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CAPITAL FLIGHT FROM AFRICA
1970-2018

New Estimates with Updated Trade Misinvoicing Methodology

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PERI RESEARCH REPORT

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Introduction

Africa's growth prospects have been severely undermined by the impact of the global economic crisis caused by the Covid-19 pandemic, which threatens to reverse some of the progress recorded since the turn of the century.[1] The slowdowns in international trade and domestic economic activity are likely to deepen the financing gaps that constrain African governments' capacity to finance crisis mitigation and post-crisis recovery programs. Financing difficulties are exacerbated by capital flight, which ironically accelerated during the pre-crisis expansion period. The erosion of the tax base by capital flight undermines private and public investment, further exacerbating gaps in infrastructure and public services such as education and health, and holding back the continent in its progress towards poverty reduction. Capital flight must therefore feature prominently in the debates on strategies to accelerate growth and position the continent for a robust post-crisis recovery.

This report presents updated estimates of capital flight from 30 African countries over the period 1970-2018. During this 49-year period, this group of countries lost a combined $2 trillion (in 2018 dollars) through capital flight. Net misinvoicing of exports and imports contributed $588 billion to total capital flight. It is estimated that the stock of offshore wealth accumulated from capital flight stood at $2.4 trillion as of 2018, assuming that capital outflows earned the equivalent of the modest US Treasury Bill rate in destination territories. This amount far exceeds the $720 billion of external debt owed by this group of countries as of 2018, making them a 'net creditor' to the rest of the world. The evidence calls for urgent action to stem the financial hemorrhage and strategies to repatriate stolen assets stashed offshore.

The estimates are generated using the methodology described in the literature and past PERI reports, notably the May 2018 edition (Ndikumana and Boyce 2018). The next section describes an adjustment to the methodology for the computation of trade misinvoicing to take into account the fact that the destination of exports and the source of imports are sometimes unspecified. This is followed by some highlights from the results in Section III, and a conclusion in Section IV. The country-level time series of capital flight are available online on the PERI website.[2]

2. Refinements in Trade Misinvoicing Estimation Methodology

This report uses the methodology established in the literature as described in Ndikumana and Boyce (2010) and updated in subsequent publications, including Ndikumana, Boyce, and Ndiaye (2015) and Ndikumana and Boyce (2018; 2019). In this edition, two changes are introduced in the methodology used to compute of trade misinvoicing.

The first change concerns the cost of insurance and freight (cif) factor used to convert exports from freight-on-board (fob) values to cif values. Traditionally, due to lack of product-specific and country-specific time series for the cif factor, 10% has been used as a proxy following the practice in the bilateral trade statistics in the IMF's Direction of Trade Statistics (DOTS). In 2018, however, the IMF changed the cif proxy from 10% to 6%. It applies the 6% to series from 2000 onward, while 10% is used for earlier series (IMF 2018). The results in this updated report are obtained using this new conversion factor.

The second change is a refinement in the computation of aggregate trade misinvoicing, which is obtained by scaling up discrepancies between the export and import data reported by African countries and the corresponding values reported by their trading partners in the group of advanced or industrialized countries (ICs), so as to arrive at a global figure. The refinement is necessitated by the fact that in some cases the destinations of exports and the sources of imports are not comprehensively reported. Some exports and imports are instead recorded under the category 'unspecified territories.' If some exports by an African country to ICs are recorded under 'unspecified areas' while members of the ICs group properly record the goods as imports from the African country, this would result in an upward bias in the export underinvoicing estimate. Similarly, if some imports by an African country from ICs are recorded as coming from 'unspecified areas,' while their destination is duly recorded by the ICs, this would cause a downward bias in the import overinvoicing estimate.

To minimize these biases, it is assumed here that the fractions of exports and imports recorded under 'unspecified areas' which were exported to or imported from ICs is proportional to the share of ICs in the African country's total country-specific imports and exports. In calculating misinvoicing, this is added to the country's exports to ICs and imports from ICs. In a given year t, for an African country i, export misinvoicing (DXIC) and import misinvoicing (DMIC) with respect to ICs are computed as follows:

Export misinvoicing:

$$DXIC_{it} = M_{IC,it} - cif * (X_{i,IC,t} + X^U_{i,IC,t}) \tag{1}$$

Import misinvoicing:

$$DMIC_{it} = (M_{i,IC,t} + M^U_{i,IC,t}) - cif * X_{IC,it} + X_{i,IC,t}) \tag{2}$$

The terms $X^U_{i,IC,t}$ and $M^U_{i,IC,t}$ represent the amounts of exports and imports recorded under 'unspecified areas' that are allocated to ICs based on the latter's shares in the African country's total exports and imports.

Total trade misinvoicing vis-à-vis all partners (aggregate trade misinvoicing) is calculated as follows:

$$MISINV_{it} = \frac{DXIC_{it}}{ICXS_{it}} + \frac{DMIC_{it}}{ICMS_{it}} \tag{3}$$

Where *ICXS* represents IC's share in the sum of country's exports to advanced economies and exports to emerging and developing countries. ICMS is IC's share in the sum of country's imports from advanced economies and imports to emerging and developing countries.

The estimated trade misinvoicing is then added to the balance of payments residual to obtain adjusted capital flight as follows:

$$ADJKF = CDEBTADJ + FDI + PI + OI – (CAD + CRES) + MISINV \tag{4}$$

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

Table A1 in the Appendix presents the list of indicators used in the computation as well as data sources.

3. Highlights from the New Estimates

This section presents highlights from the results, while detailed time series by country can be retrieved online at the Political Economy Research Institute's website at https://www.peri.umass.edu/capital-flight-from-africa.

Acceleration of capital flight

The new estimates indicate that capital flight from African countries continues to increase steadily since the turn of the century. Total capital flight from the sample of thirty countries covered in this report amounts to a $2 trillion (in constant 2018 US dollars) over the period 1970-2018. This represents 94 percent of total GDP of the thirty countries (and 85 percent of total GDP in Africa as a whole) in 2018.

Over the past decade, capital flight accelerated markedly, reaching $858 billion over 2010-2018, up from $291 billion during the 2000-09 period. On average, this group of thirty countries lost an average of $45 billion per year over 2000-2018 (Figure 1). This figure is in the ballpark of the estimates of capital flight from Africa published by other researchers and institutions that revolve around $50 billion per year.[3]

FIGURE 1: Total capital flight from 30 African countries by decade (billion, 2018 $)
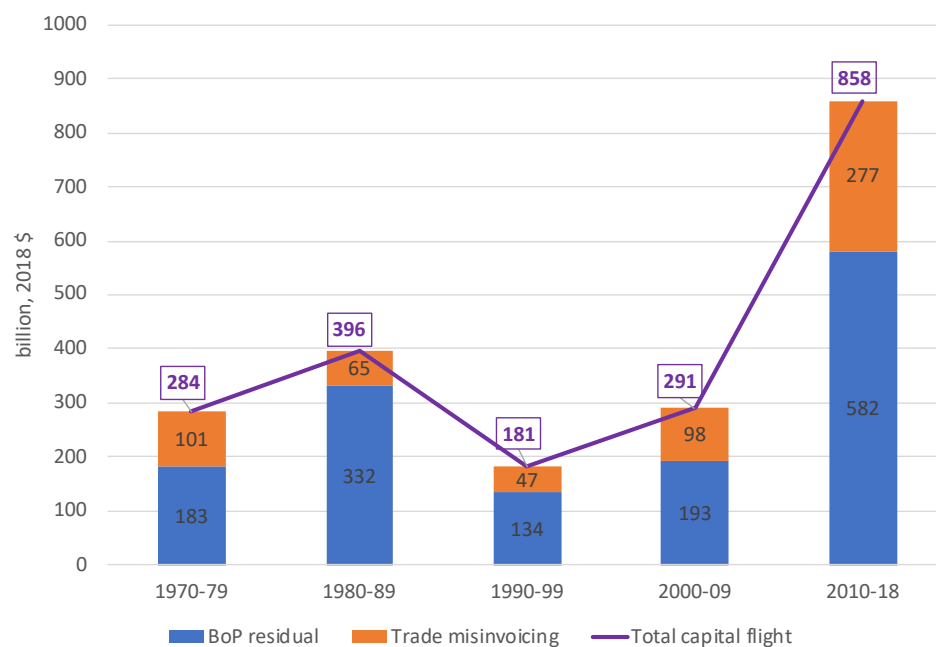
Source: Authors' computations.

Trade misinvoicing as a channel of capital flight

Trade misinvoicing constitutes an important channel of capital flight, serving as a mechanism for circumventing exchange controls, evasion of customs duties, and trade-based money laundering. For the thirty countries covered by this report, net trade misinvoicing amounted to $588 billion over the period 1970-2018, representing 29 percent of total capital flight. Export misinvoicing is the dominant feature in all countries in the sample, amounting to just over one trillion US dollars for the sample. This is counterbalanced partially by net import underinvoicing (for purposes of tariff evasion) totaling $505.7 billion.

Trade misinvoicing is pronounced in the minerals and oil sectors as documented in previous studies (UNCTAD, 2016, 2020). But agricultural commodities can also be exposed to export misinvoicing as illustrated by the case of cocoa in Côte d'Ivoire (Merckaert, 2020; Ndikumana and Boyce, 2019; UNCTAD, 2016). Trade misinvoicing and other mechanisms of capital flight are facilitated by the complicity of a complex network of actors and exacerbated by poor governance in host countries. This is well illustrated in case studies on Angola (Shaxson 2021), Côte d'Ivoire (Merckaert, 2020), and South Africa (Ndikumana et al., 2020).

Variation across countries

The aggregate figures hide wide diversity across the continent, as some countries are more exposed to capital flight than others (Table 1). The top five countries – Nigeria, South Africa, Algeria, Angola and Morocco – lost more than $100 billion each through capital flight over the 1970-2018 period. (In the case of Angola the time period is shorter, starting in 1986, and the estimate does not include an adjustment trade misinvoicing due to missing data.) These five countries lost a combined $1.2 trillion. Natural resource endowment appears to be an important risk factor for capital flight. Six of the top ten countries with the highest amount of capital flight are oil exporters.[4] Overall, the nine oil-rich countries in the sample account for 51 percent of total capital flight from the entire group. The problem of capital flight also afflicts countries that are rich in other primary commodities, including minerals and agricultural commodities. This is the case for Côte d'Ivoire (cocoa)[5] and Zambia (copper) (UNCTAD, 2016, 2020).
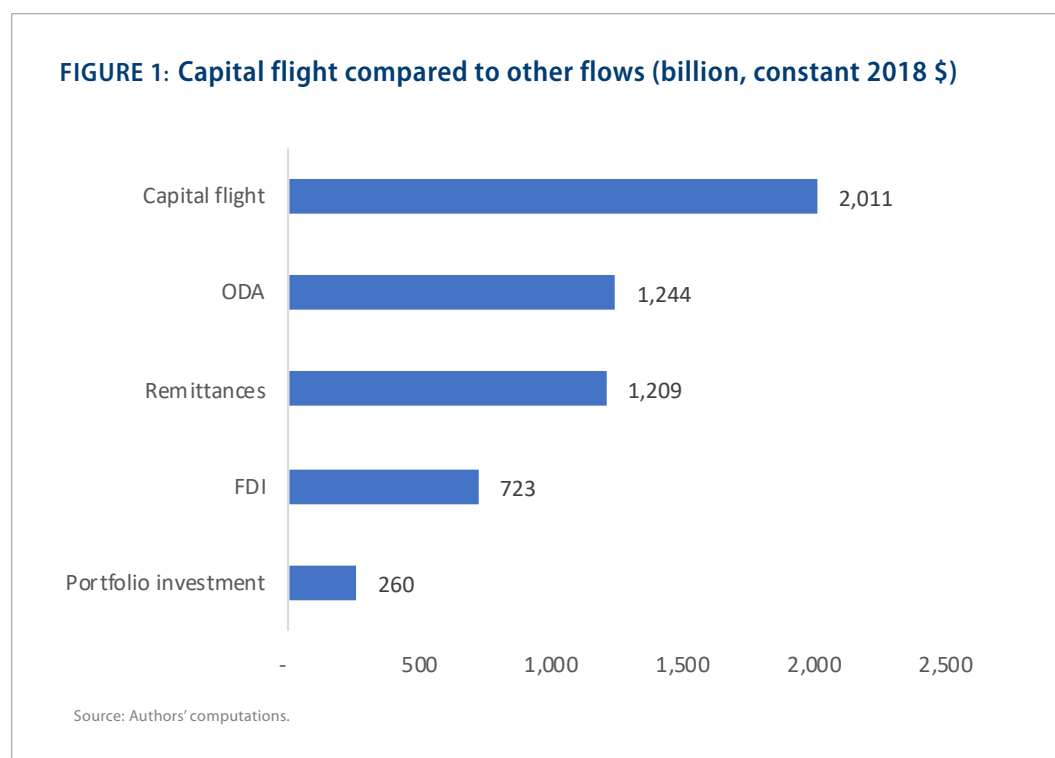
TABLE 1
Total capital flight over 1970-2018 (billion, constant 2018 $)

Country	Period	Capital flight	BoP residual	Trade misinvoicing	Total capital flight / GDP 2018 (%)
Algeria	1971-2017	135.5	59.7	75.8	80.9
Angola	1986-2018	103.1	103.1	--	97.4
Botswana	1976-2018	5.7	5.7	--	30.4
Burkina Faso	1974-2018	1.7	1.0	0.7	10.2
Burundi	1985-2018	5.7	2.4	3.2	172.0
Cameroon	1970-2018	57.1	19.3	37.8	147.6
Congo, Dem. Rep.	1970-2018	30.6	2.2	28.4	65.0
Congo, Rep.	1971-2016	71.1	15.9	55.2	709.8
Cote d'Ivoire	1970-2018	55.4	40.5	14.9	128.7
Egypt	1970-2018	79.0	264.9	-185.9	31.6
Ethiopia	1971-2018	64.2	64.0	0.2	80.0
Gabon	1978-2015	24.2	19.1	5.1	168.1
Ghana	1970-2018	42.7	38.0	4.7	65.1
Kenya	1970-2018	30.9	25.6	5.3	35.1
Madagascar	1970-2018	13.7	18.3	-4.6	99.1
Malawi	1970-2018	11.3	-5.2	16.6	157.7
Mauritania	1973-2018	16.4	8.9	7.4	214.9
Morocco	1970-2018	135.5	93.8	41.7	114.9
Mozambique	1985-2018	43.9	22.9	21.0	298.0
Nigeria	1970-2018	466.6	271.8	194.9	110.6
Rwanda	1970-2018	21.3	4.7	16.6	224.0
Seychelles	1981-2018	5.0	2.1	2.9	315.8
Sierra Leone	1970-2018	28.3	1.2	27.1	690.9
South Africa	1970-2018	329.5	196.0	133.5	89.5
Sudan	1970-2018	46.6	40.9	5.8	92.3
Tanzania	1970-2018	42.0	14.2	27.8	71.4
Tunisia	1970-2018	32.1	39.4	-7.2	80.5
Uganda	1970-2018	32.4	14.2	18.2	107.7
Zambia	1970-2018	59.4	28.4	31.0	217.8
Zimbabwe	1977-2017	20.0	9.8	10.3	90.9
Total: 30 coun-		**2,010.8**	**1,422.7**	**588.2**	**93.8**

Source: Authors' computations.

Capital flight exceeds other flows

The volume of capital flight far exceeds that of key capital inflows into the continent. Considering the thirty countries in the sample, and counting only those years for which estimates of capital flight are reported (for countries with a shorter time period), total capital flight over the period 1970-2018 exceeds the total amount of funds received by these same countries in the form of official development aid (ODA), migrant remittances, foreign direct investment, or portfolio investment taken individually. This is illustrated on Figure 2.

FIGURE 1: Capital flight compared to other flows (billion, constant 2018 $)

Category	Value
Capital flight	2,011
ODA	1,244
Remittances	1,209
FDI	723
Portfolio investment	260

Source: Authors' computations.

Hidden offshore wealth

While some of the proceeds of capital flight are used to finance consumption, a substantial fraction is invested abroad in profitable assets in the form of investment accounts, real estate, and diverse valuable objects. Assuming that the flight capital earned interest at the modest US Treasury Bill rate, the estimated stock of wealth accumulated from capital flight from 1970s to 2018 for the thirty countries amounts to $2.4 trillion (Table 2). This vastly exceeds the $720 billion in combined external debts owed by these countries as of 2018. This group of countries is, in this sense, a 'net creditor' to the rest of the world to the tune of $1.6 trillion. In other words, these countries could expunge their external debts if they could repatriate only a fraction of the hidden offshore wealth.

The evidence on hidden offshore wealth gives a new meaning to the story of Africa's relation with the rest of the world and its financing potential. The estimates suggest that Africa would not need to depend on aid if it could retain its own resources onshore. Moreover, they demonstrate that the world owes to Africa more than the reverse.

TABLE 1
Capital flight and external debt: Stock as of end of 2018
(million, constant 2018 $)

Country	Debt stock	Capital flight stock	Net external assets
Algeria	5.7	196.2	190.5
Angola	54.6	101.8	47.3
Botswana	1.7	4.1	2.3
Burkina Faso	3.3	3.4	0.1
Burundi	0.6	6.2	5.6
Cameroon	10.9	70.7	59.8
Congo, Dem. Rep.	5.0	46.2	41.2
Congo, Rep.	5.1	67.8	62.6
Cote d'Ivoire	15.7	87.4	71.7
Egypt	98.7	138.7	40.0
Ethiopia	28.0	66.7	38.7
Gabon	6.8	25.1	18.4
Ghana	23.3	44.3	21.0
Kenya	31.5	38.1	6.6
Madagascar	3.7	23.3	19.6
Malawi	2.3	13.4	11.1
Mauritania	5.2	18.9	13.7
Morocco	49.0	181.7	132.7
Mozambique	15.2	46.6	31.4
Nigeria	47.0	526.4	479.3
Rwanda	5.4	28.1	22.7
Seychelles	1.8	5.0	3.2
Sierra Leone	1.7	29.8	28.1
South Africa	179.3	303.4	124.1
Sudan	21.6	61.1	39.5
Tanzania	18.6	53.1	34.5
Tunisia	34.7	40.0	5.4
Uganda	12.3	33.8	21.4
Zambia	19.1	70.1	51.0
Zimbabwe	12.3	28.2	15.9
Total	**720.1**	**2,359.6**	**1,639.5**

Source: Authors' computations.

4. Conclusion

The evidence presented in this report shows that capital flight from African countries continues unabated, ironically even in a period when the continent posted impressive and unprecedented growth. This apparent paradox suggests that capital flight is not driven entirely, or even mainly, by the desire to maximize rates of return to investment, but instead by the quest for secrecy and concealment of private wealth away from the eyes of current or future national authorities. This suggests that the bulk of these funds are illicit; so the wealth holders are willing to accept relatively low returns to investment in offshore financial centers in exchange for legal protection and secrecy.

The report shows substantial cross-country disparities in the volume of capital flight as well as patterns of trade misinvoicing. The evidence calls for deeper analysis at the country and sector levels to shed light on the mechanisms, factors, actors, and enablers of capital flight to provide input into the design of strategies to combat capital flight. The Political Economy Research Institute has already embarked in this line of research, starting with case studies on Angola (Shaxson 2021), Côte d'Ivoire (Merckaert 2020), and South Africa (Ndikumana, Naidoo, and Aboobaker 2020). More evidence from country and sector-level studies is needed to leverage the growing attention on the issues of capital flight and illicit financial flows in the policy arena both in Africa, as in the debate led by the High Level Panel on Illicit Financial Flows, and globally, such as the efforts within the United Nations to meet target 16.4 of the Sustainable Development Goals of reducing illicit financial flows. Success in these efforts will require effective coordination of efforts at the national, continental and global levels.

Appendix: Variables and data sources

TABLE A1: Variables and data sources

Variables	Description	Source
Sources of Funds		
Change in debt CDEBTADJ: Adjussted (calculated)	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
Foreign direct investment: FDI	FDI, net (BOP, current US$)	BOP
Portfolio Flows: PI	Portfolio flows, net (BOP, current US$)	BOP
Other investment: OI	Other investment, net (BOP, current US $)	BOP
Use of Funds		
Current Account, net: CA	Current account (excludes reserves and related items)	BOP
Change in reserves: CRES	Reserve Assets	BOP
Adjustment for Trade Misinvoicing		
Total exports: XTOT	Exports to the world, FOB	DOTS
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
Exports to 'unspecified areas': X_U	Exports to 'unspecified areas'	DOTS
Imports from 'unspecified are-as': X_U	Imports from 'unspecified areas'	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   See IMF (2020) and African Development Bank (2021) for an outlook for sub-Saharan economies in the context of the pandemic.

2   The time series data and other publications on capital flight can be found here: https://www.peri.umass.edu/capital-flight-from-africa

3   See, for example, report by the High Level Panel on Illicit Financial Flows from Africa sponsored by the UNECA (UNECA, 2015).

4   The top 10 countries, in descending order of total capital flight, are: Nigeria, South Africa, Algeria, Angola, Morocco, Egypt, Republic of Congo, Zambia, Cameroon, and Côte d'Ivoire. They have lost $1.4 trillion, which represents 70 percent of the sample's total capital flight.

5   See Merckaert (2020) for an analysis of capital flight and other financial malfeasance associated with the cocoa sector in Côte d'Ivoire.

References

African Development Bank. 2021. *African Economic Outlook 2021. From Debt Resolution to Growth - The Road Ahead for Africa*. Abidjan, Côte d'Ivoire: African Development Bank.

IMF. 2018. "DOT Introductory Notes October 2018." Washington, DC: International Monetary Fund.

Merckaert, Jean. 2020. Bitter Chocolate: Wealth Extraction in Côte d'Ivoire. Working Paper 517. PERI Working Papers. Amherst, Massachusetts: Political Economy Research Institute.

Ndikumana, Léonce, and James K. Boyce. 2010. Measurement of Capital Flight: Methodology and Results for Sub-Saharan African Countries: Measurement of Capital Flight. *African Development Review* 22 (4): 471–81.

———. 2018. Capital Flight from Africa: Updated Methodology and New Estimates. PERI Research Report. Amherst, Massachusetts: Political Economy Research Institute.

———. 2019. "Magnitudes and Mechanisms of Capital Flight from Angola, Côte d'Ivoire and South Africa." PERI Working Paper 500. Amherst, Massachusetts: Political Economy Research Institute, Working Paper 500.

Ndikumana, Léonce, James K. Boyce, and Ameth S. Ndiaye. 2015. Capital Flight from Africa: Measurement and Drivers. In Ibi S. Ajayi and Léonce Ndikumana (Eds.). *Capital Flight from Africa: Causes, Effects and Policy Issues*, pp. 15–54. Oxford, United Kingdom: Oxford University Press.

Ndikumana, Léonce, Karmen Naidoo, and Adam Aboobaker. 2020. Capital Flight from South Africa: A Case Study. Working Paper 516. PERI Working Papers. Amherst, Massachusetts: Political Economy Research Institute.

Shaxson, Nicholas. 2021. Angola: Oil and Capital Flight. Working Paper 534. PERI Working Papers. Amherst, Massachusetts: Political Economy Research Institute.

IMF. 2020. *Regional Economic Outlook for Sub-Saharan Africa, June 2020 Update*. Washington, DC: IMF.

Merckaert, J. 2020. Bitter Chocolate: Wealth Extraction in Côte d'Ivoire Amherst, MA: Political Economy Research Institute, Working Paper 517.

Ndikumana, L., and Boyce, J. K. 2019. Magnitudes and Mechanisms of Capital Flight from Angola, Côte d'Ivoire and South Africa. Amherst, MA: Political Economy Research Institute, Working Paper 500.

Ndikumana, L., Naidoo, K., and Aboobaker, A. 2020. Capital flight from South Africa: A case study. Amherst, MA: Political Economy Institute, Working Paper 516.

UNCTAD. 2016. Trade Misinvoicing in Primary Commodities in Developing Countries: The Cases of Chile, Côte d'Ivoire, Nigeria, South Africa and Zambia. Geneva: UNCTAD, December.

UNCTAD. 2020. *Tackling Illicit Financial Flows for Sustainable Development in Africa. Economic Development in Africa Report 2020*. Geneva: UNCTAD.

UNECA. 2015. *Illicit Financial Flows: Report of the High Level Panel on Illicit Financial Flows from Africa*. Addis Ababa: UNECA.

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