

Leverage Buyout Activity: A Tale of Developed and Developing Economies
(**Preliminary and not to be Quoted**).

ABSTRACT

In this study we explain and compare the returns on Leveraged Buyouts (LBOs) in developed countries with those of developing economies (including newly industrialized economies). We utilize a unique data set covering LBOs from 1980 – April 2012. This covers both periods of recession and economic boom.

We analyze how various factors influence the returns of an LBO. Returns on LBOs are on average higher for developed markets; however, returns of LBOs during high economic growth periods are high for developing nations; whereas returns in developing nations are lower when compared to the returns in developed nations in periods of slow economic growth.

During periods of slow or moderate economic growth, the returns in developing nations do not compensate for the high risk associated with them. We also look at the influence of other factors such as if the target and the buyer are from the same country, Debt/Capital ratio {low, medium and high}, size of the target firms, Number of buyers involved in the LBO, Reputation of the buyer firm, Target firm's Industry, Buyer Industry, if the target and the buyer are from the same industry, Number of days to exit, interest rates in the target country and the buyer country, currency fluctuation between the target country and the buyer country, target country stock market return and Law

enforcement and government effectiveness and ease of setting up a business (number of procedures) in the target country.

We also look at the time to exit from the initial LBO to the exit through one of the following methods: IPO, bankruptcy, MBO, strategic buyout or secondary LBO. We find that LBO transactions in exit sooner when the GDP at the time of exit is higher, due to favorable markets for IPO, easier to find buyers to exit through other methods, and other favorable corporate law enforcements in the developed nations. LBOs in developing markets take longer time to exit irrespective of whether the GDP is higher or not.

Section 1: Introduction

A developed country has a highly developed economy and advanced technological infrastructure relative to other less developed nations. Most commonly the criteria for evaluating the degree of economic development are gross domestic product (GDP), the per capita income, level of industrialization, amount of widespread infrastructure and general standard of living. Most of the LBO or M&A activity takes place in these countries with USA being the country highest in LBO activity. Some of the countries that can be considered as developed are: US, Canada, UK, Netherlands, Japan, Australia, Norway, Denmark, Germany etc.

Developing countries are also called less-developed countries (LDC), are nations with a low living standard, undeveloped industrial base, and low Human Development Index (HDI) relative to other countries. LBOs in developing countries may be attractive mainly due to low rules to comply with and also due to the presence of growth opportunities for their investments.

Newly Industrialized countries or countries with economies that are more advanced than developing economies but not considered developed: Brazil, China, India, Malaysia, Mexico, Philippines, SA, Sri Lanka, Thailand and Turkey. These countries are of particular interest since they have tremendous growth opportunities which attract lot of LBO or M&A activity.

Returns of the Leveraged Buyouts (LBOs) are, on average found to be higher for targets that are from developed nations (and when the LBO operator is also from a developed country). Previous research in this area shows that LBO transactions in developing markets do not compensate for the risk inherent in the deals. Lopez-de-

Silanes, Phalippou and Gottschalg (2010), find that investments in developing countries exhibit poorer performance when compared to developed countries.

This may be a result of costly learning, lower leverage, poorer legal environments and limited exit routes. Leeds and Sunderland (2003), find that the returns in developing markets do not compensate for the high risk involved in the transactions. This is mainly due to low standards of corporate governance in terms of quality of information required for investment decisions, weakness in legal systems to enforce legal contracts and protecting all classes of investors; and the inability of domestic equity markets to offer reasonable exit prospects through IPOs.

However, in this paper, we expect to find that the returns of the LBOs in developing nations are higher during the periods when the growth of the economy is above the benchmark level when compared to returns of LBOs in the developed nations. Where as when the growth of the economy is moderate or slow, then the returns of LBOs in the developing nations do not compensate for the risk inherent in the investments in developed nations. Hence during low or moderate economic growth, the returns of LBOs in the developed nations will be higher. We use the country's GDP as a measure of economic growth. We choose different levels of GDP as benchmarks of economic growth and look at how returns vary in the different benchmark levels chosen.

We sort LBO transactions that exit during a period when the GDP was < 0 ; and when GDP was >0 and < 2 ; and also when the GDP is > 2 . We compare how the returns and the number of days to exit vary in these three categories for developed and developing countries. We look at the returns of the Leveraged buyout from the time of the announcement to the period of exit; that is after the buyout firms exit through one of

the following ways: Initial public offering (IPO), bankruptcy, Management Buyout (MBO), strategic buyout and secondary Leveraged Buyout (SLBO).

The top 50 PE firms from Private Equity International 300 (PEI 300) are given a value of “one” to represent reputed firms. The other variables will be given a value “zero” for the dummy variable. Reputed PE firm can obtain financing at a lower rate as compared to the un-reputed PE firms. We find that reputed PE firms result in higher returns and lesser number of days to exit the LBO. Stromberg (2008) finds that LBO transactions that are sponsored by more experienced PE partnerships tend to stay in LBO ownership for a shorter period of time, are more likely to go public, and are less likely to end in bankruptcy or financial restructuring.

This finding contradicts the study by Demiroglu and James (2010), where they found that small investments perform better than the larger ones. They also find that leverage (Debt/EBITDA) is directly related to reputation. We also will test the number of exits through different routes based on reputation of the issuer. For example: are bankruptcies lower when the PE firm is reputed, or are the number of IPOs larger if the PE firms are reputed.

Lopez-de-Silanes, Phalippou and Gottschalg (2010), find that Quick flips (investments held for less than 2 years have high IRR (85%) and investments held for more than 6 years have IRR of 8%. Our results reinforce these findings. We find that less number of days to exit the LBO results in higher returns (table 8).

We extend the study of Officer, Ozbas and Sensoy (2010) to look at the effect of club deals on the returns of the LBOs. They find that club deals reduce the returns of the leveraged buyout since they reduce the competitiveness during the initial process of the

leveraged buyout deals. A club deal, in finance, refers to a leveraged buyout or other private equity investment that involves several different private equity investment firms. A club deal can also be referred as a syndicated investment.

In a club deal, the investor group of private equity firms pools its assets together and makes the acquisition collectively. The practice has historically allowed private equity to purchase larger and more expensive companies than each constituent firm could potentially acquire through its own private equity funds. Additionally, by syndicating the equity ownership across a group of investment firms, each firm reduces its risk of investing since it is shared by many firms.

Club deal reduces competitiveness of a deal since many large PE firms combine to acquire a firm. This might be due to reduction in the number of firms competing for the bidding process. Also in club deals, the consortium of PE firms can negotiate better terms with the target firm, either due to reputation of one or more firms in the consortium, or due to availability of large funds due to combining of multiple PE firms. The smaller PE firms may not have the reputation or the funds to acquire in such cases.

In our study, we look at the effect of the number of PE firms on the LBO returns and also the number of days to exit. From the regression results, we find that for every one additional PE firm, the value of the target firm is higher by 543 million USD. This shows that club deals are associated with large deals (table 8). We find that club deals results in 10 percentage points lower returns for each additional PE firm involved in the deal. We also find that club deals take 45 days lesser to exit for each additional number of PE firm (table 9).

We also test the returns of the LBOs when the country of the PE firm and the target firm are same. The results show that the returns higher when the PE firm and the target firm are from the same country. This is because the PE firm in the same country may have more knowledge about the country's laws, political factors and other country-specific issues. Hence if the PE firm and the target firm are from the same country it is an advantage as compared to if the firms belong to different countries.

We test if the size of the target firm influences the return of the leveraged buyout transaction or the amount of time taken by the firm to exit. We try to classify the targets as small, medium and large firms to test if the size of the target has an impact of the returns or exit patterns of the buyout. We plan to divide the firms based on value of the LBO. (Small = < 10Million, medium = 10 – 100million, large = > 100million). Demiroglu and James (2010) and Lopez-de-Silanes, Phalippou and Gottschalg (2010), find that small investments outperform large ones.

Our results also show that smaller firms perform better than the large firms. However we found that smaller firms take longer time to exit. This could be because smaller firms make take longer time to establish the business and grow. Also may be the firm may be smaller in value due to financial distress. This may also take longer time to exit since the business needs to stabilize and start making profits.

We also test if the Debt /capital ratio of the target firm has an impact on the returns or exit time of the transactions. High debt levels can for result in tax advantage from the LBO deal; it also means that the PE firm can borrow more debt at better terms and if the PE firm is a reputed firm and hence the returns may be higher. In our results, we find that higher Debt/Capital ratio results in higher returns.

We test if the industry of the target firm or the issuer firm has an influence on the returns or exit patterns of the LBOs. Generally target firms in high growth industries tend to perform better and have shorter exit periods than those in slower growth industries. There have been studies that show that certain industries perform better than others. Hsu, Reed, and Rocholl (2012) find that industries with higher visibility have lower returns.

Also the industry of the PE firms (buyer firms) also may influence the returns or the exit patterns of the LBO or PE returns. In our analysis, we find that buyer firms in the same industry as the target have lower returns. This is because the top PE firms are classified to be in the finance industry, which in most cases is different from the industry of the target firm. Hence PE firms in a different industry than that of the target firm, show higher returns. This is because the top PE firms have good reputation through which they can get better terms on the loan for LBO; they also have more experience in LBO transactions and exit processes. Stromberg (2008) finds that LBO transactions that are sponsored by more experienced PE partnerships tend to stay in LBO ownership for a shorter period of time and are less likely to end in bankruptcy or financial restructuring.

We test the effect of legal, government and institutional factors in the target country on the LBO returns and time taken to exit. We include variables Government effectiveness, Rule of law, and number of procedures required to start a business. (The definition of these variables are provided in Section IV. La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997) find that Good law enforcement has effect on valuation and breadth of debt and equity markets.

La Porta, Lopez-de-Silanes, Shleifer and Vishny (2002) show that poor shareholder protection is penalized with lower valuations, and that higher cash-flow

ownership by the controlling shareholder improves valuation, especially in countries with poor investor protection. Leeds and Sunderland (2003) find that the returns in developed markets do not compensate for the high risk involved in the transactions. This is mainly due to low standards of corporate governance in terms of quality of information required for investment decisions, weakness in legal systems to enforce legal contracts and protecting all classes of investors; and the inability of domestic equity markets to offer reasonable exit prospects through IPOs. They also mention that private equity investors differentiate investments between countries based on protection to shareholder rights, tax treatment of capital gains, and securities market development.

We also will test if various other factors influence the returns of the Leveraged buyout transactions, such as the interest rates of both the target country and the issuer country (buyer country). If the interest rates are low in the acquirer country, then the acquirer can borrow at a cheaper rate to finance for the leveraged buyout. In the paper by Axelson, Jenkinson, Strömberg and Weisbach (2012) they find that the economy-wide cost of borrowing is the main driver of both the quantity and the composition of debt in these buyouts. Credit conditions also have a strong effect on prices paid in buyouts, even after controlling for prices of equivalent public market companies. In the developing markets, the acquirers are mixed. Some are international PE firms, some are Domestic PE or other investment firms, and there are also a few other firms acquiring the target companies.

We will also test the effect of exchange rate fluctuation between the target country's currency and the issuer country's currency. We will also test the Influence of stock market returns in the target country and the issuer country on the returns of the LBOs.

We will also test if the returns of the leveraged buyout in the country are greater than or lesser than the returns of the stock market of the target country, and also test if volatility of the stock market has an influence on the returns or amount of investment in LBOs.

Section 2. Literature Review

There have been studies that have looked at international LBOs and analyzed various factors that influence LBO activity. Leeds and Sunderland (2003), find that the returns in developing markets do not compensate for the high risk involved in the transactions. This is mainly due to low standards of corporate governance in terms of quality of information required for investment decisions, weakness in legal systems to enforce legal contracts and protecting all classes of investors; and the inability of domestic equity markets to offer reasonable exit prospects through IPOs.

Lopez-de-Silanes, Phalippou and Gottschalg (2010), find that Quick flips (investments held for less than 2 years have high IRR (85%) and investments held for more than 6 years have IRR of 8%. They also find that small investments outperform large ones. They look at the size of the PE firm in influencing the returns of the PE investment. In this paper, they also find that investments in developing countries exhibit poorer performance when compared to developed countries. This may be a result of costly learning, lower leverage, poorer legal environments and limited exit routes.

In the paper by Axelson, Jenkinson, Strömberg and Weisbach (2012) they find that the economy-wide cost of borrowing is the main driver of both the quantity and the composition of debt in these buyouts. Credit conditions also have a strong effect on prices paid in buyouts, even after controlling for prices of equivalent public market companies. In the developing markets, the acquirers are mixed. Some are international PE firms, some are Domestic PE or other investment firms, and there are also a few other firms acquiring the target companies.

Demiroglu and James (2010) found that small investments perform better than the larger ones. They also find that leverage (Debt/EBITDA) is directly related to reputation. Calderón and Fuentes (2010) find that output losses during peak - to - trough phases are larger among emerging market countries than among industrial ones. Output gains during trough-to-peak phases are larger among emerging market economies.

La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997) find that Good law enforcement has effect on valuation and breadth of debt and equity markets. La Porta, Lopez-de-Silanes, Shleifer and Vishny (2002) show that poor shareholder protection is penalized with lower valuations, and that higher cash-flow ownership by the controlling shareholder improves valuation, especially in countries with poor investor protection. Leeds and Sunderland (2003) find that the returns in developed markets do not compensate for the high risk involved in the transactions.

This is mainly due to low standards of corporate governance in terms of quality of information required for investment decisions, weakness in legal systems to enforce legal contracts and protecting all classes of investors; and the inability of domestic equity markets to offer reasonable exit prospects through IPOs. They also mention that private equity investors differentiate investments between countries based on protection to shareholder rights, tax treatment of capital gains, and securities market development.

We look at the returns on the Leveraged Buyouts in both the developed and developing (including newly industrialized economies). We want to test if the results found in previous studies are persistent in the recession and the boom periods.

Section 3: Data

The LBO transaction data are collected from Capital IQ. The exit information was collected from Capital IQ separately and is matched with the initial LBO transaction based on Target company name. If exit information was not present, then manual search was done to find exit information from the individual LBO company websites or web search. Initially for the preliminary regression test, to test how the value of the LBO depends on various other factors, we include 40,886 LBO and MBO transactions that took place from 1980 – April 2012.

Some of the LBO transactions did not have exit information. This could be due to various reasons such as: LBO transaction did not exit yet, Terms of the deal were not disclosed during the deal, or exit information not recorded in CapitalIQ. A huge number of transactions happened in the recent years (2010 onwards) and hence have not yet exited. From the available information, 15,309 transactions or 37.44% of the transactions exited the initial LBO transactions.

Only transactions that had exit dates and exit transaction value were considered for the regression tests to find the dependency of the returns of the LBOs on various factors and also to find the dependence of number of days to exit on various factors. From the transactions available, some of the exit transactions did not have transaction value. The transactions with no transaction values were eliminated for the regression analysis.

In the paper Kaplan and Strömberg (2008), they use similar data from CapitalIQ and found that 54% of the transactions had not yet exited. Our data show that only about

62.5% of the firms do not have exit information. Our results vary since we consider data from 1980 to April 2012, whereas Kaplan and Stomberg's data consisted of LBO's from 1970 to 2007.

The exit method is either through IPO, secondary LBO (which includes Management buyout), Bankruptcy sale, Strategic Sale (Trade sale) or Terms not disclosed. **In our data, we find that most common routes of exit** are Strategic Sale, Secondary LBO and IPO. Strategic sale was 51% and Secondary LBO 29% and IPO 15% of the total exits.

Stomberg (2008) find that the most common exit route, for PE and MBO deals alike, are trade sales to another corporation, accounting for 38% of all exits. The second most common exit route is secondary buyouts (24%), IPOs only account for 13% of exits, and 6% of the of the transactions end up in financial distress.

Dummy variables added: developing nations, Target firm and Buyer firm from the same country to see how the results vary, if target and buyer are from the same industry, reputed PE firm (top 50 reputed buyer firms from PEI 300), Small target firm, large target firm, GDP above benchmark level, Exit GDP above benchmark level interaction variable of developing country firm and Exit GDP above benchmark level.

Other variables: Value of the LBO deal in USD million, number of PE firms (club deals), percentage returns of the LBO from start to exit, number of days to exit, target firm market capitalization, target firm Debt/Capital ratio, GDP level during the LBO transaction, GDP level at the time of exit of the LBO, Law enforcement in target country, government effectiveness in target country, number of procedures to start a business in target country.

Table 1: Table showing number of LBO and MBO transactions each decade (from the data initially collected from Capital IQ).

Time period	Number of LBO/MBO transactions	Percentage of LBO and MBO transactions
1980 – 1989	554	1.3554%
1990 – 1999	3,713	9.081%
2000 – 2009	28,351	69.3416%
2010 – 2012	8,268	20.222%
Total	40,886	

Table 1 shows that, most of the LBO transactions happened in the 2000s. From the above capital IQ data, we find that 1.4% of the transactions were in the 1980s, 9% of the LBOs are in the 1990s, 69% of the transactions were from 2000s and 20% of the transactions were 2010-2012.

Table 2: Table showing values for LBO transactions with transaction value information available in CapitalIQ

Time period	Number of LBO/MBO transactions	Percentage of LBO and MBO transactions	Total Transaction value (Millions of \$)
1980 – 1989	275	1.73%	131,007.79
1990 – 1999	1,870	11.75%	462,616.39
2000 – 2009	11,138	70%	3,936,758.49
2010 – 2012	2,629	16.52%	472,706.35
Total	15,912		5,003,089.02

From the LBO transactions that had transaction value recorded in CapitalIQ, we sort the the transactions according to the decade in which the transactions happened (table 2). In 1980s the total value of the transactions was 131 million USD, in 1990s the total value of the LBO transactions was 463 million USD. From the year 2000-2009 the transaction value was 3.94 Billion USD, from 2010 – 2012, the transaction value was 473 million. This shows that huge number of transactions and large deals happened 2000 onwards.

Transaction amount in USD million from 2000- 2009

2009 – 52,641.1
 2008 – 39,769.49
 2007 - 129,750.91
 2006 – 183,417.64
 2005 – 111,969.07
 2004 – 74,692.88
 2003 – 61,318.27
 2002 – 76,518.44
 2001 – 35,260.17
 2000 – 26,618.42

Table 3: Number of LBO and MBO transactions and total value of transactions in developed economies

Time period	Number of LBO/ MBO transactions	Percentage of total number of LBO/ MBO transactions	Total Transaction value (Millions of \$)
1980 – 1989	265	1.87%	130,061.49
1990 – 1999	1,818	12.84%	457,767.79
2000 – 2009	10,009	70.67%	3,860,883.79
2010 – 2012	2071	14.62%	445,419.65
Total	14,163		4,894,132.72

Table 3 shows the number and value of transactions of developed economies sorted according to the decade in which the LBO transaction took place. Number of LBO transactions and total transaction value of LBO transactions are higher from year 2000.

Table 4: Number of LBO and MBO transactions and total value of transactions in developing economies

Time period	Number of LBO/ MBO transactions	Percentage of total number of LBO/ MBO transactions	Total Transaction value (Millions of \$)
1980 – 1989	10	0.57%	946.30
1990 – 1999	52	2.97%	4,848.60
2000 – 2009	1,129	64.55%	75,874.70
2010 – 2012	558	31.91%	27,286.70
Total	1,749		108,956.3

Among the firms that had transaction amount information (15,912 variables), about 1,749 (11%) of target firms involved in the LBO or MBO were from developing nations and newly industrialized nations. Table 4 shows the number and value of transactions in developing economies sorted according to the decade in which the LBO transaction took place. Number of LBO transactions and total transaction value of LBO transactions are higher from year 2000. We also notice that there is a big increase in the number of LBOs from 2010 – 2012. This shows that after the recession in 2008 there were more investors in the developing markets since they expected a huge increase in returns from those investments. Total transaction value of all the LBO and MBO transactions in developing countries are 108,956.3 million USD. Transaction value of developed economies: 4,894,133 Million USD.

Sorting the transactions based on how many target firms in developed (and developing) countries have buyers from developed countries and how many of the buyers are from developing markets. We find that among the LBO and MBO transactions in developed countries, only 101 transactions were from a buyer in developing country. Where as among the 1749 LBO and MBO transactions in developing countries, 318 transactions were done by a PE firm from a developing country. Most of the LBO/MBO transactions in developing countries were carried out by PE firms from developed countries. 56 LBO/MBO transactions in developing countries were from reputed PE firms in developed countries.

When we compare the Target debt/capital ratio in developed and developing economies, we find that: Debt to capital ratio ranges from 0.011 to 4444.6 in developed economies. Average Debt/Capital ratio in developed economies is 69.21. In developing economies, the Debt/Capital ratios range from 0.084 to 131.7 with an average of 37.88. The reason for a higher Debt/Capital ratio in case of developed economies is that the interest rates in developed economies are low as compared to that of the developing economies; hence they have a higher ability to pay off high debt. Also the credit rating is high hence developed economies can obtain higher debt easily.

Table 5: Number of LBO transactions and value of LBO transactions in Million USD by sorting the target firms into different industries that they belong to (both developed and developing nations).

Developed/Developing economy	Industry	Number of observations	Total transaction value (M USD)
Developed	Airlines	44	2,646.985
Developing	Airlines	8	204.56
Developed	Automobiles & Parts	333	131,846.698
Developing	Automobiles & Parts	35, 1	4,974.246, 10
Developed			
Developing			

Table 6: Sorting the LBO transactions according to the type of exit. Table also shows average exit time of each of the transactions (both developed and developing economies).

Type of Exit	Developed	Percentage	Developing	Percentage of Total Exits
Public Offering	402		8	
Secondary LBO	1044		13	
Strategic Sale	50		2	
Bankruptcy Sale	276		20	
Sold to Management	325		20	
Terms not disclosed	650		56	
Total				

The average exit time period of all the transactions is 5.07 years.

Section 4: Methodology

We divide the LBO activity into two categories based on the country of origin of the target. We classify and compare leveraged buyout activity as LBOs in developed countries and LBOs in developing countries.

***Hypothesis 1:** Returns of Leveraged buyouts are on average higher; however during periods of high economic growth, LBOs in developing economies have better returns when compared with developed economies. However in slow or low economies growth periods, the LBO transactions in developed economies produce higher returns than the LBOs in developing economies.*

This is true because developed economies have high growth rates in terms of GDP and other economic indicators. Historical GDP (last 10 years) in US is on average about 2-2.5% and highest being about 6.6% in Q3 2003. *Source: US Bureau of Economic Analysis.* In UK and Scotland, GDP growth rate in the last 10 years has been around 2% with the highest GDP being a little over 4% in Q3 2003 (UK GDP). *Source: Scottish Government Website.*

In China (Newly industrialized economy), GDP growth rate in the last 10 years has been around 9% with the highest GDP being about 12.8% in 2007. South Africa has a highest GDP growth rate of 6.5%. Similar in other developing or newly industrialized economies, GDP growth rate is much higher compared to the developed economies. Hence investments in developing or newly industrialized economies have higher returns when compared to investments in developed economies. However, in periods of slow economic growth, like periods of recession, the developing markets are highly risky. Hence we want to test is **Hypothesis 1** holds true.

***Hypothesis 2:** Leveraged buyouts in developed economies exit sooner; however during periods of high economic growth, LBOs in developing economies exit sooner when compared with developed economies. However in slow or low economies growth periods, the LBO transactions in developed economies exit sooner than the LBOs in developing economies.*

Hypothesis 2 is true due to the same explanation of Hypothesis 1. In periods of fast economies growth, the developing market's LBOs have high returns and hence exit sooner. And in periods of recession or slow growth, the LBOs in developing markets have difficulty finding exit buyers, or taking the firm public.

We also try to find how differently the returns of the LBO are influenced by various other variables that are listed and described below in the model. We test how these factors influence the amount, returns and number of days to exit the LBOs.

Model

For the regression analysis, we use simple OLS regression model: Equation 1) is the initial regression equation which considered all the observations (with or without exit information). For Equations 2) and 3) consider only the observations that have exited the initial LBO transaction.

- 1) **Value of transaction (USD Million) = Developing + Reputation + Same Country + Debt/Capital ratio + Number of PE firms + Target Industry + Same Industry + Target + GDP + GDP at the time of initial LBO above 2%**
- 2) **Return = Value of the transaction (USD Million) + days to exit + Reputation + Developing + Same Country + Same Industry + Debt/Capital ratio + Number of PE firms + Small firm + large firm + Target Industry + Type of exit + quick flips + Target Debt/Capital Ratio + GDP + GDP at exit + GDP**

**at the time of initial LBO above 2% + GDP at the time of exit above 2% +
Developing * GDP at exit above 2%**

**3) Days to exit = Value of the transaction (USD Million) + return + Reputation
+ Developing + Same Country + Same Industry + Debt/Capital ratio +
Number of PE firms + Small firm + large firm + Target Industry + Type of
exit + quick flips + Target Debt/Capital Ratio + GDP + GDP at exit + GDP at
the time of initial LBO above 2% + GDP at the time of exit above 2% +
Developing * GDP at exit above 2%**

Where, Return = Percentage annualized return of the LBO from the initial LBO to the exit. This is calculated by taking the difference between LBO exit value and LBO initial transaction value. This difference is then divided by the number of days to exit and multiplied by 365 to get annualized return.

Days to exit = Time period from initial LBO to the time of exit through any of the exit methods mentioned.

Developing = Dummy variable of target belongs to developing country or developed country (a value of 1 is assigned to developing economies and 0 is assigned to developed economies).

Reputation = Dummy variable to indicate good reputation of the buyer firms.

Same country = Dummy variable to indicate if the buyer and target firm belong to the same country.

Target Industry = Dummy variables for various industries of the target firms

Same Industry = Dummy variable to indicate if the target and the buyer belong to the same industry

Debt/Capital ratio = Debt/Capital ratio of the target firm

Number of buyers = Total number of buyers (PE firms) involved in the LBO transactions (Club deals).

Type of exit = Dummy variable to indicate the type of exit.

quick flips = dummy variable to show if the exit transaction is a quick flip. In other words, quick flips take less than 2 years to exit

Small = Dummy variable to indicate if the firm is a small firm with a value of less than 10 Million USD.

Large = Dummy variable to indicate if the firm is a large firm with a value of greater than 1 Billion USD.

GDP = GDP growth rate at the time of initial LBO transaction

GDP at exit = GDP growth rate at the time of exit of the LBO.

GDP at the time of initial LBO below 0 = dummy variable to indicate if GDP growth rate is below 0 when the initial LBO transaction occurred.

GDP at the time of initial LBO between 0-2% = dummy variable to indicate if GDP growth rate is above 0 when the initial LBO transaction occurred.

GDP at the time of initial LBO above 2% = dummy variable to indicate if GDP growth rate is above 2% when the initial LBO transaction occurred.

GDP at the time of exit below 0 = Dummy variable to indicate if GDP growth rate at the time of exit of the LBO was below 0.

GDP at the time of exit between 0 and 2% = Dummy variable to indicate if GDP growth rate at the time of exit of the LBO was between 0 and 2%.

GDP at the time of exit above 2% = Dummy variable to indicate if GDP growth rate at the time of exit of the LBO was above 2%.

Developing * GDP below 0% = interaction variable between the dummy variable Developing and if GDP Growth rate during initial LBO is below 0%.

Developing * GDP at exit below 0% = interaction variable between the dummy variable Developing and if GDP at exit is below 0%

Developing * GDP above 2% = interaction variable between the dummy variable Developing and if GDP Growth rate during initial LBO is above 2%.

Developing * GDP at exit above 2% = interaction variable between the dummy variable Developing and if GDP at exit is above 2%

Govt = government effectiveness.

Law = rule of law.

Numb of proced = number of procedures.

The classification of whether the country belonged to a developed country or a developing country (Variable: Developing) was done based on International Monetary Fund's World economic outlook report, April 2012. About 1900 transactions were from developing countries. The remaining 15,000 transactions were from developed countries. This clearly shows that the LBO's are mainly in developed economies.

The variable Target industry is the "Industry classification benchmark" launched by DOW Jones and FTSE in 2005. It is used to segregate markets into sectors within the macroeconomy. Dummy variable is created if the target firm and the PE firm are from the same industry. A value of 1 is assigned if the target firm and the PE firm are from the same industry. This is to determine if there is any increase/decrease in returns when the target and the buyer firms operate in the same industry. For this dummy variable even if one of the multiple buyers are in the same industry as the target firm, then a value of 1 is

assigned to the variable; and if none of the buyers belong to the industry as that of the target firm, then a value 0 is assigned to the variable.

Dummy variables are to be created for reputation of the PE firms. That is: if at least one of the buyer firm/firms is a reputed firm, then the dummy variable is given a value 1 and 0 otherwise. The measure for reputation is given based on Private equity international May 2012 report, which looks at the total fund raised by the PE firms for 5 years, i.e; 2006 – 2011. This report reveals that the world's 50 largest private equity direct investment programs have raised in excess of US\$325 billion since 2006. Even though, some of the transactions took place long before 2011, we consider this report to be close enough since most of the transactions that were collected from CapitalIQ were after the year 2000 and exited in the recent years. Hence the firms in this report will give a close measure of the reputation of the Private Equity (PE) firms in the sample.

As in the paper, Officer, Ozbas and Sensoy (2010), we include a variable to indicates the number of PE firms (or the number of buyer firms) involved in the LBO transaction. This is to test if higher number of PE firms, have an influence in increasing the returns. We even test the influence of number of PE firms on the number of days to exit for the LBO.

The variable Type of exit includes the different types of exit routes of the LBO transaction. We use the exit routes, Secondary LBO, Strategic Sale, Initial Public offering (IPO) and bankruptcy. We exclude terms not disclosed from the regression since we do not have transaction value for the interpretation of results.

We also include variables to test if the size of the target firm influences the return of the leveraged buyout transaction or the amount of time taken by the firm to exit. create

three dummy variables “small”, “medium” and “large”. The firms are divided based on the value of the LBO. Small = < 10Million, medium = 10 – 100million, large = > 100million. We include Variables Small and Large in the regression to test influence of these two extreme categories.

The variables GDP and GDP at exit can help us test of GDP at the time of initial LBO and GDP at the time of exit has an influence on the returns or the days taken to exit the LBO. We choose different levels of GDP as benchmarks of economic growth and look at how returns vary in the different benchmark levels chosen.

We sort transactions that took place during a period when the GDP was < 0; and when GDP was >0 and < 2; and also when the GDP is > 2. We compare how the dependent variables “returns” and also “days to exit” depend on these three categories and analyze how these two dependent variables vary for developed and developing countries. This benchmark lets us compare the transactions that took place in times when the market was performing badly (GDP <0), we can also look at slow/moderate growth periods (GDP between 0 and 2) and also when the economy is growing fast (GDP >0).

Although the benchmark may be different for different countries, (for example, a developing country may have much higher GDP growth rates than the 2 percent level that we have chosen for high growth phase), we still choose this average since most of the transactions are in the US and UK and 2% level would be an appropriate average for most economies.

Since one of our hypotheses is mainly based on if the returns in developing markets are higher or lower compared the returns in developed markets, we include interaction variables between the variable “Developing” with each of the four variables

“GDP below 0%” , “GDP at exit below 0%” , “GDP above 2%” and “GDP at exit above 2%”. This creates four different variables that lets us test if returns are lower or higher for developing markets during periods of economic boom (GDP growth rate above 2%) or recession (GDP growth rate below 0%).

Finally we include three variables to test the effect of regulation, law enforcement and ease of setting up a business on the returns on days to exit the LBO. Better law enforcement and corporate governance in target country results in higher returns. La Porta, Lopez-de-Silanes, Shleifer, Vishny (2002) and Leeds and Sunderland (2003) find developing countries do not have very effective corporate governance, legal systems to enforce legal contracts or government effectiveness and hence result in low returns on the transactions.

Government effectiveness, range from -2.5 to 2.5. (Source: Kaufman, Kraay and Mastruzzi (2003)). They combine into a single grouping responses on the quality of public service provision, the quality of the bureaucracy, the competence of civil servants, the independence of the civil service from political pressures, and the credibility of the government’s commitment to policies. The main focus of this index is on “inputs” required for the government to be able to produce and implement good policies and deliver public goods.

Law = rule of law, range from -2.5 to 2.5. (Source: Kaufman, Kraay and Mastruzzi (2003)). They include several indicators which measure the extent to which agents have confidence in and abide by the rules of society. These include perceptions of the incidence of crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts. Together, these indicators measure the success of a society in

developing an environment in which fair and predictable rules form the basis for economic and social interactions, and importantly, the extent to which property rights are protected.

Numb of procedures is defined as the number of procedures required to start up a firm. Range from 2 – 21. Where 2 means, it is easiest to start a firm and 21 is where it requires 21 procedures to start a business and hence it is most difficult to start a business in these target firms. This helps us test if it is easy to exit the LBO and start over as a new firm. (Source: Djankov, La Porta, Lopez-De-Silanes, Shleifer (2002)).

Section 5: Findings

The initial regression results are which shows how the value of the firm depends on various other variables are provided in the Table 7 below. For this regression we use all the observations that have initial LBO transaction value.

Table 7: Initial regression: Dependent Variable: Value of the LBO (in USD Million)

Variables	Coefficient	p-value	Is the coefficient in the direction expected
Days to exit	0.03298	0.6264	Y
Reputed	388.0472	0.0185	Y
Developing	-578.4848	0.3753	Y
Same Country	-94.2706	0.7384	
Same Industry	1196.723	0.0729	Y
# of PE firms	543.1095	0.0000	Y
GDP	-56.4936	0.3538	
GDP at Exit	-43.3174	0.2848	
Target Debt/Capital Ratio	3.5265	0.1184	Y
R-Squared = 0.10444, Adj R-Squared = 0.0.8414, Number of obs = 15342			

Table 7 shows regression results of dependency of Value of LBO on various other factors. From the results see that co-efficient of days to exit is positive, which means that is the size of the deal is higher, then it takes longer time to exit. This is because larger deals need huge funds to exit. Where as smaller deals can find exit buyers easily due to smaller requirement of funds. The variable reputed has a positive coefficient, which means that if the PE firm is reputed, then the value of the deal is higher by 388 million USD. Also from the coefficient developing, we observe that if the target firm is from a developing country, then the value of the LBO is smaller by 578 million USD. If the target firm and the PE firm are from the same country, we find that the value of the deal is lower. This could be due to the fact that reputed PE firms are generally from different

country as compared to the target firm country and hence the lower value of deals. If the PE firm and the target firm are from the same industry, then the value of the LBO deals are higher. If the number of PE firms is higher, then the value of the deal is higher by 1197 million USD as shown by coefficient # of days to exit. This is in lines with the finding that club deals are involved in larger LBOs' since they can get better terms on the loan due to reputation and capacity to borrow more funds due to their sheer size and number. From the coefficients GDP and GDP at exit, we observe that if the target GDP is higher then the value of the deal is lower; this is what we expected to have. From the coefficient target debt/capital ratio, we find that if the debt/capital ratio of the target firm is high, then the value of the LBO is higher. This shows that high debt is borrowed to finance the LBO deals.

Tables 8 and 9 include only those transactions that have exit transaction value information. Table 8 shows results of OLS regression where Annualized return of the LBO is the dependent variable.

Table 8: Dependent variable: Annual Return of the LBO

Annual return is calculated by dividing the total return of the LBO/MBO by the number of days to exit, times 365days [Annual return = (Return of LBO / # of days to exit) * 365]

Variables	Coefficient	p-value	Is the coefficient in the direction expected
Value of the deal (USD million)	-0.1645	0.0000	Y
Days to exit	-0.02425	0.1007	Y
Reputed	16.3227	0.7702	Y
Developing	-845.6277	0.0725	Y
Same Country	2.2100	0.9757	Y
Same Industry	-75.5658	0.4990	Y
# of PE firms	-10.8526	0.6692	
Small	1303.614	0.0000	Y
Large	-27.6758	0.5890	Y
GDP	-4.8814	0.8059	Y
GDP at exit	6.2829	0.7014	Y
GDP above 2%	94.4245	0.2829	Y

Exit GDP above 2%	29.30155	0.6729	Y
Developing * Exit GDP above 2%	612.4994	0.2113	Y
Government effectiveness	151.3300	0.4458	Y
Rule Law	^-122.7306	0.5457	
Number of procedures to start biz	5.3357	0.4498	
R-Squared = 0.1951, Adj R-Squared = 0.1848, Number of obs = 1545			

From the above table, the interpretation of the dependency of various coefficients on the annual return of the LBO is as follows. The variable, value of the deal has a negative coefficient. This means that if the value of the deal is higher, then the annualized return of the LBO is smaller. This shows that smaller deals have higher returns. We also test this by separating small and large firms. The variable, “small” has a positive coefficient, which shows that smaller firms have higher returns. Where as the variable “Large” has negative coefficient, showing that larger firms have negative returns. Variable “Days to exit” has a negative coefficient, which implies that if the firm takes longer time to exit, then the returns are negative. Coefficient of variable “Reputed” is 16.32. This implies that if the PE firm is reputed then the annualized returns are higher by 16.32%. This is possible since a lot of firms went bankrupt or exited at a loss during the recession period. The LBO deals carried out by reputed firms performed well. Variable “developing” has negative coefficient, showing that developing firms has a negative coefficient implying that if a LBO is from developing country, then the returns are lower in general. The variable “same country” has a positive coefficient, which means that if the target firm and the PE firm are from the same country, then the returns are higher. This is true because if the PE firms and target are from the same country, then the PE firm would have more knowledge about the country’s government rules and law. The variable, same industry is negative, implying that if the target firm and the PE firm are

from the same industry, then the returns are negative. This is true since the large PE firms are classified as financial firms and these are more reputed than other buyers of LBO/MBO deals. Hence if the deals are done by a reputed firm, returns are higher. LBO/MBO deals done by other firms have lower or negative returns. “# of PE firms” shows that if the number of PE firms is higher, then the returns are lower. This is probably because, large number of PE firms are involved in large LBO/MBO transactions in terms of deal size. Club deals can find better deals and have large funds, but they reduce competitiveness of a deal and also it may be difficult to find exit buyers for such large LBO deals. Officer, Ozbas and Sensoy (2010) find that club deals reduce the returns of the leveraged buyout since they reduce the competitiveness during the initial process of the leveraged buyout deals.

This is again in line with the previous finding that large firms have lower returns and smaller firms have higher returns. GDP at the time of initial LBO has a negative coefficient; however, GDP at the time of initial LBO should not have an influence on the returns. From the regression results, we also see that if GDP at exit is high, then the returns are higher. If GDP is higher than 2% at the time of the LBO then the returns are higher. If Exit GDP is higher than 2%, then the returns are high. However, if we look at the interaction variable between the variable “Developing” and “Exit GDP above 2%” is much higher than the coefficient of variable “Exit GDP above 2%”. This shows that if the exit GDP is above 2%, then the LBO of target firms in developing countries have higher returns as compared to LBO of target firm in developed nation. The variable “Government effectiveness” is positive; hence we interpret that if government effectiveness is higher in a country, then the returns will be higher.

Table 9 shows OLS regression results where days to exit is the dependent variable. Days to exit is defined as the number of days from the initial LBO to the date then the LBO exits through either Secondary LBO, Strategic Sale, Bankruptcy/Restructuring or Initial Public offering.

Table 9: Dependent variable: Number of days to exit the LBO
Number of days to exit is the total number of days from the initial LBO/MBO to the date that the LBO exited through one of the exit routes.

Variables	Coefficient	p-value	Is the coefficient in the direction expected
Value of the deal (USD million)	-0.08527	0.1077	Y
Return	0.190999	0.0028	Y
Reputed	-232.073	0.0267	Y
Developing	2204.011	0.0125	Y
Same Country	383.9812	0.0046	
Same Industry	477.7124	0.0225	Y
# of PE firms	-45.6733	0.3376	Y
Small	476.6944	0.0085	
Large	-158.243	0.0993	
GDP	15.30258	0.6813	
GDP at exit	-217.262	0	Y
GDP above 2%	269.2591	0.1024	
Exit GDP above 2%	-254.061	0.0508	Y
Developing * Exit GDP above 2%	852.3742	0.3537	Y
Government effectiveness	246.2793	0.5082	
Rule Law	1098.863	0.0039	
Number of procedures to start biz	27.02997	0.041	Y
R-Squared = 0.1477, Adj R-Squared = 0.1368, Number of obs = 1545			

The above table shows regression results of the dependent variable “Number of days to exit”. From the coefficients, we interpret that if the value of the deal is higher, then it takes a longer time to exit the LBO. This means that smaller LBOs exit sooner. From the variable returns, we see that if the returns of the LBO are high, then the LBO exits sooner. From the variable “Reputed” we see that if the PE firm is a reputed firm, then the LBO exits sooner by 232 days. From the coefficient of variable “Developing” we

interpret that if the target firm is from a developing country, then the LBO takes longer time to exit. From the variable “Same industry” we interpret that if the target firm and the PE firm are from the same industry, then the exit takes longer time. The reason for this is that if the LBO is done by a reputed PE firm which is classified to be in the finance industry, then the returns are higher due to better knowledge in the field and availability to favorable terms on the loan due to reputation. If the “# of PE firms” is higher, then it takes 46 days lesser to exit the LBO. This is because club deals have better negotiating power and have greater combined experience in dealing with LBOs and their exits. The results also show that Small firms take longer time to exit, and larger firms exit sooner. The sign of these coefficients are not in the direction that we expected. Higher the GDP at the time of initial LBO, longer it takes to exit. Higher GDP at the time of exit of the LBO results in sooner exits. And if GDP at the time of initial LBO is higher than 2%, the LBO takes longer time to exit. If exit GDP is above 2%, then the LBOs exit sooner by 254.06 days. The interaction variable between Developing and Exit GDP above 2% shows that if the exit GDP is above 2% and if the target firm is from a developing country, then the exit takes longer time to exit. We also see that if government effectiveness or rule law in a target country is high, then it takes longer time to exit. If the number of procedures required to start a business are high, then it takes longer time to exit due to the difficulty of starting as a new entity after exit.

CHAPTER 6: Preliminary Conclusions

The results show that LBO targets in developed nations have higher returns and exit sooner on average. However, when we look at LBOs in developing nations during the period of higher GDP growth rates, we find that the LBOs have higher returns. Also, LBOs in developing nations exit sooner when the level of GDP growth rate is higher than the benchmark level at the time of exit. We find that reputed PE firms result in higher returns and lesser days to exit. We also find that smaller firms have higher returns when compared to the larger firms.

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There may be cultural factors at work also, these are separate from legal factors.. Stulz and Williamson (JFE) to see some of the culture proxies.