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by Alessio Ciarlone and Valeria Miceli

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ARE SOVEREIGN WEALTH FUNDS CONTRARIAN INVESTORS?

Alessio Ciarlone ^a and Valeria Miceli ^{b*}

Abstract

This paper investigates the determinants of the investment activity of Sovereign Wealth Funds (SWFs) at a macro level, with special emphasis on the possible reaction to a financial crisis in a potential target economy. The analysis relies upon a specially built proprietary database, which encompasses 1,903 acquisition deals spanning the period 1995-2010 and involving 29 out of the 69 existing SWFs. According to a three-step modelling approach, we find that this class of investors prefers to invest in countries with a higher degree of economic development, larger and more liquid financial markets, institutions that offer better protection of legal rights, and a more stable macroeconomic environment. Most importantly, and in stark contrast with the existing empirical literature on other major institutional investors, SWFs seem to engage in ‘contrarian’ investment behaviour, i.e. increasing their acquisitions in countries where crises hit. The results are shown to be valid if we consider both the likelihood of a country being the target of SWFs’ investments and the amount SWFs choose to invest in each country. Capital flows stemming from SWFs’ acquisition activity worldwide may therefore eventually have a stabilizing effect on local markets during periods of financial turmoil, protecting the targeted countries from foreign shocks instead of propagating them globally.

JEL Classification: F21, F65, G01, G15, G23, G34.

Keywords: Sovereign Wealth Funds, cross-border investment, acquisition determinants, contrarian, financial crises.

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^a Bank of Italy, International Relations Directorate.

^b Dipartimento di Economia Internazionale, delle Istituzioni e dello Sviluppo (DISEIS), Centro di Ricerche in Analisi Economica (CRANEC), Facoltà di Scienze Politiche e Sociali, Università Cattolica, Milan.

* Corresponding author.

1. Introduction ¹

The article investigates the determinants of Sovereign Wealth Funds' (SWFs) investment choices at macro level, i.e. in terms of the characteristics of the target country. Within this general framework, the paper assesses whether SWFs follow the procyclical investment behaviour which seems to be typical of other institutional investors by divesting from countries where crisis hits, thus propagating the transmission of shocks globally.

SWFs are state-owned investment vehicles which manage portfolios of financial instruments partly denominated in foreign currency. They derive their wealth from commodity revenues or from balance of payments or fiscal surpluses.

Interest in the investment behaviour of SWFs has increased rapidly over the last ten years, given their growing presence in global financial markets, particularly in the equity ones: ² according to the specifically built proprietary dataset used in this paper – encompassing 1,903 equity acquisitions spanning the period 1995-2010 – SWFs reached the peak of their investment activity in international equity markets in 2007, with investment totalling \$124 billion.

SWFs' assets under management (AuM) reached \$6.3 trillion at end-2013, a figure larger than that of other important institutional investors like private equity funds or hedge funds. In spite of their growing size, academic research on SWFs is fairly limited. This is partly due to information gaps: most funds publish only very limited information about their investment activity and portfolio structure and dimension. This has raised concerns amongst politicians, the public and international financial institutions that they could be pursuing hidden strategic objectives instead of the declared return maximization targets.

Given their size, it is critical to understand which variables might determine SWFs' investment choices and also whether they contribute to exacerbating crises, propagating shocks through international financial markets from one country to another. Anecdotal evidence (Ciarlone and Miceli, 2013) suggests that SWFs followed a countercyclical approach during the recent financial crisis, when they invested in bank stocks rescuing liquidity constrained western financial institutions. By means of a more robust econometric approach, the objective of this paper is to assess whether this *prima facie* evidence of SWFs acting as stabilizers during episodes of crises is confirmed or, alternatively, whether SWFs behave like other classes of institutional investors, which divest from countries where crisis hits, thus propagating shocks on a global scale.

Investment can be thought of taking place in two stages: first of all, SWFs evaluate the countries where to invest; second, SWFs decide the actual optimal amount to allocate to each of them. By means of a three-stage modelling approach, we find evidence that SWFs are more likely to invest in countries characterised by a higher degree of economic development, deeper and more liquid financial markets, a more effective protection of property rights, a more stable macroeconomic environment. The country

¹ We would like to thank Giuseppe Parigi, Pietro Catte, an anonymous referee and participants at the 4th EMG-ECB Emerging Markets Finance Conference in London, the 12th Infiniti Conference in Prato, the 6th IFABS Conference in Lisbon and the World Finance Conference in Venice for their helpful comments on an earlier version of this paper. We also would like to thank Fondazione Eni Enrico Mattei /Monitor Group for access to their SWF database. This research has been partly financed by Università Cattolica project D.3.2 – 2009, “Stato e Mercato” directed by Carlo Beretta and Alberto Quadrio Curzio. Additional funding has been provided by the research centre CRANEC (Università Cattolica). Any errors and omissions remain our sole responsibility. The usual disclaimers apply.

² Equities, indeed, do represent an important share of SWFs' portfolios: in the average, this share is estimated to be between 50-55 per cent, with the exception of a few funds which are not allowed to trade in equities.

economic size and its degree of financial development, instead, turn out to play a positive and significant role in determining how much a SWF will allocate to each country.

Another, and in some sense more important, result relates to the sign and significance of the crisis dummy series. According to our estimation results, a country experiencing a financial crisis – however defined – is more likely to attract equity acquisitions by SWFs. Regardless of the econometric specification, the crisis dummy always significantly increases the likelihood of a country being targeted by SWFs' investment activity. At the same time, the crisis dummy also positively and significantly affects the overall amount SWFs decide to invest in each country.

This result shows that SWFs behave in a countercyclical way in their equity acquisition strategy: in stark contrast with the existing empirical literature about other major institutional investors – clearly showing a prevalence of a procyclical investment activity in times of financial stress – SWFs seem to engage in a 'contrarian' behaviour by increasing their acquisitions in countries hit by crises. Capital flows stemming from SWFs' investment activity, therefore, may end up having a stabilizing role on local markets during periods of financial turmoil, protecting the targeted countries from foreign shocks instead of propagating them globally. This conclusion is in line with what we would have expected considering SWFs specific characteristics. Focusing, for example, on the investment approach of the Norwegian SWF, the largest in the world, Chambers *et al.* (2012) suggest a tilt towards patient, liquidity supplying and market-stabilizing value strategies: being by definition large long-term investors with relatively stable risk preferences over time, SWFs are in the position to avoid pro-cyclical investing and, at the same time, earn liquidity and other *premia* through contrarian transactions.

The contribution of the paper is twofold. On the one side, it further develops the literature on SWFs by identifying the determinants of their investment choices at a country level. On the other side, it contributes to the literature on the behaviour of institutional investors showing that this class of investors do not exacerbate, or propagate, financial shocks globally. Our study is the first one, to our knowledge, which deals with these particular aspects of SWFs' investment activity.

The paper proceeds as follows. Section 2 provides background information on SWFs. Section 3 summarizes the literature on SWFs and on institutional investors' behaviour in terms of procyclicality. Section 4 describes the dataset, considering both the dependent and the independent variables as well as the econometric approach. Section 5 presents the main feature of the three-stage modelling approach, along with the estimation results. Section 6 reports a set of robustness checks. Section 7 concludes.

2. Background information on SWFs

SWFs are state-owned investment vehicles which manage portfolios of financial instruments partly denominated in foreign currency. They derive their wealth from commodity revenues or from balance of payments or fiscal surpluses (IMF, 2008).

SWFs share some common characteristics that make them worth considering as a single group of investors (Quadrio Curzio and Miceli, 2010). To begin with, all SWFs are government-owned investment funds. Second, a significant share of their portfolios is invested in foreign assets. Third, they are not subject to short-term withdrawals, i.e. they have no explicit liabilities to their owners, which gives to most of them a typically long-term investment horizon. Fourth, they are separately managed from official reserves, even when they are administered within the central bank. Finally, they are clearly differentiated from other state-owned entities, such as state-owned enterprises and public pension funds.

The last decade witnessed an impressive growth of this phenomenon, both in terms of the size of their AuM and in terms of number of new funds established worldwide. The total amount of AuM increased from \$500 billion in 1995 to almost \$6.3 trillion in 2013, while more than half (64 per cent) of all existing SWFs was established between 2000 and 2013. Funding for this rapid growth has been made possible by the increasing oil revenues and by the accumulation of foreign currency reserves.

Based on the characteristics outlined above, it is possible to pinpoint 69 SWFs in 2013, with an estimated total amount of AuM of almost \$6.3 trillion, a figure that corresponds to 8.5 per cent of the world GDP in 2013 and 4 per cent of the total stock of global financial activities in 2012 (last available figure, IMF, 2014). Their size is significant when compared to that of other important institutional investors, like private equity funds (which manage an estimated total amount of assets of \$2.6 trillion) or hedge funds (\$1.9 trillion); it remains not trivial even when confronted with central banks reserves (\$11 trillion) and also with the actual global financial giants, i.e. pension funds (with \$30 trillion of AuM), insurance companies (\$25 trillion) and mutual funds (\$24 trillion). Another relevant characteristic is the high degree of concentration: the 10 largest SWFs hold almost 80 per cent of total assets, the first 30 almost 96 per cent.³

Table 1 lists the first 30 SWFs ranked by their respective AuM along with the country of origin, the year of inception and the source of their wealth, where C stands for ‘commodity’ (mostly oil and gas) and NC stands for ‘non-commodity’ (mostly trade balance or fiscal surpluses). Considering all the existing 69 SWFs, nearly 40 per cent of the total assets belong to SWFs located in Asia. Some of the largest are the Chinese SAFE Investment Company, the China Investment Corporation, and the two Singaporean funds (the Government Investment Corporation and Temasek); typically, they do not derive their wealth from commodity exports, but rather from balance of payments surpluses. Middle Eastern SWFs follow suit, managing another big share (39 per cent) of total assets mostly stemming from oil-related revenues; the largest ones are represented by the Saudi Arabian Monetary Agency, the Abu Dhabi Investment Authority, the Kuwait Investment Authority and the Qatar Investment Authority. European SWFs were estimated to manage 17 per cent of total assets, with the biggest players being the Norwegian Pension Fund and the two Russian National Wealth Fund and Reserve Fund; all of them are commodity-based SWFs.

In the medium- to long-run, SWFs are expected to grow further, albeit at a slower pace. According to some recent estimates (Castelli and Tagliapietra, 2012), SWFs’ total AuM may reach \$10 trillion by the end of 2016, growing at a faster pace than other financial investors. Given their current size, and their expected growth rate, they appear to be particularly well-equipped to navigate financial markets, especially in critical periods.

Along with their number and dimension, and given their growing relevance for financial market developments, the interest in their structural characteristics and investment behaviour has rapidly

³ Apart from concentration, it could be insightful to give a piece of information about the relative dimension of these global players. By the end of 2013, the largest SWF was the Norwegian Government Pension Fund, with a total amount of AuM of almost \$840 billion, followed suit by the Abu Dhabi Investment Authority (\$773 billion), the Saudi Arabian SAMA Foreign Holdings (\$675.9 billion) and the two Chinese SWFs, the China Investment Corporation and the SAFE Investment Company (with \$575 and \$570 billion of AuM, respectively). In the average, these measures put SWFs approximately in the same league, in terms of size, as the largest insurance companies – like the Japan Post Insurance (\$1,258 billion of AuM), the French AXA (\$946 billion), the German Allianz (\$831) and the US Metlife (\$800) – and the largest pension funds – like the Japanese Government Pension Fund (\$1,292 billion of AuM), the Dutch ABP fund (\$373 billion) and the Korean National Pension Fund (\$368 billion). These measures largely outpace those of the mutual funds industry: the two largest mutual funds, i.e. the Vanguard Total Stock Market Index Fund and the Pimco Total Return Fund, manage a portfolio of assets estimates to be around \$250 billion each.

increased over the last decade. However, academic research on SWFs has been fairly limited up to now, largely reflecting data gaps: most SWFs publish only very limited information about their investment objectives, dimension and structure of their portfolios; some SWFs do not even disclose the amount of their assets. This has raised concerns amongst politicians, the public opinion and international financial institutions that they could be pursuing hidden strategic objectives, instead of the presumed classic return maximization targets.⁴

3. Review of the literature

The existing literature on SWFs mainly focuses on the implications of their investment activity for the stock performance of target firms. Several studies analyse how the market valuation of a firm's shares may react following an equity acquisition from a SWF: empirical evidence on this point suggests the existence of a positive impact on target firms' stock prices in the (very) short-run (Kotter and Lel, 2011; Bortolotti *et al.*, 2010; Dewenter *et al.*, 2010; Sun and Hesse, 2009), while there is no reaction at all (Dewenter *et al.*, 2010; Chhaochharia and Laeven, 2010; Kotter and Lel, 2011) or even a negative one in the long-run (Bortolotti *et al.*, 2010). Examining the long-run impacts of SWFs, Fernandes (2011) finds positive effects of SWFs' acquisitions both on the stock valuations of publicly traded target firms and on their operating performances. In this analysis, the author uses a different approach from the above papers, based on portfolio holdings instead of acquisitions deals. Bernstein *et al.* (2009) show that SWFs follow a trend-chasing investment strategy and target firms experience a negative valuation change when politicians are involved in their investment decisions. They consider only private equity investments.

Only few papers focus on the factors which may attract the interest of SWFs (Kotter and Lel, 2011), or whether these factors may differ from those that influence other important institutional investors such as mutual funds (Boubakri *et al.*, 2011) or pension funds (Chhaochharia and Laeven, 2010).⁵ In these papers, determinants of SWFs' investment activity are considered mostly at a micro level, i.e. with reference to the characteristics of the target firms,⁶ while very little attention is given to a more macro dimension in terms of country characteristics.⁷ Actually, there have been some attempts to complement the micro with a more macro approach (Chhaochharia and Laeven, 2010; Kotter and Lel, 2011; Knill *et al.*, 2012; Megginson *et al.*, 2013), but the attention has focused mainly on a very small set of variables which are decided upon from an *ex-ante* point of view. Chhaochharia and Laeven (2010) introduce the stock market turnover, the rate of inflation, the level of GDP per capita and the 'law and order' tradition of a country, which turned out to be the only significant macro determinant. Kotter and Lel (2011) suggest a possible role for the stock market capitalization and the rule of law, finding out that only the former is statistically significant, with a positive sign. Knill *et al.* (2012) assess the significance of bilateral economic and political relations between the country of the acquirer SWF and that of the target firm in influencing the likelihood of SWFs' investments. Megginson *et al.* (2013) focus on a small

⁴ The fierce debate about SWFs' potentially dangerous investment behaviour induced the IMF to establish, in 2008, a dedicated international working group (IWG); the participants, including representatives from SWFs themselves, issued a code of conduct, commonly known as 'Santiago Principles', outlining a series of principles and practices to be adopted on a voluntary basis (Generally Accepted Principles and Practices – GAPP).

⁵ Another study which addresses the differences between SWFs and other institutional investors is Dyck and Morse (2011). They find that SWFs are peculiar in their investment behaviour since an industrial planning variable has considerable power in explaining their portfolios variation.

⁶ Typical determinants at the firm-level are market capitalization, leverage, cash-assets ratio, sales growth, intangible assets ratio, ROA, ROE, turnover, book-to-market, returns.

⁷ Typical determinants at the country-level are the degree of economic development, the size of stock markets, the degree of legal rights protection.

predetermined set of variables and do not introduce the time dimension in their econometric analysis, nor they avoid the sample selection bias arising from considering the only countries where SWFs have actually invested. As a matter of fact, none of the above studies assess how periods of financial turmoil may affect SWFs' investment behaviour.

In the analysis that follows we focus on a broader range of macro variables. First of all, we enrich the list of potential determinants of SWFs' investment activity by resorting to the results of the relatively larger literature about equity allocation worldwide (e.g. Chan *et al.*, 2005) and cross-border equity flows (e.g. Rossi and Volpin, 2004; Di Giovanni, 2005; Portes and Rey, 2005). This allows us to test the significance of a richer set of macroeconomic and institutional variables. Moreover, we do not impose any *a priori* theoretical relationship between SWFs' investment activity and this ample set of potential determinants, but we let the model decide – in some sense – which variables turn out to be significant by means of a modified general-to-specific empirical approach. Finally, within this general framework, we are particularly interested in assessing how SWFs behave during periods of financial crisis.

Ample evidence suggests that the financial system is inherently procyclical (Borio *et al.*, 2001), with total gross capital flows retrenching significantly during crises, especially when particularly severe (Broner *et al.*, 2013). Institutional investors are characterised by a long-term investment horizon: from a theoretical point of view, therefore, they should be able to ride out the short-term volatility in asset prices and to be less affected by procyclicality in their investment activity. However, recent financial stress episodes have demonstrated that quite the opposite is true.

A broad literature has flourished about institutional investors' procyclical behaviour, which may be hinted to as both shock-transmitters and shock-amplifiers. Institutional investors, for instance, may engage in 'momentum' trading, systematically buying 'winners' and selling 'losers' in response to the distribution of past returns, and this behaviour seems to be particularly strong during periods of financial crisis (Kaminsky *et al.*, 2004). Also, institutional investors may engage in 'herding' behaviour (Lakonishok *et al.*, 1992; Grinblatt *et al.*, 1995; Wermers, 1999; Sias, 2004), contributing to the propagation of a crisis. The latter may indeed trigger herd activity away from the crisis hit country, producing a contagion effect which spreads its adverse consequences to neighbouring economies (Chiang and Zheng, 2010).

The work by Papaioannou *et al.* (2013) offers clear evidence of the procyclical behaviour of major institutional investors during the recent global financial crisis, in particular for mutual funds, which massively divested from crisis-hit markets after the collapse of Lehman Brothers in September 2008. The work by Raddatz and Schmukler (2011), based on an extensive set of micro-level data on mutual funds investment in bond and equity markets, reinforces this conclusion by analysing the strategic interactions between investors and managers: both of them respond to country returns and crises, and adjust their investments substantially through large portfolio reallocations, reducing their exposure to countries during bad times and increasing it when conditions improve. Capital flows from mutual funds, therefore, do not have a stabilizing role and expose countries in their portfolios to external shocks.

Considering SWFs' structural characteristics – i.e. their long-term investment horizon, the objective to preserve wealth for future generations, and the absence of any obligation to redeem – they should be well equipped to avoid the procyclicality of investment choices during episodes of financial crisis. On this point, nevertheless, the existing anecdotal evidence is mixed. While Kunzel *et al.* (2011) show that some SWFs liquidate their positions in an effort to support domestic economies or to increase the share of liquid instruments in their portfolios, Ciarlone and Miceli (2013) offer alternative evidence about SWFs' countercyclical behaviour linked to their massive investment in bank stocks during the recent financial crisis. In our view, these divergent conclusions may be reconciled by considering the different

time frames analysed in the two studies: SWFs acted countercyclically when they invested in bank stocks at the outset of the crisis, while the liquidations shortly afterwards seem to have been procyclical. Looking for evidence of the potential by SWFs to destabilize markets through herding behaviour, Miceli (2013) investigates SWFs' acquisition activity in equity markets to assess whether there is evidence of 'herding' behaviour or not. By means of a broad dataset of SWFs' equity acquisitions and sales, the study proves that this class of investors, unlike mutual funds, does not herd in equity markets. This result provides evidence that SWFs do not contribute to propagate crisis through herding behaviour.

To our knowledge, no empirical research exists evaluating – econometrically – whether SWFs' investment behaviour is procyclical or not. Our study is the first one to deal with this particular aspect, by assessing whether the occurrence of a crisis may affect the two stages of SWFs' investment activity.

4. Data description and estimation procedure

4.1 The dependent variable

In this paragraph we provide information about the construction and the characteristics of our sample of SWFs' acquisition deals. The series of equity investment have been drawn from a specifically built database, which combines information stemming from three main sources: the Fondazione Eni Enrico Mattei (FEEM) Monitor on SWF's transactions (covering 1,273 deals by SWFs between May 1985 and June 2010), the Standard & Poors' Capital IQ M&A and the Thomson One Banker M&A:⁸ for the latter two databases, a name search was performed for each of the existing 59 SWFs covering the period January 1995- December 2010 and including also the funds' known subsidiaries.⁹

After merging together the three data sources, in addition to eliminating duplicates and records with insufficient information, have also been deleted all the types of deals that were classified as 'withdrawn', 'cancelled', 'pending', 'intended', 'rumour', 'discontinued rumour', 'intra-group deals', 'mergers' and 'joint-ventures'. Deals involving transfers between related subsidiaries of a given SWF have been deleted as well, since they refer to intra-group transactions not relevant for the purpose of this analysis. As a result, the dataset consists of 1,903 acquisition deals spanning the period January 1995-December 2010. Our dataset is larger than any other previous study's sharing a similar approach to data collection based on deals (Sun and Hesse, 2009; Bortolotti *et al*, 2010; Dewenter *et al*, 2010; Kotter and Lel, 2011; Knill *et al*, 2012; Megginson *et al*, 2013), except for Bernstein *et al*. (2009). However it is smaller if compared with those studies which adopt an approach based on holdings instead of acquisition deals (Chhaochharia and Laeven, 2010; Dyck and Morse, 2011; Fernandes, 2011).

The available deals refer to 29 SWFs out of the existing 59, encompassing purchases in listed and unlisted equity across a broad range of countries and sectors.¹⁰ The 29 SWFs in the sample totalled \$5.1 trillion of AuM at the end of 2013, representing 80 per cent of the total assets owned by the universe of existing SWFs at the same date. In terms of value, the acquisitions covered in our database totalled \$513.2 billion throughout the whole 1994-2010 time span, corresponding to 1,448 deals out of 1,903.¹¹

⁸ The Monitor-FEEM SWF transaction database uses multiple public sources including financial databases (Bloomberg, SDC Platinum and Zephyr M&A), disclosures from fund websites, information aggregators (Lexis Nexis and Factiva) and other internet sources (Zawya.com, Sovereign Wealth Fund Institute).

⁹ For example, Temasek makes some investments through its subsidiaries, such as Vertex Venture Holdings or Aranda Investments.

¹⁰ Both minority and majority deals are included in the dataset. Our dataset includes only publicly disclosed deals. The rules to determine the threshold which triggers the obligation to publicly disclose a deal vary by country.

¹¹ Only 1,448 deals out of 1,903 are considered for calculating the amounts because the remaining deals do not report any amount. For the transactions characterized by multiple investors/sellers, the amount related to the

The 29 SWFs included in the sample are reported in Table 2, along with their country of origin: the most represented are the two Singaporean funds Temasek and GIC, followed by the Malaysian Khazanah, the Dubai's Istithmar, the Chinese CIC and several other Middle Eastern funds (QIA from Qatar and Mubadala from the UAE). SWFs from Asia appear to be the most active ones, even if this could depend on their higher level of transparency especially when compared with the Middle Eastern funds. This ranking is similar if the overall value of deals is taken into account.

In the time frame considered SWFs spread their acquisitions across 102 countries, with the United States leading the ranking with 328 deals (17 per cent out of the total) and \$74.4 billion as total amount of allocated financial resources (16 per cent out of the total; Table 3). In terms of number of deals the Asian markets received the larger share of investments, followed by North America (mostly US) and the European Union, which is in turn the leading region in terms of total amount (Table 4). Table 5 shows that SWFs geared their investment activity mainly towards developed economies, which accounted for almost 60 per cent of the whole number of deals and 67 per cent of the total amount allocated; this trend is confirmed even after the recent financial crisis, in spite of the fact that the turmoil hit especially the advanced economies. Table 6 hosts some descriptive statistics on the available sample of deals' value.

In a first set of regressions the dependent variable will be a binary outcome, assuming the value of 1 if a country received an investment by at least one SWF in that year and 0 otherwise, independently from both the number and the relative amount of the investment. At this stage the interest lies on the factors influencing the likelihood of a country being targeted by a SWF's equity acquisition. The characteristics of the available dataset, of course, allows us to focus on the second-stage decision as well, i.e. to uncover which factors may influence the decision of how much to invest in a given country. The estimation results of this two-stage process are hosted in Section 5.

4.2 The independent variables

In this paragraph we introduce some explanatory variables and discuss how they are expected to affect international investment activity by SWFs. Drawn mainly from the existing empirical literature on M&A operations and cross-border equity flows, we resort to 19 potential explanatory variables, which could be categorized into the following six families: economic development; stock market development; openness to trade and financial flows; investor protection; quality of institutions; 'other' variables. Particular attention in the econometric procedure will be given to the series concerning the chronology of financial crises. Table 7 hosts a brief description of these potential determinants of SWFs' investment activity, along with their respective source.

First of all, we assume that a country's ability to draw investment flows (both direct and portfolio) from abroad and, therefore, to attract attention from SWFs, is positively affected by its stage of economic development. We use several measures of economic development. The first three are both the absolute and the per-capita level of gross domestic product (measured at PPP) and its relative growth rate, with the series obtained from the IMF's World Economic Outlook database. The fourth measure is the country credit rating, based on a scale of 0-100 as assessed by the Institutional Investor Magazine.

It is reasonable to expect that investors tend to allocate their wealth in more developed stock markets because of their larger size, greater liquidity and lower transaction costs. We resort to two measures of stock market development. The first one is the relative size of the stock market of any given country,

specific SWF was separated from the total amount of the deal. In case the amount attributable to the single SWF was not specified, the total figure of the deal was divided by the number of participants.

measured by the level of capitalization as a percentage of the country's GDP; the second one, which can be considered a measure of the liquidity of the stock market in a given country, is the turnover ratio, defined as the ratio of the total value of stocks traded to the average market capitalization. Both these measures are taken from the World Bank's World Development Indicators database.

Although controls to the free movement of goods and capitals have been greatly reduced in many economies, some of them still place restrictions on foreign equity investment and capital flows, as well as resort to some sort of tariff barriers to international trade to protect domestic strategic industries. Conceivably, these obstacles can negatively affect the decision to invest in a certain country. In order to capture this factor, we employ two standard measures of 'openness' to the international movement of goods and capital: the sum of exports and imports, on the one side, and the flows of inward direct investments, on the other, both scaled to the country's GDP. All the series come from the IMF's World Economic Outlook database. We complemented the information about this relevant aspect by recurring to the Chinn-Ito index, which measures a country's degree of capital account openness.

The existing empirical literature has shown that financial markets are more developed in countries where investors' rights are more protected: the seminal papers by La Porta *et al.* (1997, 1998) suggest that the security of property rights, enforced by the rule of law, provides the foundation for both economic freedom and the efficient operation of markets. The implication, therefore, is that investors are more willing to invest in countries with stronger property rights. We resort to four different measures of investor protection. The first three variables are published by the Economic Freedom Network and measure, respectively, the degree of protection of property rights, the legal enforcement of contracts, the overall integrity of the legal system. The last indicator captures the degree of protection of shareholders' rights, based on a scale of 0-10 as assessed by the IMD in its World Competitiveness Yearbook.

The fifth family of determinants includes measures of the quality of the (political) institutions in a target country. The first four indicators are obtained from the World Bank's Worldwide Governance Indicators: a corruption perception index, which measures the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests; a government effectiveness index, which captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies; a regulatory quality index, which reflects the perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development; a rule of law index, which captures perceptions of the extent to which agents have confidence in, and abide by, the rules of society, and in particular the quality of contract enforcement, the police and the courts, as well as the incidence of crime and violence. The fifth and last measure is a business freedom index assessed by the Heritage Foundation, an overall indicator of the efficiency of government regulation of business which can assume values between 0 and 100, with 100 equalling the freest business environment. Again, we predict the existence of a positive relationship between equity investment flows, among which SWFs' ones, and the variables belonging to this family.

In addition to the above variables, we include several other factors that have the potential of explaining the investment activity by SWFs. As in Erel *et al.*, 2009, differences in stock market returns and in exchange rates may explain a large part of the level of cross-border merger activity between country pairs, stemming from overall differences in investor sentiment and from currency movements that are more than warranted by changing underlying economic conditions. Therefore, assuming that SWFs would be affected by these variables no differently than corporate acquirers, we predict that higher stock returns of the target country indices (average annual local-currency stock market returns) would be

associated with more acquisition activity if investors are trend-chasers, while the relative appreciation of the target country currency (the average annual nominal exchange rate return with respect to the US dollar) would be associated with more investment activity in that country. Finally, we also control for macroeconomic (i.e. price) stability in the target country using the CPI inflation rate, which should be negatively related to SWFs' investment activity.

We finally include a dummy variable that equals one for the year(s) a country experiences a financial crisis. The country-crisis series are obtained by merging up two different chronologies, the first one built by Laeven and Valencia (2008) and the second one by Reinhart (2010) and Reinhart and Rogoff (2011). While the former considers three different types of crisis (banking, currency and sovereign) for most of the countries belonging to our sample (28 advanced and 133 emerging),¹² the latter contemplates a much wider variety of crises (banking, currency, sovereign domestic, sovereign external, inflation, stock market) but for a smaller set of economies (25 advanced and 45 emerging).¹³ Considering, therefore, the broader country coverage offered by Laeven and Valencia's chronology and crises coverage by Reinhart and Rogoff's one, we decided to merge the two sources in order to get a much more comprehensive picture of the negative special outcomes that had involved the countries in our sample throughout the 1995-2010 time span.

Table 8 provides some descriptive statistics for the variables listed above.

4.3 The estimation procedure

Information about these 21 potential regressors, in addition to the financial crises series, have been gathered for the whole universe of countries (both advanced and emerging) which appears in the World Economic Outlook of the IMF (187 economies in total).¹⁴ This way of proceeding has been essentially chosen with the hope to circumvent any critique relating to a possible country sample-selection bias which would have emerged if, for instance, we had relied only on the set of economies actually targeted by SWFs' equity investment activity. We are well aware that this procedure has the drawback of generating a highly unbalanced panel, since it would be unreasonable to hope to have all the series available for all the possible year-country couples. Nevertheless, we also think that this is a relatively minor – and therefore acceptable – price to pay in order to get more robust estimates of the effects that these potential set of determinants may have on the decisions on both 'whether' and 'how much' to invest in a given economy.

The econometric procedure is based on a modified general-to-specific approach which, proceeding along a three-step strategy, allows us to test a rather large number of potential regressors while maintaining a reasonable sample size. In the first stage we run individual regressions for each of the 21 variables, excluding those that turn out to be insignificant in determining the probability of a country becoming target of SWFs' acquisitions. The issue of possible biases arising from omitting variables at this stage is addressed in the final step of the modelling approach. In the second stage, we run group-wise or 'horse-race' regressions between similar variables, i.e. we group in families – essentially according to

¹² Laeven and Valencia identify a total of 64 crises per advanced and 243 crises per emerging country, which corresponds to an average of 2.3 crises per advanced and 1.8 crises per emerging economy (0.14 per advanced country per year and 0.11 per emerging country per year).

¹³ Reinhart and Rogoff identify 192 crises per advanced and 700 crises per emerging country, which corresponds to an average of 7.7 crises per advanced and 15.6 crises per emerging country (less than half a crisis per advanced country per year and almost one crisis per emerging country per year).

¹⁴ The same approach is adopted in the papers by Chhaochharia and Laeven (2010) and Kotter and Lel (2011), where the whole sample of firms contained in the Worldscope database is used for their estimation purposes.

their nature – all the variables that got through the first stage and run new regressions for each of these groups. As in the first stage, we retain only those variables that turn out to be significant. In the third and final stage, we combine the best performers from each group into a final general model.¹⁵

5. The investment behaviour of SWF

5.1 *The first-stage decision: whether to invest*

In this paragraph we analyse the determinants of the likelihood that a SWF will target a specific country by means of a logit approach which, compared to the probit one, typically performs better when the dependent variable is not evenly distributed between the two possible outcomes.¹⁶ Regressions include both country and country-year fixed effects (C-FE and CT-FE), with standard errors clustered at the target country level and heteroskedasticity consistent.

By the end of the first two steps of our estimation procedure we ended up with a smaller set of variables to be employed in a ‘general’ model, which is then tested down to arrive at our preferred specification.¹⁷ From the list of variables measuring economic development, the per-capita GDP appears best suited to explain SWFs’ equity investment activity for both the C-FE and CT-FE specifications. From the list of indicators measuring the degree of stock market development, we retained the stock market capitalization in the C-FE case, along with the turnover ratio in the CT-FE one. From the family of variables gauging the degree of openness to trade and financial flows, the openness to trade in the C-FE procedure and the flow of FDI in the CT-FE one appear to have a good explanatory power for the probability of being targeted by a SWF. From the list of measures of the degree of investor protection, the property rights index turned out to be statistically significant in both the fixed effects specifications, with the extent of the legal enforcement of contracts significant only in the CT-FE case. In the same vein, from the family of variables gauging the institutional quality of a potential target country we retained the regulatory quality index to be included in the final ‘general’ model. Finally, from the list of ‘other’ variables the foreign exchange return and the inflation rate survived the first two stages of our three-stage modelling approach in the C- and CT-FE case, respectively.

These ten variables are then grouped together in the final stage of our modelling approach leading to the results reported in the first two columns of Table 9, where the difference between specification (a) and (b) lies in the presence of country or country-year fixed effects:¹⁸ almost all the families of potential

¹⁵ As a further check we restore variables that were found to be significant in the literature but were dropped in either the first or the second step. This is essentially done in order to avoid the so-called omitted-variable bias, which arises when a significant explanatory variable is not taken into account in the regression, determining a significant correlation between the other regressors and the residual term. The omitted-variable bias is still more worrisome in nonlinear estimation, such as the one we are performing here, since, unlike ordinary least squares, it is present whether or not the omitted regressors are correlated with the included ones. Two problems may arise in connection with the omitted variable bias. On the one hand, variables that are not part of the true model may be retained because the bias, induced by some omitted variable, makes them look significantly different from zero. This problem should be mitigated by the fact that the model is at last estimated using a larger set of regressors (in the second and third phase) that, hopefully, includes most of the relevant variables. On the other hand, the bias may cause the rejection of a variable that is part of the data generating process (Visco, 1978). This problem is addressed by adding variables that were discarded during the specification process but nonetheless may be important.

¹⁶ In our dataset equity investments by the available sample of SWFs represent 29 per cent of all possible outcomes.

¹⁷ The results for the first two stages of the modelling approach are not reported here for the sake of brevity, but are available from the authors upon request.

¹⁸ The three-step horse-race procedure has been performed separately for both the model with the country fixed-effect and the model with the country and year fixed-effects.

determinants of SWFs' acquisitions are represented in the table by at least one indicator per family in one of the two specifications, confirming that our starting intuition was indeed correct.

To begin with, SWFs seem more likely to invest in countries characterised by a higher degree of economic development: the GDP per capita, in fact, turns out to be positively related to the probability of being targeted by their investment activity, and statistically significant in the specification with C-FE. This result is consistent with the *prima-facie* evidence stemming from a visual inspection of our dataset, according to which SWFs have invested more – and in larger amounts – in the advanced economies subsample. Second, SWFs' equity acquisitions are more frequent in those countries characterised by more developed financial markets: the stock market capitalization in the C-FE specification, along with the turnover ratio in the CT-FE one, turns out to be significant in positively affecting the likelihood of receiving SWFs' equity acquisitions (in line with the results of Kotter and Lel, 2011). Moreover, the likelihood of being targeted by some SWF seems to be positively related to the presence of a more effective investor protection, as witnessed by the positive sign and high statistical significance of the property rights index in both the C- and CT-FE specifications along with the degree of legal enforcement of contracts in the CT-FE model (in line with the results of Chhaochharia and Laeven, 2010). Finally, a less stable macroeconomic environment, as witnessed by higher inflation rates, negatively affects the probability of equity acquisitions by SWFs.

The key result of our three-step modelling approach relates to the crisis dummy series: according to the estimation results, a country experiencing a financial crisis is more likely to attract equity acquisitions by SWFs. The crisis dummy, in fact, plays a positive and highly significant role in affecting the likelihood of a country being a target of SWFs' investment activity, also under the presence of time fixed effects. This result reinforces the hypothesis according to which SWFs do represent a category of institutional investors of their own, and it is in stark contrast with the results of the large body of empirical literature reviewed in Section 3 which hints to a procyclical behaviour of the major institutional investors during periods of financial stress. SWFs – being to a certain extent immune from the noisy interactions between investors and managers that characterize the activity, for instance, of mutual funds during periods of financial distress – actually seem to engage in a sort of 'contrarian' investment activity, i.e. an investment style that goes against prevailing market trends by buying assets in countries hit by the crisis. Capital flows stemming from SWFs, therefore, may have a stabilizing role on financial markets, so counteracting the transmission of shocks from one country to another one.

One may wonder whether our general conclusions still hold for the two different country groups: evidence on this point is provided in the last four columns of Table 9 which are dedicated, respectively, to the advanced and emerging economies under the C- and CT-FE specifications.¹⁹ Our general conclusion about the relevance of financial market development in positively affecting the likelihood of being targeted by SWFs still holds for both groupings. However, some differences emerge. First, the likelihood that a SWF will invest in an advanced economy is positively related to the level of openness to financial and trade flows – with the FDI/GDP variable positive and significant in both the C- and the CT-FE regression and the of openness to trade in the C-FE one – and to a better regulation of the business environment, as witnessed by the significance of the business freedom index in the CT-FE. Second, the degree of investor protection – through a proper legal enforcement of contracts and the safeguard of property rights – turns out to be a more relevant class of determinants in attracting SWFs' investment into emerging economies, along with the developments in the respective exchange rates.

¹⁹ As SWFs' investment strategies towards advanced and emerging economies may be different, we decided not to impose the same model to the two country subsamples but rather to replicate the 'horse-race' procedure for each of them. This is the reason why the individual variables that turned out to be significant are different in the three specifications hosted in Table 9.

As regards the financial crisis dummy, it still maintains its relevant positive role in affecting the likelihood of being targeted by SWFs for the subsample of emerging economies independently of which fixed-effects specification is chosen; on the contrary, it ceases to be significant – though preserving its positive sign – for the group of advanced economies in the specification with country-year fixed effects. We think this apparently odd result can be rationalised by taking into account the role played by the time fixed effects in a panel setting and the consequences it may have once they are required to interact with the particular chronology of financial crises of the advanced economies subsample. Just as the country fixed effects model requires regressors’ variation over time within each *unit*, a time fixed effect model requires regressors’ variation over units within each *time period*. This implies that any ‘macro’ or ‘global’ factor, which does not vary across the elements of the sample, cannot be properly included in a model with time fixed effects. Now, it turns out that this is actually the case for the chronology of financial crises of the advanced economies subsample: a visual inspection of the crisis frequency in this group of countries clearly shows that once such a negative event touches one of them then it turns ‘global’. The share of advanced economies incurring in a financial crisis in the same year is almost 38 per cent in the average of the whole time span 1995-2010; this measure touches much higher levels during the most famous episodes of the dot-com bubble collapse (60 per cent of the countries in the average of the period 2000-2002) and the subprime crisis (79 per cent of the countries in the average of the period 2008-2010). This is not the case, instead, for the subsample of emerging economies: there, in fact, the share of individuals experiencing a negative event in the same year collapses to just 20 per cent in the average of the whole time span 1995-2010, and it never reaches levels higher than 40 per cent (in 1995).

5.2 Robustness tests

In this paragraph we examine the sensitivity of our general conclusions about the factors affecting the likelihood of a country being a target of a SWF’s equity acquisition to an ample series of robustness checks. A first cohort, hosted in Table 10, relates to whole sample of countries and SWFs and encompasses alternative estimation procedures, different time spans, a possible role played by the lagged dependent variable and the size of the recipient country. A second cohort, instead, relates to different compositions of both the investing SWFs and target countries samples, with the results reported in Table 11.²⁰

A first test consists in changing the econometric procedure. Up to now we have used a fixed-effect estimator – with robust standard errors – which typically controls for all unit-specific factors, observable or not, that are constant over time, therefore removing a potentially large source of omitted variable bias. Fixed-effect estimators are based on the hypothesis that the unit-specific effect is correlated with each explanatory variable; whether this is not the case, using the fixed-effect transformation to eliminate the unobservable component would result in inefficient estimators. In order to tackle this point, in the first column of Table 10 we report the estimation results obtained by replacing country fixed with country random effects, which nevertheless confirm the main conclusions seen before. Moreover, a classic Hausman test would reject the hypothesis of random effects, so we can be fairly confident upon our initial estimation results based on a fixed effect estimator.

A second set of robustness checks relates to the possible presence of structural breaks in the series due to a reporting bias. On the one hand, one may argue that the availability of information about SWFs’

²⁰ As before, the sub-columns *a* and *b* throughout the tables report the estimates obtained with country and country-year fixed effects.

investment activity cannot be considered to be evenly distributed along the entire time span of the sample; as a matter of fact, more than half of the currently existing SWFs have been created since 2000 onwards. We tackle this first critique in the second column of Table 10, which reports the results of our preferred specifications when estimated only in the subperiod 2001-2010.²¹ On the other hand, we also would like to make sure that our main results are not driven only by the episodes witnessed in the very last few years of the sample, i.e. by the rush made by many SWFs to acquire large stakes in distressed banking institutions of many advanced economies after the onset of one of the most severe financial crises in modern ages. We deal with this aspect in the third column of Table 10, which reports the logit estimates obtained by removing the observations pertaining to the last four years of our sample. Again, the main general conclusions about the factors driving SWFs' international investment activity are still valid. Above all, the statistical significance of the effect that a country experiencing a financial crisis might have on the likelihood of being targeted by a SWF turns out to be confirmed even when the estimation is run in the subperiod 1995-2006, as witnessed by the results of the CT-FE regression.²² The conclusion, therefore, is again that experiencing a financial crisis has a positive and significant relationship upon the likelihood of being targeted by SWFs' investment activity; the inclusion of the last four years makes this relationship even more significant.

A third type of robustness tests relates to the presence of an autoregressive component in the set of regressors: one may wonder whether there is a sort of 'inertia' in SWFs' investment activity, i.e. whether – once an equity investment is carried out – SWFs become in a sense 'accustomed' to the main economic and structural features of a given country, and go on investing there. We deal with this hypothesis in the fourth column of Table 10: again, the main conclusion is preserved in terms of the general goodness of the selected families in explaining SWFs' investment behaviour as well as the role played by the onset of a financial crisis in a given country.

A fourth test relates to the potential role played by the size of an economy. Although the presence of both country and time fixed effects should be capable of capturing the evolving influence of this aspect, we added to our baseline models a measure of the country size, proxied by the share of national to world population.²³ Indeed, dimension matters in positively affecting the decision of a SWF to invest or not in a given country: the estimation results, reported in the fifth columns of Table 10, show that all the relevant conclusions about SWFs' investment behaviour are preserved when we control for this variable.

As clearly reported in Table 2, the Singaporean Temasek leads the SWFs ranking in terms both of number of acquisitions and relative total amount of financial resources allocated; at the same time Table 3 shows that two advanced economies, the US and the UK, account for almost 30 per cent of the total amount – and 26 per cent of the total number – of the set of SWFs' equity acquisitions belonging to our dataset. One may wonder, therefore, whether our general conclusions may depend on the investment style of a certain SWF (i.e. Temasek) or on the macro characteristics of some economy overwhelmingly present in the dataset (i.e. US and UK). We face these questions in Table 11, where the first column hosts the estimation results obtained by removing from the dependent variable all the equity acquisition deals implemented by the Singaporean SWF and the last three columns reports those attained by removing the

²¹ Actually, the procedure of testing the significance of the preferred specifications has been repeated also for other different time spans, i.e. 2002-2010, 2003-2010, 2004-2010. Again the estimation results, which are not reported here for the sake of brevity but are available from the authors upon request, confirm the main conclusions.

²² Running a joint test to assess the significance of the dummies for all years would suggest that the year fixed effects are indeed necessary and that the CT-FE specification should be to prefer.

²³ We also experimented with other measures like the log of total population, the log of the country GDP (at PPP) and the share of world GDP (at PPP), obtaining the same conclusions. Results are not reported here for the sake of brevity, but are available from the authors upon request.

US, the UK or both of them from the sample of potential recipient economies. Our main conclusions, especially those relating to the role played by the occurrence of a financial crisis on the likelihood of receiving an equity acquisition by some SWF, are again confirmed.²⁴

5.3 *The second-stage decision: how much to invest*

The SWF investment decision can be thought of taking place in two stages. In the first stage, the SWF determines the country in which they will invest. The second stage of the decision process is how much they will invest. In this section, we analyse the determinants of the equity allocation of SWFs.

We conduct our analysis at the target country level using the weight of the amount invested in each country in the SWFs portfolios in a given year as dependent variable: specifically, we use as dependent variable the share of equity investment in country j at time t on total equity investments by all SWFs at time t .²⁵ Since the dependent variable is constrained to assume values in the 0-1 interval, in order to explore the variation in the proportion of the shares acquired in a certain target country we relied upon random effects panel data tobit techniques. The econometric procedure still builds upon the three-stage modelling approach based on ‘horse races’ described above, being the set of potential determinants the same as the one already exploited for the first-stage decision.

By the end of the first two steps of our estimation procedure we ended up again with a smaller set of variables to be employed in a ‘general’ model, which is then tested down to arrive at our preferred specification. From the list of variables measuring economic development, the level of GDP appears to be best suited to explain the amount of resources a SWF might decide to allocate to a given country. From the list of indicators measuring the degree of stock market development, we retained both the stock market capitalization and the turnover ratio. From the family of variables gauging the degree of openness to trade and financial flows, the Chinn-Ito index of capital account openness appears to have a good explanatory power for explaining the dimension of SWFs’ equity investment. From the list of measures of the degree of investor protection, the property rights index turned out to be significant in explaining the equity allocation strategy of this class of investors. In the same vein, from the family of variables gauging the institutional quality of a potential target country we retained the rule of law index to be included in the final ‘general’ model. Interestingly, none of the ‘other’ variables – among which the stock market or the exchange rate returns – survived the first two stages of our modelling approach.

These six variables are again grouped together along with the crisis dummy in the final step of our modelling approach leading to the results reported in the first column of Table 12. A very simple, and in some sense logical, conclusion can be drawn by a visual inspection of the table: the larger (as measured by the log of the respective GDP level) and the more financially developed (as measured by both the stock market capitalization and the turnover ratio) a country is, the larger the amount of financial resources SWFs allocate to it. More importantly, the occurrence of a financial crisis ends up playing a positive significant role not only in affecting the likelihood of an investment but also its overall dimension. These very broad conclusions are confirmed also in the case we replicate the econometric procedures for the two subsamples of advanced and emerging economies, with the results of this second

²⁴ Since one may argue that acquisitions done in period t may be influenced by macroeconomic determinants in period $t-1$, we also repeated the logit estimates using the lagged independent variables, including the dummy crisis. Our results are still confirmed; they are not reported here for the sake of brevity, but are available from the authors upon request.

²⁵ Using shares instead of amounts or log amounts is common in the literature on equity allocation (Chan *et al*, 2005; Raddatz and Schmukler, 2011). In the literature on SWFs this approach has been used by Chhaochharia and Laeven (2010).

set of estimates contained in the second and third columns of Table 12. Summing up the results of this very last empirical exercise, a country's economic size, its degree of financial development and the chance of incurring in a financial crisis are all factors that play a positive and significant role in determining how much a SWF will allocate to that economy.

6. Conclusions

With \$6.3 trillion of AuM in 2013 and expected to grow more, SWFs are important players in global financial markets. For this reason, it is important to understand the factors driving their investment choices together with their possible aptitude to amplify financial fluctuations and propagate shocks globally, as it has been witnessed for other classes of institutional investors.

This paper analyses the determinants of SWFs' investment activity in terms of the macro characteristics of the target country. Using a three-stage modelling approach, and coherently with our priors, in the average of the 187 countries of our sample we find evidence that SWFs are more likely to invest in countries characterised by a higher degree of economic development, more developed financial markets, a more effective protection of property rights, a more stable macroeconomic environment. The first two factors also play a positive significant role in affecting the overall amount of financial resources SWFs choose to allocate to each country.

The key finding of our study relates to the impact of the crisis dummy series on both whether and how much SWFs invest. The econometric analysis clearly shows that a country experiencing a financial crisis is more likely to attract larger equity acquisitions by SWFs. Regardless of the econometric specification, time horizons, country groupings, presence of an autoregressive component, influence of the size of an economy, the crisis dummy always plays a positive and highly significant role in affecting the likelihood of a country being targeted by SWFs' investment activity. The occurrence of a crisis also positively and significantly affects the amount SWFs decide to invest in each country.

This conclusion stands in stark contrast with the empirical evidence on other classes of institutional investors – above all mutual funds – which have been shown to follow procyclical investment patterns in times of financial stress. We may conclude, therefore, that SWFs seem to engage in a sort of 'contrarian' behaviour, increasing their acquisitions in countries hit by a crisis. Capital flows stemming from their investment activity, therefore, could have a stabilizing role on local markets during periods of financial turmoil, protecting the targeted countries from foreign shocks instead of propagating them globally.

Table 1. The 30 largest SWFs at end-2013

SWF name	Country of origin	Estimated total assets (USD billions)	Year of inception	Fund source
Norwegian Government Pension Fund – Global (NGPF-G)	Norway	839	1990	C
Abu Dhabi Investment Authority (ADIA)	UAE - Abu Dhabi	773	1976	C
SAMA Foreign Holdings	Saudi Arabia	676	-	C
China Investment Corporation (CIC)	China	575	2007	NC
SAFE Investment Company	China	568	1997	NC
Kuwait Investment Authority (KIA)	Kuwait	410	1953	C
HK Monetary Authority – Investment Portfolio (HKMA)	China-HK	327	1998	NC
Government Investment Corporation (GIC)	Singapore	320	1981	NC
Temasek Holdings	Singapore	171	1974	NC
Qatar Investment Authority (QIA)	Qatar	170	2005	C
National Social Security Fund (NSSF)	China	161	2000	NC
Australian Government Future Fund (AGFF)	Australia	89	2006	NC
National Wealth Fund (NWF)	Russia	89	2008	C
Reserve Fund (RF)	Russia	87	2008	C
Samruk-Kazyna Jsc	Kazakhstan	84	2008	C
Revenue Regulation Fund	Algeria	77	2000	C
Investment Corporation of Dubai (ICD)	UAE – Dubai	70	2006	C
Kazakhstan National Fund	Kazakhstan	69	2000	C
International Petroleum Investment Company (IPIC)	UAE - Abu Dhabi	63	1984	C
Libyan Investment Authority (LIA)	Libya	60	2006	C
National Development Fund of Iran (NDFI)	Iran	59	2011	C
Korea Investment Corporation (KIC)	South Korea	57	2005	NC
Mubadala Development Company	UAE - Abu Dhabi	56	2002	C
Alaska Permanent Fund (APF)	USA	50	1976	C
Khazanah Nasional	Malaysia	41	1993	NC
Brunei Investment Agency (BIA)	Brunei	40	1983	C
State Oil Fund (SOFAZ)	Azerbaijan	36	1999	C
National Pensions Reserve Fund (NPRF)	Ireland	27	2001	NC
Endowment Funds	US Texas	24	-	C
New Zealand Superrannuation Fund	New Zealand	21	2003	NC

This table presents the 30 largest SWFs ordered by AuM at end 2013, along with information on the country of origin, year of establishment, source of wealth (with 'C' for commodity-based SWFs and 'NC' for all the remaining features).

Table 2. Acquiring SWFs in the sample

SWF name	Country of origin	Number of deals	Amount (USD millions)
Temasek Holdings	Singapore	760	93,488
Government Investment Corporation (GIC)	Singapore	280	79,436
Khazanah Nasional	Malaysia	144	17,311
Istithmar World	UAE - Dubai	123	17,850
China Investment Corporation (CIC)	China	121	79,622
Qatar Investment Authority (QIA)	Qatar	88	77,958
Mubadala Development Company	UAE - Abu Dhabi	67	20,500
Libyan Investment Authority (LIA)	Libya	59	5,774
International Petroleum Investment Company (IPIC)	UAE - Abu Dhabi	48	29,060
Kuwait Investment Authority (KIA)	Kuwait	45	12,914
Abu Dhabi Investment Authority (ADIA)	UAE - Abu Dhabi	44	20,505
Investment Corporation of Dubai (ICD)	UAE - Dubai	31	14,606
Brunei Investment Agency (BIA)	Brunei	15	773
Oman Investment Fund	Oman	11	1,472
Australian Government Future Fund (AGFF)	Australia	10	2,493
Korea Investment Corporation (KIC)	Korea	10	2,676
RAK Investment Authority	UAE – Ras al Khaimah	8	348
National Pensions Reserve Fund (NPRF)	Ireland	5	19,943
National Social Security Fund (NSSF)	China	5	2,845
New Zealand Superrannuation Fund (NZSF)	New Zealand	5	1,298
Norwegian Government Pension Fund – Global (NGPF-G)	Norway	4	719
State Capital Investment Corporation	Vietnam	4	0
State General Reserve Fund	Oman	4	1,221
Alaska Permanent Fund (APF)	USA	3	890
Bahrain Mumtalakat Holding Company	Bahrain	3	340
Public Investment Fund (PIF)	Saudi Arabia	3	4,266
HK Monetary Authority – Investment Portfolio (HKMA)	China - HK	1	4,689
SAMA Foreign Holdings	Saudi Arabia	1	-
State Oil Fund (SOFAZ)	Azerbaijan	1	150
TOTAL		1,903	513,146

This table presents the distribution of the acquisition deals for the 29 SWFs in the sample both in terms of number of deals and amount.

Table 3. Country of target firms by number of deals and amount

Country	Number of deals	Amount (USD millions)	Country	Number of deals	Amount (USD millions)	Country	Number of deals	Amount (USD millions)
USA	328	74,380	South Africa	9	884	Estonia	2	-
Singapore	193	18,805	Turkey	9	1,919	Iceland	2	34
China	157	69,246	Austria	8	1,477	Lebanon	2	236
Malaysia	122	12,714	Mexico	8	884	Maldives	2	-
UK	122	67,787	Norway	8	1,376	Mauritius	2	-
India	94	4,116	Sweden	8	5,999	Slovenia	2	-
UAE	81	20,521	Egypt	7	305	Zambia	2	266
Australia	69	23,556	Taiwan	7	3,104	Bangladesh	1	118
Hong Kong	63	11,925	Israel	6	10	Benin	1	-
France	55	8,060	Portugal	6	-	Bosnia-Herzegovina	1	-
Indonesia	45	8,134	Saudi Arabia	6	4,364	Brunei	1	0.02
Thailand	36	5,354	Jordan	5	920	Chad	1	90
Germany	30	27,019	Tunisia	5	45	Comoros	1	9
South Korea	29	4,474	Bermuda	4	6,164	Congo	1	-
Canada	27	15,334	Libya	4	2,263	Djibouti	1	234
Japan	25	6,505	Luxembourg	4	2,005	Eritrea	1	-
Italy	24	4,743	Morocco	4	490	Ghana	1	-
Ireland	19	20,031	Sudan	4	149	Greece	1	-
Denmark	16	1,180	Algeria	3	930	Guernsey	1	779
Switzerland	15	28,811	Argentina	3	348	Iran	1	0.1
Vietnam	15	300	Armenia	3	200	Iraq	1	-
Pakistan	13	1,505	Cayman Islands	3	402	Ivory Coast	1	-
Belgium	12	3,241	Czech Republic	3	8	Kenya	1	9
Philippines	12	454	Finland	3	384	Montenegro	1	32
Qatar	12	16,327	Georgia	3	145	Mozambique	1	-
Spain	12	5,269	Hungary	3	746	Niger	1	-
Bahrain	11	1,040	Kazakhstan	3	1,039	Palestine	1	245
New Zealand	11	1,737	Malta	3	318	Romania	1	-
Russia	11	1,070	Rwanda	3	114	Senegal	1	2
Brazil	10	3,807	Uganda	3	88	Seychelles	1	-
Kuwait	10	893	Bahamas	2	333	Slovakia	1	-
Chile	9	582	Bulgaria	2	39	Tanzania	1	4
Netherlands	9	3,926	Channel Islands	2	3	Yemen	1	300
Oman	9	396	Colombia	2	30	Zimbabwe	1	61

This table reports the distribution of the acquisitions deals (both in terms of number of deals and amount) by target countries.

Table 4. Geographic region of target firms

Geographic region	Number of deals	Amount (USD millions)
Asia	818	147,792
North America	355	89,714
European Union	346	152,231
MENA Region	169	49,286
Australia – Pacific	80	25,293
Europe – Other	56	34,370
Latin America	41	12,549
Sub-Saharan Africa	38	1,909
TOTAL	1,903	513,146

This table reports the distribution of the acquisition deals (both in terms of number of deals and amount) by geographic region of target firms.

Table 5. Country economic group of target firms

Geographic region	Number of deals	Amount (USD millions)
Advanced G7 Economies	611	203,829
Other advanced economies	518	138,853
Emerging and Developing economies	774	170,463
TOTAL	1,903	513,146

This table reports the distribution of the acquisition deals by group of country of target firms (both in terms of number of deals and amount). The country grouping comes from IMF's WEO database, Groups and Aggregates

Table 6. Statistics on deals' value

Total value of deals (USD millions)	513,146
N° of deals with value	1,448
Total number of deals	1,903
Average size of deals (USD millions)	354
Minimum size of deals per fund (USD millions)	0.0085
Maximum size of deals x fund (USD millions)	20,000
N° of target countries	84
Most represented country target	US
Amount invested in the most represented country target (USD millions)	74,380

This table reports some descriptive statistics of the sample including only those deals reporting the amount of the transaction.

Table 7. Description of the independent variables

Family	Variable	Description	Source
Economic development	<i>Country credit rating</i>	The level of credit rating of the target country. Rating on a scale of 0-100	IMD
	<i>GDP (at PPP) growth</i>	The annual growth rate of the real GDP (in PPP) of the target country.	WEO (IMF)
	<i>GDP (at PPP) per capita</i>	The logarithm of the real per capita GDP (in PPP) of the target country.	WEO (IMF)
	<i>GDP (at PPP)</i>	The logarithm of the real GDP (in PPP) of the target country.	WEO (IMF)
Stock market development	<i>Stock market capitalization to GDP</i>	Stock market capitalization of the target country as a percentage of the country's GDP.	WDI (WB)
	<i>Turnover ratio</i>	Ratio of the total value of stocks traded to the average market capitalization in the target country.	WDI (WB)
Openness to trade and financial flows	<i>Foreign direct investment (scaled to GDP)</i>	The flows of inward direct investments in the target country scaled to the country's GDP.	WEO (IMF)
	<i>Exports and imports (scaled to GDP)</i>	The sum of exports and imports of the target country scaled to the country's GDP.	WEO (IMF)
	<i>Chinn-Ito index of financial openness</i>	Based on binary dummy variables that codify the tabulation of restrictions on cross-border financial transactions reported in the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions.	http://web.pdx.edu/~ito/Chinn-Ito_website.htm
Investor Protection	<i>Integrity of the legal system</i>	This indicator is based on the World Bank's Doing Business estimates for the time and money required to collect a clear-cut debt. More precisely, zero-to-10 ratings are constructed for a) the time cost (measured in number of calendar days required from the moment the lawsuit is filed until payment) and b) the monetary cost of the case (measured as a percentage of the debt). These two ratings are then averaged to arrive at the final rating for this sub-component.	Economic Freedom Network
	<i>Legal enforcement of contracts</i>	This indicator is based on the International Country Risk Guide Political Risk Component 1 for Law and Order: "Two measures comprising one risk component. Each sub-component equals half of the total. The 'law' sub component assesses the strength and impartiality of the legal system, and the 'order' sub-component assesses popular observance of the law". Higher ratings are associated with a stronger enforcement of contracts.	Economic Freedom Network
	<i>Property rights</i>	This measure is from the Global Competitiveness Report question: "Property rights, including over financial assets, are poorly defined and not protected by law (=1) or are clearly defined and well protected by law (=7)". Higher ratings are associated with a stronger protection of property rights.	Economic Freedom Network
	<i>Shareholders' rights</i>	This indicator captures the degree of protection of shareholders' rights, based on an executive survey answering the question "Shareholders' rights are sufficiently implemented" and is measured on a scale of 0-10.	IMD
Quality of institutions	<i>Business freedom</i>	This is an indicator of the efficiency of government regulation of business which can assume values between 0 and 100, with 100 equalling the freest business environment.	Heritage Foundation
	<i>Corruption perception</i>	This indicator measures the extent to which public power in the target country is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests.	WGI (WB)
	<i>Government effectiveness</i>	This indicator captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies in the target country.	WGI (WB)
	<i>Regulatory quality</i>	This indicator captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	WGI (WB)
	<i>Rule of law</i>	This indicator captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	WGI (WB)
Others	<i>Exchange rate return</i>	Average annual nominal exchange rate return of the currency of the target country with the dollar.	IMF, Datastream
	<i>Inflation</i>	The level of inflation in the target country measured by the annual percentage change in the CPI index.	WEO (IMF)
	<i>Stock market return</i>	The average annual local-currency stock market indices returns in the target country.	Datastream
Crisis Dummy		Dummy variable that equals one for the year(s) a country experiences a financial crisis (banking, currency, debt (external and domestic), inflation, stock market crisis).	Laeven and Valencia (2008); Reinhart (2010); Reinhart and Rogoff (2011).

Table 8. Descriptive statistics of the independent variables

Family	Variable	Obs.	Mean	Median	Min.	Max.
Economic development	<i>Country credit rating</i>	944	62.0	67.9	0.0	96.4
	<i>GDP (at PPP) growth</i>	2,910	6.4	6.2	-55.6	154.4
	<i>GDP (at PPP) per capita (in logs)</i>	2,862	8.6	8.7	5.4	11.4
	<i>GDP (at PPP) (in logs)</i>	2,927	3.4	3.3	-3.7	9.6
Stock market development	<i>Stock market capitalization to GDP</i>	1,654	51.5	30.4	0.0	606.0
	<i>Turnover ratio</i>	1,584	48.6	24.1	0.0	1,612.9
Openness to trade and financial flows	<i>Foreign direct investment (scaled to GDP)</i>	2,724	4.9	2.8	-15.6	528.1
	<i>Exports and imports (scaled to GDP)</i>	2,899	88.1	80.2	14.0	445.8
	<i>Chinn-Ito index of financial openness</i>	2,784	0.3	-0.1	-1.9	2.4
Investor protection	<i>Integrity of the legal system</i>	1,459	6.3	6.7	0.0	10.0
	<i>Legal enforcement of contracts</i>	1,221	4.6	4.6	0.0	10.0
	<i>Property rights</i>	1,282	5.5	5.3	0.9	9.6
	<i>Shareholders' rights</i>	719	6.5	6.6	0.0	8.9
Quality of institutions	<i>Business freedom</i>	2,423	64.7	67.4	18.0	100.0
	<i>Corruption perception</i>	2,212	-0.1	-0.3	-2.1	2.6
	<i>Government effectiveness</i>	2,207	0.0	-0.2	-2.3	2.4
	<i>Regulatory quality</i>	2,207	0.0	-0.2	-2.7	2.3
	<i>Rule of law</i>	2,234	-0.1	-0.2	-2.2	2.0
Others	<i>Exchange rate return</i>	2,929	-3.3	-0.4	-97.9	96.1
	<i>Inflation</i>	2,895	13.9	4.5	-72.7	4,146.0
	<i>Stock market return</i>	1,203	16.2	13.6	-92.6	912.3
Financial crisis dummy		2,576	0.3	0.0	0.0	1.0

Table 9. Determinants of the likelihood of being targeted by SWFs' acquisitions: final specification

Family	Variable	Entire country sample		Country subsamples			
				Advanced economies		Emerging economies	
		(a)	(b)	(a)	(b)	(a)	(b)
Economic development	<i>Country credit rating</i>	-	-	-	-	-	-
	<i>GDP (at PPP) growth</i>	-	-	-	-	-	-
	<i>GDP (at PPP) per capita</i>	0.444*	0.023	-	-	0.243	0.105
		(0.262)	(0.208)			(0.346)	(0.303)
	<i>GDP (at PPP)</i>	-	-	-	-	-	-
Stock market development	<i>Stock market capitalization to GDP</i>	0.006***	0.011***	0.005	0.006**	0.005**	0.004
		(0.002)	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
	<i>Turnover ratio</i>	-	0.009***	0.011***	0.006***	-	0.009***
			(0.002)	(0.003)	(0.002)		(0.003)
Openness to trade and financial flows	<i>Foreign direct investment (scaled to GDP)</i>	-	-0.009	0.034**	0.040**	-	-
			(0.025)	(0.016)	(0.017)		
	<i>Exports and imports (scaled to GDP)</i>	0.003	-	0.009**	-	0.003	-
		(0.003)		(0.004)		(0.007)	
	<i>Chinn-Ito index of financial openness</i>	-	-	-	-	-	-
Investor protection	<i>Integrity of the legal system</i>	-	-	-	-	-	0.129
							(0.143)
	<i>Legal enforcement of contracts</i>	-	0.254**	-	-	-	0.377***
			(0.169)				(0.148)
	<i>Property rights</i>	0.329***	0.258**	0.325**	-0.083	0.322***	-
		(0.077)	(0.119)	(0.153)	0.189	(0.090)	
	<i>Shareholders' rights</i>	-	-	-	-	-	-
Quality of institutions	<i>Business freedom</i>	-	-	-	0.064***	-	-
					(0.026)		
	<i>Corruption perception</i>	-	-	-	-	-	-
	<i>Government effectiveness</i>	-	-	-	-	-0.370	-
					(0.521)		
	<i>Regulatory quality</i>	-0.392	-0.563	-	-	-	0.081
		(0.301)	(0.375)				(0.378)
	<i>Rule of law</i>	-	-	-	-	-	-
Others	<i>Exchange rate return</i>	0.007	-	-	-	0.015*	-
		(0.007)				(0.008)	
	<i>Inflation</i>	-	-0.076***	-	-	-	-
			(0.026)				
	<i>Stock market return</i>	-	-	-	0.003	-	-
					(0.005)		
Financial crisis dummy		0.480***	0.588***	0.856**	0.043	0.521**	0.526*
		(0.161)	(0.233)	(0.406)	(0.374)	(0.216)	(0.302)
Constant		-7.316***	-4.903***	-4.782***	-6.564***	-5.571*	-6.655**
		(2.367)	(1.797)	(1.365)	(2.471)	(3.221)	(2.722)
Country fixed effects		Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects		No	Yes	No	Yes	No	Yes
Clustered std. errors (country)		Yes	Yes	Yes	Yes	Yes	Yes
Number of observations		876	745	311	300	606	522
Pseudo R-squared		0.153	0.219	0.232	0.322	0.163	0.237

This table presents logit estimates of the likelihood of being targeted by SWFs. The dependent variable is the target dummy that equals one if a country receives a SWF investment in a given year and zero otherwise. In parentheses are *t*-statistics based on standard errors adjusted for target country clustering and heteroskedasticity. *** indicates significance at the 1% level; ** indicates significance at the 5% level; * indicates significance at the 10% level.

Table 10. Determinants of the likelihood of being targeted by SWFs' acquisitions: robustness tests

Family	Variable	Whole country and SWF sample								
		Random effects	Superior 2001-2010		Superior 1995-2006		Lagged dep. vbl.		Dimensions	
			(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Lagged dependent variable		-	-	-	-	1.316***	1.142***	-	-	
						(0.224)	(0.266)			
Country size (domestic to world population)		-	-	-	-	-	-	1.516***	1.194***	
								(0.273)	(0.304)	
Economic development	<i>Country credit rating</i>	-	-	-	-	-	-	-	-	
	<i>GDP (at PPP) growth</i>	-	-	-	-	-	-	-	-	
	<i>GDP (at PPP) per capita</i>	0.556	0.444*	-0.048	0.122	-0.147	0.181	-0.067	0.451	
		(0.387)	(0.262)	(0.214)	(0.270)	(0.231)	(0.204)	(0.176)	(0.282)	
	<i>GDP (at PPP)</i>	-	-	-	-	-	-	-	-	
Stock market development	<i>Stock market capitalization to GDP</i>	0.010***	0.006***	0.011***	0.006***	0.013***	0.006***	0.010***	0.006***	
		(0.003)	(0.002)	(0.003)	(0.003)	(0.005)	(0.002)	(0.003)	(0.002)	
	<i>Turnover ratio</i>	-	-	0.010***	-	0.009***	-	0.009***	-	
				(0.002)		(0.003)		(0.002)	(0.002)	
Openness to trade and financial flows	<i>Foreign direct investment (scaled to GDP)</i>	-	-	-0.006	-	0.000	-	-0.011	-	
				(0.030)		(0.036)		(0.024)	0.006	
	<i>Exports and imports (scaled to GDP)</i>	0.005	0.003	-	0.001	-	0.000	-	0.009**	
		(0.005)	(0.003)		(0.003)		(0.002)		(0.005)	
	<i>Chinn-Ito index of financial openness</i>	-	-	-	-	-	-	-	-	
Investor protection	<i>Integrity of the legal system</i>	-	-	-	-	-	-	-	-	
	<i>Legal enforcement of contracts</i>	-	-	0.242*	-	0.023	-	0.159	-	
				(0.142)		(0.152)		(0.123)	0.222*	
	<i>Property rights</i>	0.636***	0.329***	0.241**	0.352***	0.502***	0.361***	0.272**	0.470***	
		(0.136)	(0.077)	(0.124)	(0.089)	(0.162)	(0.066)	(0.111)	(0.094)	
	<i>Shareholders' rights</i>	-	-	-	-	-	-	-	-	
Quality of institutions	<i>Business freedom</i>	-	-	-	-	-	-	-	-	
	<i>Corruption perception</i>	-	-	-	-	-	-	-	-	
	<i>Government effectiveness</i>	-	-	-	-	-	-	-	-	
	<i>Regulatory quality</i>	-0.644	-0.392	-0.465	-0.162	-0.682	-0.348	-0.535*	-0.211	
		(0.452)	(0.301)	(0.383)	(0.329)	(0.435)	(0.246)	(0.314)	(0.356)	
	<i>Rule of law</i>	-	-	-	-	-	-	-	-	
Others	<i>Exchange rate return</i>	0.012	0.007	-	-0.010	-	0.012	-	0.010	
		(0.012)	(0.007)		(0.010)		(0.009)		(0.010)	
	<i>Inflation</i>	-	-	-0.085***	-	-0.038	-	-0.074***	-	
				(0.028)		(0.030)		(0.026)	-0.091***	
	<i>Stock market return</i>	-	-	-	-	-	-	-	-	
Financial crisis dummy		0.779***	0.480***	0.506**	0.146	0.850***	0.418**	0.663***	0.545**	
		(0.274)	(0.161)	(0.255)	(0.269)	(0.331)	(0.179)	(0.239)	(0.207)	
Constant		-11.028***	-7.316***	-4.138**	-4.554*	-3.787*	-5.397***	-4.046***	-9.946***	
		(3.368)	(2.367)	(1.843)	(2.416)	(1.987)	(1.798)	(1.511)	(2.671)	
Country fixed effects		-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Year fixed effects		-	No	Yes	No	Yes	No	Yes	No	
Clustered std. errors (country)		-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Number of observations		876	805	671	509	413	876	745	876	
Pseudo R-squared		-	0.174	0.207	0.149	0.209	0.154	0.220	0.190	
Hausman specification test		22.89***								
		(0.002)								

This table presents logit estimates of the likelihood of being targeted by SWFs. The dependent variable is the target dummy that equals one if a country receives a SWF investment in a given year and zero otherwise. In parentheses are *t*-statistics based on standard errors adjusted for target country clustering and heteroskedasticity except for the Hausman specification test, where a P-value is reported. *** indicates significance at the 1% level; ** indicates significance at the 5% level; * indicates significance at the 10% level.

Table 11. Determinants of the likelihood of being targeted by SWFs' acquisitions: robustness tests

Family	Variable	SWF sample without:		Country sample without:					
		Temasek		US		UK		US & UK	
		(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Lagged dependent variable		-	-	-	-	-	-	-	-
Country size (domestic to world population)		-	-	-	-	-	-	-	-
Economic development	<i>Country credit rating</i>	-	-	-	-	-	-	-	-
	<i>GDP (at PPP) growth</i>	-	-	-	-	-	-	-	-
	<i>GDP (at PPP) per capita</i>	0.617**	0.120	0.415	0.020	0.443*	0.028	0.413	0.024
		(0.267)	(0.250)	(0.263)	(0.208)	(0.262)	(0.209)	(0.263)	(0.209)
	<i>GDP (at PPP)</i>	-	-	-	-	-	-	-	-
Stock market development	<i>Stock market capitalization to GDP</i>	0.005***	0.007***	0.006***	0.011***	0.006***	0.010***	0.006***	0.010***
		(0.001)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)
	<i>Turnover ratio</i>	-	0.009***	-	0.009***	-	0.009***	-	0.009***
			(0.003)		(0.002)		(0.002)		(0.002)
Openness to trade and financial flows	<i>Foreign direct investment (scaled to GDP)</i>	-	0.000	-	-0.008	-	-0.008	-	-0.007
			(0.023)		(0.024)		(0.025)		(0.024)
	<i>Exports and imports (scaled to GDP)</i>	-0.001	-	0.003	-	0.003	-	0.004	-
		(0.002)		(0.003)		(0.003)		(0.003)	
	<i>Chinn-Ito index of financial openness</i>	-	-	-	-	-	-	-	-
Investor protection	<i>Integrity of the legal system</i>	-	-	-	-	-	-	-	-
	<i>Legal enforcement of contracts</i>	-	0.196	-	0.243*	-	0.254**	-	0.243*
			(0.132)		(0.129)		(0.128)		(0.128)
	<i>Property rights</i>	0.404***	0.198*	0.334***	0.255**	0.329***	0.246**	0.335***	0.241**
		(0.084)	(0.121)	(0.078)	(0.123)	(0.078)	(0.120)	(0.079)	(0.124)
	<i>Shareholders' rights</i>	-	-	-	-	-	-	-	-
Quality of institutions	<i>Business freedom</i>	-	-	-	-	-	-	-	-
	<i>Corruption perception</i>	-	-	-	-	-	-	-	-
	<i>Government effectiveness</i>	-	-	-	-	-	-	-	-
	<i>Regulatory quality</i>	-0.704**	-0.438	-0.411	-0.563	-0.429	-0.572	-0.451	-0.572
		(0.302)	(0.367)	(0.303)	(0.375)	(0.303)	(0.378)	(0.306)	(0.379)
	<i>Rule of law</i>	-	-	-	-	-	-	-	-
Others	<i>Exchange rate return</i>	0.010	-	0.007	-	0.007	-	0.008	-
		(0.008)		(0.007)		(0.008)		(0.008)	
	<i>Inflation</i>	-	-0.084**	-	-0.076***	-	-0.076***	-	-0.077**
			(0.036)		(0.026)		(0.026)		(0.026)
	<i>Stock market return</i>	-	-	-	-	-	-	-	-
Financial crisis dummy		0.649***	0.613**	0.477***	0.585***	0.475***	0.582***	0.471***	0.578**
		(0.180)	(0.272)	(0.165)	(0.235)	(0.164)	(0.235)	(0.168)	(0.237)
Constant		-9.316***	-5.907**	-7.137***	-4.797***	-7.341***	-4.888***	-7.159***	-4.776***
		(2.502)	(2.386)	(2.366)	(1.794)	(2.369)	(1.802)	(2.369)	(1.798)
Country fixed effects		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects		No	Yes	No	Yes	No	Yes	No	Yes
Clustered std. errors (country)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations		876	750	866	736	866	736	856	727
Pseudo R-squared		0.200	0.293	0.153	0.219	0.153	0.219	0.153	0.219

This table presents logit estimates of the likelihood of being targeted by SWFs. The dependent variable is the target dummy that equals one if a country receives a SWF investment in a given year and zero otherwise. In parentheses are *t*-statistics based on standard errors adjusted for target country clustering and heteroskedasticity. *** indicates significance at the 1% level; ** indicates significance at the 5% level; * indicates significance at the 10% level.

Table 12. Determinants of the amount invested by SWFs

Family	Variable	Entire country sample	Country subsamples	
			Advanced economies	Emerging economies
Economic development	<i>Country credit rating</i>	–	–	–
	<i>GDP (at PPP) growth</i>	–	–	–
	<i>GDP (at PPP) per capita</i>	–	–	–
	<i>GDP (at PPP)</i>	0.351*** (0.123)	0.870*** (0.331)	0.358*** (0.094)
Stock market development	<i>Stock market capitalization to GDP</i>	0.008*** (0.003)	–	0.005* (0.003)
	<i>Turnover ratio</i>	0.007** (0.003)	0.014** (0.007)	–
Openness to trade and financial flows	<i>Foreign direct investment (scaled to GDP)</i>	–	0.053 (0.038)	-0.020 (0.026)
	<i>Exports and imports (scaled to GDP)</i>	–	–	0.010*** (0.004)
	<i>Chinn-Ito index of financial openness</i>	0.029 (0.132)	–	–
Investor protection	<i>Integrity of the legal system</i>	–	–	–
	<i>Legal enforcement of contracts</i>	–	–	–
	<i>Property rights</i>	-0.026 (0.120)	-0.694 (0.433)	0.022 (0.071)
	<i>Shareholders' rights</i>	–	–	–
Quality of institutions	<i>Business freedom</i>	–	–	–
	<i>Corruption perception</i>	–	–	–
	<i>Government effectiveness</i>	–	–	-0.147 (1.267)
	<i>Regulatory quality</i>	–	5.277*** (1.464)	–
	<i>Rule of law</i>	0.189 (0.285)	–	–
Others	<i>Exchange rate return</i>	–	–	–
	<i>Inflation</i>	–	–	–
	<i>Stock market return</i>	–	–	–
Financial crisis dummy		1.172** (0.389)	1.640** (0.876)	0.510* (0.287)
Constant		-1.702** (0.765)	-7.233** (3.377)	-2.383*** (0.642)
Number of observations		849	260	597

This table presents tobit estimates of the amount invested by SWFs. The dependent variable is defined as the share of equity investment in country j at time t on total equity investments by all SWFs at time t . In parentheses are t -statistics based on standard errors adjusted for target country clustering and heteroskedasticity. *** indicates significance at the 1% level; ** indicates significance at the 5% level; * indicates significance at the 10% level.

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