

## POLICY BRIEF

### Gold and cocoa exports: is Ghana earning the expected revenue?



Image source: Graphic Online (<https://www.graphic.com.gh/business/business-news/low-demand-weakens-prices-of-gold-cocoa.html>)

## **Executive Summary**

Developing countries such as Ghana depend quite a lot on their exports of natural resources for revenue. Research has shown that they may be losing even more revenue than they are gaining from their exports through trade mispricing; one of the ways Illicit Financial Flows (IFFs) occurs. However, the methods currently used to measure trade mispricing have been criticized for generating inaccurate estimates. In our research, we make use of a novel methodology and transaction level data from the Customs Division of Ghana Revenue Authority to measure trade mispricing. Using Ghana's top export commodities, gold and cocoa, we find that undervaluation in gold exports from Ghana amounted to 11% of its total exports. For cocoa beans and cocoa paste, we similarly estimated 1.0% and 7.2% respectively. We also estimated tax base erosion due to mispricing to be USD 957.3 million for gold, USD 31.6m for cocoa beans and USD 32.6m for cocoa paste during 2011-2017. Our findings thus suggest significant tax base erosion through trade mispricing from Ghana.

## **Outline of key points**

Developing countries such as Ghana depend on their exports of natural resources for revenue.

Research shows they may be losing more revenue than they are gaining through trade mispricing.

Methods currently used to measure trade mispricing have been criticized for generating inaccurate estimates.

This study makes use of a novel methodology to measure trade mispricing in the exports of Ghana's top export commodities of gold and cocoa.

We estimate that 11% of total exports of gold, 1.0% of total cocoa beans and 7.2% of cocoa paste were undervalued during 2011-2017.

We also estimate tax base erosion due to mispricing to be USD 957.3m for gold, USD 31.6m

## **Introduction**

Trade mispricing occurs when one or both trading partners deliberately misreport the value, quantity or nature of goods or services in a commercial transaction. This phenomenon tends to particularly affect resource-rich developing countries, such as Ghana, because of limited regulatory capacity and the actions of the multinational companies. Research by the United Nations Economic Commission for Africa (UNECA) in 2015 estimated that Africa loses about USD 50 billion through trade mispricing. Although the aggregated data and methodology used for this analysis have been criticised, these estimates have led to a significant push by national governments and international policy organizations, like the Organization for Economic Cooperation and Development (OECD), for further research into trade mispricing. Responding to this call, this research project developed a novel empirical methodology to estimate the magnitude of abnormal pricing in commodity exports, based on legal rules of customs valuation and transfer pricing analysis.

Abnormal pricing is defined as the magnitude of trade valued outside an assumed price range which represents fair market value between unrelated buyers and sellers, and is considered a reliable indicator for trade mispricing risks. Our baseline empirical approach compared the valuation of transaction-level trade microdata with an appropriate benchmark, calculated using free-market prices adjusted for relevant product and market-specific factors identified by traders and regulators. We focused our analysis on the case of exports of partially-refined gold bars and cocoa from Ghana, the leading African producer of gold and the world's second largest producer of cocoa beans. Despite the Ghana's leading position in these exports, tax revenue collection from the natural resources and oil sector is low, representing less than a fifth (17.6%) of gross domestic product, according to the Bank of Ghana.

## Cocoa Beans and Gold Mining Site



### Cocoa Beans

Image URL: <https://curbing-iffs.org/2020/02/18/ghana-research-team-experiences-from-2017-2020/>



A gold mining site in Ghana.

Photograph by Kwabina Ibrahim.

## **Brief Description of Methodology**

The researchers adopted an innovative, interdisciplinary approach comprising qualitative, quantitative and political economy analyses.

The qualitative and political economy analyses helped to identify inherent risks for IFFs in selected commodities.

These subsequently aided the application of the statistical price filter method which is based on legal transfer pricing guidelines for conducting arm's length research.

## **Main Findings**

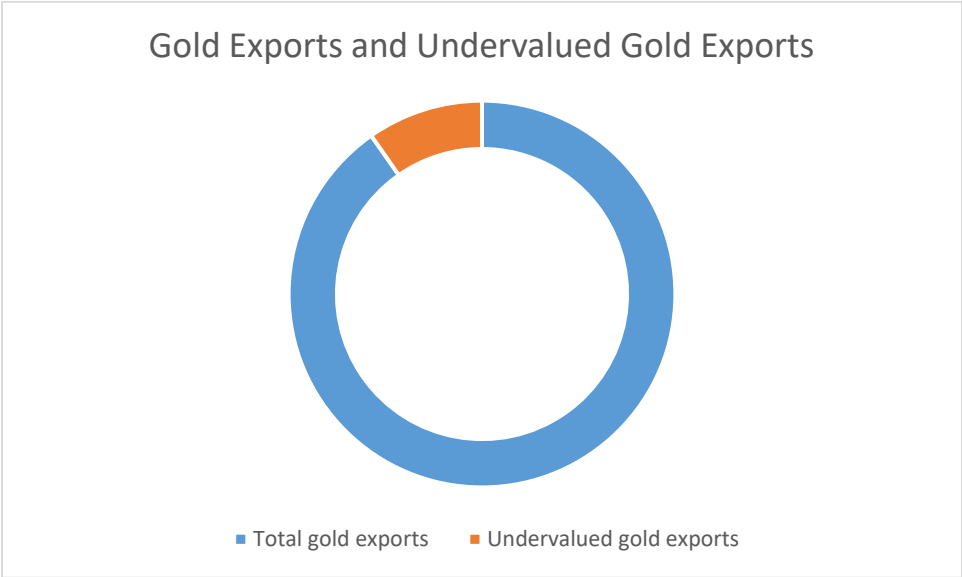
Our analysis of the commodity value chains indicates that the centralized, regulated trade in cocoa beans is exposed to fewer trade mispricing risks than the more decentralized trade in partially refined gold and cocoa paste. Some of these risks include: transfer pricing risks arising from international operations of multinational firms, artisanal, small-scale and informal firms, regulatory infrastructure for export valuation, and transit trade from neighbouring countries.

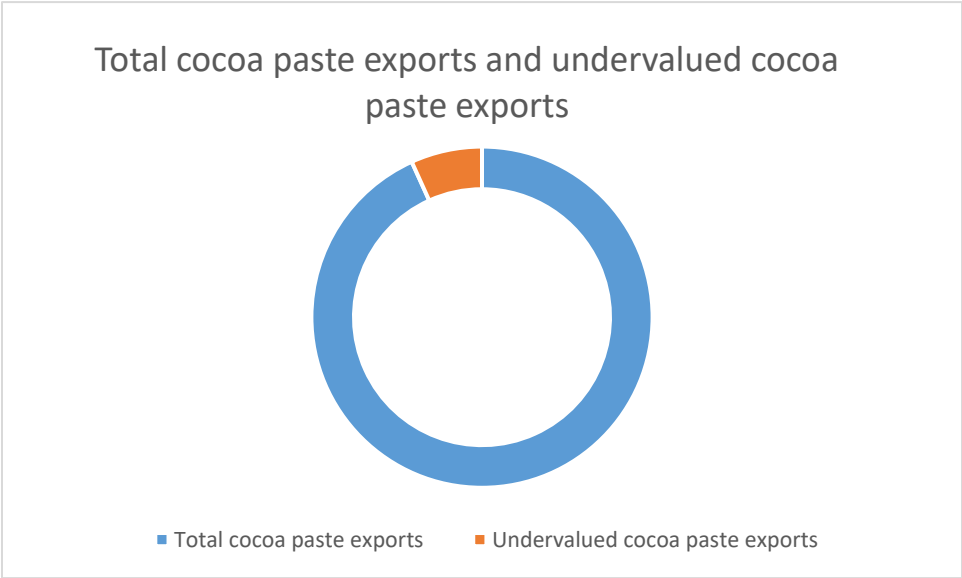
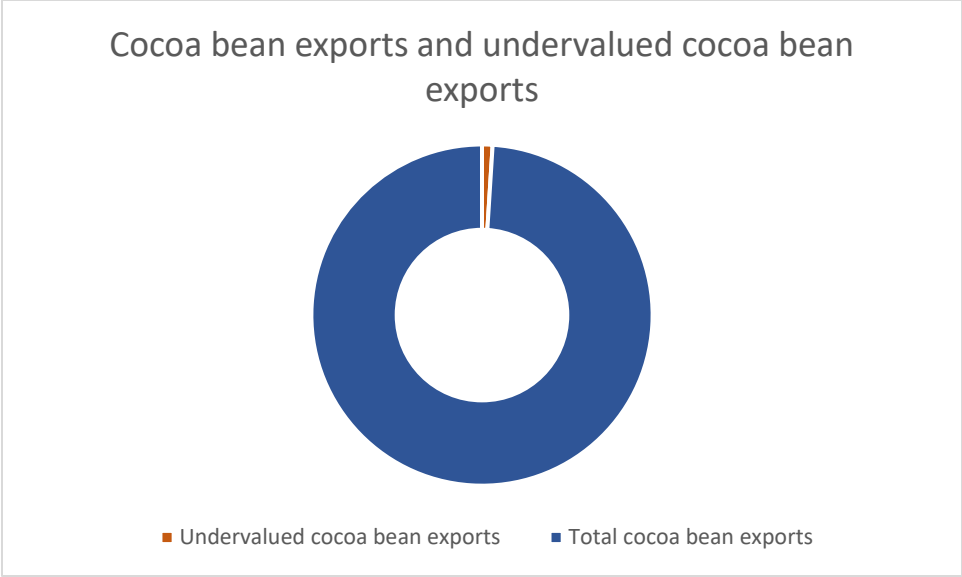
Our estimates show that Ghanaian exports are undervalued by approximately 11% of the total value of gold exported (USD 35.6 billion). The top five trading partners with the highest magnitude of undervalued gold exports are India (USD 2.0 billion), South Africa (USD 659.3 million), United Arab Emirates (USD 457.7 million), Switzerland (USD 343.4 million) and Portugal (USD 133.5 million). These, respectively, constitute approximately 5.5%, 1.9%, 1.3%, 1.0% and 0.4% of the total value of gold exported. The total estimated tax base erosion from Ghana due to the undervaluation of gold exports is USD 957.3 million.

Our results indicate that Ghanaian cocoa beans exports were undervalued by USD 126.6 million which represents 1.0% of the total export value of USD 12.6 billion during 2011-2017. The top five countries that undervalued the cocoa beans exported from Ghana are Estonia (USD 45.7 million), The Netherlands (USD 14.7 million), Germany (USD 9.7 million), China (USD 9.5 million) and Belgium (USD 8.8 million). Their corresponding percentage share of total cocoa beans exports are 0.4%, 0.1%, 0.08%, 0.08% and 0.07% respectively. Tax revenue loss from the estimated magnitude of undervalued exports equals USD 31.6 million.

Finally we estimated that 7.2% of the total export of cocoa paste (USD 1.8 billion) was undervalued with per unit price distribution of the product below the 25<sup>th</sup> percentile. The top five countries that undervalued cocoa paste from Ghana are Spain (USD 46.2 million), Bulgaria (USD 36.9 million), The Netherlands (USD 13.5 million), Turkey (USD 5.4 million) and Russia (USD 3.3 million) with percentage shares of total exports as 2.5%, 2.0%, 0.7%, 0.3% and 0.2% respectively. The total tax base erosion due to the overall undervaluation is estimated at USD 32.6 million.

**Total undervaluation estimated for each commodity (gold, cocoa beans cocoa paste)**





**Total estimated losses to Ghana due to trade mispricing**

<b>Estimated losses to Ghana due to trade mispricing (2011-2017)</b>	
Gold	USD 957.3m
Cocoa beans	USD 31.6m
Cocoa paste	USD 32.6m
<b>Total</b>	<b>USD 1021.5m</b>

## **Conclusion**

As a resource-rich, developing country, Ghana expects to leverage the production and marketing of its natural resources for financing socio-economic development. However, trade mispricing can significantly erode the potential of its natural resource sector to contribute to development as it leads to tax base erosion. Our study provided novel evidence of abnormal pricing of Ghana's most economically significant exports (gold and cocoa), using a robust, interdisciplinary method involving statistical analysis informed by industry experts. We postulate that our estimates represent useful, new evidence to inform policymakers because these estimates rely on transaction level microdata rather than the aggregate trade statistics used in existing studies. Our findings confirm that commodity trade mispricing occurs and should be an urgent concern for the Ghanaian government and civil society.

## **Summary of Policy recommendations for Ghana**

1. Improve data collection capacity of institutions engaged in the export of these commodities, such as the Customs Division of the Ghana Revenue Authority
2. Ensure greater co-operation among the various institutions in these sectors to reconcile data collected and to improve skills of their staff.
3. Improve tax assessments and payment tracking by national institutions by providing them with information and communication technology tools, especially computers, relevant software and access to critical databases, matching those of private sector actors.
4. Regulators may also consider using our research methods as a means for risk-based selection of cases for customs, tax and transfer pricing audits.



## **Policy Recommendations**

Policymakers need to prioritize the establishment of institutional expertise to track, monitor and block the sources of the resulting tax base erosion. This requires improvements to the data collection capacity of the various institutions engaged in the export of these commodities, greater co-operation among the various institutions in these sectors to reconcile data collected and constant skills improvement of personnel of these units. Information and communication technology tools, especially computers, relevant software and access to critical databases also need be upgraded to match those of the private sector actors in order to facilitate tax assessments and payments tracking.

Regulators may also consider using our research methods, based on commodity exchange prices and statistical benchmarks, as a means for risk-based selection of cases for customs, tax and transfer pricing audits.

## **Selected References**

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## **Further Information**

<https://curbing-iffs.org/>

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