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**The Impact of political instability on gross capital flows:
empirical evidence from developing countries**

by

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Abstract

Does higher political instability increase the risk of capital flight from the country? This paper seeks to establish a causal relation between political uncertainty and the extreme episodes of capital flow. By developing a unique composite variable of contested elections, and using the available data on coups d'état, incidence of political transitions and number of fatalities caused by terrorist attacks, the paper assesses the political instability for a given country. The data on the quarterly capital flows covers 60 countries, of which 19 are non-high income countries, from 1980 (at the earliest) through 2009. The baseline non-linear (logit) fixed effects model shows that the incidence of contested elections leads to sharp decreases of gross outflows (retrenchment) for both samples of high-income and low-income countries. This paper provides a number of important stylized facts on the dynamic behaviour of gross capital flows by domestic and foreign agents: (i) gross capital flows are pro-cyclical, (ii) total gross capital flows by residents retrench significantly during crises, (iii) crises affect foreign and domestic agents differently. In particular, I find no evidence of fire sales of domestic assets to foreign investors, or domestic capital flight. The evidence also runs contrary to the view that foreign investors would shy away due to domestic political instabilities. Instead, the evidence suggests that crises affect foreigners and domestic agents asymmetrically. These results advance the previous literature in two ways; firstly by distinguishing the behaviours of foreign and domestic agents and secondly by focusing on the political instability factors, rather than purely economic considerations. The results provide insights for the studies on the political economy of developing countries.

1. Introduction

Gross capital flows have skyrocketed in the last decades (Lane and Milesi-Ferretti, 2001), having grown four-fold for developing countries from 2.5% of their GDP in the 1980s to 12% in 2008 (Bluedorn et al 2013). Capital inflows allow the developing countries to diversify their funding resources, alleviate domestic risks and to improve the access to capital. With the greater integration of developing markets into the international financial system since 1980s, the gross capital flows gained a crucial role in supporting of the economic growth in developing countries. However, greater international financial integration can have destabilizing impact, where the sudden and large inflows lead to exchange rate misalignments and domestic credit booms and busts (Alberola, Erce, and Serena 2012). Hence the sustainability of capital flows and the extreme capital flow episodes are important, especially for developing countries, because of their immediate impacts on the national solvency and economic growth. Critically, the extreme flow episodes are observed during periods of economic and political crisis.

The literature on capital flows largely focuses on net capital flows, defined as the net purchases of domestic assets by foreign agents minus net purchases of foreign assets by domestic agents. However understanding the behaviour of gross capital flows is crucial, given that capital flows by foreign and domestic agents would be driven by different incentives (World Bank, 2011). This essay aims at understanding the behaviour of gross capital flows during political crises, and to analyse whether if political crisis associated with a reduction in gross capital inflows. If yes, would such reduction in gross flows be triggered by the sales of domestic assets by foreign agents, or the purchases of foreign assets by domestic agents, or a mixture of both? The perceived political uncertainty emanates from the outbreaks of ethnic tensions, burst of protests, contested elections, violent suppression of protests and civil war incidence, and is critical for the local and foreign wealth-holders, for it leads to a diversified portfolio choice where their wealth could be moved inside or outside of the country (Collier et al 1999).

This paper focuses on four specific types of extreme capital flows: capital flight, surge, stop and retrenchment. The episodes of “surge” and “stop” are defined as sharp increases and decreases, respectively, of gross inflows, whereas episodes of “flight” and “retrenchment” are sharp increases and decreases, respectively, of gross outflows. Net foreign purchases of domestic assets are gross capital inflows, whereas net purchases of

foreign assets by domestic investors are gross outflows. Hence, the gross inflows (outflows) are treated as being driven by foreigners (domestics): the surges and stops are driven by foreigners while flight and retrenchment are driven by domestic investors (Warnock and Forbes 2011, 6). The data on quarterly gross capital flows covers 60 countries, of which 41 are high-income and 19 are non-high income (upper middle, lower middle and low income) countries, for the period of 1980-2009 (see table 1). Intuitively it would be expected that the domestic political instabilities would affect the investment decisions of both foreign and domestic investors: foreign investors could want to withdraw their money from the politically instable country. On the other hand, domestic investors could choose to send their money abroad, or increase the weight of foreign assets -which are deemed more secure- in their portfolios, or do both or neither. However, the empirical research conducted in this paper finds no evidence of foreign agents basing their investment decisions on the domestic political instabilities. This research finds that the “surge” and “stop” flows, which are driven by foreign investors, remain unresponsive to increasing political instabilities. On the other hand, the political instability episodes are found to cause “retrenchment” movement, suggesting that domestic investors choose to liquidate their foreign holdings, and withdraw their money back home. In the latest section, the underlying reasons for such disparity in domestic and foreign agents’ behaviours are discussed more extensively.

This research contributes to the capital flight literature in several ways. First, the literature largely focuses on the economic causes of the capital flows, whereas this research focuses on the impact of political instability factors such as military coups, contested elections, political transitions and death-inducing terrorist attacks. Second, this research differentiates between the capital outflows and inflows, as well as the domestic and foreign agents.

2. Extreme capital flows and political instability, a literature review

The literature on extreme capital flow episodes originates from Calvo’s (1998) analysis of “sudden stops”, which he defined as sharp reductions in the net capital inflows. As he pointed out, the change in the direction of capital flows can amplify economic cycles, exacerbate the vulnerabilities in the financial system and cause macroeconomic instabilities, especially in the emerging markets. For instance, Forbes and Warnock (2011) find that the surge in capital inflows is correlated with “real estate booms, banking crises, debt defaults, inflation, and currency crises” and that “sudden stops are correlated with

currency depreciations, slower growth, and higher interest rates” (4), highlighting the importance of a careful study regarding the extreme capital flow periods.

It is challenging to provide an in-depth review of the literature on the capital flows due to the fragmented nature of the research, which focuses either on the developed or developing countries, studying non-overlapping time periods, and defining or measuring capital flows (FDI flows, debt flows etc.) differently. The study of gross capital flows is contained within the much broader literature which is concerned with the “Lucas paradox” (Lucas 1990). Lucas famously observed that the capital does not flow from developed countries to developing countries despite the fact that developing countries have lower levels of capital per worker. Under the assumptions of complete information and costless transactions, the return to capital should have been equalized across markets in order to render investors indifferent between domestic and foreign markets (Ndikumana and Boyce, 2002). The latter research largely dropped the complete information assumption for the asymmetric information framework: Brennan and Cao (1997) and Tille and Van Wincoop (2008) suggest that a retrenchment episode could occur during crises, if the foreign investors are poorly informed about the return on their domestic assets, and the information asymmetry is exacerbated by crisis. Moreover Broner, Martin, and Ventura (2010) demonstrate that an increase in the risk of default generates a retrenchment episode, because in the case where the domestic agents are less likely to default than their foreign counterparts, foreign investors sell their domestic assets to domestic agents in secondary markets. Dooley (1988) also focuses on the notion that domestic and foreign investors face asymmetric risk, which would include a wide range of implicit taxes generated for instance by rapid inflation or exchange rate depreciation. A fiscal shock may lead the government to increased reliance on the inflation tax, which erodes the value of domestic financial assets and leads residents to acquire foreign assets. Foreign investors could be attracted by the fall in prices (increase in yields), as domestic residents liquidate their domestic securities. Foreigners face less risks because they are often able to get claims denominated in foreign currency, and these have explicit or implicit government guarantees.

There is also a large literature analysing the motives behind capital flight, including financial instability, underdeveloped domestic financial market, capital control, heavy taxes, the prospect or actual devaluation of domestic money, actual and incipient hyperinflation (Cuddington, 1986; Jain, 1988; Khan and Ul Haque, 1987; Lessard and Williamson, 1987). Unstable domestic political situations (Jain, 1988), and uncertainty

over the fiscal policies of future governments (Alesina and Tabellini, 1989) can generate capital flight. In his seminal empirical paper, Sheets (1995) suggests that macroeconomic and political instabilities increase the variance of the domestic asset, resulting in a subdued demand for domestic assets. Hermes and Lensik (2000) found that holding other factors constant, political instability and war lead to greater capital flight, and that democracy and political freedom were associated with less capital flight. The capital flows are shown to be disrupted during the periods of political crises, emanating from large riots, violent suppression of demonstrations, contested elections, strikes, high-level resignations and coups d'état (Azar, 1980; Banks, 1971; Taylor and Jodice, 1983).

The political stability is an important factor in fostering a perception of invest-ability, and in attracting capital inflows. It has been found that political instability has a negative impact on the foreign direct investment to developing countries (e.g., Fatehi, Sedeh and Safizadeh, 1988, 1989). The most important constraints to the foreign investment are shown to be the political risk and macroeconomics instability (World Investment and Political Risk, 2013), while an increased risk of future expropriation may induce capital flights (Gourio, Siemer and Verdelhan 2014). Lastly, studies by Milesi-Ferretti and Tille (2010) and Broner, Didier, Erçe, and Schmukler (2010) find that economic crises lead to a decrease of net capital inflows and in extreme cases may lead to net capital outflows.

3. Data

3.1. Gross capital flows

The data for capital inflows is taken from Forbes and Warnock (2011). In *Capital Flow Waves: Surges, Stops, Flight, and Retrenchment*, Forbes and Warnock distinguish between the activities of foreigners and domestics, identifying episodes of “surges” and “stops” (sharp increases and decreases, respectively, of gross inflows); “flight” and “retrenchment” (sharp increases and decreases, respectively, of gross outflows). The underlying quarterly data on the gross inflows and outflows covers the period from 1980 (at the earliest) to 2009, and includes 60 countries for each type of extreme capital flow episodes over time. The fact that this dataset contains information on both the large increases and large decreases of inflows and outflows contributes to the analysis of all types of capital flows. Warnock and Forbes (2011) calculate the quarterly changes in gross capital inflows and outflows based on the two standard error deviation above or below from the historic average. Let C_t be the 4-quarter moving sum of gross capital inflows, and $\Delta C_t = C_t - C_{t-4}$, with $t = 5, 6, \dots, n$. Then a “surge” episode starts where the ΔC_t increases more than one

standard deviation above its rolling mean; the episode ends once ΔCt falls below one standard deviation above its mean.

3.1. Political instability measures

There are four different political instability indicators that are commonly used in the literature: coups d'état, contested elections, violent terrorist attacks and the transition from a more autocratic regime to a less autocratic one, or vice-versa. There is not a readily-available data on the contested elections, so I create a unique composite variable using four variables in the National Elections across Democracy and Autocracy (NELDA) dataset (Hyde et.al 2015). These four variables are answers to questions: “there are riots and protests after the election” (nelda29), “the government used violence against demonstrators” (nelda31); “there is evidence that reports critical of the government’s handling of the election reached large numbers of people” (nelda28), and “there was significant violence involving civilian deaths immediately before, during, or after the election” (nelda33). I treat unclear cases as “no evidence” of contested elections, and take “yes” answer to all of these questions to indicate a contested election.

The data on actual and attempted coups d'état is taken from Powell and Thyne (2011). A coups d'état is defined as... “overt attempts by the military or other elites within the state apparatus to unseat the sitting head of state using unconstitutional means... coup attempt is defined as successful if the coup perpetrators seize and hold power for at least seven days” (252). As a robustness check, a second dataset on the coup d'états is provided Centre for Systemic Peace, (Marshall & Marshall, 2016). The dataset includes four types of coup events: successful coups, attempted (failed) coups, coup plots, and alleged coup plots. Again, only successful coups are included into final analysis. Another important aspect of political instability, especially for low and lower middle income countries, is the political transition from a form of regime to another. The data is taken from Polity IV (2011), which covers all independent countries with a total population of 500,000 or more. Polity IV provides two aggregate indices, democracy (DEMOC) and autocracy (AUTO); and for a regime transition is defined as “a three-point change in either the polity’s DEMOC or AUTO score, either a negative value change or a positive value change. As a robustness check, a binary indicator of autocratic regime failure has been used (Geddes, Wright and Frantz, 2014). In order to account for the violent terrorist attacks I use the data on the fatalities from the Global Terrorism Database (GTD). To appropriately quantify the intensity of the attack, the number of total confirmed fatalities for the incident has been

used. As a robustness check, I employ a second dataset on fatalities from terrorist attacks, the RAND Database of Worldwide Terrorism Incidents (RDWTI). Lastly, I divide the country sample into groups depending on their income levels (World Bank, 2010). Thus lower-middle income countries have a GNI per capita between \$976 and \$3,855, upper-middle income groups between \$3,856- \$11,905 and high income groups above \$11,906.

4. Identification Strategy, the model and estimation method

Here I use the international asset allocation model developed by Le and Zak (2006), which adopts an approach similar to that of Collier et al. (2001). It distinguishes between the regular portfolio diversification incentives and relative risk incentives. Our main goal is to show, that except of the regular portfolio diversification, agents have incentives to transform the capital abroad, which can be caused by political instability. The model considers an economy with a large number of infinitely-lived identical agents living in a developing country. Agents consume from the return on wealth allocated to one-period investments in the domestic country or to a (single) foreign country. For simplicity there is one investment in each country, and labour income is ignored. There is a single homogeneous good produced in both countries, and population is constant, immobile, and normalized to unity. A_t denotes assets invested in the domestic market at time t that earn rate of return r_t . Investments in the domestic market are risky, and a domestic risk-free return is unavailable. Agents also invest a_t^f in the foreign country, earning a risk-free time-invariant rate of return r^f . A representative agent maximizes lifetime utility by solving

$$\text{Max}_{c_t} E \sum_{t=0}^{\infty} \beta_t U(c_t) \quad \text{s.t.} \quad c_t = (1+r_t)a_t + (1+r^f)a_t^f - A_{t+1} - a_{t+1}^f,$$

where $U(c)$ is strictly increasing, continuous and concave. In line with the standard portfolio choice model (Huang, Litzenberger, 1988), the optimum allocation equation reads

$$a_{t+1}^* = \frac{E(r_{t+1} - r^f)}{\theta \text{VAR}(r_{t+1})}$$

where $\text{VAR}(r_{t+1})$ is the variance of the return on domestic investment, and

$$\theta \equiv -\left(\frac{E[U''(c_{t+1})]}{E[U'(c_{t+1})]}\right)$$

measures risk aversion which is assumed constant. There is an

analogous problem being solved by individuals in the other country that determines capital flows into the developing country modeled above. Denote the amount of capital flight as a_{t+1}^{f*} , and capital flows from the foreign country to the domestic country as $a_{t+1}^{f\Delta}$. The net capital flight in the developing country is $A_{t+1}^f \equiv a_{t+1}^{f*} + a_{t+1}^{f\Delta}$, and aggregate capital K invested in the domestic country from time t to time $t+1$ is $K_{t+1} - a_{t+1}^* + A_{t+1}^f$. In equilibrium the capital stock is formed from domestic investment and net foreign investment, where

both depend on the characteristics of the foreign and domestic markets: $A_{t+1}^f = K_{t+1} - \frac{E(r_{t+1} - r^f)}{\theta \text{VAR}(r_{t+1})}$.

After establishing a behavioural model, I return to my econometric model and in tackling the source of the variation in returns, I focus on political instability which is measured by the incidence of coups d'état, contested elections, violent terrorist attacks and the political transition. Moreover, several macroeconomic variables are included in the structural equation as controls. Since the level of wealth and population may influence the political instability, current account, GDP (constant 2002, \$) and population (from the IMF database) are included to the original structural equation. If ignored, time-varying controls may introduce bias due to autocorrelation. To prevent such bias, lagged GDP and lagged population variables are also included to the baseline model.

In order to estimate the effect of political instability on capital flows, I specify four econometric models. This is largely because of the data which consists of binary dependent variables for capital flows ("flight", "surge", "stops" and "retrenchment"). I use the non-linear (logit) panel fixed effects method to estimate the effect of political instability on capital flows. More specifically, I estimate the following equations:

$$\Pr(\text{Flight}_{ij}=1) = F(\beta_1 \text{Contested Elections}_{ij} + \beta_2 \text{Coup d'états}_{ij} + \beta_3 \text{Fatalities by Terror Attacks}_{ij} + \beta_4 \text{Political Transitions}_{ij} + \varphi X_{ij} + \gamma_i + \varepsilon_{ij}) \quad (1)$$

$$\Pr(\text{Stops}_{ij}=1) = F(\beta_1 \text{Contested Elections}_{ij} + \beta_2 \text{Coup d'états}_{ij} + \beta_3 \text{Fatalities by Terror Attacks}_{ij} + \beta_4 \text{Political Transitions}_{ij} + \varphi X_{ij} + \gamma_i + \varepsilon_{ij}) \quad (2)$$

$$\Pr(\text{Surge}_{ij}=1) = F(\beta_1 \text{Contested Elections}_{ij} + \beta_2 \text{Coup d'états}_{ij} + \beta_3 \text{Fatalities by Terror Attacks}_{ij} + \beta_4 \text{Political Transitions}_{ij} + \varphi X_{ij} + \gamma_i + \varepsilon_{ij}) \quad (3)$$

$$\Pr(\text{Retrench}_{ij}=1) = F(\beta_1 \text{Contested Elections}_{ij} + \beta_2 \text{Coup d'états}_{ij} + \beta_3 \text{Fatalities by Terror Attacks}_{ij} + \beta_4 \text{Political Transitions}_{ij} + \varphi X_{ij} + \gamma_i + \varepsilon_{ij}) \quad (4)$$

"Flight", "Stops", "Surge" and "Retrench" are the dependent variables of capital flows and the independent variables are Political Transition, military coups, number of deaths caused by terror attacks, and an index variable for contested elections. X_{ij} denotes control variables of interest at time, γ_i stands for the country-specific fixed effect to control for time-invariant unobserved heterogeneity effects and ε_i is an idiosyncratic error term. The four structural equations measure the predicted difference in the probability of capital flight, surge, stops and retrenchment between quarterly years where a political instability event occurred or not.

There are three common ways to estimate equations 1-4: logit regression without fixed effects, conditional fixed effects logit, or a fixed effects linear probability model. I examine all, and find substantive difference between linear and nonlinear models. This underlines the importance of correctly specifying the model. Given that the dependent variables are binary, I decide to use, as a default specification, the conditional fixed effects logit model. Fixed effects control for the unobserved country characteristics. The biggest disadvantage of the fixed effects is the increased noise to signal ratio and the attenuation bias. However, since the independent variables of interest (political instabilities) have considerable within-country variation the problem is less worrisome here. Another issue would be the correlation of time-varying factors to both the capital flows and political instability. In the model, year fixed effects reduce this bias by eliminating any general association between political instability and capital flows. Given that each country in the sample has its own economic, political, and institutional characteristics that are likely to be correlated with the explanatory variables, panel fixed-effects models are the most appropriate for the purposes of this research. It allows controlling for the presence of country-specific effects and preventing biased estimates.

Unconditional fixed effect models use the least squares dummy variable estimator and may lead to inconsistency due to the existence of dummy dependent variables, known as “incidental parameters problem” (Greene 2002). Andersen (1970) and Chamberlain (1980) suggest the use of conditional estimator, obtained by “conditioning the likelihood function on minimal sufficient statistics for the incidental parameters and then maximizing the conditional likelihood function”. The conditional fixed effects logit model, used in this paper, requires that the dependent variable to be measured on at least two occasions for each country and that the independent variables must change across time for some substantial portion of the countries. Both these two conditions are met in the present paper since my study period is 1980-2009 and the control variables are not constant over time. Lastly, serial correlation in macro panels with long time series, could be a problem. Although serial correlation does not affect the unbiasedness or consistency of estimators, it changes efficiency due to underestimation of standard errors (Williams, 2015). Hence, a Lagrange-Multiplier test for serial correlation (Woodridge, 2002) was employed and the serial correlation is shown to be non-existent for this panel data.

5. Endogeneity

Most importantly I am concerned about endogeneity, specifically the correlation of time-varying factors with both political instability and gross capital flows. The inclusion of year fixed effects will reduce this bias, by removing any general association between gross capital flows and political instability in a given year. However, there is still room for worrying about endogeneity due to the omitted variables bias. One important variable that might be left in the error term would be shocks in export prices. A shock in export prices could induce both sudden capital inflow or outflows and political instability. Movement in export prices changes the income to the households or states that benefit from traded products. For instance, a sudden reversal of income could prevent government from devoting required resources to keep political stability in the state. This simultaneity in the movement of prices for primary exported products and the political instability is concerning. Hence, I add an export price shock variable into the baseline model.

Most countries export one to three primary products, and changes in the world price of these products have important impacts on GDP, investment, and spending (Blattman, Hwang, and Williamson 2007; Deaton and Miller 1995). For this exercise, the quarterly price data for 34 products (see table 8) is taken from IMF International Financial Statistics. Following Blattman and Bazzi (2014) these prices have been multiplied by the weights of export shares for each country. The resulting quarterly price index was deducted from previous quarter's price index, culminating in the country-specific commodity export price shocks.

6. Results

Table 2 displays the results of a non-linear fixed effects regression of flights, surge, stops and retrenchment on independent political instability variables (equation 1-4) for low, lower middle and higher middle income countries (total of 19 countries). Table 3 displays the results of the same 4 equations, but this time for a broader sample of 52 countries, including high income countries.

According to table 2, the contested election variable is highly significant and positive for “retrench”, with the odds-likelihood of a quarter with contested election to experience a retrenchment period being over 27 times higher than a contested-election free quarter. Recall that a “retrenchment” implies a sharp decreases of gross outflows by residents. The sensitivity test (see table 4) confirms that the result for the contested election composite variable is very robust to dropping various indicators within (nelda28, nelda29, nelda31

and nelda33). According to table 2, contested election does not have a significant impact on any other gross capital flow. Similarly, no other political instability variables (coups, transition or fatalities caused by terror attacks) have a significant impact on any of the gross capital flows. These results are very robust to various controls employed for political instability variables (see table 6).¹

Table 3 presents the results for the greater sample of 52 countries, including the high income category. Reading this table, the contested election again seems to trigger a period of “retrenchment”. The sensitivity test (see table 4) confirms that the result for the contested election composite variable is very robust to dropping various indicators within. This time the odds-likelihood of a quarter with contested election to experience a retrenchment episode is over 15 times higher than a contested-election free quarter. Note that the table 5 presents findings of the linear fixed effects model for all of countries in the sample. This paper considers as the baseline model and only comments on the results of the nonlinear fixed effect model. Indeed the volatility in the results of the linear fixed effects model (when the sample is restricted to non-high income countries the coefficients, except for the contested elections, turn insignificant) suggests poor fit of the model.

Overall, this evidence suggests that the contested elections lead domestic investors to decrease their purchases of foreign assets and retrench their money back “home”. The retrenchment by domestic agents is stronger in middle and lower-income countries, but weaker in high-income economies. Table 7 also reports the effects at the margin; for non-high income countries, *ceteris paribus* effect of having a contested election increases probability of retrenchment by 0.6; for all the countries in the sample, the same marginal effect stands at 0.5. Consequently, contested elections variable seems to have a positive impact on “retrench” for both samples; however, as expected, its impact is greater once the high income countries are eliminated from the sample. This is in line with the intuition that political instability would have a more pronounced impact for non-high income countries, where political system tends to be more fragile and the institutional poorer (WEO 2003, 98). In such political atmosphere, any instances of instability can be interpreted as a sign of an incoming prolonged period of political crisis. Furthermore, the lack of accountability and the poor institutional quality in lower income countries could decrease domestic and foreign investors’ confidence in the political system’s ability to regain stability quickly.

¹ Only the coefficients for “contested elections” are reported. The other variables’ coefficients remained insignificant with various controls, and such results are omitted here.

Hence, any political instability period is bound have a more striking impact in non-high income countries.

This analysis differentiates between capital movements that are initiated by foreign or domestic investors, and provides a much more nuanced picture of what is going on during a political crisis. While domestic investors retrench, the foreign investors seem to be indifferent to political instability, which is somewhat counter-intuitive. Firstly looking at foreign investors, their indifference may be because non-residents consider institutional quality, which is a long-run indicator of political health, to be more important in their investment decisions, and react weakly to the short-term fluctuations. Moreover, foreign investors who were willing to invest in a developing country would already have a high pain-threshold and they could be more willing to ignore ongoing political tensions plaguing developing countries. Hence, the idea would be that foreign investors would discount the effect of regional political instabilities in the hope of a higher returns on the value of their investments. Regions that are less economically developed are prone to greater political instabilities, but they are also attractive to investors for high growth potential and higher yields. Lastly the gross capital flow data used here was compiled quarterly, which may be inadequate in measuring the immediate reaction of non-residents to a short-lived domestic political instability period.

On the other hand, the fact that political instability can trigger an episode of retrenchment and that residents' gross capital flows are pro-cyclical is less surprising. One set of models that can account for our evidence are those based on asymmetric information between domestic and foreign agents. One such model is presented by Brennan and Cao (1997), who show that retrenchment during crises can take place if foreign agents are less informed than domestic agents about the return of domestic assets and crises increase this informational asymmetry. Another set of models that can account for our evidence are those in which asset returns depend on the residence of the holder of the asset. For example, in models based on sovereign risk domestic agents are less likely to be defaulted on than foreign agents. This is so because residents' welfare enters directly in the objective function of the government, creating incentives to favour residents vis-a-vis foreigners. Such models can easily account for retrenchment during crises in which the probability of default increases disproportionately on foreign holders of domestic agents.

Hence, it is clear that foreign and domestic investors can be motivated by different factors and respond differently to various policies and shocks. In turn, policymakers can tailor their reactions differently based on whether episodes of extreme capital flows are driven by domestic or foreign sources. For instance, during expansionary periods where financial globalization deepens, policy makers can encourage that channelization of foreign capital inflows into assets that can buffer eventual negative shocks. Since short-term debt flows would create fragility due to the rollover risk, equity and direct investments are safer for the recipient country (Schmukler, 2013). Most importantly, the impact of political uncertainty on foreigners and domestic agents are “asymmetrical”. For instance, the fact that political uncertainty affects the domestic investors more than foreign ones is apparent from the result of this research: political instability makes domestic investors retrench their money whereas the evidence suggests that foreign investors do not base their decision on the domestic political instability. The already existing information asymmetry between foreigners and domestic agents would be exacerbated during political uncertainty periods, reinforcing this pattern throughout the crisis period.

Finally, these results contrast with and add to the previous evidence on capital flights. The literature fails to differentiate between the behaviour of foreign and domestic investors; hence, they commonly find that global or local economic and political risk factors to be associated with capital flights. The literature suggested that any uncertainty factor, political or economic, would push domestic investors to diversify their portfolio by sending their money abroad and buying foreign assets. However, this paper does not identify a significant and positive relation between capital flight and political instability. This difference emanates from the failure of previous literature to account for the difference in foreign and domestic investors’ investment behaviours. Domestic investors do not seem to diversify their portfolio by exporting their money abroad; they rather bring their money home. Hence, capital inflows by domestic agents increase because of the reduced investments in other developing and developed countries. There are a number of additional areas for further research that have been highlighted by this result. It is equally important to understand whether this reduction in investments in other countries emanates from a reduction in assets in equity portfolio investment, reserves or debt portfolio investment. Moreover how much and in what proportion does the returning money come from the other developed or developing countries would be a relevant question.

7. Economic Crises

Lastly, this research seeks to answer another interesting and complementary question, namely to understand whether if the markets “discriminate” among economies based on the political instability of those economies, especially during financially turbulent periods. Following Alvarez, in order to tackle this question a dummy variable for crisis and interactions terms with political instability variables are included to the model. The dummy for crisis includes “banking, currency, and sovereign debt crises” and has been created by Laeven and Valencia (2008 and 2012).

$$\Pr(\text{CapitalFlows}_{ij}=1) = F(\beta_1 \text{ContestedElections}_{ij} + \beta_2 \text{Coups}_{ij} + \beta_3 \text{Fatalities}_{ij} + \beta_4 \text{Transitions}_{ij} + \beta_5 \text{Crisis} + \beta_6 \text{Crisis} * \text{Transition} + \beta_7 \text{Crisis} * \text{Fatalities} + \beta_8 \text{Crisis} * \text{Coups} + \beta_9 \text{Crisis} * \text{Elections} + \varphi X_{ij} + \gamma_i + \varepsilon_{ij})$$

The result of the conditional fixed-effects logit model is not reported in this research, because none of the results for crisis or any other interaction terms are found to be significant.

8. Conclusion

This paper provides a number of important stylized facts on the dynamic behaviour of gross capital flows by domestic and foreign agents. I have shown that: (i) gross capital flows are pro-cyclical, (ii) total gross capital flows by residents retrench significantly during crises, (iii) crises affect foreign and domestic agents differently. In particular, I find no evidence of fire sales of domestic assets to foreign investors, or domestic capital flight. The evidence also runs contrary to the view that foreign investors would shy away due to domestic political instabilities. Instead, the evidence suggests that crises affect foreigners and domestic agents asymmetrically. If, for example, crises were associated with a worsening of investor property rights or an increase in informational asymmetries that affected foreign creditors more than domestic creditors, I would expect the type of retrenchment observed in the data. In analysing the relation between capital flows and political instability, I found that foreign agents do not base their investment decisions on the domestic political instabilities; the “surge” and “stop” flows driven by foreigners remain insignificant when political instabilities increase. On the other hand, political instability increases “retrenchment” movement, suggesting that domestic investors choose to liquidate their foreign holdings and withdraw their money back home. As expected, the impact of political instability for non-high income countries, where any instances of instability can be interpreted as a sign of an incoming prolonged period of political crisis.

There are a number of additional areas for further research that have been highlighted by this result. Firstly and most importantly, there should be a more in-depth analysis of the domestic investors' decision to bring money back home. The literature does not provide a satisfactory reply into why this would be the case. It is equally important to understand whether domestic agents' decision to reduce investments in other countries emanates from a reduction in assets in equity portfolio investment, reserves or debt portfolio investment. Moreover how much and in what proportion does the returning money come from the other developed or developing countries would be a relevant question. Finally, this research contributed to the capital flows literature in several ways. First, previous research largely focused on the economic causes of the capital flows, whereas this paper will focus on political factors such as coups, contested elections, political transitions and instabilities caused by terrorist attacks. Second, this research takes not only the capital outflows but also the capital inflows into consideration. Hence the results provide insights for the studies on political economy of developing countries and serves as a guide for policymakers in both developed and developing countries. For instance, the policy reactions can be tailored based on whether episodes of extreme capital flows are driven by domestic or foreign sources and what kind of political instability periods should be of immediate concern.

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Table 1: List of Countries included in the sample

Table 1: List of Countries included in the sample			
High Income Countries		Slovak Republic	1998q4-2009q4
		Slovenia	1997q4-2009q4
Australia	1981q1- 2009q4	Hong Kong	2004q1-2009q4
Australia	1979q1- 2009q4	Sweden	1980q4-2009q4
Austria	1979q1- 2009q4	Switzerland	2004q1-2009q4
Belgium	1980q4-2009q4	Taiwan	1993q1-2009q4
Canada	1979q1-2009q4	UK	1979q1-2009q4
Chile	1996q1-2009q4	US	1979q1-2009q4
Croatia	1998q4-2009q4	Venezuela	1999q4-2009q4
Czech Republic	1998q4-2009q4		
Denmark	1980q4-2009q4	Upper Middle Income	
Estonia	1997q4-2009q4	Argentina	1981q4-2009q4
Finland	1980q4-2009q4	Brazil	1980q4-2009q4
France	1980q4-2009q4	Colombia	2001q4-2009q4
Germany	1979q1-2009q4	Mexico	1984q1-2009q4
Greece	2004q4-2009q4	Malaysia	2004q4-2009q4
Hungary	1995q1-2009q4	Panama	2003q1-2009q4
Iceland	1981q1-2009q4	Peru	1996q1-2009q4
Ireland	1986q1-2009q4	Romania	1996q1-2009q4
Israel	1979q1-2009q4	South Africa	1979q1-2009q4
Italy	1979q1-2009q4	Turkey	1989q1-2009q4
Japan	1982q1-2009q4	Thailand	1981q1-2009q4
Korea	1981q4-2009q4		
Latvia	1998q4-2009q4	Lower Middle Income	
Lithuania	1998q4-2009q4	Bolivia	1993q4-2009q4
Netherlands	1979q1-2009q4	Guatemala	1982q1-2009q4
New Zealand	1985q4-2009q1	India	1980q4-2009q4
Norway	1980q4-2009q4	Indonesia	1986q1-2009q4
Poland	2000q1-2009q4	Nicaragua	1997q1-2009q4
Portugal	1980q4-2009q4	Philippines	1982q4-2009q4
Russia	1999q4-2009q4	Sri Lanka	1982q4-2009q4
Singapore	2000q1-2009q4		
Spain	1980q4-2009q4	Low Income Countries	
		Bangladesh	1981q4-2009q4

Table 2: Results of Logit Fixed Effects Regression, Excluding High-Income Countries, with and without controls

	Flights	Surges	Stops	Retrench
Contested Election	-1.244 (0.652)	-0.808 (0.571)	1.500 (1.089)	3.326*** (0.959)
Fatalities (GTD)	-0.293 (0.207)	0.0154 (0.0431)	-0.0395 (0.0614)	-0.0386 (0.0264)
Transition	-0.527 (423.5)	-5.214 (770.8)	5.052 (0.295)	-6.419 (2,973)
Coups (INSCR)	-6.660 (651)	-5.969 (0,547)	-7.889 (854)	7.517 (642.5)
GDP	0.272** (0.146)	0.445** (0.0969)	-0.589*** (0.0815)	-0.381*** (0.0792)
lagGDP	0.0565 (0.0805)	0.183 (0.0846)	0.123 (0.0803)	0.0825 (0.0764)
lagPOP	-1.32e-10 (9.77e-10)	-4.87e-10 (5.26e-10)	2.11e-10 (4.78e-10)	1.20e-10 (4.91e-10)
Population	-3.60e-09** (8.55e-10)	2.99e-10*** (6.31e-10)	2.54e-09 (9.27e-10)	2.98e-08*** (4.21e-09)
Current Account	7.77e-11 (2.17e-10)	-1.33e-10 (2.15e-10)	3.86e-10 (2.68e-10)	9.29e-11 (2.10e-10)
Price Shock	-0.0281 (0.252)	-0.0987 (0.319)	0.304 (0.325)	-0.00873 (0.299)
Price Shock Lag1	-0.510 (0.379)	-0.0934* (0.404)	1.262 (1.147)	0.0485 (0.466)
Price Shock Lag2	-0.354 (0.378)	-0.317 (0.378)	-0.0338 (0.627)	0.476 (0.851)
Constant	-2.306*** (0.538)	-2.605*** (0.687)	2.186*** (0.207)	-1.845** (0.723)
Observations	917	917	910	917
# Countries	19	19	19	19

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

Table 3: Results of Logit Fixed Effects Regression, Including High-Income Countries, with and without controls

	Flights	Surge	Stops	Retrench
Contested Election	-1.432 (1.462)	-0.941 (1.225)	0.230 (0.904)	2.719*** (0.825)
Fatality (GTD)	-0.296 (0.2460)	0.0125 (0.436)	-0.0361 (0.0748)	-0.0420 (0.0827)
Transition	-5.132 (408.0)	-16.59 (2,732)	5.021 (729.6)	-0.182 (0.263)
Coups, (INSCR)	-6.627 (582)	-5.443 (322.2)	-7.159 (861.4)	7.302 (1476.1)
GDP	0.170 (0.132)	0.339*** (0.0626)	-0.522*** (0.0543)	-0.315*** (0.114)
lagGDP	0.0327 (0.0492)	0.120 (0.0522)	0.133 (0.0502)	0.118 (0.0496)
lagPOP	-2.02e-10 (9.30e-10)	-5.58e-10 (1.07e-09)	1.25e-10 (4.52e-10)	3.09e-10 (4.75e-10)
Population	-3.21e-09** (1.27e-10)	2.79e-08*** (9.45e-10)	262e-09 (8.27e-10)	3.07e-08*** (1.99e-09)
Current Account	-8.77e-11 (2.17e-10)	-2.33e-10 (2.15e-10)	3.96e-10 (2.68e-10)	5.29e-11 (2.10e-10)
Price Shock	-0.0244 (0.252)	-0.0987 (0.319)	0.113 (0.325)	-0.0559 (0.273)
Price Shock Lag1	-0.210 (0.379)	-0.441 (0.404)	1.547 (1.147)	-0.367 (0.371)
Price Shock Lag2	-0.418 (0.378)	-0.357 (0.378)	0.0768 (0.627)	0.830 (0.951)
Constant	-1.695*** (0.142)	-2.197*** (0.155)	-1.318*** (0.131)	-1.289*** (0.137)
Observations	1,784	1,837	1,840	1,784
#Countries	52	52	52	52

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

Table 4: Results of Linear Fixed Effects Regression, Including High-Income Countries, with and without controls

	Flights	Surges	Stops	Retrench
Contested Election	0.166* (0.0928)	-0.000158 (0.071)	0.172 (0.137)	0.494** (0.959)
Fatalities (GTD)	-0.00279 (0.0207)	0.00268 (0.00431)	-0.00446** (0.0014)	-0.00388s** (0.0264)
Transition	0.112*** (0.025)	0.0432 (0.07)	0.142*** (0.0095)	-0.0356 (2,973)
Coups (INSCR)	-0.233*** (0.0571)	-0.006 (0.0196)	-0.179*** (0.0157)	0.393*** (642.5)
GDP	0.272** (0.146)	0.0366 (0.0969)	-0.0950*** (0.0185)	-0.572** (0.0792)
lagGDP	0.0335** (0.0105)	0.0203 (0.0846)	0.0157 (0.0803)	0.0157 (0.0132)
lagPOP	0 (6.77e-10)	-0 (0)	0 (6.15e-11)	0 (6.09e-11)
Population	1.60e-10 (1.48e-10)	3.83e-10*** (6.31e-10)	6.56e-09 (9.27e-10)	2.14e-10 (4.21e-09)
Current Account	0 (0)	-0 (0)	0 (0)	0 (0)
Price Shock	0.0581 (0.252)	-0.0399 (0.0399)	0.0180 (0.0325)	0.0684 (0.299)
Price Shock Lag1	0.0799** (0.379)	-0.117 (0.123)	0.132*** (1.147)	0.462 (0.466)
Price Shock Lag2	0.0254 (0.378)	-0.0551 (0.378)	-0.0351 (0.0227)	0.0639 (0.851)
Constant	0.223	0.238***	0.151	0.136
Time Dummies	No	Yes	No	Yes
Observations	1627	1627	1627	1627
# Countries	18	18	18	18

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

Table 5: Results of Linear Fixed Effects Regression, Excluding High-Income Countries, with and without controls

	Flights	Surge	Stops	Retrench
Contested Election	1.199 (0.462)	0.941 (1.225)	0.230 (0.904)	2.719*** (0.825)
Fatality (GTD)	-0.036 (0.2460)	0.0125 (0.436)	-0.0361 (0.0748)	-0.0420 (0.0827)
Transition	5.132 (408.0)	-16.59 (2,732)	5.021 (729.6)	-0.182 (0.263)
Coups, (INSCR)	-7.627 (582)	-5.443 (322.2)	-7.159 (861.4)	7.302 (1476.1)
GDP	0.520*** (0.132)	0.339*** (0.0626)	-0.522*** (0.0543)	-0.315*** (0.114)
lagGDP	0.139 (0.0492)	0.120 (0.0522)	0.133 (0.0502)	0.118 (0.0496)
lagPOP	1.34e-10 (9.30e-10)	-5.58e-10 (1.07e-09)	1.25e-10 (4.52e-10)	3.09e-10 (4.75e-10)
Population	2.21e-09 (1.27e-10)	2.79e-08*** (9.45e-10)	262e-09 (8.27e-10)	3.07e-08*** (1.99e-09)
Current Account	3.77e-11 (2.17e-10)	-2.33e-10 (2.15e-10)	3.96e-10 (2.68e-10)	5.29e-11 (2.10e-10)
Price Shock	0.110 (0.252)	-0.0987 (0.319)	0.113 (0.325)	-0.0559 (0.273)
Price Shock Lag1	1.575 (0.379)	-0.441 (0.404)	1.547 (1.147)	-0.367 (0.371)
Price Shock Lag2	0.078 (0.378)	-0.357 (0.378)	0.0768 (0.627)	0.830 (0.951)
Constant	0.223	2.197***	-1.318***	-1.289***
Time Dummies	No	Yes	No	Yes
Observations	873	873	873	873
#Countries	25	52	52	52

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

Table 6: Results of Linear and Nonlinear Models for Contested Elections on Retrenchment, with various controls

	Retrench	Effects at the Margin
Contested Election (Baseline Logit FE Model, Non-High Income)	3.326*** (3.45)	.5940106***
Control for Coups d'états	3.316*** (3.44)	.5930407***
Control for Transition	3.319*** (3.44)	.5925346***
Control for Fatalities	3.381*** (3.54)	.6019226***
Contested Election (Baseline Logit FE Model, Inc. High Income)	2.711*** (3.29)	.4854656***
Control for Coups d'états	2.711*** (3.44)	.48597***
Control for Transition	2.714*** (3.44)	.4844986***
Control for Fatalities	2.774*** (3.40)	.4964258***
Contested Election (Baseline Linear FE Model, Non-High Income)	0.447* (2.85)	
Contested Election (Baseline Linear FE Model, Inc. High Income)	0.413*** (3.02)	

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

Table 7: Regression Results of Sensitivity Test for Contested Elections

	Retrench	
	Including High Income	Excluding High Income
Contested Elections	3.326*** (0.459)	2.719*** (0.320)
Contested Elections-1	3.673*** (0.483)	2.775*** (0.353)
Contested Elections-2	3.602*** (0.459)	2.549*** (0.320)
Contested Elections-3	3.602*** (0.459)	2.549*** (0.320)
Contested Elections-4	3.772*** (0.607)	1.958** (0.460)
Observations	917	1,784
# Countries	26	52

Contested Election variable includes nelda28, nelda29, nelda31, nelda33; contested election-1 includes nelda29, nelda33, nelda31; contested election-2 includes nelda29, nelda33, nelda28; contested election-3 includes nelda33, nelda31, nelda28; lastly, contested election-4 includes nelda29, nelda31, nelda28 (*see table 8 for variables*).

Table 8: National Elections Across Democracy and Autocracy, Variables

nelda28	Is there evidence that reports critical of the government's handling of the election reached large numbers of people?
nelda29	Were there riots and protests after the election?
nelda31	If yes (NELDA29): did the government use violence against demonstrators?
nelda33	Was there significant violence involving civilian deaths immediately before, during, or after the election?

Table 9: List of Commodities included in the Price Shock Analysis

Aluminum, 99.5% minimum purity, LME spot price, CIF UK ports, US\$ per metric ton
Bananas, Central American and Ecuador, FOB U.S. Ports, US\$ per metric ton
Barley, Canadian no.1 Western Barley, spot price, US\$ per metric ton
Beef, Australian and New Zealand 85% lean fores, CIF U.S. import price, US cents per pound
Coal, Australian thermal coal, 12,000- btu/pound, less than 1% sulfur, 14% ash, FOB Newcastle/Port Kembla, US\$ per metric ton
Cocoa beans, International Cocoa Organization cash price, CIF US and European ports, US\$ per metric ton
Coffee, Robusta, International Coffee Organization New York cash price, ex-dock New York, US cents per pound
Rapeseed oil, crude, fob Rotterdam, US\$ per metric ton
Copper, grade A cathode, LME spot price, CIF European ports, US\$ per metric ton
Cotton, Cotton Outlook 'A Index', Middling 1-3/32 inch staple, CIF Liverpool, US cents per pound
China import Iron Ore Fines 62% FE spot (CFR Tianjin port), US dollars per metric ton
Lamb, frozen carcass Smithfield London, US cents per pound
Maize (corn), U.S. No.2 Yellow, FOB Gulf of Mexico, U.S. price, US\$ per metric ton
Natural Gas, Natural Gas spot price at the Henry Hub terminal in Louisiana, US\$ per Million Metric British Thermal Unit
Crude Oil (petroleum), simple average of three spot prices; Dated Brent, West Texas Intermediate, and the Dubai Fateh
Palm oil, Malaysia Palm Oil Futures (first contract forward) 4-5 percent FFA, US\$ per metric ton
Swine (pork), 51-52% lean Hogs, U.S. price, US cents per pound.
Poultry (chicken), Whole bird spot price, Ready-to-cook, whole, iced, Georgia docks, US cents per pound
Rice, 5 percent broken milled white rice, Thailand nominal price quote, US\$ per metric ton
Rubber, Singapore Commodity Exchange, No. 3 Rubber Smoked Sheets, 1st contract, US cents per pound
Fish (salmon), Farm Bred Norwegian Salmon, export price, US\$ per kilogram
Soybeans, U.S. soybeans, Chicago Soybean futures contract (first contract forward) No. 2 yellow and par, US\$ per metric ton
Sugar, Free Market, Coffee Sugar and Cocoa Exchange (CSCE) contract no.11 nearest future position, US cents per pound
Sunflower oil, Sunflower Oil, US export price from Gulf of Mexico, US\$ per metric ton
Tea, Mombasa, Kenya, Auction Price, US cents per kilogram, From July 1998, Kenya auctions, Best Pekoe Fannings. Prior, London auctions, c.i.f. U.K. warehouses
Tin, standard grade, LME spot price, US\$ per metric ton
Uranium, NUEXCO, Restricted Price, Nuexco exchange spot, US\$ per pound
Wheat, No.1 Hard Red Winter, ordinary protein, Kansas City, US\$ per metric ton
Wool, coarse, 23 micron, Australian Wool Exchange spot quote, US cents per kilogram
Zinc, high grade 98% pure, US\$ per metric ton

Table 10: Main Indicators

Variables	Observations	Mean	Std. Dev.	Min	Max
Surges	4881	.1430035	.3501123	0	1
Stops	4884	.1707617	.3763391	0	1
Retrenchment	4787	.1669104	.3729348	0	1
Flight	4787	.1639858	.3703014	0	1
Contested Elections	4889	.0269994	.1620981	0	1
Coups (T&P)	4889	.0079771	.1095752	0	2
Coups INSCR	4889	.0059317	.1059096	0	2
Fatalities (RAND)	4889	.3761352	5.381.434	0	329
Fatalities (GTD)	4889	1.832.406	2.159.846	0	1375
Transition (Polity IV)	4889	.1898139	2.848.315	-2	98
Transition (GWF)	4889	.0034772	.0588711	0	1