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Estimating Illicit Financial Flows (IFFs) Through Trade Mispricing in Zimbabwe: A Gross Excluding Reversals (GER) Approach

Moses Chamisa [1]

[1] Department of Customs, Zimbabwe Revenue Authority, Harare, Zimbabwe

E-mail: mchamisa@zimra.co.zw

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Abstract

The study presents an analysis of the quantum and destinations of illicit financial flows through trade mispricing from Zimbabwe for the period 2009-2018. The study also contributes to literature given the dearth in existing literature on illicit financial flows from Zimbabwe. Utilising the Gross Excluding Reversals approach, illicit financial flows through trade mispricing from Zimbabwe for the period under study are estimated at US$11.52 billion. The major destinations of illicit financial flows through trade mispricing from Zimbabwe are China, South Africa, India, Netherlands, Italy and Botswana. The study argues that US$11.52 billion is a significant figure that is hindering socio-economic growth in the country that warrants the attention of policy makers, and it is recommended that among other issues, the government start recognising IFFs as key risk to socio-economic development.

Keywords: Illicit Financial Flows; Trade Mispricing; Gross Excluding Reversals (GER)

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1. Introduction

Illicit financial flows (IFFs) are stalling development and the effects are worse in developing countries as they continue to erode the tax base and deprive the government of tax revenues. There is no consensus on the definition of illicit financial flows mainly due to the breadth of the term illicit. However, refined definitions suggest that illicit financial flows should be understood as money that is illegally earned, transferred or used, at its origin or during movement of use. According to Cobham and Janksy (2017), the various means by which illicit financial flows take place in Africa include transfer-pricing, trade mispricing, mis-invoicing of services and intangibles and use of unequal contracts. All are done to evade tax and illegal export of foreign exchange. Baker (2005) assessed that grand corruption accounted for a small percent of illicit flows and laundering of proceeds of crime between a quarter and a third. Commercial tax evasion through the manipulation of trade prices accounted for around two thirds of the phenomenon of illicit flows.

There is no single agreed method on how to accurately measure illicit financial flows owing to their hidden nature. Kar and Cartwright-Smith (2008) pointed out that cross border flows of money associated with crime, corruption and tax evasion are diverse and by their nature hard to measure. However, large estimates of illicit financial flows by previous researches have contributed to attracting attention and encouraged political momentum on this crucial issue.

To date, the United Nations Economic Commission for Africa (UNECA) High-Level Panel on Illicit Financial Flows in conjunction with other institutions and civic society organisations and other individual researchers have exhibited tremendous efforts on the IFFs phenomenon. This efforts range from work on understanding the key determinants, channels and components of IFFs, estimation of the values lost through IFFs and ways to curb IFFs.

- Understanding the determinants, channels and components of IFFs. Empirical work focused on understanding the ways through which IFFs manifest. Most of the researches focused on environments which enable IFFs, the sectors and countries that are more prone to IFFs. Prominent in this area are the work of the UNECA High-Level Panel on Illicit Financial Flows, Global Financial Integrity, Oxfam and Tax Justice Network. Trade mispricing is preferred in this study because empirical literature has indicated that IFFs through trade mispricing are both significant and a persistent feature of developing countries' trade with advanced economies and remain an obstacle to development (see Kar, 2012; Cobham, Jansky and Prats, 2014; Global Financial Integrity, 2015; UNCTAD, 2016; Kravchenko, 2018; Carton and Slim, 2018; Ahene-Codjoe and Alu, 2019; Global Financial Integrity, 2019). Trade mispricing is a form of customs and tax fraud involving exporters and importers deliberately misreporting the value, quantity or nature of goods or services in a commercial transaction (Forstater, 2018).
- Estimating the losses due to IFFs. Researches in this area have looked at quantifying IFFs. Key players in this area include the Global Financial Integrity, Transparency International and other independent researchers. Some of the researches looked at the size of IFFs from a global perspective while others looked at it at a granular level. Transparency International (2004) estimated that the top ten notorious corrupt state leaders collectively embezzled US$60 billion from their countries for the past 20 years. Cobham (2005) estimated the total loss to developing countries from tax evasion and tax avoidance at US$385 billion per year. A study by Hollingshed (2010) estimated that Africa and Zimbabwe lost 3.4% and 31.5% of their total government revenues to illicit financial flows respectively. Global Financial Integrity (2015) estimated that trade mis-invoicing drains US$800 billion from developing countries annually and accounts for almost 83% of illicit financial flows. However, UNECA (2012) noted that illicit financial flows are difficult to compare because various studies, which attempt to estimate them, use different methods, assumptions and sometimes different data.
- Efforts to curb IFFs. Global and country level initiatives have been implemented to curb IFFs. However, the major challenge with this is that they focus on elements of IFFs such as money laundering (Cooper, Rusere, van der Linden, and Ferreira, 2018). Noticeable work in this area is the work of Tax Inspectors Without Borders who assist emerging economies improve their tax and audit capacities.

Estimates of trade mispricing are closely linked to illicit financial flows. Two main channels through which illicit financial flows leave a country are the World Bank Residual model and the Trade Mis-invocing model. The earlier model captures IFFs through the use of a country's external accounts, while the later utilises the IMF Direction of Trade Statistics. The World Bank Residual model compares a country's source of funds with its recorded use of funds. Under this model, whenever a country's source of funds exceeds its recorded use of funds, the residual is regarded as IFFs. The Trade Mis-invoicing model compares a country's imports or exports with a trading partner. Discrepancies in partner-country trade data after adjusting for freight and insurance are regarded as IFFs.

Under the Trade Mis-invoicing model there are two approaches to estimating IFFs. The first one is the traditional Net method. This method reduces gross capital outflows (import over-invoicing and export under-invoicing) by gross capital inflows (import under-invoicing and export over-invoicing) to arrive at a net position. The second approach is the Gross Excluding Reversals (GER) method that only

consider estimates of export under-invoicing and import over-invoicing in the analysis of IFFs. This research estimates IFFs from Zimbabwe using the Gross Excluding Reversals (GER) method. The rational for adopting the GER method is that netting of illicit inflows from outflows in unrealistic especially in developing countries and the Net method automatically equates all "wrong signs" as genuine reversals of IFFs which is also unrealistic.

To the reseacher's knowledge, computations of illicit financial flows from Africa have been made at the global level. Very few papers have focused on estimating illicit financial flows in Zimbabwe except a study by Afrodad (2015). However, the paper only estimated the size of illicit financial flows from the mining, fisheries and timber sectors. This study is different as it presents a general methodology to measure illicit financial flows in Zimbabwe using the national aggregated level approach.

Based on these identified research gaps, this study has two objectives. First, the specific interest of this study is to estimate the amount of illicit financial flows in Zimbabwe through trade mispricing with its major trading partners for the period 2009-2018 using the Gross Excluding Reversals (GER) method as an interpretation of the Trade Mis-invoicing model that utilises IMF DOTs data set. Second the study seeks to determine the destinations of illicit proceeds from Zimbabwe. On the whole, the findings of this study will contribute to the existing body of knowledge on illicit financial flows and trade mispricing. Furthermore, the findings of the study will help policy makers to develop evidence-based policies to curb trade-related illicit financial flows, and strengthen co-operative governance and information sharing to address data anomalies and trade mispricing challenges.

The next section provides a review of the literature on illicit financial flows, trade mispricing and illicit financial flows estimation methodology, then provides a conceptual research model. Section 3 describes the research methodology, specifies the model and model assumptions, and concludes with data and data sources used to estimate illicit financial flows through trade mispricing. Section 4 analyses the data and presents the results. Discussion of the results and their implications is provided in Section 5. Section 6 presents a summary of the results and some policy recommendations. Section 7 concludes with suggestions for further research on estimating illicit financial flows through trade mispricing.

2. Literature Review

2.1 Theoretical Framework

The Classical-Marxist and the Neo-Marxist Theories

The theory argues that because of the inability to find profitable investment outlets at home, developed capitalist countries export capital to the less developed countries (Szymanski, 1974). This help the less developed countries' real economic development through a real transfer of resources. On the other hand, Szymanski (1974) the neo-Marxist theory posits that developed countries exploit the developing countries due to the maintained monopoly structure of international commerce and investment. Developed countries export more profits from developing countries than is invested in them. The process of real resource extraction from the less developed to the advanced countries is held to be one of the principle causes of their backwardness, as well as of the widening gap between the two sets of countries.

Other Theories

Other international capital flows theories are flow theory, portfolio theory, monetary analysis theory, and transaction cost theory. First, the flow theory focuses on examining the relationship between capital flows and the level of interest rate (Li, 2018). According to this theory, interest rate is the decisive factor of cross-border capital flows. High foreign interest rate increases the outflows of domestic capital to foreign countries, while on the contrary, the high domestic interest rate would lead to increased foreign capital inflows or reduced domestic capital out flows.

Second, the portfolio theory posits that investors allocate the proportion of assets according to the balance between incomes and risk (Li, 2018). The theory further points that the flows of assets depend on the rate of return, risk forecast and investor's wealth. Third, the monetary analysis theory suggest that international capital flows are determined by monetary policy and changes in reserves.

Fourth, the transaction cost theory indicates that transaction cost is an important factor affecting cross-border capital flows. These transaction costs include search and information costs, negotiation and decision-making costs, and implementation and monitoring costs. When compared with the flow theory, the transaction costs theory points out that international capital flows are besides interest rates, are also limited by transaction costs of domestic and foreign investment (Li, 2018).

Standard economic theory points out that capital should flow from developed to developing countries, thereby making poor countries better off by giving them access to more financial resources. Such investment should improve their levels of employment and income. However, despite the growth in cross-border capital flows, the distribution of flows has seemingly become more perverse relative to what standard economic theory predicts. As suggested in the neo-Marxist theory, capital should flow from rich countries to poor countries, but Lucas (1990) pointed out that capital is flowing from poor to rich countries. Among other variables and factors highlighted in theory on capital flows, the inverted situation experienced today may be as a result of illicit financial flows.

2.2 Illicit Financial Flows (IFFs)

Illicit financial flows is an umbrella term for a broad group of illegal cross-border economic and financial transactions. They generally involve the transfer of money through illegal means such as corruption, criminal activities and efforts to hide wealth from a country's authorities. IFFs significance as a disabler to development efforts is reflected by their inclusion in the Sustainable Development Goals Framework under target element 16.4 (UNDP, 2015). The Council for Economic Cooperation (2014) defined it as transfer of financial capital out of a country in contravention of national and international laws. Ostheimer (2015), defined illicit financial flows simply as all transfers of illegally acquired and employed capital while United Nations Economic Commission for Africa (2013) defined illicit financial outflows as illegally earned, transferred or utilized money.

A key concept of illicit financial flows is that they are committed with the intent to avoid any kind of detection by government official statistics. Major characteristics of illicit financial flows are that transfers may be illegal, the funds are proceeds of illegal activities, and there is no paper trail, which could potentially identify the owner, the origin and the activity of the business. According to United Nations Economic Commission for Africa (2013), what makes it illicit is that somewhere at its origin, movement, or use the money flouted laws.

2.3 Trade Mispricing

Just like illicit financial flows, there are various definitions of trade mispricing. The most prominent definitions are those by MacSkimming (2010), Nicolaou-Manias and Wu (2016), and Hollingshead (2010) which defined trade mispricing as the deliberate over-invoicing of imports or under-invoicing of exports usually for the purpose of tax evasion. Exporters under estimate the revenue generated from exports on their invoices and importers over estimate import expenditures, while their trading partners receive instructions to deposit the balance into foreign accounts.

A study by Global Financial Integrity (2015) estimated that nearly 83% of illicit financial flows manifest as trade mispricing. Nicolaou-Mania and Wu (2016) pointed out that trade mispricing manifests itself in different ways that include mis-invoicing, transfer pricing, re-invoicing and other fraudulent invoicing practices.

Motives for Trade Mispricing

There are three main motives behind traders engaging in trade mispricing namely financial motives, circumventing exchange and customs control, and minimizing the administrative burden. First, financial motives are compelled by the bid to maximize profit. Financial motives include tax evasion, which is the deliberate understatement of the value of exports and imports by traders to reduce the tax liability. This is more prevalent in countries with high export and import taxes. Second, traders are driven to engage in trade mispricing to circumvent currency controls. Existence of exchange rate distortions and foreign exchange controls creates parallel market premium that traders will seek to exploit to their advantage through import over-invoicing and export under invoicing. In the same vein, traders engage in trade mispricing to avoid customs controls that include high tariffs and daunting procedures. Third, trade mis-invoicing occurs when traders engage in smuggling to avoid red tape and is encouraged by the presence of high levels of bureaucracy in the public sector (UNCTAD, 2016).

The Nexus between Trade Mispricing and Illicit Financial flows

Following theoretical and empirical literature reviewed, a graphic representation of the conceptual framework was developed. The theoretical framework explains the relationship between import mispricing (import over-invoicing), export mispricing (export under-invoicing) and estimated illicit financial flows.

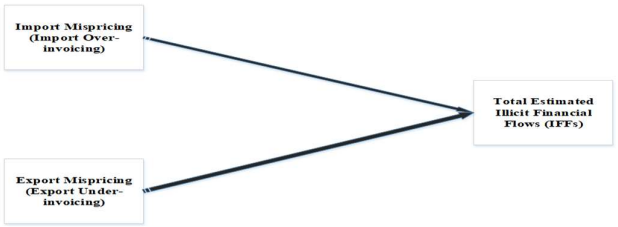

Figure 1: Conceptual Framework (Nexus between trade mispricing and illicit financial flows)

Source: Author Own Construction

Trade mispricing (import over-invoicing and export under invoicing) are a conduit to move capital unrecorded out of a country. Therefore, trade mispricing is clearly an illegal arrangement, often estimated by assessing variances in trade statistics. However, it should be noted that not all discrepancies in trade statistics are necessarily trade mispricing. Other causes of variances include imports expressed at Cost, Insurance and Freight (C.I.F) value, reporting time lags, and exchange rate fluctuations differences in commodity classifications and exclusion of certain products from trade statistics for confidentiality reasons, for instance military products. Ritter (2015) highlighted that not all trade mispricing is an illicit financial flow because import over-invoicing does not, in and of itself, result in a cross-border flow of money but may result in an illicit financial flow if the money illicitly earned is repatriated. On the other hand, traders may engage in export under-invoicing to evade customs tariffs and thus not essentially resulting in a cross-border flow of money.

2.4 Illicit Financial Flows Estimation Methods

There is no consensus among researchers concerning the best measurement of illicit financial flows. Illicit financial flows is a delicate and controversial issue. DIIS (2009) and

O'Hare, et al. (2014) pointed out that precise estimation of illicit financial flows is difficult due to differences as to its definition and the fact that by their very nature they are never declared making data on them unavailable in official statistics. However, DIIS (2009) indicated that studies that arrive at credible estimates of illicit financial flows using economic models, IMF and WB databases have been developed.

Basically, there are four commonly used methods in literature namely World Banks's Residual Model, Dooley method, Hot Money method and Trade Mis-invoicing Model. The World Bank's Residual Model uses the balance of payment figures to compare a country's source of funds with recorded use. Therefore, illicit flows is the gap between recorded between source of funds and use of funds. That is, if source of funds is greater than use of funds, illicit flows is assumed to have taken place from a country where funds were used.

On the other hand, the Dooley's method relies on privately held foreign assets reported in the balance of payments that do no generate investment income. The third method is the Hot Money method, which according to Mevel, Ofa and Karingi (2013) uses the balance of payment statistics with the assumption that residual item of net errors and omissions in the balance of payments is an expression of capital flight. This method assumes that in principle, changes in net wealth should correspond to the income surplus. Therefore, if income surplus is greater than changes in net wealth, it assumed assets could have been moved from the country.

The fourth method is the Trade Mis-invoicing model that uses the IMF Direction of Trade Statistics (DOTS). The method assumes that illicit flows takes place when imports are over- invoiced and when exports are under-invoiced on customs documents. It uses bilateral import and export statistics to estimate trade mis-invoicing by comparing the difference between a reporting country's exports or imports to the world (or partner country) import or exports statistics. The difference is assumed to be illicit financial flows after adjusting imports for insurance and freight. Imports C.I.F are adjusted for insurance and freight by dividing them with a fixed coefficient equal to 1.1 to convert them to Free on Board (F.O.B) values.

2.5 Empirical Framework

Kravchenko (2018) examined the prevalence of trade mis-invoicing in Asia and the Pacific using the Trade Mis-invoicing Model. He compared bilateral export and import data at HS6 digit level of aggregation and found out evidence of substantial illicit financials inflows and outflows within the Asia-Pacific region. The results of the study also suggested that as much as 7.6% of regional tax revenue may have been lost in 2016 due to fraudulent export and import value declarations. However, the study proposed an examination of highly disaggregated bilateral data, ideally at transaction level to gain a true picture of the scale of mis-invoicing within the region. Employing a similar approach, Cobham, Jansky and Prats (2014) assessed the role of Switzerland as the leading hub for global commodities trading in terms of the patterns of prices received by original exporting countries and subsequently by Switzerland and other jurisdictions. The study used UN COMTRADE data utilising the most detailed data possible for global analysis, which follows the Harmonized System categorisation at the six-digit level. The results showed systematic differences in the declared prices for commodity exports to and from Switzerland during 2007-2010. This implied average, annual capital shifts from developing countries to Switzerland in the range between US$8 billion to more than US$120 billion.

UNCTAD (2016) investigated and quantified the extent of trade mis-invoicing in primary commodities in a sample of resource-rich developing countries namely Chile, Côte d'Ivoire, Nigeria, South Africa and Zambia. The study covered key primary commodities namely oil and gas, minerals and agricultural commodities. The results showed substantial levels of trade mis-invoicing in all five countries covered by the study, although the patterns vary substantially across countries, products and trading partners. At the product level, while trade in copper exhibits pervasive and large amounts of over-invoicing in Chile, the results for Zambia showed substantial under-invoicing, as well as considerable over-invoicing in trade with Switzerland and the United Kingdom. On the other hand, iron ore and gold exports from South Africa exhibited systematic under-invoicing. Little gold appeared in South Africa's export data, although the country's trading partners recorded substantial amounts of gold imports from South Africa. Exports of oil from Nigeria and silver and platinum from South Africa showed mixed results − both under-invoicing and over-invoicing. However, the results of this study has caused an outcry among South African government officials and the South African Chamber of Mines. The South Africans argued that the estimates of trade mis-invoicing in the gold and platinum sector reported by UNCTAD were based on reporting and classification problems in the UN COMTRADE database and the biggest variance stem from the manner in which source and destination is reported in the UN COMTRADE database. A study by Carton and Slim (2018) explored the extent of trade mis-invoicing among OECD countries over the period 2006-2016. The study used two standard approaches related to analysis of bilateral trade relationships namely the Mirror Data Technique (trade mis-invoicing model) and Geographical Intensity Indices. Results revealed interesting findings that include that the accumulated mis-invoicing amount reached more than US$12 trillion over the period and is characterised by illicit inflows; and that significant amounts of illicit financial flows occur in the most advanced countries despite the quality of their statistical recording services. Furthermore, it was revealed that countries with high GDP per capita are

both senders and recipients of illicit financial flows, while lower GDP per capita countries are also receivers of illicit inflows. Moreover, imports were indicated as the principal vehicle sustaining bilateral trade mis-invoicing and geographical proximity appeared to be an important factor in determining the channel used and the direction of illicit financial flows.

Kar and Freitas (2012) found that over the period 2000-2011, cumulative illicit financial flows from China totalled a massive US$3.79 trillion, if one were to exclude the country's intra-regional trade with Hong Kong and Macao. The study further revealed that mis-invoiced trade between Chinese companies and the United States increased from US$48.8 billion in 2000 to US$59.0 billion in 2011; and the volume of trade mis-invoicing between mainland China and the United States rose to US$72.0 billion before the financial crisis of 2008, but has declined since then, probably as a result of lower growth in bilateral trade between the countries. In addition, the commodity groupings most susceptible to trade mis-invoicing include HS Code 84 (nuclear reactors, boilers, machinery, etc.) and HS Code 85, (electrical and electronic equipment), with the sub-group for electronic circuits (HS Code 854231) showing the largest cumulative illicit outflows of US$84.1billion. Trade mis-invoicing related to the sub-group for mobile phones (HS Code 851712) increased at the fastest pace from 2007-2011.

De Boyrie, Nelson and Pak (2007) identified capital flows due to trade mis-invoicing in 30 African nations using the Price Filter Matrix approach. The results of this study indicated that between 2000 and 2005, capital outflows from all 30 African countries to the USA grew by more than 50 percent, through both low-priced exports and high-priced imports. Ngwakwe (2015) evaluated how trade mis-invoicing orchestrate external debt in Nigeria and its obstructive tendencies on Nigeria's sustainable economic development. The study employed a mixed approach of descriptive analysis and a t-test of difference in means between trade mis-invoicing outflow from Nigeria, external debt and Official Development Assistance (ODA) in Nigeria for the period 2003 – 2012. Findings indicated that as trade mis-invoicing outflow increased during the period 2003 -2012, Nigeria's external debt increased yearly. Furthermore, results from the statistical t-test showed that the mean difference in trade mis-invoicing outflow is significantly greater than the mean differences in external debt and official development assistance received into Nigeria. The analysis further disclosed trade mis-invoicing outflow as a major impediment to Nigeria's stride to sustainable economic development. Jha and Truong (2015) computed capital flight through trade mis-invoicing from India for the period 1988-2012 using India's trade with 17 major trading partners. The study revealed that capital flight accelerated since 2004 and particularly sharply since 2007. In 2008, it peaked at nearly $40 billion with the total outflow between 1988 and 2012 exceeding $186 billion. In a study that aimed to provide first quantitative estimates of illicit financial flows for the 18 partner countries for development of Belgium, Pacolet and Vanormelingen (2015) found that US$46 billion illicit financial flows or 3.5% of GDP are estimated for the 18 partner countries of Belgium around 2012. Nicolaou-Mania & Wu (2016) estimated the extent of trade mispricing by enhancing the model currently used by Global Financial Integrity among five African countries, and by developing a Trade Based Money Laundering (TBML) model as a means of quantifying illicit financial flows between two developing countries. The results indicated declining trade mispricing in South Africa and Zambia for the period 2013-2015, and Nigeria for the period 2013-2014. However, Morocco and Egypt exhibited increasing trade mispricing from 2013-2014. The TBML model showed increasing financial outflows for all five countries.

Kar (2012) estimated the quantum of illicit financial flows (IFFs) from Mexico over the period 1970 – 2010 and examined the underlying drivers and dynamics using a simulation model. Results showed that for the period under study, cumulative illicit financial flows from Mexico amount to a massive US$872 billion and expressed as a percentage of GDP, illicit flows increased to an average of 6.3 %. Moreover, illicit financial flows as a share of Mexico's external debt increased from 15.0 % in 1970 to 28.7 % in 2010, averaging 16.8 % over the period under study.Ahene-Codjoe and Alu (2019) estimated trade-based illicit financial flows from Ghana by providing novel evidence of abnormal pricing in Ghana's commodity exports. Their analysis focused on two of Ghana's most economically significant commodity exports, gold (gold bullion and unwrought gold) and cocoa (superior quality cocoa beans and cocoa paste). Findings indicated significant evidence that illicit financial flows via commodity trading are a concern for Ghana. Using contemporaneous market reference prices, the study revealed abnormally undervalued export for gold (gold bullion and unwrought gold) equalled US$3.8 billion or 11% of the total export value (US$35.6 billion) between 2011 and 2017. Furthermore, an estimated 2.7% of the 12.6 billion USD worth of cocoa beans exported was undervalued and similarly an estimated 7.5% of the total export of cocoa paste (US$1.8 billion) was undervalued. In a similar fashion, Marur (2019) evaluated trade mis-invoicing in gold, copper, cocoa, and coffee for Ghana, Laos, Switzerland, and the UK over the period 2000-2017, based on data from the UN COMTRADE. The study findings reflected substantial trade gaps across countries and commodities. Ghana and Laos displayed negative trade gaps in gold (US$6 billion) and copper (US$1.1 billion) respectively. For Switzerland, the positive gap in gold (US$70 billion) was most prominent, while for UK it was the negative gap in gold (US$178 billion).

Mevel, Ofa and Karingi (2013) revisited methodology to estimate IFFs through trade mis-pricing from Africa at the sector level. Results of the study indicated that the massive amount of financial resources illegally lost by Africa are in fact highly concentrated in a few countries and sectors (essentially extractive and mining industries). In addition, losses associated with IFFs seem hardly reversible thereby suggesting the adoption of effective frameworks to prevent them in the first place. Using the World Bank Residual Model to estimate illicit financial flows in seven African countries during the period 2005-2015, Abayomi (2018) found that illicit financial flows were present in all the sample countries otherwise unabated and in quantum terms, they were more in upper-middle-income countries while they were highest in low- income countries as a proportion of GDP. The study further revealed that relative to aggregate income, low-income countries engage more in illicit financial flows than the other income groups.

Utilizing the World Bank Residual model and the IMF Direction of Trade Statistics to estimate illicit outflows from Africa, countries over a 39-year period from 1970-2008, Kar and Cartwright-Smith (2008) found illicit financial flows from Africa to be approximately US$854 billion. However, the authors pointed out that data limitation significantly understates the problem. Hence, after making various adjustments to the estimate, the results suggested that the volume of illicit flows over the period 1970 to 2008 was closer to US$1.8 trillion. A study by Tandon and Rao (2017) provided evidence that trade mis-invoicing between developed countries is in fact large. They used domestic factors to predict the export and import mis-invoicing for a sample of large traders for the period 1990 to 2014. They found that the domestic factors better explain the export side, therefore, allowing to estimate illicit flows through trade mis-invoicing using the export mis-invoicing by all countries. Cooper, Rusere, van der Linden and Ferreira (2018) utilised Global Financial Integrity (GFI) mixed-method approach whereby an analysis of trade-based IFFs using the IMF DOTS data is added to an analysis of finance-based IFFs from balance of payment statistics data. The analysis revealed that Sub-Saharan Africa (SSA) is at very high risk of IFFs. Additionally, when expressed as a percentage of GDP, IFFs outweigh benevolent development flows such as ODA and Foreign Direct Investment (FDI), which could be restraining the extent to which these flows are able to bring about positive development in SSA. The study further suggested that the risk of IFFs does not always correlate directly with the size of the economy and is unevenly spread across SSA.

Empirical research revealed significantly high estimates of illicit financial flows through trade mis-pricing. The United Nations High Level Panel on Illicit Financial Flows from Africa (2015) argued that Africa lost over US$50 billion annually from illicit financial outflows, a figure that exceeds levels of Official Development Assistance to the continent. However, such estimates can be criticised. A study by Nistch (2016) reviewed the empirical methodology that underlies recent estimates that suggested that developing countries lose about US$1 trillion each year due to illicit financial flows. Deficiencies in the use of mirror trade statistics to quantify the extent of capital outflows due to trade mis-invoicing were highlighted. The study revealed that serious issues in the empirical analysis include arbitrary assumptions, mixed methodologies and skewed sampling. Consequently, he argued that the quantitative results obtained from employing the Mirror Trade Statistics (trade mis-invoicing model) have no substantive meaning and that the US$1 trillion estimate of illicit financial flows from developing countries lacks evidence and is uncorroborated. Similarly, a study report by WCO (2018) suggested that estimates of illicit financial flows via trade mis-pricing are not sufficiently robust mainly as a result of different assumptions in methodologies. The study report further indicated that high estimates of illicit financial flows via trade mis-pricing which feature prominently in current literature, research, and even media outlets should not be understood as a reliable quantitative measurement of the scale of illicit financial flows. Rather it suggested that they are a risk indicator, which can be useful in comparing the risk of illicit financial flows via trade mis-pricing across commodities, countries and over a longer time period.

3. Research Methodology

3.1 Methodology

The study estimated the size of illicit financial flows through trade mis-pricing in Zimbabwe using data on its major trading partners for the period 2009-2018. It used one of the most widely employed methods of estimation of trade mi-pricing by international bodies, policy makers and academics, that is, the Country-Partner Trade Analysis introduced by Bhagwati (1964, 1974). Country-partner trade analysis defines the degree of trade mis-pricing as the difference between total declared amount of exports from one country to a partner country and the total declared amount of the corresponding imports in the partner country. This method can also be referred to as the trade mis-invoicing model that uses the IMF DOTS data set. However, the researcher was also aware of the major limitations of this methodology. First, using a fixed coefficient of 1.1 to convert import values from C.I.F to F.O.B. is highly unrealistic and can only add unsatisfactory distortion between export and import statistics resulting in biased values for illicit financial flows. Second, assuming illicit financial flows to be the sole residual between export and import values after converting those in the same unit is certainly inappropriate. Third, in addition to potential statistical errors which are rather difficult to assess, there are other reasons such as time lags in export/import processes that can explain why export and import statistics do not match. In

addition, Trade Mis-invoicing model does not reveal other flows such as smuggling and cash-based criminal activity.

The national level aggregate data was employed as it adjusts for "merchanting" hubs when they form part of a trading chain. However, such adjustments are inconsistent across jurisdictions. Additionally, high level of aggregation eliminates all possibility to consider the commodity source of any observed mispricing, hence DOTS based estimates should be treated with caution.

The study followed a study by Kar and Cartwright-Smith (2008) that presented estimates of illicit financial flows based on the Gross Excluding Reversals (GER) model as an interpretation of the Trade Mis-invoicing model. Under the GER method, only estimates of export under invoicing and import over invoicing are included in the illicit flows analysis since it is argued in this method that the reduction of outflows by inward illicit flows in the Net method is unrealistic in countries with history of poor governance and lack of prudent economic policies characteristics that clearly define Zimbabwe.

3.2 Gross excluding Reversals (GER) Model Specification

The model adopted by the study is specified below. As pointed out by Nicolaou-Mania and Wu (2016) the model captures mispricing on both export and import sides with the assumption that imports and exports are conduits of illicit financial flows.

〖EIFFs〗 _j = X_(i)-[M_j/β]+[M_i/β]-X_j

Where:

〖EIFFs〗 _j = Estimated Illicit Financial Flows

i = Trading partner country

j = Zimbabwe

X_i= Exports (FOB) from trading partner country (i) to Zimbabwe (j)

M_j= Imports by Zimbabwe (j) from trading partner country (i) adjusted for the CIF factor β

M_i = Imports by trading partner (i) from Zimbabwe adjusted for the CIF factor β

X_j = Exports by Zimbabwe (j) to trading partner country (i)

β = CIF adjusting factor

IFFs related to trade mispricing occur where country i's exports are understated when compared to Country j's reported imports from Country i and/or country i's imports are overstated when compared to Country j's reported exports, after adjusting for CIF. In addition, the variances are linked to the commercial tax evasion component of illicit financial flows. However, the estimation only provides a guide to the extent of the problem of illicit financial flows and should only be used as an indicator of the extent of trade mispricing

Gross excluding Reversals (GER) Model Assumptions

The model is underpinned on the assumption that if there is over- or under-invoicing it is considered to be trade mispricing, which is assumed to represent the commercial tax evasion component of IFFs. However, there are factors that may explain these variances that include timing delays, unreported entries from multilateral trade routes and general data errors that overestimate the extent of mispricing.

The CIF adjusting factor is fixed at 1.1 and does not vary over time, between trading partner countries, by distance, or even by the number of transiting destinations. Moreover, the model assumes that where there is missing data from a corresponding partner country there is no trade mispricing, which could underestimate the extent of mispricing especially for (developing) countries with poor statistics.

3.3 Data and Data Sources

The data span cover the years 2009-2018. The time series data for both exports and imports were obtained from International Monetary Fund Direction of Trade Statistics (IMF DOTs) found on the IMF Trade Statistics database.

4. Data Analysis and Results

The study employed one of the most widely used methods of estimation of trade mi-pricing by international bodies, policy makers and academics, that is, the country-partner trade analysis introduced by Bhagwati (1964, 1974) since it is one of the key conduits accounting for over 70% of illicit flows in developing countries. Furthermore, it followed a study by Kar and Cartwright-Smith (2008) that presented estimates of illicit financial flows based on the Gross Excluding Reversals (GER) model as an interpretation of the Trade Mis-invoicing model. The GER method only includes estimates of export under-invoicing and import over-invoicing in the illicit flows analysis.

4.1 Total Estimated IFFs (Total Import Mispricing plus Total Export Mispricing)

Table 1: Total Estimated IFFS (Import Mispricing plus Export Mispricing

Year	Import Mispricing IFFs (US$ Millions)	Export Mispricing IFFs (US$ Millions)	Nominal Total Estimated IFFs (US$ Millions)	Real Total Estimated IFFs (US$ Millions)	Share of Nominal GDP
2009	332.53	98.79	431.32	479.25	4.46%
2010	558.84	149.15	707.99	755.59	5.88%
2011	699.35	460.41	1,159.76	1,206.83	8.22%
2012	652.35	516.31	1,168.66	1,168.66	6.83%
2013	670.51	690.98	1,361.49	1,244.51	7.13%
2014	645.13	606.08	1,251.20	1,146.84	6.42%
2015	786.07	739.51	1,525.58	1,389.42	7.64%
2016	577.64	540.38	1,118.01	997.34	5.44%

2017	652.53	728.13	1,380.66	1,201.62	6.26%
2018	687.00	725.50	1,412.49	1,186.97	4.56%
Total	**6,261.94**	**5,255.23**	**11,517.17**	**10,777.02**	**6.22%**

Table 1 represents the total estimated illicit financial flows through trade mispricing in Zimbabwe. For the ten years under study, Zimbabwe lost an estimated US$11.52 billion in trade related (commercial tax evasion component) illicit financial flows comprised of US$6.26 billion in import mispricing (import over-invoicing) and US$5.26 billion in export mispricing (export under invoicing). The minimum of US$431.32 million was recorded in 2009 while a maximum of US$1.525 billion was recorded in 2015. For the study period, an average of US$1.15 billion was lost through trade mispricing. Estimated illicit financial flows grew by 227.48% from the minimum of US$431.32 million in 2009 to US$1.41 billion in 2018. The year 2015 recorded the highest amount indicating it as the period when foreign currency shortages started to creep into the economy as many companies and individuals externalised foreign currency following a loss of confidence in government after the harmonised elections in 2013. In real terms, Zimbabwe lost USD10.78 billion to trade related illicit financial flows. For the period 2009-2018, the share of illicit financial flows in Gross Domestic Product (GDP was 6.22%

4.2 Estimated Import Mispricing (Import Over-invoicing) IFFs

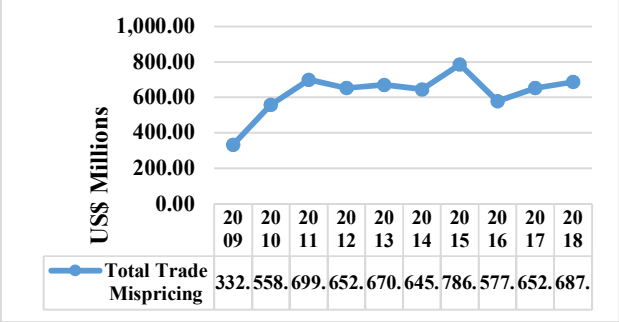

Figure 2: Estimated Import Mispricing (Import Over-invoicing) IFFs

For the period 2009-2018, Zimbabwe lost a total of US$6.26 billion due to imports mispricing (import over-invoicing). On average, estimated illicit financial flows as a result of imports over-invoicing were US$626.19 million. Since 2009 illicit financial flows through import mispricing (import over-invoicing) has been on an increase. Zimbabwe experienced an increase in import mispricing (import over-invoicing) of 106.59% from US$332.53 million recorded in 2009 to US$687 million in 2018. For the ten-year period under review, illicit financial flows through import mispricing (import over-invoicing) reached a highest record of US$786.07 million in 2015. As indicated earlier, this is the period that a lot of foreign currency was externalised from the country as foreign currency shortages started to manifest during the same year.

Distribution of Estimated Import Mispricing (Import Over-invoicing) IFFs

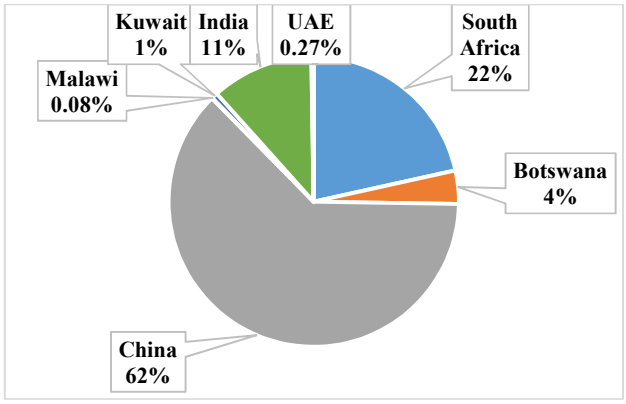

Figure 3 presents the distribution of illicit financial flows through import mispricing (import over-invoicing). The major destinations of these illicit financial outflows are China, South Africa, India and Botswana that constituted 62%, 22%, 11% and 4% of the total nominal illicit financial outflows respectively. This is in line with the results of the study by Government of Zimbabwe (2015) that identified major destination of illicit financial flows from Zimbabwe as China and South Africa. In addition, the naming and shaming list released by the Government of Zimbabwe in 2018 indicated the major destinations of illicit financial flows from Zimbabwe to include China, South Africa and Botswana. Other destinations include Kuwait (1%), United Arab Emirates (0.27%) and Malawi (0.08%).

4.3 Estimated Export Mispricing (Export Under-invoicing) IFFs

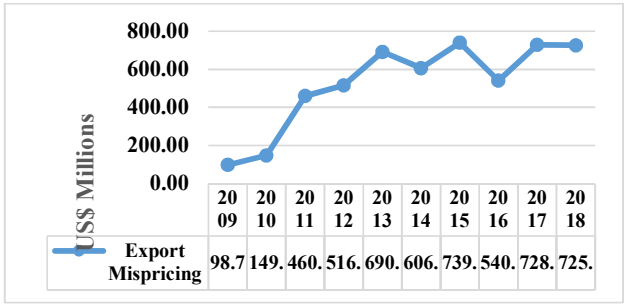

Figure 1: Estimated Export Mispricing (Export Under-Invoicing) IFFs

Illicit financial flows through export mispricing (export under-invoicing) are presented in Figure 4. For the period under review, a total of US$5.26 billion was lost from Zimbabwe in illicit financial flows through export mispricing (export under-invoicing). This translates to an average of US$525.52 million per annum. Figure 4 indicates that export mispricing (export under-invoicing) illicit financial flows maintained a positive trajectory. Export mispricing (export

under-invoicing) illicit financial flows increased by whopping 634.39% from US$98.79 million in 2009 to US$725.50 million recorded in 2018. This might be attributed to increased volumes of trade among Zimbabwe and its major trading partners. Furthermore, traders externalised export proceeds as a way of preserving their earnings which could have been subjected to imbalanced or unfair exchange controls and practices in Zimbabwe. For the period 2009-2018, the highest amount of outflows of US$739.51 million was recorded in 2015. As with import mispricing (import over-invoicing) in the above discussion, this is the same year Zimbabwe started to experience foreign currency shortages that have crippled economic growth.

Distribution of Export Mispricing (Export Under-invoicing) IFFs

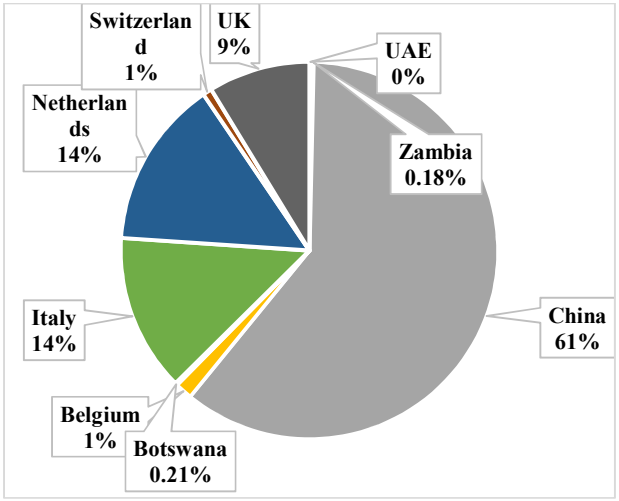

Figure 2: Distribution of Estimated Export Mispricing (Export Over-invoicing) IFFs

Figure 5 indicates the distribution of illicit financial flows through export mispricing (export under-invoicing) by country. The major destinations of export mispricing (export under-invoicing) illicit financial flows are China (61%), Italy and Netherlands which constitute 14% each and the United Kingdom (9%). Other countries include Belgium and Switzerland with 1% each, Botswana (0.21%) and Zambia (0.18%). Interestingly, China and Botswana appear on both the imports and exports IFFs. This concurs with the naming and shaming list released by Government of Zimbabwe in 2018 that indicated the two countries as major destinations for illicit proceeds among a list that included South Africa. The presence of Switzerland as a destination of export IFFs might be attributed to its nature as a tax haven.

5. Discussion

The purpose of the research was to quantify the illicit financial flows from Zimbabwe through trade mispricing with its major trading partners. Data was collected from the IMF Trade Statistics database. Estimation of the illicit financial flows was carried out using the country-partner-trade analysis. In particular, the Gross Excluding Reversals (GER) model was adopted as an interpretation of the Trade Mispricing Model to estimate illicit financial flows. Microsoft Excel software was utilised to analyse the data.

The empirical results supported previous studies that Africa including Zimbabwe is losing billions of dollars due to trade mispricing. The results indicated that for the period 2009-2018 Zimbabwe lost an estimated total of US$11.52 billion in nominal terms to illicit financial flows through trade mispricing. This translates to 6.22% of total GDP amounting to US$185.06 billion for the period under study. In real terms, results showed that an estimated US$10.78 billion was lost through trade mispricing. Import mispricing (import over-invoicing) amounted to US$6.26 billion while export mispricing (export under-invoicing) amounted to US$5.26 billion. The study further revealed that the major destinations of import trade illicit proceeds are China, South Africa, India and Botswana in order of magnitude. For export trade illicit proceeds, the destinations were indicated as China, Italy, Netherlands and United Kingdom (UK) with Italy and Netherlands having the same percentages.

The results of the study indicated that illicit financial flows are a big problem. Zimbabwe is losing large amounts of money as illicit financial flows drain resources and tax revenues meant for socio-economic development. These illicit financial flows have social and economic implications in Zimbabwe. First, IFFs decrease the government's ability to provide public infrastructure and reduces domestic investment. Both cases lead to widened income gap (inequality) and increased unemployment. Furthermore income inequality breeds economic and social instability and destroys the social structure of the country. IFFs cause the nation's income equality to be skewed towards the rich.

Second, IFFs hinder economic growth. Capital held in secrecy jurisdictions will not be available for investments and that leads to distorted investment patterns. In addition, IFFs crowd out other genuine economic and entrepreneurial activities as commercial activities emanating from IFFs due to their hidden nature provide high returns.

Third, IFFs lead to tax revenues losses as big companies shift their profits and money abroad. These lost tax revenues will be compensated through higher taxes on few complaint taxpayers, and this compromises or violates tax justice and extremely dents the country's governance system.

Fourth, as mentioned above, IFFs undermine a country's governance system. The illegal activities that give rise IFFs undermine both the institutions that are responsible for curbing such flows (such as Financial Intelligence Unit (FIU), central banks, tax administrations) and the democratic institutions that fail to hold offenders accountable.

The wickedness of IFFs calls for policymakers to understand how IFFs have become a cancer to the fabric of Zimbabwean socio-economic development. Policymakers also need to guard against practices of import and export

mispricing that will lead to illicit financial flows and tax revenue evasion that impedes economic and social development. Prudent macroeconomic policies need to be put in place to encourage domestic investment and discourage capital flight out of the country in search of better risk-adjusted returns. Furthermore, these macroeconomic policies should be supported by strong institutions for them to be effective.

6. Conclusions

The paper employed the IMF DOTs Model for determining the level of illicit financial flows in Zimbabwe using its top trading partners for the period 2009-2018. Eleven top trading partners were selected separately for imports and exports. The study results showed that Zimbabwe is losing billions of dollars to illicit financial flows through trade mispricing (import over-invoicing and export under-under-invoicing). Illicit financial flows have negative economic and social implications as they erode domestic resources and impede economic and social development. Existing literature put it clear that illicit financial flows result in reduction of both public and private investment. Loses to government in form of tax revenues, money laundering and capital flight results in a decline and poor provision of basic public infrastructure and utilities that include health and education.

Based on the analysis, the study concluded that the estimated nominal US$11.52 billion that Zimbabwe lost to illicit financial flows through trade mispricing with its major trading partners is quite a significant amount that warrants the attention of policy makers. Furthermore, the study concluded that China, South Africa, India, Botswana, Netherlands, Italy and United Kingdom were the major destination for illicit proceeds from Zimbabwe.

7. Recommendations

Illicit financial flows are complex in nature and have deleterious effects on the economy and society. Therefore, the following recommendations are proposed to help Zimbabwe and other African countries curtail illicit financial flows that are trade related.

- Government should start the process of recognising illicit financial flows as a key risk to economic and social development that should be incorporated in national risk assessments and industry-level risk assessments. Further, research into this issue should be developed to support changes in policies.
- Checking of import and export documents through an organised multiple agencies that include the private and public sectors in the process of validating import and export information including invoices.
- Strengthen information exchanges between government departments and/or agencies within the country as well as across borders. This approach should include the tax administration, the central bank, and ministry responsible for trade, the police, Zimbabwe Anti-Corruption Commission (ZACC), and Financial Intelligence Unit (FIU). Government departments should be restructured to and aligned so that departments that deal with different crimes can work together to inform a holistic picture of IFFs. Information to be shared should include information on personal and business accounts.
- To avoid disputed figures, the government should adequately and significantly, record and share all international trade transactions with international institutions responsible for compilation of trade statistics such as the IMF, World Bank and African Tax Administration Forum (ATAF).
- Government should introduce an online, real-time benchmark pricing tool that will be embedded in the customs Asycuda World risk module that will be significant in raising red flags on mispriced goods, long before the consignment reaches the country's borders.
- Capacitate customs and excise officials on what trade mispricing and how it works coupled with availing them with global trade databases to enable risk assessments of imports and exports and adequately rewarding them to retain and attract capable staff and to help minimize the risk of corruption that facilitates illicit financial flows and trade mispricing.
- Creation of a special wing of the Zimbabwean Customs, educate and empower this wing with international trade mis-invoicing techniques and tracking skills to enable this wing to deal specifically with trade mis-invoicing outflows from Zimbabwe.
- Government must address issues of corruption domestically within and outside tax authorities.
- Government should take full advantage of existing national and international regulatory bodies that fight illicit financial flows. These include the OECD BEPS Inclusive Framework project and tax transparency under the Global Forum on Transparency and Exchange of Information for Tax Purposes, the UN, the FATF and the Extractive Industry Tax Initiative (EITI) regarding country-by-country reporting to mention but a few.
- Government should show political will and commitment to fighting illicit financial flows. Commitment to tackle illicit financial flows can incentivise policy coherence and provides a standard for governments to be scrutinised by peers and civil society, to be held to accountable by citizens.

8. Future Research

Further research on IFFs is necessary. Researches should address the strengths and weaknesses of existing methods to ascertain more accurate estimates of volumes and channels of illicit financial flows and the main incentives and legal or regulatory issues involved in trade-related illicit financial flows. In addition, research should be conducted on the impact of illicit financial flows on tax revenues, may be using effective tax rates, average tax rates or at tariff lines level to produce more accurate estimates of likely revenue losses. It is suggested that future studies should not only focus on aggregate figures, but also on disaggregated or micro data to

estimate illicit financial flows. In this vein, estimates of illicit financial flows through trade mispricing should be carried out on commodity levels to identify the commodities used as conduits of these illicit proceeds. Future studies should also estimate the illicit financial flows in Zimbabwe from a global or world perspective in order to have a holistic picture of the nature and magnitude of this phenomenon. Lastly, studies should also include trade in services in estimating illicit financial flows.

References

[1] Abayomi, O. (2018). Comparing the Illicit Financial Flows in Some African Countries: Implications for Policy. *African Journal of Economic Review, VI*(II).

[2] Afrodad. (2015). Illicit Financial Flows: Towards a More Integrated Approach for Curbing Illicit Flows fro Zimbabwe.

[3] Ahene-Codjoe, A., & Alu, A. (2019). Commodity Trade Related Illicit Financial Flows: Evidence of Abnormal Pricing in Commodity Exports From Ghana.

[4] Baker, R. (2005). *Capitalism's Achilles Heel: Dirty Money and How to Renew the Free Market System.* Hoboken: John Wiley and Sons.

[5] Carton, C., & Slim, S. (2018). Trade Misinvoicing in OECD Countries: What Can We Learn from Bilateral Trade Intensity Indices? *MPRA*. Retrieved from https://mpra.ub.uni-muenchen.de/8573

[6] Centre for Budget and Governance Acounatbility & Finacial Transparency Coalition. (2015). Illicit Financial Flows: Overview of Concepts, Methodologies and Regioanl Prespectives.

[7] Cobham, A. (2005). Tax Evasion, Tax Avoidance and Development Finance. *Finance and Trade Policy Research Centre*.

[8] Cobham, A. (2005). Tax Evasion,Tax Avoidance and Development Finance. *Finance and Trade Policy Research Centre*.

[9] Cobham, A., & Janksy, P. (2017). Measurement of Illicit Financial Flows. *UNODC-UNCTAD Expert Consultation on the SDG Indicator on Illicit Financial Flows.*

[10] Cobham, A., Jansky, P., & Prats, A. (2014). Estimating Illicit Flows of Capital via Trade Mispricing: A Forensic Analysis of Data on Switzerland. Retrieved from www.cgdev.org

[11] Cooper, B., Rusere, M., van der Linden, A., & Ferreira, A. (2018). Illicit Financial Flows: A Financial Integrity Perspective.

[12] de Boyrie, M., Nelson, J., & Pak, S. (2007). Capital Movement Trough Trade Misinvoicing: The Case of Africa. *Journal of Financial Crime, 14*(4), 474-489.

[13] DIIS. (2009). Combating Illicit Financial Flows From Poor Countries: Estimating the Possible Gains.

[14] Forstater, M. (2018). Illicit Financial Flows, Trade Misinvoicing and Multinational Tax Avoidance: The Same of Different? *Centre for Global Development*.

[15] Global Financial Integrity . (2015).

[16] Global Financial Integrity. (2019). Illicit Financial Flows to and from 148 Developing Countries:2006-2015.

[17] Government of Zimbabwe. (2015). *National Risk Assessment Report.* Harare: Government of Zimbabwe. Retrieved 05 03, 2018

[18] Hollingshed, A. (2010). The Implied Tax Revenue Loss from Trade Mispricing. *Global Financial Integrity*.

[19] Jha, R., & Truong, D. (2015). Estimates of Trade Mis-invoicing and Their Macroeconomic Outcomes for Indian Economy. *Review of Economics and Finance*.

[20] Kar, D. (2012). *Mexico:Illicit Financial Flows, Macroeconomic Imbalances and the Underground Economy.* Global Financial Integrity (GFI).

[21] Kar, D., & Cartwright-Smith, D. (2008). Illicit Finacial Flows fro Developing Countries 2002-2006.

[22] Kar, D., & Cartwright-Smith, D. (2008). Illicit Financial Flows from Africa: Hidden Resources for Development. Retrieved from www.gfip.org

[23] Kar, D., & Freitas, S. (2012). *Illicit Financial Flows from China and The Role of Trade Misinvoicing.* Global Financial Integrity.

[24] Kravchenko, A. (2018). Where and How to Dodge Taxes and Shift Money Abroad Using Trade Misinvoicing: A Beginner's Guide. Retrieved from http://www.unescap.org/resource-series/tiid-working-papers

[25] Li, D. (2018). An Economic Analysis of the International Capital Flow. *American Journal of Industrial and Business Management*(8), 404-416.

[26] Lucas, R. (1990). Why Doesn't Capital Flow from Rich to Poor Countries? *The American Economic Review, 80*(2), 92-96.

[27] MacSkimming. (2010). Trade-Based Money Laundering: Responding to an Emerging Threat.

[28] Marur, S. (2019). Mirror-Trade Statistics: Lessons and Limitations in Reflecting Trade Misinvoicing.

[29] Mevel, S., Ofa, S., & Karingi, S. (2013). Quantifying Illicit Financial Flows from Africa through Trade Mispricing and Assessing Their Incidence on African Taxes. *16th GTAP Conference.* Shanghai.

[30] Ngwakwe, C. (2015). Trade Misinvoicing, External Debt and Sustainable Development: A Nigerian Example. *Risk Governance and Control: Financial Markets and Institutions, 5*(2).

[31] Nicolaou-Mania, K., & Wu, Y. (2016). Illicit Financial Flows: Estimating Trade Mispricing and Trade-Based Money Laundering for Five African Countries. *Global Economic Governance, Discussion Paper*.

[32] Nistch, V. (2016). Trillion Dollar Estimate: Illicit Financial Flows from Developing Countries. Retrieved from http://nbn-resolving.de/urn:nbn:de:tuda-tuprints-54379

[33] O'Hare, B., Makuta, I., Bar-Zeer, N., Chiwaula, L, & Cobham, A. (2014). The Effect of Illicit Financial Flows on Time to Reach Fourth Millennium Development Goal in Sub-Saharan Africa: A Quantitative Analysis. *Journal of the Royal Society of Medicine, 107*(4), 148-156. doi:10.1177/0141076813514575

[34] Ostheimer, A. (2015). Illicit Financial Flows as an Obstacle to Development.

[35] Pacolet, J., & Vanormelingen, J. (2015). Illicit Financial Flows: Concepts and First Macro Estimates for Belgium and Its 18 Preferred Partner Countries. *Belgian Policy Research Group on Finance for Development. Working Paper No. 10*.

[36] Ritter, I. (2015). Illicit Financial Flows: An Analysis and Some Initial Policy Proposals.

[37] Szymanski, A. (1974). Marxist Theory and International Capital Flows. *Review of Radical Political Economics*. doi:10.1177/04866B47400600302

[38] Tandon, S., & Rao, R. (2017). Trade Misinvoicing: What Can We Measure?

[39] Transparency International. (2004). Global Corruption Report 2004.

[40] UNCTAD. (2016). Trade Misinvoicing in Primary Commodities in Developing Countries: The Cases of Chile, Co te d'Ivoire, Nigeria, South Africa and Zambia.

[41] UNDP. (2015). Sustainable Development Goals: 2030 Agenda.

[42] UNECA. (2012).

[43] WCO. (2018). *Illicit Financial Flows via Trade Mispricing.* WCO