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 a lost potential for economic growth and development. This is the first study utilizing the residual approach to estimate capital flight from the Middle East and North Africa (MENA) exclusively. The analysis employs a development comparative approach on the countries of the region. In particular, it relates capital flight of each country to the model of development pursued. Resource-based industrialization states register the largest amount of capital flight mounting to more than 273 billion of 1995 USD with accumulated interest earning capital flight of more than 935 billion of current USD. On the other hand, state-led development economies and balanced economies of the MENA region show negative large capital flight of 102 and 112 billions of 1995 USD, respectively. Capital flight under the first model is assisted by natural resource exporting rents, the capitalist orientation of most economies of the model and the monarchial character of most of their political systems. In contrast, capital flight under the last two models is driven by large negative trade misinvoicing and assisted by the inward-looking strategies of the two models, one party or militarily controlled governments as well as the significant capital controls characterizing the states of the two models. In addition to calculating and highlighting capital flight from the region, this study presents an accounting for the phenomenon and provides policy implications based on the reported results.

I. Introduction

Capital flight from developing countries represents a lost potential for economic growth and development. In the contemporary literature of development economics, there has been increasing attention to the notion of capital flight. Many analysts have attributed sluggish economic growth and persistent balance of payments deficits in most developing counties to capital flight (Ajayi, 1996). In addition, capital flight has adverse consequences for developing countries. First, the loss of capital through capital flight erodes the domestic tax base and therefore affects income redistribution. Secondly, it reduces a bank's ability to create money for investment projects. Most importantly, capital flight contributes to the distribution of income from the poor to the rich (See Pastor, 1990, and Ajayi, 1997).

The literature also highlights several routes of capital flight from developing countries. Prime among those are external borrowing and trade misinvoicing. Also many authors have identified factors that cause capital flight including risk of inflation, taxation, political risk instability, financial repression, weak institutions, ineffectiveness of macroeconomic policies, business cycles, overvaluation of exchange rates, and poor investment climate, to name a few (See, Hermes, Rensink and Murinde, 2002, Schneider, 2003 and Boyce and Ndikumana, 2002).

Several approaches to measuring capital flight have been cited widely such as the hot money measure, the balance of payments approach and the residual approach (See Schneider, 2003, and Hermes, Rensink and Murinde, 2002). However, it is well documented in the literature that most researchers use the residual method to capital flight. The residual approach is more inclusive and therefore gives a measure of capital flight that takes into account most transactions of capital flows between nations including external debt, foreign direct investment, and portfolio investment. The residual method is a broad measure and an indirect approach that is based on the discrepancies between sources of foreign exchange (capital inflows) and uses of those funds (capital outflows). Capital flight, according to this method, comprises the surplus of capital inflows over foreign exchange outflows that are not recorded in government official statistics.

This paper makes use of the residual approach to estimate capital flight from the Middle East and North Africa (MENA)[2]. 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.

The rest of the paper is organized as follows. Section two provides a brief discussion of economic, political and historical background of the MENA region. Section three presents the methodology used in the estimation of capital flight from the MENA region. Part four attempts an illustration of the capital flight phenomenon from the region based on the reported figures. The last section provides conclusions and policy implications.

II. Background on MENA

Common features among the countries of the Middle East and North Africa are a shared heritage, one language and culture, as well as similar political structures. However, the region's factor endowments are substantially different. Some are resource-rich-labor-scarce states (the countries of the Gulf Cooperation Council), others are resource-rich-labor-abundant states (i.e. Algeria and Iran), and the rest are resource-poor-labor- rich states (i.e. 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 has been regarded widely as the prime reason behind the marginalization of popular politics and has been a product of domestic socioeconomic and political environments - not external manipulation. Ultimately, the monopoly of states 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 in the MENA region has undergone serious tensions. In terms of economic integration, the MENA Region lags considerably behind the rest of the world[6]. According to a World Bank analysis, the region's trade has grown at 3% relative to 8% for the rest of the world in the last decade. The major Latin American and East Asian countries have made consistent inroads into the region, while the exporters of the region have not significantly penetrated the markets of Latin America and East Asia (Page, 1998)[7]. In addition, the international capital flows of foreign direct investment as well as portfolio investment have bypassed the MENA region considerably[8].

The growth performance of the MENA region has been rather disappointing. Several macroeconomic indicators illustrate the poor health of the economies of the region. The 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 registers among the highest rates of unemployment internationally.

Historically speaking, the dependence on natural resources and the legacy of central planning have shaped the development trajectories pursued by the countries of this region. Over the last three decades, the resource rich states have adopted resource-based industrialization while the overwhelming majority of capital-scarce states follow state-led development strategies in which the states command productive activities[9]. The third category consists of somewhat balanced economies with balanced sectoral contribution to the output of those states. For the purposes of this study, we categorize the region according to their development models into three groups: Resource-based industrialization states, state-led development economies and balanced economies[10].

Resource-based industrialization states are characterized by their heavy reliance on exporting 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 and

foreign aid & grants and share a common heritage of central planning as well as the socialist orientation. The latter is assisted by one party or military controlled governments and exemplified in their trade and finance policies as well as the internal management of their economies. Balanced economies, while sharing some characteristics with their state-led development counterparts, have more economic diversification as well as more rigorous private sectors than state-led development economies.

While the first oil shock contributed to one of the worst economic downturns on a global scale, the MENA region benefited enormously from the wealth generated from oil rents. In particular, the resource-based industrialization states had 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 of unprecedented high standards of living as those economies tripled their exports of crude oil to exploit the tilt of terms of trade in their favor.

Most of both the state-led development and balanced economies produced some small amounts of 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 resource-based industrialization states[11]. This resulted in massive amounts 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 by their contractors in resource-rich states as well as smaller amounts of investment inflows provided those governments with unprecedented amounts of foreign exchange (Field, 1994).

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 in 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 the adverse trade balances following the fall of crude oil prices. Derived from the common heritage of central planning, state intervention

theories and socialist legacies, which encouraged limiting private sector participation and private business initiatives and advocated the control of the state over much of the economic, political and social aspects of their people, this option was preferred to countries under the two models outlined above over trade and financial liberalization advocated by international organizations in the early 1980's (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 (SAP). Following the implementation of the latter, however, the regions' average rate of economic growth in the year of 2000 fell short of that in 1980.

Given the huge expansion of crude oil exports and the large external loans disbursed to non-oil states in the early 1970's to mid 1980's, the question of the appropriate public usage of such funds to finance internal public development projects inevitably arises. For this purpose, this paper attempts an explanation of 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 Ajaya (1997) and Nkidumana and Boyce (2000). The following section provides the detailed utilization of the residual approach toward measuring capital flight from the countries of the MENA region.

III. Methodology

Following Boyce and Ndikumana (2000), and according to the residual approach developed by the World Bank, we define capital flight as the difference between capital inflows and foreign exchange outflows. The rational 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. More specifically, a surplus of inflows over reported uses reflects positive capital flight. Such funds are not recorded in the official statistics and therefore, according to the residual approach, counted as capital flight.

In short, our methodology, including necessary adjustments, is as follows:

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

Where KF refers to capital flight in current USD, Δ Debt refers to change in total external debt stock, NFI refers to the net flows of foreign investment, CA refers to the current account balance, and Δ Reserves refers to the changes in the accumulation of foreign exchange reserves. The adjustment for exchange rate fluctuations in long-term debt stock is carried out as follows:

Since $\quad \Delta Debt = Debt_t - Debt_{t-1} \tag{2}$

Then $\quad \Delta DebtAdj_t = Debt_t - NEWDebt_{t-1} \tag{3}$

Where Δ 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. The latter is obtained as follows:

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

$$+ LTOther_{i,t-} + LTMult_{i,t-1} + LTUSD_{i,t-1} + STDebt_{i,t-1} \tag{4}$$

Where LTDebt is the total long-term debt, λ being the proportion of long-term debt held in currency 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].

Accordingly, we modify the residual equation (1) to be:

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

The adjustments for Trade minsinvoicing are conducted as follows:

$$DEXP_{it} = PEXP_{it} - (CIF_t * EXP_{it}) \tag{6}$$
$$DIMP_{it} = IMP_{it} - (CIF_t * PIMP_{it}) \tag{7}$$

And,

$$MISINV = \frac{DEXP}{ICXS} + \frac{DIMP}{ICMS} \tag{8}$$

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, and CIF refers to the cost of freight and insurance[13]. MISINV refers to total trade misinvoicing.

Thus, we add misinvoicing to the calculation of capital flight in equation 1 as follows:

$$KF\ Adj_{it} = KF_{it} + MISINV_{it} \tag{9}$$

Finally, we adjust for inflation by transforming capital flight into constant 1995 USD using the Producer Price Index (PPI):

$$Real\ KFAdj_{it} = KF\ Adj_{it} / PPI_t \tag{10}$$

The additional adjustment employed concerns interest earnings on capital flight. This step is done as follows:

$$Interest\ KF\ Adj_{it} = Interest\ KF\ Adj_{I,t-1}(1+TBILL_{it}) + KF\ Adj_{it}\ ^{[14]} \tag{11}$$

The results of the adopted methodology appear in table 6 and are elaborated upon in the following section.

IV. Results and Capital Flight Accounting

According to reported estimates, the MENA region as a whole is indeed a net creditor to the rest of the world. Driven overwhelmingly 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[15]. This implies that large amounts of capital generated mainly by oil rents were not used to finance public development projects. Rather, significant amounts of such flows of foreign exchange fled those states in the form of capital flight to finance external private assets.

This study, however, adds the significance of natural resource rents, especially crude oil, in contributing to capital flight from resource rich states. Exporting revenues generated mostly from the early 1970s to the mid 1980s, the era of high crude oil prices, and assisted by the low controls on capital outflows drive the occurrence of the phenomenon in those states considerably. 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 indicate about a900% increase in capital flight from Saudi Arabia in 1974, following the first oil shock, about a 55% increase in capital flight from Algeria, more than a 48% increase in capital flight from Bahrain, more than a 90% increase in capital flight from Kuwait, more than a 653% increase in capital flight from Oman, about a 31% increase in capital flight from Libya, and about an 865% increase in capital flight from Iran in 1979[16], the aftermath of the second oil shock.

The link between capital flight and crude oil prices is further shown 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 oil prices, to its value in 1987, where oil prices approached their values prior to 1973, was $2.09 billion in Algeria, $7.8 billion in Kuwait, $54.4 billion in Saudi Arabia, but a $0.6 billion increase in Iran, and a $270 million increase in capital flight from Bahrain and a $3.5 billion increase in the case of Oman [17]. Graph 1 depicts the positive association between capital flight and oil rents in

resource-based industrialization states. The coefficient of the regression is significant even when controlling for outlier countries individually.

On the other hand, both state-led development economies and balanced-economies appear to have experienced negative capital flight of $214 billion driven by large negative trade misinvoicing. 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 states are characterized by high trade barriers, restrictions and agents in the international market who try to maximize their gains by avoiding import duties. 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 duty revenues as a percentage of total government tax revenues compared to resource-based industrialization states[18]. In addition, and 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. Graph 2 shows the negative association between capital flight in state-led development and balanced economies and import duties in those states. The coefficient of the regression remains negative even when controlling for outlier countries individually. However, it declines the most when controlling for Morocco in the regression.

The estimates of trade misinvoicing in table 8 show that state-led development economies and balanced economies have experienced large negative import misinvoing. Coupled with poor institutional quality and effectiveness, the import substitution strategy adopted by the two models of development 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 the average of three periods, about 50% of total GDP in those states and import duties as a percentage of total government tax revenues averaged about 32%. This implies that negative trade

misinvoicing had undermined a large percent of GDP in state-led development economies and balanced economies.

V. Conclusions and Policy Implications

This is the first exclusive study to estimate and examine capital flight from the MENA region. The outcomes clearly prove the 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 $102 billion for state-led development economies and $112 billion 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 more socialist-derived development paths and socio-economic state intervention theories. The states under this model command their economies including productive activities. The inward-looking features of this model reflect the lingering socialist legacies among the states of the model. Finally, 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, the capital flight figures for countries under this model resemble those under the state-led development approach.

This paper suggests a reevaluation of the region's international trade and finance policies. More specifically, since resource-based economies employ less capital controls on outflows, on average, than the other two groups, a consideration of higher capital controls on outflows might help restrict the occurrence and frequency of the capital flight phenomenon from those states. In contrast, import duties for balanced economies as well as state-led development economies are significantly reduced by those international traders under-reporting their import transactions. Thus, new evaluations of trade duties in those economies should take into account the highlighted consequences. Finally, the countries of the region

should attempt to diversify economic activities, promote investment opportunities and improve institutional quality to provide the conditions for capital flight reversal and suppress tax evasion and smuggling activities.

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A. Tables

Table1: Model of Economic Development Determination

	Resource-based industrialization economies (Algeria, Bahrain, Iran, Kuwait, Libya, Oman, Saudi Arabia, and UAE)[19]	State-led development economies (Comoros, Djibouti, Egypt, Mauritania, Syria, Somalia, Sudan, And Yemen)	Balanced economies (Jordan, Lebanon, Morocco, and Tunisia)[20]
Dominant Sector(s)[21]	Industry	Agriculture & services[23]	Manufacturing & Services
Dominant Export Categories	Fuels, Ores & Metals	Food, Agricultural Raw Materials & Natural Resources	Manufacturing & Natural Resources
Openness (X+M/GDP)	Open	Least Open	Less Open
Import Duties (% Of Total Tax Revenues)	Low	Relatively High	Highest
Capital Controls On Outflows[24]	Low	Highest	High

Table 2: Macroeconomic Indicators

Country	GDP per Capita (Current UDS)	Growth of GDP (%)	Growth of per capita GDP (%)	Inflation (%)	Unemployment (%)	Current Account Balance % GDP
Algeria	156	3.9	1.14	11.03	20.4	(2.24)
Bahrain	9,392	3.2	(0.1)	5.15	2.3	0.15
Comoros	499	2	(0.52)	NA	NA	(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)
Iran	1,610.2	1.94	(0.8)	17.57	NA	2.9
Iraq	NA	(12.25)	(15.07)	NA	NA	12.8
Jordan	1,593	8	3.9	7.42	14.4	(2.13)
Kuwait	16,717.5	2.3	(2.6)	5.04	NA	25
Lebanon	2,286	(18)	(18.4)	NA	8.6	(6)
Libya	NA	(3.8)	(5.4)	NA	NA	4
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)
Oman	4,634.5	6.9	2.7	0.22	NA	2.81
Saudi Arabia	8,379	4.8	0.33	4.5	NA	3.75
Somalia	NA	1.74	(2.98)	NA	NA	NA
Sudan	244	4.28	1.6	42	NA	NA
Syria	670.7	5.6	2.3	12.9	5.7	1.01
Tunisia	1,721	5.2	3.1	6.02	NA	(5.6)
UAE	27,237.5	5.8	(3.5)	NA	NA	NA
Yemen	284.66	5.3	1.4	30.6	11.5	0.93

Sources:
- World Development Indicators, CD-ROM Edition (2003).
- Figures represent averages of three period averages calculated from World Development Indicators, CD-ROM Edition (2003). For Countries that have data Shortages, we compute period averages of available data in each decade starting from 1970. Negative figures appear in parenthesis. Countries without data are not reported.

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

Country	US. Dollar	Swiss Franc	British Pound	SDR	Multiple Currencies	Japanese Yen	French Franc	Deutsche mark	Other Currencies
Algeria	41.05	1.06	2.51	0	6.25	11	15.87	6.87	15.36
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
Iran	45.97	0.67	0.19	0	5.39	5.25	1.94	8.66	2.85
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
Oman	50.4	0	12.9	0	1.3	4.6	2.82	1.84	19.4
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	NA	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

Source: Author's computation from Global Development Finance 2002 (CD-ROM Edition).
- Averages for the years (1970-2002) are weighted by total long-term debt. Countries without data are not reported.

Table 4: External Debt, Annual Average (1970-2000), Millions of Current USD

Country	Long Term Debt	Short Term Debt	IMF Credit	Total external Debt Stock	Total Change in Debt Adjusted for Exchange Rate Fluctuations	Total External Debt Adjusted for Exchange Rate Fluctuation (DebtAdj)	DebtAdj (%) GDP
Algeria	17,542	1,033.5	512	19,086	257.3	18,822.9	36.2
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
Iran	3,733	3,750.8	NA	7,484	582	10,170.6	10.49
Jordan	3,779	548.7	108	4,436	121.9	4,457.7	83.04
Lebanon	1,037	742.6	NA	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
Oman	2,124	436.4	NA	2,560	0.5	2,647.9	26.8
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

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

Table 5: Sources and Uses of Funds, Annual Averages in Millions of USD

Country	Net Foreign Investment	Change in Debt Adj	Current Account Balance	Changes in Net Reserves
Algeria	33.67	257.3	(517.28)	82.65
Bahrain	158	NA	(64)	(61)
Comoros	1.01	(112.3)	(12.73)	(2.27)
Djibouti	2.09	(11.4)	(47.72)	7.66
Egypt	569.53	336.3	(897.73)	(201.28)
Iran	61.15	582	741.05	741.44
Jordan	81.70	121.9	(133.75)	(311.03)
Kuwait	5,380	NA	108	(400)
Lebanon	1,211.05	(465)	(2,683.23)	(216.77)
Libya	(241)	NA	569	(338)
Mauritania	2.97	12	(64.49)	2.78
Morocco	222.79	140.6	(731.68)	(204.01)
Oman	92.15	0.5	159.38	(199.10)
Saudi Arabia	838	NA	451	(657)
Somalia	6.60	7.6	(121.43)	6.60
Sudan	42.92	80	(386.35)	(4.93)
Syria	51.83	428.4	68.32	(182.37)
Tunisia	51.83	116.6	(538.21)	(182.37)
Yemen	NA	24.9	157.9	(201)

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

Table 6: Annual Capital flight (1970-2002) Adjusted for Exchange Rate Fluctuations &

Trade Misinvoicing (Millions of 1995 USD)

Country	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Algeria	NA	NA	NA	NA	NA	NA	NA	(1,312.3)	(2,739.5)	(1,227.7)	(3,925.8)	2,779.4
Bahrain	NA	NA	NA	NA	NA	(794.4)	(1,034.4)	(752.5)	(618.6)	(318.3)	(854.5)	(469.2)
Comoros	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	(8.3)	(14.0)
Djibouti	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.1
Egypt	NA	NA	NA	NA	(3,176.4)	(3,308.6)	(247.4)	4,262.1	(2,582.6)	75.4	(4,793.6)	(3,900.8)
Iran	NA	NA	NA	NA	NA	NA	10,708.9	1,396.9	1,461.2	14,110	12,430.8	(3,623.8)
Jordan	NA	NA	28.8	(64.1)	(6.6)	(179.8)	43.3	(327.5)	(838.7)	(419.0)	(663.7)	(1,388.1)
Kuwait	NA	NA	NA	NA	NA	11,794.8	13,412.9	6,857.6	11,557.0	21,966.6	15,372.8	15,698
Lebanon	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.34
Libya	NA	NA	NA	NA	NA	NA	NA	(51)	1,139.3	1,494	(3,217)	(9,231.2)
Mauritania	NA	NA	NA	NA	NA	(0.2)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.2)
Morocco	NA	NA	NA	NA	NA	(34.0)	(2,220.4)	(3,193.6)	(1,558.4)	(2,042)	(1,417.7)	(2,341.2)
Oman	NA	NA	NA	NA	179.0	336.8	291.6	685.5	87.7	653.7	53.5	(590.6)
Saudi Arabia	NA	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
Somalia	NA	NA	NA	NA	NA	NA	NA	(272.3)	(187.9)	(49.8)	(309.3)	(110.9)
Sudan	NA	NA	NA	NA	NA	NA	NA	(244.4)	(109.7)	90.8	(183.8)	(1,135)
Syria	NA	NA	NA	NA	NA	NA	NA	(522.4)	90.4	1,135.9	(701.7)	(1,229.7)
Tunisia	NA	NA	NA	NA	NA	NA	NA	(867.7)	(356.5)	(484.5)	(1,320.2)	(2,088.4)

Table 6: (Continues) Annual Capital flight (1970-2002) Adjusted for Exchange Rate Fluctuations & Trade Misinvoicing, Millions of 1995 USD

Country	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Algeria	3,803.9	617.7	2,506.8	4,191.3	3,126.9	687.1	(38.2)	2,108.8	4,309.7	2,746.9	3,006.8	2,740
Bahrain	202.1	107.7	132.8	(208.6)	(120.4)	(199.2)	1,330.7	501.1	(1,131.5)	(460.9)	(91.2)	(567.5)
Comoros	(14.2)	(11.3)	(22.2)	(14.3)	(13.9)	(20.2)	12.2	(27.3)	(6.5)	(7.3)	(16.0)	81.6
Djibouti	0.1	(44.2)	(44.5)	0.2	(91.8)	(85.0)	(84.8)	(85.0)	(128.3)	(180.7)	(76.9)	(27.1)
Egypt	(3,570.4)	(2,987.8)	(3,924.3)	(7,419.5)	(5,577.1)	466.2	(2,568.8)	(2,048.1)	154.5	(1,930.2)	(2,676.4)	(5,144.6)
Iran	2,740.63	1,735.97	4,624.9	(1,601.1)	(5,348.1)	(3070.6)	(5,171.1)	(5,478.7)	(6,070.7)	64.99	619.65	4,484.1
Jordan	(2,688.7)	(1,737.2)	(67.3)	33.3	(284.4)	(1,579.5)	(1,261.0)	(268.5)	52.5	(1,519.6)	(812.7)	(137.9)
Kuwait	461.4	829.5	5,030.8	2,634.8	6,404.3	7,873.5	7,833.8	8,656.6	5,115.4	(30,676.9)	(2,380.2)	3,498.6
Lebanon	0.3	1.5	0.5	0.1	(0.1)	8.6	(44.1)	436.8	459.2	(1,624.5)	(1899.3)	(1,044.8)
Libya	3,549.6	4,693.6	3,486	3,830.3	(2,290)	(2,911)	(548)	(4,785.9)	(1,650.6)	(1,848)	(134)	927.7
Mauritania	(0.3)	(0.3)	(0.2)	(0.1)	(0.2)	(0.2)	(0.6)	(0.1)	(0.1)	(0.7)	(0.1)	(0.1)
Morocco	(1,904.4)	(1,042.5)	(1,121.2)	(1,011.4)	(1,168.7)	(492.5)	(209.9)	(1,451.0)	(2,167.3)	(1,774)	(1,124.3)	(977)
Oman	(233.7)	57.7	(182.1)	(541.3)	1,617.6	3,002.2	2,043.1	2,500.4	5,339.7	(970.9)	(1,146.4)	(342.3)
Saudi Arabia	33,077.6	(6,770.8)	(6,400.6)	(13,625.7)	(2,862.9)	(16,274.5)	(6,914.4)	(7,921.7)	4,423.4	(27,400.9)	(14,276.2)	(21,274.4)
Somalia	(380.3)	35.4	(221.5)	(134.3)	(340.1)	(139.9)	(87.8)	(141.5)	(1,268.6)	0.8	0.3	0.1
Sudan	(1,338)	(3.9)	47.6	752.6	(521.6)	(437.6)	(835.8)	(41.6)	(424.2)	(1,032.2)	(484.9)	10.3
Syria	(1,189.8)	366.9	(1,016.6)	(433.2)	(804.9)	(361.2)	201.6	997.8	1,232.0	778.6	(154.5)	201.6
Tunisia	(1,895.9)	(1,188.9)	(2,534)	(1,322.8)	(1,089.3)	(838.5)	(427.3)	(1,149.3)	(1,933.5)	(1,982.4)	(3,123.1)	(3,303.2)

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Table 6: (Continues) Annual Capital flight (1970-2002) Adjusted for Exchange Rate Fluctuations & Trade Misinvoicing, Millions of 1995 USD

Country	1994	1995	1996	1997	1998	1999	2000	2001	2002	Total KF
Algeria	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	502	1,953.7	3,599.5	142.7	(978.3)	215.81	880.5	(94.7)	NA	**1,978.8**
Comoros	(27.4)	(17.5)	(116.2)	(122.2)	0.1	0	(0.1)	0	(331)	**(696.2)**
Djibouti	(56.7)	(25.2)	(168.9)	(1.8)	(1.1)	0.7	0.3	0.1	0	**(1,100.7)**
Egypt	(3,788)	(3,929.3)	(4,089.4)	(7,944.4)	(7,077.5)	(4,483.7)	3,062	(6,148.2)	(223.1)	**(85,829.1)**
Iran	(345.9)	2,616.7	(41.5)	2,571.9	(415.5)	1,548.1	(36.9)	2,0817.7	0	**50,728.5**
Jordan	(338.9)	(274.9)	(76.4)	264.4	635.2	(336.2)	(82.4)	(414.2)	(1,044.6)	**(15,754.1)**
Kuwait	4,482.4	17,435	4,287.7	8,254.9	3,462.1	4,372.6	11,956.4	4,923.4	NA	**171,115.9**
Lebanon	(2,635.7)	(2,016.1)	(2,632.1)	(1,024.4)	(2,275.3)	(2,062.5)	(102.2)	0	0	**(16,452)**
Libya	(384.3)	(204.9)	(187)	(371.5)	1,472.6	1,008	NA	NA	NA	**(6,197)**
Mauritania	0.8.	0.1	0.8	0.3	0.14	(1.6)	0	0	0	**(4,820.7)**
Morocco	(1,565.9)	(1,053.1)	(383.2)	(261.2)	(276.5)	(1,879.4)	(481.2)	(2,497.7)	(730.2)	**(36,379.9)**
Oman	(524.2)	(1,232.2)	(419.2)	(698.6)	(1,999.2)	(1,278.3)	934.8	946.9	0.0	**8,571.2**
Saudi Arabia	(17,964)	(13,626)	(20,516)	(9,749.7)	(18,964.2)	(12,908.5)	2,739.2	15,275.8	NA	**11,880**
Somalia	(4.7)	0.3	0.3	0.5	(0.3)	(5.4)	(0.2)	0.1	0.7	**(3,616.6)**
Sudan	(3.1)	0.8	(16.7)	(1.2)	(0.0)	(231.3)	(303.6)	0.0	0.1	**(6,446.5)**
Syria	(786.2)	(371.8)	(356.5)	221.1	(87.0)	326.3	2,154.4	(0.0)	0.0	**(308.7)**
Tunisia	(2,443.6)	(3,216.2)	(3,272.4)	(1,387.9)	(2,071.5)	(566.0)	(2,408.6)	(1,441.5)	(1,432)	**(44,145)**

Source: Authors' 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).
- Note: Negative figures appear in parenthesis. Countries without data are not reported.

Table7: Total Capital flight (%) of GDP, and 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)
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	NA
Comoros	(347.8)	(696.2)	(406.4)	(30.2)	(9)	(47.8)
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)
Iran	39,355.9	50,728.5	132,068.7	1,878.84	2	43.7
Jordan	(13,007.9)	(15,754.1)	(35,729.6)	(508.2)	(8.5)	(185.3)
Kuwait	130,605	171,115.9	418,085.8	6,338	63	5,595
Lebanon	(16,258.1)	(16,452)	(22,088)	(747.8)	(10.2)	(237.1)
Libya	(5,467)	(6,197)	(12,775)	(269)	NA	(71)
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)
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
Somalia	(2,939.7)	(3,616.6)	(8,171.3)	(139.1)	(25.8)	NA
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)

Source: Authors' 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).
- Note: for resource-based industrialization states, the adjustment on capital flight entails correcting to trade misinvoicng only since they do not have data on external debt. Negative figures appear in parenthesis. Countries without data are not reported.

**Table 8: Total Trade Misinvoicing (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
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)
Iran	(4,599.2)	(37,727.5)	30,499.5	(199.9)
Iraq	108.29	371	(262.7)	4.7
Jordan	(7,735.1)	11,918.2	(19,653.3)	(336.3)
Kuwait	(9,837.1)	(2,858.7)	(6,978.3)	(427.7)
Lebanon	2,314.7	1,094.2	1,220.5	100.6
Libya	(6,748.9)	8,697.4	(15,446.4)	(293.4)
Mauritania	(928.5)	830.1	(1,758.6)	(40.3)
Morocco	(16,629.1)	26,480.5	(43,109.6)	(723)
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)
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)
UAE	(23,835.6)	25,550.7	(49,386.4)	(1,036.3)
Yemen	(2,701.65)	(131.5)	(2,569.9)	(675.3)

Source: Authors' computations from:
- Direction of Trade Statistics, 2003 (CD-ROM Edition).
- World Development Indicators 2003 (CD-ROM Edition).
- Not: Negative figures appear in parenthesis.

B. Graphs

1. Capital flight and fuel exports in resource-based industrialization states
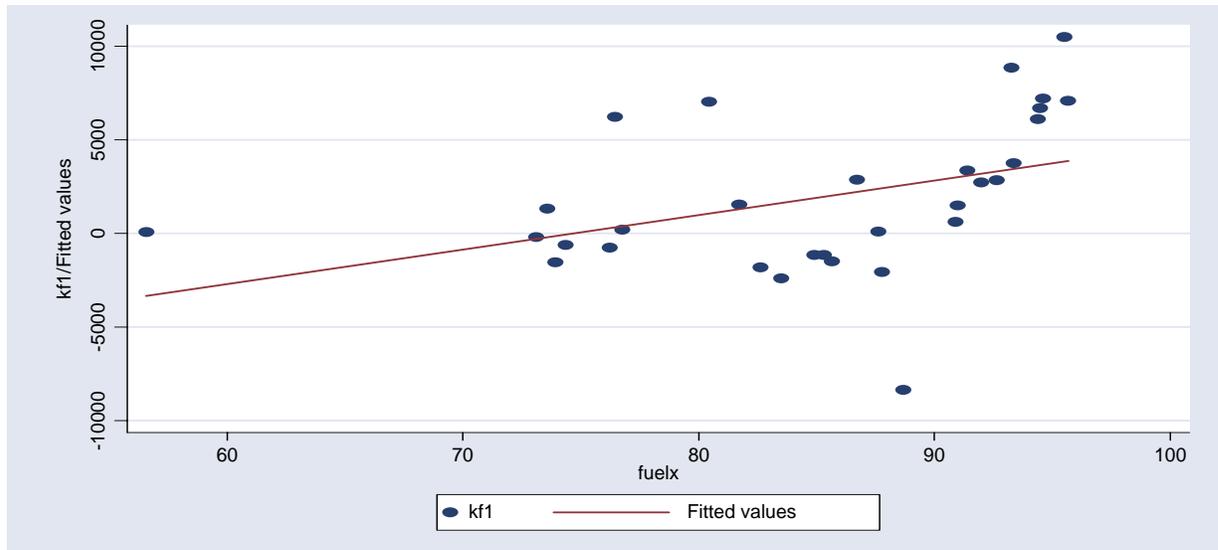
The dependent variable is average capital flight in Resource-based industrialization states whereas the independent variable is the average ratio of fuel exports as (%) of merchandise exports. The results are robust even when controlling for outliers countries.

2. Capital flight and tariff revenues (%) of total government taxes in state-led development and balanced economies
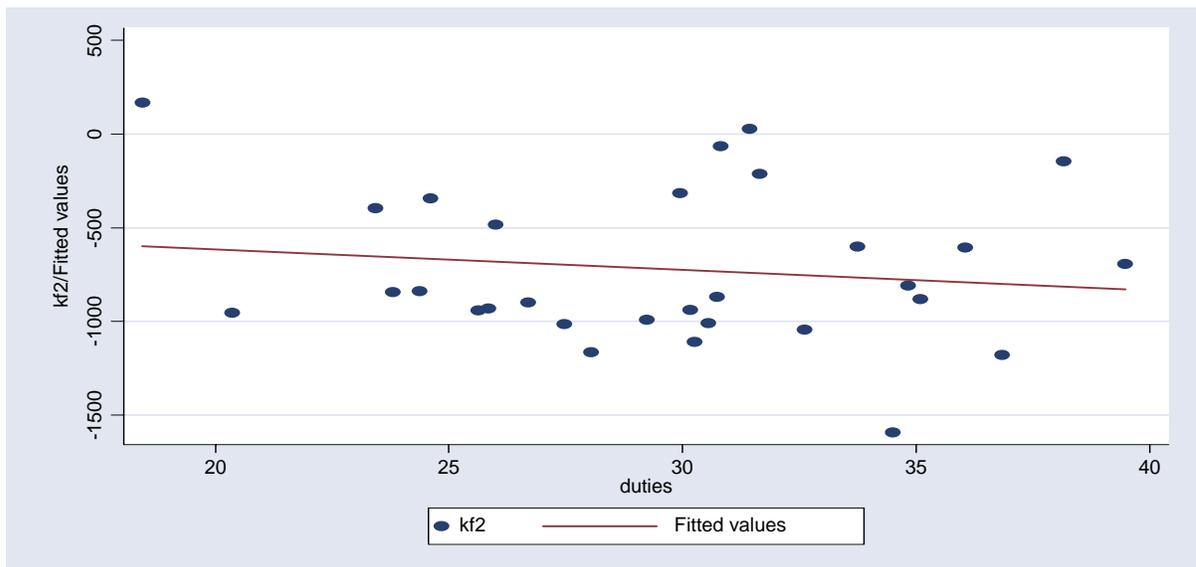
The dependent variable is average capital flight in state-led development economies and balanced economies whereas the independent variable is the average ratio of import tariffs as a (%) of total government tax revenues. The coefficient remains negative when controlling for outlier countries. However, it declines the most when controlling for Morocco in the regression.

Notes:

[1] The Author works for the Research Department at Saudi Arabia Monetary Agency (SAMA), the Central Bank of Saudi Arabia, and currently is a PhD candidate at the University of Massachusetts- Amherst. I'm grateful to professor Gerald Epstein for various discussions and comments on this paper.

[2]. 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. Iran is added to the region since the World Bank classifies it as such and because of its relevance to main 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.

[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 (outflows) of workers remittances to or (out) of each country.

[4]. See table 2 for macroeconomic indicators. According to the World Bank classifications, five countries (Egypt, Mauritania, Somalia, Sudan, and the Republic of Yemen) are low-income countries. Twelve 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 capital real GDP growth in the MENA region over the past two decades has faltered compared with the rest of developing countries.

[5] I construct an institutional quality index based on indicators gathered by Kaufman (1998). The index comprises six indicators: namely; voice and accountability, political stability and lack of violence, government effectiveness, regulatory framework, rule of law and control of corruption. The index ranges between –2 (low) and 2 (high). According to the index constructed, the overwhelming majority of the MENA countries have negative or low estimates, especially in voice and accountability and control of corruption, reflecting the poor institutional quality characterizing the region. A study by George Abed (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 comparison. Only when looking at the Rule of Law that Latin America and the Caribbean score as low as the MENA region.

[6]. This is more pronounced for state-led development economies as well as balanced economies. See Table 1 for country classification.

[7] This paper was cited in Almounsor (2004).

[8]. The MENA region, on overage of three period averages, received well below 1% of the world 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 public sector, when excluding banks and other financial institutions, in developing countries averaged about 10% of GDP in 1980. In addition, state owned enterprises accounted for ¼ to ½ 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).

[10] For more details, refer to table 1. Note that this classification is not intended to simplify the complexity of the region and does not assume perfection of the suggested models of development. The region has experienced political & economic shocks including country wars, civil wars, revolutions, policy shifts, oil shocks and institutional changes which might cause disruptions to the development process. The classification is then intended to help accounting for the capital flight phenomenon within each model of development for the ease of understanding as well as for model-specific policy implications. For alternative development model specifications, see Richards, Alan and Waterbury, John 1990. The classification in table one is based on average of three period averages of data derived from the World Development Indicators (2003), CD-ROM Edition.

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

[12] Schnieder (2003) have 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 nine countries of the MENA region, Schnieder's estimates of capital flight is less inclusive in terms of number of years of analysis. Moreover, our estimates implement various adjustments to reach the final figure of capital flight such as incorporating trade misinvoicing into capital flight.

[12.] The Adjustment for exchange rate fluctuations excludes IMF credit, short-term debt, debt in other currencies and debt held in multiple currencies. For further details, please refer to Boyce and Ndikumana (2000).

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

[14.] See Chapter 2 of the volume for details on the methodology.

[15.] An anomaly case under resource-based industrialization economies is 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, 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.

[16.] 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.

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

[18.] Note the relevance of this argument to the import misinvoicing estimates in table7. 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, according to conventional wisdom, such high negative magnitude of import misinvoicng is related to the implementation of international trade duties in those economies.

[19.] 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 the sense that they are ruled by one party or military controlled governments as opposed to monarchial governments in the Gulf States.

[20.] 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.

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

[22.] 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 overwhelming majority of such activities.

[23.] The indices for 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: 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.