A Development Comparative Approach to Capital Flight: The Case of the Middle East and North Africa, 1970-2002

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Abstract

Capital flight from developing countries represents lost potential for economic growth and development. This is the first study to estimate capital flight and examine its determinants from the Middle East and North Africa region (MENA) from 1970-2002. The analysis employs a comparative approach relating capital flight of each country to the model of development pursued. Resource-based industrialization states register the largest volume of capital flight amounting to more than 273 billion of 1995 USD. Accumulated interest earnings capital flight amounts to more than 935 billion of current USD. On the other hand, state-led development economies and balanced economies of the region show "negative capital flight" of 102.8 and 112.7 billions of 1995 USD, respectively; In other words, substantial unrecorded capital inflows. Capital flight under the first development model is assisted by natural resource exporting rents, the outward orientation of most economies and the monarchial character of most of their political systems. In contrast, capital inflows under the last two development models indicate smuggling of goods and other types of avoidance of taxes and trade regulations and is assisted by their inward-looking strategies, one-party or militarily controlled governments and capital controls. In addition to calculating the volume of capital flight from the region, this study presents an econometric analysis of its determinants and discusses policy implications based on the results.

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1. INTRODUCTION

Capital flight from developing countries represents lost potential for economic growth and development. In the contemporary literature of development economics, increasing attention has been paid to the notion of capital flight, with many analysts attributing sluggish economic growth and persistent balance of payments deficits in developing countries to capital flight (Onwidoduokit (2001)). In addition, capital flight has other adverse consequences for developing countries. First, it reduces the ability of the banking system to create money for business projects and other productive investment activities. Secondly, and probably most importantly, the loss of capital affects income distribution by eroding the domestic tax base and by redistributing income from the poor to the rich (Pastor (1990); Ajayi (1997)).

According to mainstream economic theory, capital movement (including capital flight) is attributed to profit-maximizing behavior of wealthy individuals based on portfolio choice decisions that are motivated by achieving high risk-adjusted return to capital (Collier, Pattillo and Hoeffler (2001)). In a world of free capital mobility, diminishing returns, complete information and negligible transaction costs, returns to capital will equalize across countries and markets, making agents indifferent between investing domestically or abroad (Boyce and Ndikumana (2002)).

Developing countries have experienced large amounts of capital flight in the era of trade and financial liberalization since the 1980s. This contradicts the predictions of conventional Neo-classical theory that capital movement should be from capital-abundant countries (where rates of return are low) to capital-scarce countries (where the returns on capital are high). On of the main contributions of recent development, international and political economists is to have shed light on this contradiction and explained its dynamics within and outside mainstream economic theory.

On the reversal of the direction of capital movement predicted by conventional economic theory, Boyce and Ndikumana (2002) point out that if investment is riskier in developing countries, the net risk-adjusted returns may be lower, and this, according to them, could explain why capital flight flows in the opposite direction. Some authors such as Razin and Radka (1991), Dooley and Kletzer (1994) and Bjerksund and Schjelderun (1995) focus on government differential tax treatment between local and foreign capital (Hermes, Lensink and Murinde (2002)) while others pay more attention to macroeconomic instability and (such as high budget deficits, volatile inflation and exchange rates and large current account deficits) political instability (such as revolutions, social unrest, strikes and coups) in some developing countries (e.g. Hermes, Lensink and Murinde; (2002)). FitzGerald and Cobham (2000) and Boyce and Ndikuman (2002) add corruption by some elites and dictators in developing countries accumulating private wealth fueled by their respective government borrowing from abroad (Boyce (1992) calls this *debt-fueled capital flight).* Others point out the global integration of capital markets having increased the ease by which nationals can move their assets abroad (FitzGerald and Cobham (2000)). In addition, factors such as financial repression, weak institutions, ineffectiveness of macroeconomic policies, business cycles,

overvaluation of exchange rates and a poor investment climate have been cited as contributing to capital flight from developing countries (Boyce and Ndikumana (2002); Hermes, Lensink and Murinde (2002); Schneider (2003)).

Pastor (1990) asserts that poor investment climate is not a major cause of capital fight "if the investment climate in a country is unfavorable enough to push out local capital, why would savvy international bankers invest their own funds in the form of loans". Instead, he attributes capital flight to discriminatory treatment of local and foreign investors in Latin America, enhanced access to foreign credit by local elites and to what he calls "loan pushing" by debtor countries and international organizations. For a summary of the main findings of selected studies on the determinants of capital flight, see Hermes, Lensink and Murinde (2002) and Boyce and Ndikumana (2002).

There are several measures of capital flight that have been used in the literature; these include the balance of payment measure, the hot money measure and the residual measure, which is the most widely used (Hermes, Lensink and Murinde (2002); Schneider (2003)). The residual measure, a broad measure based on the discrepancies between sources of foreign exchange (capital inflows) and uses of those funds (capital outflows), is more inclusive and gives a measure of capital flight that takes into account most capital flows between nations including external debt, foreign direct investment and portfolio investment. Capital flight, according to this approach, comprises the surplus of capital inflows over foreign exchange outflows that is not recorded in official government statistics. Usually, this involves attempts by wealth holders to avoid government sanctioned policies that could reduce the principal or its returns or could endanger control over one's financial wealth (Epstein (2005)).

This paper makes use of the residual approach to estimate capital flight and empirically examine its determinants from the Middle East and North Africa region (MENA) within a comparative development framework.[1] To the best of my knowledge, this is the first set of estimates of capital flight from the MENA region utilizing the residual approach, focusing exclusively on the region and covering such a wide range of countries in the region.[2] The rest of the paper is organized as follows. Section two provides a brief discussion of the economic, political and historical background of the MENA region followed by a comparative development methodology in the third section.

[1] We follow the Arab Monetary Fund definition of the MENA region, which includes Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Somalia, Syria, Tunisia, UAE and Yemen. We also add Iran to the region since the World Bank classifies it as such and because of its relevance to the core analysis of this paper. Data on the West Bank and Gaza are not available. For the purposes of this study, Pakistan, Afghanistan, Israel and Turkey are not covered.

[2] Schneider (2003) has estimated international capital flight using both the broad measure as well as the hot money measure to capital flight. Since her study incorporates countries for which data are available, she presents some estimates of capital flight and trade misinvoicing separately for the following countries under the MENA region: Algeria, Egypt, Iran, Jordan, Morocco, Oman, Syria and Tunisia. In addition to the fact that her study includes only eight countries of the MENA region, Schneider's estimates of capital flight are less inclusive in terms of number of years of analysis. Our estimates cover all countries in the region for which data are available and incorporate trade misinvoicing adjustments to reach the final figure of capital flight.

Section four presents the methodology used in the estimation of capital flight from the MENA region. In the fifth section, I present a discussion of capital flight estimates and trends from the region based on the reported results. Section six discusses the empirical findings of this paper and the last section provides conclusion and policy implications for development.

2. BACKGROUND ON MENA

The countries of the Middle East and North Africa have a shared heritage, language and culture, as well as similar political structures. However, their factor endowments are substantially different. While some are resource-rich and labor-scarce states (the countries of the Gulf Cooperation Council), others are resource-rich and labor-abundant states (such as Algeria and Iran), and the rest are resource-poor and labor-rich states (such as Egypt, Jordan and Morocco).[3] Standards of living as well as the sizes of economies also differ vastly among the countries of the region.[4]

The political structures of the MENA region are traditional and persistent. Regardless of the nominal type of regime, the political elites continue to resist political reforms that they perceive as threatening to the status quo. The continuity of the current political organization in the countries of the region is widely regarded as the prime reason behind the marginalization of popular politics and can be thought of as a product of domestic socioeconomic and political environments as well as external manipulation. Ultimately, the monopoly of the state over resources and decision-making activities, outside of the purview of civil society, hinders popular participation in fostering long-term prosperity of the countries of the region (see Abootalebi (1999)). In addition, the quality of institutions in the MENA region is low by international standards.[5]

The globalization process has had little success in the MENA region. In terms of

[3] This classification is consistent with that of the World Bank. Resource abundance is measured by natural resource endowments whereas labor abundance is measured by net inflows of workers' remittances to each country.

[4] According to the World Bank classifications, five countries (Egypt, Mauritania, Somalia, Sudan, and the Republic of Yemen) are low-income countries. Thirteen countries (Algeria, Bahrain, Djibouti, Iran, Iraq, Jordan, Lebanon, Libya, Syria, Morocco, Oman, Saudi Arabia and Tunisia) are middle-income countries while Kuwait, Qatar and the United Arab Emirates are classified as high-income countries. However, per capita real GDP growth in the MENA region over the past two decades has faltered more than in other developing regions.

[5] I constructed an institutional quality index based on indicators gathered by Kaufman, Kraay and Zoido-Lobaton (1999b). The index comprises six indicators: namely; voice and accountability, political stability and lack of violence, government effectiveness, and regulatory framework, rule of law and control of corruption. The index ranges between –2 (low) and 2 (high). According to the index constructed, the majority of the MENA countries score negative or low estimates, especially in voice and accountability and control of corruption, reflecting the poor institutional quality characterizing the region. A study by Abed and Davoodi (2003) at the IMF presents an updated version of the same indices (2002) and compares the MENA region to Latin America and the Caribbean, East Asia and OECD countries. The MENA region by far has the lowest institutional quality on a regional scale. Only when looking at the rule of law do Latin America and the Caribbean score as low as the MENA region.

economic integration, the MENA Region lags considerably behind the rest of the world.[6] According to a World Bank study, the region's trade has grown at 3 percent in the last decade, as compared to 8 percent for the rest of the world. The major Latin American and East Asian countries have made consistent inroads into the region's import markets, while the region's exports have been unable to significantly penetrate the markets of Latin America and East Asia (Page (1998)).[7] In addition, the international capital flows of foreign direct investment and portfolio investment have bypassed the MENA region considerably.[8]

The growth performance of the MENA region has been rather disappointing (see table 1 for growth rates and other macroeconomic indicators). Several macroeconomic indicators illustrate the poor health of the economies of the region. Mounting external debt, increasing budgetary deficits, falling per capita incomes as well as rising poverty and income inequality characterize most of the economies in the MENA region. The greatest challenge facing the MENA region is to create enough employment opportunities for the large and rapidly growing labor force. According to the World Bank, the region has one of the highest rates of unemployment in the world.

[Insert Table 1 Here]

Historically speaking, the dependence on natural resources and the legacy of central planning have shaped the development trajectories pursued by the countries of the region. Over the last three decades, the resource-rich states have adopted resource-based industrialization while the majority of capital-scarce states followed state-led development strategies in which the states command productive activities.[9] The third category consists of economies in which sectoral contribution to national output is fairly balanced. For the purposes of this study, we categorize the countries of the region into three groups according to the development models followed by each country; resource-based industrialization states, state-led development economies and balanced economies.

[Insert Table 2 Here]

Resource-based industrialization states are characterized by their heavy reliance on the export of natural resources, along with their capitalist orientation and the monarchial character of most of their political systems. State-led development economies as well as balanced economies rely heavily on external borrowing, citizens' remittances, tourism,

[6] This is more pronounced for non-resource-based economies (state-led development economies as well as balanced economies). See Table 2 for country classification.

[7] This paper was cited in Almounsor (2003).

[8] The MENA region, on overage of three period averages, received below 1 percent of the world's net foreign direct investment inflows over the last three decades. The data are derived from World Bank Indicators 2003, CD-ROM Edition.

[9] According to the World Bank estimates, the output of the public sector, when excluding banks and other financial institutions, in developing countries averaged about 10 percent of GDP in 1980. In addition, state owned enterprises accounted for one-quarter to one-half of total value added in manufacturing. In many of countries of the MENA region, however, the contribution of the public sector was considerably higher than those averages (Roger Owen and Sevket Paumuk, (1998)).

foreign aid and grants and share a common heritage of central planning as well as a socialist orientation. The latter is assisted by one-party or military governments and exemplified in their trade and finance policies as well as in the internal management of their economies. Balanced economies, while sharing some characteristics with their state-led development counterparts, have greater economic diversification as well as more rigorous private sectors than state-led development economies (see the section on comparative development analysis below for details). However, given the similarities between state-led and balanced economies (non-resource-based and characterized by more government intervention than the resource-based states), and for ease of understanding, I will sometimes refer to the countries under these two categories as *non-resource based states.*

While the first oil shock contributed to one of the worst global economic downturns, the MENA region benefited enormously from the wealth generated from oil rents. In particular, the resource-based industrialization states experienced an explosion of growth and investment as well as high rates of capacity utilization. Public sector spending, particularly on infrastructure building and construction projects, largely absorbed the growth in oil revenues. The skyrocketing crude oil prices in 1973 provided the conditions for unprecedented high standards of living as these economies tripled the value of their exports of crude oil.

Many state-led development and balanced economies produced some oil of their own and profited directly from the high prices of the era. In addition, they witnessed an excess demand for their abundant and relatively more skillful labor from the resource-based industrialization states. [10] This resulted in massive inflows of remittances from their citizens working in the Gulf countries, as well as a rise in their trade shares and capital flows. Flows of aid, cheap loans, outright grants, profits earned by their contractors in resource-rich states as well as smaller amounts of investment inflows provided those governments with unprecedented inflows of foreign exchange.

However, reality began to dawn in the mid-1980s when crude oil prices fell sharply as western economies adjusted to the oil shocks of 1973 and 1979 by using oil more efficiently, contracting domestic demand and developing alternative sources of energy. Oil rents dropped drastically and the flows of aid and remittances within the region were much reduced. In addition, both investment and savings ratios to GDP decreased. Countries following state-led development strategies as well as balanced economies had to increase their external borrowing and financing to compensate for adverse trade balances following the fall of crude oil prices (see Table 3 below for average long term debt in different currencies and Table 4 for average external debt relative to GDP and total external debt stock adjusted for exchange rate fluctuations). Derived from their common heritage of central planning, state intervention theories and socialist legacies, which encouraged limited private sector participation and private business initiatives and advocated the control of the state over much of the economic, political and social aspects of people's lives, this option was preferred by countries under the two models

[10] The Gulf Cooperation Council countries of the MENA region (GCC) had been the main actor importing labor during the construction and infrastructure boom between the mid 1970s to the mid 1980s.

outlined above over trade and financial liberalization advocated by international organizations in the early 1980s (see Owen and Sevket (1998) and Field (1994)). Nevertheless, the deterioration of economic conditions and the increasing leverage of the international organizations (the IMF and the World Bank) brought most of the countries of the region under Structural Adjustment Programs (SAPs). Following the implementation of the latter, however, the region's average rate of economic growth in the decade of the 1990s fell short of that in the1960s and 1970s.

[Insert Table 3 Here]
[Insert Table 4 Here]

Given the huge expansion of crude oil exports and the large external loans disbursed to non-oil states between the early 1970s and the mid-1980s, the question of the appropriate public usage of such funds to finance internal public development projects inevitably arises. For this purpose, this paper sheds light on the public utilization of those funds and provides policy implications based on the results obtained. More specifically, the paper addresses the problem of capital flight from the Middle East and North Africa utilizing the residual approach to capital flight developed by the World Bank in 1985, and further developed by various authors including Ajayi (1997) and Nkidumana and Boyce (2000). The following section provides details of our development comparative approach on the countries of the MENA Region, followed by the methodology of the residual approach in measuring capital flight from the countries of the MENA region.

3. COMPARATIVE DEVELOPMENT ANALYSIS

This section is primarily based on my earlier study that utilizes a broad range of indicators to categorize the MENA countries. In that study, the data included structure (composition) of output, structure of aggregate demand, structure of merchandise exports, structure of merchandise imports, central government expenditures, central government revenues, balance of payments account, role of private sector and integration to the word economy. However, for this paper, given space limitations, I only use selected indicators that suggest the same typology I developed in my earlier paper. For simplicity, larger involvement of the government sector than the private sector and low integration to the world economy implies state-led development strategy whereas minimal state intervention, more active private sector and more integration to the world economy imply an outward orientation strategy to economic development. Table 2 in the appendix section provides a brief summary of the comparative development methodology.

The typology is generated by computing three period averages over the last three decades of relevant variables: Resource-based industrialization economies have large share of the industrial sector to GDP (average of 55.5%), large share of exports to GDP (40% and higher), of which the largest share of total exports are fuel, ores and metals (65% and higher). They also have rigorous private sector relative to state-led development economies. Countries classified under this model are: Algeria, Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.

For state-led industrialization economies, we pay close attention to the following statistics; the highest share of output in those economies are services and agriculture sectors (average of 69%). They also have large share of agricultural products, raw materials and food exports relative to total exports (50% and higher) as well as low rates of non-tax revenues as % of current central government revenues. The private sector of those states play a less important role than in their resource-based industrialization counterparts. Countries classified under this model include: Comoros, Djibouti, Egypt, Mauritania, Somalia, Sudan, Syria and Yemen. Finally, balanced economies are characterized by more or less balanced distribution of output among sectors with more contribution of the manufacturing sector to GDP than the other two categories. In addition, they have more active private sector relative to state-led development economies. Balanced economies include Jordan, Lebanon, Morocco and Tunisia. As with any taxonomy, this structure is a great simplification of reality, but it will prove useful in helping us understand the nature of capital flight in the MENA region. For alternative development model specifications, see Richards, Alan and John Waterbury (1990).

4. METHODOLOGY OF ESTIMATING CAPITAL FLIGHT

Following Boyce and Ndikumana (2000), and according to the residual approach developed by the World Bank, capital flight is defined as the difference between capital inflows and foreign exchange outflows. The rationale behind such characterization lies in the argument that capital inflows are either used to finance current account deficits or else accumulated in the central bank as foreign exchange reserves. Accordingly, flows that do not go to either account are regarded as capital flight, which finances private external assets. More specifically, a surplus of inflows over reported uses reflects positive capital flight. The residual here captures "unrecorded flows," which suggests attempts to avoid rules, regulations and social control by local governments. The starting point of estimating private external assets is the *Balance of Payments statistics* published annually by the IMF. To carry out the estimation, I use the following residual equation first developed by the World Bank in the mid 1980s and adopted by Boyce and Ndikumana (2000)[11], among others:

$$KF_{it} = \Delta\, Debt_{it} + NFI_{it} - (CA_{it} + \Delta\, Reserves_{it}) \qquad (1)$$

Where *KF* refers to capital flight in current USD, Δ *Debt* refers to change in total external debt stock, *NFI* refers to net inflows of foreign investment, *CA* refers to the current account deficit, and Δ *Reserves* refers to the changes in the accumulation of foreign

[11] As Boyce and Ndikumana (2000) point out, researchers at the World Bank recognized that many external private assets are scrupulously concealed in the Balance of Payments (BOP) statistics. In addition, when comparing external borrowing BOP data to that in World Debt Tables, they found that BOP statistics underestimate external debt. Finally, the official data on the value of exports and imports in the BOP data is undermined by widespread trade misinvoicing, motivated among other reasons by the desire to avoid controls on transferring foreign exchange abroad or by the desire to evade import restrictions or custom duties. After correcting the BOP data, researchers recalculated net errors and omissions, thereby obtaining a 'residual' measure of capital flight.

exchange reserves (net additions). This equation illustrates that capital flight is the difference between total capital inflows (the change in total external debt stock plus net inflows of foreign investment) and recorded foreign exchange outflows (financing the current account deficit and accumulating foreign exchange reserves in central banks). If the difference is positive, this reflects capital flight; if it is negative it reflects capital inflows.

Since the BOP external debt data are reported in USD, and since countries hold debt denominated in a variety of currencies (see Table 3 above) we adjust external debt for exchange rate fluctuations on the USD value of the stock of long term debt. In the BOP statistics, debt stock data are converted to USD using the end-of-year exchange rate. In periods of significant fluctuations in the exchange rates of the currencies in which debt is denominated, year-to-year changes in the dollar value of stock of outstanding debt can differ markedly from the actual net flows during the year under consideration. If so, then estimates of capital flight obtained from equation (1) will be biased. Depreciation of the British Pound relative to the USD at the end of any given year compared to another, for instance, will reduce the dollar valuation of this portion of a country's debt stock and the estimates of capital flight based on this apparent change in debt stock will be correspondingly reduced. Conversely, when the currencies in which debt is denominated appreciate against the USD, capital flight estimates are inflated. Thus, I adjust for exchange rate fluctuations in long-term debt stock as follows:

Since $\Delta Debt = Debt_t - Debt_{t-1}$ (2)

Then $\Delta DebtAdj_t = Debt_t - NEWDebt_{t-1}$ (3)

Where $\Delta DebtAdj$ refers to the change in long-term external debt disbursed at the end of the year adjusted for exchange rate fluctuations and *NEWDebt* is total long term external debt valued at the beginning of the year. In other words, $\Delta DebtAdj$ is the difference between end-of -year debt stock and beginning-of-year debt stock, when both are valued at the end of year exchange rate.

For country *i*, the USD value of the beginning-of-year stock of debt at the new exchange rates is obtained as follows:

$$NEWDebt_{i,t-1} = \sum_{j=1}^{6}\left[\left(\lambda_{ij,\,t-1} * LTDebt_{i,\,t-1}\right) / \left(EX_{jt} \big/ EX_{j,\,t-1}\right)\right] + IMFCR_{i,t-1} / \left(EX_{SDR,\,t} \big/ EX_{SDR,\,t-1}\right)$$
$$+ LTOther_{i,t-1} + LTMult_{i,t-1} + LTUSD_{i,t-1} + STDebt_{i,t-1} \quad (4)$$

Where *LTDebt* is the total long-term debt, λ being the proportion of long-term debt held in currency *j* for each of the non-US currencies; *EX* is the end of year exchange rate of the currency of denomination with respect to the USD; *IMFCR* is the use of IMF credit; *LTOther* is long term debt denominated in other unspecified currencies; *LTMult* is long term debt denominated in multiple currencies; *LTUSD* is long term debt denominated in

US dollars and finally *STDebt* is short term debt. [12] I then modify equation (1) to account for exchange rate fluctuations in long term external debt as follows:

$$KF_{it} = \Delta DebtAdj_{it} + NFI_{it} - (CA_{it} + \Delta Reserves_{it}) \quad (5)$$

However, researchers also found that the trade data in the current accounts of BOP statistics are misreported. If the current account deficit is overstated (i.e.import overinvoicing or export underinvoicing), the capital flight estimates will be inflated. Conversely, if the current account deficit is understated (i.e. import underinvoicing or export overinvoicing), the capital flight estimates will be smaller. To correct for trade misinvoicing in BOP data, I compare a country's export and import data to those of its trading industrial partners, using the *Direction of Trade Statistics* data. Here, I assume that data from industrialized countries are relatively accurate and interpret the discrepancy between these and the data from their MENA trading partners as evidence of misinvoicing.

For an individual MENA country *i* in year *t*, export discrepancies and import discrepancies with industrial partners are computed as follows:

$$DEXP_{it} = PEXP_{it} - (1+CIF_t)*EXP_{it} \quad (6)$$

$$DIMP_{it} = IMP_{it} - (1+CIF_t)*PIMP_{it} \quad (7)$$

$$MISINV = (DEXP/ICXS) + (DIMP/ICMS) \quad (8)$$

Where *DEXP* and *DIMP* refer to export and import discrepancies, *PEXP* and *PIMP* refer to exports and imports of a MENA country recorded in industrial countries' official statistics, *EXP* and *IMP* are exports and imports of a MENA country as reported in its own statistics, *CIF* refers to the cost of freight and insurance and *ICXS* and *ICMS* refer to the share of each MENA country's exports to industrial countries in total exports to the World and the share of each MENA country's imports from industrial countries in total imports from the world, respectively . [13] *MISINV* refers to global trade misinvoicing of each MENA country. A positive sign of *DEXP* indicates net export underinvoicing and; a negative sign indicates net export overinvoicing. Similarly, a positive sign of *DIMP* indicates net import overinvoicing; a negative sign indicates net import underinvoicing. The trade misinvoicing figures appear in Table 5 below.

Thus, I add trade misinvoicing to the calculation of capital flight in equation (5) as follows:

$$KFAdj_{i\,t} = KF_{it} + MISINV_{it} \quad (9)$$

Finally, I adjust for inflation by transforming capital flight into constant 1995 USD using the US. Producer Price Index (PPI). The rationale here is that capital flight that fled in, say, 1974, the era of high oil prices, from Saudi Arabia, for instance, is worth more than a

[12] The adjustment for exchange rate fluctuations excludes IMF credit, short-term debt, debt in other currencies and debt held in multiple currencies. These constitute small percentages of total external debt stock as can be seen in Tables 3 and 4 above.

[13] We standardize the cost of freight and insurance to 10 percent of the value of exports or imports throughout our computation.

dollar that fled 15 years later. To make the value of capital flight comparable at different dates, I adjust them for inflation as follows:

$$Real\ KFAdj_{it} = KF\ Adj_{it} / PPI_t \quad (10)$$

The additional adjustment employed concerns interest earnings on capital flight. This step is important to account for gains in asset values over time through market appreciation or interest earning. Following the same logic, the volume of Kuwaiti capital flight, for instance, invested abroad in, say, 1976, is worth more than Kuwaiti capital flight in, say, 2000, due to those accumulated interest earnings.[14] In addition, imputing interest earning to the entire amount of capital flight provides and estimate of its opportunity cost to the nation, on the assumption that such funds would have otherwise been available for domestic investment and development programs. Thus, I compute the stock of interest-earnings adjusted capital flight (*Interest KF Adj* $_{it}$) as follows:

$$Interest\ KF\ Adj_{\ it} = Interest\ KF\ Adj_{\ I,t-1}\ (1+TBILL_{\ it}) + KF\ Adj_{\ it}\ ^{15} \quad (11)$$

Where *TBILL* is US short term Treasury bill rates to proxy for the interest earned on past capital flight.

The estimates of capital flight based on the adopted methodology appear in Table 6 and are elaborated on in the following section. The final adjustment concerning interest earnings in equation (11) appears in Table 7 below.

[Insert Table 5 Here]
[Insert Table 6 Here]
[Insert Table 7 Here]

5. DISCUSSION OF CAPITAL FLIGHT ESTIMATES AND TRENDS

As stated above, I report annual capital flight estimates adjusted for inflation, exchange rate fluctuations and trade misinvoicing in Table 6 above. I also report average annual capital flight burden (capital flight / GDP), average annual capital flight, average annual per capita capital flight and total nominal capital flight with accumulated interest earnings in Table 7 above. Since capital flight entails some trade misinvoicing, I report our estimates of the region's trade misinvoicing in Table 5 above. I then graph capital flight estimates and capital flight relative to GDP in both resource-based states and non-resource based economies in part A of the figures appendix and graph the estimates of trade misinvoicing in part B of the figures appendix.

[14] Although capital flight is used to finance the acquisition of assets abroad including fixed assets such as real estate and liquid assets such saving deposits and stocks, some of these funds can be used to finance consumption, rather than being invested.
[15] See Boyce and Ndikumana (2000) and Epstein (2005) for details on the methodology.

In figures 1 and 2 (part A of the figures appendix) I plot total capital flight from resource-based and non-resource-based states separately, respectively. I also do the same in Figures 3 and 4 but using capital flight as a percentage of GDP for resource and non-resourced economies, respectively. In Figure 5 I plot capital flight as a percentage of GDP for individual resource-based states. Figures 6 and 7 plot trade misinvoicing estimates for resource-based and non-resource-based economies, respectively.

According to reported estimates, the MENA region as a whole is indeed a net creditor to the rest of the world. Driven by the resource-based industrialization states, the region registers 57.8 billion of 1995 US dollars of capital flight with imputed interest earning capital flight of 525.6 billion of current USD. This implies that large amounts of capital generated mainly by oil rents had not been used to finance public development projects. Rather, significant amounts of such flows of foreign exchange had fled those states in the form of capital flight to finance external private assets.

As shown in Figure 1, total real capital flight in resource-based states combined was highest during the decade of 1973-1982, a period in which both the first and the second oil shocks took place. This basic observation suggests that oil exports have financed capital flight in the oil rich states and were diverted away from domestic investment, welfare programs, employment creation, infrastructure development and other necessary development programs. In only one decade (1973-1982), oil rich states experienced more than $ 300 billion of flight capital, which corresponds to about an average of 30% of their GDPs combined (see Figure 3). For most of these oil states, a “golden age” would have been possible if those funds were directed to internal development programs. Indeed a full reversal of capital flight has a great potential, when coupled with prudent policies to control future flight of capital, in creating employment opportunities, stimulating domestic demand and in breaking the vicious cycle of under-development and low economic growth.

The trend of capital flight in oil rich states is shown to decline gradually over time (Figure 1). This is also partially caused by the decline in oil revenues of those states. In the classification in Table 2, I have shown that resource-based states are relatively more integrated into the world economy than both state-led and balanced economies. However, capital flight from these states has been more vulnerable to internal and external economic and political shocks than state-led and balanced economies. As shown in Figure 3, average capital flight relative to GDP was sensitive, at various degrees, to both oil shocks (1973 and 1979), both the Iran – Iraq War and the First Gulf War (1980- 87 and 1991), the Mexican currency crisis (1994) and the East Asian currency crisis (1997-2000). Average capital flight relative to GDP in all oil states combined reached 65 % in the first oil shock, 23% during the second oil shock, averaged about 5% during the Iran-Iraq War, dropped to negative 31% during the First Gulf War, mounted to about 22% during the Mexican currency crisis and was about 13% of GDP during the East Asian financial crisis. The dramatic drop in capital flight (capital inflows) in 1991 could be partly explained by wealthy Kuwaiti elites flooding unrecorded financial assets into these states to escape appropriation by the Iraqi invasion. But what is puzzling is that Kuwait itself had huge negative capital flight in 1991 (more than 30 billion of 1995 USD). In

addition, when looking at the trade misinvoicng figures for 1991, we notice it is positive, implying that this massive inflow of capital was not caused by tax evasion and smuggling activities. Perhaps, future research can give us more insight into this puzzle of capital flight reversal in resource-based states during the 1st Gulf war.

When looking at individual country capital flight (Table 6) one notices that Kuwait has the largest amount and most volatile flight capital among the oil rich states. For instance, Kuwait registered capital flight of 190% of GDP in 1975 ($11.7 billion), about 122% of GDP in 1979 ($21.9 billion), about 2% of GDP in 1982 ($ 461 million), negative 160% in 1991 (- $ 30.6 billion during Iraqi Invasion) and about 97% of GDP in 1997 ($8.2 billion). Although Kuwait's total capital flight is more than that of Saudi Arabia, the latter registered more than $ 212 billion capital flight only between 1971 to 1983, a figure that is about 210% of that of Kuwait's for the same period. However, capital flight relative to GDP is much higher in Kuwait, given its small size, than Saudi Arabia during that same period. Analogous to the case of Kuwait, Saudi Arabia's capital flight relative to GDP was highest during the first and second oil shocks, 22% ($20.7 billion in 1974) and 21% ($29.6 billion in 1980), respectively. For the other oil countries, capital flight relative to GDP reached its peak in 1996 for Bahrain (80 % of GDP), in 2000 for Iran (about 19% of GDP), in 1996 for Algeria (about 11% of GDP), in 1983 for Libya (13% GDP) and in 1990 for Oman (45% of GDP).

The estimates of total trade misinvoicing for resource-rich states in Table 5, with the exception of Iran and Kuwait, show two interesting phenomena throughout the period of analysis; export underinvocing to undertake capital flight and import underinvoicing to avoid taxation on imported goods. This finding may point to two different sets of agents in the international market; one undertakes capital flight through underreporting oil exports (perhaps political elites) and the other engaging in smuggling and tax evasion activities (perhaps economic elites).

This study, however, adds the significance of natural resource rents, mainly crude oil, in contributing to capital flight from resource rich states. The occurrence of the phenomenon in those states is considerably driven by exporting revenues generated mostly form the early 1970's to the mid 1980's, the era of high crude oil prices, and assisted by the low controls on capital outflows. The moderate implementation of capital controls on outflows in the resource rich states is reflected in the reported high figures of capital flight from the economies of the model. The estimates of real capital flight provided in Table 6 indicates about 900% increase in capital flight from Saudi Arabia in 1974, following the first oil shock, about 55% increase in capital flight from Algeria, more than 48% increase in capital flight from Bahrain, more than 90% increase in capital flight from Kuwait, more than 653% increase in capital flight from Oman, about 31% increase in capital flight from Libya, and about 865% increase in capital flight from Iran in 1979, [16] the aftermath of the second oil shock. [17]

[16] One exception in the case of resource-based industrialization economies is that of Libya registering small negative capital flight. This could be explained within the political structure and ideology of the country. Libya is ruled by military government, which distinguishes the country from other states within the model that are characterized by monarchical systems. In addition, while the other economies within the model are characterized by their capitalist and integrative orientation, Libya shares the influence of socialist ideas with the countries under state-led development and balanced economies. This feature, however,

The link between capital flight and crude oil prices is further evident by the sharp decline of capital flight figures for resource-based industrialization states in 1986-7 accompanying the fall of oil prices in the same year. The decrease in capital flight in those economies from its value in 1981, prior to the declining trend in prices of oil, to its value in 1987, where oil prices approached their values prior to 1973, is $ 2.09 billion in Algeria, $ 7.8 billion in Kuwait, $ 54.4 billion in Saudi Arabia, but $ 0.6 billion increase in Iran, and $ 270 million increase in capital flight from Bahrain and $ 3.5 billion increase in the case of Oman.[18]

On the other hand, state-led development economies as well as balanced-economies appear to have experienced negative capital flight of $ 215 billions driven by large negative trade misinvoicing. Total capital flight was negative throughout the period of estimation (except the year 2000). Only in the year 2000 that Egypt with $3 billion and Syria with $2.1 billion capital flight have driven average capital flight in non-oil states to about $2 billion. The trend of capital flight in these states declines more drastically than the case of the resource-based states (see Figure 2). However, as shown in Figure 4, capital flight in these states, on average, is less sensitive to economic and political shocks than the resource rich states. Based on our classification in Table 2 above, these states are less integrated into the world economy and adopt a state-dominated approach to economic development. This feature of this model of development probably mitigates the effect of political and economic shocks on capital flight in the countries of the model. In addition, according to Karam (2002), the countries under the former two models of development have higher indices of capital controls on outflows than the economies following resource-based industrialization.

Contrary to resource-based economies, state-led and balanced economies have experienced negative trade misinvoicing throughout the period of analysis (see Table 5 and Figure 7 below). As shown in Table 2, the output of these states is dominated by agriculture, manufacturing and services and the states impose relatively high rates of taxation on international trade activities in those economies. [19] This case of large negative misinvoicing characterizing the state-led development economies and balanced economies is not a unique one. Boyce and Nkidumana (2000) identify several factors contributing to such phenomenon; namely tax evasion and smuggling activities. Those

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coupled with United Nations' sanctions on Libya for supporting 'terrorism', which limited if not constrained Libya's ability to export crude oil, provides an illustration of the deviation of Libya's figure of capital flight from most countries adopting the same development strategy.

17 Note that the second oil shock resulted from the Iranian Revolution. Both the Iranian Revolution and the rise in crude oil prices contributed to the sharp rise in capital flight from Iran.

18 Note that capital flight was negative in Iran both in 1981 and 1987. However, the figure of 1987 is $0.6 billion larger than that for 1981. In the latter year, capital flight in Iran was seriously disrupted by the Iraqi invasion of the country in 1980, but picked up again in the second year following the invasion. A plausible explanation of the negative capital flight from Iran in 1981 is the need for increased military spending and purchases of USSR-made artillery, thereby decreasing capital flight.

19 Note the relevance of this argument to the import misinvoicing estimates in Table 5. Economies following state-led industrialization strategies as well as balanced economies register, on average, considerably higher import negative misinvoicing than resource-based industrialization economies. Thus, the high negative magnitude of import misinvoicng is related to the implementation of international trade duties in those economies.

states are characterized by high trade barriers and restrictions and agents in the international market try to maximize their gains by avoiding import duties. In particular, the negative trade misinvoicing is largely driven by import under-invoicing as shown in Figure 7 below. Data from the World Bank's World Development Indicators show that, state-led development economies as well as balanced economies have, on average, considerably higher rates of import duties revenues as a percentage of total government tax revenues compared to resource-based industrialization states. Although export misinvoicing is positive throughout the period for state-led and balanced economies, import misinvoicing is negatively twice as large, thus bringing total trade misinvoicing negative throughout the period of analysis. This finding also may point to two different sets of agents in the international market; one undertakes capital flight through export under-invoicing (perhaps political elites) and the other engaging in smuggling and tax evasion activities (perhaps economic elites).

Coupled with the poor institutional quality and effectiveness, the high reliance on international trade taxation adopted by the non-resource based states have paved the way for domestic importers to undermine government revenues through tax evasion and smuggling activities in order to maximize their gains. Import duties as a percentage of total government tax revenues are substantially reduced by those economies under-reporting their import transactions. According to the World Development Indicators (2003), imports constitute, on average of three period averages, about 50% of total GDP in those states and import duties as a percentage of total government tax revenues average about 32%. This implies that large amounts of potential import duties in state-led development economies and balanced economies had been undermined by negative trade misinvoicing.
The following section provides and empirical accounting of capital flight in the MENA region.

6. CAPITAL FLIGHT ACCOUNTING

The empirical literature on capital flight has intensified since the 1980s following the Latin American Debt Crisis. Since then, there has been substantial number of empirical studies on capital flight from different regions except for the MENA region. Whether capital flight is a cause or a consequence (or both) of poor macroeconomic environment is worth investigating. In particular, studying the causes of capital flight in the MENA region can shed some light on the some of the factors that contribute to underdevelopment, low economic growth and poor standards of living. In addition, studying the impact of capital flight on the economies of the MENA region, particularly resource-based states that have large stock of capital held abroad in foreign exchange, can help explain some of the unequal distribution of income and wealth and the erosion of social welfare programs and social safety nets in those states. While this study focuses only on the determinants of capital flight, there are fertile grounds for future research to pursue these agendas.

This section provides an empirical accounting of the two phenomena (capital flight from resource based states and capital inflows in non-resource based states) followed by

the conclusion and policy implications for development. However, given the distinct characteristics of the resource based compared to the non-resource based economies, I run separate fixed effects regressions on the determinants of capital flight in each category. In particular, to obtain higher degrees of freedom, and given the similarities between state-led and balanced economies (non-resource-based, inward looking) I put the countries of the two models in one panel and the resource-based economies (outward oriented) in another panel to estimate separate fixed effects regressions on the determinants of capital flight in these two categories.
The following section provides the data and methodology of empirically estimating capital flight followed by the empirical results.

6.1. DATA and METHODOLOGY

The data and sources used in the empirical investigation are described in Table A1 in the appendix. The independent variables are classified into five categories: macroeconomic environment, fiscal policy, capital inflows, financial development and political and institutional variables. The dependent variable is capital flight relative to GDP where the capital flight estimates are obtained using the residual method provided in section 4 above and whose results are provided in Table 6.

As Boyce and Ndikumana (2002) point out, the existing economic theory does not offer a clear-cut way of determining a priori which independent variables should be included in the empirical model of the determination of capital flight. Thus, I follow a step-wise approach of adding explanatory variables one at a time and retaining only those that are statistically significant. As highlighted earlier, I estimate two separate fixed effects models for resource-based and non-resource-based countries, respectively. A combination of four variables remain significant when used simultaneously in the case of the resource-based states (Table 9, column 24) and four variables for non-resource-based states (Table 10, column 18). In both regressions, I used Hausman specification test to choose between fixed and random effects and I rejected the null hypothesis that the coefficients estimated by the efficient random effects estimator are the same as the ones estimated by the consistent fixed effects estimator, indicating that I should use the fixed effects regressions that control for variables that vary between cases but constant over time. One of the main advantages of using fixed effects is that it takes care of omitted variable bias. Each of the two fixed effects models is specified in the following way:

$$KF_{it} = (\alpha + \psi_{it}) + \beta X_{it} + \varepsilon_{it} \qquad (12)$$

Where for a country i at time t, KF is capital flight relative to GDP, ψ_{it} represent individual or country fixed effects over time t to capture unobservable individual country characteristics, X is a vector of time-varying independent variables and ε is the error term.

Before carrying out the estimation, it is important to test the stationarity of the variables in both panels. For this, I use the Augmented Dickey Fuller – Fisher Chi-square

test for pooled data and I rejected the null hypotheses that the data series (both dependent and independent variables) have unit roots[20]. The results of the estimation are provided in Table 9 for resource-based states and Table 10 for non-resource-based states. In columns 1 through 24 in Table 9 and columns 1 though 18 , I regress capital flight on independent variables used previously in the literature on capital flight as well as on relevant variables to the characteristics of the countries of the MENA region. In so doing, I only retain the significant variables for the benchmark regressions for oil states (column 24 in Table 9) and non-resource based states (column 18 in Table 10).

However, when testing the benchmark regression for the resource based states for heteroskedasticity using Breusch-Pagan / Cook-Weisberg test, I find that the variance is not homoskedastic (with high Chi-squared value of 107.28 and low probability of 0.000). Although this does not cause biased estimates, it can make inferences and hypothesis testing misleading. Thus, I correct for this problem in the same regression (note that coefficients don't change, only P-values change in the regression). I also tested the model for mulitcollinearity using the Variance Inflation Factor (VIF) and the results indicate no presence of mulitcollinearity between the independent variables (average VIF score is 4.06). Finally, I tested the normality of the residuals and the possibility of outliers in the regression, in Figure 7 and Figure 8 below, respectively, and found that the residuals are normally distributed and there is no presence of outliers driving the results in one direction or another. Based on this benchmark regression, I also run a dynamic model by incorporating the effects of past capital flight on present capital flight (Table 11).

For non-resource states, I run the same econometric tests on the regression with the largest number of significant independent variables (not reported to save space). I first test the stationarity of the variables using the Augmented Dickey Fuller – Fisher Chi-square test for pooled data and I rejected the null hypotheses that the data series (both dependent and independent variables) have unit roots. Having preferred fixed effects over random effects (following form Hausman specification test), I then test for heteroskedasticity using Breusch-Pagan / Cook –Weisberg test and find that the variance is heteroskedestic. I correct for this problem in the same regression (The coefficients remain the same, only the P-values are now more accurate). However, the model fails the multicollinearity test (average VIF = 11.3). Running a correlation matrix I find that the variables Tx_trade (taxes on international trade relative to current revenues) and m_duties (import duties relative to total tax revenues) are highly correlated (0.90). Although the presence of multicollinearity leaves the estimates "BLUE"[21] it can lead to large standard errors as multicollinearity between the regressors increases. Thus, I drop the offensive variable Tx_trade and run the same regression again. The new model shows no presence of multicollinearity (VIF <10) but still suffer from heterskedasticity, which I correct for in the same regression (regression 18 in Table 10). Finally, I test for the

[20] These tests were done to the variables in the benchmark regressions for resource- based and non - resource based states. However, out of nine variables, the GDP per capita and import duties relative to total tax revenues are found to have high probabilities suggesting that they might be non-stationary. Since these are only two, and since unit roots don't cause biased estimates, I proceeded with the estimation procedure without the need for differencing the data.

[21] This refers to Best Linear Unbiased Estimators.

normality of the residuals and the possibility of existing outliers in the fitted values in Figures 9 and 10 below, respectively, and find that the residuals are normally distributed and there is no presence of outliers.

6.2. RESULTS

In the benchmark regression for resource-based states (Table 9, regression 24), it is shown that capital flight in oil states is mainly driven by the current account balance (%) GDP, the level of GDP per capita, the growth rate of real GDP in 1995 USD and the extent of political rights in these states.

[Insert Table 9 Here]

The positive effect of the current account balance in oil states implies the effect of oil export revenues since most of the foreign exchange earnings in resource-based states are generated by exporting natural resources such as oil (more than 65% of total exports come from oil exports). The second significant variable is the level of GDP per capita, which has a positive effect. This mainly suggests that the larger the size of a MENA oil country, the larger the amount of capital flight relative to GDP and is probably associated with the presence of large industrial sectors dominated by the production and exportation of crude oil and its derivates to the international market. The growth rate of GDP in 1995 USD is negatively related to capital flight in oil states. This effect implies that low growth rates of overall economic activity induces capital flight and could be linked to lack of investment opportunities in these states. Interestingly, political rights is the only non-economic variable that is statistically significant and negatively affects capital flight in the resource-rich states of the MENA region (the political rights variable is measured on one to seven scale such that a score of one represents the highest degree of freedom and seven the lowest). This implies that the political environment, with the monarchial character of the resource- based states, has a stronger effect on capital flight than the economic environment in general. In other words, lower political rights indicate stronger monarchies and thus more privilege to undertake capital flight.

[Insert Table 10 Here]

The benchmark regression for non resource-based states (Table 10, regression 18) shows that capital flight relative to GDP is significantly driven by the level of GDP per capita, the current account balance relative to GDP, and duties on imported goods relative to total tax revenues (the variable workers' remittances is, surprisingly, insignificant). The only variable that positively affects capital flight is the current account balance relative to GDP. Opposite to the case of resource-based states, GDP per capita negatively affects capital flight in non-resource-based states. This implies that the larger the market size or level of development in these states, the less capital flight (more tax evasion and smuggling activities). This could also mean that larger market size is associated with better investment climate, thus providing a disincentive to those undertaking capital flight to move their assets abroad. In addition, import duties relative to total tax revenues have a negative impact on capital flight. The latter suggests that agents in the international

market engage in smuggling of goods and tax evasion activities in non-resource-based states and is supported by the large negative import misinvoicing presented in Table 5 and Figure 7. In fact, the coefficient on import duties is the second largest in magnitude compared to all the other significant variables in the regression with the second lowest probability. This implies that the negative capital flight (capital inflows) in non-resource states mostly respond to government taxation on imported goods.

Finally, I introduce lagged capital flight as an independent variable in both resource based and non resource based states. The results are consistent with the previous models but adds the significance of lagged capital fight as an independent variable. This implies that agents undertaking capital in resource-based states builds on their ability to move capital abroad in lagged periods and agents in non-resource based states build on their ability to evade taxes and smuggle goods in lagged periods. However, the growth rate of GDP variable becomes insignificant in resource based states and imports relative to GDP becomes significant for non-resource based states. In addition, the explanatory power of these dynamic models is the same as those of the static models in both regressions. Thus, I rely on the static models for the main findings and policy implications for development.

[Insert Table 11 Here]

7. CONCLUSIONS AND IMPLICATIONS FOR DEVELOPMENT

This paper is the first attempt to estimate capital flight and empirically examine its determinants from the MENA region. The outcomes clearly show a link between capital flight and the development trajectory undertaken. Resource-based industrialization states of the MENA region have experienced $273 billion of capital flight relative to negative $102 billion for state-led development economies and negative $112 for balanced economies. It is crucial to highlight the association of each particular model of development with certain political and economic ideologies. The outward-looking orientation of resource-based industrialization economies of the MENA region is supported by the common interests of the political elites of those states with the industrial world. Likewise, the state-led development and balanced economies follow a more socialist-derived development paths and socio-economic state intervention theories (inward looking). The states under this category command their economies including productive activities. The inward-looking features of this category reflect the lingering socialist legacies among the states of the model. Balanced economies, while sharing some state dominance approach to economic development, appear to emphasize the minimal role of the state more than their state-led development counterparts by attempting to diversify economic activities and create balance between the various economic sectors. Nevertheless, capital flight figures for countries under this model resemble those under the state-led development approach.

Given the different characteristics between resource-based states (outward oriented) and non-resource-based (inward-looking) countries, I estimated two separate fixed effects models on the determinants of capital flight. The results indicate that the *macroeconomic*

environment (represented by market size, growth rate of GDP and current account balance) as well as *the political environment* (represented by the political rights variable) both affect capital flight in the resource-rich states. In particular, capital flight is fueled by exporting natural resources which is the largest source of foreign exchange in these states (captured by the current account) and is assisted by the outward orientation and monarchial character of most of their political systems. In addition, these states have low capital controls on outflows when compared to non-resource states, a feature that permits capital to flow out relatively freely.

The empirical results for the inward-looking-non-resource-based states link capital flight to their protectionist development strategy. The *macroeconomic environment* (represented by market size and current account balance) and *fiscal policy (*represented by international trade taxation) are the only sets of variables affecting capital flight from non-resource-states. Duties on imports seem to have a large negative effect on capital flight. This suggests that capital flight in non-resource-based states responds mostly to government taxation on imported goods and implies that business elites engage in illegal trade transactions outside the purview of their respective governments. The trade misinvoicing estimates provided in Table 5 show that more than $147 billion of 1995 USD (more than 236 billion of 1995 USD of import under-invoicing and more than 88 billion of 1995 USD of export under-invoicing) out of the total negative capital flight of $ 215.5 billion of 1995 USD in non-resource-based states come from trade misinvoicing.

The results of this work have various implications for development policies in the MENA region. Clearly, the development strategy of dependence on the industrial sector led by the production and exportation of crude oil and its derivatives has its drawbacks. A side from the depletion of the natural resources and thus possible de-industrialization, it seems that this strategy has focused public wealth generated from exporting natural resources in the hands of political and business elites who exploited it in their favor. Perhaps, this itself provided a disincentive for them to adopt strategies that are more favorable to the public and continued to accumulate private wealth outside of their countries. However, with domestic and political pressure, most of these states are shifting away from natural resource dependence to diversify their economies and allow for more public democratic participation in decision-making. Although, this has not moved far enough, it is moving in the right direction. The pressure by western Industrial partners and international organizations seems to be getting more attention. To meet their demands, most of the resource-based states have liberalized trade further, lifted some restrictions on their capital accounts and some of them have joined the World Trade Organization (such as Bahrain, Saudi Arabia, Kuwait and Oman). This shift may have weakened the ability of the elites to accumulate private wealth from natural resource rents, but it may also have opened many other avenues for the wealthy elites to exploit public wealth including stock market manipulation and predatory lending. In addition, these states have experienced some of their lowest growth rates in their recent history and this shift has yet to prove its relevance for development in these states. The resource based states need to undertake appropriate measures to control capital flight and pave the way for capital flight reversal. Such reversal of capital would finance public development projects, create employment opportunities and enhance productive capacity. Several of

the measures to control capital flight have been advanced in the literature on capital fight including capital controls, capital management techniques, international cooperation and transparency between countries, prudent regulatory framework and investment in domestic opportunities (Boyce and Ndikumana (2002), Epstein (2005), Hermes, Lensink and Murinde (2002), and Pastor (1990)).

For non-resource states, the massive inflows of illegal capital (in the form of smuggling of goods and tax evasion) since the 1970s ($ 214 billion of 1995 USD) raises some concerns for these states. Tax evasion erodes the domestic tax base, adversely affects government redistributive programs, contributes to inequality and poverty and endangers governments' fiscal stance. In addition, the smuggling of goods could be associated with more costly activities such as drug trade and money laundering. Thus, appropriate measures to suppress tax evasion and smuggling of goods across boarders are in fact desirable and necessary. For instance, the governments of these states could lower tariffs on imported goods and implement moderate progressive income and wealth taxation system coupled with prudent capital controls to prevent subsequent capital outflows. This way, not only can this help halt these illegal transactions but also can help raise more income, correct social inequalities and fund public projects and redistribution programs.

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APPENDIX
TABLES

Table 1(A): Macroeconomic Indicators for Resource-Based States, period average, 1970 -2002

Country	GDP per Capita (1995 USD)	Growth rate of GDP (%)	Growth rate of per capita GDP (%)	Inflation (%)	Unemployment (%)	Current Account Balance (% of GDP)
Algeria	1576	3.9	1.14	11.03	20.4	(2.24)
Bahrain	9,392	3.2	(0.1)	5.15	2.3	0.15
Iran	1,610.2	1.94	(0.8)	17.57	–	2.9
Iraq	–	(12.25)	(15.07)	–	–	12.8
Kuwait	16,717.5	2.3	(2.6)	5.04	–	25
Libya	–	(3.8)	(5.4)	–	–	4
Oman	4,634.5	6.9	2.7	0.22	–	2.81
Saudi Arabia	8,379	4.8	0.33	4.5	–	3.75
UAE	27,237.5	5.8	(3.5)	–	–	–

Table 1(B): Macroeconomic Indicators for Non-resource-Based States, period average, 1970 -2002

Country	GDP per Capita (1995 USD)	Growth rate of GDP (%)	Growth rate of per capita GDP (%)	Inflation (%)	Unemployment (%)	Current Account Balance (% of GDP)
Comoros	499	2	(0.52)	–	–	(7.7)
Djibouti	1,135	(0.65)	(5)	11.03	43.5	(10)
Egypt	822.98	5.5	3.2	5.15	7.8	(4.9)
Jordan	1,593	8	3.9	7.42	14.4	(2.13)
Lebanon	2,286	(18)	(18.4)	–	8.6	(6)
Mauritania	476.7	2.83	0.19	6.7	28.9	(11)
Morocco	1,159.5	4.05	1.86	6.4	16.6	(5.8)
Somalia	–	1.74	(2.98)	–	–	–
Sudan	244	4.28	1.6	42	–	–
Syria	670.7	5.6	2.3	12.9	5.7	1.01
Tunisia	1,721	5.2	3.1	6.02	–	(5.6)
Yemen	284.66	5.3	1.4	30.6	11.5	0.93

Notes on Table 1 (A) and (B):
[a] Figures represent averages of three period averages calculated from World Development Indicators, CD-ROM Edition (2003).
[b] For Countries that have data shortages, we compute period averages of available data in each decade starting from 1970.
[c] Negative figures appear in parentheses.
[d] Countries without data are not reported.
Source: World Development Indicators, CD-ROM Edition (2003).

Table 2: Models of Economic Development

	Resource-based	Non - resource based	
	(Algeria, Bahrain, Iran, Kuwait, Libya, Oman, Saudi Arabia and UAE)[22]	State-led development economies (Comoros, Djibouti, Egypt, Mauritania, Syria, Somalia, Sudan and Yemen)	Balanced economies (Jordan, Lebanon, Morocco and Tunisia)[23]
Dominant Sector(s)[24]	Industry (Average 55.5% GDP)	Agriculture and services[25] (Average 69% GDP)	Manufacturing and Services (Average 73% GDP)
Dominant Export Categories	Fuels, Ores and Metals	Food, Agricultural Raw Materials and Natural Resources	Manufacturing and Natural Resources
Integration (X+M/GDP)	Relatively Integrated	Least Integrated	Less Integrated
Import duties (% of total tax revenues)	Low	Relatively High	Highest
Capital controls on outflows[26]	Low (0.26)	Highest (0.46)	High (0.42)

Note: Indices for capital controls are borrowed from Karam (2002).
Source: World Development Indicators, CD-ROM Edition (2003).

[22] Note that, unlike the Gulf Cooperation Council states, Iran, Iraq, Libya and Algeria, being resource-based industrialization states, share the common heritage of central planning with the countries of the other two models. In addition, their political regimes differ from other resource-based states in that they are ruled by single-party or military governments as opposed to the monarchies of the Gulf states.

[23] Note that Jordan and Morocco, unlike other countries of the model and the countries following state-led development, are distinguished by their monarchial governments. Such a feature, however, did not preclude the states of the model from adopting protectionist measures as well as nationalist and socialist orientation in managing economic activities.

[24] Exports of fuel as well as orals and metals in Iran had been seriously disrupted, firstly by the Iranian Revolution in 1979 and secondly by the Iraq-Iran war which lasted more than 7 years. Accordingly, the industrial sector in Iran accounts for 37.09 percent of total output over the three decades of analysis. The industrial sector in the other countries under the model accounts, on average, for the following percentages of total output: Algeria (51.6 percent), Bahrain (44 percent), Kuwait (58 percent), Libya (65 percent), Oman (61 percent), Saudi Arabia (61.6 percent), and UAE (66.4 percent). For state-led development economies, the share of both agriculture as well as services account, on average, for more than 69 percent of total output. Finally, balanced economies have more balanced sectoral contribution to output. The shares of both the manufacturing sector as well as the service sector register more than 66 percent of total output. In particular, they account for 80 percent in Jordan, 75 percent for Lebanon, 68 percent in Morocco and 70 percent in Tunisia.

[25] The service sector comprises backbone public utilities such as transportation, finance, information as well as communication. The public sector in the MENA region dominates the majority of such activities.

[26] The indices of capital control on outflows are borrowed from Karam (2002). According to Karam, the IMF publishes such indices for member countries in the 'Annual Report on Exchange Arrangements and Exchange Restrictions.' The indices are as follows (higher values translate into higher controls): 0.59 for Algeria, 0.15 for Bahrain, 0.18 for Kuwait, 0.11 for Oman, and 0.27 for Saudi Arabia. For state-led development economies, the indices are: 0.60 for Comoros, 0.16 for Djibouti, 0.17 for Egypt, 0.69 for Mauritania, 0.71 for Somalia, 0.67 for Sudan, 0.66 for Syria, and 0.01 for Yemen. Balanced economies indices are: 0.05 for Jordan, 0.17 for Lebanon, 0.66 for Morocco, and 0.81 for Tunisia. Thus, the average capital controls for the models are: 0.26 for resource-based, 0.46 for state-led and 0.42 for balanced economies.

Table 3: Currency Composition (%) of Long Term Debt: Weighted Averages, 1970-2002

Country	USD	Swiss Franc	British Pound	SDRs	Multiple Currencies	Japanese Yen	French Franc	Deutsche Mark	Other Currencies
Resource-Based									
Algeria	41.05	1.06	2.51	0	6.25	11	15.87	6.87	15.36
Iran	45.97	0.67	0.19	0	5.39	5.25	1.94	8.66	2.85
Oman	50.4	0	12.9	0	1.3	4.6	2.82	1.84	19.4
Non Resource-Based									
Comoros	22.56	0	0	0.56	4.78	0	34.28	0	37.79
Djibouti	8.99	0	0	3.22	8.9	0	45.28	0.23	33.36
Egypt	52.97	2	1.71	0.09	4.45	6.18	9.07	8.02	15.47
Jordan	43.97	0.31	10.35	0.49	6.33	7.95	4.01	9.77	16.79
Lebanon	52.18	0.12	0.21	0	9.23	0.17	16.56	2.19	19.3
Mauritania	39.2	0.05	0.34	1.35	3.73	1.29	14.14	1.55	38.27
Morocco	42.25	0.28	0.28	0.11	12.84	2.07	22.98	7.23	11
Syria	69.4	1.35	0.92	0	3.13	1.43	2.83	1.98	18.94
Somalia	43.7	0	0.23	0.68	15.84	1.3	2.31	3.03	32.9
Sudan	46.3	9.49	6.32	0.26	5.28	–	2.29	2.11	26.19
Tunisia	29.61	0.48	0.2	0.12	14.21	6.85	16.6	9.92	21.95
Yemen	31.12	2.28	2.36	1.57	1.97	2.69	0.82	3.69	53.47

Note: Averages for the period 1970–2002 are weighted by total long-term debt. Countries without data are not reported.

Source: Author's Computations from Global Development Finance 2002 (CD-ROM Edition).

Table 4: External Debt, Annual Average (1970-2000), millions of current USD

Country	Long-term debt	Short-term debt	IMF credits	Total External Debt Stock	Total change in debt adjusted for exchange rate fluctuations	Total external debt adjusted for exchange rate fluctuation (DebtAdj)	DebtAdj (% of GDP)
Resource-Based							
Algeria	17,542	1,033.5	512	19,086	257.3	18,822.9	36.2
Iran	3,733	3,750.8	–	7,484	582	10,170.6	10.49
Oman	2,124	436.4	–	2,560	0.5	2,647.9	26.8
Non Resource-Based							
Comoros	110	7.1	0.73	118	(112.3)	117.9	82.77
Djibouti	115	14.3	1.4	130	(11.4)	146.1	53.6
Egypt	20,502	3,523.3	171	24,196	336.3	24,605.7	69.2
Jordan	3,779	548.7	108	4,436	121.9	4,457.7	83.04
Lebanon	1,037	742.6	–	1,780	(465)	1,728	41
Mauritania	1,209	123.4	55	1,387	12	1,421.9	158.3
Morocco	12,703	457.2	406	13,566	140.6	13,844.9	64.5
Somalia	1,189	207	94	1,490	7.6	1,529	122.9
Sudan	6,002	2,569	575	9,146	80	9,358.4	100.03
Syria	9,100	1,562	2	11,052	428.4	10,983	85.6
Tunisia	5,044	489	108	5,642	116.6	5,693.2	52.06
Yemen	3,072	446	65	3,585	24.9	3,559.7	114.8

Note: Negative figures appear in parentheses. Countries without data are not reported.
Source: Authors Computations from Global Development Finance 2002(CD-ROM Edition) and World Development Indicators 2003 (CD-ROM Edition).

Table 5 (A): Total Trade Misinvoicing for Resource-based States: 1980 –2002 (millions of 1995 USD)

Country	Total Trade Misinvoicing	Total Export Misinvoicing	Total Import Misinvoicing	Annual average
Algeria	35,504.2	38,191	(2,686.8)	1,543.7
Bahrain	2,909.7	2,235	674.7	126.5
Iran	(4,599.2)	(37,727.5)	30,499.5	(199.9)
Iraq	108.29	371	(262.7)	4.7
Kuwait	(9,837.1)	(2,858.7)	(6,978.3)	(427.7)
Libya	(6,748.9)	8,697.4	(15,446.4)	(293.4)
Oman	5,847.9	14,407.8	(8,559.9)	254.2
Qatar	(5,082.1)	16.9	(5,099.1)	(220.9)
Saudi Arabia	(71,578.8)	46,390.3	(117,969.1)	(3,112.1)
UAE	(23,835.6)	25,550.7	(49,386.4)	(1,036.3)
Total	**(77, 311)**	**95,274**	**(175,215)**	**(3,361)**

Note: Negative figures appear in parentheses.
Source: Author's computations from: Direction of Trade Statistics, 2003 and World Development Indicators, 2003 (CD-ROM Editions).

Table 5 (B): Total Trade Misinvoicing for Non-resource-based States: 1980 –2002 (millions of 1995 USD)

Country	Total Trade Misinvoicing	Total Export Misinvoicing	Total Import Misinvoicing	Annual average
Comoros	(163.90)	15.28	(179.1)	(7.13)
Djibouti	(748.6)	(1.58)	(747.1)	(32.55)
Egypt	(77,661.6)	58,944.2	(136,605.8)	(3,376.5)
Jordan	(7,735.1)	11,918.2	(19,653.3)	(336.3)
Lebanon	2,314.7	1,094.2	1,220.5	100.6
Mauritania	(928.5)	830.1	(1,758.6)	(40.3)
Morocco	(16,629.1)	26,480.5	(43,109.6)	(723)
Somalia	(742.1)	183.2	(925.4)	(32.2)
Sudan	(4,171.2)	1,148.4	(5,319.6)	(181.3)
Syria	(11,675.8)	(4,699.4)	(6,976.3)	(507.6)
Tunisia	(29,816.5)	(7,809.6)	(22,006.9)	(1,296.3)
Yemen	(2,701.65)	(131.5)	(2,569.9)	(675.3)
Total	**(150,659)**	**87972**	**(238,631)**	**(7,107.8)**

Note: Negative figures appear in parentheses.
Source: Author's computations from: Direction of Trade Statistics, 2003 and World Development Indicators, 2003 (CD-ROM Editions).

Table 6 (A): Annual capital flight (1970-1992) adjusted for exchange rate fluctuations and trade misinvoicing for resource-based states (millions of 1995 USD)

Country	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Algeria	–	–	–	–	–	–	–	(1,312.3)	(2,739.5)	(1,227.7)	(3,925.8)	2,779.4
Bahrain	–	–	–	–	–	(794.4)	(1,034.4)	(752.5)	(618.6)	(318.3)	(854.5)	(469.2)
Iran	–	–	–	–	–	–	10,708.9	1,396.9	1,461.2	14,110	12,430.8	(3,623.8)
Kuwait	–	–	–	–	–	11,794.8	13,412.9	6,857.6	11,557.0	21,966.6	15,372.8	15,698
Libya	–	–	–	–	–	–	–	(51)	1,139.3	1,494	(3,217)	(9,231.2)
Oman	–	–	–	–	179.0	336.8	291.6	685.5	87.7	653.7	53.5	(590.6)
S. Arabia	–	613.5	3,345	2,707.5	20,776	15,361	20,890	19,380.1	8,998.7	13,796.1	29,628.0	38,179.9

Country	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Algeria	3803.9	617.7	2506.8	4191.3	3126.9	687.1	(38.2)	2108.8	4309.7	2746.9	3006.8
Bahrain	202.1	107.7	132.8	(208.6)	(120.4)	(199.2)	1330.7	501.1	(1131.5)	(460.9)	(91.2)
Iran	2740.63	1735.97	4624.9	(1601.1)	(5348.1)	(3070.6)	(5171.1)	(5478.7)	(6070.7)	64.99	619.65
Kuwait	461.4	829.5	5030.8	2634.8	6404.3	7873.5	7833.8	8656.6	5115.4	(30676.9)	(2380.2)
Libya	3549.6	4693.6	3486	3830.3	(2290)	(2911)	(548)	(4785.9)	(1650.6)	(1848)	(134)
Oman	(233.7)	57.7	(182.1)	(541.3)	1617.6	3002.2	2043.1	2500.4	5339.7	(970.9)	(1146.4)
S. Arabia	33076.6	6770.8	(6400.6)	(13625.7)	(2862.9)	(16274.5)	(6914.4)	(7921.7)	4423.4	(27400.9)	(14276.2)

Country	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Total KF
Algeria	2740	1,481.6	3,850.8	5,133.2	436.3	474.3	(1,122)	747.7	377.7	597.8	35,359.3
Bahrain	(567.5)	502	1,953.7	3,599.5	142.7	(978.3)	215.81	880.5	(94.7)	–	1,978.8
Iran	4484.1	(345.9)	2,616.7	(41.5)	2,571.9	(415.5)	1,548.1	(36.9)	2,0817.7	0	50,728.5
Kuwait	3498.6	4,482.4	17,435	4,287.7	8,254.9	3,462.1	4,372.6	11,956.4	4,923.4	–	171,115.9
Libya	927.7	(384.3)	(204.9)	(187)	(371.5)	1,472.6	1,008	–	–	–	(6,197)
Oman	(342.3)	(524.2)	(1,232.2)	(419.2)	(698.6)	(1,999.2)	(1,278.3)	934.8	946.9	0.0	8,571.2
S. Arabia	21,274.4	(17,964)	(13,626)	(20,516)	(9,749.7)	(18,964.)	(12,909.)	2,739.2	15,275.8	–	11,880
Total											**273,436**

Negative figures appear in parentheses. Countries without data are not reported.
Source: Author's computations from Global Development Finance 2002 (CD-ROM Edition); World Development Indicators 2003 (CD-ROM Edition); International Financial Statistics 2003 (CD- ROM Edition); Direction of Trade Statistics 2003 (CD-ROM Edition).

Table 6 (B): Annual capital flight (1992-2002) adjusted for exchange rate fluctuations and trade misinvoicing for non-resource-based states (millions of 1995 USD)

Country	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Comoros	–	–	–	–	–	–	–	–	–	–	(8.3)	(14.0)
Djibouti	–	–	–	–	–	–	–	–	–	–	–	0.1
Egypt	–	–	–	–	(3,176.4)	(3,308.6)	(247.4)	4,262.1	(2,582.6)	75.4	(4,793.6)	(3,900.8)
Jordan	–	–	28.8	(64.1)	(6.6)	(179.8)	43.3	(327.5)	(838.7)	(419.0)	(663.7)	(1,388.1)
Lebanon	–	–	–	–	–	–	–	–	–	–	–	2.34
Mauritania	–	–	–	–	–	(0.2)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.2)
Morocco	–	–	–	–	–	(34.0)	(2,220.4)	(3,193.6)	(1,558.4)	(2,042)	(1,417.7)	(2,341.2)
Somalia	–	–	–	–	–	–	–	(272.3)	(187.9)	(49.8)	(309.3)	(110.9)
Sudan	–	–	–	–	–	–	–	(244.4)	(109.7)	90.8	(183.8)	(1,135)
Syria	–	–	–	–	–	–	–	(522.4)	90.4	1135.9	(701.7)	(1229.7)
Tunisia	–	–	–	–	–	–	–	(867.7)	(356.5)	(484.5)	(1320.2)	(2088.4)

Country	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Comoros	(14.2)	(11.3)	(22.2)	(14.3)	(13.9)	(20.2)	12.2	(27.3)	(6.5)	(7.3)	(16.0)
Djibouti	0.1	(44.2)	(44.5)	0.2	(91.8)	(85.0)	(84.8)	(85.0)	(128.3)	(180.7)	(76.9)
Egypt	(3570.4)	(2987.8)	(3924.3)	(7419.5)	(5577.1)	466.2	(2568.8)	(2048.1)	(154.5)	(1930.2)	(2676.4)
Jordan	(2688.7)	(1737.2)	(67.3)	33.3	(284.4)	(1579.5)	(1261.0)	(268.5)	52.5	(1519.6)	(812.7)
Lebanon	0.3	1.5	0.5	0.1	(0.1)	8.6	(44.1)	436.8	459.2	(1624.5)	(1899.3)
Mauritania	(0.3)	(0.3)	(0.2)	(0.1)	(0.2)	(0.6)	(0.1)	(0.1)	(0.1)	(0.7)	(0.1)
Morocco	(1904.4)	(1042.5)	(1121.2)	(1011.4)	(1168.7)	(492.5)	(209.9)	(1451.0)	(2167.3)	(1774)	(1124.3)
Somalia	(380.3)	35.4	(221.5)	(134.3)	(340.1)	(139.9)	(87.8)	(14.1.5)	(1268.6)	0.8	0.3
Sudan	(1338)	(3.9)	47.6	752.6	(521.6)	(437.6)	(835.8)	(41.6)	(424.2)	(1032.2)	(484.9)
Syria	(1189.8)	366.9	(1016.6)	(433.2)	(804.9)	(361.2)	201.6	997.8	1232.0	778.6	(154.5)
Tunisia	(1895.9)	(118.9)	(2534)	(1322.8)	(1089.3)	(838.5)	(427.3)	(1149.3)	(1933.5)	(1982.4)	(3123.10

Country	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Total KF
Comoros	81.6	(27.4)	(17.5)	(116.2)	(122.2)	0.1	0	(0.1)	0	(331)	(696.2)
Djibouti	(27.1)	(56.7)	(25.2)	(168.9)	(1.8)	(1.1)	0.7	0.3	0.1	0	(1,100.7)
Egypt	(5144.6)	(3,788)	(3,929.3)	(4,089.4)	(7,944.4)	(7,077.5)	(4,483.7)	3,062	(6,148)	(223.1)	(85,829.1)
Jordan	(137.9)	(338.9)	(274.9)	(76.4)	264.4	635.2	(336.2)	(82.4)	(414.2)	(1,044.6)	(15,754.1)
Lebanon	(1044.8)	(2,635.7)	(2,016.1)	(2,632.1)	(1,024.4)	(2,275.3)	(2,062.5)	(102.2)	0	0	(16,452)
Mauritania	(0.1)	0.8.	0.1	0.8	0.3	0.14	(1.6)	0	0	0	(4,820.7)
Morocco	(977)	(1,565.9)	(1,053.1)	(383.2)	(261.2)	(276.5)	(1,879.4)	(481.2)	(2,498)	(730.2)	(36,379.9)
Somalia	0.1	(4.7)	0.3	0.3	0.5	(0.3)	(5.4)	(0.2)	0.1	0.7	(3,616.6)
Sudan	10.3	(3.1)	0.8	(16.7)	(1.2)	(0.0)	(231.3)	(303.6)	0.0	0.1	(6,446.5)
Syria	201.6	(786.2)	(371.8)	(356.5)	221.1	(87.0)	326.3	2,154.4	(0.0)	0.0	(308.7)
Tunisia	(3303.2)	(2,443.6)	(3,216.2)	(3,272.4)	(1,387.9)	(2,071.5)	(566.0)	(2,408.6)	(1,442)	(1,432)	(44,145)
Total											**(215,550)**

Table 7: Total Capital Flight (%) of GDP with imputed interest earnings (millions of 1995 USD)

Country	Total Nominal KF Adjusted for Exchange Rate Fluctuations & Trade Misinvoing (KFAdj)	Total Real KFAdj	Total Nominal KFAdj with accumulated Interest Earnings	Annual Average Real KF Adj	Annual Average KFAdj (% GDP)	Annual Average Per Capita Real KF Adj (Units of USD)
Resource-Based						
Algeria	34,576.89	35,359.3	52,303.5	1,359.9	2.41	51.4
Bahrain	3,982.5	1,978.8	(5,630.1)	73.29	9.33	–
Iran	39,355.9	50,728.5	132,068.7	1,878.84	2	43.7
Kuwait	130,605	171,115.9	418,085.8	6,338	63	5,595
Libya	(5,467)	(6,197)	(12,775)	(269)	–	(71)
Oman	6,321.1	8,571.2	19,659.5	295.5	4.2	219
Saudi Arabia	(50,133)	11,880.0	332,190.1	383	0.1	389
Non-Resource Based						
Djibouti	(1,006.6)	(1,100.7)	(1,844.1)	(50)	(12.1)	(105.8)
Egypt	(73,753)	(85,829.1)	(162,415)	(2,959.6)	(6.8)	(54.8)
Comoros	(347.8)	(696.2)	(406.4)	(30.2)	(9)	(47.8)
Jordan	(13,007.9)	(15,754.1)	(35,729.6)	(508.2)	(8.5)	(185.3)
Lebanon	(16,258.1)	(16,452)	(22,088)	(747.8)	(10.2)	(237.1)
Mauritania	(4,000)	(4,820.7)	(10,116)	(172.1)	(18.2)	(90)
Morocco	(29,774.3)	(36,379.9)	(80,388.8)	(1,299.2)	(5.5)	(58.4)
Somalia	(2,939.7)	(3,616.6)	(8,171.3)	(139.1)	(25.8)	–
Sudan	(5,483.)	(6,446.5)	(11,067.4)	(247.9)	(2.1)	(10.8)
Syria	478.2	(308.7)	(22,990.9)	(11.8)	(0.1)	(5.7)
Tunisia	(40,528.3)	(44,145)	(54,986.2)	(1,697.8)	(200.9)	(208.9)

Note: In the case of Bahrain, Kuwait, Libya and Saudi Arabia, the adjustment on capital flight entails correcting for trade misinvoicing only since they do not have data on external debt. Negative figures appear in parentheses. Countries without data are not reported.

Source: Author's computations from Global Development Finance 2002 (CD-ROM Edition); World Development Indicators 2003 (CD-ROM Edition); International Financial Statistics 2003 (CD-ROM Edition); Direction of Trade Statistics 2003 (CD-ROM Edition).

Table 8: Descriptive Statistics for Benchmark Regression Variables for Resource and non-Resource States

Variable	Observations		Mean		Std. Dev.		Minimum		Maximum	
	Resource	Non	Resource	Non	Resource	Non	Resource	Non	Resource	Non
KF_GDP	163	251	9.42	-9.36	32.59	16.74	-159.99	-168.9	192.17	27.99
CA_GDP	167	237	4.3	-6.16	24.45	9.11	-240.49	-41.25	58.55	14.31
Growth	190		3.47		8.21		-20.61		33.99	
P. Rights	217		5.94		0.81		4		7	
M_GDP		227		45.37		18.68		18.75		99.91
TxTrade		179		25.08		14.46		0.02		76.5
M Duties		159		28.94		15.3		0		70.86
GDPPC	175	270	6935.55	1002	6031.31	647.7	1098.57	192.6	30989.08	2942

Table 9: Fixed Effects Estimation for Resource Based States
Dependent Variable: Capital Flight % GDP

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	-39.50*** [1]	-46.329***	-40.129***	-034.48**	-34.35***	35.289***
	(0.000)	(0.000)	(0.000)	(0.020)	(0.000)	(0.000)
CA_GDP	1.007***	0.763***	0.881***		0.607***	0.621***
	(0.000)	(0.000)	(0.000)		(0.000)	(0.000)
GDPPC	0.006***	0.007***	0.007***	0.011***	0.007***	0.007***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Budget_GDP	0.082***					
	(0.738)					
GCF_GDP		-0.045				
		(0.882)				
X_GDP			-0.140			
			(0.460)			
Growth				-1.01***		
				(0.000)		
Inflation				0.219		
				(0.441)		
Trade_GDP				-0.001		
				(0.994)		
Fuel X				-0.394**		
				(0.007)		
Law					-3.46***	
					(0.000)	
BureaQ						-3.100*
						(0.068)
R^2	0.57	0.52	0.53	0.47	0.58	0.57
No. of Obs.	82	121	132	100	109	109
F-test	27.6	51.31	53.4	24.81	56.3	55.85

[1] Notes: P-values are in parentheses. The symbols ***, ** and * denote significance at 1%, 5% and 10% levels respectively

Table 9 (continues): Fixed Effects Estimation for Resource Based States
Dependent Variable: Capital Flight % GDP

Variable	(7)	(8)	(9)	(10)	(11)	(12)
Intercept	-34.42***	-17.16	-44.36	47.19*	-85.40***	-48.782
	(0.000)	(0.814)	(0.000)	(0.017)	(0.000)	(0.000)
CA_GDP	0.606***		0.716***	0.741***	0.774***	0 .782
	(0.000)		(0.000)	(0.000)	(0.000)	(0.000)
GDPPC	0.007 ***	0.006***	0.007***	0.007***	0.008***	0.008
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Budget_GDP						
GCF_GDP						
X_GDP		2.33***				
		(0.000)				
Growth		-0.737*		-0.654**	-0.782***	-0.680
		(0.042)		(0.002)	(0.001)	(0.787)
Inflation		-0.354			-0.311	-0.281
		(0.759)			(0.223)	(0.285)
Trade_GDP		-1.309*		0.017	0.028	-0.033
		(0.032)		(0.902)	(0.816)	(0.787)
Taxes_GDP		3.775				
		(0.262)				
Fuel X		-0.222				
		(0.204)				
Private Credit_GDP				0.006 (0.941)		
Corruption Control		5.327 (0.805)	-0.498 (0.848)			
Law	-4.463					
	(0.470)					
BureaQ	0.997					
	(0.866)					
Political Rights					6.011** (0.016)	
Civil Liberties						0.499 (0.859)
R^2	0.58	0.68	0.54	0.52	0.512	0.54
No. of Obs.	109	39	110	130	113	113
F-test	41.82	6.83	53.42	33.72	30.07	27.46

Table 9 (continues): Fixed Effects Estimation for Resource - Based States
Dependent Variable: Capital Flight % GDP

Variable	(13)	(14)	(15)	(16)	(17)	(18)
Intercept	-42.881***	-44.25***	-39.57***	-48.55***	-45.22***	- 39.26***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CA_GDP	0.775***	0.751***	1.047***	0.755***	0.740***	1.09***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GDPPC	0.075***	0.007***	0.007***	0.008***	0.007***	0.006***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Growth	-0.558***	-0.626***	-0.3500	-0.657***	-0.630***	-0.420*
	(0.004)	(0.002)	(0.163)	(0.002)	(0.002)	(0.047)
GCF_GDP						
X_GDP		-0.015				
		(0.935)				
Budget_GDP			0.019			
			(0.939)			
Inflation				-0.271		
				(0.277)		
Trade_GDP					0.004	
					(0.967)	
Taxes_GDP						0.550
						(0.532)
Fuel X						
Private Credit_GDP						
Corruption Control						
Law						
R^2	0.53	0.53	0.58	0.53	0.53	0.58
No. of Obs.	138	131	82	120	131	87
F-test	55.83	42.62	21.47	44.49	42.61	22.13

Table 9 (continues): Fixed Effects Estimation for Resource - Based States
Dependent Variable: Capital Flight % GDP

Variable	(19)	(20)	(21)	(22)	(23)	(24)
Intercept	-40.35***	-46.88***	-41.56***	-36.24***	-36.80***	-81.65***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.004)
CA_GDP	0.806***	0.805***	0.636***	0.558***	0.567***	0.778***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GDPPC	0.007***	0.007***	0.008***	0.008***	0.008***	0.007***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Growth	-0.654***	-0.553***	-0.693***	-0.641***	-0.648***	-0.681***
	(0.004)	(0.007)	(0.000)	(0.001)	(0.001)	(0.001)
GCF_GDP						
X_GDP						
Budget_GDP						
Inflation						
Trade_GDP						
Taxes_GDP						
Fuel X	-0.072					
	(0.378)					
Private Credit_GDP		0.047				
		(0.706)				
Corruption Control			-0.963			
			(0.691)			
Law				-2.392		
				(0.154)		
BureaQ					-2.166	
					(0.177)	
Political Rights						6.557***
						(0.014)
R^2	0.56	0.53	0.57	0.59	0.59	0.73 [27]
No. of Obs.	112	137	109	108	108	137
F-test	35.26	41.48	45.74	46.80	46.65	45.91

[27] For the benchmark regression, I report Adjusted R-squared. For all other regressions, I report "overall R – squared" that combines both "within R-squared" and "between R-squared" provided by the fixed effects estimation in STATA.

Table 10: Fixed Effects Estimations for Non-resource states
Dependent Variable: Capital Flight % GDP

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.203	-0.872	-0.294	5.682	-1.70	10.80**
	(0.970)	(0.874)	(0.959)	(0.150)	(0.812)	(0.023)
GDPPC	-0.008	-0.004	-0.006	-0.008***	-0.009***	-0.016***
	(0.114)	(0.332)	(0.313)	(0.007)	(0.010)	(0.000)
Growth	-0.062	0.004				
	(0.691)	(0.974)				
CA_GDP		0.361***	0.338***	0.533***	0.568***	0 .553***
		(0.005)	(0.012)	(0.000)	(0.000)	(0.000)
FDI_GDP			0.512			
			(0.243)			
Tx_GDP				-0.004	0.464*	0.003
				(0.874)	(0.049)	(0.909)
Budget					0.072	
					(0.640)	
Corruption						0.778
Control						(0.380)
R^2	0.01	0.05	0.04	0.32	0.25	0.38
F-test	1.38	3.22	3.25	10.11	7.96	8.28
No. of Obs.	230	214	192	163	135	120

Table 10 (continues): Fixed Effects Estimations for Non-resource states
Dependent Variable: Capital Flight % GDP

Variable	(7)	(8)	(9)	(10)	(11)	(12)
Intercept	22.50***	18.97***	27.90***	22.75***	25.04***	21.03***
	(0.002)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)
GDPPC	-0.015***	-0.010***	-0.013***	-0.012***	-0.014***	-0.012***
	(0.001)	(0.006)	(0.000)	(0.001)	(0.000)	(0.001)
CA_GDP	0.537***	0.499***	0 .441***	0.495***	0.445***	0.475***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
M_duties	-0.266**	-0.320***	-0.282***			
	(0.018)	(0.000)	(0.000)			
Corruption	-0.359					
Control	(0.740)					
Remittances		-1.46				
		(0.322)				
Trade			-0.102*	-0.091		
			(0.064)	(0.108)		
TxTrade				-0.209**	-0.139	
				(0.027)	(0.165)	
GCF_GDP					-0.356***	-0.456***
					(0.015)	(0.001)
X_Duties						0.122
						(0.639)
R^2	0.38	0.33	0.30	0.31	0.35	0.32
F-test	8.51	11.96	12.32	9.17	11.19	10.60
No. of Obs.	97	130	134	141	136	129

Table 10 (continues): Fixed Effects Estimations for Non-resource states
Dependent Variable: Capital Flight % GDP

Variable	(13)	(14)	(15)	(16)	(17)	(18)
Intercept	35.66***	32.97***	31.23***	34.66***	28.23***	17.93***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.009)
GDPPC	-0.022***	-0.021***	-0.018***	-0.021***	-0.011***	-0.013***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.004)	(0.007)
CA_GDP	0.601***	0.625***	0.674***	0.542***	0.489***	0.412***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
M_GDP	-0.366***	-0.361***	-0.355***	-0.413***	-0.199**	-0.174
	(0.001)	(0.004)	(0.001)	(0.001)	(0.044)	(0.121)
Budget	0.016					
	(0.934)					
Law	1.183	1.173	1.347*			
	(0.162)	(0.143)	(0.049)			
X_GDP		0.021				
		(0.882)				
Remittances			-1.33		-1.87	
			(0.393)		(0.203)	
Corruption				0.916		
Control				(0.350)		
TxTrade				0.115		
				(0.412)		
M_duties					-0.272***	-0.236***
					(0.001)	(0.005)
R^2	0.35	0.35	0.37	0.35	0.31	0.45 [28]
F-test	9.47	9.76	9.98	8.90	10.95	11.09
No. of Obs.	96	101	101	101	129	134

[28] For the benchmark regression, I report Adjusted R – squared. For all other regressions, I report "overall R – squared" that combines both "within R-squared" and "between R-squared" provided by the fixed effects estimation in STATA.

Table 11: Fixed Effects Estimation for Resource and non Resource-based States with lagged Independent Variable (capital flight % GDP)
Dependent Variable: Capital Flight % GDP

Variable	Resource Based	Non Resource Based
Intercept	-39.23***	51.14***
	(0.003)	(0.000)
Lag KF_GDP	0.230***	0.139*
	(0.001)	(0.097)
GDPPC	0.004***	-0.011***
	(0.000)	(0.001)
CA_GDP	0.632***	0.362***
	(0.000)	(0.002)
Growth	-0.297	
	(0.115)	
Pr	6.050***	
	(0.005)	
M_GDP		-0.181**
		(0.047)
M_Duties		-0.213***
		(0.006)
Adjusted R^2	0.74	0.46
F-test	39.06	10.38
No. of Obs.	131	130

Table A1: Definition of Variables and Sources

Variable	*Definition*	*Source*
Dependent Variable		
KF	Ratio of KF to GDP in 1995 USD	Table 6 and WDI (2003)
Independent Variables		
I. Macroeconomic Environment		
GDPPC	GDP per capita in 1995 USD	WDI (2003)
Growth	Growth rate of GDP in 1995 USD	WDI (2003)
GCF	Gross Capital Formation as % Of GDP	WDI (2003)
Inflation	Growth rate of the CPI Index	WDI (2003)
Trade	Exports plus Imports relative to GDP	WDI (2003)
CA	Current account balance as % Of GDP	WDI (2003)
M_GDP	Imports % GDP	
II. Fiscal Policy		
Budget	Budget Balance as % of GDP	WDI (2003)
Taxes	Tax revenues as % of GDP	WDI (2003)
M_Duties	Import Duties as % total Tax Revenue	WDI (2003)
Tx_Trade	Taxes on international trade as % Current Revenues .	WDI (2003)
III. Capital Inflows		
FDI	Net flows of foreign direct Investment as % GDP	WDI (2003)
Remittances	Workers Remittances in Millions Of 1995 USD	WDI (2003)
Fuel X	Exports of fuel as % of total Merchandise exports	WDI (2003)
X	Exports as % of GDP	WDI (2003)
IV. Financial Development		
Private	Credit to private as % of GDP	WDI (2003)

Credit

V. Political and Institutional Environment

Law	Role of Law	Political Risk Services (2000)
BureaQ	Bureaucratic Quality	Political Risk Services (2000)
Corruption Control	The extent to which corruption is controlled	Political Risk Services (2000)
Political Rights	The extent of political rights	Freedom House (2001)
Civil Liberties	The extent of civil liberties	Freedom House (2001)

FIGURES
A. Capital Flight Figures

Figure 1: Total capital flight from resource-based Countries (in Millions of 1995 USD) (1970-2002)

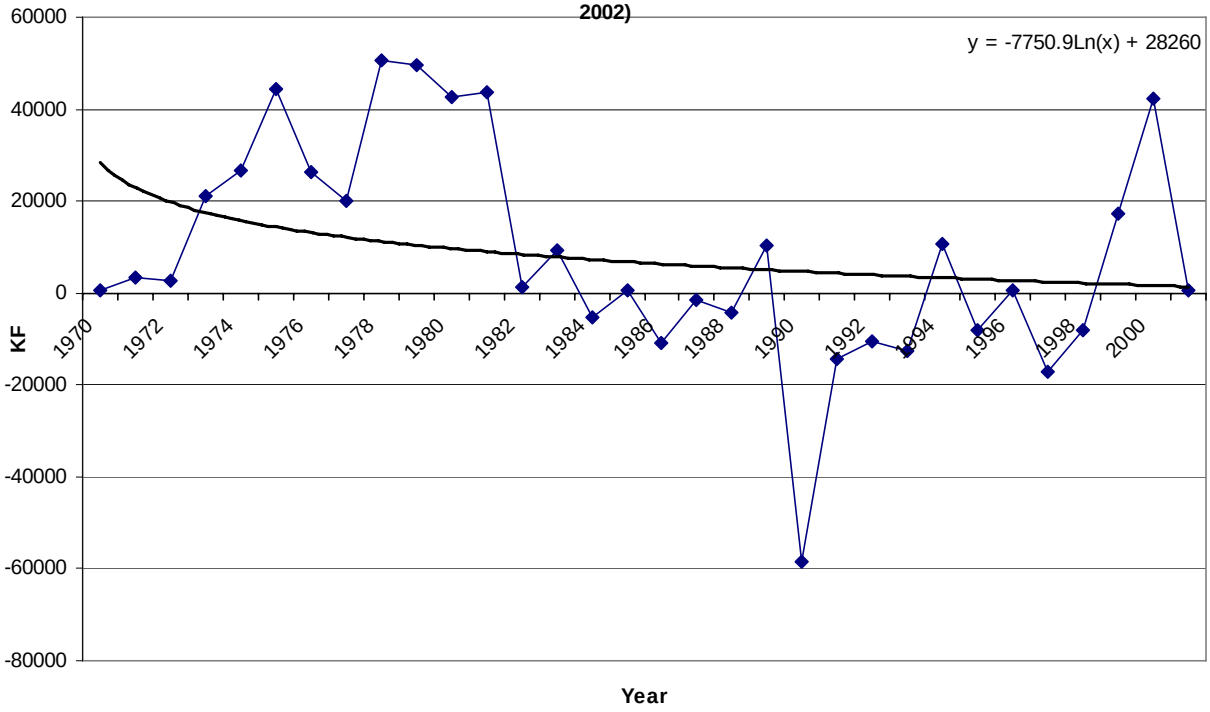


Figure 2: Total capital flight from non- resource-based states (in millions of 1995 USD) (1970-2002)

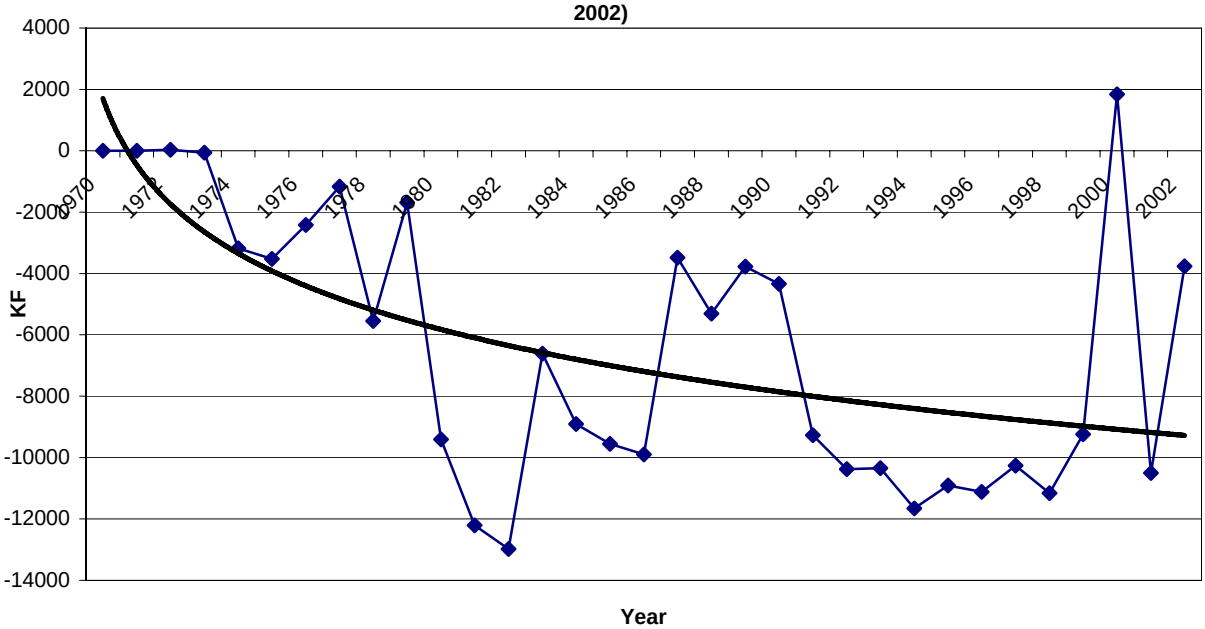


Figure 3: Total capital flight / GDP for resource-based countries (1970-2002)

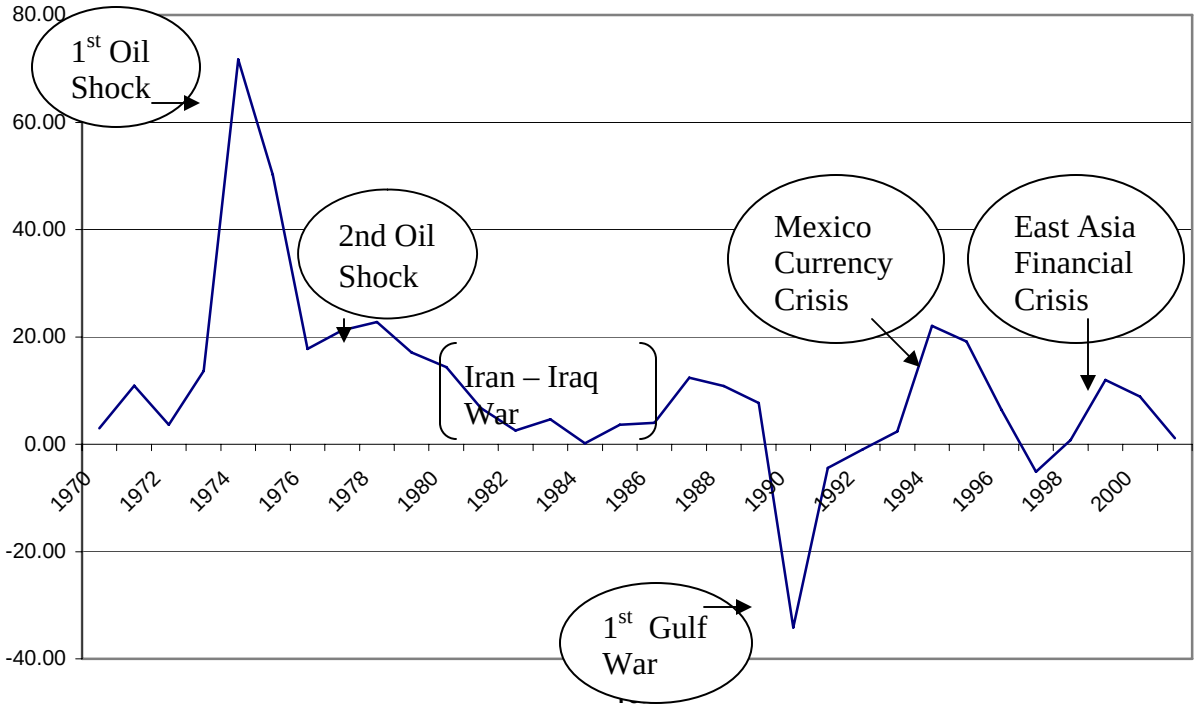


Figure 4: Capital Flight / GDP for non-resource-based States (1972-2002)

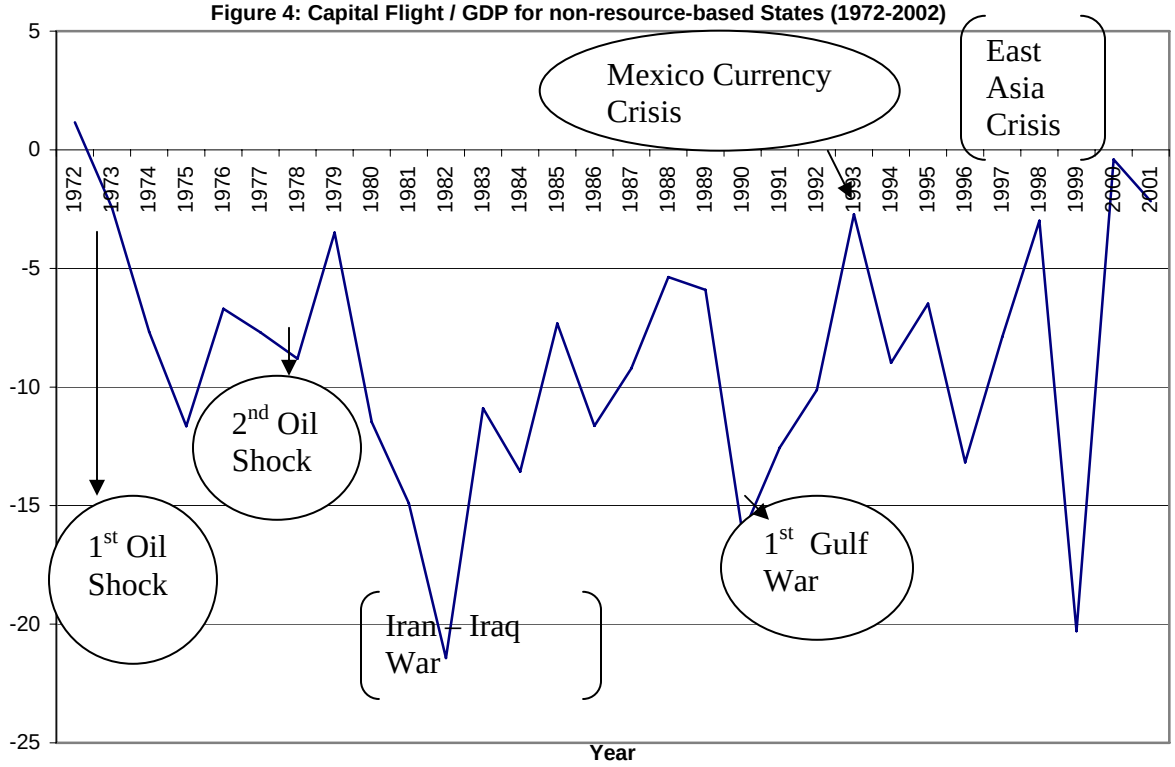
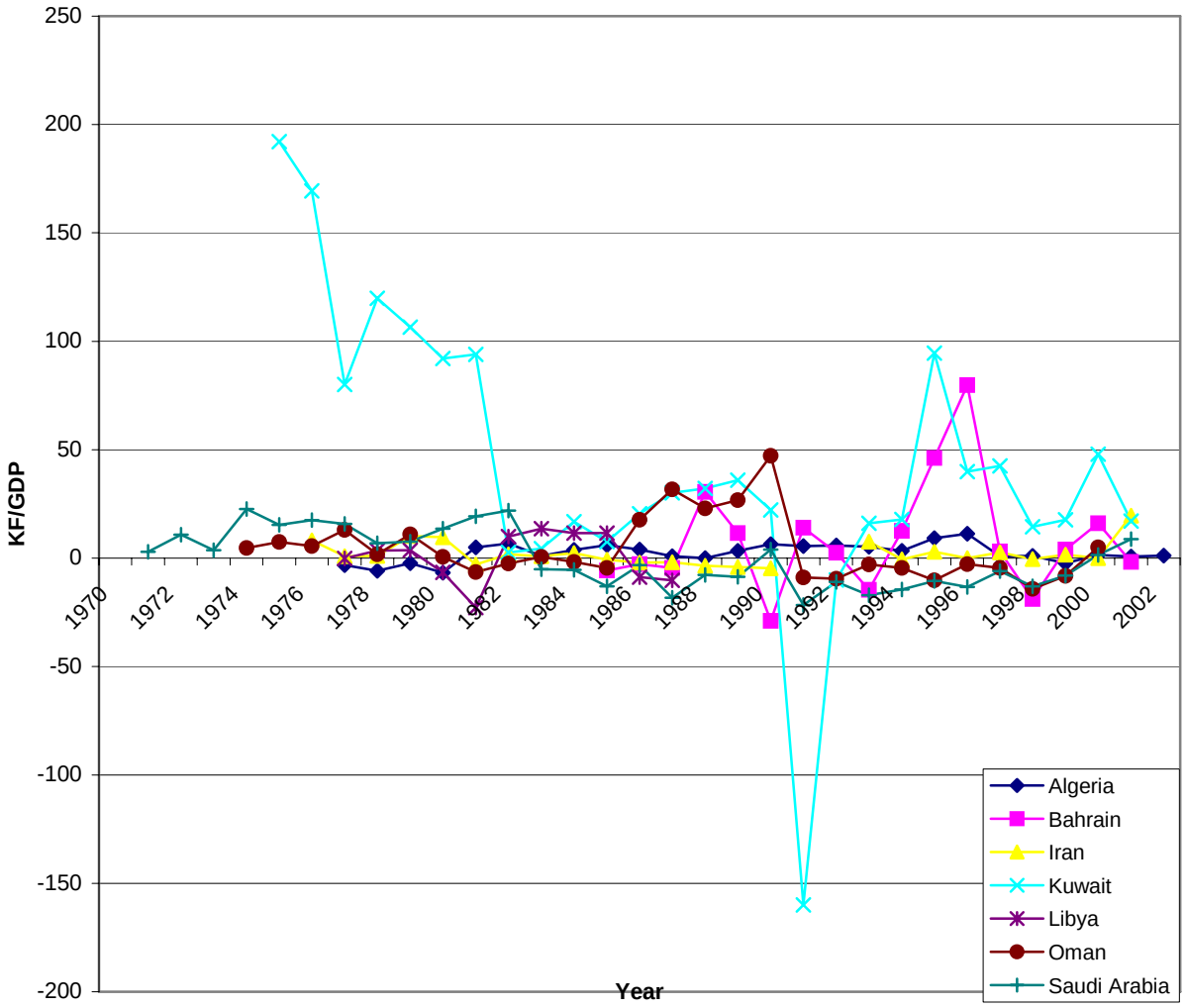


Figure 5: Individulal capital flight / GDP for resource-based countries (1970-2002)



B. Trade Misinvoicing Figures

Figure 6: Export and Import Misinvocing for Resource-based States in millions of 1995 USD (1980-2002)

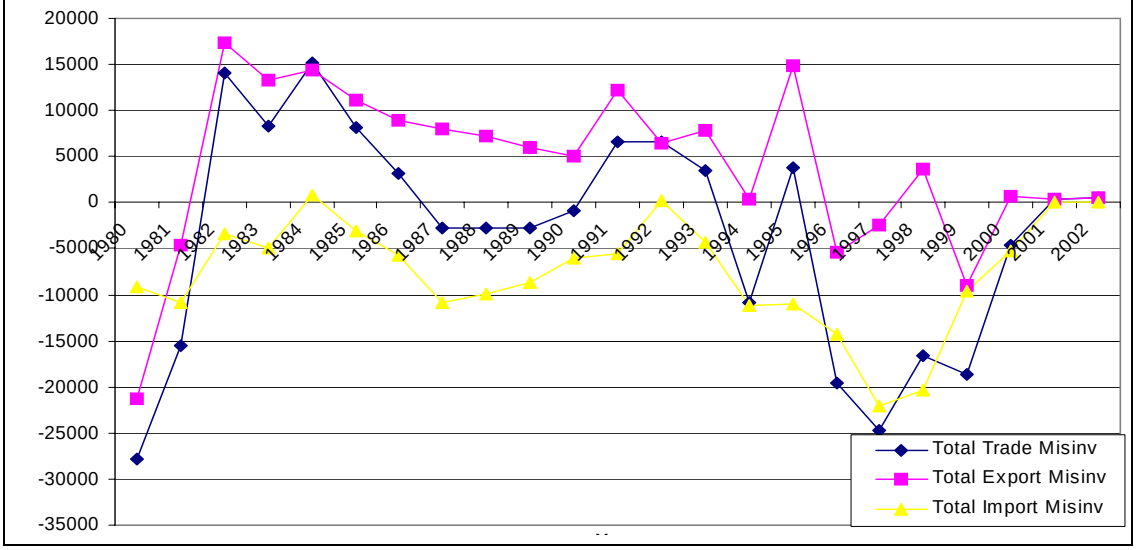


Figure 7: Import and Export Misinvoicing for Non-resource-based States in millions of 1995 USD (1980- 2002)

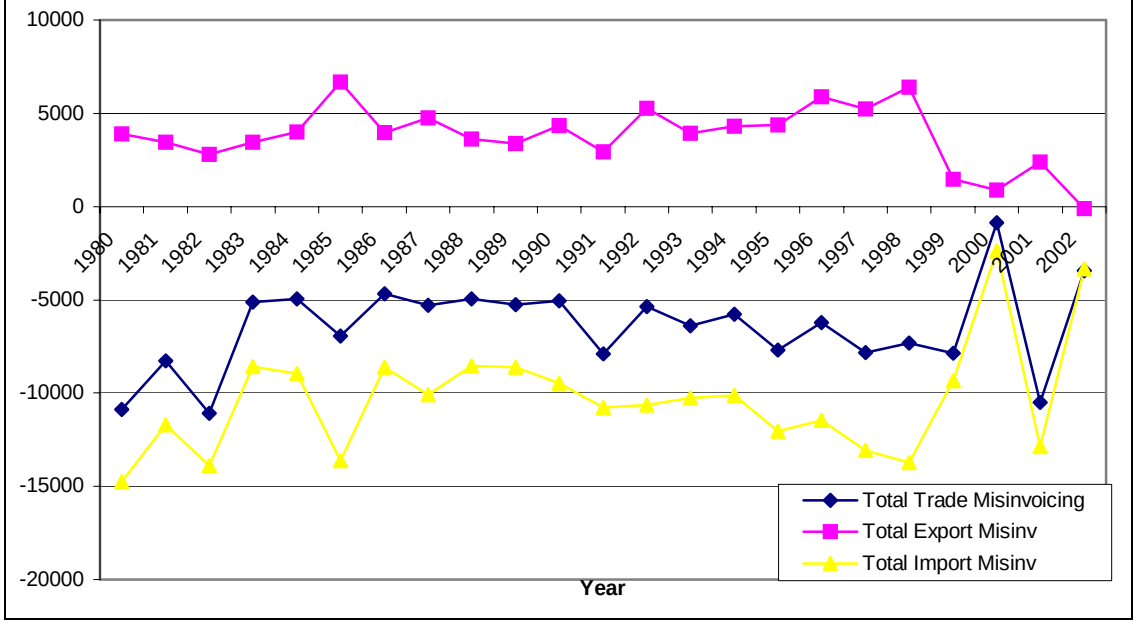


Figure 7: Normality of the residuals for resource based states (regression 24)

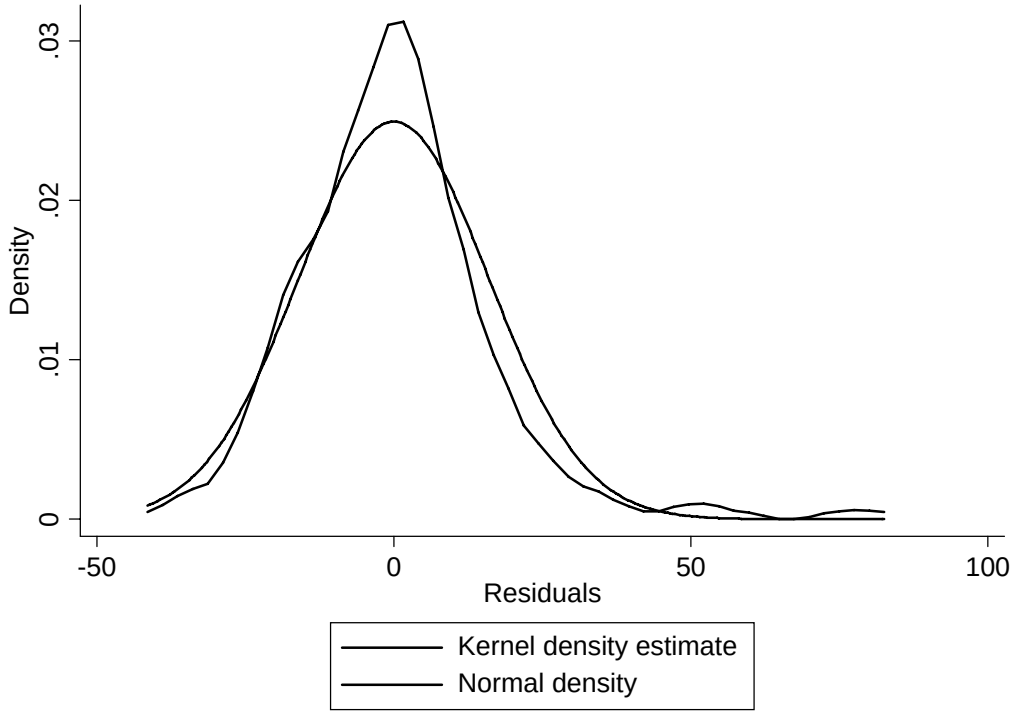
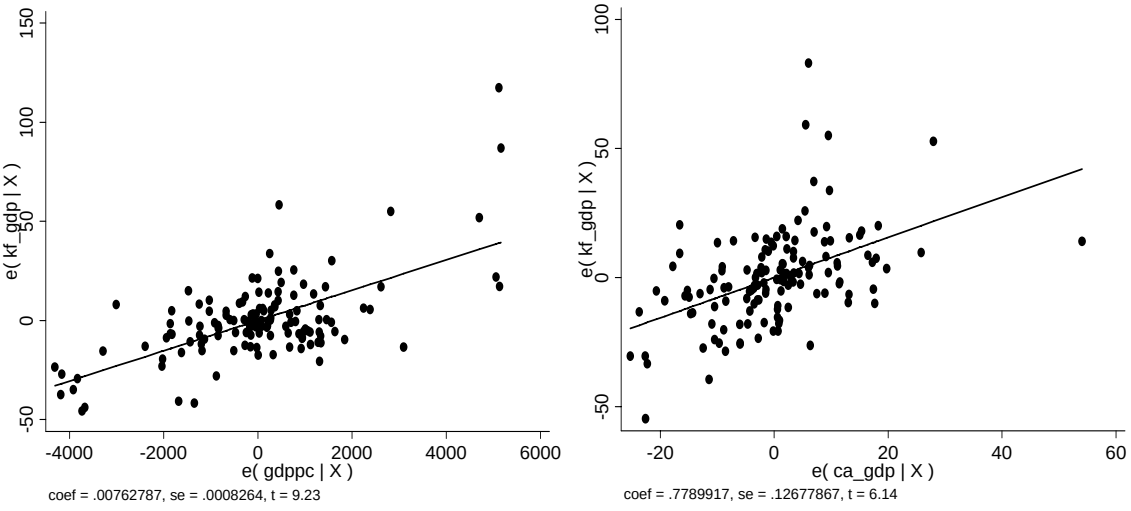


Figure 8: Testing for outliers in resource-based states



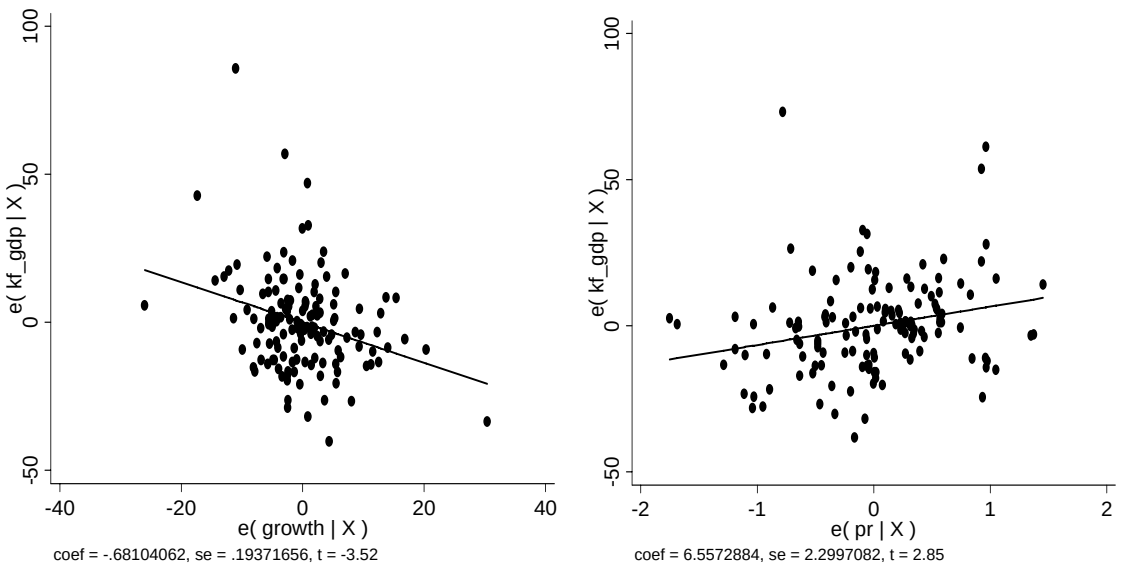


Figure 9: Normality of the residuals for non-resource based states (regression 18)

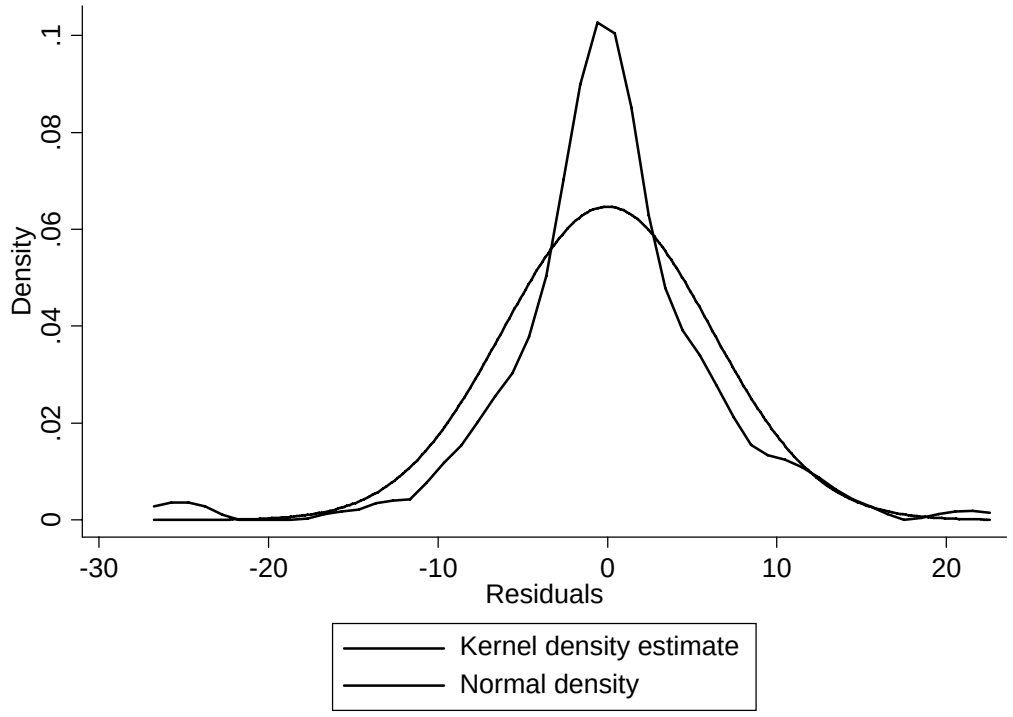


Figure 10: Testing for outliers in non-resource-based states