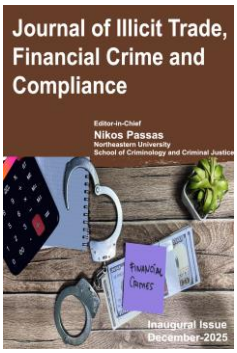
Journal of Illicit Trade, Financial Crime, and Compliance

ISSN (online): 3070-6122



Export Underinvoicing in Sri Lanka: A Discussion of Estimates

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ARTICLE INFO

Article Type: Research Article

Keywords:
Illicit financial flows
Mirror trade data
Capital flight
Trade misinvoicing
Corporate fraud
External stability

Timeline:
Received: Sep 19, 2026
Accepted: Oct 27, 2026
Published: Oct 30, 2026

Citation: Pathirana D., Export Underinvoicing in Sri Lanka: A Discussion of Estimates. J Illicit Trade Financ Crime Compli. 2026; 2: 118-125.

DOI: https://doi.org/10.65879/3070-6122.2026.2.09

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ABSTRACT

This study estimates export underinvoicing in Sri Lanka from 2012 to 2023 using United Nations Comtrade mirror statistics. Analysing bilateral trade across 31 two-digit and specific six-digit Harmonised System Codes accounting for 64% of total merchandise exports, the research reveals that a minimum of 14% of goods export receipts equivalent to 2% of the Gross Domestic Product are lost annually due to underinvoicing. Aggregate capital outflows reached USD 17.7 billion, escalating to USD 21.2 billion when adjusted for imputed interest costs, exceeding both net external public borrowing and net foreign direct investment over the same period. Outflows surged during acute macroeconomic distress and are heavily concentrated in garments and precious stones exports, which account for over 73% of total underinvoicing. These findings indicate that curbing trade misinvoicing in Sri Lanka provides a more viable pathway to foreign exchange solvency than attempting to attract foreign investment through costly tax holidays.

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Introduction

Economists have long recognised capital flight as a central driver of external instability. The economic decline of Great Britain and its departure from the Gold Standard during the Great Depression have been attributed to flight of funds. More recently, empirical analysis of the 1990s Asian Financial Crisis demonstrated that economies implementing capital controls recovered significantly faster compared to those that relied on competitive markets. A robust body of literature confirms that countries experiencing recurrent balance of payments difficulties also exhibit the highest degree of capital flight [1-3]. This enduring nexus has established capital flight and external crises as 'twin problems' characteristic of developing economies [4,5].

For Sri Lanka, these vulnerabilities culminated in the acute economic distress of 2022—a crisis characterised by severe shortage of essentials, civilian hardships, and a historic popular uprising against the political establishment. Despite the central role played by foreign exchange shortages in triggering this collapse, empirical research quantifying the scale and ramifications of illicit financial flows through trade misinvoicing remains sparse. This study addresses this critical gap by empirically estimating the magnitude of capital flight driven by export underinvoicing in Sri Lanka, providing actionable insights to improve foreign exchange reserves and mitigate future external shocks.

Method of Estimation

This study employs commodity-level mirror statistics to estimate export underinvoicing in Sri Lanka's merchandise exports from 2012 to 2023, excluding 2018 due to data unavailability for Sri Lanka. The dataset comprises bilateral trade with 19 industrialised economies which account for the largest market share for Sri Lanka's exports during the period in review.

Data were sourced from United Nations (UN) Comtrade platform, covering 31 two-digit Harmonised System (HS) Codes and two six-digit HS Codes under HS Codes 61 and 62. The disaggregated six-digit HS Codes cover Sri Lanka's apparel and garment exports to Germany, the United States and the United Kingdom—destinations representing the largest market shares for these commodities, which account for nearly 41% of Sri Lanka's total merchandise exports. Given that apparel and garments account for a significant share of the country's exports basket, data at the six-digit level HS Codes were analysed to minimise underestimation of trade gaps inherent in aggregated two-digit HS Code data. Collectively, the analysed trade data accounted for approximately 64% of Sri Lanka's total merchandise exports over the period under review according to Central Bank of Sri Lanka (CBSL) statistics.

To ensure comparability, the import data of partner economies, typically reported as Cost, Insurance & Freight (CIF) values, have been adjusted to Free On Board (FOB) values. Industry sources indicate that insurance and freight costs in apparel and garments exports generally constitute a maximum of three percent of the consignment value for shipments to the United States, with this percentage decreasing for larger consignment values, potentially reaching as low as 1.5 percent. For other major export destinations such as Europe, the costs are even lower due to shorter shipping distances. Accordingly, a conservative adjustment ratio of seven percent was applied to convert CIF values to FOB values, as provided by UN Comtrade.

Formula adopted for estimating export underreporting:

$$C_{p,y} = \left[I_{a,p,y} \times (1 - R)\right] - X_{p,y}$$

where, R = 0.07

C: Estimated outflow from Sri Lanka through export underinvoicing

p: HS Code

y: year

I: Imports recorded by partner country *a,* (CIF price).

X: Export receipts recorded by Sri Lanka (FOB prices).

R: CIF-to-FOB adjustment factor

To test sensitivity of the findings to the CIF-to-FOB adjustment factor (R), we conducted a robustness check on the apparel sector (HS Codes 61 and 62). While a conservative seven percent adjustment is applied uniformly in the baseline model, industry sources indicate that actual shipping and insurance costs for garments range between 1.5%-3.0% as highlighted earlier. Recalculating the estimates using an apparel specific adjustment of three percent increases the cumulative capital outflow estimate by USD 459 million over the review period to USD 18.1 billion. This demonstrates that our baseline seven percent adjustment yields a conservative lower-bound estimate.

While mirror statistics serve as a standard proxy for estimating capital flows, the methodology is subject to several inherent limitations. Aggregating data—both by commodity code and into annual time intervals—increases the likelihood of positive and negative gaps offsetting one another, potentially understating the total outflow. Furthermore, the cross-referencing method cannot detect transfer pricing, where transaction prices deviate from the arm's length principle without producing value discrepancies in cross referenced data, or physical smuggling where trading takes place without official records. Additionally, simultaneous manipulation of invoice entries by both importer and the exporter can invalidate mirror trade results. However, these limitations do not preclude the careful use of trade pairs for analysing illicit capital flows [6,7].

To operationalise the mirror-trade analysis, the sample was limited to 19 major industrialised partner economies and 33 two-digit HS Codes, of which HS Codes 61 and 62 were disaggregated to the six-digit level as highlighted earlier. This selection is methodologically justified by trade concentration: 19 partner economies account for over 80% of total destination markets and when combined with the selected HS Codes, the analysed trade accounts for 64% of aggregate merchandise exports over the review period according to CBSL and UN Comtrade data. While this design excludes minor trading partners and peripheral product lines that are traded in low values—thereby yielding a conservative lower-bound estimate of capital flight—it effectively isolates high-value, transparent trade channels where institutional data reliability is highest and structural incentives for capital flight are most pronounced. Potential selection bias is thus second-order and statistically trivial, and hence does not adversely change the main results, as the core sectors driving the estimates (such as apparel and precious stones) are fully captured within these primary trade channels.

Conversely, the presence of entrepot trade can lead to significant over-estimation of outflows [8]. The potential for overestimation resulting from this is mitigated in this study by confirmations from the Export Development Board of Sri Lanka and the National Gem and Jewellery Authority that the country's garments and precious stone exports are not subject to entrepot trade. This distinction is critical, as garments and precious stones account for over 73% of the estimated underreporting in this study.

2.1. Assumptions

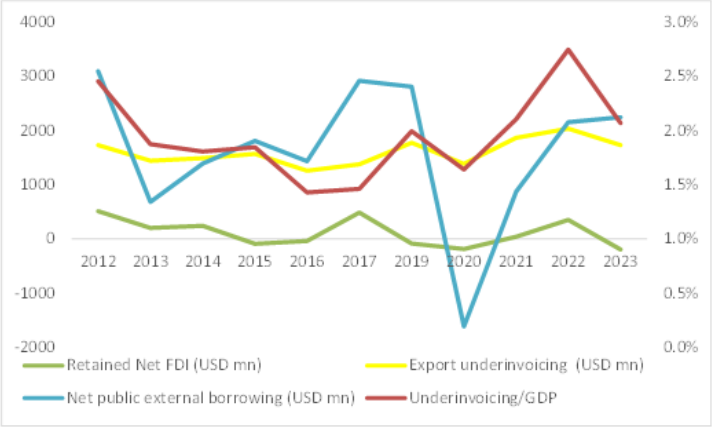
A key assumption of this research is that trade data from advanced economies is less susceptible to manipulation, and that capital flows from developed economies to Sri Lanka via export overinvoicing are negligible. This assumption is grounded in Sri Lanka's statutory tax framework and prevailing revenue codes. Throughout the review period (2012-2023), the formal merchandise export sector was subject to statutory corporate income taxes and applicable turnover taxes (such as the Ports and Airports Development Levy, Nation Building Tax, and Value Added Tax at various junctures). Consequently, attempting to engineer capital inflows through export overinvoicing would artificially inflate recorded export revenues, exposing firms to immediate tax liabilities, export-turnover levies, and heightened regulatory audits by the Inland Revenue Department [9]. Conversely, inward worker remittances, service export receipts, and specific consultancy earnings enjoyed complete statutory tax exemptions during this period to incentivise foreign exchange inflows. These tax-exempt categories naturally functioned as the low-cost, preferred channels for capital inflows, rendering export overinvoicing economically irrational and cost-prohibitive. While these statutory disincentives heavily skew illicit capital channels toward underinvoicing rather than overinvoicing, we qualify this assumption as a baseline framework rather than an absolute exclusion; any isolated, non-tax-compliant overinvoicing remains a second-order phenomenon that does not materially alter the aggregate estimates of capital flight.

While research indicates that developed economies also engage in trade misinvoicing specifically underinvoicing imports to evade import tariffs [10-12] such practices can lead to underestimation of capital outflows from Sri Lanka

under the chosen methodology. Consequently, instances where Sri Lanka's recorded export receipts exceed the partner country's import figures are treated as potential import underinvoicing in the destination economy. Supported by a domestic export tax structure that renders export underinvoicing financially unviable, these methodological assumptions do not compromise the reliability of the estimated outflows.

Estimates of Export Underinvoicing in Sri Lanka: 2012 - 2023

The empirical estimates indicate that export underinvoicing facilitates substantial annual capital outflows from Sri Lanka, reaching a magnitude sufficient to exacerbate long-run foreign indebtedness and recurrent external crises. By analysing 64% of goods exports from 2012 to 2023, estimates show that a minimum of 14% of *total* goods export receipts are lost annually due to export underinvoicing. This suggests an average underinvoicing rate of 23% of total analysed export receipts when CIF-to-FOB price conversion ratio R = 0.07 is applied. Aggregate outflows reached USD 17.7 billion over the review period, with annual average outflows equivalent to two percent of the Gross Domestic Product. When adjusted for a 2.88% annual imputed interest cost from 2012 to 2023—based on the 30-year U.S. bond yield average for 2012-2023—cumulative outflows escalate to USD 21.2 billion. This figure exceeds both the net external public borrowing of USD 17.8 billion and net foreign direct investment (FDI) of USD 9.1 billion over the same period (Figure **1**). Analysing similar dynamics in Sub-Saharan Africa, Ndikumana and Boyce [5] advocated for debt cancellation, arguing that international capital markets fail when creditor decisions are insulated from the systemic risks of capital flight from debtor nations.



Source: Author calculations using UN Comtrade data and CBSL

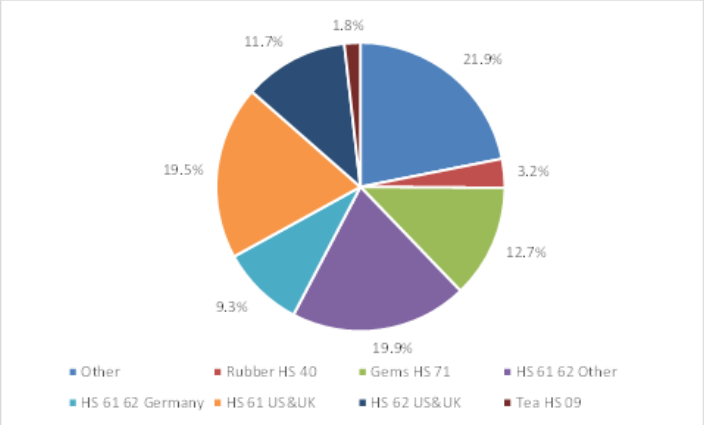
Figure 1: Export underinvoicing, FDI and debt.

The estimates show that curbing exports underinvoicing in Sri Lanka presents a more significant avenue for increasing savings and capital availability than the conventional emphasis on attracting FDI. The annual average capital outflow from export underreporting (USD 1,698 million) was more than double the annual average net FDI flows (USD 825 million). Furthermore, because official data indicates that approximately 86% of the net FDI was subsequently repatriated as profits and dividends—noting that repatriation figures and foreign borrowing interest payments may be incomplete or underreported in official balance of payments accounts—restricting capital outflows through export underinvoicing preserves domestic capital at a scale more than 14 times greater than *retained* net FDI flows during the review period. For instance, the total estimated export underreporting when CIF-to-FOB conversion factor of seven percent was applied uniformly across the dataset was USD 17.7 billion, which dwarfs the retained net FDI flow of USD 1.2 billion during the full review period. Furthermore, the retained net FDI flow does not reflect the negative impact of interest payments on foreign borrowings by FDI firms, which further understates the striking gap between real FDI contributions and export underinvoicing estimates.

Exports underinvoicing in Sri Lanka exhibits a clear correlation with external crises, surging during periods of acute balance of payments distress. While the baseline annual average outflow (excluding major outliers) stands at USD 1,392 million, outflows spiked during periods of heightened economic instability. In 2012, outflows reached USD 1,729 million when Sri Lanka's currency depreciated 13.4% due to severe balance of payments pressure. Similarly, annual outflows peaked at USD 2,036 million in 2022 during Sri Lanka's worst post-independence crisis.

Outflows also climbed to USD 1,569 million in 2015 following the treasury bond scandal and reached USD 1,774 million in 2019 amidst the political and economic instability following the Easter Sunday attacks. These patterns demonstrate that trade misinvoicing functions as an endogenous mechanism closely tied to the macroeconomic ebbs and flows.

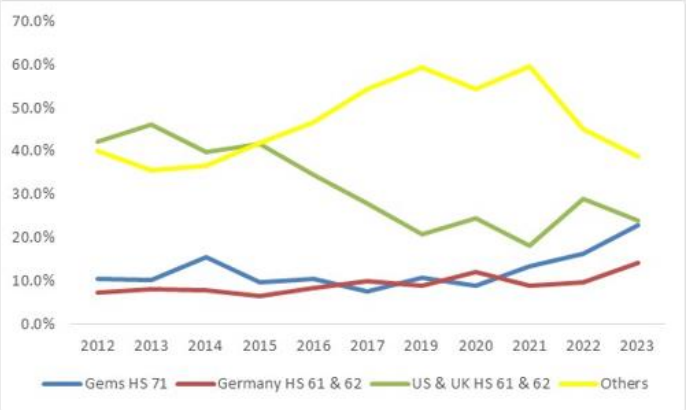
The sectoral composition of export underinvoicing provides actionable data for public authorities seeking to restrict and repatriate outflows. Notably, HS Codes 61 and 62 comprising garments and apparel, constituted the vast majority of capital outflows, at 60.4% of the total. Disaggregated analysis reveals that exports of these categories to Germany, the United States and the United Kingdom accounted for 40.5% of total outflows, while precious stones (HS Codes 71) and rubber products (HS Code 40) contributed 12.7% and 3.2% respectively. More importantly, out of the 33 examined HS Codes, just three product categories representing apparel and precious stones account for a staggering 73.1% of the total outflows (Figure **2**). This finding significantly streamlines regulatory efforts, allowing customs authorities to target interventions on high-risk trade categories. However, because garments and apparel are highly differentiated, effective enforcement would require transaction-level mirror data [7].



Source: Author calculations using UN Comtrade Data

Figure 2: HS code share of export underinvoicing – 2012 to 2023.

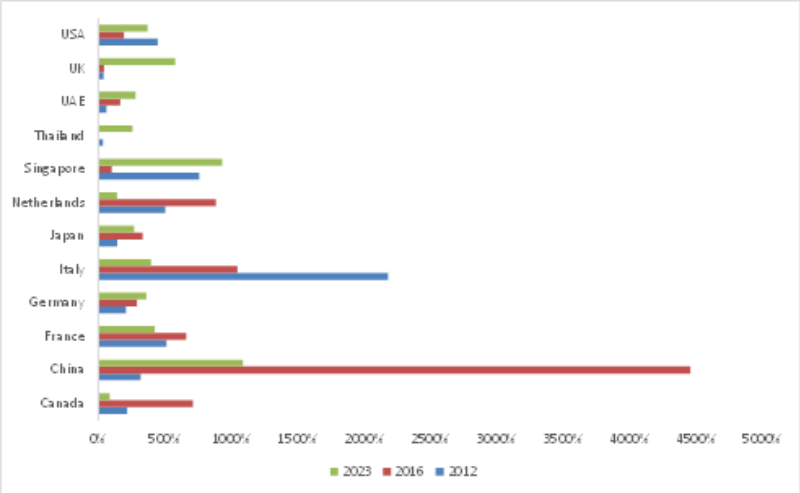
This analysis also reveals a notable shift in primary destinations for capital outflows **(**Figure **3)**. The combined share of the United States and the United Kingdom as destinations for apparel exports underinvoicing declined significantly. Dropping from 42.2% of aggregate outflows in 2012 to 24.1% by 2023. This decrease corresponds with a nearly 50% contraction in Sri Lanka's apparel exports to the United Kingdom over the review period. Conversely, outflows directed towards Germany increased substantially, rising from 7.2% in 2012 to 14.2% in 2023, tracking an upward trend in garments exports to Germany.



Source: Author's calculations using UN Comtrade Data

Figure 3: Export underinvoicing - change in HS code share.

Most alarmingly, the export of precious stones under HS Code 71 which constituted only 10.6% of total outflows in 2012, surged to 23% by 2023. This spike is particularly striking given that *total* CIF value of precious stones exports recoded by Sri Lanka in 2023 was merely USD 205 million, while trading partners analysed in the study *alone* reported an aggregate import value of USD 545 million and a corresponding export value of USD 137 million. This disparity indicates a staggering 170% underreporting of receipts for HS Code 71 based on aggregate exports data, and 290% underreporting based on sample trade data, far exceeding the overall underreporting rate of 23%. In 2023, these outflows were predominantly directed towards the United States (USD 172.5 million), Thailand (63.3 million), United Arab Emirates (37.5 million), and France (31.7 million) while the highest rates of underreporting were recorded with China (1,089% - USD 19.9 million), Singapore (933% - USD 8.3 million), the United Kingdom (579% - USD 12.7 million) and France (427%) **(**Figure **4)**. Beyond institutional verifications from the National Gem and Jewellery Authority—which mandates official valuation and reports national precious stones exports data directly to Sri Lanka Customs—and the United States Census Bureau, these consistent multi-destination mirror trade data disparities over the review period, corroborated by Parliament's Sectoral Oversight Committee findings on mineral and gemstones trade misinvoicing [13], confirm that the extreme underreporting in HS Code 71 is a systemic, cross border phenomenon rather than an isolated reporting error.



Source: Author's calculations using UN Comtrade Data

Figure 4: Rate of underreporting of precious stones exports by destination.

Confirmations from the National Gem and Jewellery Authority (the official state body responsible for valuation, pricing declaration and revenue repatriation) and the United States Census Bureau (via the United States Embassy in Sri Lanka) verify that this discrepancy cannot be explained by entrepot trade, as these exports route directly to final destination importers. This trend mirrors the significantly greater capital flight observed in extractive industries across Africa and Latin America [5,7] and aligns with literature demonstrating higher misinvoicing rates for products with high value-to-weight ratios [6,14].

Recent institutional findings reinforce these empirical estimates. In a 2024 analysis, Gomi Senadhira, former Director General of Sri Lanka's Department of Commerce, utilised UN Comtrade mirror data to highlight large-scale underinvoicing of precious and semi-precious stones exports (HS Code 7103) to Thailand, an issue subsequently brought before Parliament's Sectoral Oversight Committee on Natural Resources & Sustainable Development [13]. The current study demonstrates that this phenomenon extends well beyond trade with Thailand, with outflows directed toward major global hubs. In August 2024, the Ways and Means Committee under the Parliament's Public Finance Committee estimated that Sri Lanka loses approximately USD four billion annually to both exports and imports misinvoicing [15]. Recent criminal investigations into import overinvoicing by the Financial Crimes Investigation Division in Sri Lanka revealed that over USD 600 million (LKR 190 billion) was illegally remitted overseas though 89 companies during the first nine months of 2023 [16]. Collectively, these institutional findings and law

enforcement records provide compelling evidence for the scale of the capital flight estimated in this study.

Conclusion

This study provides empirical evidence that export underinvoicing serves as a primary channel of substantial capital flight from Sri Lanka. Over the eleven-year review period, aggregate capital outflows via export underinvoicing exceeded both the net public sector external borrowing, and net FDI, averaging two percent per annum. This suggests that Sri Lanka was effectively a net creditor to the rest of the world during a period marked by acute external debt distress.

Addressing trade-related capital outflows requires targeted regulatory and policy interventions rather than spreading administrative resources thinly across all trade lines. Enforcement agencies should concentrate audits on high-risk trade categories facilitating the majority of outflows. In Sri Lanka, these outflows are heavily concentrated within a limited number of export commodity categories—specifically apparel and precious stones—accounting for over 73% of estimated export underinvoicing. This finding offers a pragmatic, targeted pathway for customs monitoring and public policy interventions. Because garments are highly differentiated goods, macro-level mirror statistics alone are insufficient for court-admissible enforcement. Consequently, state authorities must establish automated, bilateral trade data-sharing systems with key export destinations—specifically Germany, the United States, the United Kingdom and key destinations for precious stones exports like France, Italy, Thailand, China and United Arab Emirates—to cross-check transactional-level customs declarations in real time.

Furthermore, the alarming 170% underreporting rate observed in aggregate precious stones exports and 290% underreporting in sample data highlights severe institutional weaknesses in state valuation procedures. Implementing independent, expert-led valuation mechanisms at export exit points is essential to replace reliance on self-declarations and stem illegal capital outflows in high-value commodities. Ultimately, external stability strategies in Sri Lanka must prioritise curbing illicit financial flows, which offers a far more sustainable pathway to foreign exchange solvency than traditional, high-cost initiatives designed to attract profit-repatriating FDI through offering long-run tax holidays.

While real-time bilateral data sharing and expert-led valuation mechanisms offer a viable solution to export underinvoicing, their operationalisation requires addressing key technological and legal constraints within Sri Lanka. Real-time data integration requires modernising Sri Lanka Customs' digital infrastructure [17,18]. Transitioning from the legacy ASYCUDA World platform to United Nations Conference on Trade and Development's (UNCTAD) advanced ASY5 system would provide the necessary digital infrastructure and real-time data sharing capabilities for automated detection of mirror trade data anomalies [17]. From a cost perspective, the capital expenditure associated with digital upgrades and specialised training is minimal relative to the approximately two percent of the GDP per annum capital flight recovered.

To complement these technological upgrades, the domestic legal framework must be strengthened through strict statutory penalties that effectively disincentivize capital flight. Regulatory authorities should institute systematic financial audits of export transactions, prioritising the most recent tax years and high-risk commodity sectors (such as HS Code 71, 61 and 62), to uncover past illicit transfers, recover lost foreign exchange, and establish an effective deterrence against future illicit flows.

Declaration of Interest

I have no relevant interests to declare.

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