Analysis and Discussion

Before moving to the econometric analysis, it is important to discuss some features of the data. Firstly, Table 1 highlights the differences in intuitional quality between different regions/countries used in the subsequent analysis. The institutional data are taken from the International Country Risk Guide (ICRG) constructed by countryrisk.com. As well as their measure of internal conflict (discussed above) they also have statistics on corruption and law & order. The data in Table 1 contains an average taken from 1997-2009 for each of these variables for a number of key countries. Freedom from Corruption is an assessment of corruption within the political system it has maximum score of 6. Law & Order is split up into two components. The Law sub-component is an assessment of the strength and impartiality of the legal system, while the Order sub-component is an assessment of popular observance of the law. The maximum score for this variable is 6.

The internal conflict variable is discussed above.

Table 1 here

As can be seen across each country there is considerable heterogeneity. The data follows a consistent and familiar pattern, with the developing countries Brazil and India all scoring lower on average for each measure relative to the other countries. This result is unsurprising. Perhaps the most interesting statistics are those associated with Italy and Spain, who have the worst rating in terms of freedom from corruption and law & order in western Europe.

6.1 Modelling Strategy

Clearly the decision to invest in a conflict zone in a developing country is not the same as the decision to invest in say the US or EU. Investing in a developing country in general can be considered more risky, with investment in a conflict location an extreme example of this. We therefore proceed as follows. In order to control for the propensity to engage in risky investments, we construct a database of all firms who have invested in developing countries with weak institutions, based on the institution quality data discussed below. This controls for risk taking, and also the ability or willingness to operate in countries with poor institutional protection. We subsequently seek to explain which firms are then willing to invest in conflict zones, which may be seen as a more extreme situation.

As we outline above, we do this through the use of a panel probit model, but before presenting the results it is important to consider a number of econometric issues. Firstly, there is the issue of colinearity in the explanatory variables. Some of the correlations reported in table A3 are high, but these typically are simply correlations between measures of size. They do not present a colineraity problem, and the summary of the VIF tests are reported below table A3.

Secondly, as some firms may repeatedly invest in the same set of countries, there is the possibility of serial correlation. We tested for this using the most reliable test for serial correlation, as discussed in Gourieroux et al (1985). This involves the use of an asymptotic "score test" for serial correlation. The null of no serial correlation is not rejected for any of the sets of results that we report below.

The final issue is one of endogeneity in the institution variables. Some of the literature discussed above suggest a theoretical relationship in which ifdi can influence the institutions of a country. It is therefore necessary to test for this, and

we do so under the null of no serial correlation, using a likelihood ratio test. This fails to reject the null that the institution variables are endogenous[8].

Finally, as we outline above, there are numerous measures of phenomena such as institutional quality, or ownership structures, so our strategy proceeds as follows. Starting with the baseline model that uses traditional variables seeking to capture differences in the FDI decision, such as age, size, intangible assets, sector and performance, we augment this with the measures of institutional quality, such as freedom from corruption, protection of law and order, and internal conflict in the home country. These measures are designed to capture a range of institutional differences, but in practice tend to be correlated, and so we introduce these on an individual basis. For completeness, we also replace these with a set of country dummies to capture differences in the home country.

The baseline equation employs freedom from corruption, as the variable most used in the FDI flows literature discussed above. We then employ the others in turn, and finally replace these with country dummies to examine the importance of home countrydifferences of these on the decision to invest in a conflict country. In order to confirm the final specifications we employ a series of RESET tests for overall model specification, following the work of Peters (2000) and Gourieux et al (1987). Table 2 gives some simple descriptive statistics for each of the variables used in the following analysis. Included are the mean, standard deviation and the maximum and minimum values for each variable. In addition to this Table A1.1 in Appendix A contains the correlation matrix for the FDI variables.

Table 2 here

Tables 3A and 3B presents the results of our baseline probit specification (column 1). These report comparable specifications, using two alternative measures of shareholding concentration. Initially we focus on the importance of the leading shareholder (3A) and then on the herfindahl of all shareholdings (3B). The results however are consistent across these alternative indicators.

The results illustrate the firm level determinants of a firm's decision to invest in a conflict location. More specifically they represent the decision of a firm that has already chosen to invest in low income countries with weak institutions, to also invest in a conflict location. Given this particularly restrictive question, the models work particularly well.

The control variables work as expected, profitability is associated with this type of FDI and are consistent with the OLI theory outlined above. Intangible assets and number of subsidiaries are positive. Equally, the effect of age is positive, but again with a turning point[9], suggesting that the most established firms shy away from this type of activity. The results concerning age and size can also be linked to the issue of CSR. Small firms are perhaps too small to attract criticism, or perhaps are set up for the specific purpose of investing in sensitive locations, while the largest firms are extremely diversified and may be able to hide certain activities. The other control variables, subsidiaries, cash flow and intangible assets work as expected.

We also find unqualified support for hypothesis two. The coefficients on the sectoral dummies show not surprisingly mining and agriculture are positive and significant. Firms in these sectors are some 15% and 7% respectively more likely to engage in FDI in conflict zones. Those sectors governed by geography are more likely to engage in FDI in conflict zones. It is noticeable however than manufacturing firms are more likely to invest in such locations, though this again is linked to the desire to source

key inputs. Our results show that the extent of this strategy goes well beyond what may have been thought of as the traditional sectors of this type of activity. High-technology industries, which include financial services and manufacturing, show a high probability of being attracted to such locations. Transportation, not surprisingly, is less likely to be attracted to conflict countries.

Firm size is inversely associated with this behaviour, though with a turning point, suggesting that it is the smaller and largest firms that are most likely to invest in conflict locations, which provides support for hypothesis three.

Table 3A here

Of more interest are the ownership variables, both in terms of the firm specific variables, and the home country variables. There is strong support for hypothesis one. From even within the developed world there are large differences in the propensity to invest in conflict countries. Spain, Italy and France appear far more likely to invest in conflict countries than Germany or USA or the UK, although the UK is positive but small, perhaps indicative of certain ex colonial ties. This provides support for the arguments around hypothesis one, in that there are significant differences in the propensity of different countries to invest in conflict regions, and that these are explained by differences in home country institutions. This is then extended further to include transition countries, with India and Brazil being significantly more likely to invest in conflict locations. The marginal effects, reported in the appendix are also informative here. Italian firms for example are nearly 37% more likely to invest in a conflict zone than the average, while Japanese firms are 12% less likely. Of the emerging countries, India is the most likely to invest in conflict zones, 38% more likely than the average. These results are replicated by the model that employs

ownership concentration in the form of the herfindahl of ownership concentration, which are reported in table 3B.

Table 3b here

The country effects are confirmed by the measures of institutional quality, with all three measures being negatively associated with FDI to conflict countries. Firms from countries with lower corruption, less internal conflict, and better law and order are less likely to invest in conflict zones. This is consistent with both the analysis based on CSR, and the resource based view of the firm. Firms from countries with traditionally weaker institutions (even within the developed world) are more likely to be willing to engage with such locations, having more experience with managing resources in challenging environments. It is also likely that such firms may face less criticism or questioning over the ethics of their investments, than in say the US, UK or Germany.

 The impact of ownership concentration is positive across all specifications, and both measures of ownership concentration, providing strong support for hypothesis 4such that concentrated firms are more likely to invest in conflict locations. This is consistent with the discussion of both CSR and the work of Peng (2008) and Doukas and Lang (2003)

that is linked in H4.