Value Creation in top Asian firms

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Abstract

Previous studies have employed the trade-orientated gross value-added models to determine a country's economic performance and competitiveness, correlating value creation with parameters such as GDP and total export value (Daudin *et al.* 2011; Koopman *et al.* 2012). Whilst this method is useful on a macro level, it does not capture the degree of value creation undertaken at firm level. Hence, we borrow the accounting concept of residual income (Ohlson 1995; Frankel & Lee 1998) to evaluate firm level value creation. This will allow us to bypass the need to generalising all firms in the same industry and disregard the trade metric in terms of foreign imported intermediates. Using the 1997 financial crisis as a starting point, we investigate top Asian listed firms and opine that these firms are the leading force for a country's economic growth. We show that value creation as measured by residual income is highly correlated with GDP per capita (0.816) and changes in GDP per capita (0.551). We find that: 1) high income countries consistently generate higher value vs. middle income countries and the latter countries have not created enough value or at a rate sufficiently fast to catch up; 2) oil and gas producers create most value; 3) firms in countries receiving the IMF package suffered from low/negative value creation in the immediate aftermath but rebounded strongly to be outperforming those firms in the countries that opted out; and 4) low and moderately levered firms create more value than the highly indebted firms.

1. Introduction

Over the past 2 decades, the fortunes of several Asian countries have diverged: South Korea, Singapore, Hong Kong and Taiwan have achieved developed country status, alongside Australia and Japan. However, several countries like Malaysia and Thailand have remained in the middle income group (Asian Development Outlook 2013 and Key Indicators for Asia and the Pacific 2011). Various indicators have shown that the GDP growth per capita (Aiyar *et al.* 2013), Foreign Direct Investment (Thangavelu *et al.* 2009) and total investment per percent GDP (Coulibaly & Millar 2011) for these middle income countries are relatively stagnant or slow since the 1997 Asian Financial Crisis. Consequently, there have been lots of calls for these countries to move up the value chain in order to achieve their economic aspirations.

In addition, some countries are facing with increasingly higher government debt-to-GDP ratio (World Economic Outlook Database, April 2013). Therefore, this prompts us into diagnosing the ability of these economies to create value and enlarge the GDP pie. A lack of value creation in the respective economy is the main impediment for sustainable growth (Memedovic & Lapadre 2009; Zhan *et al.* 2013). Likewise, with higher value creation, firms can earn supernormal profits and thus increase income in the economy.

Gross value-added, first outlined by System of National Accounts in 1993 (pg. 191), is the value equivalent to the difference between a country's output (in basic prices) and the aggregate amount of its intermediate inputs (in purchaser's prices) of goods and services. The idea of value-added by a producer to the intermediate inputs was taken further by Hummels *et al.* (2001). They observed the vertical specialization in world trade and proposed that the uses of imported intermediate inputs to produce goods for export are measured based on a country's Input-Output (IO) table. Since then, OECD and WTO have collaborated in setting up a database called Trade in Value-added (TiVA) to account for value-creation in trades, based on global IO tables. However, this value-added indicator

places general assumptions about all firms in a certain industry using the same input to produce the same outputs and the indicator also put weight on foreign imported intermediates.

Previous studies have employed the trade-orientated gross value-added models to determine a country's economic performance and competitiveness, correlating value creation with parameters such as GDP and total export value (Daudin *et al.* 2011; Koopman *et al.* 2012). Whilst this method is useful on a macro level, it does not capture the degree of value creation undertaken at the firm level. Hence, we adopt an alternative approach to evaluate value creation, without generalizing all firms in the same industry and disregarding the trade metric in terms of foreign imported intermediates. We opine that the top performers in the industry are the leading force and the main driver for a country's economic growth, thus the sustainability of GDP per capita growth should correlate with the firms' ability to create value in the long run.

EVA® (Economic Value Added) (Stewart 1991) and residual income (RI) models (Ohlson 1995; Frankel & Lee 1998) are commonly used to evaluate the economic or abnormal profit gained from going concern firms. Residual income represents the profit (or value) created from actual profits, less expected profits calculated from the required cost of capital. Residual income is calculated from the net operating profits after tax (i.e. the actual profits) less the required cost of capital multiplied by the book value base (i.e. the expected profits).

Because residual income uses risk-adjusted rate of return in estimating the expected profit, residual income would show the degree of out-performance or under-performance over the firm's required cost of capital. Therefore a positive residual income indicates value creation and a negative residual income indicates value destruction, after taking into account risks involved in the value generating activity. Consequently, EVA® and RI models are often used by investors and managers as tools to evaluate a firm's financial performance and measure the true economic profit of a firm, which is value creation (Bacidore *et al.* 1997; Bromwich & Walker 1998). Besides, future stock returns can be

also predicted by RI models based on an assumption about the projection of terminal value (Frankel & Lee 1998; Ali *et al.* 2003).

The 1997 financial crisis created a natural structural break because implicitly or explicitly, many Asian countries had to hit the economic reset button, remove excesses in their economies and rebuild their economies. Therefore, in this paper, we use RI models to compare the economic performance of the largest listed companies in thirteen Asian countries across different sectors from 1997. By tracking residual income (RI) of the companies that make up the constituents of the benchmark indices for the thirteen Asian countries, we can find out the degree of value creation in these countries and provide a good setting for understanding the middle income trap phenomenon that plagues certain countries. Using natural experiments setting, we analyse the impact of the IMF bailout, debt level and industry effect on the degree of value creation in firms that represent these Asian countries.

We summarise our key findings here. Firstly, we find that value creation is highly correlated with GDP per capita (0.816) as well as changes in GDP per capita (0.551). This shows that firms in rich countries create more value and implies that firms creating value would lead to improvement in GDP per capita. Secondly, we find that high income countries consistently generate higher residual income per share viz-a-viz middle income countries and that these middle income countries are not converging to the degree of value creation in the high income countries to enable them to catch up. Thirdly, Oil and Gas Producers create most value compared to Alternative Energy firms which create the least and occasionally destroy some.

Fourthly, in the subsequent ten years after the Asian Financial Crisis, the three countries receiving IMF help generally created more values compared to those which opted out of the IMF programme but were also facing financially distress. Analysing the two sectors most affected by the Asian Financial Crisis – banks; construction and materials – we find that whilst these firms were creating low values (and occasionally destroyed value) in 1998, they subsequently rebounded stronger and

created more value than those firms in the countries that were financially distressed but opted out of IMF help.

Fifthly, given the Modigliani and Miller Hypothesis and the issue of corporate debt during the Asian Financial Crisis, we analysed capital structure and its relationship to value creation. We find that the top quartile of firms with high leverage (total debt to total assets) consistently create less value than the moderately or low leverage firms. Indeed, in the sectors most affected by the 1997 crisis (construction and materials sector and banks), being low in leverage has allowed these firms to continue to create value during the crisis period. This is contrasted with the highly levered firms which has not only destroyed value but were languishing in low value creation state. This is also the case even for the control firms which were not in the countries affected by the Asian Financial Crisis. Hence, unsurprisingly, the lesson is for firms to adopt moderate leverage capital structure to consistently maximise value creation.

Our paper is structured as follows: section 2 explains our data and methodology; section 3 reports our findings; and section 4 discusses some policy implications.

2. Data and methodology

Firm level value creation is measured using residual income, which can be summarised as:

Residual Income per share (RI) = Earnings per share – cost of capital.*Book value per share

$$RI_t = EPS_t - r_t.*BV_{t-1}$$

where r_t is cost of capital estimated using the Fama and French three factor model. To ensure consistency in measurement, all values are expressed on per share basis and translated using end of period exchange rates into USD. To control for size of capital outlay, RI is scaled by the end of period closing stock price, i.e. RI/P.

The thirteen countries investigated include China, Hong Kong, Taiwan, South Korea, Japan, India, Pakistan, Australia, Malaysia, Singapore, Philippines, Thailand and Indonesia. All firm level accounting, stock price data and exchange rates data are obtained from Datastream and Bloomberg. The data collected spans 1997 and 2012. Table 1 shows the required annualised cost of capital estimated using the Fama and French three factor model. Consistent with expectation, we find that investors demand the lowest cost of capital in Japan (8.7%); whilst Indonesia requires the highest cost of capital (34.7%).

3. Results

Descriptive statistics

Figure 1 and Figure 2 show the distribution of firms by countries and across industries respectively. Our database covers a diverse range of industries across countries in Asia.

Value creation over time by country and by industry

Table 2 shows the correlation between value creation (RI per share) with GDP per capita and the changes in GDP per capita across the thirteen countries. We find that value creation is highly correlated with GDP per capita – with the correlation between RI per share and GDP per capita up to 0.939 in China (first column in

Table *2*). Thus, this indicates that countries that have become richer with higher GDP per capita are also highly capable of creating value. For countries that are already rich at the start such as Japan and Australia, the correlation is still high at 0.643 and 0.864 respectively.

The second column of

Table *2* shows the correlation between value creation (RI per share) with the changes per capita. We show that value creation is also highly correlated with changes in GDP per capita – e.g. the correlation is 0.969 for China, a country that has increased GDP per capita from USD821 to USD6,093 between 1998 and 2012. Even in Australia, the correlation is high at 0.671. In Japan where the economy has stagnated for the past two decades, the correlation is only mildly positive (0.129). Therefore, our investigation into firm level value creation is significant in understanding the *growth* of GDP per capita.

Figure 3 reports residual income per share in high- and medium-income countries, categorised using the 2012 GDP per capita. We find that high income countries (Australia, Singapore, Japan, Hong Kong, South Korea and Taiwan) consistently generate higher residual income per share. Although the amount of value created dipped around the financial crisis in 2008, it has rebounded strongly. On average, the degree of value creation (as measured by residual income per share) in middle income countries (Malaysia, China, Thailand, Indonesia, Philippines, India and Pakistan) is about 22% of those of the high income group. Given that the middle income countries (blue line in Figure 3) is not converging towards the high income countries' ability to create value, this implies that firms in middle income countries are not creating value fast enough to catch up to the level of the high income countries.

To control for size of capital outlay, we adopt scaled value creation (RI/P). Figure 4 shows the degree of scaled value creation (RI/P) across industries – with Oil & Gas Producers (OILGP), Real Estate Investment Trusts (REITS), Equity Investment Instruments (EQINV), Telecommunications Fixed Line (TELFL) and General Industries (GNIND) having created multiple times more value than Alternative

Energy (ALTEN), Leisure Goods (LEISG), Software & Computer Services (SFTCS), Aerospace and Defense (AERSP) and Electronic and Electrical Equipment (ELTNC).

In interpreting this result, we highlight that: 1) despite high capital expenditure and after taking into account the inherent risks, Oil & Gas Producers (OILGP) add significant amount of value. However, this cannot be said of Mining (MNING) and Industrial Metals and Mining (INDMT) firms where the value creation is approximately half of those created at the energy producers; 2) Real Estate Investment Trusts (REITs) and Equity Investment Instruments (EQINV) are vehicles created with specific financial objectives in mind (to allow investors gain access to these investment, often with tax benefits), thus are somewhat leveraged to the underlying investments; and 3) being a nascent and expensive technology, it is unsurprising that the Alternative Energy (ALTEN) firms yielded only low level of value creation and indeed has destroyed value between 2000 and 2004 (see Figure 5). Nevertheless, there are only very few such clean energy firms in our database.

The degree of value creation in these industries are also fairly stable across time, as illustrated in Figure 5 which show the bottom 10 sectors that create least value vs. the top 10 most value enhancing sectors in Figure 6. As explained earlier, the Real Estate Investment Trusts (REITs) and Equity Investment Instruments (EQINV) firms are investment vehicles. As such, they are highly volatile in their level of value creation.

The effect of IMF bailout during the Asian Financial Crisis

During the 1997 financial crisis, some financially distressed countries were compelled to receive IMF help (South Korea, Indonesia and Thailand); whilst other (perhaps less distressed) countries opted to stay away from the IMF (Malaysia, Japan, Philippines and Singapore). Hence, our database offers a unique setting for understanding the effect of the IMF bailout package on the subsequent degree of value creation in different countries.

In the subsequent ten years till 2007, Figure 7 shows that the three countries receiving IMF help generally created more values compared to those which opted out (the red line in Figure *7* are generally above the blue line), despite both groups of countries started at the same level in 1998. This is especially true for the years between 1999 and 2005. Nevertheless, over time, all firms converge to the degree of value creation as shown by the control group as represented by the green line. The control group is represented by firms in three countries which were not directly hit by the Asian Financial Crisis in 1997 – Pakistan, India and Australia.

Looking further into the individual country's degree of value creation, Figure 8 shows that the scaled amount of value creation (RI/P) in the three countries that received IMF help increased in 1998 and 1999. However, for the other four countries that were financially distressed but received no IMF bailout, the degree of value creation (RI/P) fell between 1998 and 1999. This might indicate the countries which opted out of IMF help had a longer and protracted period of cleaning the excesses from the economic system. Figure 8 also shows that Japanese value creation is generally low and stable; whereas Indonesia suffered a degree of value destruction in 1998 before recovering strongly after the IMF bailout.

Two sectors were badly affected by the financial crisis – banks (due to bad debts); construction and materials (due to bursting of property bubble). Figure 9 shows that in 1998, all banks in the financially distressed countries created almost the same degree of values, which were much lower than the control group (banks in Australia, India and Pakistan). Banks in countries that opted out of the IMF help (Malaysia, Singapore, Philippines and Japan) have low value creation till 2003. On the other hand, although banks in countries receiving IMF help (South Korea, Thailand and Indonesia) suffered low value creation and occasional value destruction between 1998 and 2001, they subsequently rebounded strongly and generally outperformed those banks originating from countries that opted out of the IMF package. Nevertheless, over time, the degree of value creation converges towards the mean as shown by the control group.

Figure 10 reports the snapshots as of RI/P in 1998 and 2007. We show that in 1998 the dispersion in value creation in banks is much greater for those countries receiving IMF help vs. those that did not receive IMF help. However ten years later in 2007, banks in these IMF assisted countries generally create more value than those banks in the opt out countries and the control group of banks.

As shown in Figure 11 and Figure 12 which analyse the Construction and Materials sector, a similar conclusion that firms in IMF assisted countries subsequently add more value can be drawn. Those firms performed even better than the banks in their own countries between 1999 and 2001. They recovered in two years and matched the control group's value level in 2000. This finding might imply that the countries that received IMF help might have inculcated IMF best practices by opening up the sectors to foreign investors as required by the reform package.

Value creation by capital structure

We investigate the hypothesis that there is an optimal leverage level that is most conducive to value creation. This is because the Modigliani and Miller Hypothesis postulates that there is an optimal level of leverage where the value of the firm is maximised. Besides, as high corporate debt was an issue during the Asian Financial Crisis, this analysis would complement our understanding. We measure leverage by the total debt to total asset ratio.

Figure 13 shows the scaled residual income (RI/P) categorised by the level of leverage. The most levered quartile of firms has leverage ratio ranging from 0.43 to 0.58. We find that these highly levered firms (as represented by the red line) do not create as much value as the lowest and moderately levered firms. This substantiates the argument that excessive debt ratio increases financial distress and default risks, hence increases the required cost of capital and decreases the level of residual income and risk-adjusted value creation.

There is not much difference in value creation between the least and the averaged levered firm. This is probably because the median leverage for the middle leverage group ranges from 0.21 to 0.29. Since it is low, the amount of debt would not have introduced more risks compared to the least leverage group, which has a median leverage of 0.03 to 0.05. Therefore, these two categories are by capital structure not financially much different.

Taking the analysis of the impact of IMF bailout during the Asian Financial Crisis further, we look into the effect of leverage (as measured by the ratio of total debt to total asset) for Banks and Construction and Material firms – the two sectors most affected by the crisis.

The graph on the left in Figure 14 shows that Banks in the top quartile leverage in countries receiving IMF bailout initially suffered from severe value destruction but subsequently recovered strongly vs. those from countries that opted out of the IMF packages. On the other hand, Banks in the bottom quartile leverage (right side graph in Figure 14) do not exhibit large differences in whether the country has opted out or received the IMF bailout help. The differentiating factor was whether they were in the financially distressed country in the first place. Nevertheless, after the effect of the Asian Financial Crisis has abated, say from 2003 onwards, the level of debt do not seem to enable Banks to create more value – both top and bottom quartile leveraged Banks in the same grouping generate similar level of value.

The left side graph in Figure 15 shows that the top quartile highly leveraged Construction and Material firms (mean leverage ratio of 0.32 in 1998) in countries that opted out from IMF help languished without value creation till 2002 (the blue line). Such performance is similar to those highly levered Construction and Material firms in the control group which has a mean leverage ratio of 0.53 in 1998 (the green line). Thus, this implies that the effect of leverage dominates the effect of locality for these firms. Alternatively, this can also indicate these highly levered firms in the control group might be equally affected by the Asian Financial Crisis (perhaps through slowdown in cross border construction projects or material trades).

The lacklustre performance of the control group and the countries that opted out of IMF help is contrasted with strong rebound in value creation for the highly leveraged Construction and Material firms. The mean leverage ratio of those Construction and Material firms in countries that received IMF help is 0.75 in 1998, which is more than twice of those firms whose countries opted out of IMF help.

The impact of low leverage on Construction and Material firms can be seen in the right side graph in Figure 15. Instead of being stuck in low value creation situation, the least levered firms in the countries that opted out of IMF help continued to create value, thus indicating that being conservatively financed (mean leverage ratio of 0.10 in 1998) has helped these firms weather the crisis better. On the other hand, probably due to being less affected by debt and the effect of the host country receiving IMF bailout, the level of value creation in lowly levered firms (mean leverage ratio of 0.47 in 1998) is less volatile than their highly geared peers (mean leverage ratio of 0.75 in 1998).

4. Policy implications

Our results thus far show that the middle income countries are unlikely to catch up to the high income countries in the near future for two reasons. Firstly, because firms in the high income countries are highly value creative, they create a widening a gap between themselves and the middle income countries. Secondly, given the degree of value creation in middle income countries are not converging to that level of the high income countries, these middle income countries are not creating value large enough or fast enough to catch up.

Therefore, middle income countries should identify the value enhancing policies from the top ten value-creating sectors in order to close the gap with the high income countries. For example,

Malaysia, Pakistan and China have both active sectors in Oil and Gas Producers (OILGP) and Oil Equipment and Services (OILES), and these two sectors are among the top ten value creating sectors.

Our analysis on the impact of the IMF bailout on firm level value creation shows that firms in countries receiving the IMF package suffered from low/negative value creation in the immediate aftermath but rebounded strongly to be outperforming those firms in the countries that opted out of the IMF programme. Whilst the IMF has acknowledged some of the shortcomings of the programme (IMF Issues Briefs June 2000), there might be ideas for structural reforms that are worthwhile to enhance value creation. In particular, since low and moderately levered firms create more value than the highly indebted firms, the efficiency in the corporate debt pricing market can be improved and the monitoring of debt (household, corporate and sovereign) should be more rigorous.

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Table 1: The annualised required cost of capital, estimated using the Fama and French three factor model

Hong Kong	29.5%
Singapore	25.8%
South Korea	26.1%
Taiwan	15.6%
India	31.1%
Indonesia	34.7%
Malaysia	14.8%
Pakistan	32.9%
Philippines	22.2%
Thailand	28.0%
China	23.0%
Japan	8.7%
Australia	21.3%

Table 2: Correlation of residual income per share (USD) to GDP per capita (USD) and changes in GDP per capita (USD)

Country	Median RI per share (USD) vs. GDP per capita (USD)	Median RI per share (USD) vs. *change* in GDP per capita (USD)
Australia	0.864	0.671
Singapore	0.907	0.468
Japan	0.643	0.129
Hong Kong	0.886	0.636
South Korea	0.889	0.389
Taiwan	0.657	0.293
Malaysia	0.804	0.750
China	0.939	0.969
Thailand	0.936	0.771
Indonesia	0.657	0.336
Philippines	0.914	0.718
India	0.779	0.556
Pakistan	0.736	0.475
Mean	0.816	0.551

Figure 1: Number of firms by country

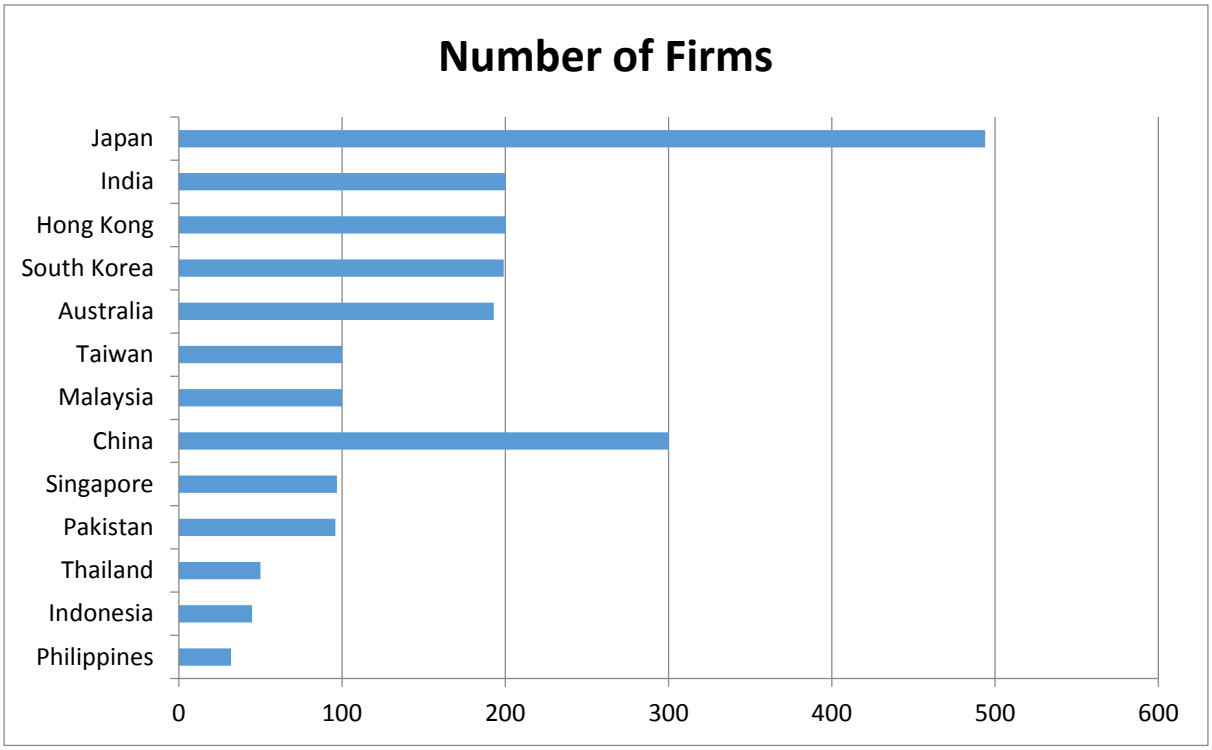
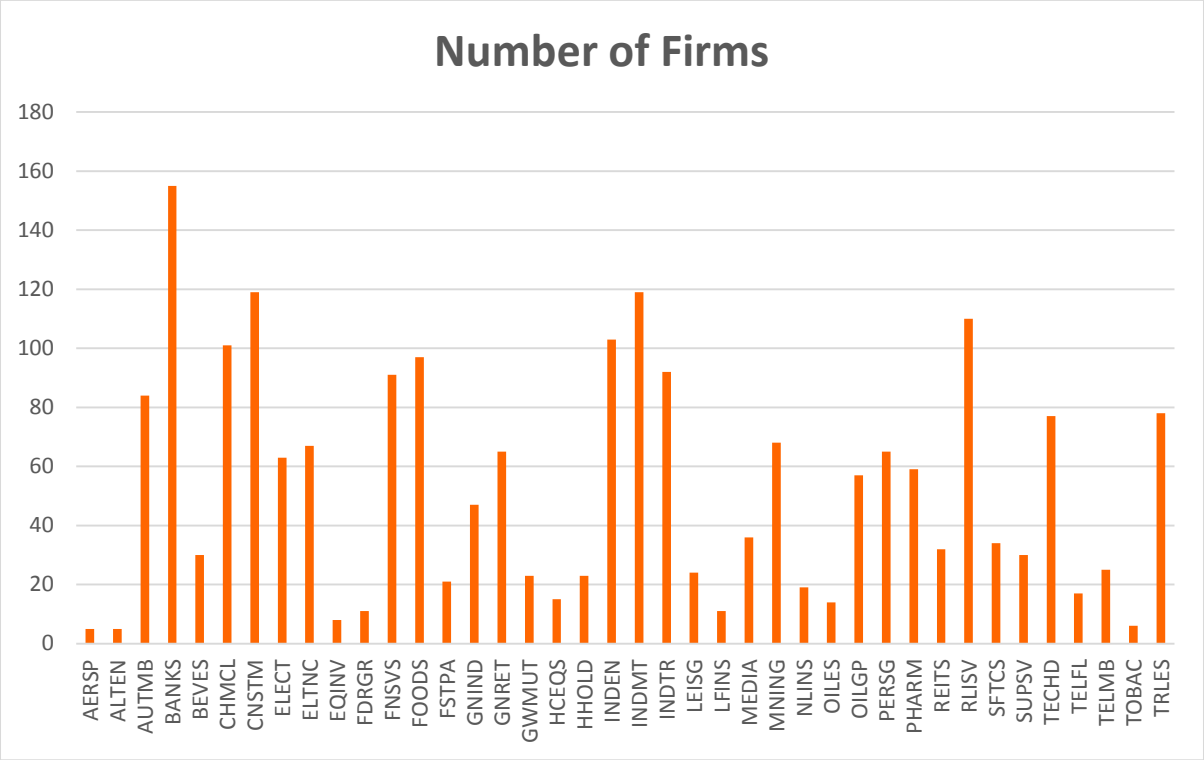
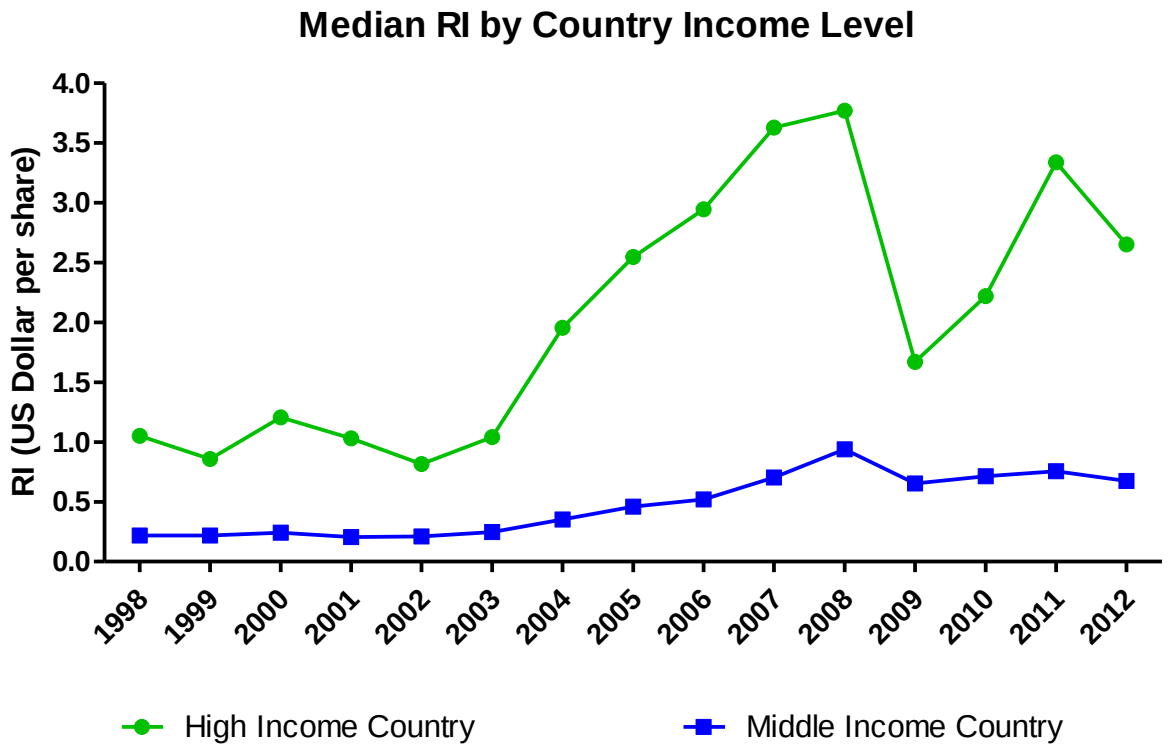


Figure 2: Number of firms by Industry Classification Benchmark (ICB) level 4 sector categorisation



AERSP	Aerospace & Defense
ALTEN	Alternative Energy
AUTMB	Automobiles & Parts
BANKS	Banks
BEVES	Beverages
CHMCL	Chemicals
CNSTM	Construction & Materials
ELECT	Electricity
ELTNC	Electronic & Electrical Equipment
EQINV	Equity Investment Instruments
FDRGR	Food & Drug Retailers
FNSVS	Financial Services
FOODS	Food Producers
FSTPA	Forestry & Paper
GNIND	General Industrials
GNRET	General Retailers
GWMUT	Gas, Water & Multiutilities
HCEQS	Health Care Equipment & Services
HHOLD	Household Goods & Home Construction
INDEN	Industrial Engineering
INDMT	Industrial Metals & Mining
INDTR	Industrial Transportation
LEISG	Leisure Goods
LFINS	Life Insurance
MEDIA	Media
MNING	Mining
NLINS	Nonlife Insurance
OILES	Oil Equipment & Services
OILGP	Oil & Gas Producers
PERSG	Personal Goods
PHARM	Pharmaceuticals & Biotechnology
REITS	Real Estate Investment Trusts
RLISV	Real Estate Investment & Services
SFTCS	Software & Computer Services
SUPSV	Support Services
TECHD	Technology Hardware & Equipment
TELFL	Fixed Line Telecommunications
TELMB	Mobile Telecommunications
TOBAC	Tobacco
TRLES	Travel & Leisure

Figure 3: Residual income per share in high vs. medium income countries (based on 2012 GDP per capita)

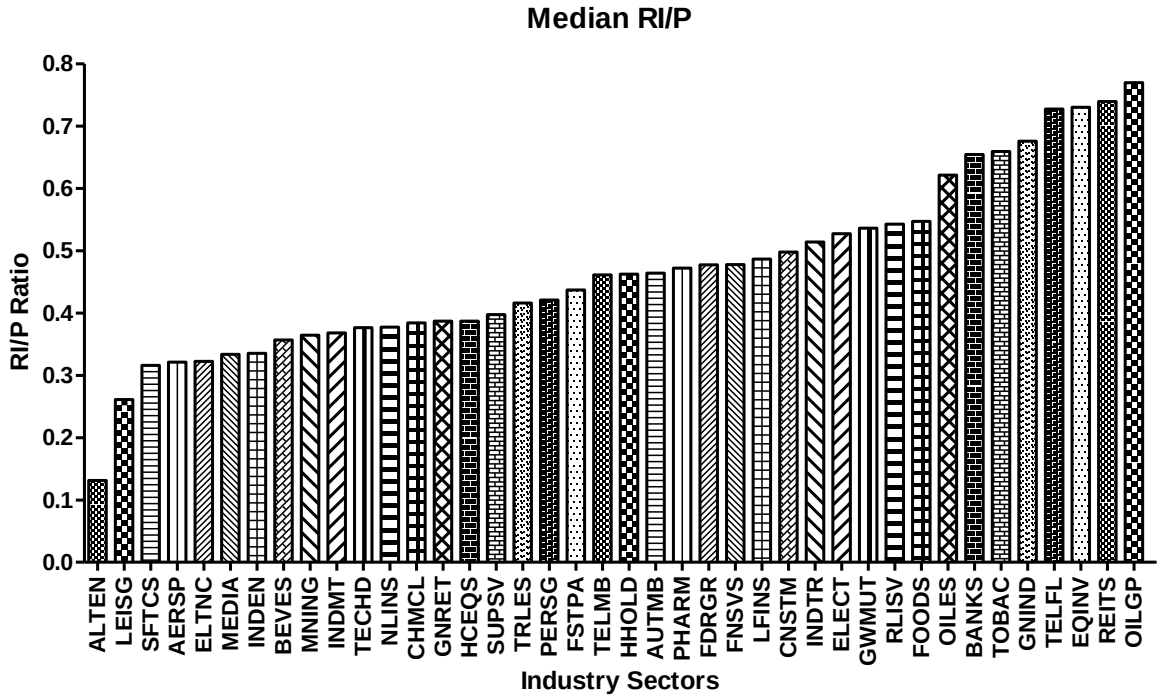


High and medium income countries (2012 GDP per capita in USD):

Six high income countries: Australia (USD67,436); Singapore (USD54,007); Japan (USD46,548); Hong Kong (USD36,708); South Korea (USD24,454); Taiwan (USD20,386)

Seven middle income countries: Malaysia (USD10,432); China (USD6,093); Thailand (USD5,480); Indonesia (USD3,551); Philippines (USD2,587); India (USD1,503); Pakistan (USD1,255)

Figure 4: Scaled residual income (RI/P) by Industry Classification Benchmark (ICB) level 4 sector categorisation



ALTEN	Alternative Energy	HHOLD	Household Goods & Home Construction
LEISG	Leisure Goods	AUTMB	Automobiles & Parts
SFTCS	Software & Computer Services	PHARM	Pharmaceuticals & Biotechnology
AERSP	Aerospace & Defense	FDRGR	Food & Drug Retailers
ELTNC	Electronic & Electrical Equipment	FNSVS	Financial Services
MEDIA	Media	LFINS	Life Insurance
INDEN	Industrial Engineering	CNSTM	Construction & Materials
BEVES	Beverages	INDTR	Industrial Transportation
MNING	Mining	ELECT	Electricity
INDMT	Industrial Metals & Mining	GWMUT	Gas, Water & Multiutilities
TECHD	Technology Hardware & Equipment	RLISV	Real Estate Investment & Services
NLINS	Nonlife Insurance	FOODS	Food Producers
CHMCL	Chemicals	OILES	Oil Equipment & Services
GNRET	General Retailers	BANKS	Banks
HCEQS	Health Care Equipment & Services	TOBAC	Tobacco
SUPSV	Support Services	GNIND	General Industrials
TRLES	Travel & Leisure	TELFL	Fixed Line Telecommunications
PERSG	Personal Goods	EQINV	Equity Investment Instruments
FSTPA	Forestry & Paper	REITS	Real Estate Investment Trusts
TELMB	Mobile Telecommunications	OILGP	Oil & Gas Producers

Figure 5: Bottom 10 least value creating sectors as measured by RI/P

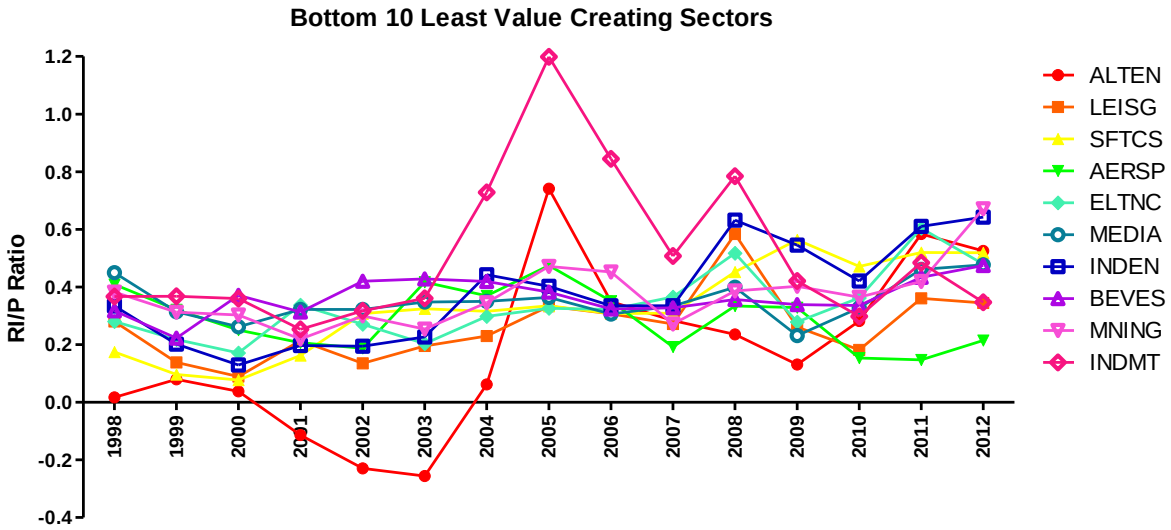


Figure 6: Top 10 most value creating sectors as measured by RI/P

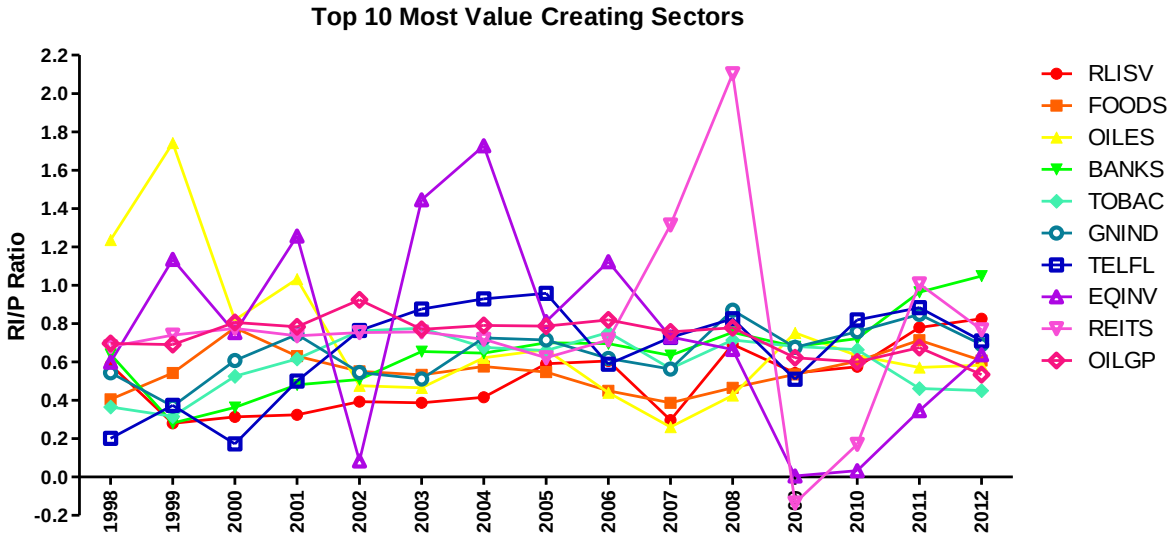
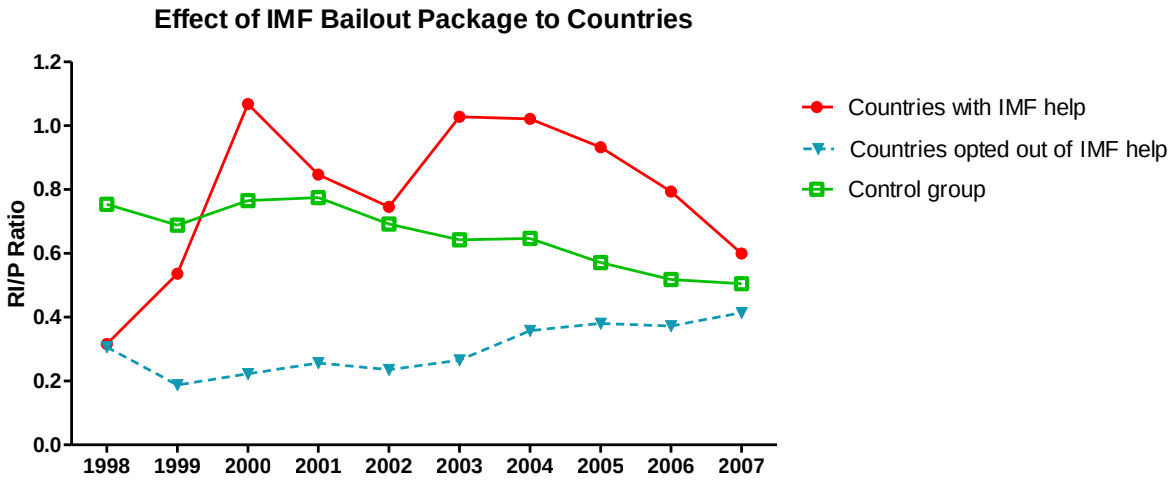


Figure 7: Scaled value creation (RI/P) in countries with IMF bailout, countries opted out of IMF help and control group



Countries with IMF bailout: Thailand, South Korea and Indonesia

Countries opted out of IMF help: Malaysia, Singapore, Philippines & Japan

Control group: Australia, India & Pakistan

Figure 8: Scaled value creation (RI/P) in Indonesia, South Korea, Thailand (received IMF bailout) vs. Singapore, Malaysia, Japan, Philippines (opted out of IMF help)

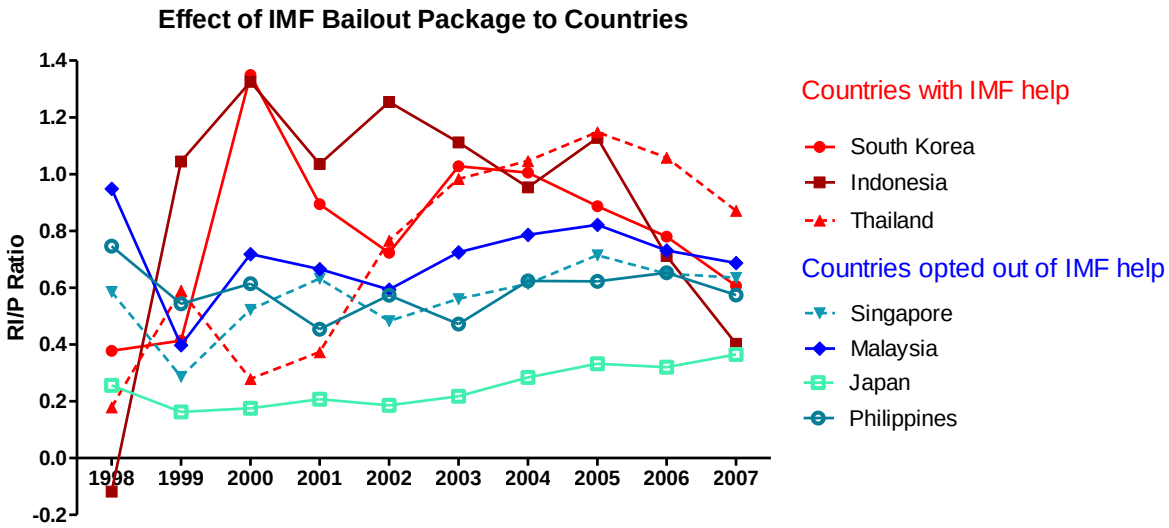


Figure 9: Scaled value creation (RI/P) for Banks in countries with IMF bailout, countries opted out IMF help and control group

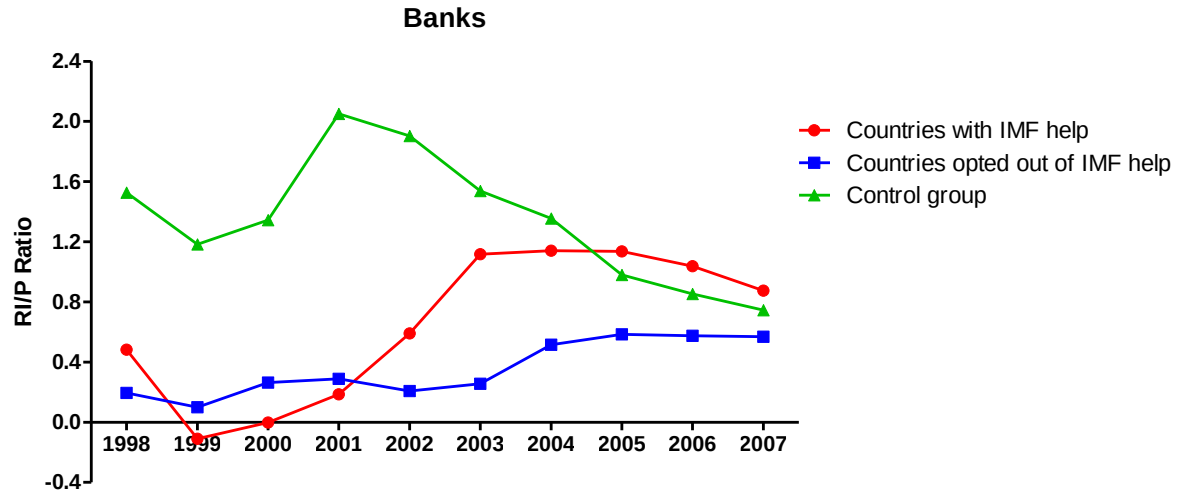
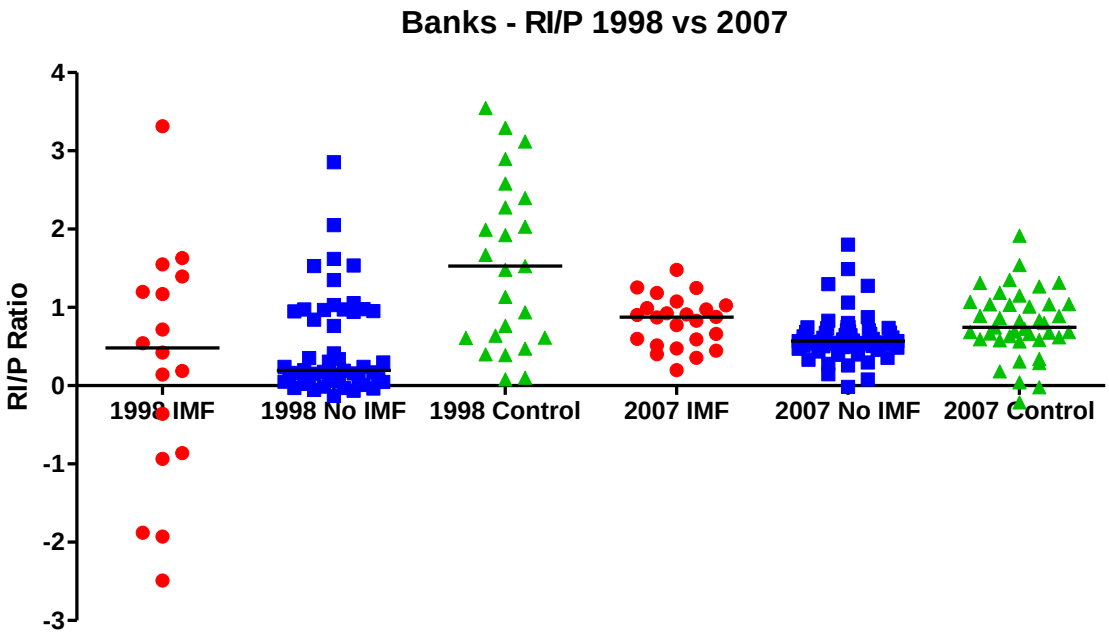


Figure 10: Scaled value creation (RI/P) for Banks in 1998 and 2007 in countries with IMF bailout, countries opted out IMF help and control group



Note: 1 outlier each was removed from 1998 IMF and 1998 Control group

Figure 11: Scaled value creation (RI/P) for firms in Construction and Materials in countries with IMF bailout, countries opted out IMF help and control group

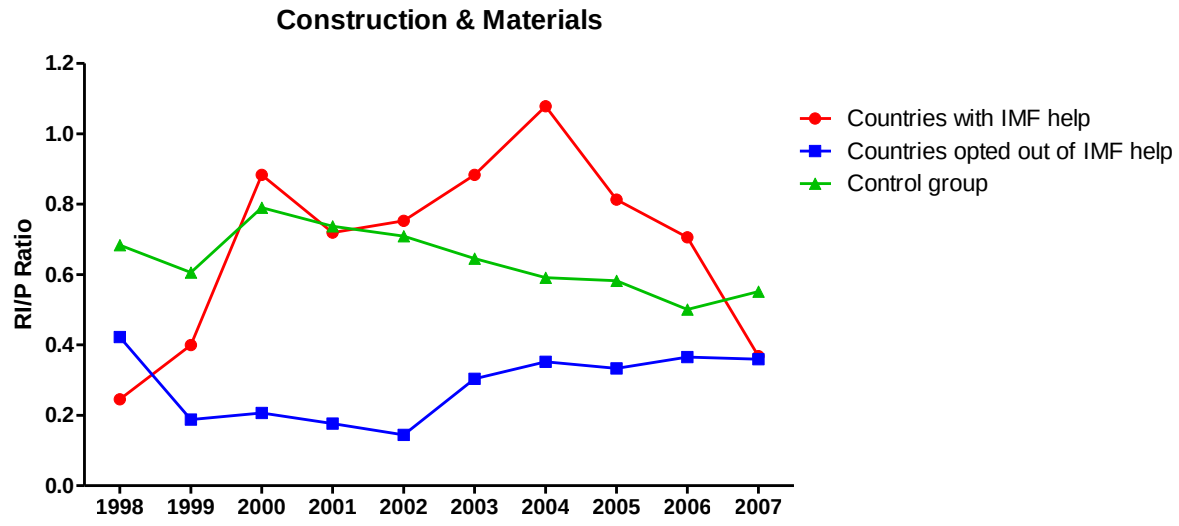


Figure 12: Scaled value creation (RI/P) for firms in Construction and Materials in 1998 and 2007 in countries with IMF bailout, countries opted out IMF help and control group

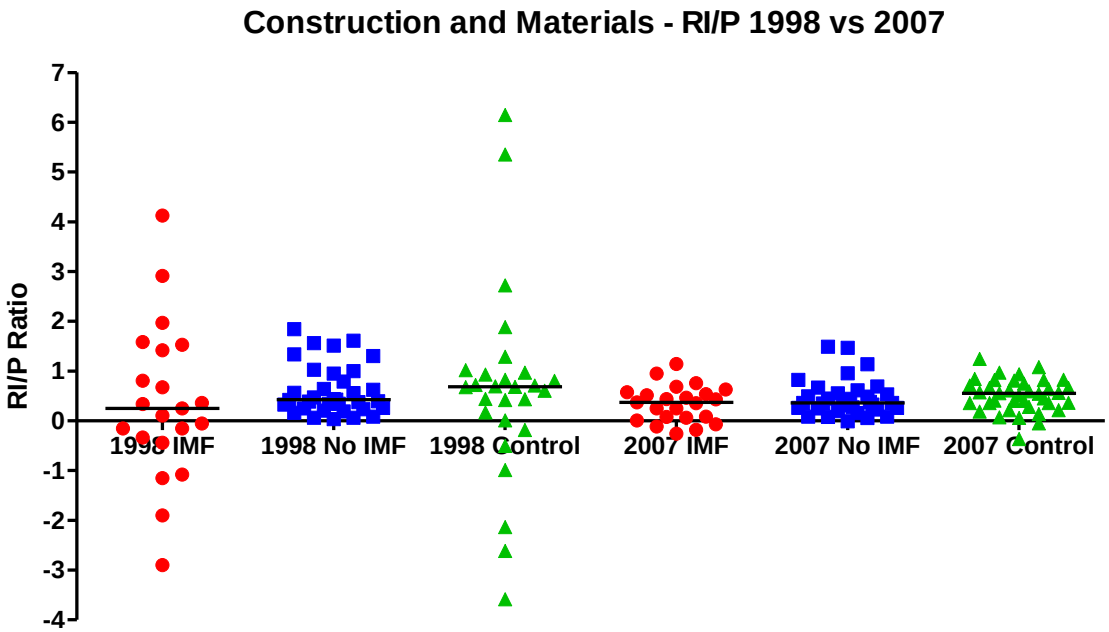


Figure 13: Scaled value creation (RI/P) for firms in the top, middle and bottom quartile of debt ratio (total debt/total assets)

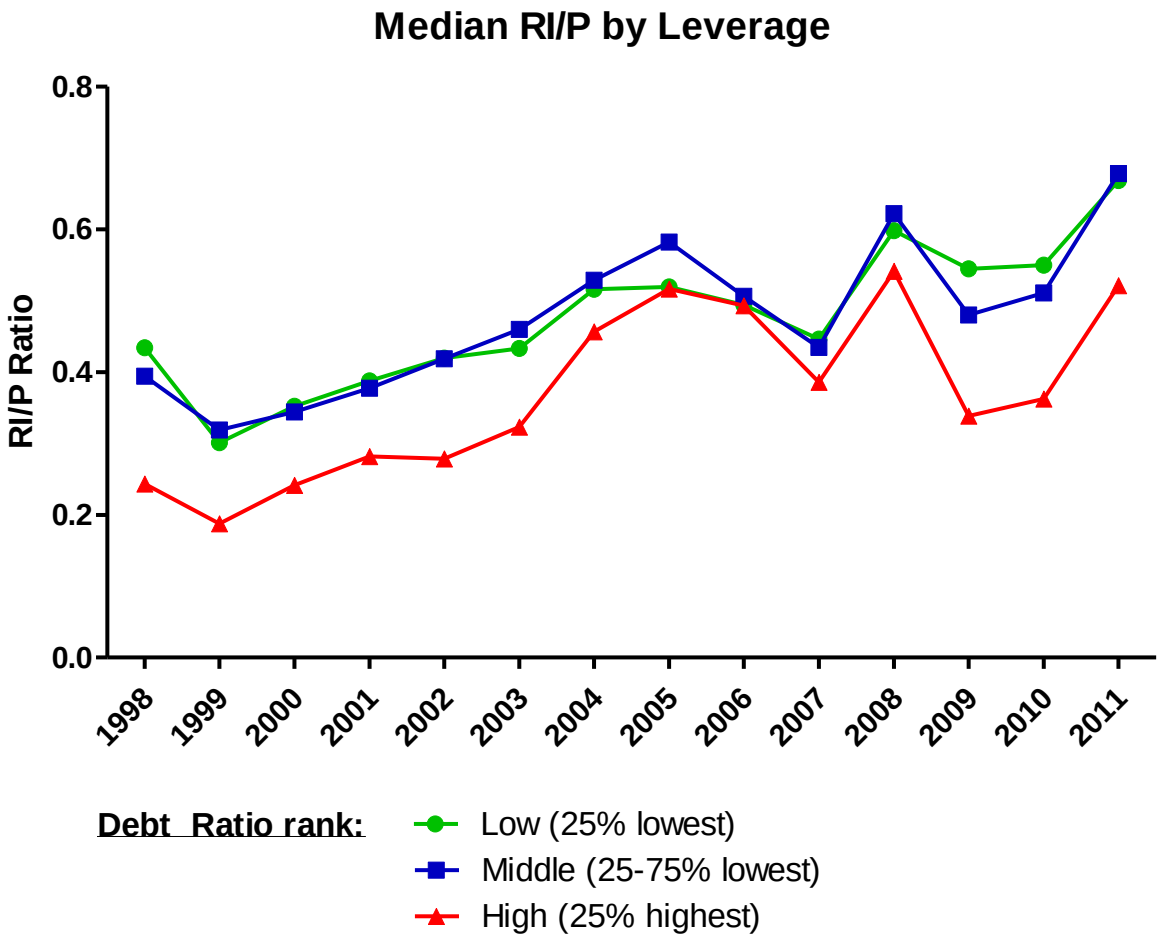


Figure 14: Scaled value creation (RI/P) for Banks in the top and bottom quartile of high leverage in countries with IMF bailout, countries opted out IMF help and control group

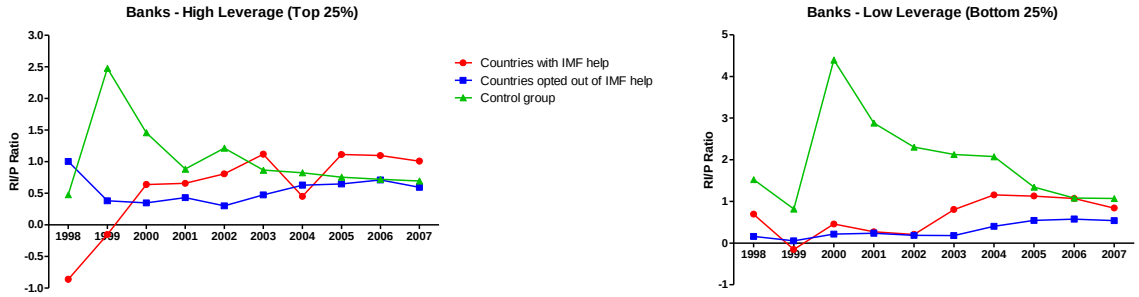


Figure 15: Scaled value creation (RI/P) for Construction and Material firms in the top and bottom quartile of high leverage in countries with IMF bailout, countries opted out IMF help and control group