Claremont Colleges
working paper 2001-10

Economics papers by faculty at Claremont Graduate University, Claremont Institute for Economic Policy Studies, Claremont McKenna College, Drucker School of Management, Harvey Mudd College, Lowe Institute, Pitzer College, Pomona College, and Scripps College.

Political Risk and Capital Flight*

Quan Vu Le

and

Paul J. Zak

School of Politics and Economics
Claremont Graduate University

May 01, 2001

*The authors thank Arthur Denzau and Yi Feng for discussions on this project which have led to a significantly improved paper. Nevertheless, the authors are solely responsible for any errors.

Correspondence to: Paul J. Zak, Department of Economics, Claremont Graduate University, Claremont, CA 91711–6165, paul.zak@cgu.edu or http://fa.cgu.edu/~zakp.

Political Risk and Capital Flight

Abstract

Capital flight often amounts to a substantial proportion of GDP when developing countries face crises. This paper presents a portfolio choice model that relates capital flight to rate of return differentials, risk aversion, and three types of risk: financial risk, political risk, and policy risk. Estimating the equilibrium capital flight equation for a panel of 47 developing countries over 16 years, we show that all three types of risk have a statistically significant impact on capital flight. Quantitatively, political risk is the most important factor causing capital flight. We also identify several political factors that reduce capital flight by signaling market-oriented reforms are imminent.

Keywords: Capital Flight, Political Risk, Policy Risk, Portfolio Choice.
Journal of Economic Literature Classification Number: **F3** International Finance; **P16** Political Economy of Capitalism.

Why is it that when an American puts money abroad it is called "foreign investment" and when an Argentinean does the same it is called "capital flight"? Why is it that when an American company puts 30 percent of its equity abroad it is called "strategic diversification" and when a Bolivian businessman puts only 4 percent abroad it is called "lack of confidence"?

Stephen Charles Kanitz in *The Wall Street Journal*, September 21, 1984, p45

1 Introduction

International investments are an effective method of portfolio diversification. Movements of capital seeking the highest risk-adjusted return should not be of concern to policy-makers in developing countries if risks can be hedged. Unfortunately, many sources of risk are uninsurable–especially in developing countries with immature institutional structures and nascent financial markets. As a result, when the risk profile of a country changes, capital flight ensues.

Empirical studies show that capital flight is a substantial impediment to growth in developing countries (Varman-Schneider, 1991). For example, following the economic crisis and political instability in Mexico in 1983, capital outflows were 8.7% of GDP and per capita GDP subsequently fell -5.8%. The following year, capital outflows were 3.1% of GDP and per capita GDP grew 6.1%. The speed and magnitude of capital flight suggests that the causative factors are not purely economic. The correspondence between political decisions and the economic environment leads us to examine polities as a source of investment risk.

In this paper we build a formal international asset allocation model and decompose risk into three factors: financial risk, political risk, and policy risk. While the effect of political risk on asset substitution in an open economy has received increasing attention in the literature (Dooley & Isard, 1980; Eaton & Turnovsky, 1983; Ize &

Ortiz, 1983; Ize, 1985; Agmon, 1985; Alesina & Tabellini, 1989; Diamonte, Liew, & Stevens, 1996; Erb, Harvey, & Viskanta, 1996; Andrews & Willett, 1997; Collier, Hoeffler, & Pattilo, 1998; Lensink, Hermes & Murinle, 1999; Sobel, 1999; and Schulze, 2000), there has not been a clear decomposition of the various aspects of risk on capital flight. The equilibrium of the comprehensive model in this paper shows that many types of risk, as well as risk aversion and return differentials affect investment decisions. Thus, any empirical test of the political factors driving capital flight must control for economic conditions that impact investment decisions as well as fully specify sources of risk.

Estimating the equilibrium capital flight equation for a panel of 47 developing countries over 16 years, we show that all three types of risk impact capital flight. The empirics show that the quantitatively most important factors affecting capital flight are, in order, political instability, financial risk, and policy instability. All factors are statistically significant at better than the 1% level. Surprisingly, we find that there is a set of political events that *reduce* capital flight, including nonviolent demonstrations, and constitutional changes in government. We conjecture that these events signal economic reforms that reduce future risks and/or indicate higher future returns.

In the following section, we illustrate the confluence of political and economic factors that impel capital flight by presenting sketches of the events surrounding several extreme episodes in Argentina, Mexico, South Korea, the Philippines, Nigeria, and Cote d'Ivoire. Section 3 presents a formal model of international portfolio choice. Section 4 decomposes investment risk into financial risk, political risk, and policy risk, and develops measures of each of these. Using these risk measures, we estimate the equilibrium capital flight equation in Section 5, and show that all three types of risk are statistically significant determinants of capital flight. Section 6 summarizes our findings.

2 Politics and Episodes of Capital Flight

Economic theory does not provide a single definition of capital flight. Despite definitional problems, measures of capital flight can be generated. Three commonly used measure of capital flight have been developed by the World Bank (1985), Morgan Guaranty Trust (1986), and Cline (1987).

Throughout our analyses, we use the broadest estimate of capital flight using the World Bank method for the 47 developing countries in our sample, covering the period between 1976 and 1991. The World Bank residual method compares of the source of finance, i.e., the change in external debt and the net foreign direct investment, with the uses of finance, i.e., the current account deficits and the change in official reserves. Therefore, the residual includes the assets of both the banking and nonbanking sectors. Balance-of-payments data are taken from the World Bank's *World Development Indicators*.[1]

If political risk, policy variability, and financial instability affect the magnitude of capital flight in developing countries, changes in these factors should be correlated with capital flight in the data.[2] For a detailed analysis, we select six countries in our sample that experienced sudden massive capital flight and examine their political-economic interrelationships.

Argentina: Like many other Latin American countries, capital movements in Argentina are associated with political instability. Figure 1.1 shows the political events that incited capital outflows. In 1981 General Jorge Rafael Videla became

[1]The Morgan Guaranty Trust method excludes the acquisition of short-term foreign assets by the banking and finance sector; only the accumulation of private foreign assets by the nonbanking sector is identified as capital flight. The Cline method modifies the Morgan Guaranty Trust estimate by excluding travel, reinvested FDI income and other investment income from the estimate.

[2]The survey by Brunetti, Kisunko, & Weder (1998) reveals that political risk is viewed as an obstacle to doing business in developing countries.

President but by December was ousted by Field Marshal Roberto Viola. In 1985 a state of siege was declared to halt right-wing violence. In 1987 President Raul Alfonsín quelled a military revolt. Throughout the 1980s, inflation was unchecked and the economy deteriorated. In May 1989, President Carlos Saul Menem imposed an austerity program that sparked nationwide unrest. Between 1976-1991, capital flight in Argentina averaged 3.40% of GDP per year, peaking at 10% of GDP in 1989.

MEXICO: Sporadic economic crises, political reforms, and uprisings by Zapatista rebels in Chiapas were among the problems faced by the Mexican government in the 1980s and 1990s. The economic crisis in the mid-1980s challenged the legitimacy of the ruling party (*Partido Revolucionario Institucional* or PRI). In the midst of the economic crisis in 1985, election fraud led to massive protests by the opposition in which at least three people died and many were injured. Political reforms were initiated by President Carlos Salinas de Gotari in 1988 and accelerated by his successor, President Ernesto Zedillo. Uprisings in Chiapas and Guerrero demanding greater democratization and a more equitable distribution of income began in the early 1990s. These turbulent events are associated with capital flight as shown in Figure 1.2. Capital flight in Mexico averages 3.11% of GDP annually between 1976-1991, reaching a maximum of 8.7% of GDP in 1983.

SOUTH KOREA: The mid-1980s was a period of revolutionary turmoil and dramatic social change in South Korea, initiating a transition to democracy in 1988. The democratic transition was not free of bloodshed. Three significant events changed the political landscape of South Korea. In 1986, students marched in Seoul to mark the sixth anniversary of Kwangju uprising resulting in a strong response by the government. In the following year, violent protests occurred in the wake of the selection of Roh Tae Woo, an ex-army general, as the leading party presidential candidate. In 1991, thousands of students demonstrated after police beat a student to death during a demonstration. Figure 1.3 indicates that during the political unrest of the

mid-1980s and early 1990s, there was significant capital flight. South Korea's average capital flight is relatively small between 1976-1991, averaging 1.92% of GDP per year, but peaking at 6.6% of GDP in 1987 prior to the democratic transition.

Philippines: The Philippines led a wave of democratization in Asia beginning in the mid-1980s. In 1985, 100,000 people staged an antigovernment demonstration to mark the second anniversary of the death of Senator Ninoy Aquino. This commenced a movement against the authoritarian regime of Ferdinand Marcos. In the following year, faced with mounting protests and pressure from the U.S., Marcos agreed to a national election and was defeated by Ninoy Aquino's widow Corazon Aquino. Following the election, Marcos supporters clashed with supporters of the new government. During the two-year period of political turmoil and uncertainty, Filipinos transferred large quantities of capital abroad as shown in Figure 1.4. Capital flight in the Philippines averages to 2.56% of GDP annually between 1976-1991, exceeding 8% of GDP in 1985 prior to the presidential election.

Nigeria: Many sub-Sahara African countries are caught in a coup trap (Londregan & Poole, 1990), and Nigeria is no exception. Political instability, labor strife, and corruption are endemic. Under authoritarian military regimes, organized labor and political movements were harassed, and opposition leaders purged and imprisoned. Significant events include: in 1985, General Ibrahim Babangida came to power through an internal military coup; in 1987, an attempted coup failed, followed by the execution of coup leaders; and in 1991, another attempted coup against President Babangida failed. Figure 1.5 shows that attempted and actual coups were accompanied by capital flight. Capital flight in Nigeria between 1976-1991 averages 7.37% of GDP per year, exceeding 31% of GDP in 1987.

Cote d'Ivoire: In the 1980s and 1990s, harsh economic conditions led to widespread anger and frustration in Cote d'Ivoire. Worker dissatisfaction was stoked as real wages fell and unemployment soared. In 1986, public discontent with the govern-

ment's austerity program provoked nationwide violent demonstrations. The threat of a coup in 1990 rose when junior officers and army conscripts seized the Abidjan airport to protest low wages. This produced substantial capital flight as shown in Figure 1.6. Annual average capital flight in Cote d'Ivoire was 2.98% of GDP per year between 1976-1991, and exceeded 16% of GDP in 1985 and 1986.

[Figure 1 about here]

3 A Formal Model of Capital Flight

Consider 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 (which could be considered a basket of investments such as a country mutual fund), and we ignore labor income. There is a single homogeneous good produced in both countries, and population is constant, immobile, and normalized to unity.

Let a_t denote assets invested in the domestic market at time t, which earns the rate of return r_t. Returns in the domestic market are risky, $r \sim N(\mu, \sigma^2)$. By assumption, the domestic country has immature financial markets in that 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. The risk-free return can be considered to be U.S. T-Bills.[3]

A representative agent maximizes lifetime utility by solving

$$Max_{c_t} E \sum_{t=0}^{\infty} \beta^t U(c_t) \tag{1}$$

[3]Because the model does not include money, there is no exchange rate risk. In a monetary model, a risk-free foreign return exists if exchange rate risk can be hedged.

s.t.

$$c_t = (1 + r_t)a_t + (1 + r^f)a_t^f - a_{t+1} - a_{t+1}^f \tag{2}$$

where $U(c)$ is strictly increasing, continuous, and concave.

The necessary and sufficient conditions for an optimum to (1) are

$$U'(c_t) = E[U'(c_{t+1})r_{t+1}] \tag{3}$$

$$U'(c_t) = E[U'(c_{t+1})r^f]. \tag{4}$$

Combining (3) and (4) produces

$$E[U'(c_{t+1})(r_{t+1} - r^f)] = 0 \tag{5}$$

Using the definition of covariance, (5) is equivalent to

$$E[U'(c_{t+1})]E[r_{t+1} - r^f] = -COV[U'(c_{t+1}), r_{t+1}] \tag{6}$$

where $COV(x, y)$ is the covariance between the random variables x and y.

Assuming $U'(c_{t+1})$ and r_{t+1} are jointly normally distributed, equation (6) can be written as[4]

$$E[U'(c_{t+1})]E[r_{t+1} - r^f] = -a_{t+1}E[U''(c_{t+1})]VAR(r_{t+1}) \tag{7}$$

Rearranging, equation (7) is

$$a_{t+1}^\star = \frac{E(r_{t+1} - r^f)}{\theta VAR(r_{t+1})}, \tag{8}$$

where $VAR(r_{t+1})$ is the variance of the return on domestic investment, and $\theta \equiv -\frac{E[U''(c_{t+1})]}{E[U'(c_{t+1})]}$ 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

[4]Equation (7) holds by Stein's lemma: $COV(g(x), y) = E(g\prime(x))COV(x, y)$, if g is continuous and satisfies some regularity conditions. See Huang & Litzenberger (1988, p101). If $U'(c_{t+1})$ and r_{t+1} are not jointly normal, then (7) approximates (6) by a central limit theorem.

amount of capital flight that comes from equation (8) as $a_{t+1}^{f\star}$, and capital flight from the foreign country to the domestic country as $a_{t+1}^{f\diamond}$. We define net capital flight in the developing country as $A_{t+1}^{f} \equiv a_{t+1}^{f\star} + a_{t+1}^{f\diamond}$. Then, aggregate capital K invested in the domestic country at time t is

$$K_{t+1} = a_{t+1}^{\star} + A_{t+1}^{f}. \tag{9}$$

Equation (9) shows that 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.

Rearranging equation (9) and substituting out domestic investment $a_{t+1}^{\star}$ using equation (8), produces the equilibrium capital flight equation

$$A_{t+1}^{f} = K_{t+1} - \frac{E(r_{t+1} - r^{f})}{\theta VAR(r_{t+1})}. \tag{10}$$

Equation (10) predicts that capital flight is higher when the domestic expected return is low, domestic investment risk is high, and when risk aversion is high.

4 Determinants of Political Risk

The next step of the analysis is to decompose the variance in the equilibrium capital flight equation (10). We focus on three sources of the variation in returns: financial risk, σ_f^2, political risk, σ_p^2, and policy risk, σ_τ^2. Assuming that each type of risk is independently distributed, the risk of domestic investment is

$$VAR(r_{t+1}) = \sigma_{f,t+1}^2 + \sigma_{p,t+1}^2 + \sigma_{\tau,t+1}^2. \tag{11}$$

Financial risk, σ_f^2, is due to variation in the business environment, including the robustness of the economy and consumer confidence. Financial risk is measured by the variance of portfolio returns. Because of the uncertainty association with inflation, the variability of inflation is another measure of financial risk. Lucas (1972) and

Friedman (1977) argue that the variance of inflation causes uncertainty about prices, reducing economic activity.

Among the two forms of nonfinancial risk, political risk, σ_p^2, captures the longevity of the ruling regime. Government stability is important to assess when forecasting the ability to realize and retain returns. Second, even though the same government may remain in power, it may choose a wholly different policy stance that may affect returns. Policy risk, σ_τ^2, captures changes in government policies such as taxes or regulations that impact firm profitability.

In the subsections below we further discuss each type of nonfinancial risk and specify how they are measured.

4.1 Measurement of Political Variables

Political instability has two major components: regime instability and political violence. Regime instability is caused by constitutional or unconstitutional government change. Feng (1997) characterizes three different types of government change.[5] Major regular government change, $MJCH$, is defined as a constitutional power transfer of the executive office within the ruling party or the coalition of ruling parties. Irregular government change, $IRCH$, occurs through unconstitutional means and thus may disrupt the political system. Finally, minor regular government change, $MRCH$, indicates regime stability but a lack of substantial party competition. This variable captures the notion that any change in government generates some form of instability.

The next set of measures for political instability involves political violence. These include: *(i)* violent and nonviolent antigovernment uprisings, and *(ii)* violent and nonviolent actions to suppress uprisings by the government. We use the political instability indices developed by Le (1998) derived from principal components analy-

[5]Feng's data set ends in 1989 which limits the coverage of our empirical analyses. The authors thank Yi Feng for making the data set available to us.

sis. Principal components produces two factors for political instability, which are denoted $SPIF1$ and $SPIF2$. The first factor includes general strikes, riots, and anti-government demonstrations which represents collective protests. The second factor includes purges, guerrilla warfare, and assassinations which captures internal crackdowns and violent uprisings.

Policy instability is measured by the variability of government political capacity. Organski & Kugler (1980) and Arbetman & Kugler (1997) develop a measure called *relative political extraction* (RPE), which is based on the ratio between actual and expected tax revenue.[6] A country with high RPE has a strong and capable government that implements policy effectively. Conversely, a government with low RPE is unable to extract resources and is therefore weakened. Feng & Chen (1997) argue that the variability of RPE generates instability because the direction of policy implementation is uncertain. As a result, we use the variance of RPE as a measure of policy instability.

A second dimension of policy instability is reflected in poor contract enforcement. Contract-intensive money, CIM, a measure developed by Clague et al (1999), is an indicator of property rights enforcement based the type of financial assets being held. CIM is defined as the ratio of noncurrency money to the total money supply, $\frac{M_2-C}{M_2}$, where M_2 is a broad definition of the money supply and C is currency held outside banks. When individuals expect that the government will provide sufficient contract and property rights enforcement, capital lent to investors will be high. We use the variance of CIM as another measure of governmental policy risk.

[6] Arbetman & Kugler's data set ends in 1991. The authors thank Jacek Kugler for making the data set available to us.

5 EMPIRICAL TESTS OF THE CAPITAL FLIGHT MODEL

The major testable implication of this paper is that political risks affect the magnitude of capital flight. This section specifies a statistical model to test the influence of political risks on capital flight in 47 developing countries between 1976-1991, unless otherwise noted. The choice of countries and years included in the sample was determined primarily by countries that have had high volatility in capital movements.

The capital flight equation (10) at time t is more easily estimable by dividing both sides by K_t,

$$\frac{A_t^f}{K_t} = 1 - \frac{E(r_t - r^f)}{\theta K_t VAR(r_t)}, \tag{12}$$

where the utility function is chosen so that risk aversion is constant.[7] Using a linear production function to transform capital into output, $Y_t = \lambda K_t$, for $\lambda > 0$, equation (12) can be written in terms relative to output. Taking natural logs of this equation and approximating $\ln(1-x)$ by $-\ln(x)$, for $x = \frac{E(r_t - r^f)}{\theta Y_t VAR(r_t)} < 1$ produces the equation[8]

$$\ln(\frac{A_t^f}{Y_t}) = \ln(d) - \ln(E(r_t - r^f)) + \ln(Y_t) + \ln(VAR(r_t)), \tag{13}$$

where d is an agglomeration of parameters from the model. Finally, using the decomposition of the variance of returns (11) yields the estimable equation[9]

$$\ln(\frac{A_t^f}{Y_t}) = \ln(d) - \ln(E(r_t - r^f)) + \ln(Y_t) + \ln(\sigma_{f,t}^2) + \ln(\sigma_{p,t}^2) + \ln(\sigma_{\tau,t}^2). \tag{14}$$

Equation (14) demonstrates that when estimating the equilibrium capital flight equation, one must control for the return differential, $Er_t - r^f$, as well as GDP, Y_t. Besides these controls, the model predicts that capital flight will rise with financial

[7] There are a variety of utility functions that have constant risk aversion, called constant absolute risk aversion (CARA) preferences; see Huang & Litzenberger (1988).

[8] This approximation is valid as long as x is small which obtains since GDP is in the denominator. In taking logs, we have ignored the 1 in (12).

[9] Similar to that above, we approximate $\ln(\sigma_{f,t}^2 + \sigma_{p,t}^2 + \sigma_{\tau,t}^2)$ by $\ln(\sigma_{f,t}^2) + \ln(\sigma_{p,t}^2) + \ln(\sigma_{\tau,t}^2)$.

risk, $\sigma^2_{f,t}$, which is measured by the variance of the domestic interest rate. We also include in the estimation a second measure of financial risk, the variance of inflation. The remaining risk factors to be estimated in equation (14) are political risk, $\sigma^2_{p,t}$, which is measured by the probabilities of major, minor, and irregular government change $MJCH$, $MRCH$, and $IRCH$, as well as the measures of collective protests $SPIF1$ and violent uprisings, $SPIF2$; and policy risk, $\sigma^2_{\tau,t}$, which is measured by the variance in relative political extraction σRPE, and the variance in contract-intensive money σCIM. Data for domestic interest rates, the T-bill rate, and the inflation rate are taken from the IMF's *International Financial Statistics*. Data for GDP is taken from the World Bank's *World Development Indicators*.

5.1 Empirical Results

This section carries out empirical tests linking the various forms of risk to capital flight for a sample of 70 developing countries from Africa, Asia, and Latin American. Appendix A lists the countries in the sample, and Appendix B reports the data sources and years of coverage. Because these countries have diverse political landscapes and levels of economic volatility, the regressions may be driven by unmeasured country characteristics. That is, capital flight may not be mainly due to the political risk but to other country characteristics. We address this contingency by running generalized least squares (GLS) regressions and controlling for country fixed effects.

Equation 1 in Table 1 estimates the basic economic model in which there is no political or policy risk, $\sigma^2_p = \sigma^2_\tau = 0$. This regression explains 12% of the variation in capital flight for our panel of data. All the explanatory variables have the correct sign and are statistically different than zero at the 1% level. The regression shows that capital flight declines as the return differential $Er_t - r^f$ rises, while capital flight increases as financial risk – measured by the variance of the domestic interest rate and the variance of the inflation rate – increases.

Equations 2 through 8 add measures of political and policy risk one variable at a time to the base model of equation 1 to assess their impact on capital flight. Each variable is entered separately because there is substantial multicollinearity between the measures of political and policy risk; *viz.* politically unstable countries are also likely have unstable policies. Equations 2 and 3 add to the base model the measures of socio-political instability, $SPIF1$ and $SPIF2$, respectively. While internal uprisings $SPIF2$ have the predicted sign, raising capital flight, collective protests $SPIF1$ decrease capital flight. Both are statistically significant at the 1% level. These regressions explain over 50% of the variation in capital flight. The results appear to obtain because countries experiencing collective action absent political violence typically undertake reforms, including transitions to democracy, that lead to increased stability. For example, Lohmann (1994) demonstrates that collective protests in East Germany over the period 1989-1991 led to an unprecedented internal change in leadership and eventual unification with West Germany. This is our first surprising result: organized protests *reduce* capital flight if they are by and large nonviolent.

Equations 4, 5, and 6 add regime instability to the basic model of equation 1. The results show our next surprising results: with better than 99% confidence the estimation shows that major and minor government change $MJCH$ and $MRCH$ *reduce* capital flight. Indeed, both types of regime change have the same quantitative impact on capital flight: A ten percentage point increase in the probability of a major or minor government change reduces capital flight as a proportion of GDP by 0.08. This indicates that major and minor government change raise stability, mostly likely because they signal that market-oriented reforms are occurring. Feng (1999) states that the short-term uncertainty caused by major government change is dominated by the long-term benefits of policy readjustment. As for minor government change, Feng argues that since it does not involve a change of the ruling party or coalition of parties, it is an indicator of political stability and continuity. Conversely, Equation 6

reveals that irregular government change induces capital flight with better than 99% confidence. A ten percentage point increase in the probability of a transfer of executive power through unconstitutional means raises capital flight as a proportion of GDP by 0.04.

Equations 7 and 8 add policy risk to the base model of equation 1. These equations show that policy instability as measured by the variances in contract intensive money and relative political extraction induces capital flight. While the variance of RPE is statistically significant at the 1% level and quantitatively important, the variance of CIM is neither statistically or economically significant. The latter is due to the broadness of the CIM measure vis-à-vis the policy environment.

Equation 9 represents a full model of capital flight including financial, political, and policy risk. The specification includes variables from each narrow category (regime instability, socio-political instability, and policy instability) which have low multicollinearity. The estimated coefficients show that economic factors, violent uprisings, and policy instability are all statistically significant contributors to capital flight at better than the 1% level. Among these factors, the return differential is the quantitatively most important, followed by irregular government change, the variance of domestic returns, internal uprisings, the variance of inflation, and the variance of RPE. This ordering reveals the interleaving of economic and political factors that drive capital flight. To wit, this equation explains 60% of the variation in capital flight.

Lastly, Equations 10 and 11 explore whether the "surprising" results continue to hold in the full model. In these regressions, we include collective protests and major or minor government change, as well as a the variance of RPE as the measure of policy instability. The $MJCH$ and $MRCH$ variables remain significant at the 1% level. Importantly, in both regressions, the negative coefficients on major and minor government change continue to obtain. These equations explain over 60% of the

variation in capital flight. Thus, some political factors robustly incite capital flight while others reduce it.

[Insert Table 1 about here]

6 Conclusions

This paper examines the effects of various types of risk – financial, political, and policy instability – on capital flight. The theoretical model shows that all three determinants of risk affect capital flight by changing investors' asset allocation decisions. Estimating the equilibrium capital flight equation for a panel of 47 developing countries shows after controlling for return differentials, per capita GDP, and financial risk, several types of risks accelerate capital flight, including unconstitutional government change, internal uprisings, and the variance of policy implementation. Surprisingly, collective protests, and major and minor constitutional government changes decrease capital flight. This appears to occur because these political events are associated with market-oriented reforms that signal future higher returns and/or lower risk.

References

Agmon, Tamir, 1985, *Political Economy and Risk in World Financial Markets*, Lexington Books.

Alesina, Alberto, 1989, Politics and Business Cycles in Industrial Democracies, *Economic Policy*, 8:55-98.

Alesina, Aberto, and Tabellini, Guido, 1989, External Debt, Capital Flight and Political Risk, *Journal of International Economics*, 27:199-220.

Andrews, David M., and Willett, Thomas D., 1997, Financial Interdependence and the State: International Monetary Relations at Century's End, *International Organization*, 51(3):479-511.

Arbetman, Marina and Kugler, Jacek, 1997, *Political Capacity and Economic Behavior*, Westview Press.

Brunetti, Aymo, Kisunko, Gregory, & Weder, Beatrice, 1998, How Business See Government: Responses from Private Sector Surveys in 69 Countries, *International Finance Corporation*, Discussion Paper No.33.

Clague, Christopher, Keefer, Philip, Knack, Stephen, & Olson, Mancur, 1999, Contract-Intensive Money: Contract Enforcement, Property Rights, and Economic Performance, *Journal of Economic Growth*, 4:185-211.

Cline, William R., 1987, Discussion of Chapter 3, *Capital Flight and Third World Debt*, Donald R. Lessard and John Williamson, eds., Institute for International Economics.

Collier, Paul, Hoeffler, Anke and Pattilo, Catherine, 1998, Capital Flight as a Portfolio Choice, *Development Research Group*, The World Bank.

Diamonte, Robin L., Liew, John M., and Stevens, Ross L., 1996, Political Risk in Emerging and Developed Markets, *Financial Analysts Journal*, 52(3):71-76.

Dooley, Michael, and Isard, P., 1980, Capital Controls, Political Risk, and

Deviations from Interest Rate Parity, *Journal of Political Economy*, 88(2):370-84.

EATON, J., AND TURNOVSKY, S., 1983, Exchange Risk, Political Risk and Macroeconomic Equilibrium, *American Economic Review*, March:183-189.

ERB, CLAUDE B., HARVEY, CAMPBELL R., AND VISKANTA, TADAS E., 1996, Political Risk, Economic Risk, and Financial Risk, *Financial Analysts Journal*, 52(6):29-46.

FENG, YI, 1999, Political Institutions and Private Investment, *Claremont Graduate University Working Paper.*

FENG, YI, 1997, Democracy, Political Stability and Economic Growth, *British Journal of Political Science*, 27:391-418.

FENG, YI & CHEN, BAIZHU, 1997, Government Capacity and Private Investment: A Study of Developing Countries, in *Political Capacity and Economic Behavior,* Arbetman, Marina & Kugler, Jacek, eds., Westview Press.

FRIEDMAN, MILTON, 1977, Inflation and Unemployment, *Journal of Political Economy*, 85:451-472.

HUANG, CHI-FU & LITZENBERGER, ROBERT H., 1988, *Foundations for Financial Economics*, North-Holland.

INTERNATIONAL FINANCE STATISTICS, The International Monetary Fund.

IZE, A, AND ORTIZ, G., 1983, Political Risk, Asset Substitution and Exchange Rate Dynamics: The Mexican Financial Crisis of 1982, *Documentos de Trabajo*, No.5, August, El Colegio de Mexico.

IZE, A., 1985, Investment, Capital Flight and Political Risk: The Case of Mexico, unpublished, January, El Colegio de Mexico.

LE, QUAN VU, 1998, Socio-Political Instability: Issues, Measures, and Explanations, *Claremont Graduate University Working Paper.*

LENSINK, ROBERT, HERMES, NEILS, AND MURINDE, VICTOR, 1999, Capital Flight and Political Risk, *University of Groningen Working Paper.*

Lohmann, Susanne, 1994, The Dynamics of Informational Cascades: The Monday Demonstrations in Leipzig, East Germany, 1989-1991, *World Politics*, 47:42-101.

Londregan, John B. & Poole Keith T., 1990, Poverty, the Coup Trap, and the Seizure of Executive Power, *World Politics*, 32:151-183.

Lucas, Robert E., Jr., 1972, Expectations and the Neutrality of Money, *Journal of Economic Theory*, 4(2):103-24.

Morgan Guaranty Trust Company, 1986, LDC Capital Flight, *World Financial Markets*, March:13-15.

Organski, A.F.K. and Kugler, Jacek, 1980, *The War Ledger*, University of Chicago Press.

Schulze, Gunther G., 2000, *The Political Economy of Capital Controls*, Cambridge University Press.

Sobel, Andrew C., 1999, State Institutions, Private Incentives, Global Capital, *Michigan Studies in International Political Economy*, University of Michigan Press.

Varman-Schneider, Benu, 1991, *Capital Flight from Developing Countries*, Westview Press.

World Development Report, 1985, The World Bank.

World Development Indicators, 1999, The World Bank.

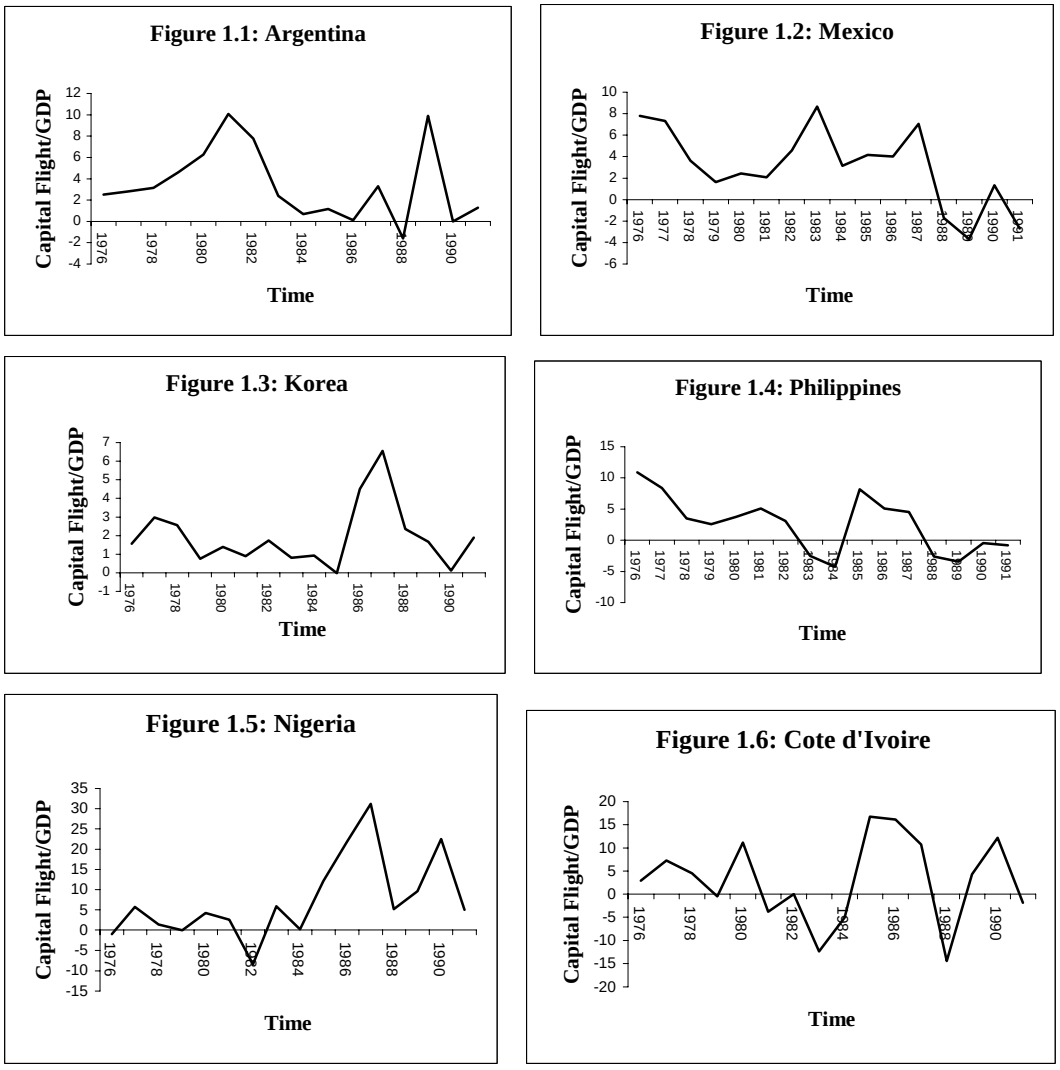

Figure 1: Capital Flight and Political Events

TABLE 1: POLITICAL RISK AND CAPITAL FLIGHT IN 47 DEVELOPING COUNTRIES

Variable	Capital Flight 1	Capital Flight 2	Capital Flight 3	Capital Flight 4	Capital Flight 5	Capital Flight 6	Capital Flight 7	Capital Flight 8	Capital Flight 9	Capital Flight 10	Capital Flight 11
Constant	0.024* (0.007)	0.011 (0.008)	0.031* (0.008)	0.018* (0.007)	0.009 (0.007)	0.044* (0.007)	0.019* (0.007)	0.030* (0.007)	0.055* (0.007)	0.013 (0.008)	0.0004 (0.009)
R – T-bill (domestic interest rate – T-bill)	-0.013* (0.001)	-0.019* (0.001)	-0.020* (0.001)	-0.012* (0.001)	-0.013* (0.001)	-0.016* (0.001)	-0.011* (0.001)	-0.014* (0.001)	-0.020* (0.001)	-0.019* (0.001)	-0.018* (0.001)
GDP (gross domestic product)	0.002* (0.001)	0.005* (0.001)	0.002* (0.001)	0.0003 (0.001)	0.001 (0.001)	0.002* (0.001)	0.001 (0.001)	0.002* (0.001)	0.002* (0.001)	0.003* (0.001)	0.004* (0.001)
σR (variance of domestic interest rate)	0.003* (0.001)	0.003* (0.001)	0.003* (0.001)	0.004* (0.001)	0.003* (0.001)	0.004* (0.001)	0.003* (0.001)	0.003* (0.001)	0.004* (0.001)	0.005* (0.001)	0.005* (0.001)
σINF (variance of inflation)	0.002* (0.001)	0.004* (0.001)	0.004* (0.001)	0.001* (0.001)	0.001* (0.001)	0.002* (0.001)	0.002* (0.001)	0.003* (0.001)	0.002* (0.001)	0.003* (0.001)	0.003* (0.001)
SPIF1 (collective protests)	--	-0.012* (0.001)	--	--	--	--	--	--	--	-0.013* (0.001)	-0.012* (0.001)
SPIF2 (internal uprisings)	--	--	0.008* (0.001)	--	--	--	--	--	0.005* (0.001)	--	--
MJCH (major government change)	--	--	--	-0.008* (0.001)	--	--	--	--	--	-0.006* (0.002)	--
MRCH (minor government change)	--	--	--	--	-0.008* (0.001)	--	--	--	--	--	-0.008* (0.001)
IRCH (irregular government change)	--	--	--	--	--	0.004* (0.001)	--	--	0.006* (0.001)	--	--
σCIM (variance of CIM)	--	--	--	--	--	--	0.0002 (0.0002)	--	--	--	--
σRPE (variance of RPE)	--	--	--	--	--	--	--	0.001* (0.0002)	0.0005 (0.0003)	0.0003 (0.0003)	0.0003 (0.0003)
R-squared	0.124	0.534	0.561	0.129	0.170	0.209	0.078	0.165	0.622	0.685	0.713
Adjusted R-squared	0.117	0.529	0.557	0.119	0.161	0.201	0.070	0.156	0.616	0.680	0.708
No. of Observations	541	541	535	460	460	460	541	510	432	437	437
Period	76-91	76-91	76-91	76-89	76-89	76-89	76-91	76-91	76-91	76-89	76-89

Notes: White heteroskedasticity-consistent standard errors are in parentheses. * Statistically significant at the 1-percent level. All variables are in logarithm.

APPENDIX A
Sample of Country Coverage

Africa—21 countries	Asia—10 countries	Latin America—16 countries
Central African Republic	Indonesia	Argentina
Chad	Jordan	Barbados
Congo, Rep.	Korea, Rep.	Bolivia
Cote d'Ivoire	Malaysia	Brazil
Egypt, Arab Rep.	Nepal	Chile
Ethiopia	Pakistan	Colombia
Gabon	Philippines	Costa Rica
Ghana	Sri Lanka	Ecuador
Kenya	Thailand	El Salvador
Madagascar	Turkey	Guatemala
Mauritania		Honduras
Mauritius		Mexico
Morocco		Paraguay
Nigeria		Peru
Senegal		Uruguay
Sierra Leone		Venezuela
South Africa		
Swaziland		
Uganda		
Zambia		
Zimbabwe		

APPENDIX B Data Sample and Years Coverage		
Variable	Years Coverage	Source
Capital Flight	1976-1991	Data used to estimate capital flight are taken from the World Bank's World Development Indicators.
Contract-intensive money	1976-1991	Data used to estimate CIM are taken from the International Monetary Fund's International Financial Statistics.
Domestic interest rate	1976-1991	International Monetary Fund's International Financial Statistics.
Inflation rate	1976-1991	International Monetary Fund's International Financial Statistics.
Major government change	1976-1989	Feng (1997).
Minor government change	1976-1989	Feng (1997).
Irregular government change	1976-1989	Feng (1997).
Collective protests	1976-1991	Le (1998).
Internal crackdowns and violent uprisings	1976-1991	Le (1998).
Relative Political Extraction	1976-1991	Arbetman & Kugler (1997).
Treasury Bill Rate	1976-1991	International Monetary Fund's International Financial Statistics.