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Curbing Illicit Financial Flows (IFFs) from Resource-rich Developing Countries: Improving Natural Resource Governance to Finance the SDGs

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Abnormal Pricing in Swiss Commodity Imports: Research Findings and Policy Proposals

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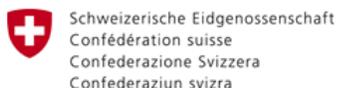
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Research Motivation

Trade-based illicit financial flows (IFFs) driven by mispricing of natural resource exports and imports pose a significant risk for tax base erosion in resource-rich, developing countries. It also represents regulatory and financial risks for commodity-trading and financial hubs like Switzerland. Because of a lack of relevant data and methodological weaknesses, there is a lack of robust evidence on the magnitude and channels of trade-based IFFs. Our research presents a novel empirical approach that combines statistical price-filter analysis with in-depth commodity market research to provide evidence on the magnitude of abnormally-priced commodity trade, i.e. transactions that are valued outside an assumed arm's length price range representing a deemed fair market value.

Empirical Methodology

Motivated by legal rules for transfer pricing and customs valuation, we compare transaction-level import prices to an arm's length price range defined using contemporaneous benchmark prices from commodity exchanges, adjusted for product-specific factors. Abnormally under-valued imports indicate financial inflows while abnormally over-valued imports are interpreted as outflows. In cases where heterogeneous commodities are traded without reference to a specific market benchmark, we define the arm's length price range using the interquartile range of observed unit prices (e.g. CHF per kilogram) calculated at the country-year level. Finally, we compare our estimates with commonly used measures of trade mispricing based on asymmetries or gaps in aggregate import and export statistics.

Main Results: Case study on Abnormally Priced Swiss Commodity Imports

Unwrought Gold (tariff code: 7108.12): To determine the arm's length price range for gold doré imports, we combine daily spot prices for refined gold and silver from the London Bullion Market Association (LBMA) with country-level measures of gold and silver content in doré derived from Metals Focus Gold-Silver Doré Database. We calculate daily benchmark prices for doré imports with varying levels of gold content between 2.8% and 95% by weight depending upon the import source. Next, we assume 5% variation around these daily, country-level price benchmarks to account for unobserved insurance, transportation, and refining costs to calculate the upper and lower bounds of the arm's length price range. In our Swiss case study, when comparing individual transaction-level unit values with our defined arm's length price range between 2012-17, it appears that a total of CHF 21.7 billion gold imports are abnormally under-valued, which corresponds to 4.5% of total gold imports over the whole period.¹ On the other hand, the estimated amount of over-valued imports is negligible (CHF 18.3 million between 2012-17).

To be noted: on a similar study on Ghana gold exports, we could further distinguish between exports from the sixteen main gold mines depending on the average gold content of shipments from each mine. This showed that while 3-4% of Ghana's gold exports to Switzerland appear as abnormally priced, the share of Ghana's exports to other countries which is abnormally priced is at times much higher.

¹ The main sources of abnormally valued gold imports in Switzerland include gold producing states Suriname, Mongolia, Ethiopia, Burkina Faso and Saudi Arabia, as well as trading and refining hubs United Kingdom and South Africa.

Cocoa Beans (tariff code: 1801.00): Due to significant product heterogeneity which leads to the absence of an internationally recognized, single market reference price, cocoa beans from different sources are traded at significantly different price levels. This reflects differences in quality, production and processing costs, and other market-specific conditions (for example: minimum farm-gate prices for cocoa beans set by the government in Ghana). As a result, we prefer interquartile range price filter estimates of abnormal pricing for agricultural commodity imports. We improve the applicability to local market conditions by calculating the interquartile range by product, source and year, i.e. we calculate the interquartile range of unit prices (CHF per kilogram) for all Swiss import transactions of a particular commodity from a source country in a given year. Since the interquartile price range is endogenously defined, this method designates by definition some transactions to be abnormally valued. Hence, we primarily use this method to identify potential trade mispricing risks, i.e. trading partners whose exports to Switzerland appear to be significantly and consistently abnormally valued. Our results show relatively minor magnitudes of abnormally under-valued imports between 2011-17: CHF 44.7 million for cocoa beans, or 5% of total imports.²

Unroasted Coffee (tariff codes: 0901.11; 0901.12): Applying the same interquartile price filter methodology for coffee imports, we find relatively minor magnitudes of abnormally under-valued imports over the same period: CHF 128.9 million for coffee beans (3% of total import value).³ We also observe very minor magnitudes of over-valued coffee bean imports to Switzerland, equal to 2% of total imports between 2011 and 2017.

Refined Copper (tariff code: 7403.11): In the case of copper imports, the small number of transactions does not permit to apply the price-filter methods. We thus resort to partner-country trade gaps using mirror statistics from Switzerland and its trading partners, i.e. comparing reported annual exports from country X to Switzerland with reported annual imports by Switzerland from country X. Overall, we find large asymmetries of CHF 2.5 billion per year on average between 2011-17 that are systematically negative. In other words, reported Swiss imports of refined copper are much smaller than what the rest of the world reports as exports to Switzerland. We hypothesize that a '*Switzerland effect*' exists in international trade statistics of copper, which is driven by merchanting activities of Swiss trading firms. The exporters selling copper to Swiss trading firms report Switzerland as the destination in their trade statistics. Yet, Swiss trading firms export these copper shipments onward to third countries without entering Swiss customs territory.⁴

Partner Country Trade Gaps: Finally, we also find large asymmetries when applying the mirror-trade or partner-country trade gap method: these gaps are systematically positive for gold, cocoa, and coffee indicating that reported Swiss imports exceed what the rest of the world reports as exports to Switzerland. We hypothesize that these differences are driven by the '*Entrepôt trade effect*' in international trade statistics, whereby the exporting countries record their exports destination as the intermediate shipping hub from where commodities are then re-shipped or re-exported to

² Both producer countries (Ghana, Ecuador, and Dominican Republic) and shipping hubs (Germany) appear among the largest sources of abnormally valued cocoa imports by Switzerland

³ Brazil, Colombia, Ethiopia, Guatemala and India are mainly producer countries who appear as the largest sources of abnormally valued coffee imports by Switzerland.

⁴ The case of copper highlights the importance of collecting merchanting data by central banks, which included disaggregated product-level data on the offshore trade activities of firms domiciled within a trading hub.

Switzerland. However, Swiss Customs records the original source country as the trading partner leading to significant divergence in both trading partners' mirror trade statistics.

Policy Implications

1. Enhance Customs' tariff classification categories for precious commodities to increase transparency: Trade in natural resources, especially precious metals like gold, can arguably serve as a conduit for IFFs through trade mispricing. Determining a proper price range as a relevant reference for the purpose of determining a 'normal price range' for precious metals can be challenging when the relevant tariff lines are too aggregated to allow integrating important valuation criteria like precious metal purity grade. For example, the Swiss tariff has just 3 categories for non-monetary gold (powders, unwrought and semi-manufactured gold) which are used to record any gold transaction containing more than 2% pure gold. Compare this to the 35 categories for chocolate based on different proportion of main ingredients. The IFF risks can be compounded by weak natural resource governance and lack of regulatory oversight in the form of Customs valuation audits in exporting countries. For example: In our corresponding analysis of gold doré exports from Ghana, a major exporter of gold to Switzerland, we find that 11% of its total exports between 2011-17 were abnormally undervalued. India, United Arab Emirates and South Africa are the largest destinations of abnormally valued Ghanaian gold exports, followed by Switzerland and Portugal.

Recommendations: We recommend enhancing transparency in global precious metals trade by incorporating additional tariff categories to record distinct purity grades of precious metals and alloys. At a global level, the World Customs Organization could propose a revision of the Harmonized System of Trade Classification to add additional 6-digit categories with distinguish precious metals as per their form along the value chain: e.g. raw ore, semi-refined doré, refined precious metals, crafted ornaments and industrial machinery, and scrap for recycling. National customs administrations on their side could explore additional sub-categories up to 8 or 10-digits based on metallurgical distinctions and purity, especially for raw and semi-processed precious metals.

Target audience: World Customs Organization, Swiss Federal Customs Administration, Precious Metals Control.

2. Improved transfer-pricing documentation for international trade in commodities: With a few exceptions, customs administrations and tax authorities among most advanced trading hubs, including Switzerland, do not record/publish whether international trade transactions occur between related business entities, i.e. transfer pricing, or unrelated business entities, i.e. arm's length transactions. The definition of related business entities is set as per national transfer pricing legislation but usually refers to direct ownership or control relationships between distinct business entities. A large body of academic and policy research has demonstrated that affiliates of multinational companies involved in within-firm trade face economic incentives to engage in tax optimization strategies to shift taxable income from relatively high-tax to low-tax jurisdictions. Combined with lack of appropriate regulatory guidelines and monitoring capacity, aggressive pricing strategies can be employed especially within commodity extraction, marketing and trading, which contribute to tax base erosion from resource-rich countries.

Recommendation: We recommend that information on related-party international trade transactions be recorded and shared between national customs administration, tax authorities and relevant regulators in advanced trading hubs with the objective of identifying risks of abusive transfer pricing, especially with resource-rich, developing countries.

Target audience: Major trading and financial hubs. In Switzerland: Swiss Federal Tax Administration, State Secretariat for Economic Affairs, Swiss Federal Customs Administration.

3. Reconsider unintended consequences of fiscal incentives offered by trading hubs: Fiscal incentives usually take the form of tax reductions or exemptions for trade in valuable commodities in order to reduce the regulatory burden and attract trading firms to operate in a particular jurisdiction. For example: Switzerland's Value Added Tax rules exempt gold products, including coin, bars, and unprocessed, semi-manufactured and scrap gold, from VAT taxation: alloys containing 2 percent or more of gold (by weight) meet the legal definition of VAT-exempt gold. Other major trading hubs like United Arab Emirates and Singapore also present similar fiscal incentives.

Recommendation: We recommend tax administrations and appropriate regulators to identify and analyze the extent to which such fiscal incentives may have the unintended effect of heightening trade-related IFFs risks through trade mispricing and mis-classification. Specific products and trading partners with weak trade governance can be identified for enhanced monitoring based on this analysis. These risks are further amplified due to lack of transparency in aggregated tariff classification systems and lack of transfer pricing documentation.

Target audience: Major trading hubs. Swiss Federal Tax Administration, State Secretariat for Economic Affairs.

4. Leverage new technologies to improve international trade governance: A number of 'smart' technologies are increasingly available to improve trade governance by combating fraud without imposing high regulatory burdens and transaction costs. These include 'smart containers' with electronic sealing, geo-data for border management and the use of blockchain technologies. Blockchain-based distributed ledger technologies can improve transparency and reduce transaction costs and procedures related to trade finance, pre-shipment inspection and certification by providing a tamper-proof, decentralized and distributed digital record of transactions to track and verify the full chronology of transactions.⁵ Similarly, artificial intelligence and machine learning-based platforms are being explored to optimize trade shipping routes, reduce transaction and logistics costs, and detect fraud or abnormal pricing patterns in financial services. Such technological advances offer opportunities to strengthen the reliability and transparency of trade records.

Recommendation: We recommend multi-stakeholder engagements by private sector, business associations, regulators, policy experts and researchers to leverage digital technologies to render value chains more robust to IFF-related risks.

Target audience: Swiss Trading and Shipping Association.

⁵ Blockchain provides a useful concept which will be increasingly incorporated into international trade and can help curb trade-related IFFs, but it still needs to be carefully designed. The technology reduces manipulation of trade data after it has been recorded in the distributed ledger but does not remove the need for verification at the gate before the data are registered.

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