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Abnormal Pricing in International Commodity Trade: Evidence from Ghana

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MOTIVATION: LACK OF ROBUST EVIDENCE ON TRADE IFF_s

- **IFFs & Financing for Development:** IFFs from low-income countries represents a significant barrier for increasing domestic resource mobilization and sustain foreign aid dependence
- **Trade mispricing is a prominent channel for IFFs:** Misreporting the value, quantity or nature of goods or services in an international commercial transaction
 - Drivers include tax-motivated profit shifting, evasion of customs duties/restrictions, capital controls
- **Resource-dependent developing countries are particularly susceptible:** Commodity trade mispricing major concern, but lack robust evidence of magnitude and drivers
- **Lack of robust evidence:** Existing research mainly relies on partner-country trade gaps
 - Global Financial Integrity (2019) estimate global trade mispricing ~\$1.9trillion (2006-15)
 - High-Level Panel on IFFs from Africa estimate trade mispricing ~\$50 billion annually
 - Ndikumana et al. (2015) estimate capital flight from Africa ~\$1.3trillion (1970 - 2010)

OBJECTIVE: MEASURE COMMODITY TRADE MISPRICING

- **Scope:** International trade in extractive and agricultural commodities
 - Ghana: Gold and Cocoa exports
 - **Laos:** Copper and Coffee exports (*not covered here*)
 - **Switzerland:** Gold, Copper, Coffee and Cocoa imports (*not covered here*)
- **Empirical methods:** Price-filter analysis using transaction-level Customs data to compare observed prices vs. estimated arm's length price range based on:
 1. **Free-market prices from commodity exchanges:** Baseline approach
 2. **Interquartile range of observed price distributions:** Endogenous measure interpreted as risk indicators
- **Regulatory motivation:** Transaction Valuation (WTO); Transfer Pricing Rules (OECD/UN Tax Committee, U.S. Internal Revenue Service)

GOLD AND COCOA SECTORS IN GHANA

Liberalized gold sector with large-scale multinational mining firms and artisanal producers:

- Transfer pricing risks can arise from multinational firms' international networks
- Artisanal, small-scale and informal firms susceptible to corrupt actors
- Weak regulatory capacity to verify valuation of gold exports
- Transit trade from fragile neighbouring gold producers, ex: Burkina Faso

Government controlled cocoa sector with COCOBOD monopoly on bean exports:

- No multinational firms allowed in cocoa bean exports, hence low transfer pricing risks
- Liberalized processed cocoa products sector, with foreign trading firms and numerous local firms
- Cocoa bean export valuation conducted by COCOBOD
- Smuggling risks from neighboring countries due to price differentials, ex: Ivory Coast

ANALYSIS OF GHANA'S GOLD EXPORTS: 2011-17

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Benchmark prices:

- Daily Gold and Silver Bullion Price (London Bullion Market Association)
- Mine-level Gold-Silver Dore Composition (MetalsFocus Consulting)

Arm's Length Price Range: +10% and -10% around benchmark prices

Adjust benchmark prices using gold sector experts' estimates for:

- 1) Additional costs:** Refining, Transportation and Insurance
- 2) Market price volatility:** Contract terms between different types of buyers and sellers, contract terms including invoicing currency and spot/future transactions

MAIN RESULTS: GOLD EXPORTS

Table 4: Undervalued and Overvalued Exports – Gold (HS Code: 7108.13.1000 & 7108.12.0000)

Year	Free Market Price Filter: Minus 10% of Benchmark Prices* (USD, Million)	Free Market Price Filter: Plus 10% of Benchmark Prices* (USD, Million)	Partner Country Trade Gaps (USD, Million)
2011	222.8	2.0	-5,145
2012	544.5	14.5	-4,115
2013	514.7	23.1	-2,010
2014	205.5	13.4	-1,447
2015	78.9	7.4	142
2016	1,195.4	1.9	909
2017	1,067.4	4.2	-1,312
Mean	547.0	9.5	-1,854
Total	3,829.1	66.6	-12,977

Data Source: Ghana Revenue Authority (GRA); Metal Focus Limited; United Nations Comtrade Database (accessed: December 2020)

- Approx. USD 3.8 billion of exports (11% of total) are abnormally undervalued
- Top destinations include: India, South Africa, United Arab Emirates, Switzerland and Portugal
- Estimated tax base erosion of USD 957.3 million

GHANA COCOA BEAN EXPORTS: 2011-17

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Benchmark prices:

- London Futures Price – 12 months (Intercontinental Exchange)
 - ~80% of cocoa bean production is sold in advance using futures contracts

Arm's Length Price Range: +30% and -20% around benchmark prices

- Adjust benchmark prices by using COCOBOD experts' calculations for:
 - 1) Price premiums (up to 17%) for top grade Ghanaian beans
 - 2) Transportation costs (up to 13%): COCOBOD records exports prices on CIF basis
 - 3) Market price volatility (less 20%): Discounts for lower quality beans, contract terms with different types of buyers

MAIN RESULTS: COCOA BEANS

Table 5: Undervalued and Overvalued Exports – Cocoa Beans (HS: 1801.00.1100)

Year	Free Market Price Filter: Minus 20% (USD, Million)	Free Market Price Filter: Plus 30% (USD, Million)	Partner Country Trade Gaps (USD, Million)
2011	24.4	3.8	503
2012	8.5	7.9	339
2013	1.4	21.6	361
2014	57.4	12.0	139
2015	2.2	7.0	-915
2016	9.0	47.0	262
2017	23.8	15.4	13
Mean	18.1	16.4	100
Total	126.6	114.7	703

Data Source: Ghana Revenue Authority (GRA); United Nations Comtrade Database (accessed: December 2020)

- Negligible magnitudes of under and over-valued cocoa bean exports (<1% of exports)

CONCLUSIONS AND POLICY IMPLICATIONS

- This research aims to provide new evidence of abnormal pricing of Ghana's most economically significant exports (gold and cocoa) using a mixed methods approach
- Postulate that estimates based on transaction-level microdata represent important new evidence to inform policymakers on IFF risks, compared to aggregate measures
- Our findings indicate that commodity trade mispricing is indeed an urgent concern for Ghana, especially in precious metals exports
- Recent policy steps taken: Adoption of transfer pricing rules; Establishment of TP unit and anti-money laundering unit; Appointment of government regulator as gold assayer
- Implementation gap remains; Further improvement in statistical infrastructure needed to support comparability analysis

THANK YOU FOR YOUR KIND ATTENTION

For more information, please visit <https://curbing-iffs.org>

References:

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APPENDIX

Illicit Financial Flows: A Conceptual Framework

International transfers of funds or financial capital which are **illicitly** sourced, transferred, or used

