growth, especially as many developed nations begin to struggle with the challenges of an aging population. Negative population growth is now seen a number of nations across the globe, perhaps most notably in Japan. Thus for this analysis, the rationale was that a lower rate of population growth could potentially correlate with more private equity capital as this would imply that nations with greater attractiveness for private equity are relatively more developed.

8.5. Investment/GDP

Investments/GDP was positively significant for 5 of the models tested, ranging in significance from the 5 percent level to the 1 percent level. Of the 4 types of models tested, it was significant for all 4 types at least once save for the Capital/Regional model type. In addition,

Investment/GDP resulted in significance for the most models of any variable other than GDP, and also served as the variable with the most significance for fundraised capital (Model 2). Interestingly, it was not significant for Model 6, which tests for Invested Capital/GDP.

The strong results obtained from this variable are in line with the expectations set prior to commencing the analysis, as Investment, otherwise known as capital formation, is the sum of investments into fixed assets. The bulk of this investment of course comes by way of the private sector, which likely helps explain why greater amounts of investment render a nation more attractive for private equity capital. It is surprising that Investment/GDP was not tested for by other authors in the literature, given the significance it has achieved in my analysis and the theoretical sense the variable makes for inclusion in a model of this nature. One possible reason is could be that there other just as viable variables such as M&A Activity and IPOs that serve as valid indicators of economic activity, especially on the firm level. Investment/GDP represents an investment into the future growth of firms, in the same vein that an R&D investment would, a variable that has been aptly included in many other analyses in the literature, such as Romain and La Pottterie (2004). Yet, the fact that this variable was especially significant for fundraised capital rather than invested capital could indicate that an indicator of economic activity at an overall level does not always translate to excellent opportunity at the overall firm level.

8.6. Inflation

Inflation was positively significant for Model 6 at the 10 percent level, which is somewhat contrary to expectations. It is no secret that interest rates and inflation are often mentioned in the same breath, and in much of the literature interest rates were positively correlated with venture capital and private equity fundraising. Félix et al. (2007), Gompers and Lerner (1998), and Romain and La Potterie (2004) all reached this aforementioned conclusion about interest rates. Rising interest rates lead to decreased consumer spending and economic contraction, which is associated with decreasing inflation, and thus is in contradiction with my result. Furthermore, Bernoth and Colavecchio (2014) obtained the result that inflation is negatively related to private equity investment.

8.7. Inward FDI/GDP

FDI was not found to be significant amongst any of the models tested. This is somewhat surprising – especially for the Invested Capital models, given that private equity can be counted

as a part of FDI. The general consensus within the literature and industry indicate that private equity capital goes where there is opportunity. More FDI flowing into a nation is in concurrence with the notion that opportunity is present, and thus theoretically should manifest in more private equity capital flowing in as well. In the literature, no other authors examined tested for this variable

8.8. ODF/GDP

ODF flows were significant for 2 of models tested, Model 2 and Model 6, both of which are of the Capital/GDP model type. That model type is perhaps the most significant of the model types because it standardizes for the size of each nation's economy, and is the standard practice model format across all of the literature in this space. ODF flows were negatively significant at the 10 percent level for Fundraised Capital and at the 5 percent level for Invested Capital. The coefficients indicate that for every 1 percent increase in ODF/GDP, a nation will attract .56 percent less Fundraised Capital/GDP and .21 percent less Invested Capital/GDP. The negative direction of the correlation falls well in line with expectations, as more ODF signifies greater reliance on foreign aid. Greater reliance on foreign aid likely translates to a less robust domestic private sector and ability to sustain development using sources internal to a nation. This then can translate to a dearth of private equity opportunities. ODF has not been tested for across any of the previous literature, and represents a unique addition from this paper to the existing literature.

8.9. Bank Credit to Private Sector/GDP

Bank Credit to the Private Sector/GDP was found to be positively significant for Model 4, the Fundraised Capital of a nation as a proportion of total amount fundraised amongst all the nations in the dataset. The coefficient was positively significant at the 5 percent level, and signifies that a 1 percent increase in Bank Credit to the Private Sector/GDP will result in a 2.98 percent increase in a nation's proportion of global private equity fundraising. Increasing bank lending to the private sector is interesting, because it indicates that there are legitimate opportunities for banks to lend to. Provided that the government is not subsidizing the majority of this lending, banks are generally much more risk averse than private equity investors. Banks have a fiduciary duty to their deposit holders, and in developing countries small businesses are quite risky portfolio items for banks. If banks are lending to the private sector in increasing volume, this could therefore indicate that the private sector is becoming a source of decreased risk, and thus more legitimate opportunities are available. However, in many cases, it is

government subsidization/policies and sometimes credit guarantee schemes that will incentivize or obligate banks to start lending more. Increased lending could also lead to decreased demand for equity financing, in keeping with the pecking order theory, as equity financing is costlier for a firm than debt financing.

8.10. Mobile Subscriptions per 100 People

Mobile subscriptions were significant in 4 of the models: 1, 3, 4, and 8. Significance occurs at the 1 percent level for Model 1, 3, and 4, and at the 5 percent level for Model 8. Perhaps contrary to initial intuition, the coefficients are directionally negative, meaning that more Mobile Subscriptions per 100 People in a nation actually indicates less private equity capital flowing in. Technology penetration is often regarded as an interesting metric for development, and given that development also should in theory imply further attractiveness for private equity capital, this is an especially interesting phenomenon. It is important to note that the interpretation of this result should not be that if a country begins decreasing the number of mobile phone subscriptions per 100 people than that will suddenly render that nation more attractive to private equity capital. Yet if one considers the situation of many developing nations, it is not surprising that there are more mobile phone subscriptions in those nations. In regions such as Sub Saharan Africa, landline technology was simply leapfrogged and many nations simply went straight to mobile technology. As a result, in 2004, Africa became the first continent to have more mobile phone users than landline users (Meldrum, 2004). Thus when considering this reality, the robust result obtained from the analysis actually falls in line with what one should expect.

8.11. Received Personal Remittances/GDP

Remittances did not prove to be significant in any of the models tested for. This variable wasn't included in any analyses observed in the literature, but the rationale for it from an economic point of view seems to fit with the idea of private equity attractiveness and business opportunity. Theoretically speaking, more remittances implies that a nation is more reliant on foreign sources of financing and business opportunity to help finance consumer consumption. Moreover, if one is reliant upon remittances, it could be unlikely that one has access to the capital associated with a private equity level business opportunity. Thus the logic leads to the conclusion that more remittances mean less opportunity for private equity capital to finance. However, one could also argue on the other hand that remittance finance goes a long way in supporting business opportunity in the nation, and could actually does not imply a dearth of

opportunity. One could point out that financing is financing, and remittance finance could help startup entrepreneurial ventures. A potential sub-analysis could be to analyze the spending of remittance funds, and if there is a relationship between rates of entrepreneurship and remittances within a nation.

8.12. Control of Corruption

Control of corruption was found to be positively significant at the 5 percent level for Model 6, serving as the most significant variable for Invested Capital. Control of corruption is measured on a scale from -2.5 to 2.5, with the higher the rating the less corrupt the nation. The coefficient implies that an increase of 1 on the Control of Corruption scale would lead to a .04% increase in the private equity capital/GDP ratio for a given nation. The fact that this variable is significant within the analysis only of Model 6 is slightly off with expectations, especially given the plethora of instances within the literature where good governance was mentioned as a variable to test for as a factor to include within the analysis. The link between law and finance has been well established by works such as those of La Porta et al. (1998), who empirically linked the legal system of the nation with the level of investor protection offered, or Gompers and Lerner (1998), who found that regulatory policies within the United States were significant for venture capital fundraising. Within the literature on determinants of private equity capital, Groh and Wallmeroth (2015) also concluded that good governance is a significant determinant for venture capital funds, as did Bernoth and Colaveecchio (2014). One possible explanation for why corruption was significant for invested capital but not for fundraised capital could be that invested capital is much closer to the ground, and thus this capital could be more sensitive to the potential negative effects of poor governance on the opportunities the fund is considering. Yet, given the link between control of corruption, overall regulatory quality, and thereby investor protections, this result is surprising, as investors looking to fundraise will certainly consider the legal implications of investing into a particular nation.

9. Further Discussion

9.1. Policy Implications

The people that will arguably be able to make the most practical use of this information are policy makers. They are the ones that have perhaps the most power to drive regulatory change and impact the determinants of private equity capital in their respective nations. The link between law and finance has been well documented, and in order to have a thriving private sector, a willing and able public sector needs to cultivate it. In addition, by understanding the

differences between fundraised and invested capital determinants, policy makers can act accordingly. It could be argued that invested capital is the more significant of the two types

9.2. Future Research

Future research in this field could explore a number of different directions. As more data on development is taken and made publically available, it will be easier to test associations for these variables with Private Equity fundraised and invested capital. Moreover, by flipping the independent and dependent variables in the equation, there is much need to test for the real impact of private equity capital on development in emerging countries. There is much talk on the impact that foreign investment and financing for MSMEs can have on economic development, but there is no statistic currently that policy makers can cite to show the exact benefit of having more private equity capital invested into their nations.

9.3. Limitations

As a work completed for a master's degree, there is of course a time limitation, which restricts the time allowed to complete the analysis and writing. If given more time, I would have been able to produce a more complete work, complemented primarily by a more rigorous analysis. A more rigorous analysis in this case would be the possible inclusion of additional variables, possible exclusion of irrelevant variables, and also the possible utilization of more advanced econometric techniques if necessary.

As a thesis conducted on a subject concerning emerging markets, the data associated with my work will of course be more scarce than for those concerned with developed markets. Emerging markets by nature will have less data and lower quality data available to analyze, which severely limited the data that I could use. For example, a significant determinant found by many other authors was that of market capitalization, which I could not really utilize due to lack of data for all 34 nations in the dataset for the years 2006 – 2017.

There were also a significant number of development variables that would have been quite interesting to analyze, but I was not able to use due to lack of quality data across my entire panel and potential issues with collinearity. Some of the omitted variables are: lending interest rates, total tax rate, bank branches per 1000 people, number of patents applications, alcohol consumption per capita, statistical capacity, business startup cost for females, bank deposits as

a % of GDP, maternal mortality rates, the World Bank Doing Business Indicators, the World Bank Enterprise Surveys, and more.

Variables that were excluded from the dataset due to potential concerns about collinearity (but not lack of data availability) are Regulatory Quality (with Control of Corruption) and CO_2 Emissions per Capita (with GDP per Capita). As time progresses, more and more data will be collected on both the dependent and independent variable sides of the equation analyzed in this thesis, and thus a better analysis of this exact same topic will be possible in the coming several years.

10. Conclusion

In this study I have analyzed the macroeconomic determinants of private equity capital for emerging market nations, supplemented with some microeconomic development variables. The analysis considered both fundraised and invested private equity capital, with Investment as a % of GDP and Control of Corruption serving as the most important variables for the two forms of capital, respectively. Other significant variables are GDP, %Δ in Exports, ODF as a % of GDP, and Mobile Subscriptions per 100 People for fundraised capital while for invested capital GDP, Inflation, ODF as a % of GDP, and Mobile Subscriptions per 100 People were also found to be significant.

Investments into emerging markets have been shown to reward many investors with outsized return, even those seeking to create positive impact through their investment as well. Much of this can be attributed to the reality that in emerging markets, simply investing capital is a positive social impact, as it unlocks financing and can help create jobs in a community. Private equity capital in particular has an opportunity to contribute to the professionalization of emerging market firms and by proxy the economies as a whole, because of the high standards PE portfolio firms are held to and the extra-financial value created by private equity investors.

My findings do not support the notion that private equity finance has a significant impact on a macro-level on economic growth and development, but given the positive impact of private equity on a micro-level, the macro level impact can be inferred from it. Thus, I operate with the assumption that private equity financing is beneficial for economic development in

emerging market nations, hence my goal to ascertain what the determinants of private equity capital are.

Attracting private equity capital can be a great way to professionalize an economy starting from an individual firm level, and given the strictness many private equity investors operate with, the presence of private equity could signal to other investors about the opportunity present in a nation. Yet, as I have demonstrated with my results, fundraising capital and investing capital are two different topics, as each type of capital has different determinants, particularly highlighted in Model 2 and Model 6. By showing this, I've demonstrated the need for more research to tackle the difference between fundraised and invested capital determinants, as most authors in the literature consider fundraised capital as part of their investment. Moreover, by highlighting the difference between emerging market and developed nation private equity, more analysis specific to emerging market nations could be well worth the effort.

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