THE IMPACT OF ECONOMIC CONDITIONS ON MERGERS & ACQUISITIONS ACTIVITY IN INTERNATIONAL MARKETS

by

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IN INTERNATIONAL MARKETS

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ABSTRACT

Following the end of the financial crisis of 2007 – 2008, the vast majority of the world has entered a recovery stage. Economies have been thriving ever since, and companies all over the world feel the need to constantly grow more competitive. As a result, a large number of merger & acquisitions (M&A) transactions have been carried out in recent years, in the period from June 2009 up until the present. But what are the specific factors that affect the volume of M&A activity from all countries, especially those in international markets? Prior studies mention different economic factors, such as financial openness, GDP growth and taxation. This paper specifically addresses the impact of economic freedom and GDP growth rate on the volume of M&A activity in Asia and the Latin America & Caribbean region, in the period from June 2009 to December 2015.

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INTRODUCTION

Mergers and acquisitions (M&A) are strategic transactions involving the incorporation of different firms that can facilitate business growth, expand geographical presence, and to generate more revenue and/or lower operating costs. By performing an M&A transaction with another firm, the acquiring firm can boost the efficiency of its business by combining sectors of the target firm with its own, thereby enlarging its portion of market share and potentially achieve dominance over competing firms. As a result, a successful M&A transaction will have a profound impact on not only the firms that it entails but the entire industry encompassing these firms as well.

Following the drastic industrial evolutions of the 21st centuries, companies across the world have constantly been trying to make themselves more competitive in the market. Consequently, large volumes of M&A activity, including both domestic and cross-border deals, have occurred in various sectors of the international markets, such as energy, technology, and healthcare. This paper seeks to identity the economic determinants of international M&A transactions.

LITERATURE REVIEW

I. Macroeconomic factors

Neto, Brandao and Cerqueira (2009) determined that there are two methods of investing that a firm can choose when it comes to foreign direct investments (FDI). The first method is called "greenfield investment," in which the investor seeks to establish new facilities and operations in the foreign country in hopes of new cash flows from the market expansion. The second method is to acquire an existing, already operating firm in the foreign country through an M&A transaction. It is essential to perceive this basic distinction between the two forms of FDI when it comes to understanding international M&A activity.

In their study, they addressed two main questions, which are (1) why a company decides to invest in a foreign country and (2) what makes a country so appealing that it attracts foreign investors. These questions are important because they involve the existence and generation of FDI inflows and outflows. The study arrived at intriguing conclusions.

First, the size of the economy is "positively correlated with all series of inward and outward investment." This conclusion is intuitive, since when an economy grows larger, more companies will be competing with each other; consequently, at a certain point in a company's cycles of growth, provided that it continually prospers, the company will have to look across the border for new opportunities that would potentially facilitate more growth for its business. On the other hand, a big economy often goes hand in hand with an appealing market, which attracts international investors who hunger for market expansion. Second, surprisingly, economic growth is not so much necessarily correlated with attracting FDI in the form of M&A as it is with greenfield investments. The study found that a fast growing industry appeals to investors that are interested in building

new facilities and operations in said country, hence greenfield investments. As for outward FDI, it prompts domestic companies to invest abroad in M&A transactions. Third, as the study concluded, financial development is also crucial to cross-border M&A activity. These findings are important to investors that are interested in forecasting the volume of international M&A as well as policy makers that try to stimulate growth in such sector.

Covering the same topic of cross-border M&A, Chousa, Vadlamannati and Tamazian (2008) tackled the specific question of whether there is a correlation between cross-border M&A activity and capital markets growth and quality by analyzing data acquired from nine emerging economies. Generally speaking, stock markets are a strong economic indicator. However, whether it is closely connected with the volume of M&A activity is not inherently obvious. According to Chousa et al.'s observations, during the period from 1990 to 2000, stock markets saw fast growth in emerging countries. At a domestic level, they observed that this level of high growth resulted in high volumes of M&A activity throughout the 1990s. The study found several important factors that potentially influence the volume of M&A activity.

First, its empirical results show that markets have a strong, positive impact on M&A deals and values. Interestingly enough, the quality of said emerging markets matters far more than their growth with respect to their impact on the volume of M&A transactions. The logical interpretation is that the more efficient the markets are, or are thought to be, the more cross-border M&A activity they spur. Second, the acceleration of capital also seems to play a major role in the generation of M&A transactions. This implies that a high level of liquidity in the market attracts investors from across the border, thus drawing in a greater amount of FDI inflows. Third, money supply and financial openness are also found to be large drivers of cross-border M&A activity in these

emerging markets. Higher levels of these variables lead to higher M&A volumes, Chousa et al. (2008) pointed out.

These conclusions to a certain extent echo those reached by Neto et al. (2009) – a large, fast growing, liquid market usually attracts a huge volume of M&A activity. In other words, competitive companies across the world all want to get their share of the pie. In current global economic conditions, China's economy has witnessed robust growth in recent years. As a result, according to my personal speculation, it has also witnessed increased flows of FDI coming in from the US and Europe. Presumably, more cross-border M&A transactions between such countries have happened in recent times.

Garita and Marrewijk (2007) delved further into macroeconomic factors behind cross-border M&A activity. They further elaborated upon the idea of FDI promotion policies, which comprise financial openness and/or the liberalization of the capital account. They remarked that, from an economist's point of view, financial openness can yield important potential benefits, such as higher risk-adjusted rates of return. These benefits can give investors an incentive to invest more in foreign countries, leading to higher volumes of cross-border M&A activity as a result.

Determining M&A transactions to be "by far the most important component of FDI," Garita et al. (2007) used an extensive dataset from 211 countries in the period from 1986 to 2005 to identify the macroeconomic factors behind cross-border M&A activity. The study yielded interesting results. They determined, from the empirical results, that financial openness stimulates M&A activity, as a result of investors' higher degree of openness to new investments, thanks to potential high risk-adjusted rates of return. According to the article, "it is well known that the evidence linking financial openness … to economic growth has been weak at best," according to studies performed by economists. Garita et al. (2007), however, remarked that financial openness

results in growth in cross-border M&A activity, and this type of capital flow is what they believed can potentially spur real economic growth by means of its effects, namely a lesser degree of volatility and positive spillover effects on, for example, knowledge, technology and improvements to the labor force. However, they did not provide evidence for this latter hypothesis in their article; instead, they stated that this would be a good area for future research.

They further elaborated on the idea of financial openness, which is traditionally thought of as a source of transitional risks. Even though this statement might be correct, since it has in fact been widely mentioned and supported in existing economic and business literature to date, Garita et al. (2007) made a note that resisting liberalization for a prolonged period of time might prove counterproductive and financially repressive.

From my understanding, countries that have policies restricting financial openness, as a result, should witness a reduced volume of cross-border M&A activity. The authors stated that an increased level of financial openness will open doors for international expansion, which I believe would be an opportunity to bring in new cash flows, and help capital flows move around much easier, thanks to “the cleverness of investors and global financial markets.” The positive effects of financial openness, namely higher growth and lower volatility, would prove most beneficial in industrial economies. Consequently, it might be in governments’ best interest to make sure that they have policies that promote financial openness, i.e. liberalization. Furthermore, as the authors observed, most of the M&A deals in their study are between developed countries, and they conclude that financial openness is the way forward.

Visic and Skrabic (2010), through an analysis of M&A data in European transitional economies, came up with relevant results regarding the economic determinants of M&A activity. By observing economic trends in various countries in the period from 1994 to 2008, they found a

strong correlation between the economic growth of a country and its amount of FDI inflows in the form of cross-border M&A. They stated that fast growing economies in European transition countries become "more capable to absorb investments." Therefore, lagged GDP growth seems to be a positive factor in the generation of M&A activity.

Another interesting factor they found is the interest rate spread of a country. Visic et al. (2010) determined that there is also a strong, positive correlation between a country's interest rate spread and its cross-border M&A activity as a form of FDI inflows. This relationship is comprehensible because a higher interest rate gives domestic investors a harder time finding a source of leverage for their investments; as a result, foreign investors would grasp the opportunity to invest in the country, which in turn boosts the volume of M&A activity coming into the country.

Supporting the idea of the correlation between economic growth and FDI inflows, Dabla-Norris, Honda, Lahreche, and Verdier (2010), in an IMF working paper, provided evidence obtained from low-income countries. They stated that "growth is increasingly associated with higher FDI inflows." Therefore, not only in developed European countries but also in developing, low-income countries, economic growth plays an important role in the generation of M&A activity. I personally find this line of reasoning to be fairly sound, because in an attempt to compete with both domestic and foreign competitors, a company would look for "greener pastures" where there are better opportunities for continued growth of its business, whether it be for the purpose of market expansion or diversification. As a result, investing in faster growing economies would be a better idea than investing in slower growing economies, because faster growing economies would better accommodate the investment and yield better returns than slower growing economies, where consumer spending is not yet a strong sector in the economy.

Another finding by Dabla-Noris et al. (2010) is that "low-income countries are particularly sensitive to changes in the cost of borrowing in advanced countries." This finding is similar to that of Visic et al. (2010), in which they asserted that higher interest rates positively lead to more FDI inflows in the form of cross-border M&A. In short, Visic et al. (2010) and Dabla-Noris et al. (2010) were able to come up with similar results in their papers published in the same year, even though Visic et al. (2010) targeted European countries in their study and Dabla-Noris et al. (2010) researched low-income countries. Consequently, it is highly likely that economic growth and interest rate spread are two important macroeconomic factors behind cross-border M&A as a form of FDI inflows that apply to countries all over the world.

II. The financial crisis

A recent study by Reddy (2015) focused on the impact of the global financial crisis on cross-border M&A activity. This is an important area of research, since the financial crisis of 2007-2008 deeply influenced the global economy as a whole, and, without a doubt, it has had an effect on the M&A market, even until now. Reddy (2015) asserted that while the financial crisis took a great toll on developed countries, emerging markets in Asian, African and Latin American continentals have been able to take advantage of its effects thanks to the undervaluation of asset prices.

Reddy (2015) also came to a conclusion through his study that these emerging markets have been attracting FDI inflows from both developed countries and other developing countries, which contradicts the traditional notion that M&A activity mostly occurs between developed countries. This finding is consistent with the conclusions of previously mentioned studies, because emerging markets are the fastest growing ones; developed markets do not usually have much more potential for business growth. In the current global economy, emerging markets like China would

definitely, to my knowledge, attract more cross-border M&A activity as a form of FDI inflows than developed countries such as the US.

III. Taxation

On the subject of taxes, there are many interesting studies that draw a clear connecting line between taxation and M&A activity. Hebous, Ruf and Weichenrieder (2010) looked specifically at the impact of taxation on greenfield investments vs. cross-border M&A, the two main forms of FDI. This was a groundbreaking study in 2010, since the majority of financial studies before this study had uniformly treated FDI as homogenous projects, Hebous, Ruf and Weichenrieder (2010) took the initiative to differentiate M&A and greenfield investments and specifically analyzed the effects of taxation on each of them.

For greenfield investments, Hebous, Ruf and Weichenrieder (2010) found that an increase in the statutory corporate income tax rate of 10 percent resulted in an average decrease of activity in this sector by about 6.4 percent. On the other hand, cross-border M&A investments manifest less sensitivity to international tax rates with a tax elasticity of -3.6 percent, which means that a 10 percent increase in tax rates would result in only a 3.6 percent decrease in cross-border M&A activity. This finding might serve as a possible reason why M&A investments account for a large portion of FDI inflows and outflows, seeing as they are much less sensitive to fluctuations in international tax rates, a critical component in today's global economy.

On the same subject of international taxes and cross-border M&A, Huizinga and Voget (2009) also examined the international tax system (double taxation) and its effects on the volume of cross-border M&A activity. They found that the international tax system affects the outcomes of cross-border takeovers in that higher levels of international double taxation would result in less

appeal to newly created multinational firms. In other words, countries with higher imposition of international double taxation will attract less FDI in the form of cross-border M&A, especially from the parent companies of the recently established multinational firms.

They mentioned a recent movement in 2005, in which the President's Advisory Panel of Federal Tax Reform supported the elimination of worldwide taxation by the US. Huizinga and Voget (2009) remarked that this movement had a significant impact on the amount of global M&A activity. Specifically, they estimated that the volume of US cross-border takeovers, in which a parent American company would be formed, rose to 58 percent from 53 percent as a percentage of worldwide cross-border takeovers. Since attracting FDI could be one of the more important goals for economic policy makers, it is in their best interest to pay closer attention to their policies regarding the taxation of their country.

Herger, Kotsogiannis and McCorriston (2013) took an even closer look at the multiple forms of taxes and how they affect alternative forms of FDI in general and cross-border M&A activity in particular. In their background research, he found that existing literature had suggested a strong correlation between moderate direct corporate taxes and increased appeal of a country as an FDI host. Through a study of over 80,000 cross-border acquisitions, involving 30 major countries in the period from 1999 to 2010, Herger et al. (2013) came up with the several effects that taxation has on FDI in general and on cross-border M&A in particular.

First, they identified the broadly negative correlation between various tax forms and the desire of multinational companies to acquire a target firm. In other words, an increase in not only corporate income tax but also other forms of taxes would result in a decrease in M&A activity of the country. This finding is consistent with those arrived at by Hebous, Ruf and Weichenrieder

(2010), where they assert that a 10 percent increase in corporate tax rates result in, on average, a 6.4 percent decrease in greenfield investments and a 3.6 percent decrease in M&A investments.

Second, in an analysis of corporate taxes vs. sales taxes, Herger et al. (2013) found out that corporate taxes had an elasticity fluctuating between -1/10 and -2/5, and the elasticity of sales taxes fluctuated around -1/4.

Third, Herger et al. (2013) researched double taxation, "which arises when the same profit is also taxed in the parent country and when withholding taxes have to be paid in the host country when repatriating profits," and came to a conclusion that this double taxation system exacerbated the detrimental effects of corporate taxes on cross-border M&A. This third finding of Herger et al. (2013) easily links back to the findings of Huizinga and Voget (2009), in which they state that a higher level of international tax rates would result in a decrease in the appeal of a country as an FDI host, i.e. it would attract less FDI inflows than it would with a lower level of international tax rates.

Finally, Herger et al. (2013), being the first researchers to look at the various forms of taxes and their effects on FDI inflows, found that "for the case of sales taxes, the effect rises primarily with CBAs [cross-border acquisitions] that are driven by a horizontal strategy," in which a horizontal strategy is where "an affiliate is integrated into the multinational enterprise to sell to the local market." Since the affiliate would be to sell to the local market after the acquisition, sales taxes play a significant role in the inception of the M&A transaction. Specifically, a higher sales tax rate would negatively impact the amount of future cash flows that a parent company can expect to generate from the new M&A transaction. As a result, the returns that it would expect from the cross-border transaction would also decrease, and the two parties would have a harder time finalizing the M&A deal.

To sum up, taxes of all kinds, whether it be corporate taxes or sales taxes, negatively affect the amount of international M&A activity. Consequently, economic policy makers should keep this in mind when they decide to introduce a new policy involving taxes in the country.

Huizinga, Voget and Wagner (2008) examined the correlation between international taxation and takeover premiums involved in cross-border M&A. Huizinga et al. (2008) asserted that "the creation of a new multinational firm through a takeover may have important tax costs." Since cutting costs is a major goal of M&A transactions, having to pay an unfavorable amount of money in additional taxes might potentially provide an acquiring with less of an incentive to go through with the transaction.

According to Huizinga et al. (2008), specifically, there are two new types of taxes to be paid after a cross-border takeover: (1) non-resident withholding taxes to be paid by the new foreign subsidiary and (2) additional income tax to be paid by the parent company to the parent country on incoming from the new foreign subsidiary. While a couple of OECD members, including the United Kingdom and the United States, had absolutely removed the burden of non-resident withholding taxes, the majority of developed countries still levied them.

Furthermore, half of the developed countries in the world also levied additional income tax on new foreign subsidiaries. As a result, double taxation of the target's income was still one of the larger factors that a firm had to take into consideration in negotiating an international M&A deal. This factor of double taxation reduced the gains to be had from the deal for the shareholders of both firms, which manifested itself in the takeover premium. According to Huizinga et al. (2008), if the takeover premium was reduced to reflect the double taxation, a part of the burden was shared between the acquirer and target shareholders. Otherwise, the burden was fully placed on the shareholders of the acquiring firm.

Huizinga et al. (2008) also came up with results showing that the cross-border M&A deals researched led to, on average, a 4 percent increase in the tax burden on the target's income. Moreover, they found that the non-resident dividend withholding taxes seemed to move along with the bid premiums in a one-for-one pattern which suggested that these taxes' effects completely transformed into a new tax burden for the acquiring firm. The other type of tax, the additional income tax that the acquiring firm had to pay to the parent country on the new foreign subsidiary's income, was found to have little correlation to the bid premiums. In essence, countries that levied non-resident dividend withholding taxes might have provided acquiring firms with an incentive not to carry out the deal.

IV. Growing global economy

Recently, the M&A trend has looked robust in the international markets, especially in emerging countries. Rajan (2008), in a research project on intra-developing Asia FDI flows, addressed the topic. Rajan (2008) asserted that the global economy had witnessed extreme growth from countries in Asia, especially China, India and Japan, to name a few. This trend would undoubtedly have positively affected the amount of FDI that these emerging economies managed to attract from international acquiring countries. However, a trend involving intraregional investments was witnessed as well, especially from countries such as Japan, Hong Kong, Korea, Singapore and Taiwan. According to Rajan (2008), since 2000, China and India had heavily invested in countries all around the world as well as in the rest of Asia.

Following this phenomenon, Rajan (2008) remarked, the trend involving intraregional FDI flows between Asian countries had been increasingly South-South rather than exclusively North-South like before. Since most of the evidence regarding this observation had been anecdotal and qualitative, Rajan (2008) conducted a research on 15 developing countries in Asia in a period of

15 years from 1990 to 2005. Results from the study showed that, out of all the FDI flows into developing Asia, 35% came from within Asia itself. Out of that percentage, 90% came from high-income countries including Hong Kong, China, Singapore and Taiwan. Therefore, a great amount of FDI inflows that came into emerging markets in Asia were from the higher-income parts of it. However, while intraregional flows of FDI were significant, Asia was investing more aggressively in other countries outside Asia as well.

On a relevant note, the robust global economy does not only spur flows of investment towards emerging markets such as those in Asia, but towards United States, one of the most developed countries in the world, as well. Feliciano and Lipsey (2002) stated that the US had transformed into a magnet for flows of FDI since the late 1980s. Traditionally, as a highly developed economy, the US usually looked outside for more growth; however, since the late 1980s, it had also been reeling in quite a large amount of FDI inflows. This was presumably due to the ever-growing economy of the US, which up to the present still renders it one of the best investment target in the whole world.

Feliciano et al. (2002) confirmed that “most of the direct investment flow [had] been in the form acquisitions of U.S. firms by foreign owners.” This is consistent with the fact that the majority of FDI inflows and outflows all over the world have been in the form of cross-border M&A transactions rather than greenfield investments. For 20 years prior to the publishing of the study, according to Feliciano et al. (2002), “foreign firms [had] spent over $1 trillion on these acquisitions and acquired more than $2 trillion in U.S. firm assets.” Such huge inflows of FDI have been able to keep the US economy growing strongly and steadily ever since.

Since international trade is an important part of international economic growth, acquiring US firms would allow foreign acquiring firms to assume a better position in the international

competitive market. If a large industry player outside the US gets its hand on another large industry player within the US, it is possible that the result of the merger would be an industry giant that would have the power to suppress the rest of the market as well as negotiate better deals with suppliers and set higher prices for on their products to gain more profit from consumers. One of the recent examples was a merger between American Airlines and US Airways, which produced a giant airline in the industry.

On this subject, Feliciano et al. (2002) stated that, "direct investments flow in the same direction as trade, from countries with comparative advantages in particular industries to industries of US comparative disadvantage, particularly when those US industries are growing slowly and are relatively unprofitable." In acquiring a US firm at these particular times, a foreign acquiring industry, besides potentially becoming an industry giant that has substantial influence over the rest of the supply chain, would be able to have an easier time competing with the rest of the market inside the US. Fast-growing industries, especially in the US, are usually extremely competitive, and they also set high barriers to new entrants. Therefore, during times of and in industries with lower profitability, a foreign acquiring firm would be able to blend in and start competing more easily, gaining more market share within in a shorter period of time.

V. Gap in academic literature

One of the more noticeable limitations in these studies is that the data sets are outdated, especially lacking financial information from after the financial crisis of 2007 – 2008. Based on this gap in existing studies, I plan to, in my paper, update the data set with more recent figures while focusing on two specific macroeconomic factors, namely economic freedom (or financial openness) and GDP growth rate.

METHODS & RESULTS

I. Sample

This research focuses on 30 different countries in Asia and the Latin America & Caribbean region in the period from 2009 to 2015. The data set is collected from the M&A subset of the Bloomberg Terminal database. Among the countries studied, there are 5 countries from Asia Developed, 15 from Asia Emerging, and 10 from the Latin America & Caribbean region. Financial data of a total of 30 countries were gathered to achieve enough statistical power for the analysis, in order for the study to produce sound, reliable results. Regarding the period chosen (from June 2009 to December 2015), it was the period after the end of the financial crisis of 2007 – 2008, when M&A activity from all over the world started to soar in a stage of recovery. Refer to Table 1 below.

		EBITDA	Book Value	Deal Volume / GDP	Deal Count / GDP	Economic Freedom	Average GDP Growth
Asia Developed	Australia	8.99	1.68	65.2 M	0.58	80.30	2.49
	Hong Kong	14.81	1.47	151.8 M	1.35	88.60	2.70
	Japan	7.04	1.06	12.5 M	0.21	73.10	0.36
	New Zealand	10.45	1.66	20.9 M	0.57	81.60	2.10
	Singapore	8.60	1.37	142.5 M	1.58	87.80	4.81
Asia Emerging	Bangladesh	12.78	1	4.0 M	0.19	53.30	6.13
	Cambodia	0.34	0.22	14505	0.00	57.90	5.99
	China	8.67	1.73	77.4 M	0.77	52.00	8.40
	India	9.88	2.1	22.6 M	0.39	56.20	7.43
	Indonesia	9.44	2.81	36.7 M	0.45	59.40	5.51
	Kazakhstan	7.98	0.94	16.5 M	0.05	63.60	4.69
	Malaysia	7.79	1.27	14.4 M	0.21	71.50	4.60
	Pakistan	4.61	1.4	2.2 M	0.04	55.90	3.19
	Papua New Guinea	17.96	2.83	144.6 M	0.42	53.20	8.41
	Philippines	7.34	1.61	15.1 M	0.24	63.10	5.47
	South Korea	8.85	1.64	32.4 M	0.33	71.70	3.16
	Sri Lanka	11.97	1.84	1.8 M	0.16	59.90	6.74
	Taiwan	15.55	1.3	23.5 M	0.20	74.70	3.30
	Thailand	8.71	1.63	16.1 M	0.21	63.90	3.01
	Vietnam	10.39	1.51	7.4 M	0.24	54.00	5.87
LATAM & Caribbean	Argentina	3.19	1.08	3.8 M	0.07	43.80	3.23
	Brazil	7.12	2.17	26.6 M	0.16	56.50	1.84
	Chile	10.15	2.41	27.2 M	0.24	77.70	3.50
	Colombia	8.38	2.45	15.9 M	0.12	70.80	4.04
	Costa Rica	0.16	0.16	9.2 M	0.11	67.40	3.37
	Ecuador	7.80	2.8	3.4 M	0.07	48.60	3.57
	Mexico	7.89	2.21	17.2 M	0.08	65.20	2.03
	Panama	4.20	1.72	25.2 M	0.30	64.80	7.67
	Peru	6.74	2.91	22.4 M	0.18	67.40	4.66
	Venezuela	1.10	1.2	3.3 M	0.02	33.70	-1.09

Table 1: Bloomberg data – Financial metrics

II. Financial data

1. Dependent variables

In order to assess the potential impact of economic conditions on M&A activity in the chosen markets, four variables were selected to represent the volume of M&A activity in these markets. These dependent variables are EBITDA, Book value, Deal volume and Deal count.

- EBITDA and book value are two popular multiples with which target companies are valued in an M&A transaction. The higher these values are, the higher price buying companies pay for target companies. The sample has an average EBITDA multiple of 8.30 and an average book value multiple of 1.67.

- Deal volume and deal count, on the other hand, are two measures with which to assess the volume of M&A activity as a whole. In order for these measures to more accurately reflect different countries' M&A activity, they are both scaled with respect to the corresponding country's average GDP during the period from 2009 to 2015. The sample has an average deal volume (divided by average GDP) of $32.1 million and an average deal count (divided by average GDP) of 0.32.

2. Independent variables

The independent variables, representing the economic conditions in this case, consist of Economic freedom and Average GDP growth throughout the period from 2009 to 2015.

- Economic freedom is an economic metric measured by 10 quantitative and qualitative factors, which are classified into 4 different categories, including Rule of law, Limited government, Regulatory efficiency and Open markets. Essentially, the metric indicates how easy

it is in a certain country. All data on economic freedom is collected from The Heritage Foundation's Economic Freedom Index. On the index, the country with the number-one ranking is Hong Kong with an overall score of 88.6; the country with the lowest ranking is North Korea with a score of 2.3.

- Average GDP growth measures how fast a country's economy grows. All data on GDP growth is collected from the International Monetary Fund's (IMF) database. Across all countries involved in the study, the average GDP growth rate is 4.24%.

III. Regression analysis

To determine whether there is a correlation between each of the dependent variables and each of the independent variables, I have come up with 2 different hypothesis:

Null hypothesis	Neither economic freedom nor GDP growth has any impact on M&A activity in international markets.
Alternative hypothesis	Economic freedom and/or GDP growth has an impact on M&A activity in international markets.

To test out these hypothesis, I apply three different regression models to each dependent variable. In the first model, the dependent variable y is regressed against the first independent variable x1; in the second model, against the second independent variable x2; and in the third model, against both x1 and x2:

Model 1: $y = \alpha + ß1*x1$

Model 2: $y = \alpha + ß2*x2$

Model 3: $y = \alpha + ß1*x1 + ß2*x2$

The regression analyses yielded results as follows:

1. EBITDA

EBITDA			
	Model 1	**Model 2**	**Model 3**
Intercept	1.661	6.065	-2.021
t-stat	0.440	3.872	-0.501
Economic Freedom	0.104		0.120
t-stat	1.790		2.156
Average GDP Growth		0.526	0.624
t-stat		1.607	2.004
Regression F statistic	3.204	2.584	3.783
Adjusted R-squared	0.071	0.052	0.161
Number of observations	30	30	30

Table 2: Regression analysis - EBITDA

As can be seen from Table 2 (important output highlighted in yellow), both economic freedom and average GDP growth have achieved significance in the regression. Specifically, in model 1, economic freedom has a t-stat of 1.79, effectively putting it at the 10% significance level. In model 2, average GDP growth almost achieves a 10% significance level; however, since the sample size is only 30, it can be safely concluded that the second independent variable is significant as well. In model 3, when put together, both independent variables have their significance levels increased.

In other words, there is a strong correlation between both economic freedom and GDP growth, and the EBITDA multiple in international M&A transactions. As a result, the higher degree of economic freedom a country has, the more premiums are paid in M&A transactions in that country and vice versa. The regression analysis comes up with the same result for GDP growth.

2. Book Value

Book Value			
	Model 1	**Model 2**	**Model 3**
Intercept	1.769	1.437	1.442
t-stat	2.592	5.208	1.876
Economic Freedom	-0.002		0.000
t-stat	-0.144		-0.006
Average GDP Growth		0.056	0.056
t-stat		0.964	0.935
Regression F statistic	0.021	0.929	0.448
Adjusted R-squared	-0.035	-0.002	-0.040
Number of observations	30	30	30

Table 3: Regression analysis – Book value

Surprisingly, the book value multiple shows no significant correlation with either of the independent variables. In model 1, economic freedom has a t-stat of -0.144, which indicates that it might be slightly negatively correlated with the book value multiple. In model 2 and 3, there is no remarkable t-stat (usually over 1.65) either, so the average GDP growth variable also does not have a strong connection to the book value multiple either.

The reasons behind these surprising results might be either that (1) the study does not include enough countries to achieve sufficient statistical power or that (2) the book value metric is not as good a measure as the EBITDA multiple in assessing the volume of M&A activity, which is more likely to be the case.

3. Deal Volume

Deal Volume - GDP			
	Model 1	Model 2	Model 3
Intercept	-58.75 M	14.82 M	-90.23 M
t-stat	-1.57	0.89	-2.22
Economic Freedom	1.42 M		1.56 M
t-stat	2.47		2.77
Average GDP Growth		4.07 M	5.33 M
t-stat		1.17	1.70
Regression F statistic	6.11	1.38	4.70
Adjusted R-squared	0.15	0.01	0.20
Number of observations	30	30	30

Table 4: Regression analysis – Deal volume

Regarding the Deal volume variable, in model 1, economic freedom has achieved significance with a t-stat of 2.47. In model 2, average GDP growth does not reach the 1.65 threshold; however, in model 3, when both independent variables are put together, they both reach the 10% significance level. From this analysis, it can be concluded that both economic freedom and GDP growth rate have an impact on the deal volume metric as well.

4. Deal Count

Deal Count - GDP			
	Model 1	**Model 2**	**Model 3**
Intercept	-0.731	0.223	-0.946
t-stat	-2.535	1.560	-2.982
Economic Freedom	0.016		0.017
t-stat	3.705		3.961
Average GDP Growth		0.022	0.036
t-stat		0.746	1.487
Regression F statistic	13.729	0.556	8.267
Adjusted R-squared	0.305	-0.016	0.334
Number of observations	30	30	30

Table 5: Regression analysis – Deal count

As can be seen from Table 5, out of the two independent variables, economic freedom is the only significant one. It has highly significant t-stats in both model 1 and model 2 (3.705 and 3.961). The average GDP growth rate, on the other hand, fails to reach a significant t-stat in both model 2 and model 3. Theoretically, a higher degree of economic free would as a result explain a higher M&A deal count, but a higher rate of GDP growth would not, in international markets.

CONCLUSIONS & RECOMMENDATIONS FOR FUTURE RESEARCH

This study aims to find out whether there is a correlation between a set of dependent variables, representing the volume of M&A activity in international markets, and a set of independent variables, representing the economic conditions in those markets. The dependent variables include EBITDA, Book value, Deal volume and Deal count. The independent variables include Economic freedom and Average GDP growth. These two sets of variables are analyzed by means of three different regression models. According to the results yielded by the regression analyses, both of the independent variables (economic conditions) have an impact on the dependent variables (M&A activity).

These findings tie back to the conclusions reached by some studies in the literature review. High degrees of economic freedom, or financial openness, were found to be a large driver that stimulates M&A activity in international markets by Chousa et al. (2008) and Garita et al. (2007). On the other hand, Visic et al. (2010) arrived at the same conclusion for GDP growth rate through a study of European transition countries. My study echoes the results of these studies but supports them with more recent economic data and targets different sectors of the global economy, Asia and the Latin America.

On a different note, the study inevitably has several different limitations. First, the sample size is only 30, which does not hold much statistical power. Second, since various countries did not have any information on its M&A deals carried out within a certain period of time, there are many zeros in the data, rendering some of the analyses barely valid. Third, the economic freedom metric is just an arbitrary score, which means it might not contain exhaustive information about the said quality of a country and/or perfectly precisely present realistic economic figures.

Because of these limitations in my study, I believe that I should put forth recommendations for future research. Since the study only focuses on two economic conditions, which are economic freedom and average GDP growth, there are still many other available areas for further research. These different economic factors might include currency movements, central bank policy, and commodity prices. Hopefully, the data on M&A activity already collected in this study will provide a foundation for those future studies.

BIBLIOGRAPHY

Rajan, R. S. (2008). Intra-Developing Asia FDI Flows: Magnitudes, Trends and Determinants. *Soesastro, H. (ed.), Deepening Economic Integration- The ASEAN Economic Community and Beyond-, ERIA Research Project Report 2007-1-2, Chiba: IDE-JETRO, 204-238.*

Huizinga, H., Voget, J., & Wager, W. (2008). International Taxation and Takeover Premiums in Cross-border M&As. *Oxford University Centre of Business Taxation Working Paper No. 08/26.*

Feliciano, Z., & Lipsey, R. (2002). Foreign Entry into U.S. Manufacturing by Takeovers and the Creation of New Firms. *National Bureau of Economic Research Working Paper No. 9122.*

Dabla-Norris, E., Honda, J. Lahreche, A. & Verdier, G. (2010). FDI Flows to Low-Income Countries: Global Drivers and Growth Implications. *IMF Working Paper.*

Hebous, S., Ruf, M., Weichenrieder, A. (2010). The Effects of Taxation on the Location Decision of Multinational Firms: M&A vs. Greenfield Investments. *Cesifo Working Paper No. 3076, Category 1: Public Finance.*

Huizinga, H. & Voget, J. (2009). International Taxation and the Direction and Volume of Cross-Border M&As. *The Journal of Finance, Vol. LXIV, No. 3.*

Višić, J. & Škrabić, B. (2010). Determinants of Incoming Cross-Border M&A: Evidence from European Transition Economies. *International Conference on Economic Modeling - Ecomod 2010.*

Herger, N., Kotsogiannis, C., & McCorriston, S. (2013). Multiple Taxes and Alternative Forms of FDI: Evidence from Cross-Border Acquisitions. *University of Oxford, Said Business School WP 14/01.*

Reddy, K. S., (2015). The impact of the global financial crisis on border-crossing mergers and acquisitions: A continental/industry analysis. *MPRA Paper No. 63563.*

Garita, G. & Marrewijk, C. V. (2007). Macroeconomic Determinants of Cross-Border Mergers and Acquisitions. *Department of Economics, Erasmus University and Tinbergen Institute Working Paper.*

Chousa, J. P., Chaitanya, K. & Tamazian, A. (2008). Does Growth & Quality of Capital Markets drive Foreign Capital? The case of Cross-border Mergers & Acquisitions from leading Emerging Economies. *William Davidson Institute Working Paper Number 911.*

Neto, P., Brandao, A., & Cerqueira, A. (2009). The Macroeconomic Determinants of Cross Border Mergers and Acquisitions and Greenfield Investments. *J. Bus. Strategy VII, 1&2, 21–57.*

Karels, G. V., Lawrence, E. & Yu, J. (2011). Cross-border mergers and acquisitions between industrialized and developing countries: US and Indian merger activity. International Journal of Banking and Finance: Vol. 8: Iss. 1, Article 3.

Aslanbekovich, A. A. (2015). International Mergers and Acquisitions Market: REcnet Trends and Prospects for Growth. *ISSN 2377-1682, Vol. 1, No. 1.*

Millimet, D. L. & Kumas, A. (2007). Reassessing the Effects of Bilateral Tax Treaties on US FDI Activity. *Southern Methodist University Working Paper.*

Globerman, S. & Shapiro, D. (2004). Foreign Direct Investment in Emerging and Transition European Countries. *International Finance Review Book Series, Vol. 6.*

Hegbrant, J. & Hellberg, F. (2014). Macroeconomic Factors Influencing Cross-Border Merger & Acquisitions Value. *Lund University, School of Economics and Management Working Paper.*

Arulampalam, W., Devereux, M. P. & Liberini, F. (2010). How do taxes affect cross-border acquisitions?. *Oxford University Centre for Business Taxation Working Paper.*

Brakman, S., Garita, G., Garretsen, H. & Marrewijk, C. V. (2009). Economic and Financial Integration and the Rise of Cross-Border M&As. *University of Groningen Working Paper.*

Brooks, D. H. & Jongwanich, J. (2011). Cross-Border Mergers and Acquisitions and Financial Development: Evidence from Emerging Asia. *ADB Economics Working Paper.*