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CAPITAL FLIGHT FROM AFRICA

Updated Methodology
and New Estimates



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PERI RESEARCH REPORT

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1. INTRODUCTION

The problem of capital flight from Africa has gained substantial attention in academia and the policy arena in Africa and globally, especially in the context of the debate on financing for sustainable development. Capital flight is a matter of concern in a continent that, while making great strides in accelerating growth since the turn of the century, continues to lag behind in most development goals. The majority of the countries in the region missed the Millennium Development Goal of halving extreme poverty by 2015, and it is the only continent still witnessing an increase in the number of poor people. A major constraint to economic development in Africa is the lack of adequate financial resources in the face of immense needs in public and public investment in infrastructure and social services. Capital flight undermines efforts to alleviate that constraint.

This report provides updated estimates of capital flight from a representative sample of 30 African countries from 1970 to 2015 using an updated algorithm. The results indicate that this group of countries lost a combined \$1.4 trillion through capital flight over the 46-year period. Including interest earnings on capital flight brings the cumulative amount to \$1.8 trillion. This amount vastly exceeds the stock of debt owed by these countries as of 2015 (\$496.9 billion), making the group a “net creditor” to the rest of the world. The evidence also shows that these countries lose more through capital flight than they receive in the form of aid or foreign private investment. The evidence calls for more detailed and deeper country level investigation of the mechanisms, channels, drivers, actors and enablers behind capital flight with a view to provide insights into possible strategies to stem the continent’s financial hemorrhage.

The remainder of the report describes the extensions to the capital flight computation methodology, presents key results and suggests avenues for further investigation.

2. UPDATES TO THE METHODOLOGY

Definition

Capital flight is estimated using an updated version of the methodology described in Ndikumana and Boyce (2010) and Ndikumana, Boyce and Ndiaye (2015).¹ It is defined as a residual of the Balance of Payments consisting of discrepancies between recorded foreign exchange inflows and recorded uses of these inflows. Capital flight represents outflows of financial resources from a country in a given period that are not recorded in official government statistics. In that sense, capital flight is narrower than the phenomenon of illicit financial flows, which includes also flows that may be duly recorded but are illicit by virtue of the illicit nature of the activities that generated them, or failure to report the earnings associated with them. In other words, illicit financial flows are all flows that are associated with violation of the law in their mode of acquisition, cross-border transfer, and holding abroad. Global Financial Integrity has led the work on illicit financial flows and produces estimates for Africa and other regions (Global Financial Integrity (2010); Clough et al. (2014)).² A global perspective on the phenomenon is also provided in other studies, such as those by Peter Reuter (Reuter, 2017, 2012). The United Nations Commission for Africa, through the High Level Panel on Illicit Financial Flows has led the policy debate on the subject in the continent since 2012 (High Level Panel, 2015). It has just released its two most recent publications on the topic (UNECA, 2018a, 2018b).

Revisions and Extensions to the Estimation Methodology

Relative to our previous studies, the algorithm used in this report includes the following revisions.

- a) These new estimates do not include an adjustment for unrecorded remittances due to lack of updated benchmark data that can be compared to the flows reported in the Balance of Payments.
- b) The BOP residual is extended to include two additional sources of foreign exchange inflows, namely portfolio investment and other investment, in addition to external borrowing and foreign direct investment.
- c) Computation of adjusted change in debt stock: The year-to-year variation in the stock of external debt obtained using data from the World Bank's International Debt Statistics includes 'net change in interest arrears', although this does not correspond to an inflow of resources. Therefore, in addition to the adjustment for exchange rate fluctuations, the new adjusted change in debt stock includes an adjustment for net change in interest arrears.
- d) As in previous editions of our capital flight estimates, trade misinvoicing is obtained by scaling up the discrepancies vis-à-vis advanced countries using the shares of the latter in a country's total exports and total imports. However, examination of the data in the Direction of Trade Statistics (DOTS) reveals that the sum of exports to/imports from advanced economies and exports to/imports from the emerging and developing economies category does not always equal to the country's total exports/imports. Some exports

and imports are recorded under three ‘residual categories’ in DOTS: 1) Other countries not included elsewhere, 2) Countries and areas not specified, 3) Special categories. This implies that the share of industrialized countries in total exports and imports is lower if a substantial portion of exports or imports is recorded under these ‘residual categories.’ In such situations, scaling up discrepancies vis-à-vis advanced countries would inflate the value of total trade misinvoicing. Therefore, the updated algorithm uses the share of industrialized countries’ exports and imports in the sum of exports or imports to/from advanced economies and developing economies.

The new shares are calculated as follows:

$$ICXS = \frac{XIC}{XIC + XED} ; \quad ICMS = \frac{MIC}{MIC + MED} ; \quad (1)$$

where *XIC* and *XED* represent exports to industrialized countries and emerging and developing countries, respectively; *MIC* and *MED* are imports from industrialized countries and emerging and developing countries, respectively.

The revised algorithm for computation of capital flight, *KF*, is the following:

$$KF = CDEBTADJ + FDI + PI + OI - (CAD + CRES) + MISINV \quad (2)$$

where *CDEBTADJ* is change in debt stock adjusted for exchange rate fluctuation, interest arrears and debt forgiveness, *FDI* is foreign direct investment, *PI* is portfolio investment, *OI* is other investment, *CAD* is the current account deficit, *CRES* is net additions to reserves, and *MISINV* is net trade misinvoicing.

To enable comparison over time and across countries, nominal capital flight series are converted into constant prices using the US GDP deflator with base 2015=100. In addition, to measure the opportunity cost of capital flight for the source country, it is assumed that the funds exported through capital flight accumulate value through interest earnings and capital gains. The resulting ‘stock’ measure may be greater than or less than the actual stock of flight capital. The challenge in estimating the latter is the lack of information on the proportion of funds that are invested vs. consumed and on the rate of return on such investments, which vary by asset and market conditions. Following our past practice, we take a conservative approach to measuring the opportunity cost by assuming that capital flight earned interest income at the modest 3-month US Treasury Bill rate.

James Henry developed a more elaborate approach to estimate the stock of offshore wealth resulting from accumulation of capital flight by assuming that half of capital flight is consumed and the rest invested (Henry, 2012, 2016). He incorporates interest income and capital gains from past capital flight stashed abroad using banking industry information. The resulting estimates represent a measure of the market value of the assets held abroad that resulted from past capital flight. His detailed statistics on capital flight and offshore wealth are available online at <http://globalhavenindustry.com/>.

Sample and Data Sources

The report covers 30 countries that have adequate data from 1970 to 2015. These countries together account for 92 percent of the continent's total GDP.

Variable definitions and data sources are provided in Table A1 in the Appendix. Data on debt are from International Debt Statistics; *FDI, PI, OI, CAD, and CRES* are from the Balance of Payments. FDI can also be obtained from UNCTAD database. All these variables are also available in World Development Indicators.

Exports and imports are from the Direction of Trade Statistics. The price index used to convert nominal values into real values is the US GDP deflator, which is obtained from the US Department of Commerce. The US Treasury Bill rate is from the IMF's International Financial Statistics database.

Note that the signs on *FDI, PI, OI, and CRES* in the Balance of Payments under the BPM6 are symmetrical to that in BPM5 format, following the shift from a credit/debit perspective to an assets/liabilities perspective. Therefore, the sign on the values for these variables must be changed (from positive to negative and vice-versa) before inputting the data into the formula in equation (2) above.

There are also peculiarities pertaining to specific countries regarding some variables.

Trade misinvoicing:

- For South Africa, export and import data are available in the electronic DOTS from 1998 only. Therefore, trade misinvoicing adjustment only covers that period. Any time series analysis on this country must take into account this structural break when analyzing total capital flight.
- In the case of Zambia, the data exhibit extremely large export overinvoicing (the country's exports are substantially larger than the recorded value of its partners' imports), which are difficult to explain.³ We therefore estimated trade misinvoicing directly relative to the rest of the world using world exports to Zambia and world imports from Zambia.
- We use a similar approach for Gabon and Sudan, which also show systematic substantial and unexplained overinvoicing of exports from 2005 and 2006, respectively.
- In the case of Zimbabwe, the estimates obtained by scaling up discrepancies vis-à-vis industrialized countries yield unusually large export underinvoicing due to very small shares of the IC's in the country's exports, especially since 2003.⁴ We again use the values obtained by comparing Zimbabwe's data directly to world data.

External debt:

- For South Africa, data on external debt in the International Debt Statistics start in 1994. Data from 1970 to 1993 are drawn from the South African Reserve Bank's online database, using the Rand/USD exchange rate to convert values from rand to the US dollar.
- Data obtained from Angola's Central Bank (Banco Nacional de Angola) show much higher values of the stock of debt than is reported in IDS from 2011 to 2015. This implies that the change in debt obtained from IDS is underestimated. We therefore use BNA data for that period.

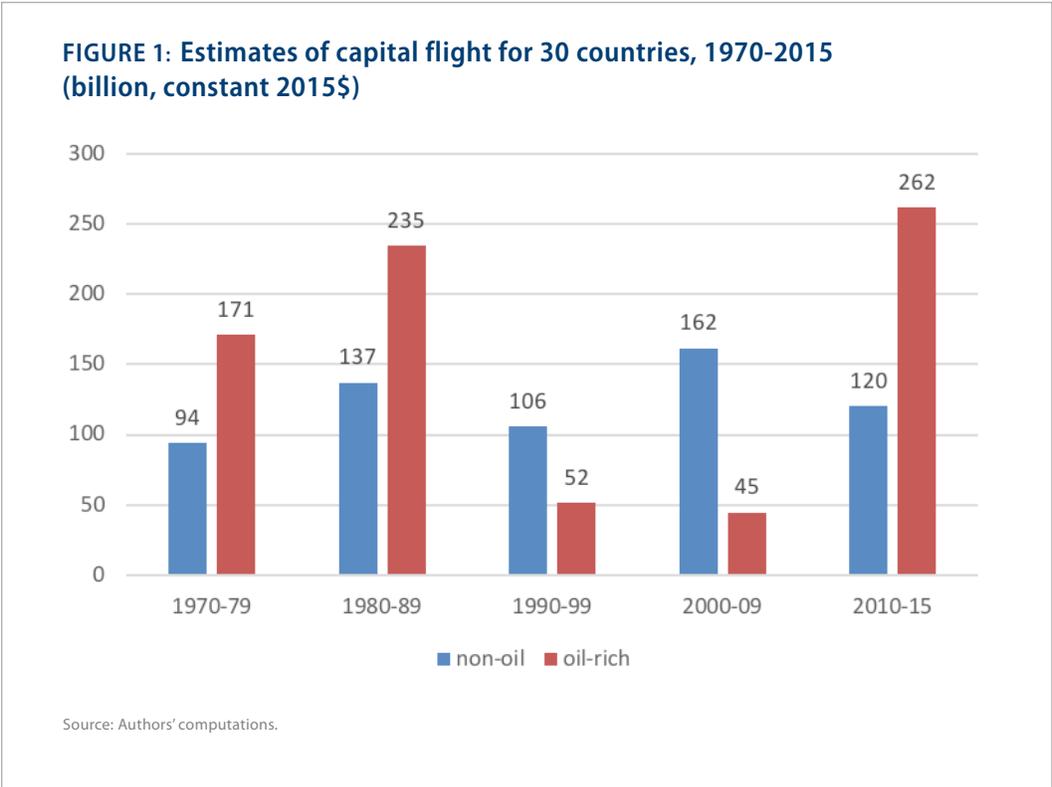
3. Highlights from the New Estimates

Trends in Capital Flight

This section presents the key insights from the updated results. The detailed time series are available online at <https://www.peri.umass.edu/capital-flight-from-africa>.

Consistent with findings from earlier studies, the estimates presented in this report show that capital flight continues to be a serious drain on financial resources from Africa, a capital-starved continent. Between 1970 and 2015, the sample of 30 countries considered in this report lost a total amount of \$1.4 trillion through capital flight. Following high levels in 1970s and 1980s, capital flight declined in the 1990s, but then exploded since the turn of the century (Figure 1).

The explosion of capital flight corresponds with the surge in growth observed across the continent, which earned it the label of “continent on the rise.” The same period corresponds with marked improvements in overall macroeconomic stability thanks to African governments’ commitment to economic reforms. One would therefore expect that such an environment would encourage domestic investment and serve as a disincentive for capital flight. The evidence suggests that capital flight is not driven by the search for higher return on investment by savvy African investors. It suggests instead that it is more likely to be driven by evasion of taxes on private wealth or avoidance of possible prosecution from illicit acquisition of wealth. In the case of illicitly acquired wealth, the owners may willingly accept



a low or even negative return on assets in exchange for the protection that offshore financial centers provide.

The onset of the surge of capital flight over the past two decades corresponded with the resource boom in the period leading up to the global financial crisis. Indeed oil-rich countries feature prominently on the top of the list in terms of volume of capital flight (Table 1). Nigeria leads the pack with \$340 billion, followed by Algeria (\$141 billion), Angola (\$61 billion), Cameroon (\$43 billion) and the other five oil exporters with smaller amounts.⁵ The oil-rich countries together account for 55 percent of the continent's cumulative capital flight over the period.

The evidence also shows that capital flight represents a heavy burden relative to the size of the economy for most countries. For the 30 countries as a group, cumulative capital flight represents 65.6 percent of their combined 2015 GDP. The ratios of cumulative capital flight to 2015 GDP range from 9.9% for Egypt to 705.9% for the Republic of Congo.

Trade misinvoicing represents an important mechanism of capital flight through overinvoicing of imports and underinvoicing of exports. Import underinvoicing for tariff evasion (including “pure” smuggling, where imports are simply not recorded), on the other hand, is an illicit use of foreign exchange distinct from capital flight. For the sample of 30 countries as a whole, cumulative net trade misinvoicing, defined as export underinvoicing plus import overinvoicing, amounts to \$285.6 billion. Countries incurring large volumes of capital flight through net trade misinvoicing are Algeria (\$85.9 billion), Nigeria (\$125 billion), and South Africa (\$54.6 billion). For Egypt, import underinvoicing (\$419.6 billion) exceeds export underinvoicing (\$275.8 billion), resulting in a negative net trade misinvoicing adjustment, reducing the BoP residual measure of capital flight by \$143.8 billion. The cumulative total estimates of trade misinvoicing by decade are presented in Table 2 and detailed time series are available online at:

<https://www.peri.umass.edu/capital-flight-from-africa>.

TABLE 1
Capital flight by country, 1970-2015 (billion, constant 2015 \$)

Country	Total capital flight (billion, 2015 \$)	Ratio to GDP 2015 (percent)	Stock of capital flight in 2015 (billion \$)	Debt stock in 2015 (billion \$)	Net external assets in 2015 (billion \$)
Algeria	141.5	85.3	206.0	4.7	201.3
Angola	60.9	52.9	63.7	28.0	35.8
Botswana	3.6	24.9	2.1	2.1	(0.0)
Burkina Faso	2.0	19.4	3.5	2.6	0.9
Burundi	5.1	181.8	5.8	0.6	5.2
Cameroon	42.9	138.8	57.5	6.6	50.9
Congo, DR	19.0	50.1	35.7	5.4	30.2
Congo, Rep.	59.9	705.9	59.8	3.9	55.9
Côte d'Ivoire	32.0	97.3	64.9	10.0	54.9
Egypt	31.3	9.9	85.8	46.6	39.2
Ethiopia	32.9	52.1	37.2	20.4	16.8
Gabon	23.5	172.3	25.3	4.3	21.0
Ghana	29.8	79.9	32.1	20.7	11.4
Kenya	19.1	30.0	29.4	19.1	10.3
Madagascar	11.3	98.7	20.0	3.0	17.0
Malawi	9.7	150.5	12.4	1.7	10.6
Mauritania	2.8	58.2	5.9	3.7	2.2
Morocco	115.9	114.6	162.5	43.0	119.5
Mozambique	13.4	90.6	17.0	10.1	6.9
Nigeria	340.3	68.8	411.0	29.0	381.9
Rwanda	17.7	213.7	24.9	2.2	22.6
Seychelles	3.8	272.5	4.4	2.7	1.6
Sierra Leone	28.4	674.0	30.5	1.4	29.1
South Africa	198.5	62.5	183.6	137.9	45.7
Sudan	31.8	40.0	45.9	21.4	24.5
Tanzania	29.5	63.0	41.2	15.0	26.2
Tunisia	27.7	64.3	36.3	27.4	8.9
Uganda	21.1	83.7	23.3	5.8	17.5
Zambia	25.2	118.8	37.4	8.8	28.7
Zimbabwe	3.4	21.2	13.2	8.7	4.5
Total: 30 countries	1,384	65.6	1778.2	496.9	1,281.3
Oil-rich countries	764.1	60.7	1019.9	155	865.4
Non-oil countries	619.87	72.8	758.3	342.4	415.8

Source: Authors' computations.

TABLE 2
Trade misinvoicing: cumulative values by decade (billion, constant 2015 \$)

Period	Capital flight	BoP residual	Export misinvoicing	Import misinvoicing	Net misinvoicing
1970-79	265.7	173.3	118.8	-26.4	92.4
1980-89	372.0	314.5	172.2	-114.7	57.5
1990-99	157.7	116.8	164.3	-123.4	40.9
2000-09	206.6	186.2	322.2	-301.9	20.3
2010-15	381.9	307.4	250.8	-176.2	74.6
Total: 30 countries	1,383.9	1,098.3	1028.3	-742.6	285.7
Oil-rich	764.1	640.3	656.0	-532.3	123.7
Non-oil	619.9	457.9	372.3	-210.3	162.0

Sources: Authors' computations.

Capital Flight Relative to Other Financial Flows

Africa continues to be a 'net creditor' to the rest of the world in the sense that capital flight including imputed earnings on past outflows (\$1.8 billion) vastly exceeds the stock of external debts owed by these countries (\$496.9 billion) as of 2015. However, while the assets accumulated abroad through capital flight are private, the debts constitute a collective liability on the shoulders of the citizens of these countries. In fact, some of these debts fueled the accumulation of capital flight abroad through the 'revolving door' and various mechanisms of embezzlement of public funds by politicians. This raises the issue of legitimacy of such loans which may be challenged as being odious (Ndikumana and Boyce, 2011).

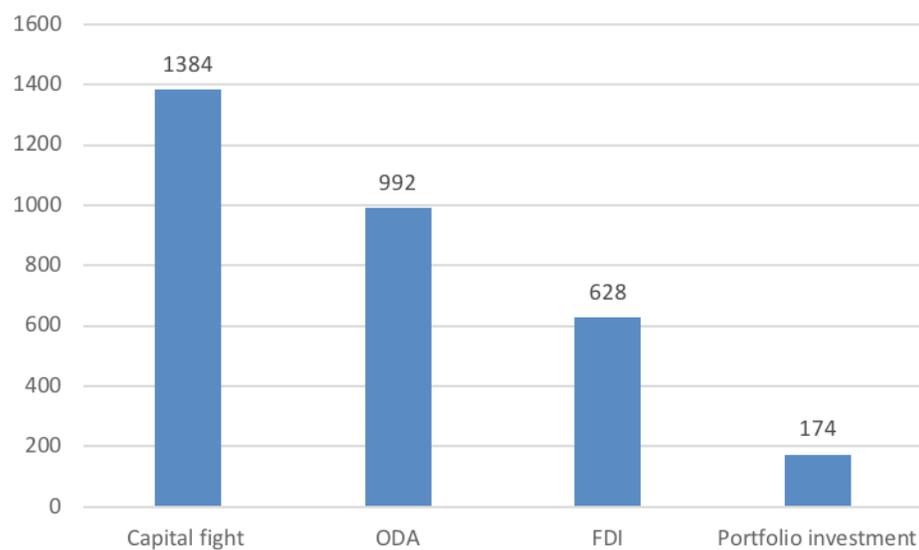
The evidence in this report casts doubt on the popular view of Africa as aid and debt dependent, giving the impression that the continent is unable to raise its own resources domestically. In fact, the resources flowing out of Africa exceed the inflows in the form of official development aid or private investment (Figure 2 and Table 3). During the 46-year period examined in this report, the 30 countries in the sample received a combined \$991.8 billion in ODA, \$628.3 in net FDI and \$173.6 in net portfolio investment. In fact, some countries experienced net outflows in private capital through recorded portfolio investment: Angola (-\$6.7 billion), Botswana (-\$7.5 billion), the Democratic Republic of Congo (-\$14 billion), Egypt (-\$6.9 billion) and Burkina Faso (-\$0.6 billion). Clearly, African countries would not need to rely on ODA if they were able to retain their resources onshore.

TABLE 3
Capital flight, ODA, FDI, and portfolio investment: Cumulative amounts by decade (billion, constant 2015 \$)

	FDI billion \$	PI billion \$	ODA billion \$	Capital flight		
				billion \$	Percent of ODA	Percent of (ODA + FDI + PI)
1970-79	35.3	0.02	130.8	265.7	203.1	160.0
1980-89	34.6	2.2	183.3	372.0	203.0	169.0
1990-99	59.7	47.8	211.1	157.7	74.7	49.5
2000-09	285.2	8.6	265.5	206.6	77.8	36.9
2010-15	213.5	115.0	202.2	381.9	188.9	72.0
Total	628.3	173.6	992.8	1383.9	139.4	77.1
Oil-rich	316.0	34.6	343.6	764.1	222.4	110.1
Non-oil	312.4	139.1	649.3	619.9	95.5	56.3

Sources: Authors' computations (capital flight); Balance of Payments (FDI); World Development Indicators (ODA).

FIGURE 2: Capital flight, ODA and FDI: Cumulative flows (billion, constant 2015 \$)



Source: Authors' computations (capital flight); Balance of Payments (FDI); World Development Indicators (ODA)

4. Conclusion

The evidence presented in this report shows that capital flight remains a major concern for African countries. The amounts of unrecorded outflows are large both in absolute terms and relative to the size of the source economies. These countries can ill afford these losses of resources given their immense development needs.

The acceleration of capital flight over the past two decades suggests a need for deep investigation into the structural factors of this phenomenon not only at the origin in search of push factors, but also at the destination to identify potential pull factors. While it is important to continue refining the methodology and the data used in aggregate level analysis, there is a need for more detailed investigation at the country and sectoral levels to uncover the mechanisms, drivers, actors, and enablers of capital flight at both national and global level to shed light on effective strategies to prevent the continent's financial hemorrhage.

APPENDIX TABLE A1
Variables and data sources

Variables	Description	Source	Comments
Sources of Funds			
Change in debt (adjusted): CDEBTADJ	External debt stocks, total (DOD, current US\$) Debt forgiveness or reduction (current US\$) Net change in interest arrears	World Bank International Debt Statistics (IDS)	South Africa: IDS used for 1994-onward; used SARB data for 1970-1993 Angola: used IDS for 1989-onward; used printed World Debt Tables for 1985-88 (to get cdebt 1986-88), and Banco Nacional de Angola for 2011-2015
Foreign direct investment: FDI	FDI, net (BOP, current US\$)	BOP	Change the sign
Portfolio Flows: PI	Portfolio flows, net (BOP, current US\$)	BOP	Change the sign New addition to the algorithm
Other investment: OI	Other investment, net (BOP, current US \$)	BOP	Change the sign New addition to the algorithm
Use of Funds			
Current Account, net: CA	Current account (excludes reserves and related items)	BOP	
Change in reserves: CRES	Reserve Assets	BOP	Change the sign
Adjustment for Trade Misinvoicing			
Total exports: XTOT	Exports to the world, FOB	DOTS	South Africa: only 1998-onward
Exports to advanced economies : XIC	Exports to advanced economies, FOB	DOTS	
Total imports: MTOT	Imports from the world, CIF	DOTS	
Imports from advanced economies: MIC	Imports from advanced economies, CIF	DOTS	
Advanced economies' imports from Africa: PXIC	Advanced economies' imports from African country, CIF	DOTS	
African countries exports to African country: PMIC	African countries exports to African country, FOB	DOTS	
Other Variables			
Price index	US GDP deflator	US Department of Commerce	
Interest rate	US Treasury Bill rate	IMF's International Financial Statistics	
GDP	Nominal GDP	UNCTAD statistical database	

Endnotes

- 1 Also see Ndikumana et al. (2015).
- 2 The various reports by Global Financial Integrity can be found online at www.gfintegrity.org.
- 3 Export overinvoicing relative to advanced countries amount to \$28.9 billion, which, if scaled up using the share of advanced countries in total exports, would yield \$53.5 billion relative to the rest of the world. These large differences are likely to be due to inaccurate or inconsistent reporting of the destination of exports, especially in the case of copper, which is transacted through trading hubs in Switzerland.
- 4 The average share of advanced countries in total exports ranges from 1.7% to 14.8% during 2011-2015. These small ratios yield very large scaled up values of export misinvoicing relative to the rest of the world.
- 5 Countries considered as oil-rich here are Algeria, Angola, Cameroon, Republic of Congo, Côte d'Ivoire, Egypt, Gabon, Nigeria and Sudan.

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