

Impact of Chinese Investment on Sub-Saharan Africa's Firm

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This paper analyzes the effect on firm performance when a company's ownership structure changes from wholly African-owned to partially Chinese-owned by evaluating the differential impact of Chinese firms compared to other nationality changes in ownership structure. China's economic growth over the last two decades has come with high investment outflows throughout Sub-Saharan Africa. Therefore, determining how firms should view Chinese investors compared to other nationalities will help policymakers and firm leadership better decide on potential investors for their companies. Using a firm-level staggered entry data set with Chinese and foreign investment above a certain threshold, as the treatment variables with thresholds between 3% to 15%, a two-way fixed effect regression with firm-level and country-year fixed effects determined that Chinese investment increases net income of Sub-Saharan African firms by 109%.

Introduction

Do investors of Chinese origin in Africa have a differential impact on a firm's performance compared to investors of other nationalities? Investigating the independent variable, change in ownership, and the dependent variables, revenue, net income, stock price, market capitalization, and PE ratio, we will explore two qualities of Chinese investment. One has Chinese investment successfully achieved some positive financial impact on African firms. Two, does this investment from investors from China have a unique impact that is unlike that of investors from other countries. China's government plays a significant role in how they direct investment, a significant difference between China and other countries in the West and Asia. Additionally, China's influence throughout the developed world is only growing, and they are seeking economic partnerships with African countries. Understanding how ownership structures affect firm performance will help firms and policymakers improve their decision-making regarding regulations and FDI.

To find optimal comparison countries for China, data mining for correlation between the treatment effect, different thresholds, and the dependent variables, revenue, net income, stock price, market capitalization, and PE ratio. Once the comparison countries were determined, a two-way fixed effects regression was run to identify the coefficients of change in ownership on the dependent variables. I expect the effect of these coefficients to be positive and statistically different from other foreign countries because, as Chinese investment enters a company, Chinese investors are more hands-on and involved in management, causing more knowledge spillover. With their investment at least partially directed by the government, African firms with Chinese investment will have more opportunities to work with other Chinese-invested firms and more

easily access Chinese FDI flowing into the country. The complete causal chain can be found in Figure 12.

Papers related to my methodology come in two different types. Some papers relate more qualitatively through their investigation of investment in Africa, and others apply econometric methodologies to analyze questions related to the ownership structure. Dollar et al. discovered that Chinese stock investment as of 2015 had been relatively low, and the difference between Western Investment and Chinese Investment is relatively small (Dollar, 2015)ⁱ. In comparison, this paper will focus on the difference between foreign investors' and Chinese investors' ability to drive the financial performance of these African firms. Bautigam et al analyzes manufacturing firms in Tanzania, Nigeria, Ghana, and Ethiopia and whether China will enter. They note that these investors coming into Africa are similar to Indian and Hong Kong investors in China (Bautigam, 2018).ⁱⁱ A plethora of literature exists on ownership structure and firm performance. Most papers solve the endogeneity problem using 2SLS with Tobin's Q, and they use the Hausman test to check for exogeneity(Sánchez, 2007).ⁱⁱⁱ The most interesting paper in relation to mine is in Lindemanis et al. In their analysis, they look specifically at private firms in the EU. Their definition of an ownership change is one where a foreign owner buys a controlling stake in the company. Therefore, their data contains slightly different data than my analysis, but the causal chain they identify in their paper is similar. Their threshold is set to 51% as opposed to mine, which scales from 3% to 15%. Additionally, I'm looking at public firms, while their analysis was on private firms. Surprisingly, they find a negative effect of ownership change on the change in ROA. Their analysis also uses propensity score matching to solve the endogeneity problem, while we attempt to analyze through balance tests, robustness checks, and event study graphs (Lindemanis, 2022).^{iv}

Data

The data used in this paper was obtained from Refinitiv DataStream using their Eikon products.

The time series data was extracted through requests to their database using Eikon's python package to the Eikon API. The data are the financials of all Sub-Saharan Africa Firms listed on their country's stock exchange. DataStream collects firms' financials through their annual reports and investor reports. Not all SSA countries have stock exchanges, so the exchanges included in the dataset are Rwanda, Uganda, Namibia, Zambia, Tanzania, Malawi, Botswana, Ghana, Bourse Régionale des Valeurs Mobilières (BRVM), Zimbabwe, Kenya, Mauritius, Nigeria, and South Africa. BRVM's Headquarters are in Côte d'Ivoire with member countries including Guinea Bissau, Mali, Niger, Senegal, Togo, and Côte d'Ivoire. From DataStream, I extract firm-level yearly time series data on revenue in USD, market capitalization, PE ratio, Net Income After Taxes, Stock Price, Earnings per Share, NAICS sector, NAICS subsector, country of headquarters, and the total number of outstanding shares. The descriptive statistics for the data set, specifically Revenue and Net Income After Taxes, can be found in Tables 20 and 21. Additionally, I call yearly times series investor-level data with information on the origin country of the investor, how many shares they own, and the company invested in. With the two datasets merged, the main manipulation that occurs is summing all shares held by investors from the same country together to create a numerical variable of the percentage owned by investors from specific countries and the continent of Africa investors. This manipulation allows the data to be collapsed to have firm-level panel data. Also, the natural log of revenue and net income of the firms is taken to linearize these values. After merging all the data, 613 cross-sectional units are in the dataset. The dataset includes 25 total years from 1998 to 2022, but some companies

entered and exited during those 25 years. Ownership percentage is measured through the number of shares an investor owns divided by the total number of outstanding shares.

Empirical Methodology

The data mining process in this paper has two steps. First, to find optimal comparison countries for China, the correlation tables between change in ownership and the dependent variables were created for each of the five thresholds: 3%, 5%, 10%, 12%, and 15%. These correlation tables can be found in Tables 1 to Table 5. The data mining process utilized a simple OLS regression of the DVs on the change in ownership dummy variable at different thresholds. The dataset had investors from over 50 countries, and the analysis could only be conducted on a select few. These five tables show some cross-sectional correlation between the country of investment and these financial indicators. Second, the process counted the number of countries that switched from control to treatment over the course of the natural experiment. Singapore and the United States were the two countries that this data mining process found to be the best comparisons. These countries were chosen because the number of switches was relatively high, and some correlation was apparent. Some countries like Belgium, Hong Kong, and India could not be used because there were too few firm switchers within the sample, as seen in Table 6.

Once these comparisons were determined, the identification method of choice was a natural experiment using observation data that will utilize the two-way fixed effect model, taking advantage of the data's staggered entry, which is visualized in Figure 12 for Chinese investment. This model allows us to take advantage of the within-variation of the dataset. Fixed effects on year, country, and the firm could be employed. This dataset has a lot of country and year fixed effects despite having few switchers, so this variation in time periods, African countries, and firms allows us to better identify both α_i and δ_{it} in the estimating equation below.

After the data mining process to determine possible candidates and thresholds for comparison, thresholds at 5% and 12% and two countries were selected. At the 5% threshold, there are 6 Chinese switchers, 157 US switchers, and 37 Singaporean switchers. But, at a threshold of 12%, there are 5 Chinese switchers, 76 US switchers, and 8 Singaporean switchers. Moving from 5% to 12%, only one Chinese data point is lost, while 50% of US-invested firms and almost 80% of Singaporean-invested firms drop from the dataset. Thus, at 5% threshold, the analysis is mostly between firms with activist Chinese investors and a broad array of US and Singaporean investors. These US and Singaporean investors at this level are composed of index funds, more passive investors, and strategic entities that work directly with Sub-Saharan African Firms, while the Chinese investors are composed of almost exclusively strategic entities or activist investors. These strategic entities and activist investors seek to fundamentally change the operations of the firm that they are invested in, while passive investors want to diversify their risk. In contrast, the analysis at the threshold of 12% is closer to an apples-to-apples comparison, where I will be comparing firms with activist Chinese investors to firms with American or Singaporean activist investors. The comparison between these two analyses is a robustness check on the results and will be described in that section. The two-way fixed effects regression was used to identify the effect of Chinese, American, and Singaporean ownership.

$$\ln Rev_{ijt} = C\kappa_{ijt} + Fw_{ijt} + \alpha_i + \delta_{jt} + \epsilon_{ijt}$$

$\ln Net Income_{ijt}$, $Stock Price_{ijt}$, $PE Ratio_{ijt}$, $Market Cap_{ijt}$, EPS_{ijt} can replace $\ln Rev_{ijt}$. Rev_{itj} is the revenue of a company in a fiscal year in USD as reported by that firm in a Sub-Saharan country. $Net Income_{itj}$ is the net income after tax of a company in a fiscal year in USD as reported by that firm in a Sub-Saharan country. $Stock Price_{itj}$ is the stock price in USD of a company in a fiscal year as reported by that firm in a Sub-Saharan country. $PE Ratio_{itj}$ is the

Price-Earnings ratio of a company in a fiscal year as reported by that firm in a Sub-Saharan country. $Market\ Cap_{itj}$ is the market capitalization in USD of a company in a fiscal year as reported by that firm in a given country. EPS_{itj} is the earnings per share of a company in a fiscal year as reported by that firm in a specific country. κ_{itj} is the dummy variable for Chinese investment above a certain threshold in a fiscal year as reported by that firm in a Sub-Saharan country. w_{itj} is the dummy variable for one foreign country investment above a certain threshold in a specific fiscal year as reported by that firm. δ_{tj} is the fiscal year as reported by that firm and country fixed effects. α_i is the firm fixed effects. ϵ_{ijt} is the error term for each firm in a fiscal year as reported by that firm in a given country. C is the effect size of Chinese ownership on revenue/net income/EPS/ PE Ratio/Market Capitalization/stock price. F is the effect size of foreign ownership on revenue/net income/EPS/ PE Ratio/Market Capitalization/stock price of foreign ownership will be Singapore or the United States, depending on the regression. This two-way fixed effects regression uses country-year and firm-fixed effects to control for the cross-sectional variation by only looking at variation within each firm.

After conducting the two-way-fixed effects with and without clustering standard errors, F-tests were measured between both Chinese firms and Singaporean firms as well as Chinese firms and US firms. The F-test will show if the effect size of change to Chinese ownership and effect size of change to American or Singaporean ownership is statistically significant.

Because this analysis is a observational study, selection bias exists in the companies that receive the treatment. Investors pick companies they believe will succeed, so these firms are selected for a reason, not randomly. These reasons could include past performance, a good product, or some innate potential. Most importantly, this selection bias could be driven by the

nationality of the investor. Investors from China may look for certain qualities that American investors are not looking for. Some of these American firms may be seeking to diversify risk by getting exposure to emerging markets, while these Chinese firms may be more activist in their investment. The data mining process gave us some insight into assuaging this issue by finding comparable countries. An investor from the United States who owns 12% of a company is substantively different in their involvement, effect, and voting power than someone who owns much less of the company or a passive index fund who happens to own the stock. By setting this threshold very high, we maintained a similar number of Chinese firms while filtering out US companies and Singaporean companies that are dissimilar.

With this panel analysis, one of the core assumptions is the independence of the timing of entry into the treatment. This assumption applied to investment decisions can be tenuous. Investors and firms are profit-maximizing, and, to maximize profits, these investors seek the best return on investment. Therefore, an obvious investment choice would be a high-quality firm that is currently underperforming or underpriced. Similar to a wage earner that enters an employment program because they lost their job, does the treatment in this analysis drive the increase in the financial performance of firms, or does mean reversion offer a better explanation? If investors select firms because they are having unusually bad outcomes just prior to treatment, when a baseline is constructed, these firms will tend to recover, resulting in the appearance of a positively biased treatment effect. However, this logic of some innate quality or downtrend at the time of investment mirrors the logic of Ashenfelter's Dip, so we would expect to see a dip in these dynamic effects prior to the treatment effect in the event study graphs. The implication of seeing statistically insignificant would be a defense of the use of the fixed effects model and the assertion that when investors invest in a firm is uncorrelated.

Before beginning the discussion on the results section, discussion on the event study graphs analyzing this endogeneity of entry into the treatment. This section includes six total event study graphs looking at 5% and 12% thresholds for change in ownership from African owned to minority stakes of investors from Singapore, the US, and China. Looking first at the 5% threshold graphs, Figures 1, 2, and 3 fail to clarify the concerns on the independence of timing of entry into treatment. Figure 1 linearly slopes upwards from lag three through the rest of the graph, and Figure 3 appears to mean revert just before entry into treatment with poor performance in the following years. In contrast, when the threshold for ownership is set at 12%, these assumptions are much more clearly upheld. Figures 4, 5, and 6 clearly show that a shock to the company does not occur immediately before an investor decides to invest in the firm.

Additionally, Tables 13 to 17 substantiate this claim. These tables display regressions that check the endogeneity of entry into treatment by regressing the year of entry on the selected indicators of financial performance. If endogeneity existed, we would expect the year that a firm is treated or invested in to directly correlate with EPS, PE Ratio, Net Income, Revenue, Stock Price, or Market Cap. These factors are often thought of as being deterministic of investment. If the year of investment correlated with a lower stock price, this relationship would intuitively make sense because an investor is taking advantage of a lowered stock price or overall financial performance to maximize their future returns. However, within this data, no proof of this phenomenon exists. Each correlation on the balance for US investors, Singaporean investors, and Chinese investors year of buying a firm does not correlate with any of the indicators of financial performance. Although endogeneity is highly suspected in this analysis of financial performance, these two endogeneity checks show that two-way fixed effects is an appropriate

tool to use in this context. Essentially, these tables for all three countries at both thresholds show that the year of selection into the treatment is as good as random.

Results

The hypothesis of this paper was that Chinese investment into Africa has unique characteristics that will positively affect revenue, net income the other characteristics of firm performance. Moreover, Chinese investment is substantively different from investment from other countries because the Chinese government at least partially directs Chinese investment. This government involvement likely allows firms that Chinese investors invest in to gain contracts or favorable terms with Chinese firms entering Africa or trade with the Chinese market. American and Singaporean investors do not have the same level of government involvement in their decisions in Africa. Therefore, we would expect some level of differential impact between investors from these two countries. The results, in part, affirm this hypothesis posited at the beginning of this paper. The regressions can be found in Tables 6 to 9, and Tables 10 and 11 contain the F-Statistics. Most of the results pertaining to PE Ratio, Earnings per Share, and Stock Price were insignificant, but the results on Net Income after taxes were quite striking. The coefficients on these tables show an interesting result where only Chinese investors have a significant positive effect on a firm's revenue and net income. The coefficient on net income at the 5% threshold was measured as .697 at a .01 level of significance, as shown in Table 7. Because revenue and net income are in the form of log-level, they resemble an elasticity formula and can be calculated using the following equation:

$$\% \text{ change in Net Income} = (e^{\text{coefficient}} - 1) * 100$$

Using this equation to calculate the percent change in net profit from the measured coefficient, the change in ownership of Chinese investors investing in African firms results in a net profit

after tax increase of 100.77%. In comparison, the coefficients on American and Singaporean investment are statistically indistinguishable from zero for both revenue and net income after applying robust standard errors. However, the effect of Chinese investment on a firm's net income is significant when either regular stand errors or robust stand errors are used for both thresholds. At the threshold of 12%, as shown in Table 9, Chinese firms' impact on net income was measured as .738, which is slightly larger than the previous threshold measure of .697. Thus, when Chinese investors invest in a firm by at least 12%, they increase the net income of that firm after tax by 109% when compared to wholly owned Sub-Saharan African companies.

The F-statistics in Tables 10 and 11 show expected results that follow what was found in the regression tables. The F-statistics for PE Ratio, Market Capitalization, Stock Price, and EPS are all statistically insignificant, while the F-statistics for net income were significant to at least a .01 level at both thresholds when comparing Chinese investment vs Singaporean investment and Chinese Investment vs American investment. Therefore, the results do indicate a differential impact on African firms from Chinese investment and other nationalities' investment regarding net income on African firms at the 5% and 12% thresholds. This result supports the hypothesis that when Chinese investors invest in a company. They have unique characteristics that are dissimilar to investors from other countries.

Robustness Checks

The robust standard errors on the coefficient of Chinese investment need to be analyzed in tandem with the regular standard errors because there are only 5 switchers in this data set. The small sample size for Chinese investment can cause issues with how robust standard errors are calculated when the intra-cluster correlation is negative. The result that causes some skepticism is the regular standard error of EPS in Table 8 is measured to be 1.273, while, when

robust standard or clustered error are applied, the standard error drops to .0373, causing the coefficient to be significant at a p-value of .1. Therefore, when analyzing these tables, I would recommend looking at both clustered and unclustered because the standard errors for coefficients on Singapore and American investment will get bigger, while the coefficient on Chinese investment will get smaller. The coefficients on Net Income are significant at a p-value of .05 in the 2-way fixed effects with regular standard errors (Tables 6 and 8), while in the regressions with robust standard errors, the coefficients on Net Income for Chinese investment are significant at a p-value of .01. Because these coefficients are significant in both tables, we can feel more confident in these point estimates. A firm usually has very little movement of its financial indicators from year to year. Revenue, Net income, Market Capitalization, and others are often correlated with the previous period's measurement. Thus, including cluster standard errors will penalize my statistical significance on my coefficients if there is this autocorrelation within units.

The second robustness check is on the parallel trends assumption, specifically on Net Income. Looking at the event study graphs in figures 1 through 10, some of the parallel trends assumptions hold better than others, but most importantly, we see that in Figure 7 to Figure 10. The parallel trends assumption does hold for the analysis of Chinese investment's effect on net income. One nuance about entry into the treatment is that by the time the company reports its financials. The investors have likely already been invested in the company between a day and a year prior to the report. Thus, the treatment effect is measured at zero, but entry into the treatment happens somewhere between -1 and 0 on this event study graph as opposed to 0 and 1. In figures 7 and 9, we see that year 0 has a bit of a dip, but this dip could not have driven entry into treatment because investors already owned part of the company by the time these financials

were reported. Despite this bit of a dip, the parallel assumption does hold across these graphs. The lags for Chinese investment on net income are all statistically insignificant. To be thorough, we can test this with the following estimation equation.

$$\ln Net\ Income_{it} = C_2(\lambda_t * \kappa_{it}) + C_1\kappa_{it} + \lambda_t + \epsilon_{it}$$

λ_t is the fiscal year dummy variables or the time-fixed effects. The rest are the same as the previous estimation equation. In this equation, we are not going to worry about the country year fixed effects, so the j 's in the estimation equation are left out. Essentially, this equation determines if the treatment was growing at the same rate as the control, so a statistically insignificant C_2 would affirm the parallel assumption. As shown in Tables 18 and 19, the coefficients on all these treatment year interaction terms are insignificant, affirming the parallel trends assumption.

With the use thresholds at 5% and 12%, this methodology had a built-in robustness check, which allowed for the comparison of results across different subsets of firms. With the low number of switchers for Chinese investors, little flexibility exists in using subsets regarding sector analysis because publishing companies, finance companies, and construction companies are represented. If only one sector was represented, then maybe this type of analysis would have been possible. However, the use of different thresholds allowed for some ability to control who these investors were. Controlling for investors at the firm level is difficult, but by using thresholds, we can categorize the investment. At 5% threshold, you will be able to see activist investors, hedge funds, strategic enterprises, and passive index fund-type investments. American investors seek exposure to emerging markets to diversify their risk. This type of investor is not interested in managing day-to-day, but some of these passive investor-type companies can still own a fairly large percentage of a company. In comparison, Chinese investment leans more

strategic and activist than a passive Vanguard style of investment. 10% of a company is usually the benchmark for formal reporting. Thus, this threshold shows a substantial commitment to the success of the firm allowing for a different comparison. This difference can be seen in the F-statistics on Revenue in Table 10 and 11. The nationality of investors had differential impacts on revenue when the threshold was at 5% but moving this threshold to 12% caused the F-statistics on revenue to become insignificant. Therefore, showing as the threshold increased, the differences between the types of investors likely decreased. This robustness check solidifies the F-statistics on net income at the 12% threshold in Table 11 because, despite the types of investors between these three countries becoming more similar, the difference in net income increased. The issue of endogeneity of why one type of buyer chooses to buy a specific firm is at least in part solved by these thresholds. Having this high threshold for US and Singaporean investors to match the higher percentage of ownership by Chinese investors means the buyers of firms are similar outside of their different nationalities, so these investors should, in theory, pursue similar investment opportunities.

Short Comings

The biggest short coming of this analysis is the number of true observations that the study uses to calculate the treatment effects. Only five companies are used to analyze Chinese investment into Sub-Saharan Africa at the 12% threshold. This number of firms makes it extremely difficult to make any claim that this study is externally valid. This problem also extends to the Singaporean analysis. At the 5% threshold, 37 companies were included in the analysis, but at the 12% threshold, this number dropped to 8. Although, within-variation does exist among these firms to allow for some statistically significant results. This analysis is likely only internally valid because this observational study can only analyze firms on public African Stock exchanges. This

set of firms is not representative of all firms throughout Africa. Firms listed on a stock exchange are usually larger and more successful; some are even former state-owned enterprises, so they are not representative of all firms. This issue will cause the analysis not to be externally valid, meaning the results of changes in investment on firm performance cannot be applied to all firms in Sub-Saharan Africa. Therefore, one of the major claims boils down to asserting that these 5 Chinese firms have a differential impact from those 8 Singaporean firms, which is not quite as interesting as making a claim overall on Chinese investors' impact on firms throughout Sub-Saharan Africa. The second shortfall of this analysis is its discussion of reverse causality. Most of the literature on investment and firm performance uses the 2SLS to solve this endogeneity issue. My discussion in the empirical methodology did not sufficiently grapple with how this analysis approach is superior to the 2SLS, nor did it truly handle the reverse causality issue

Conclusion

From looking at the event study graphs, causal justifications from the usage of the ownership thresholds, and the two-way fixed effects regression, the main takeaway is that Chinese investment at the 12% threshold increases the net income of African firms by 109%, and this coefficient on net income, which can be found in Table 9, is statistically different from the coefficients on net income for both American investors and Singaporean investors (Table 11). Consequently, Chinese investment has a positive impact on a firm's net income in Sub-Saharan Africa compared to its counterparts. Recently, African countries have tried to garner more investment. One of their methods has been to open stock exchanges and convert SEOs to publicly listed companies, which has decreased some barriers to foreign investment reaching Sub-Saharan African firms. Therefore, understanding how Chinese investors or Western investors impact the financial performance of firms listed on the stock exchange allows

companies to make better decisions when interacting with these potential investors. Furthermore, Governments in Africa may also want to understand how foreign investors affect the performance of firms within their country because, as their stock markets grow, understanding how foreign investors impact their domestic firms will assist in evaluating the benefits of their stock exchange as well as developing regulations. The governments of African countries may want to incentivize certain investors. By knowing the investors that have the largest impact on firm performance, policymakers can directly target these types of investors with subsidies, FDI incentives, or tax incentives.

ⁱ Dollar, D., Tang, H., & Chen, W. (2015). Why is China investing in Africa? Evidence from the firm level. *Brookings Institution*.

ⁱⁱ Brautigam, D., Xiaoyang, T., & Xia, Y. (2018). What kinds of Chinese ‘geese’ are flying to Africa? Evidence from Chinese manufacturing firms. *Journal of African Economies*, 27(suppl_1), i29-i51.

ⁱⁱⁱ Sánchez-Ballesta, J. P., & García-Meca, E. (2007). A meta-analytic vision of the effect of ownership structure on firm performance. *Corporate Governance: An International Review*, 15(5), 879-892.

^{iv} Mārtiņš Lindemanis, Artūrs Loze, Anete Pajuste, The effect of domestic to foreign ownership change on firm performance in Europe, *International Review of Financial Analysis*, Volume 81, 2022, 101341, ISSN 1057-5219, <https://doi.org/10.1016/j.irfa.2019.04.004>.

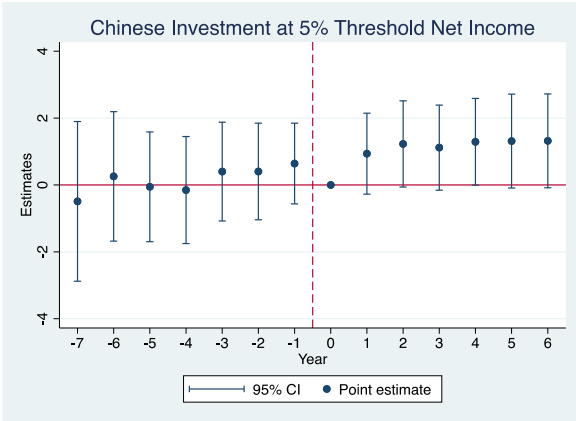


Figure 7

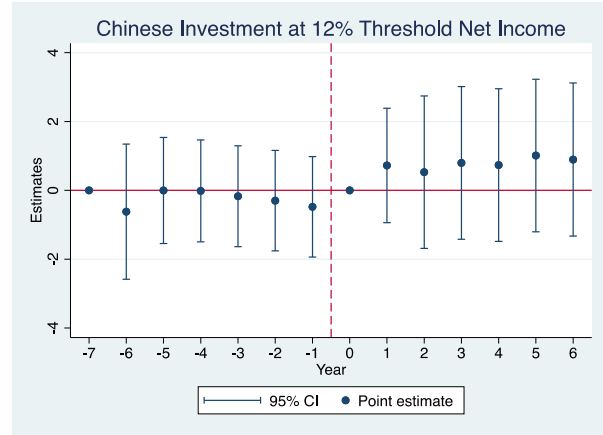


Figure 8

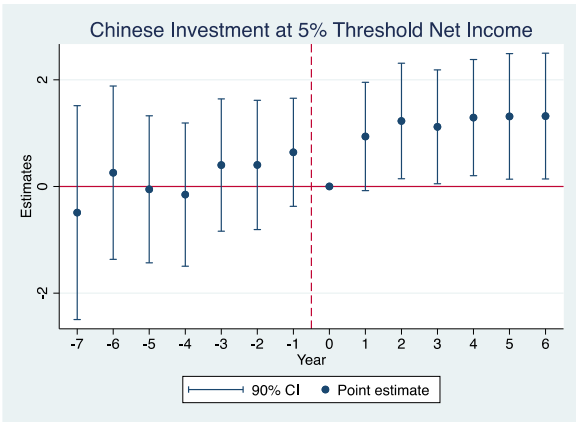


Figure 9

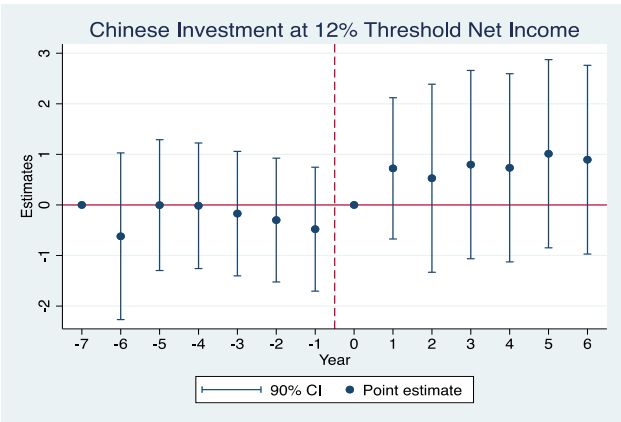


Figure 10

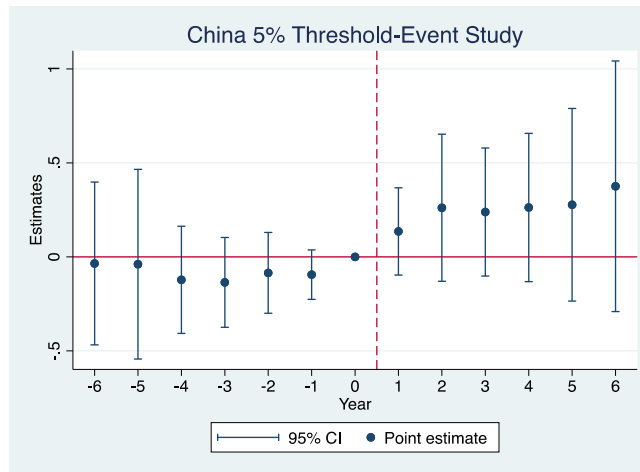


Figure 1: China Investor Origin Country at a 5% Threshold Event Study Revenue

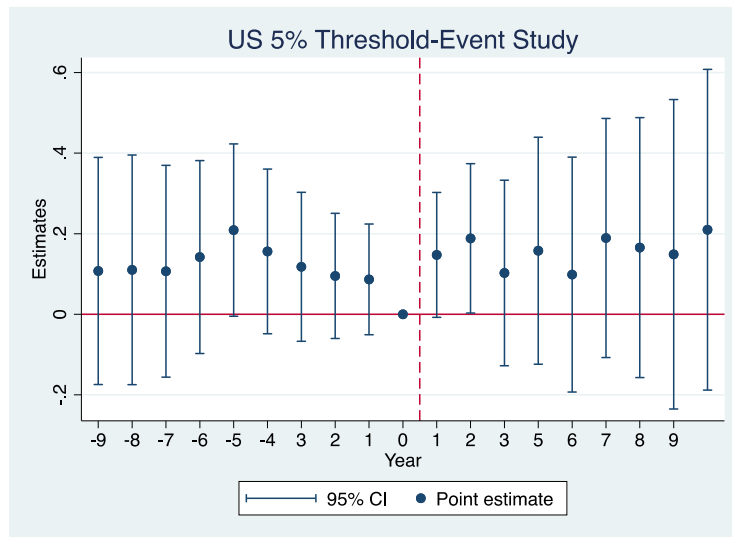


Figure 2: China Investor Origin Country at a 5% Threshold Event Study Revenue

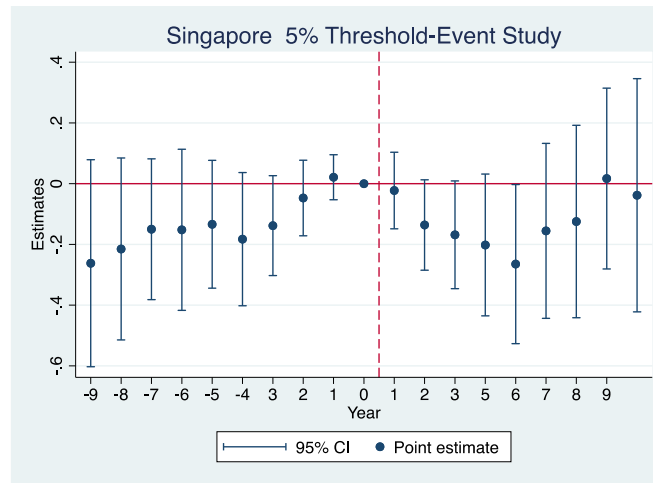


Figure 3: Singapore Investor Origin Country at a 5% Threshold Event Study Revenue

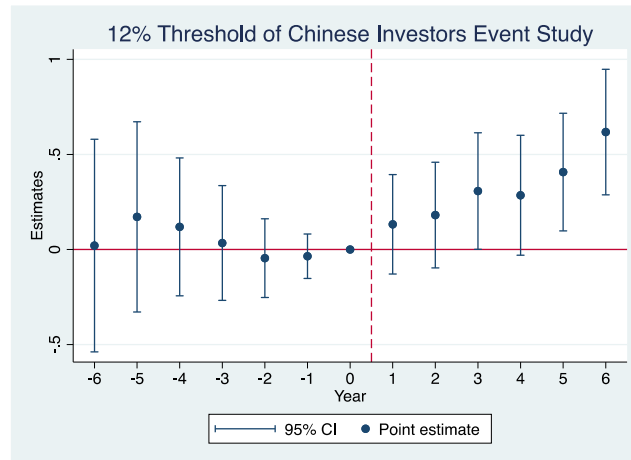


Figure 4: China Investor Origin Country at a 12% Threshold Event Study Revenue

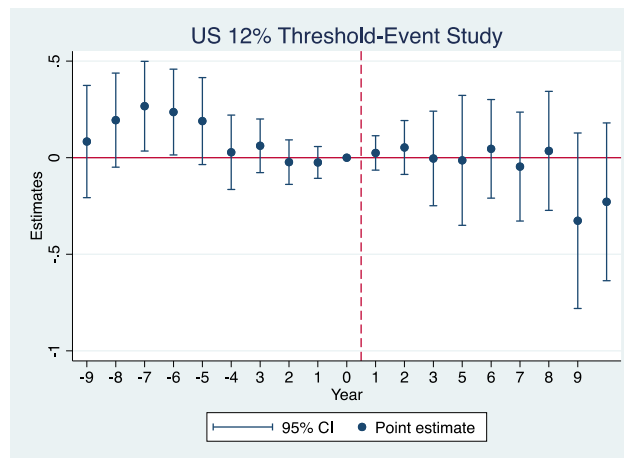


Figure 5: US Investor Origin Country at a 12% Threshold Event Study Revenue

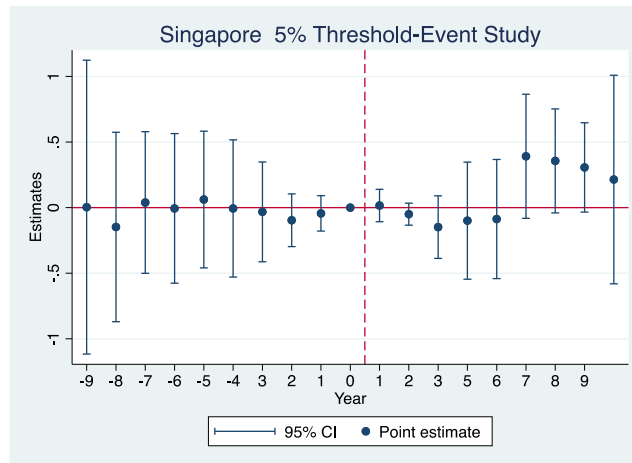


Figure 6: Singapore Investor Origin Country at a 12% Threshold Event Study Revenue

Table 1: Threshold 3%						
Investor Country	PE Ratio	Stock Price	Ln Revenue	Ln Net Income	Market Capitalization	Earnings per Share
United States	-20.55	-1.703e+08	1.691***	1.395***	3.038e+09***	-0.0853
France	-27.03	-1.546e+08	0.00829	-0.387	-5.566e+08	-27.03
Germany	-28.10	-1.546e+08	-0.555	-1.024***	-1.191e+09**	-1.486
Singapore	-12.48	-1.570e+08	1.988***	1.458***	2.134e+09***	-12.48
Belgium	-31.38	-1.538e+08	-0.525	0.175	-1.132e+09	-0.685
United Kingdom	-15.58	-1.649e+08	0.394***	0.176	2.899e+07	-0.269
Hong Kong	-26.73	-1.538e+08	-2.289	-1.560	-1.230e+09	-0.718
India	-31.81	-1.541e+08	-1.245***	-0.981**	-6.743e+08	-31.81

Table 2: Threshold 5%						
Investor Country	PE Ratio	Stock Price	Ln Revenue	Ln Net Income	Market Capitalization	Earnings per Share
United States	-20.55	- 1.703e+08	1.691***	1.395***	3.038e+09***	-0.0853
France	-26.16	- 1.545e+08	-0.0842	-0.381	-4.964e+08	-26.16
Germany	-27.42	- 1.545e+08	-0.535	-1.161***	-1.191e+09*	-1.690
Singapore	-14.51	- 1.559e+08	1.701***	1.062***	1.162e+09***	-0.193

Belgium	-31.38	- 1.538e+08	-0.525	0.175	-1.132e+09	-0.685
United Kingdom	-13.90	- 1.631e+08	0.465***	0.190	1.192e+08	-0.256
Hong Kong	-26.73	- 1.538e+08	-2.289	-1.560	-1.230e+09	-0.718
India	-32.28	- 1.539e+08	-1.590***	-1.258**	-1.225e+09	-0.701

Table 3: Threshold 10%						
Investor Country	PE Ratio	Stock Price	Ln Revenue	Ln Net Income	Market Capitalization	Earnings per Share
United States	-18.31	- 1.601e+08	1.300***	0.853***	2.084e+09***	0.0402
France	-26.24	- 1.545e+08	-0.174	-0.478	-6.764e+08	-26.24
Germany	-27.16	- 1.544e+08	-0.358	-1.158***	-1.184e+09*	-27.16
Singapore	-14.27	- 1.546e+08	0.980***	0.0924	-1.333e+08	-0.373
Belgium	-31.38	- 1.538e+08	-0.525	0.175	-1.132e+09	-0.685
United Kingdom	-10.43	- 1.611e+08	0.344**	0.0916	1.206e+08	-0.174
Hong Kong	-26.73	- 1.538e+08	-2.289	-1.560	-1.230e+09	-0.718
India	-32.28	- 1.539e+08	-1.590***	-1.258**	-1.225e+09	-0.701

Table 4: Threshold 12%						
Investor Country	PE Ratio	Stock Price	Ln Revenue	Ln Net Income	Market Capitalization	Earnings per Share
United States	-16.86	- 1.585e+08	1.076***	0.710***	1.322e+09***	0.0335
France	-26.24	- 1.545e+08	-0.174	-0.478	-6.764e+08	-26.24

Germany	-25.23	- 1.544e+08	0.292	-0.926**	-1.147e+09	-1.690
Singapore	-14.93	- 1.542e+08	0.594	-0.319	-9.819e+08	-0.457
Belgium	-31.38	- 1.538e+08	-0.525	0.175	-1.132e+09	-0.685
United Kingdom	-8.819	- 1.604e+08	0.304**	0.0682	1.162e+08	-0.280
Hong Kong	-26.73	- 1.538e+08	-2.289	-1.560	-1.230e+09	-0.718
India	-32.28	- 1.539e+08	-1.590***	-1.258**	-1.225e+09	-0.701

Table 5: Threshold 15%						
Investor Country	PE Ratio	Stock Price	Ln Revenue	Ln Net Income	Market Capitalization	Earnings Per Share
United States	-14.89	- 1.568e+08	0.559***	0.358*	4.235e+08	-14.89
France	-26.24	- 1.545e+08	-0.174	-0.478	-6.764e+08	-26.24
Germany	-25.18	- 1.541e+08	0.0905	-0.923**	-1.131e+09	-0.656
Singapore	-15.29	- 1.541e+08	0.565	-0.350	-1.056e+09	-0.534
Belgium	-31.38	- 1.538e+08	-0.525	0.175	-1.132e+09	-0.685
United Kingdom	-6.171	- 1.597e+08	0.318**	0.104	2.374e+08	-0.232
Hong Kong	-26.73	- 1.538e+08	-2.289	-1.560	-1.230e+09	-0.718
India	-32.28	- 1.539e+08	-1.590***	-1.258**	-1.225e+09	-0.701

Table 6: Number of Switchers At Different Ownership Thresholds					
	3%	5%	10%	12%	15%
China	7	6	5	5	3
United States	202	157	95	76	54
France	12	11	10	10	10

Germany	12	9	8	6	5
Singapore	52	37	15	8	7
Western	390	330	247	226	209
Belgium	2	2	2	2	2
United Kingdom	122	97	76	71	61
Hong Kong	2	1	1	1	1
India	8	3	3	3	3

Table 6: 5 % Threshold for Treatment with Country-Year and Firm Level FE with No Clustering at Firm Level

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Ln Revenue (USD)	Ln Net Income (USD)	PE Ratio	Market Cap (USD)	EPS (USD)	Stock Price
United States	-0.00468 (0.0502)	0.140** (0.0682)	-45.94 (40.21)	7.929e+08*** (1.647e+08)	-0.341 (0.240)	-0.0469 (4.347e+06)
China	0.312 (0.223)	0.697** (0.287)	-12.99 (191.0)	-3.238e+07 (7.621e+08)	0.0628 (1.126)	0.616 (2.079e+07)
Singapore	-0.00804 (0.0953)	0.0804 (0.121)	-43.63 (73.03)	1.825e+08 (3.140e+08)	0.303 (0.421)	2.556 (8.352e+06)
Constant	18.87*** (0.0108)	16.81*** (0.0145)	45.98*** (8.808)	1.252e+09*** (3.547e+07)	0.671*** (0.0631)	1.574e+08*** (918,225)
Observations	6,160	5,127	4,827	6,139	2,760	6,525
R-squared	0.902	0.832	0.217	0.664	0.493	1.000

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7: 5 % Threshold for Treatment with Country-Year and Firm Level FE with Clustering at Firm Level					
VARIABLES	(1)	(2)	(3)	(4)	(5)
	Ln Revenue (USD)	Ln Net Income (USD)	PE Ratio	Market Cap (USD)	EPS (USD)
US Investors	-0.00468 (0.0728)	0.140 (0.0968)	-45.94* (26.77)	7.929e+08* (4.566e+08)	-0.341 (0.306)
Chinese Investors	0.312*** (0.0718)	0.697*** (0.194)	-12.99 (9.642)	-3.238e+07 (1.941e+08)	0.0628* (0.0373)
Singaporean Investors	-0.00804 (0.132)	0.0804 (0.230)	-43.63 (54.84)	1.825e+08 (4.094e+08)	0.303 (0.237)
Constant	18.87*** (0.00615)	16.81*** (0.00831)	45.98*** (3.027)	1.252e+09*** (3.305e+07)	0.671*** (0.0341)
Observations	6,160	5,127	4,827	6,139	2,760
R-squared	0.902	0.832	0.217	0.664	0.493

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 8: Threshold 12 % for Treatment with Country-Year and Firm FE with No Clustering at Firm Level

	(1)	(2)	(3)	(4)	(5)	(6)
Investor Origin Country	Ln Revenue (USD)	Ln Net Income (USD)	PE Ratio	Market Cap (USD)	EPS (USD)	Stock Price
United States	-0.0183 (0.0723)	0.0609 (0.0987)	-20.99 (57.03)	-9.288e+08*** (2.374e+08)	-0.457 (0.328)	-5.621 (6.263e+06)
China	0.207 (0.296)	0.738** (0.375)	-3.632 (226.4)	-1.206e+08 (1.020e+09)	0.0304 (1.273)	0.0791 (2.591e+07)
Singapore	-0.299* (0.178)	-0.300 (0.237)	17.50 (145.4)	-5.534e+08 (5.870e+08)	-0.149 (1.368)	0.880 (1.552e+07)
Constant	18.87*** (0.0102)	16.82*** (0.0136)	41.85*** (8.225)	1.350e+09*** (3.351e+07)	0.655*** (0.0564)	1.574e+08*** (870,731)
Observations	6,161	5,128	4,828	6,140	2,761	6,526
R-squared	0.902	0.832	0.217	0.664	0.493	1.000

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 9: Threshold 12 % for Treatment with Country-Year and Firm FE with Clustering at Firm Level

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Ln Revenue (USD)	Ln Net Income (USD)	PE Ratio	Market Cap (USD)	EPS (USD)	Stock Price
United States	-0.0183 (0.0748)	0.0609 (0.133)	-20.99 (31.90)	-9.288e+08 (1.020e+09)	-0.457 (0.315)	-5.621 (4.606)
China	0.207* (0.110)	0.738*** (0.226)	-3.632 (2.736)	-1.206e+08 (2.388e+08)	0.0304*** (0.0115)	0.0791 (0.0995)
Singapore	-0.299 (0.299)	-0.300 (0.552)	17.50 (27.20)	-5.534e+08 (4.380e+08)	-0.149 (0.144)	0.880 (1.344)
Constant	18.87*** (0.00289)	16.82*** (0.00488)	41.85*** (1.047)	1.350e+09*** (3.465e+07)	0.655*** (0.0143)	1.574e+08*** (0.144)
Observations	6,161	5,128	4,828	6,140	2,761	6,526
R-squared	0.902	0.832	0.217	0.664	0.493	1.000

Robust standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 10: F-Tests with China Coefficient at 5% Threshold

	(1)	(2)	(3)	(4)	(5)	(6)
Country	Ln Revenue (USD)	Ln Net Income (USD)	PE Ratio	Market Cap (USD)	EPS (USD)	Stock Price
Singapore	9.43 (0.0001)	6.49 (0.0016)	1.18 (0.3067)	0.11 (0.8984)	1.63 (0.1973)	2.18 (0.1139)
United States	9.43 (0.0001)	7.59 (0.0006)	1.73 (0.1789)	1.57 (0.2100)	1.51 (0.2239)	1.51 (0.2220)

F-Statistics and p-values in parentheses

Table 11: F-Test Statistic with China at 12% Threshold

	(1)	(2)	(3)	(4)	(5)	(6)
Country	Ln Revenue (USD)	Ln Net Income (USD)	PE Ratio	Market Cap (USD)	EPS (USD)	Stock Price
Singapore	2.22 (0.1098)	10.47 (0.0000)	0.98 (0.3751)	0.99 (0.3709)	3.99 (0.0197)	0.64 (0.5266)
United States	1.79 (0.1682)	5.43 (0.0046)	1.03 (0.3591)	0.55 (0.5780)	4.49 (0.0121)	1.26 (0.2848)

F-Statistics and p-values in parentheses

Table 12: Test for Endogeneity of Entry into Treatment for Singapore at 5% Threshold

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Year of Entry into Treatment					
PE Ratio	-0.0268 (0.0581)					
EPS		-0.549 (0.882)				
Ln Net Income			0.539 (0.408)			
Ln Revenue				0.482 (0.431)		
Stock Price					-0.0292 (0.0978)	
Market Cap.						2.87e-10 (1.73e-10)
Constant	2,016*** (1.239)	2,016*** (0.805)	2,005*** (7.565)	2,005*** (9.007)	2,016*** (0.900)	2,015*** (0.771)
Observations	30	26	31	31	31	30
R-squared	0.008	0.016	0.057	0.041	0.003	0.090

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 13: Test for Endogeneity of Entry into Treatment for Singapore at 12% Threshold

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Year of Entry into Treatment					
PE Ratio	-0.124					
	(0.102)					
EPS		-8.219				
		(7.724)				
Ln Net Income			-1.350			
			(1.731)			
Ln Revenue				0.127		
				(1.041)		
Stock Price					-0.376	
					(0.187)	
Market Cap.						-1.64e-09
						(1.38e-09)
Constant	2,017***	2,016***	2,038***	2,012***	2,017***	2,016***
	(2.182)	(2.820)	(29.61)	(20.80)	(1.341)	(1.521)
Observations	7	4	7	7	7	7
R-squared	0.226	0.361	0.108	0.003	0.447	0.220

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 14: Test for Endogeneity of Entry into Treatment for Chinese at 5% Threshold

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Year of Entry into Treatment					
PE Ratio	-0.289					
	(0.273)					
EPS		-31.52*				
		(7.872)				
Ln Net Income			0.712			
			(0.538)			
Ln Revenue				1.264		
				(1.849)		
Stock Price					-1.052	
					(1.938)	
Market Cap.						-1.80e-09
						(3.85e-09)
Constant	2,018***	2,017***	2,003***	1,992***	2,017***	2,017***
	(3.535)	(0.738)	(9.000)	(35.17)	(2.282)	(2.331)
Observations	5	4	5	6	6	6
R-squared	0.272	0.889	0.368	0.105	0.069	0.052

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 15: Test for Endogeneity of Entry into Treatment for Chinese at 12% Threshold

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Year of Entry into Treatment					
PE Ratio	-0.0681 (0.629)					
EPS		15.50 (28.25)				
Ln Net Income			-0.681 (0.841)			
Ln Revenue				-0.943 (1.174)		
Stock Price					2.238 (4.345)	
Market Cap.						-5.37e-09 (2.13e-09)
Constant	2,019*** (4.601)	2,017*** (4.114)	2,031*** (14.73)	2,037*** (22.40)	2,018*** (3.291)	2,022*** (1.578)
Observations	4	3	4	4	4	4
R-squared	0.006	0.231	0.247	0.244	0.117	0.761

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 16: Test for Endogeneity of Entry into Treatment for US Investors at 5% Threshold

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Year of Entry into Treatment					
PE Ratio	0.00680 (0.00552)					
EPS		-0.595 (0.616)				
Ln Net Income			0.101 (0.326)			
Ln Revenue				0.102 (0.272)		
Stock Price					-0.0318 (0.0424)	
Market Cap.						-1.40e-10 (1.09e-10)
Constant	2,015*** (0.631)	2,016*** (0.632)	2,013*** (5.868)	2,014*** (5.536)	2,016*** (0.605)	2,016*** (0.619)
Observations	89	87	89	115	116	115
R-squared	0.017	0.011	0.001	0.001	0.005	0.015

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 17: Test for Endogeneity of Entry into Treatment for US Investors at 12% Threshold

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Year of Entry into Treatment					
PE Ratio	0.0549 (0.0891)					
EPS		-0.440 (1.163)				
Ln Net Income			0.675 (0.498)			
Ln Revenue				0.337 (0.385)		
Stock Price					-0.186 (0.139)	
Market Cap.						0 (2.08e-10)
Constant	2,015*** (1.524)	2,017*** (0.992)	2,003*** (9.081)	2,009*** (7.891)	2,017*** (1.073)	2,016*** (0.937)
Observations	47	41	45	56	58	57
R-squared	0.008	0.004	0.041	0.014	0.031	0.000

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 18: Parallel Trend Assumption 5% Threshold	
VARIABLES	(1) Net Income
Chinese Investment	-1.655 (2.128)
2011# Chinese Investment	-4.323 (3.009)
2012# Chinese Investment	-0.360 (3.008)
2013# Chinese Investment	0.985 (2.607)
2014# Chinese Investment	1.538 (2.381)
2015# Chinese Investment	1.682 (2.458)
2016# Chinese Investment	2.035 (2.458)
2017# Chinese Investment	1.919 (2.381)
2018# Chinese Investment	2.244 (2.333)
2019# Chinese Investment	2.245 (2.458)
2020# Chinese Investment	2.514 (2.381)
2021# Chinese Investment	2.503 (2.333)
Constant	17.35*** (0.401)
Observations	5,293
R-squared	0.036

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 19: Parallel Trend Assumption 12% Threshold	
VARIABLES	(1) Net Income
Chinese Investment	-1.655 (2.127)
2014##Chinese Investment	(0) 2.320 (2.606)
2015##Chinese Investment	3.945 (3.007)
2016##Chinese Investment	4.207 (3.007)
2018##Chinese Investment	3.842 (2.605)
2019##Chinese Investment	4.603 (3.006)
2020. ##Chinese Investment	3.992 (2.606)
2021##Chinese Investment	2.503 (2.332)
Constant	17.35*** (0.401)
Observations	5,293
R-squared	0.035

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

	Table 20: Ln Income after Tax Summary Statistics				
	Observations	Mean	Standard Deviation	Min	Max
Chinese Investment Threshold 5%	36	16.75055	2.007503	11.3921	19.52687
Chinese Investment Threshold 12%	15	17.98682	1.71248	13.74577	19.52687
US Investment Threshold 5%	414	18.06938	1.963728	9.74236	22.78046
US Investment Threshold 12%	165	17.50885	2.067806	12.04372	21.86397
Singaporean Investment 5%	95	17.83621	1.613848	14.05669	21.41086
Singaporean Investment 12%	27	16.50383	1.050679	14.05669	18.66036
Entire Dataset	5,293	16.82088	2.153289	6.9356	22.93472

	Table 21: Ln Revenue Summary Statistics				
	Observations	Mean	Standard Deviation	Min	Max
Chinese Investment Threshold 5%	41	18.52285	1.330428	16.25062	20.68179
Chinese Investment Threshold 12%	17	18.96885	1.565146	16.38885	20.68179
US Investment Threshold 5%	499	20.40436	2.053033	12.50247	23.57845
US Investment Threshold 12%	207	19.90158	2.22607	13.80309	23.22565
Singaporean Investment 5%	103	20.52641	1.479461	17.8911	23.44441
Singaporean Investment 12%	32	19.45109	.9788336	17.8911	22.3715
Entire Dataset	6,324	18.86045	2.324699	4.936456	24.21738

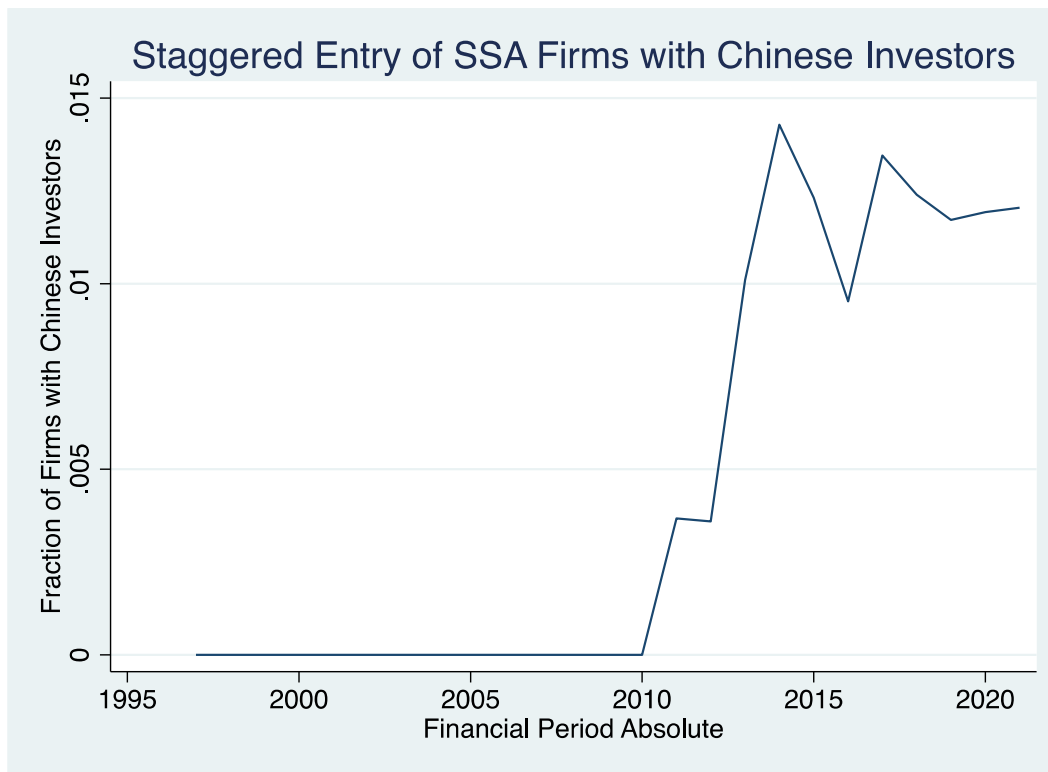


Figure 11

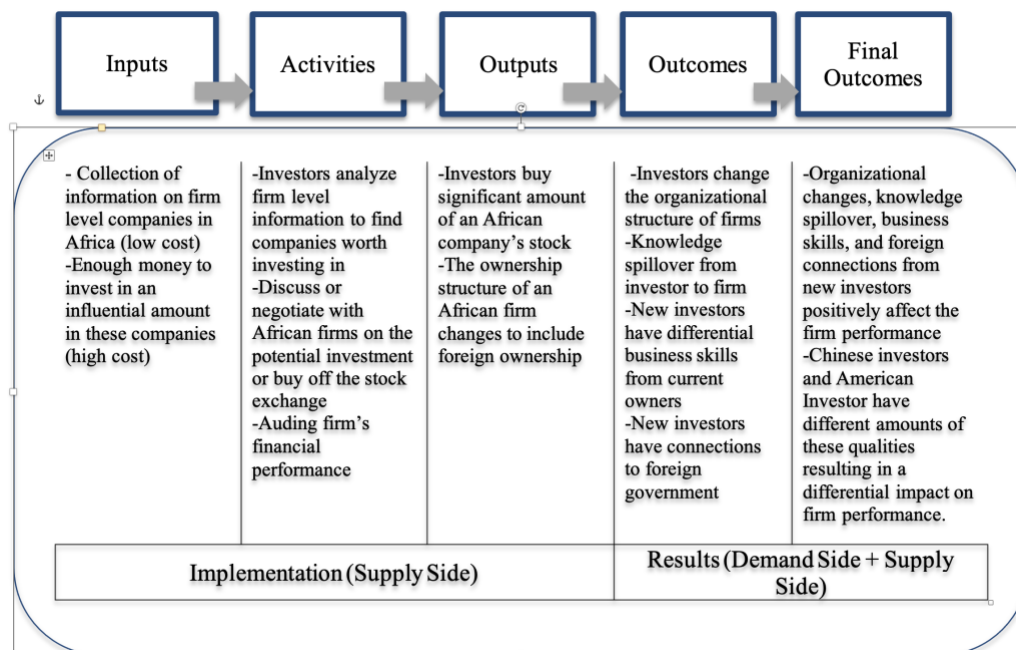


Figure 12: Casual Chain