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Exchange rate effects in cross-border acquisitions

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Abstract

This paper studies the impact of exchange rates on target shareholder's wealth gains in 250 cross-border takeovers. A majority of the takeovers in the study do not occur when the acquirer's exchange rate is relatively strong and when they do, the impact it has on the wealth gains to targets is inconclusive. Previous studies document a positive relationship between a bidder's strong exchange rate and wealth gains to target shareholders. We provide evidence showing that a wide definition of when an exchange rate is strong increases the gains to the targets but are unable to confirm this relationship with narrower definitions. Our results therefore prohibit us to exclude the possibility that exchange rates have an impact in cross-border takeovers. However, if the informational asymmetries in cross-border takeovers have decreased it is likely that imperfections and costs in product or factor markets and biases in government and regulatory policies play a more prevalent role in determining the target's shareholders wealth gains today.

Keywords: Exchange rates, cross-border, M&A´s, corporate takeovers, wealth gains

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1.Introduction

This paper explores the question whether exchange rates affects the gains to target shareholders in cross-border acquisitions. Froot and Stein (1989) developed a model that explains how exchange rates are linked to foreign direct investment (FDI) and subsequently provide a tool able to explain why a depreciating U.S. dollar increase FDI into the U.S. They suggest that informational asymmetries regarding an asset's payoff causes investors to be dependent on their net wealth, which would favor foreign investors in times when the dollar is weak and consequently increase the wealth gains to target shareholders. The theory was later tested and confirmed by Harris and Ravenscraft (1991) who find empirical evidence showing that exchange rates affect the target wealth gains in cross-border takeovers positively.

The multifaceted nature of M&A's has puzzled researchers for a long time. The determinants and characteristics of M&A's, their profitability and activity have varied over time. Inconclusive results have spurred new approaches and created the ability to differentiate between periods of time based on the impact of certain characteristics and drivers of profitability.

Our objective is to revisit the hypothesis that target wealth gains in cross-border takeovers are positively related to the exchange rate between the bidder and the target firm. An acquirer's wealth in a foreign currency will grow as the acquirer's currency appreciates or the foreign currency depreciates. This will affect his net wealth in the foreign currency, which enables the acquirer to pay a higher premium and consequently increase the wealth gains to target shareholders. Since the theory by Froot and Stein (1989) was developed and tested, the world has experienced rapid development in information technology that might have improved capital mobility and decreased the informational asymmetries used to explain the relationship between exchange rates and FDI. It is therefore interesting to test whether exchange rates still play a significant role in corporate takeovers by looking at the proposed link in a more recent setting.

We examine 250 cross-border transactions between January 2000 and October 2012. We generate the cumulative abnormal return (CAR) around each takeover announcement. We are thereby able to determine the takeover announcement's effect on the target shareholders wealth and proceed by attaching variables that displays the strength of the acquirer's exchange rate when the bid is announced to each individual takeover. The strength is determined by comparing it to averages in

different timespans around the announcement. We include a set of control variables that previous research has found to impact wealth gains in takeovers in order to yield a better estimate of the effect of exchange rates. Finally, we regress the control variables and exchange rate variables on the CAR and will thus be able to determine the effect of a relatively strong exchange rate.

Our study suggests that the link between exchange rates and FDI is highly contingent on how we define the strength of an exchange rate. We find that an exchange rate that is relatively strong while using a short timespan to determine its strength confirms the theory developed by Froot and Stein (1989) and increases the targets wealth gains. However, since our results are inconclusive while employing a longer timespan to determine the exchange rate's strength, there are reasons to believe that the informational asymmetries have decreased and that exchange rates play a more passive role in modern takeovers.

The remaining paper is structured in the following way: part 2 presents our theory and earlier studies on takeovers with an emphasis on the value drivers and gains to the shareholders of the firms involved. Part 3 presents our hypothesis, part 4 presents the data we are using in our study and part 5 presents the method employed. Part 6 display descriptive statistics, our results and analysis and in part 7 we conclude our study.

2. Theory and Literature Review

Our paper focuses on how exchange rates affect the target company gains in cross-border takeovers. The literature surrounding takeovers has attracted a vast amount of attention over the years mainly because it is an interdisciplinary field and since results have been inconclusive, further research has been easy to motivate.

2.1. Theory
The link between FDI and exchange rates are presented in a paper by Froot and Stein (1989). They incorporate cost-of-capital into a model that does not neglect an industrial organization view on why takeovers occur. The industrial organization view state that foreign investors win bids for domestic assets when they can manage them more efficiently. However, when there are informational asymmetries regarding an assets payoff, acquirers cannot fully finance the acquisition from external sources in a cost-efficient way and are depending on their net wealth. In

a bidding process over an asset between a foreign and domestic investor, who holds their wealth in their respective currency, the wealth a foreign acquirer can use to raise their bid is dependent on the exchange rate. If the bidders have the same ability and could manage the asset equally efficient, the exchange rate will determine the foreign bidder's wealth and therefore also the outcome of a bidding process. An intuitive example could concern the purchase of an American factory that both a foreign and domestic investor is interested in buying. The investors can borrow 90 percent of the total purchase price in dollars and holds wealth in their respective home currencies. The foreign investor's wealth in dollars is determined by the exchange rate and if the dollar were to depreciate, the foreign investor's wealth in dollars would increase and thus enable him to borrow more and potentially outbid his competitor.

Harris and Ravenscraft (1991) use this model to study how exchange rates affected the target wealth gains in cross-border takeovers between the years 1970 and 1987. They find that exchange rates play a significant role in cross-border corporate takeovers, and that a weak U.S. dollar increases the gains to the U.S. target firms examined. The authors further state that an acquisition is motivated and that the source of the target wealth gains is determined by:

1. *Imperfections and Information Asymmetries in Capital markets*
2. *Imperfections and costs in product and factor markets*
3. *Biases in Government and Regulatory Policies*

Our study focuses on the link between exchange rates and target gains in cross-border takeovers, which occur due to imperfections and information asymmetries in capital markets. Moreover, the other motives are represented by a set of control variables that will be explained more extensively in our literature review.

2.1.1. Exchange Rates and Imperfections & Information Asymmetries in Capital Markets
The idea developed by Froot and Stein (1989) parts with the notion of perfect capital mobility and suggests that the correlation between FDI inflow and a depressed U.S. dollar occurs due to cost-of-capital advantages that favor foreign investors. Harris and Ravenscraft (1991) find that a relatively strong exchange rate significantly affected the target gains positively, a result that is similar to a study by Erel, Liao and Weisbach (2012). These authors conclude that countries whose exchange rate has appreciated are more likely to be buyers and that short-term movements

between two countries' currencies increased the likelihood of an appreciating country buying in a depreciating country.

2.2. Literature Review

The CAR, much like the takeover premium, is determined by an acquirer's valuation of the target firm. Exchange rates are unsurprisingly not the only factor determining this. It is merely one of the factors to include when determining the relative impact of the different variables affecting the gains to target shareholders that arise when an acquirer value the firm differently than the market. However, in order to determine the takeover characteristics and strategic choices that could be translated into viable variables affecting the CAR it is helpful to examine the history regarding takeovers and thereby understand what motivates firms to engage in takeovers.

Betton, Eckbo and Thorburn (2008) show that merger activity coincides with general economic expansion, however, mergers occurring at different periods of time have their own broad characteristic. In the 60's corporations acquired in order to diversify, in the 80's acquisitions were aimed to specialize or adapt to advances in information and communications technologies and the late 90's focused on strategic mergers with global partners. Jensen (1993) proposes that merger activity is linked with technological changes and that a merger implementing a new technology also forces competitors to merge in an effort to stay competitive. These general explanations of what drives intensified takeover activity do not fully encapsulate the interdisciplinary aspects of takeovers and how the motives to acquire impacts profitability and value for the parties involved. However, the motives behind takeovers presented by Harris and Ravenscraft (1991) do provide a hint.

2.2.1. Imperfections and Information Asymmetries in Capital Markets

Vasconcellos and Kish (1998) find that a depressed U.S. stock market relative to foreign markets lead to a rise in foreign acquisitions of U.S. firms. This relationship is confirmed by Erel et al. (2012) who finds that the relative stock market performance affects the tendency to merge. A greater difference in performance increases the likelihood that the acquirer originates in the superior performing country. Nathan and O'Keefe (1989) display that the premiums are negatively correlated with the performance of the S&P, which means that the premiums are lower when the stock index performs well. Moreover, the correlation between merger waves and general economic expansion causes changes in takeover characteristics. Rhodes-Kropf, Robinson

and Viswanathan (2005) find that merger waves coincide with high market-to-book (M/B) ratios and as a proxy for overvaluation this might incentivize bidders to pay with overpriced (overvalued) stock to targets. Shleifer and Vishny (2003) show that target managements accept overvalued stocks from acquiring firms since their time horizon is short, which would enable them to sell their stock and realize the gains. Rhodes-Kropf and Viswanathan (2004) state that target management accept overvalued stocks since the bidders overestimate the potential synergies during positive market conditions. Both Shleifer and Vishny (2003) and Rhodes-Kropf and Viswanathan (2004) suggest that valuation affects mergers and that overvalued firms can alter the method of payment and thus benefit from this inefficiency as mispricing has the ability to separate firms into targets and acquirers.

2.2.2. Imperfections and Costs in Product and Factor Markets
Imperfections and costs in product and factor markets results in corporations aiming to capitalize on monopoly rents or internalize costly external processes. This is in line with the industrial organization view on FDI and that the value of an asset is determined by how efficiently it is managed. A cost-efficient way of transferring a process through the market mechanism might be difficult and induces foreign acquisitions of domestic assets since it might create economies of scale, scope and spillover effects. Rhodes-Kropf and Robinson (2008) find that firms tend to acquire firms similar to their own and that placing assets under common control is the only way to realize synergies. This is similar to the findings by Bruner (2001) who show that diversification destroys value. Andrade and Stafford (2004) show how mergers are clustered by industry, that mergers function as an expansionary tool in industries with excess capacity and more recently also in industries that are growing fast and are prone to reach full capacity shortly.

Efforts to increase market power, cut costs or increase efficiency through horizontal expansion impacts the industry where the takeover occurs. Shahrur (2005) finds no evidence of increased monopolistic collusion from horizontal mergers that would benefit the merging firms on their supplier's expense but conclude that the merging firms gain through increased efficiency and buying power.

2.2.3. Biases in Government and Regulatory Policies

Biases in government and regulatory policy can spur mergers waves. Shleifer and Vishny (1991) propose that the conglomerate merger wave in the 60's occurred due to anti-trust laws enacted in the 50's. Bris and Cabolis (2008) show that an acquirer pays a larger premium the better shareholder protection and accounting standards the acquirer's country has. Harris and Ravenscraft (1991) state that taxes, accounting principles and trade tariffs can motivate takeovers and bring forth a tax law that allowed for accelerated depreciation of acquired assets. Betton et al. (2008) propose that the method of payment affect the targets taxation and that all-cash bids' are taxed as capital gains immediately in the U.S. Therefore, the premium should be higher in these bids. However, Rossi and Volpin (2004) state that the potential effect of taxation and tax competition between countries that could be a determinant in mergers is a complex issue. It requires a study that encompasses the possibility to take advantage of investment tax credits and accelerated depreciation as well as each respective countries treatment of foreign income, which makes the subject appropriate for a study of its own.

The broad motives presented by Harris and Ravenscraft (1991) encapsulate the focus of the research that followed in the sense that it has tried to capture the source of wealth gains to targets and bidders and acknowledged that this changes over time and that variables' impact fluctuate.

2.3. Takeover Wealth Gains

Betton et al. (2008) and Bruner (2002) compile evidence from the literature regarding corporate takeovers and M&A profitability respectively. Both show that targets earn significant and positive returns in takeovers and Bruner (2002) states that targets on average earn around 20-30 percent. However, in terms of gains to the acquirers their conclusions differ slightly. Betton et al. (2008) focus on announcement returns and Bruner (2001) includes post-merger performance to a larger extent. Betton et al. (2008) find that the wealth gains in mergers are positive for bidders, targets and a combination of the two. Bruner's results are similar since it concludes that targets and a combination of targets and bidders earn positive returns. However, bidders alone earn negative returns and the conclusion of Bruner's deductive study of M&A's and if it "pays" is that they do but that the uncertainty and erratic returns displayed over time, calls for a general conclusion that M&A's should be approached with caution.

3. Hypothesis

Our study builds on the work by Froot and Stein (1989) who developed a theory on the link between exchange rates and FDI. They state that a foreign acquirer, who holds his wealth in his home currency, benefits from a weak U.S. dollar. The foreign acquirer should be able to outbid any domestic competition due to that the foreign acquirer's wealth in U.S. dollars increases. Consequently, the foreign acquirer is able to pay a larger premium and the wealth gains to the shareholders of the target firm will be greater. Our hypothesis is that target wealth gains in cross-border takeovers are positively related to the exchange rate between the bidder and the target firm.

4. Data

We use a dataset entailing cross-border transactions between January 2000 and October 2012 as a starting point for our research. The transactions are recorded by Suuronen (2012) who analyzes the effects of European takeover policy on transaction activity and bid premiums. The dataset contains information on a number of cross-border transactions and some of the characteristics such as percentage of shares acquired and percentage of cash involved in the bid. Furthermore, the origin of the target and acquiring firm is stated, which is useful in determining country and sector specific differences as well as ease the process of retrieving correct information on exchange rates and their potential effect on target wealth gains. Our study includes acquisitions of public targets, between the years 2000 and 2012 where the method of payment is all cash, all stock or a combination of the two and the offer concerns a majority share in the target firm i.e. 50-100 percent.

We choose to focus our study on a specific set of countries that i.) acquired firms in the US during the period and ii.) acquisitions going in the opposite direction i.e. U.S. buyers. We only incorporate countries that have at least a few takeovers between them and the U.S, which decreases the number of takeovers and countries to include. The tables below displays the countries we choose to include as well as the share of acquisitions done with U.S. targets and how they are distributed over the years.

Table 1

Number of Takeovers between sample countries and the U.S.

Sample period is between January 2000 and October 2012

Countries	% U.S Targets	No. Of Takeovers
Australia & U.S	*47%*	15
Canada & U.S	*39%*	89
France & U.S	*73%*	22
Germany & U.S	*93%*	15
Italy & U.S	*100%*	7
Japan & U.S	*80%*	15
Netherlands & U.S	*91%*	23
Spain & U.S	*83%*	6
United Kingdom & U.S	*66%*	58
Total		250
Takeovers in the U.S. (%)		62%
Takeovers outside the U.S (%)		38%

Table 2

Number of takeovers per year

Year	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*	*2010*	*2011*	*2012*
Acquisitions	36	17	10	11	18	20	28	42	18	9	14	17	10
Total	250												

Additional data is added in order for us to address our hypothesis. We use DataStream to extract daily stock returns for each target firm and quarterly value and growth measures such as Market-to-book ratio (M/B) and capex growth, which yields firm specific information that is used when establishing the origins of target gains. This decreases our sample size, since this data is not available for each individual takeover. Bloomberg is used to extract information on monthly exchange rates against the dollar and we include each country's stock indices to infer the trend in the stock market around the announcement. Country stock indices are also used when estimating

the abnormal returns around the announcements. Moreover, yearly purchasing power parity (PPP) data is drawn from OECD's website and serves as a substitute to exchange rates.

5. Method

5.1 Dependent variables

Harris & Ravenscraft (1991) studies the target wealth gains during an acquisition by examining the abnormal returns during a period around the announcement. The firm specific CAR over the period will determine whether or not the shareholders have benefitted from the acquisition announcement. Our study will be an event study that incorporates 250 targets in cross-border takeovers from different countries between the years 2000 until 2012.

The abnormal returns $\left(AR_{jt}\right)$ are defined as the continuously compounded firm specific returns (r_{jt}) less the expected returns (c_{jt}), which is the firm specific return in the absence of a takeover. The firm specific cumulative abnormal returns (CAR_j) will provide an indication of how the acquisition announcement affected the target and subsequently if the target's shareholders are subject to any wealth gains.

$$CAR_j = \sum_{i=t_a}^{i=t_b} AR_{ji}$$

(1)

Where: CAR_j = The firm specific *(j)* cumulative abnormal return starting at date t_a ending at t_b, which is determined by the time window adopted.

$$AR_{jt} = r_{jt} - c_{jt} \qquad\qquad (2)$$

Where: AR_{jt} = The firm specific *(j)* abnormal return at time *t*

r_{jt} = Actual return of firm *j* at time *t*

$$c_{jt} = \alpha_j + \beta_j rm_t \qquad\qquad (3)$$

Where: c_{jt} = Expected return of company *j* at time t
α_j = The intercept term of firm *j* from the market model
β_j = The regression coefficient from the market model for firm *j*
rm_t = The market return in period *t*

We start by extracting 225 days of stock returns for each individual target firm (j) and construct three return/time-windows. The estimation window, 200 days, ends 20 days prior to the announcement. The two event windows capture the realized return for each firm around the announcement day ($t = 0$). They are divided into a "long" 25 day window and a "short" 5 day window. The long window includes 20 days prior to the announcement until 4 days after, which means that at least parts of any potential run-up proposed by Schwert (1996) is incorporated into the window measuring the CAR. Our "short" CAR is more isolated around the announcement and ranges from 3 days prior to 1 day after the announcement.

The market model parameters α and β are estimated by regressing the stock returns on the matching index returns, which is intended to yield a proxy for the expected return in the absence of a takeover announcement. The sum of the difference between realized return and the expected return in our two event windows are our dependent variables.

5.2 Independent variables

Exchange rates

We classify the buyer's exchange rate in each transaction as either over- or undervalued. This requires a benchmark and we construct multiple variables that encompass the relative strength of the exchange rate at the time of the announcement.

Erel et al. (2012) conclude that short-term movements in exchange rates increase the likelihood that firms in countries with appreciating currency buy firms in countries with a depreciating currency. Previous studies, such as Harris and Ravenscraft (1991), use an average exchange rate for the entire period (17 years) of the sample as a benchmark. This allows the strength of the exchange rate to vary with points in time that are distant from the actual announcement. We include a variable using the announcement date exchange rate divided by the average exchange rate of the 12-year sample period and thus keep the average constant for the entire sample. However, if the exchange rate matters for the acquirer (i.e. our study) its relative strength must be based on the acquirer's perception of its strength. We want to link our exchange rate variable more specifically to each individual takeover, which will allow us to incorporate the effect seen in short-term exchange rate movements. An average that is linked to each individual takeover might be better in isolating and encapsulating the effect of the exchange rates. We use monthly exchange rate data trailing back to 1994 until 2015 and construct three additional measures of relative strength. The measures are constructed using the exchange rate at the announcement and averages surrounding the announcement. We divide them into a short, medium and long interval that encompasses two, four and six years around the announcement. The exchange rate variables used in our regressions are standardized in order to enable a better interpretation of the intercept.

PPP

The PPP variable is used as a substitute measure of the strength of the currency. A value above one implies that goods and services in the country are more expensive than in the US. The OECD measure of PPP is compiled yearly and variations that are likely to affect our results are therefore less likely to be seen by our PPP variable than by the exchange rates data. Despite the scarceness of this data we include the target country's PPP in the year of the announcement as a variable to

capture the same relationship with takeovers as Harris and Ravenscraft (1991) finds for exchange rates.

Method of Payment

Previous research finds that the method of payment is related to the target gains through several other variables. Shleifer and Vishny (2003) show that targets accepted stock as payment when the state of the economy is good and the stocks can be seen as overvalued. A similar conclusion with the inclusion of bidders overestimating synergies is drawn by Rhodes-Kropf and Viswanathan (2004). However, Betton et al. (2008) propose that taxation could affect the method of payment-choice as well since cash-bids are taxed immediately as capital gains by the targets. We include a variable that display the share of cash involved in the takeover, which allows us to track how a larger share of cash is related to the CAR.

Index Trend / State of the Economy

Vasconcellos and Kish (1998) find that a depressed U.S. stock market relative to foreign markets increased foreign acquisitions of U.S. firms. Nathan and O'Keefe (1989) find a negative relationship between target premiums and the performance of the S&P in a study of U.S takeovers. Moreover, Harris et al. (1987) find that the state of the economy dictated the choice of firms to acquire and Erel et al (2012) conclude that a larger performance difference between the countries respective stock indices increased the likelihood that a firm in a superior performing country acquired a firm in a country whose stock index performed poorly. The index trend variable is supposed to capture the effect of a positive trend in the index on an acquisition between two countries. In order to measure this we look at the return two quarters before announcement in the respective countries. If the return was positive for both quarters we treat it as a positive trend in the economy/market.

Market to Book value

Our market-to-book value builds on the previous measure of economic expansion and positive trend in the market. It also incorporates the findings of Rhodes-Kropf, Robinson and Viswanathan (2005), who find a relationship between high M/B ratios and merger waves and that the ratio as a proxy for over-/undervaluation should impact takeovers. In order to capture the

impact of the target firms' over-/undervaluation the Market to Book value (MTBV) is used. The effect of how much more the buyer pays in premium if the company is undervalued is supposed to be captured by this variable. We use the MTBV one quarter before the announcement in our regressions.

Market Value

We use the market value in US dollars of the target firm as a size variable, in order to measure how the size of the firm affects the premium being paid to the shareholders of the target firm. Betton et al. (2008) find that the market value affected the premium negatively. We use the natural logarithm of each target firm's market value in order to trace down any CAR differences related to the size of the firm being acquired.

Capital Expenditures

Jensen (1993) proposes a link between technological change and merger waves, which forced industries to consolidate in order to remain competitive. Andrade and Stafford (2004) link industry expansion through mergers with excess capacity and also find that it is becoming increasingly more common in rapidly growing industries. Growth in firms is at least partly enabled through capital expenditures (capex), and will function as a firm characteristic measure of growth. We choose to include the average growth in capex for each firm on a quarterly basis a year before the takeover announcement.

Same Industry

When a company acquires within the same industry it might provide benefits such as synergies that might increase competitive advantage and help spread costs. This relates to the findings by Andrade and Stafford (2004) and Rhodes-Kropf and Robinson (2008) who find mergers cluster by industry and that placing assets under common control is the only way to realize synergies. Shahrur (2005) finds that horizontal takeovers benefit the merging firms through efficiency gains and buying power. Our variables indicate if the firm was acquired by a firm with the same or a similar standard industrial classification (SIC) code.

Bidders & Shares Acquired

We include a dummy variable indicating if there are more than one bidder involved in the bid and the potential effects of competition. Bradley, Kim and Desai (1988) show that competition decreases the gains to acquirers and that it subsequently increases the gains to targets. The authors also find that the fraction of shares acquired is positively related to the wealth gains to targets.

5.3. OLS Model

The regressions are done with an OLS model. The standard errors are clustered by target country since the CAR's are likely to be dependent within the countries. The standard errors are also robust to get rid of heteroscedasticity problems. Equation 4 is an example of how our OLS regression will look.

$$\boldsymbol{CAR} = \propto + \beta_1(Exchangre\ rate) + \beta_2(Cash) + \beta_3(Capex) + \beta_3(M/B) \quad (4)$$
$$+ \beta_3(Same\ Industry) + \beta_4(Bidders) + + \beta_5(lnMV) + e_i$$

Table 3

Variable Description

Variables	Description
longcar1	Cumulative abnormal returns in percentage, taken 20 days before announcement and four days after. The variable is reported in percentage.
shortcar1	Cumulative abnormal returns in percentage, taken one day before announcement and four days after. The variable is reported in percentage.
fxvar1*	The foreign acquirer's exchange rate on the date of announcement over the average exchange rate for the whole sample period. If the variable is less than one the foreign exchange rate is relatively weak compared to the average over the entire sample period.
fx3y*	The foreign acquirer's exchange rate on the date of announcement over the average exchange rate for the three years prior to announcement and three years after announcement. If the variable is less than one the foreign exchange rate is relatively weak compared to the average over the six years.
fx2y*	The foreign acquirer's exchange rate on the date of announcement over the average exchange rate for the two years prior to and two years after announcement. If the variable is less than one the foreign exchange rate is relative weak compared to the average over the four years.

fx1y*	The foreign acquirer's exchange rate on the date of announcement over the average exchange rate for one year before and one year after announcement. If the variable is less than one the foreign exchange rate is relatively weak compared to the average over the two years.
ppp	Purchasing power parity for foreign buyer the year of announcement over the average PPP for the sample period. If the value is above one the PPP for the year of announcement is higher than the average.
fxvardummy1	Dummy variable, if the foreign acquirer's exchange rate is relatively strong on the day of announcement compared to the average exchange rate of the sample period the variable equals one, otherwise zero
fx3ydummy	Dummy variable, if the foreign acquirer's exchange rate is relatively strong on the day of announcement compared to the average taken 3 years prior to and 3 years after announcement it equals one, otherwise zero
fx2ydummy	Dummy variable, if the foreign acquirer's exchange rate is relatively strong compared to the average exchange rate taken 2 years prior to and 2 years after announcement it equals one, otherwise zero
fx1ydummy	Dummy variable, if the foreign acquirer's exchange rate is relatively strong on the day of announcement compared to the average exchange rate taken one year prior to and one year after announcement it equals one, otherwise zero
ofcash	Percentage of the transaction paid in cash.
bidders	Dummy variable. If there was more than one bidder the variable equals one, otherwise zero.
sharesacq	Percentage of shares taken over by the acquirer at the time of the transaction.
sameind	Dummy variable. If the SIC codes are exactly the same the variable equals one, otherwise zero.
simind	Dummy variable. If the SIC code matches for the first two digits the variable equals one, otherwise zero.
trend2	Dummy variable, equals one if foreign acquirer's stock index had a positive gain during the two quarters before announcement and targets stock index had not, otherwise the variable equals zero.
mtbv	Market-to-book-value of the target firm one quarter before announcement.
lnmv	The natural logarithm of market value in US dollar of the target firm one quarter before announcement.
capex	The target firms average quarterly growth in capital expenditure, during the reported periods from 1998 to one quarter before announcement. The variable is presented in percentage form.

*The variable is standardized when we run our regressions. The variable is standardized in order to enable a better interpretation of the intercept. It is now interpreted, as when the variable is set to its mean rather than zero, the dependent variable equals the intercept. It is economically unreasonable for our exchange rate variables in their original form to take on a value of zero.

6. Results & Analysis

6.1. Descriptive statistics

Our sample consists of 250 transactions undertaken during the period between January 2000 and October 2012. We choose a set of foreign acquisitions of U.S. firms, which make up approximately 62 percent of our total transactions. The remaining 38 percent are takeovers by U.S. firms in the countries in our sample that bought in the U.S.

Table 4

Summary Statistics

Table 4 presents the summary statistics of the variables being used in the study. We include the number of observations, the mean, the std. dev. as well as the min and max values

Variable	Observations	Mean	Std.Dev	Min	Max
longcar1	250	29.327	22.985	-18.509	116.925
shortcar1	250	25.461	19.806	-18.584	88.99
fxvar1	250	0.985	0.159	0.688	1.472
fx3y	250	0.996	0.071	0.825	1.212
fx2y	250	0.998	0.055	0.836	1.196
fx1y	250	0.999	0.039	0.854	1.171
ppp	250	6.334	24.216	.01	129.55
fxvar1dummy	250	0.452	0.499	0	1
fx3ydummy	250	0.42	0.495	0	1
fx2ydummy	250	.448	0.498	0	1
fx1ydummy	250	0.46	0.499	0	1
ofcash	250	92.051	17.448	8.26	100
bidders	250	0.068	0.252	0	1
sharesacq	250	97.452	9	51.09	100
sameind	250	0.272	0.446	0	1
simind	250	0.495	0.501	0	1
trend2	250	0.124	0.330	0	1
mtbv	250	2.681	2.679	0.44	24.77
lnmv	250	5.86	1.586	1.93	9.56
capex	250	21.831	46.951	-59.086	489.641

The CAR is divided into a short and long window with averages 25.46 and 29.33 percent respectively, which is similar to the average target gains found by Bruner (2002). *Longcar1* ranges from negative 18.5 percent to positive 117 percent while *shortcar1* ranges between negative 18.5 percent to positive 89 percent. *Shortcar1* incorporates fewer days prior to the

announcement and is generally smaller, which display the presence of a positive run-up in our sample (Schwert, 1996). In 16 of the observations the CAR's are negative. This could be associated with rather extraordinary circumstances since it can be translated into that the acquiring firm pay less than the market value of the asset. However, Weitzel and Kling (2016) show that negative premiums are no measurement error and that the target shareholders still earn positive returns due to "hidden earnouts" from overvaluation corrections and participation in the bidder's share of joint synergies. We therefore find it reasonable to include these negative CAR's in our regressions.

Fxvar1 has an average of 0.985, which shows that the foreign buyer's currency has been relatively weak during our sample period. This relationship appears to be true even for our variables with shorter period averages, *fx3y*, *fx2y* and *fx1y* where the variables average ranges from 0.996 to 0.999. Additionally, we introduce dummy variables intended to more directly show the strength of an exchange rate at the time of the announcement. The dummy variables *fxvar1dummy, fx3ydummy, fx2ydummy* and *fx1ydummy* display that around 40 percent of all transactions are made when the buyer's currency is relatively strong. This shows that a majority of the transactions in our sample occurs when the acquirer's exchange rate is relatively weak.

The sample has a large percentage of "all cash" bids where the mean of *ofcash* is 92 percent. We also have a large portion of transactions where all shares are acquired, almost 89 percent. The average within the sample for percentage of shares acquired is over 97 percent.

27.2 percent of our transactions take place between firms that have the exact same SIC code (*sameind)*, which would rises to about 50 percent if we allow the firms to match at a two-digit level (*simind)*. This shows that firms have not adapted to the notion presented by Bruner (2001) regarding diversification as a value destroyer since a large extent of our transactions occur between unrelated firms.

The variable, *mtbv,* ranges between 0.44 and 34.77 and has an average of 2.68 which show that most of the firms in our sample are not undervalued at the time of announcement.

Additional firm specific information is included in order to contrast the effects of certain firm characteristics. We choose to include capital expenditure *(capex)* and market value (*lnmv)*. We look at the average growth in capex, which gives us a mean of 21.831 percent and a range

between roughly a negative 60 percent to a positive 490 percent. We use quarterly data beginning a year .prior to the announcement of the bid and the contrasts should sufficiently separate between high and low growth firms. For *lnmv* we can see that the size of the firms in the sample ranges from 1.44 to 9.98 with the average of 5.91.

The trend variable, *trend2,* displays that a depressed target´s stock market and a well performing foreign stock market appear in 12.54 percent of the transactions.

6.2. Exchange Rate Regressions

In all regressions we have used cluster robust standard errors to correct for the possibility that the CAR's are not independent of each other within the respective countries and possible heteroscedasticity.

Table 5

Regression analysis of target wealth gains in cross-border acquisitions with long-window CAR.

The cumulative abnormal return day -20 to day +4 is the dependent variable. The sample includes 250 observations from 10 different countries during the period January 2000 and October 2012. Standard errors are corrected for heteroscedasticity and clustered on countries. See Table 3 for variable definitions.

Standard errors are presented in parenthesis and ***, **, * note statistical significance at the 1%, 5%, and 10% level, respectively

VARIABLES	(1)	(2)	(3)	(4)
ofcash	0.118***	0.113***	0.120***	0.130**
	(0.033)	(0.031)	(0.033)	(0.04)
bidders	-11.80*	-12.45*	-12.90*	-12.53*
	(6.017)	(5.804)	(5.685)	(5.887)
sharesacq	0.124	0.115	0.109	0.108
	(0.180)	(0.185)	(0.186)	(0.181)
sameind	-2.588	-2.920	-2.758	-2.770
	(2.153)	(2.137)	(2.204)	(2.087)
trend2	-4.498	-4.402	-4.573	-4.823
	(4.720)	(4.665)	(4.648)	(4.960)
mtbv	-0.309	-0.348	-0.402	-0.445
	(0.413)	(0.380)	(0.360)	(0.387)
lnmv	-2.282**	-2.363**	-2.313**	-2.198**
	(0.816)	(0.902)	(0.936)	(0.889)
capex	-0.024	-0.023	-0.023	-0.024
	(0.0301)	(0.0295)	(0.0296)	(0.0299)
fxvar1	-1.161*			
	(0.583)			
fx3y		0.592		
		(0.983)		
fx2y			1.467	
			(1.118)	
fx1y				2.622***
				(0.757)
Constant	23.12	25.20	24.96	23.66
	(20.31)	(21.41)	(21.90)	(21.68)
Observations	250	250	250	250
R-squared	0.084	0.082	0.086	0.095

Table 5 displays the results from using our four exchange rate variables in a regression of *longcar1*. We find that our variable *fx1y*, which accounts for the strength of the exchange rate given a two year average surrounding the announcement, is significant at a 1 percent level. The coefficient is positive at 2.622, which indicates that a stronger exchange rate increases the gains to the target shareholders and economically that a standard deviation change in our exchange rate variable results in a 2.622 percent increase in the target gains. Despite that it confirms the theory developed by Froot and Stein (1989) and our hypothesis, it is also evident that we lose significance as we expand the time frame that constitutes our averages, which can be seen by our insignificant variables *fx2y* and *fx3y* that ranges four and six years around the announcement respectively.

If we divert from the transaction specific average exchange rates we found to be a relevant addition to our study and include a measure of exchange rate strength that is more in line with the study by Harris and Ravenscraft (1991) the results are puzzling. Instead of an average that surrounds the takeover we use the entire sample period's average and by specifying exchange rate strength in this manner our exchange rate variable, *fxvar1*, is negative and significant at a 10 percent level with a coefficient of – 1.161. The negative coefficient is at odds with both theory and our hypothesis and in practice means that a relatively strong exchange rate decreases the target gains.

Our results indicate that an elongated timespan that accounts for the historic and future development of the exchange rate depletes the significance of our exchange rate variable. Our sample yields inconclusive results that make it reasonable to question the importance and impact of exchange rates in cross-border takeovers since a relatively strong exchange rate should result in higher target gains regardless of the timespan being used. It is therefore possible that the informational asymmetries that Froot and Stein (1989) propose would cause exchange rate to affect the gains to target shareholders have decreased over the years or that our sample simply does not contain this link between exchange rates and cross-border takeovers.

Furthermore, a majority of the control variables in Table 5 are insignificant. The percentage of cash involved in the takeover, number of bidders and market value are exceptions to this and are significant regardless of the timespan being used. *Ofcash* is significant at a 1 to 5 percent level with coefficients ranging from 0.113 to 0.130, which means that a 1 percent increase in the share

of cash results in 0.113 to 0.130 percent higher gains to target shareholders. It should be noted that a large share of our takeovers concerns a rather large share of cash and that the method of payment could affect the target gains in two ways. An overvalued acquirer would use stocks as payment, which should mean that a larger share of cash results in lower target gains. Stock payments are used by acquirers' when they are overvalued and allow them to take advantage of a market imperfection and target shareholders with a short time horizon (Shleifer and Vishny, 2003). However, taxation of cash bids as capital gains in the U.S. speaks in favor of that cash bids should be higher. Our sample shows that the trade-off between these considerations favor the second alternative and that cash bids generally increase the gains to the target shareholders.

The negative return for multiple bidders, significant at a 10 percent level with a coefficient around -12 for all regressions, are likely to be a result of our sample since competition should have a positive effect on target shareholder wealth gains (Bradley, Kim and Desai, 1988). It could be a result of a sample where the transactions involving multiple bidders have a generally lower premium and that we lack data displaying the bidding process. The negative coefficient on market value is also found by Betton et al. (2008) and it appears reasonable to assume that high market values coincide with smaller target gains because of the larger total amount involved in transactions involving larger firms. The variable is consistently significant at a 5 percent level with a coefficient ranging from -2.198 to -2.363, which means that a 1 percent increase in market value will result in a 0.021 decrease in CAR.

Table 6

Regression analysis of target wealth gains in cross-border acquisitions with short-window CAR.

The cumulative abnormal return day -3 to +1 is the dependent variable. The sample includes 250 observations from 10 different countries during the period January 2000 and October 2012. Standard errors are corrected for heteroscedasticity and clustered on countries. See Table 3 for variable definitions.

Standard errors are presented in parenthesis and ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively

VARIABLES	(1)	(2)	(3)	(4)
ofcash	0.055	0.048	0.05	0.06
	(0.044)	(0.045)	(0.049)	(0.055)
bidders	-14.47**	-14.64**	-15.07***	-15.12***
	(4.466)	(4.591)	(4.487)	(4.273)
sharesacq	0.179	0.171	0.168	0.164
	(0.196)	(0.201)	(0.203)	(0.202)
sameind	0.484	0.107	0.144	0.193
	(2.478)	(2.191)	(2.163)	(2.180)
trend2	-5.439**	-5.146*	-5.282**	-5.545**
	(2.033)	(2.275)	(2.266)	(2.401)
mtbv	-0.160	-0.162	-0.199	-0.255
	(0.407)	(0.405)	(0.395)	(0.393)
lnmv	-1.595*	-1.698*	-1.681*	-1.586*
	(0.790)	(0.773)	(0.788)	(0.761)
capex	-0.0382	-0.0369	-0.0368	-0.0374
	(0.022)	(0.021)	(0.021)	(0.021)
fxvar1	-1.373			
	(1.416)			
fx3y		-0.361		
		(0.860)		
fx2y			0.406	
			(0.826)	
fx1y				1.697**
				(0.627)
Constant	15.16	17.17	17.33	16.49
	(21.32)	(21.84)	(22.23)	(22.14)
Observations	250	250	250	250
R-squared	0.088	0.084	0.084	0.091

In a regression with our "short" CAR's the results in our exchange rate variables take the same form as above, with the exception of an insignificant *fxvar1*. *Fx1y* is significantly positive at a 5 percent level and a coefficient of 1.697. This significance is again lost as we expand the timespan. In the "short" CAR that encompasses three days before until one day after the announcement we are likely to lose some of the potential run-up that occurs prior to the announcement, which might contribute to lowering the coefficient (Schwert, 1996). A shorter event window also produces an insignificant *ofcash* variable. We examine this by regressing the *run-up (=longcar1-shortcar1)* on *ofcash* and find a link between a higher share of cash in the transaction and a higher run-up. It appears as if a cash deal attracts more attention, which could explain why the run-up is larger.

Multiple bidders and market value remains negative and significant at a 1 percent and a 10 percent level respectively. However, a positive trend in the acquirers' stock index that coincides with a negative trend in the targets' stock index is consistently significant at a 5 percent level and displays a negative coefficient ranging from -5.146 to -5.545, which translates into that a acquisitions preceded by a positive trend in the acquirers stock index and a negative trend in the targets decrease the gains by roughly 5 percent. The trend variable is intended to capture the relationship between a depressed U.S. stock market and increased foreign takeovers of U.S. firms found by Vasoncellos and Kish (1998) and how premiums are negatively correlated with the index performance (Nathan and O'Keefe, 1989). Our definition of positive versus negative trend might spur this result since a two quarter drop in the target country's index might not qualify as a "depressed" stock market. However, our results indicate that this is related to the target gains negatively and that foreign acquirers' might capitalize on even a short-time decline in the targets' index.

Table 7

Regression analysis of target wealth gains in cross-border acquisitions with dummy variables.
The cumulative abnormal return day -20 to day +4 is the dependent variable. The sample includes 250 observations from 10 different countries during the period January 2000 and October 2012. Standard errors are corrected for heteroscedasticity and clustered on countries. See Table 3 for variable definitions. Standard errors are presented in parenthesis and ***, **, * note statistical significance at the 1%, 5%, and 10% level, respectively.

VARIABLES	(1)	(2)	(3)	(4)
ofcash	0.113***	0.113***	0.113***	0.121***
	(0.033)	(0.03)	(0.029)	(0.032)
bidders	-12.06*	-12.36*	-12.26*	-12.54*
	(6.086)	(6.139)	(5.824)	(6.311)
sharesacq	0.118	0.117	0.117	0.114
	(0.185)	(0.185)	(0.184)	(0.184)
sameind	-2.849	-2.968	-2.916	-2.792
	(1.998)	(2.113)	(2.112)	(2.103)
trend2	-4.301	-4.386	-4.352	-4.438
	(4.742)	(4.527)	(4.437)	(4.905)
mtbv	-0.323	-0.337	-0.328	-0.304
	(0.411)	(0.398)	(0.394)	(0.418)
lnmv	-2.359**	-2.363**	-2.366**	-2.365**
	(0.835)	(0.893)	(0.890)	(0.827)
capex	-0.023	-0.023	-0.023	-0.024
	(0.029)	(0.03)	(0.030)	(0.030)
fxvar1dummy	-0.386			
	(1.663)			
fx3ydummy		0.647		
		(2.284)		
fx2ydummy			0.374	
			(2.682)	
fx1ydummy				4.056*
				(1.775)
Constant	24.92	24.70	24.71	22.55
	(21.07)	(21.49)	(21.78)	(21.34)
Observations	250	250	250	250
R-squared	0.082	0.082	0.082	0.089

Table 7 displays the results of the regression where we include dummy variables indicating the strength of the exchange rate at the time of announcement. The regressions show no significant results indicating that a strong exchange rate would yield lower target gains. However, the exchange rate dummy encompassing our shortest timespan remains significant and positive at a 10 percent level with a positive coefficient of 4.056. Takeovers occurring when the exchange rate is above average have a CAR that is 4.056 percent higher than those that occur when the exchange rate is below average. The control variables that have been consistently significant (*ofcash, bidders, lnmv)* are all still statistically significant in all four regressions at a 1, 10 and 5 percent respectively. The exchange rate variable in our shortest timespan is still in line with our hypothesis but the difference in what *fxvar1* and its' dummy display that it is reasonable to question the use of an average that is not linked to each individual transaction.

It is evident that the impact of exchange rates appear to be a question of how you define its' relative strength. The shortest timespan display consistent and significant results indicating that exchange rates affects the targets' shareholders positively, which confirm the theory developed by Froot and Stein (1989) and the link between exchange rates and FDI. However, we are unable to conclude this as we expand the timespan that constitutes the averages and incorporate the measure used by Harris and Ravenscraft (1991). Including shorter timespans allows us to differentiate between the relative strength of the exchange rate and capture the effects of short-term changes in the exchange rate that might provide an opportunity for foreign investors to place competitive bids.

6.3. PPP Regression

Table 8

Regression analysis of target wealth gains in cross-border acquisitions with PPP.
The first regression includes the cumulative abnormal return day -20 to day +4 as the dependent variable. In the second regression the dependent variable is the cumulative abnormal return day -3 to day +1. The sample includes 250 observations from 10 different countries during the period January 2000 and October 2012. Standard errors are corrected for heteroscedasticity and clustered on countries. See Table 3 for variable definitions.
Standard errors are presented in parenthesis and ***, **, * note statistical significance at the 1%, 5%, and 10% level, respectively

VARIABLES	(1)	(2)
ofcash	0.110***	0.047
	(0.032)	(0.045)
bidders	-11.82*	-14.77**
	(5.760)	(4.412)
sharesacq	0.0987	0.165
	(0.206)	(0.210)
sameind	-2.563	0.200
	(2.176)	(2.156)
trend2	-5.022	-5.410**
	(4.178)	(1.953)
mtbv	-0.423	-0.205
	(0.358)	(0.361)
lnmv	-2.308**	-1.679*
	(0.896)	(0.794)
capex	-0.0236	-0.0370
	(0.029)	(0.021)
ppp	13.20	3.722
	(9.261)	(7.579)
Constant	14.00	14.23
	(22.01)	(23.68)
Observations	250	250
R-squared	0.093	0.085

In Table 8 we use the purchasing power parity instead of exchange rate as one of the control variables. In regression one the long-window CAR is being used while the second regression shows the short-window CAR. We find no significant results indicating that the variable *ppp* should affect the target gains. As in the previous regressions *bidders,* and *lnmv* are significant in

both ways of measuring the target gains, while *ofcash* is significant when measuring premiums in the longer period and *trend2* is significant when using the shorter period.

We find that this is a direct result of the lack in data that would allow us to differentiate more extensively between takeovers.

6.4. Additional tests

In addition to the regressions in the previous section we perform regressions where we exclude the negative CAR's and an additional one where we do not cluster by the acquiring country (see Appendix, Table 9 and 10). This does not alter our results or analysis substantially. The exchange rate variable with our shortest timespan remains significant and positive.

Since the sample is skewed in the number of acquisitions done per year we perform a regression where we account for if there are more than 20 acquisitions done the year of the takeover to make sure that the skewness in our data does not affect our result (not reported). We include a dummy variable that equals one if the takeover is made during a year when there are more than 20 takeovers (year 2000, 2005,2006 and 2007). This do not alter our results in any significant way, *fxvar1* and *fx1y* are still the significant variables when it comes to exchange rates and as in the results in Table 5 *ofcash, bidders* and *lnmv* are the only control variables that are statistically significant.

Due to missing variables and a high mean in our *ofcash* variable, we find it appropriate to perform regressions that exclude this variable (See Appendix, Table 11). We perform regressions similar to those in Table 5 and the two most prominent changes are that we lose significance in *fxvar1* and that *sameind* is negative and consistently significant at a 5 percent level. Firms that acquire in the same industry as their own generally decrease the gains to the targets. This shows that acquisitions in order to diversify involve larger gains to the target shareholders and that the acquirers might struggle to value these firms correctly This is in line with Bruner (2001) who stated that diversification destroys value for the acquirer. Buying in the same industry might mean that the acquirer is better suited to estimate the potential synergies and benefits of a merger that is overlooked by an acquirer that operates outside of the target's industry. It is also evident that an additional regression that excludes *ofcash* and incorporates more observations results in

an insignificant *fxvar1*, which displays that the variables impact is fragile since the same action does not alter our results using the transaction specific averages.

We also substituted the variable *sameind* for *simind,* to see if it affects our results (not reported). However, swapping variables does not change the outcome of our regressions. The proposed increase in target gains arising from synergies that can be exploited by the buyer remains insignificant.

We also perform a regression including a tax variable (see appendix, Table 12). The variable is supposed to capture the difference in corporate tax between the acquirer's country and the targets and how this should impacts the target gains. Our results do not change in any major way and despite that the tax variable is significant, we find that it is fairly weak in determining the potential gains that could occur due to taxation differences among countries.

7. Summary & Conclusion

In a study of 250 cross-border takeovers occurring between 2000 and 2012 we are unable to fully confirm our hypothesis that target wealth gains are positively related to the exchange rate between the bidder and target firm. We find that the link appears depending on the timespan employed in order to establish the average exchange rate that we use in order to classify the strength of the exchange rate at the time of the bid announcement. When using the average that encompass the two years surrounding the announcement, we find significant results indicating that a relatively strong exchange rate does affect the gains to the target's shareholders positively. However, if we extend the timespan, we are unable to find the same results, which calls for a cautious conclusion on the impact of exchange rates in modern takeovers.

The exchange rate variable attached to our shortest timespan is consistently significant regardless of if we change our event window or drop variables in order to gain observations in our sample. However, a longer timespan results in that we lose significance in the exchange rate variables, which obstructs a general conclusion that would confirm our hypothesis and the theory by Froot and Stein (1989) in the same manner as Harris and Ravenscraft (1991) did. Our results would

force a very wide definition of when the exchange rate is relatively strong that might change with a different sample.

A wide definition of exchange rate strength affect the target gains positively and tying the average exchange rate to each individual transaction is a more consequent way of determining its' strength. Allowing the benchmark to vary in the same way as the exchange rate at the time of announcement yield additional measures that provide an image of the conditions the acquirer faced around the time the bid is announced. The results from our redefinition of exchange rate strength yield a more robust and consequent result that could have been an interesting addition to the original study.

We do not exclude the possibility that exchange rates are a determinant in cross-border takeovers but simply state that our sample yields inconclusive results that changes while defining our exchange rate variables differently and prohibits a definitive answer. Our results might indicate that the informational asymmetries thought to favor foreign investors with a relatively strong exchange rate have decreased over the years, which is reasonable due to improvements in information technology between now and when the initial study by Harris and Ravenscraft were performed.

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9.Appendix

Table 9

Regression analysis of target wealth gains in cross-border acquisitions without negative CARs

The cumulative abnormal return day -20 to day +4 is the dependent variable. The sample includes 282 observations from 10 different countries during the period January 2000 and October 2012. Standard errors are corrected for heteroscedasticity and clustered on countries. See Table 3 for variable definitions.

Standard errors are presented in parenthesis and ***, **, * note statistical significance at the 1%, 5%, and 10% level, respectively.

VARIABLES	(1)	(2)	(3)	(4)
ofcash	0.074*	0.061*	0.065*	0.074*
	(0.032)	(0.028)	(0.029)	(0.038)
bidders	-11.79*	-11.83*	-12.29*	-12.08*
	(5.648)	(5.670)	(5.609)	(5.825)
sharesacq	0.143	0.117	0.108	0.104
	(0.168)	(0.170)	(0.169)	(0.166)
sameind	-2.981	-3.567	-3.472	-3.414
	(2.549)	(2.689)	(2.794)	(2.684)
trend2	-6.073	-5.755	-5.868	-6.051
	(4.738)	(4.588)	(4.604)	(4.825)
mtbv	-0.468	-0.488	-0.532	-0.579
	(0.389)	(0.373)	(0.358)	(0.364)
lnmv	-2.285***	-2.443**	-2.429**	-2.351**
	(0.621)	(0.755)	(0.788)	(0.757)
capex	-0.041	-0.039	-0.038	-0.039
	(0.024)	(0.023)	(0.024)	(0.024)
fxvar1	-2.079***			
	(0.496)			
fx3y		-0.101		
		(0.922)		
fx2y			0.770	
			(1.043)	
fx1y				1.915**
				(0.704)
Constant	29.29*	34.10*	34.58*	33.86*
	(15.64)	(15.82)	(16.28)	(16.91)
Observations	227	227	227	227
R-squared	0.097	0.089	0.090	0.097

Table 10

Regression analysis of target wealth gains in cross-border acquisitions without cluster

The cumulative abnormal return day -20 to day +4 is the dependent variable. The sample includes 282 observations from 10 different countries during the period January 2000 and October 2012. Standard errors are corrected for heteroscedasticity and clustered on countries. See Table 3 for variable definitions.

Standard errors are presented in parenthesis and ***, **, * note statistical significance at the 1%, 5%, and 10% level, respectively.

VARIABLES	(1)	(2)	(3)	(4)
ofcash	0.118*	0.113*	0.120*	0.130*
	(0.066)	(0.068)	(0.069)	(0.069)
bidders	-11.80**	-12.45**	-12.90***	-12.53***
	(4.712)	(4.827)	(4.804)	(4.794)
sharesacq	0.124	0.115	0.109	0.108
	(0.144)	(0.149)	(0.150)	(0.149)
sameind	-2.588	-2.920	-2.758	-2.770
	(3.151)	(3.175)	(3.182)	(3.176)
trend2	-4.498	-4.402	-4.573	-4.823
	(3.811)	(3.905)	(3.919)	(3.860)
mtbv	-0.309	-0.348	-0.402	-0.445
	(0.439)	(0.435)	(0.433)	(0.426)
lnmv	-2.282**	-2.363**	-2.313**	-2.198**
	(1.020)	(1.005)	(0.995)	(0.985)
capex	-0.024	-0.023	-0.023	-0.024
	(0.026)	(0.026)	(0.026)	(0.026)
fxvar1	-1.161			
	(1.524)			
fx3y		0.592		
		(1.508)		
fx2y			1.467	
			(1.502)	
fx1y				2.622*
				(1.490)
Constant	23.12	25.20	24.96	23.66
	(17.56)	(18.02)	(18.16)	(17.98)
Observations	250	250	250	250
R-squared	0.084	0.082	0.086	0.095

Table 11

Regression analysis of target wealth gains in cross-border acquisitions without *ofcash*

The cumulative abnormal return day -20 to day +4 is the dependent variable. The sample includes 282 observations from 10 different countries during the period January 2000 and October 2012. Standard errors are corrected for heteroscedasticity and clustered on countries. See Table 3 for variable definitions.

Standard errors are presented in parenthesis and ***, **, * note statistical significance at the 1%, 5%, and 10% level, respectively.

VARIABLES	(1)	(2)	(3)	(4)
bidders	-12.51*	-13.19**	-13.48**	-13.01*
	(5.997)	(5.660)	(5.595)	(5.762)
sharesacq	0.174	0.165	0.158	0.156
	(0.215)	(0.215)	(0.215)	(0.211)
sameind	-3.762*	-3.811*	-3.717*	-3.810*
	(1.880)	(1.841)	(1.864)	(1.836)
trend2	-3.503	-3.675	-3.812	-4.023
	(5.046)	(4.925)	(4.836)	(5.062)
mtbv	-0.286	-0.300	-0.312	-0.330
	(0.263)	(0.244)	(0.232)	(0.229)
lnmv	-2.759***	-2.752***	-2.720***	-2.639***
	(0.728)	(0.778)	(0.789)	(0.769)
capex	-0.021**	-0.020**	-0.02**	-0.021**
	(0.008)	(0.008)	(0.008)	(0.008)
fxvar1	-0.254			
	(0.404)			
fx3y		1.139		
		(1.015)		
fx2y			1.767	
			(1.198)	
fx1y				2.685**
				(0.923)
Constant	31.52	32.37	32.91	32.78
	(22.10)	(22.23)	(22.24)	(21.93)
Observations	282	282	282	282
R-squared	0.086	0.089	0.092	0.100

Table 12

Regression analysis of target wealth gains in cross-border acquisitions with tax

The cumulative abnormal return day -20 to day +4 is the dependent variable. The sample includes 250 observations from 10 different countries during the period January 2000 and October 2012. Standard errors are corrected for heteroscedasticity and clustered on countries. See Table 3 for variable definitions.

Standard errors are presented in parenthesis and ***, **, * note statistical significance at the 1%, 5%, and 10% level, respectively.

VARIABLES	(1)	(2)	(3)	(4)
ofcash	0.114**	0.105**	0.110**	0.122**
	(0.04)	(0.038)	(0.041)	(0.046)
bidders	-11.23	-11.88*	-12.43*	-12.29*
	(6.451)	(6.205)	(6.084)	(6.342)
sharesacq	0.126	0.113	0.108	0.104
	(0.173)	(0.183)	(0.184)	(0.181)
sameind	-2.623	-3.171	-3.050	-3.026
	(2.091)	(2.049)	(2.121)	(2.036)
trend2	-6.559*	-5.851	-5.933	-6.301
	(3.197)	(3.518)	(3.575)	(3.801)
mtbv	-0.373	-0.387	-0.435	-0.501
	(0.408)	(0.381)	(0.358)	(0.373)
lnmv	-2.670***	-2.746***	-2.684***	-2.571***
	(0.545)	(0.691)	(0.746)	(0.714)
capex	-0.020	-0.019	-0.019	-0.02
	(0.03)	(0.03)	(0.03)	(0.03)
taxeff	-0.374**	-0.306*	-0.286*	-0.296*
	(0.152)	(0.142)	(0.137)	(0.130)
fxvar1	-2.170**			
	(0.825)			
fx3y		0.007		
		(1.024)		
fx2y			0.995	
			(1.143)	
fx1y				2.525**
				(0.819)
Constant	26.08	28.68	28.44	27.31
	(20.01)	(21.51)	(22.14)	(22.16)
Observations	250	250	250	250
R-squared	0.104	0.096	0.098	0.108