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RATIONALIZING TAX SUBSDIES FOR MECHANDIZE EXPORT DEVELOPMENT: RATIONAL RECONSTRUCTION APPROACH

BY

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DEDICATION

This research is dedicated to my late father Mr Herbert Matimba who passed away before witnessing the fruits of his efforts he exerted 29 years ago, my mother (Anna Ziso), my wife (Aspire Mufaro Matimba) and my friends (Tichayendepi Masaya and Takunda Mazvanya), Who would always encourage me to push everything to the limit and whose good examples have given me insolent boldness to defy the odds and achieve all that I have ever imagined.

Heavenly father bless the Matimba family.

ABSTRACT

This research was premised on rationalizing tax subsidies for merchandize export development in Zimbabwe since it is a resource endowed nation with huge mineral deposits and large tracts of arable land for farming. The ultimate goal is to improve export performance by capitalizing on these low hanging fruits. However, some researchers believe that tax subsidies are a leakage in the circular flow of income while others believe that exports have a chance to improve in the absence of stringent tax rules and regulations that confine tax payers to pay more than they are supposed to pay. This is also out of the idea that revenues are the resource pool for all expenditure needs and rationalizing tax subsidies appears to be the plausible option to equate the balance between revenue and expenditure. The research covered the period from 1985 to 2020 using the data from the World Bank. The findings revealed that there is positive relationship between tax subsidies and merchandize exports. The findings also revealed that tax subsidies do not work in isolation and their effectiveness depend on other factors which the implementing country may not be privy to. Value addition should be emphasized and underlined as it is the cornerstone of international trade. It is also important to underscore that tax subsidies thrive under bilateral relationships where two countries forge a trade relationship meant to address their needs.

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ABBREVIATIONS/ACRONYMS

ADB	African Development Bank
ADF	Augmented Dickey Fuller
CRF	Consolidated Revenue Fund
ECM	Error Correction Model
ESAP	Economic Structural Adjustment Program
FER	Foreign Exchange Reserves
GATT	General Agreement on Tariffs and Trade
GNU	Government of National Unity
IMF	International Monetary Fund
NDS	National Development Strategy
OESD	Organisation for Economic Corporation and Development
RBZ	Reserve Bank of Zimbabwe
SEZ	Special Economic Zones
SOE	State Owned Enterprises
WB	World Bank
WTA	World Trade Organization
ZIMASSET	Zimbabwe Agenda for Sustainable Socio- Economic Transformation

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CHAPTER ONE

INTRODUCTION

1.0 Introduction to the Study

Many researchers have now become the proponents of economic growth as it is the foundation for the development of any economy. It is out of this realization that developing and emerging economies are now trying even harder to be visible on the world stage of international trade. International trade and economic growth are inextricably intertwined and their tendency of coexisting can only be underscored (Joneghani, 2018). International Monetary Fund (IMF), World Bank (WB), Organization for Economic Cooperation and Development (OECD) and other known Organizations have all emphasized the potency of all policies that improve the prospects of growth. However, this research will focus on tax subsidies and other incentives as tools for merchandise export development.

The concept of subsidies in general has garnered attention in contemporary public policy spaces and its broadness has made it elusive to develop a clear definition Houthakker, 1972). The definition however, depends on measurement and quantification of such a subsidy. Government subsidies represent government subsidy expenditure which is a more pronounced fiscal tool designed to increase the income of producers beyond what they would earn without intervention, and this is usually known as producer surplus (Schwartz and Clements, 1999).

This research will however focus on tax subsidies which by definition are fiscal incentives designed to limit the tax obligation for firms and businesses. The researcher will use tax subsidies and incentives to refer to other variants of help by the Government. Firms in Manufacturing sector face different struggles not limited to adhering to the principles of taxation within the country. This imposes difficulties in enabling the manufacturing sector to contribute more to the fiscus of the nation via the proceeds from international trade. ***Corporate Income Taxes (CITs), Export Taxes (ETs)*** among others types of taxation will be used in this research.

Governments are now employing policies in form of economic subsidies that incentivize the local industry for the purposes of exporting (Durmuşoğluand *etal*, 2012). According to Liu and Zhou (2023) also alluded that technological advancements are attributable to tax subsidies be they inform of tax incentives or preferential tax cuts that are extended to medium-sized firms and enterprises that are into research. This promotes innovative solutions to the problems that may be prevalent in the market. This also help these firms to have an understanding of what is expected of them in foreign markets through researching and developing niches for their products.

It is also worth highlighting that taxes are the main source of Government revenue and diverting that revenue and commit it to subsidies and incentives would seem wayward, hence the need to reconstruct the theoretical underpinnings of tax subsidies as an export promotion strategy, so in as much as the Government is poised to help businesses, the policy makers ought to strike a balance and guard against malpractices by certain firms as they may connive with tax consultants and avoid taxes. In 2016, the European Commission found out that the Irish Government had subsidized Apples, a company already earning profits close to billion annually, yet the company was paying a paltry Corporate Income tax of 0.005% of its total income.

There are very few researches that have tried to rationalize tax subsidies for merchandize exports, and for those few ones, the results are mixed and anecdotal. This piece of research will apply the lens of rational reconstruction, to drive home undisputed theoretical underpinnings of tax subsidies as a policy instrument for merchandize export development. Rational reconstruction is a philosophical concept that was emphasized by Beaney (2013). The interpretations of rational reconstruction are rooted from *Neo-Kantianism of 1880,* meaning discovery and validation of a justification. This has also helped researchers to develop new perspectives in developing a subsidization framework that does not strain the fiscal space yet serving its purpose.

There is definitely a need for a rational reconstruction in finding a way of optimizing tax subsidies in relation to merchandize exports, otherwise all efforts would be for nothing. This approach will help to justify economic implications of such subsidies. The lens of rational reconstruction will help in interrogating the proposed ways promoting exports. The overall aim is to promote exports through subsidizing manufacturing firms by offering them tax subsidies and the variants thereof, mindful of the budgeting and financial implications.

Designing a proper tax structure that is responsive to the needs of the industry nourishes the tenets of Public Finance Management, hence the need for policy makers to apply caution when making decisions regarding tax subsidies and incentives. This also serves as the basis of debate when policy makers, researchers and other stakeholders deliberate on the potency on different policy stances that lead to a more pronounced increase in the value of exports. According to Surrey (1957), tax policy serves as the input to policy making. Taxes aid the Government in raising revenue which is much needed for funding projects and programs to be undertaken in the following year. Taxes contribute more to international trade and elevate manufacturing industry to another level.

There is a widely known conception that revenue from the taxpayers is never sufficient to fund expenditure needs and yet on the other hand, some scholars assumed that international trade poises more returns to the exporting nation through foreign currency receipts which beckons the policy makers to apply a more prudential stance in striking a balance between foregoing present revenues in an effort to earn more in the future whilst cognizant of the fact that subsidies may drain the fiscus more than they are supposed to.

This research is therefore premised on finding an optimal level of tax subsidies in a more sustainable manner. The research will also extend in determining the degree of strain on the fiscus which is also a common resource pool for many issues. Zimbabwe prides itself in being a resource endowed nation, vast areas of arable land, huge mineral deposits which then aids in manufacturing. This is notwithstanding the fact that the Gross Domestic Product for Zimbabwe has been declining dating back from as recent as 2017. It suffices to say that tax subsidies maybe necessary ingredient in alleviating and elevating manufacturing industry which has been deteriorating in the past decades in comparison to the bread basket era.

1.1 Background of the Study

Global trade now serves as the main determinant factor for economic growth for most if not all developing and emerging countries, Zimbabwe included. For export's sake, proponents of international trade are constantly vouching for policies that provide comfort to firms in

manufacturing sector which happen to be the drivers of export industry. Tax subsidies have become the centerpiece of enabling competitiveness of domestic producers to foreign markets. There are diverging viewpoints on whether or not these tax incentives are the panacea of improving exports, job creation and even increasing profits for these firms.

Zimbabwe's productive sector has gone through various phases, characterized by notable events and different policy stances including the Economic Structural Adjustment Programme (ESAP), Zimbabwe Programme for Economic and Social Transformation (ZIMPREST), Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZIMASSET) and the National Development Strategy 1(NDS), just to mention a few. This was also coupled by liberation struggle which gave independence in 1980 and the subsequent majority governance in 1980, land reform propositions in 2001, Government of national Unity in 2009 and the recently new dispensation. It is also important to note that these distinct phases produced different outcomes regardless of the ultimate goal of maintaining trade balance to this very day.

Zimbabwe disengaged itself from the colonial rule in 1980 and since then, the country braced itself for a transition which would set the ground rules for enabling a prolonged growth and improvement of an economy regardless of a previous bondage of white minority rule for nearly a century. Public Finance Management would dictate how the nation would structure its taxation policy to an extent of meeting the needs of the nation. Tax Policy extends beyond the notion of revenue generation into a more pronounced and refined export policy which is an important element in the cycle improving revenues, an indispensable ingredient in enabling the nation to leapfrog the inertia of stagnancy into prosperity. This is all derived from making sure that the each and every stage of enabling improved productive capacity is upheld.

Export development policies have worked well in the European Countries and there is no reason to believe that the same conception cannot be applied in Africa, Zimbabwe in particular. Zimbabwe is a resource endowed nation and this therefore means that the prosperity of a nation could be made easier if a nation's efforts are premised on improving exports. The word may seem simple but it requires a more dedicated approach in ensuring that production is export oriented.

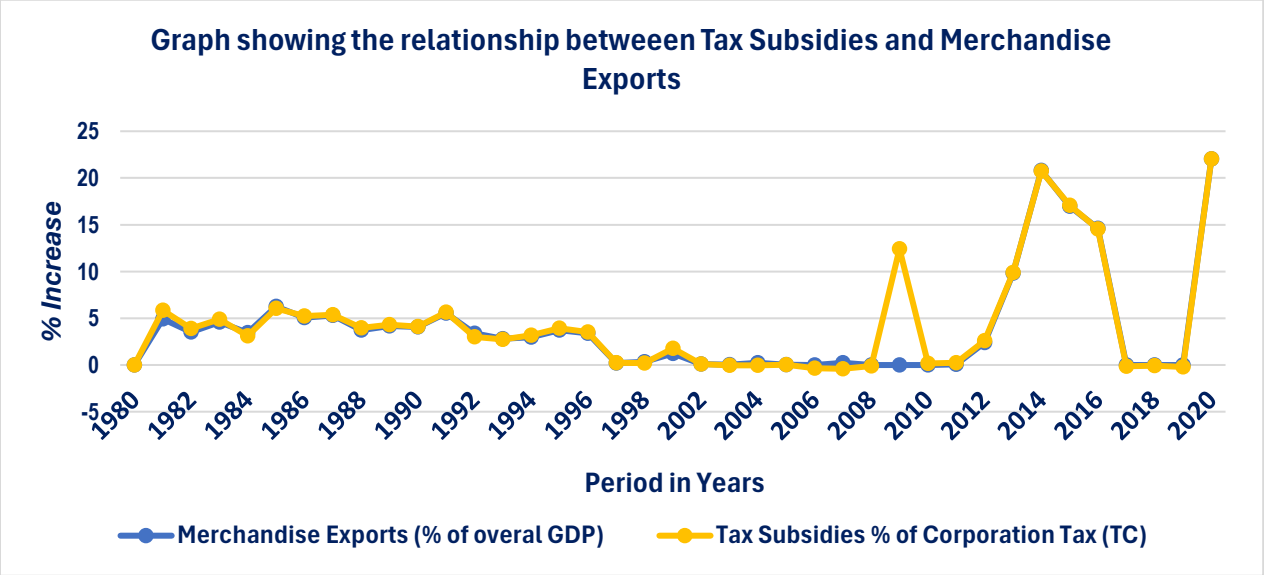
This is also motivated not only by the fact that the nation is resource endowed but mainly because of a void of value addition especially for the sectors in mining, agriculture and manufacturing that

account for more than 60% of the nation's total output. The challenge is that the fiscus of a nation should be structured in a way that suffices almost all the needs of a nation regardless of the need of the Government to help certain manufacturing firms to produce more exportable goods in an effort to improve export earnings.

Some scholars have developed the basis of determining the plausibility of the balance between tax subsidies and exports. This also means that export earnings should outweigh the amount that was transferred by the Government as a portion of tax to be paid by these manufacturing firms. This then means structuring a tax policy in a such a way that these firms are excused from the hurdles related to paying taxes, royalties and other charges. Firms that are in the mining sector find it hard to acquire mineral refinery machines which then forces them to export raw mineral ores reducing the earnings compared to the earnings of exporting refined jewellery. Climatic changes have also negatively impacted agricultural sector especially to those who have more reliance on rain season. This limits the quantity of raw materials for manufacturing firms in textile and food industry. It is therefore important to emphasize the importance of competitive domestic production which creates a competitive edge even in the foreign markets by producing value added goods and services.

The figure below shows the connection between tax subsidies and merchandise export development.

Figure1.1 Tax Subsidies and Merchandise Exports *Figure 1*



Source: World Bank

The Figure 1.1 clearly exhibits the relationship between tax subsidies (TC) and merchandise exports (ME) for the period from 1980 up to 2020. The figure is also showing a very close relationship between tax subsidies and merchandise exports. It is also evident from the graph that subsidies and exports are inextricably linked as they are correlating very well.

There was a sharp increase in subsidies up to 5% from 1980 up to 1991. Subsidies maintained an average growth rate of 5% from 1980 up to 1991.The country was coming from the shackles from liberation struggle and the government employed distributive policies not only in the manufacturing sector but even in social sectors. The nation became the recipient of socialism, an ideology that uses subsidies and grants as its bargaining trump card. Government expenditure rose by a considerable percentage since it was responding to the needs of its citizens that had just got their independence.

Post early 1990s, the nation started experiencing huge budget deficits and this was attributed to distributive policies, an important component of socialism. IMF introduced reform policy known as ESAP to suppress the negative ramifications of socialism. The reformists argued that such an ideology drains the fiscus without compensation and there is no economic calculation to confirm what has been lost due to these free-bies masked as subsidies and grants. IMF agreed to help extend aid on condition that Zimbabwe was going to accepts the reform and implement.

Subsidies fell by 5% from 1995 to 1997 a period where reforms around the industrial sector were introduced, signifying a reduced subsidies by the Government. More importantly, merchandise exports have always been intimately connected to subsidies. More importantly, ESAP was grounded in shifting the resources from production of non- tradeable goods which do not add productivity to the economy, both exportable and importable goods.

It is important to note that Zimbabwe was hit by financial crisis in 2008 when the nation recorded the highest inflation ever when the country's currency hit the billions. Subsidies rose by 13% but to no avail since there was no industry to absorb these subsidies.

It is imperative to understand how the presence has come to existence in as far as tax policy is concerned. Devereux (2006) investigated the potency of taxation on firm's profit which illuminates the probability of improved exports. The reliance on tax policy beckons attention because it informs a firm on how to increase profit among other needs. The relaxation of taxes encompasses

different range of taxes, for example Marginal and Average tax rates. This is important in enabling the firm to make informed decisions as per the degree of burden on the firm's side. The notion is premised on making sure that the country has enough revenue to fund expenditures. However, it should be noted that revenue may be forestalled in an effort to improve the prevalence of operating.

Another submission is that the nation might grand its multinational companies tax exemption to insert plant that extract raw materials into products that are much needed in foreign markets. However, there is possibility that these multinational companies might connive with tax consultants and pay way less than they are supposed to regardless of an understanding of being tax exempted especially through transfer pricing where these members collide.

Period of the Government of National Unity, was marked by a sharp increase in subsidies and exports. Both exports and subsidies rose by an average of 20% and this was due to an economy that was performing very well. This is also the period which inflation was reduced to a single digit.

1.2 Problem Statement

The central premise of this research is to ascertain the degree to which tax subsidies are a plausible instrument for export performance of merchandise goods. Revenue from taxpayers is the resource pool for most if not all expenditure needs within the country yet that is the same pool where the government expect to get the subsidies from. It is therefore necessary to determine the degree to which tax subsidies and other incentives can be effectively amalgamated into a policy framework for the purpose of improving export position of a nation.

The concept of subsidies is too broad which beckons the policy makers to narrow the elements to suit the specific needs, hence the need to deliberate it on this particular research, for the purposes of driving home the true underpinning around tax subsidies. The extension of the concept of subsidies into tax subsidies is encapsulated in Government subsidy expenditure framework which in its nature requires policy makers to structure indispensable components to suit the needs of the cause.

Zimbabwe is a resource endowed nation and the value of exports does not resonate well with the deposits of resources found in a nation. Value addition is also a cause for a concern, Zimbabwe

has huge mineral deposits, vast areas of arable land and other resources but the challenge is on value addition to give exports more value in international markets.

1.3 Research Objectives

1. Developing a framework underpinning tax subsidy for merchandize export development
2. Analyse the economic impact of such subsidies on the economic outcomes they are supposed to achieve
3. Finding a way of capitalizing on the endowments of Zimbabwe since it exhibits the attributes of a low hanging fruit.

1.4 Research Questions

1. Do the theoretical underpinnings of tax subsidies influence their practicality
2. Is it feasible to use tax subsidies as a policy tool to improve export position of a nation.

1.5 Significance of the study

There are few researches that have specifically studied the relationship between tax subsidies and merchandise export development for Zimbabwean economy. Basing on the presumption that international trade is now considered to be the cornerstone of economic policy and promoting exports is one of the most important components of international trade. Corporation taxes however, pose serious challenges to the operations of these firms. Corporate income tax in form of export taxes. Export taxation, however, as strange as it seems could affect the volume of exports negatively. This then calls for a subsidization framework to cushion these firms so much so that they can contribute more the ultimate needs of the country. This research will therefore help policymakers in designing a policy framework that speaks to the needs of the nation. It will also help policy makers to determine whether to apply these subsidies selectively or holistically, as there are explicit and implicit

Zimbabwe is a resource endowed nation with huge mineral deposits, vast tracts of arable, yet the value of proceeds from these exports do not resonate well with the resource, suffice to say the nation needs to improve in terms of sustainability attributed to export incentives. Tax subsidies

and their variants have been in the game for quite a long time yet there still exist mixed conclusions as to whether they are sustainable to use as a policy instrument in improving the export position of a nation considering that the level of beneficiation is low in Zimbabwe. The effectiveness of tax subsidies may however depend on certain factors and it would be helpful to the policy makers to know the circumstances under which tax subsidies are can be used efficiently and effectively for the betterment of the export industry.

1.6 Hypothesis of the study

H0 There is no relationship between tax subsidies and merchandise export development

H1 There is a relationship between tax subsidies and merchandise export development

1.7 Delimitation of the study

This research is confined to Zimbabwean context, showing true and undisputed relationship between tax subsidies and merchandise export development. The data sources on this research will be accessed on National Statistics Agency (ZIMSTATS), International institutions such as (World Bank), International Monetary Fund (IMF) and other related organisations.

1.8 Study Limitations

As mentioned above, there are few researches that have tried to capture sustainability of the connection between tax subsidies and merchandise export development.

1.9 Organization of the Study

The current chapter has introduced the research topic on rationalizing the tax subsidies for merchandise export development. The following chapter will focus on theoretical and empirical literature review of the research in question, Chapter three on methodology and research criteria. Chapter four will present the research findings and giving interpretations. Chapter five will proffer conclusions, policy recommendations and insights for future researchers.

CHAPTER TWO

2.0 Introduction

Macek (2014) argued that the influence of corporate tax is merged into different trade models by determining its impact on the growth of the firm, which then enables the firm to optimize its production processes for the purposes of gaining international relevance. There are however, few researches that have tried to study the relationship between tax subsidies and merchandise export development and their contribution has been more theoretical for example (Helpman, 1976; Baxter, 1992; Frenkel, Razin, and Sadka, 1991). Some scholars argued that there is a symmetrical connection between tax subsidies and export subsidies, claiming that they serve the same purpose.

2.1Theoretical Literature Review

This chapter will analyze the theories that relate to financial incentives given to firms to cushion them from the hurdles that are prevalent in their operation spaces, in an effort to promote exports. There are certain theories that have tried to create a connection between tax subsidies and merchandise export growth and most of these theories seek to provide insights into how policy makers may improve their export position by influencing the activities of the production sector, albeit having to be mindful of the circumstances that resonates well with that resolution.

Balassa and Sharpston (1978) provided a clear prescription of promoting exports by way of employing ethical and fair subsidization framework. These researchers also extended their analysis by advocating for the modification of General Agreement on Tariffs and Trade (GATT) and the World Trade Organization (WTO) regulations with regards to the eventual goal of increasing the quantity of exports. This also clearly confirms formidability of applying tax incentives as an input to merchandise export development.

However, there should be a standard through which two or more trading nations handle their trading affairs. GATT and WTO rules and regulations also confines exporting countries or firms to provide a full disclosure of the amount and kind of subsidies given to them by their governments. This disclosure helps the importing nation on how to balance the equation of imports to exports.

Adherence to the tenets of (GATT) and (WTO) improves transparency, global trade balance just to mention a few. This in turn would benefit the previously exporting country especially if it were to import at some point in time. This demonstrated exporter-importer relationship exhibits fundamentality of subsidies in the context of international trade such that a policy like offering tax subsidies especially to exporting firms would yield enormous ramifications, therefore the effects of tax subsidies cannot be underestimated but rather underscored.

2.1.1 Optimal taxation Theory

Mankiw et al (2009) argued that optimal taxation theory combines taxation and international trade. Ramsey (1927) and Mirrlees (1971) have contributed more on its foundation. Optimal taxation conceptualizes the notion that capital income ought to be protected because it's a breeding ground for more prosperity. This theory also informs how international trade is influenced by the structure of taxation policy in a nation as argued by Dixit,1985).

This theory intersects well with well-known international trade theories like Heckscher- Ohlin Theory by Heckscher (1919) and Ohlin (1933), New Trade Theory by Krugman (1979) and comparative advantage theory by Ricardo (1817). This theory relates well with the needs of the research in optimizing taxation for the purposes of influencing a competitive edge in foreign markets. Zimbabwe satisfies rudimental properties of a nation that requires a paradigm shift with regards to enabling international trade that produces more rewards.

2.1.2 Heckscher- Ohlin Theory

This trade theory was canonized by Heckscher (1919) and Ohlin (1933) extensively as an explaining tool that determines patterns of trade attributable to differences in factor endowments. This theory extends beyond explaining the differences in factor endowments just like Zimbabwe that has huge mineral deposits and vast tracts of arable land. Refined versions of this theory assumes that factor endowments alone cannot determine trade patters between countries as there are other factors like Tax policy that confines exporting firms to pay taxes like export taxes and corporate income tax. This has a huge bearing on the level of exports regardless of factor endowments.

2.1.3 New Trade Theory

Pual Krugman (1979) assumed that the proceeds from exports are intimately connected to the policies that increase the propensity to produce and import. It then needs to be in the interests of a nation to have a cocktail of instruments that are meant to increase the productive capacity of a nation. This could be done by subsidies that improve the position of the manufacturing sector. The theory offers guidance into policies that are designed to improve export position as a result of tax incentives given to manufacturing firms. It follows the notion that tax subsidies are a driving tool towards enabling firms to increase their returns to scale and expand production. This coincides with the design of the strategic trade policy that is informed by ambition of a nation as put forward by Brander and Spencer, 1985).

Martinez (2022) supported the view of Krugman. His view emphasized that the role of Non-Tariffs Measures (NTMs) as a new trade policy instrument. Martinez highlighted that export taxes play a pivotal role in influencing the final price of exports. Government may incentivize the volume of exports by subsidizing firms that export beneficiated goods. Adjustment of tax exports to give exporting firms more comfort. In Zimbabwe, export expenditure incurred is deductible for tax purposes. The tax system in Zimbabwe provides that export tax stands at 24%. However, when firms are exporting more than 51%, their tax responsibility is reduced to 15.45%.

Medin (2014) argued that everything evolves around new trade policy. It all starts and ends with policies that are tilted towards international trade. The author argued that Norwegian Government applied tax subsidies and incentives to the Energy- Intensive industry. The firms in this industry were exempted from paying electricity tax in which the government would compensate the shortfall by a subsidy. This proved right as the industry improved its exports, suffice to say that trade theory informs the industrial policy and tax subsidies are a formidable tool for dictating the activities of the industry which would then enable global growth leap.

2.1.4 Lerner Symmetry Theorem

Lerner symmetry theorem was developed by (Lerner, 1936). This is a theory that assumes that the effect of import tariff is equivalent to the effect of export taxes. When the government protect infant industries by applying a tariff, it is as good as subsidizing local firms to be more export

oriented. This theory seeks to provide insights into how international trade is informed by an economic policy designed to promote exports. This also signifies the plausibility of applying a formidable tax policy that speaks and address the concerns of exporters for the purposes of export development.

The ramifications that are attributed to import tariffs will be equivalent to the effects of export taxes. In Zimbabwe, export taxes are charged to limit exports of raw materials especially in minerals. It is also important to note that, this symmetrical effect, depends on the stage of development that a country belongs to. Global economic powers are able to influence world price of goods and services thereby thwarting the prospects of those who are still developing.

The above theoretical views show that tax policy is the common denominator of international trade and export policy is part and parcel of the main envelope called taxation policy. Moreso, the impact of tax subsidies and other incentives is conditional on many factors, some of which are very difficult to diagnose. Empirical literature review will provide the basis on which tax subsidies are used as a policy instrument to influence the activities at the international market.

2.2 Empirical Literature Review

Organization for Economic Cooperation and Development (OECD) (2011) published a report with a title Corporate Tax Incentives (CTIs) for international competitiveness. OECD viewed tax incentives as a policy instrument for improving the competitiveness of the exporting sector. Empirical results for testing the relationship between tax subsidies and merchandise export development have produced different and anecdotal results hence the need examine the relationship and derive the degree and extent of the connection between the variables in question. Research has also shown that the effectiveness of tax subsidies depends on many factors including type of the industry being supported, the overall structure of the economy and other related issues which may have a bearing on export development without a hindsight.

To start with, Dubrovina etal (2021) investigated the relationship between taxes and export-import tendencies in European Union (EU) countries. The research used a panel analysis for 28 EU countries for the period from 2002 to 2018.The study showed that export taxes have a huge and

direct bearing in dictating the level of exports especially in the short run. An increase in export taxes leads to an intensification of exporting activities. It should also be emphasized that the if the new trade theory is employed in its fullness, positive results will be inevitable. The results have also shown that the value of exports also depends on income levels in foreign markets where the products will exported. Overally, this suffices that tax subsidies would definitely have a substantial impact in helping firms to export more and reduce the price of exports.

Liu and Zhou (2023) investigated the impact of direct tax subsidies and incentives on the efficiency of the manufacturing industry in China. China reform policy in early 1980s, entailed an ideological shift from pure socialism to capitalism with Chinese values/characteristics, this paradigm shift earned international recognition in early 1980s. The researchers used a panel data of 31 manufacturing industries for the period from 2009 to 2015 using Stochastic Frontier Analysis (SFA) and Panel Tobit Regression (PTR) to examine the response of manufacturing industry to the efficiency of tax subsidies and other preferential tax offers to aid research and development for the manufacturing industry.

The results validated that tax incentives have a positive impact on manufacturing firms. This reform policy coupled with tax credits and R/D have contributed more to the dominance of the Chinese manufacturing Industry in Global trade. In 2010, China's value-added goods accounted for 19.8% of the world's overall value-added goods, outpacing United States of America (USA) for the very first time as the world's most industrialized country. In 2021, China's value-added exports constitute 30% of the world's total signifying global manufacturing dominance.

It is therefore, important to note that China's global manufacturing dominance is largely attributable to this ideological reform that consigned protectionist tendencies in favor of opening up to international markets. State Capitalism would allow development of industries through a subsidizing State-Owned Enterprises (SOEs) for them to be export oriented.

Joneghani (2018) studied the impact of economic subsidies in improving export levels in an Iranian exporting Firm. The research was prompted by the need to increase foreign exchange reserves (FERs) from non- oil exports. The study used the descriptive-survey framework and the questionnaire used a Likert scale to capture psychometric behavior with regards to the responses from 261 managers and other experts of an exporting firm. The results showed that the contribution of economic subsidies like tax subsidies on merchandise export development are conditional on

many factors some of which makes them wayward to bank on them. Some of the conditions are quality of subsidies, functional financial scope of the subsidies just to mention a few.

Another study was done by Madani and Mas-Guix (2011) to analyze the performance of exports in response to tax incentives. The study employed a difference-in-difference methodology to assess the effectiveness of a tax incentive program for South Africa's automative sector for the period from 1996 to 2006.The approach was two-pronged in order to capture different modalities within South Africa and other countries that are automative exporters. The results confirmed that exports take time to respond to the incentives as they affect businesses differently. The overall contention of the study confirmed that tax incentives work in the short run for the purposes of enabling the firms to take a leap from the inertia, otherwise they do not have a considerable impact in the long run.

Beck and Chaves (2011) examined the impact of taxes on trade competitiveness. The study employed a panel data analysis covering 25 OECD countries. The results showed that higher capital income taxes retard the flow of exports. The results also confirmed that trade take time to respond to tax changes and some tax incentives are difficult to exploit.

2.3 Conclusions

The above empirics have tried to examine the true and undisputed degree of connection between tax subsidies and export tendencies in different countries and regions. The cumulative effectiveness of these subsidies is conditional and depend on many factors, many of which are peculiar to specific countries. This therefore means that the nature of the relationship between these variables depends on the tax policy, factor endowments, elasticity of demand for exports, exchange rate differentials just to mention a few. Contribution of tax subsidies ought to be outside-in perspective, contrary to the commonly held position by the policy makers. On this score, divergent research findings are also attributed to differences in econometric procedures, sample selection differences and other related reasons. The next chapter will therefore focus on methodology which will be informed by Zimbabwe's unique characteristics.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

A policy efficiency and effectiveness is as strong as processes that apprise it. Research methodology is one of these processes which will be undertaken in this chapter. This present chapter will therefore give detailed explanation on the research methods of rationalizing tax subsidies and merchandise export development. There will also be a review of government's capacity to enable domestic competitiveness in the foreign markets. The researcher will also justify the variables to be used and their data sources as per the requirements, guidelines and conditions. Diagnostic tests will also be contacted to ensure the authenticity of the results.

3.1 Research Design

This research hinges on rationalizing tax subsidies for merchandise export development in Zimbabwe for the period from 1990 to 2020. The nature of the study compels the researcher to use time series data from 1990 to 2020. Time series analysis enables the researcher to pick anomalies in the data, recognise the pattern and correlation of the data.

3.2 Model Specification

The previous chapter has provided much needed insight in developing a reasonable regression model. This research will adopt its model from the research of Liu and Zhou (2023). The authors carried out a study of ascertaining the potency of tax incentives on manufacturing sector in China. Their research resonates well with the needs of this particular research.

Model

$$ME_t = \alpha_0 + \alpha_{t1} TS + \alpha_{t2} VA + \alpha_{t3} TO + \alpha_{t4} GDP + \alpha_{t5} GDP^2 + \varepsilon$$

Where:

TS: *Tax Subsidies as a % of Corporation Tax;*

VA: *Value Addition as a % of total GDP;*

TO: *Trade Openness measured by volume of trade*

GDP: *GDP per capita annual growth %;*

GDP^2: *Squared GDP per capita annual growth%*

α_0: *The intercept*

α_1- α_5 : *variable coefficients,*

ε : *Residual error term*

3.3 Justification of variables

3.3.1 Tax Subsidies (TS)

This variable will be used in the analysis of measuring its potency on merchandise export development for the purposes of rationalizing the degree to which these tax subsidies are used as a policy instrument. Tax Subsidies were brought to light by (Surrey, 1957). Surrey enclosed tax subsidies as a tax expenditure introduced by the Government to influence the activities of the manufacturing sector. Tax subsidies are assumed to have a direct link on export performance of a country like Zimbabwe, it therefore suffices to include it as a variable in this research.

3.3.2 Trade Openness (TO)

This is the ratio between net exports and the total value of goods produced within a country. It also determines the volume of trade between countries (Levine and Renelt, 1992). Its significance in this research is derived from the idea that if trade is liberalized between countries as opposed to protectionism, chances are, movement of goods will be increased hence having an impact on the value and development of exports. It is also important to note that an exporting nation can try to improve its output so as to capitalise on the liberalization. Yeyati and Panizza (2011) alluded that trade openness also help countries to design policies that effectively and efficiently capitalise on their comparative advantages.

3.3.3 Gross Domestic Product (GDP)

Gross domestic product refers to the total value of goods and services produced within a nation for a given period of time. The total value of exports is directly related to the output produced within

a nation such that the total exports will be a percentage of the total output produced within a country and the surplus being exported. There is a direct connection between output produced and the value of exports such that an increase in output may mean an increase in exports holding other things constant. The research will also determine the connection between merchandize export development and gross domestic product. This variable is also expected to take a positive sign.

3.3.4 Value Addition (VA)

Value addition refers to the process of extracting raw materials into finished and semi-finished products. This also entails product enhancement which is derived from an increase in the value, quality and usefulness of the raw products. The concept of value addition resonates well with the needs of the research that places the impact of subsidizing manufacturing firms for them to be competitive in international markets.

It is also reasonable to assume that the Government might apply tax subsidies to enable manufacturing firms to produce more or reducing corporate income tax to those firms that export beneficiated products. On this score, high value-added exports are a product of a sound manufacturing sector. According to Gomez-Sabaini (1990), export taxes have quietly been used as an instrument to promote value addition in Argentina's industrial sector, such that export taxes would heavily constrain exports of non- value-added products compared to those who prioritize value addition This also confirms the presence of the invisible hand that indirectly confine firms to export value added products.

3.3.6 Error Term

Error term encompasses all other exogenous variables which are not included in the model. It is a well-known as random disturbance error term that has its properties.

Diagnostic Tests

Unit root test

It is prudent to make sure that there is no unit root problem regarding the fact that the researcher will use time series analysis. Unit root problem is likely to distort the authenticity of the variables.

To guard against that, the researcher will test stationarity of the data to fulfil the pre-estimation diagnosis requirement. The mean and variance of the trend should be equal, time invariant signifying stationarity (Gujarati, 2009).

The Phillips-Pheron (PP) and the Augmented Dickey Fuller (ADF) tests are two main approaches for determining stationarity of the variables. Many time series data are subject to unit root problems and researchers resort to second differencing which then compels usage of the (ADF). The hypothesis is articulated as follows.

H_0: Series has unit root problem

H_1: Series has no unit root problem

Decision Rule: Reject H_0 if the p-value of the ADF statistic is greater than the critical values at 1%, 5% and 10% levels of significances, otherwise do not reject.

Autocorrelation test

Autocorrelation, according to Gujarati (2009), exists when error terms are correlated in different periods. Autocorrelation is one of the ten Classical Linear Regression Model (CLRM)assumptions, that says there should not be a relationship between two error terms in different periods otherwise parameters would be skewed. The researcher has resorted to Breusch-Godfrey Serial LM test to determine if there is no association between the error terms. The following is the hypothesis:

H_0: There is auto-correlation

H_1: There is no auto-correlation

Decision Rule: Reject H_0 if the p-value of the Chi-Square and the F-Statistic is greater than 0.05, otherwise do not reject.

Heteroscedasticity test

Owing to the Classical Linear Regression Assumptions, error terms ought to have equal variances, signifying homoscedasticity. When error terms have an unbalanced spread, it means there is a presence of heteroscedasticity. The researcher will use the Bruesh-Godfrey test and the hypothesis follows that;

$\boldsymbol{H_0}$: There is heteroscedasticity

$\boldsymbol{H_1}$: There is no heteroscedasticity present

Decision Rule: Reject H_0 if p-value of the Chi-Square is greater than the p-value of the F statistic, otherwise do not reject.

Multicollinearity test

Multicollinearity is due to Andren, 2008). This happens when the explanatory variables are correlated. However, it is important to note that multicollinearity, in its general form is inevitable since time series data exhibits linear relations among regressors, therefore multicollinearity should be a matter of degree not kind. Exact or perfect linear relationship produces misleading results while less than perfect multicollinearity can be tolerated since it does not pose serious threat to the results. Correlation matrix is commonly used to determine the existence or non-existence of perfect linear relationship among regressors. Its presence is usually shown by a correlation coefficient of 0.8 or above. The test can be highlighted as follows;

$\boldsymbol{.H_0}$: There is perfect correlation among the explanatory variables

$\boldsymbol{H_1}$: There is no perfect correlation among the explanatory variables

Decision rule: Reject H_0 if there is no correlation coefficient of 0.8 or above.

Model Specification Test

Decision makers can only benefit from econometric research if it is properly done. Quality policymaking is equivalent to quality research. Research can only inform effective and efficient policymaking if it is done thoroughly and rigorously. Model specification tests enable researchers to ensure plausibility and authenticity of the results, since econometric models are fraught with different errors and bias for example wrong functional form and omitting relevant variables. Pursuant to model adaptation from empirical researches, the researcher cannot be certain that the model is a true reflection of the intended prediction, hence resorting to Ramsey RESET. Ramsey RESET approach is usually used to verify model's reliability and specification. The hypothesis is as follows.

$\boldsymbol{H_0}$: The model is incorrectly specified.

$\boldsymbol{H_1}$**:** The model is correctly specified

Decision Rule: Reject H_0 if the p-value is greater than 0.05, otherwise do not reject.

Conclusions

The researcher has focused heavily on model specification and other diagnostic tests that will be conducted in this chapter. Chapter 4 will present the results and offer description.

CHAPTER FOUR

ESTIMATION, PRESENTATION AND INTERPRETATION OF RESULTS

4.0 Introduction

This research is premised on rationalizing tax subsidies for merchandize export development for the period from 1985 to 2020. After gaining its independence in 1980, Zimbabwe resorted to transformative adjustments which gained shape in 1985. In 2020, the nation was also not spared by the economic shock of the Covid 19 pandemic. The economy started showing signs of rejuvenation in 2023.The researcher has therefore chosen the period from 1985 to 2020. This present chapter will focus on estimating, presenting and giving an interpretation of the results regarding this particular research. The current chapter will apply the methodology discussed in the previous chapter.

4.1 Diagnostic Tests Results

It is always wise for the researcher to apply due diligence when estimating an econometric model, adhering to regression requirements, identifying mistakes and lapses in an effort to ensure that the data being used is fit for use in a regression model. Econometric models represent the reality and other conventional theories that explain real-world phenomenon, hence the need to conform to standards when running a regression model. The researcher adheres to the tests that are done prior estimation. These tests include testing unit root test, multicollinearity, just to mention a few.

4.2 Descriptive Statistics

The researcher will present the descriptive statistics for the variable used in the model. The variables include merchandize exports (ME), tax subsidies (TS), value addition (VA), trade openness (TO) and gross domestic product (GDP). The variables are expressed in percentage form for easy analysis. This normalization helps in addressing scale differences and effects (World Bank, 2024). According to Salvatore, converting variable units into percentages helps in simplifying statistical interpretation and analysis.

Table 1***Table 4.1 Summary Statistics Table***

	ME	TS	VA	TO	GDP	GDP2
Mean	1.227778	1.530631	1.931189	-0.006672	1.651583	32.4782
Median	0.8374	1.42275	1.4352	0.0146	2.04425	22.72681
Maximum	18.4171	3.6156	48.4443	0.2568	9.6753	99.90202
Minimum	-18.4911	0.2334	-20.9141	-0.7728	-9.9951	0.024964
Std. Dev.	8.379688	0.961309	11.26745	0.173064	5.531771	32.59981
Skewness	-0.071659	0.787942	1.685151	-2.468379	-0.404729	0.762276
Kurtosis	3.290968	2.858039	9.584124	11.95627	2.290826	2.157407
Jarque-Bera	0.157804	3.75534	82.06444	156.8796	1.737224	4.551335
Probability	0.924131	0.152946	0	0	0.419533	0.102728
Sum	44.2	55.1027	69.5228	-0.2402	59.457	1169.215
Sum Sq. Dev.	2457.671	32.34401	4443.439	1.048286	1071.017	37196.18

(Refer to Appendix B1)

There are 36 observations per each variable for the period from 1985 to 2020.The nation has recorded an average merchandize export rate of 1.23%. The mean for gross domestic product is 1.65% meaning that the economy has recorded an average growth rate of 1.65% from 1985 to 2020.

Value addition has the highest standard deviation of 11.268 and this signifies that the data points are more dispersed around the mean. The deviation from the mean is high and this may be a sign of outliers in the model. The solution to this Winsorization that replace outliers based on the chosen range of as percentiles, as argued by (Duan, 1998).

4.3 Unit Root Tests

Table 2***Table 4.2 Unit Root Test Results (1985-2020)***

Variable	ADF Test	P-Value	Critical 1%	Critical 5%	Critical 10%	Order of Integration
ME	-3.5261	0.0009	-2.6327	-1.9501	-1.6112	I (0)
TS	-4.5771	0.0000	-2.6392	-1.9517	-1.6106	I (0)
TO	-7.8987	0.0000	-2.6327	-1.9507	-1.6111	I (0)
VA	-4.1061	0.0002	-2.6327	-1.9507	-1.6111	I (0)
GDP	-3.7166	0.0005	-2.6327	-1.9507	-1.6111	I (0)
GDP2	-3.3349	0.0015	-2.6329	-1.9507	-1.6111	I (0)

(*Refer to Appendix B.2.1 to 5)*

The results from the table above shows that the chosen data is stationary and there is no unit root problem which would distort the results. All the variables are integrated to order zero.

4.4 Redundant Variable Test

The researcher tried to assess the significance of all explanatory variables included in the model. The test also determines if there is need to include or remove certain variables in the model. Redundant variables are removed while the appropriate ones are included. The researcher has resorted to Redundancy variable test to screen the variables. The table below shows a summary of the results.

Table 3 ***Table 4.3: Redundant variable test results***

	Prob value F-Statistic	Prob value t-statistic	Probability value Likelihood Ratio	LR Test summary Restricted LogL Value	LR Test summary Unrestricted LogL Value
TS	0.0244	0.0244	0.0114	-101.3909	-98.1905
VA	0.0006	0.0006	0.0001	-105.7025	-98.1905
TO	0.0335	0.0335	0.0169	-101.0427	-98.1905
GDP	0.0191	0.0191	0.0084	-101.659	-98.1905
GDP^2	0.4533	0.4533	0.3994	-98.54561	-98.1905

From table 4.3, the value of the restricted LogL is less than the unrestricted LogL value for the variables used in this research indicating that all variables are indispensable for this particular research.

Table 4 ***Table 4.4: Autocorrelation summarized test results***

Hypothesis	Decision Rule	P-value (χ^2)	P-Value(F)

H_0: There is auto-correlation	Reject H_0 if the probability value of the F-Statistic and χ^2 is above 0.05	0.2326**	0.3064**

***means significant at 1%, 5% and 10%

(Refer to appendix C)

Table 4.4 shows that the probability value of the F-Statistic and Chi-Square is more than 0.05, therefore the researcher rejects H_0 and conclude that there is no correlation between the error terms.

Heteroscedasticity Results

The researcher employed the Breusch-Pagan-Godfrey test to determine the presence or non-presence of heteroscedasticity, and the results are shown in the table below.

Table 5***Table 4.5 Heteroscedasticity Test Results***

Hypothesis	Decision Rule	P-value (χ^2)	P-Value(F)
H_0: There is heteroscedasticity	Reject H_0 if probability value of the χ^2 is greater than 0.05	0.1937***	0.2050***

***means significant at 1%, 5% and 10%

(Refer to appendix D)

From the table 4.5, the researcher rejects H_0 since the probability of the F-statistic and the Chi-Square is exceeds 0.05. The researcher came to conclude the presence of homoscedasticity.

Multicollinearity Test Results

To determine the relationship between the regressors, the researcher tested for multicollinearity. The following table makes up the summary of the results.

Table 6***Table 4.6: Multicollinearity Test Results***

	ME	TS	TO	VA	GDP	GDP2
ME	1.000000					

TS	0.494766	1.000000				
TO	-0.238577	0.053903	1.000000			
VA	0.765644	0.266237	-0.047968	1.000000		
GDP	0.764308	0.445720	-0.218524	0.629614	1.000000	
GDP2	0.175160	0.002113	-0.012572	0.443612	0.185912	1.000000

(Refer to appendix E)

Table 4.6 confirms that all independent variables are not correlated as shown by their coefficients. Multicollinearity is always and everywhere a matter of degree not kind meaning that if the independent variables are not correlated to a degree of 0.8, then there is no harm.

4.5 Normality Test

The researcher used the Jarque Bera to test for normality. The results obtained are summarized in.

Table 7***Table 4.7: Summarized Normality Test Results***

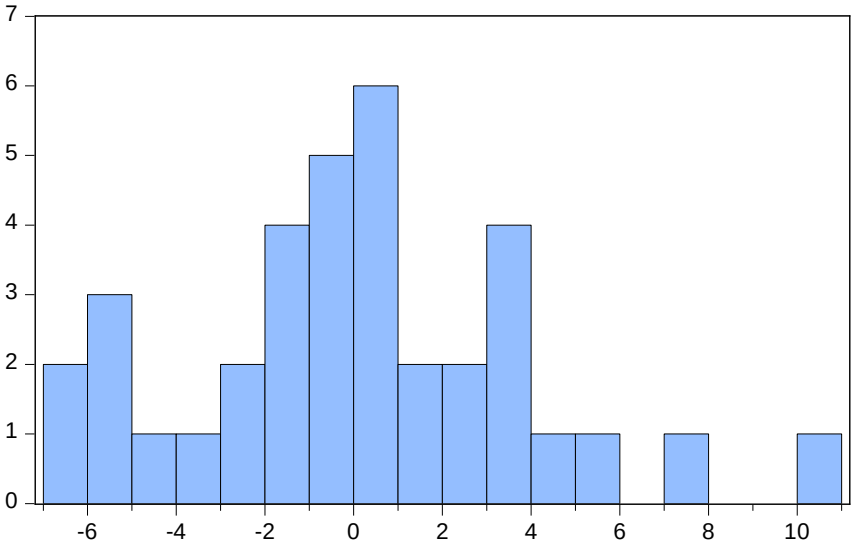
Hypothesis	**Decision Rule**	**Jarque-Bera Statistic**	**Probability**
$H_{0:}$ Normal Distribution absent	Reject H_0 if the probability value and the Jarque Bera statistic is above 0.05	2.160913***	0.339440***

***means significant at 1%, 5% and 10%

(Refer to the graph below)

The results show that the Jarque Bera statistic is 2.160913 and its probability 0.339440 and these figures are above 0.05. Therefore, the researcher rejects H_0 and concludes that there is normal distribution among the residuals. The normality graph is shown below.

Figure 2**Fig 4.2: Normality Graph**



Series: Residuals	
Sample 1985 2020	
Observations 36	
Mean	-3.70e-16
Median	-0.003010
Maximum	10.95567
Minimum	-6.669882
Std. Dev.	3.856565
Skewness	0.527133
Kurtosis	3.573701
Jarque-Bera	2.160913
Probability	0.339440

4.6 Model Stability Test

The researcher also used the CUSUM and CUSUMSQ to test the stability of the model. The CUSUM and CUSUMSQ marks or plot should be within the defined bounds. The cumulative sums and the Cumulative sum of squares help in detecting structural adjustments within the model.

Figure 3Fig 4.3: CUSUM Graph

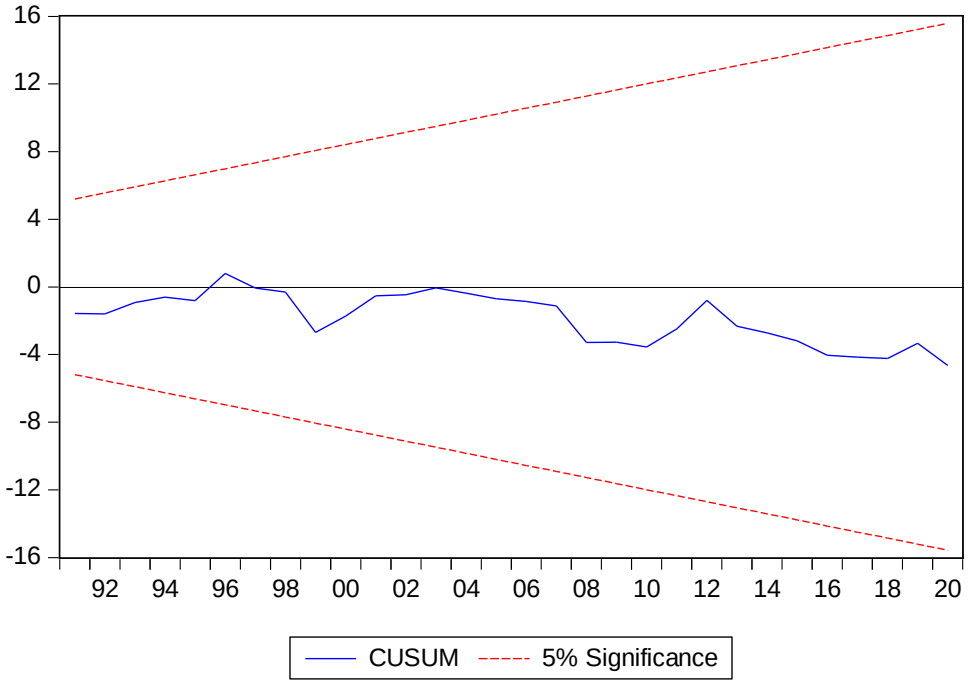
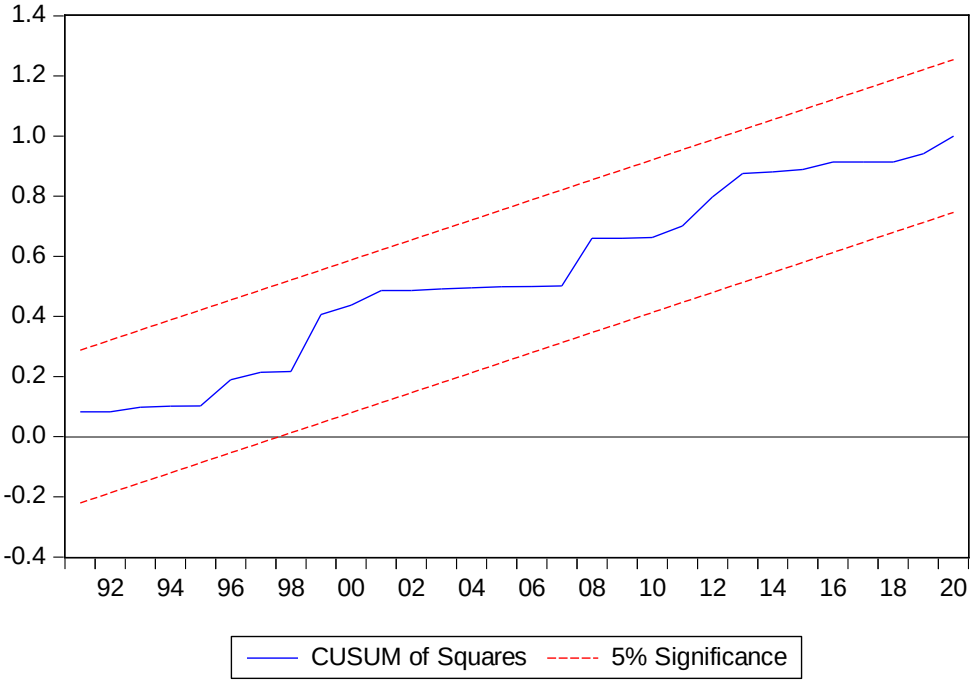


Fig 4.4: CUSUMSQ Graph



Model specification Test

The Ramsey RESET test was used to test if the model is correctly specified. The table below summarizes the results.

Table 8***Table 4.8: Model Specification Results***

Hypothesis	**Decision Rule**	**P-value (F)**
H_0**:**	Reject H_0 if p-values are greater than 0.05	0.4742***

*** represents significant at 1%, 5% and 10%

(Refer to Appendix F)

Table 4.8 indicates that, the probability value of the F-Statistic is greater than 0.05 the researcher therefore rejects H_0 and concludes that the model is correctly specified.

4.7 Regression Results

As highlighted in the Chapter three, the researcher has resorted to Ordinary Least Squares (OLS) method, testing the potency of applying subsidies to the manufacturing sector for the purpose of boosting merchandize exports. The results are highlighted below.

Table 9***Table 4.9: Regression Results***

Dependent Value	**ME**			
Independent Variable	**Coefficient**	**Std Error**	**T-Statistic**	**P- Value**
C	-2.166276	1.618097	-1.33878	0.1907
TS	1.909113	0.834829	2.28683	0.0294
VA	0.42715	0.089604	4.767088	0
GDP	0.447777	0.185111	2.418961	0.0218
TO	-7.745224	4.26613	-1.815515	0.0795
GDP2	-0.03523	0.024423	-1.442494	0.1595

(Refer to Appendix G)

R^2=0.788190 **Adjusted R^2** = 0.752889

Probability (F-Statistic) = 0.000000 **F-Statistic** = 22.32732

D-W Statistic = 1.889808

As a result of the above table's findings, the estimated equation from the model described in chapter three can then be estimated as follows;

$$ME = -2.166276 + 1.909113TS + 0.42715VA + 0.447777GDP - 7.745224TO - 0.03523GDP^2$$

Interpretation of the regression results

First off, the researcher will give an interpretation of the goodness of fit normally known as (DoF). This measures the degree to which an econometric model represents the captured data. This is usually measured by both R^2 and the Adjusted R^2 · The former measures the variance proportions explained by the model through independent variables while the latter, the adjusted one represents the superiority of the explanatory variables in the overall performance of the model.

Basing on the presumption of the findings, the R^2 implies that 78% of the merchandise export tendencies are explained by variations in tax subsidies, value addition, trade openness and an

increased productive sector. The remaining percentage will be captured by the error term which encompass all other explanatory variables that are not included in the model, including elasticity of exports and exchange rate movements just to mention a few. The Durbin Watson's test scored 1.89, which is closer to 2 validating the plausibility of the assumptions used in the regression model.

Adjusted R^2 rides on the degrees of freedom, hence ensuring conservativeness of the regression model by capturing model complexity, inclusion of unnecessary explanatory variables.75% of the variations in merchandise exports are explained by the model. The probability value of the F-Statistic is 0.00000 signifying that the regression model is significant at 5%. Other Criterions assume that the F- statistic should be above 5 and this is positively confirmed by the F- statistic having a score that is more than 5.

The variables whose probability is less than 0.05 give an indication that they are statistically significant at 5% and they include tax subsidies, value addition, trade openness and gross domestic product.

Tax Subsidies (TS)

From the Table 4.9 above, tax subsidies have proven to be a necessary component in both domestic economic and foreign economic policy. The research has shown that there is a positive relationship between tax subsidies and merchandise exports. This means that any percentage change in a tax subsidy leads to an increase in merchandise exports by 1. 909113.This provides a ratification that tax subsidies are an important component in improving exports position of a nation. Notwithstanding the fact that subsidies in general are paradoxical in the eyes of economic commentators. Tax subsidies can be viewed as a leakage or an injection in the economy depending on the outcome. The Government of Zimbabwe as established Special Economic Zones (SEZs). These zones are ostensibly designed to lure investment through exhibiting favourable terms. They are the messengers of the Government Policy regarding improving exports.

The dialogue regarding the criticality of tax subsidies however, hinges on an ideology that a nation like Zimbabwe subscribes to. In a capitalist society, subsidies are considered to be a waste and a classic component of a free-bee., while the socialists would argue otherwise.

Value Addition (VA)

There is also a positive connection between value addition and merchandise export. This means that for any percentage increase in value addition, merchandise exports increase by 0. 42715.This signifies the indispensability of value addition as a way of improving exports. Zimbabwe is a resource endowed nation with all kinds of resources and it suffices that the country should capitalise on resources to improve exports. Burger *et al* (2019), emphasized the importance of value addition and diversification. The researchers further argued that the motive for any industry should cantered on exporting, capitalizing on synergies that are in international spaces. The world market prefers finished products that are ready for consumption.

Gross Domestic Product (GDP)

It all starts and ends with production. Production is the be all and end all of living in a global economy. A nation that does produce has no edge over the nation that cannot produce, as confusing as it seems, gross domestic product is the fulcrum that supports the wheels of international trade. Gross domestic product is cross-cutting variable that is known to have a positive relationship with many variables. All merchandise exports are a product of produced output in a nation for a given period of time. This positive correlation resonates well with underlying elements of international trade. A nation can only exports what it has produced be it a raw or a manufactured product. The table above has shown that for every 1% increase in output produced, merchandise exports increase by 0. 44777.This also means that as the productive capacity of an economy increases, the local market becomes saturated and the surplus is exported. Secondary elements of the elasticity of exports are always a product of export themselves.

Trade Openness (TO)

The research has shown that there is a negative relationship between trade openness and merchandise exports, such that a one percent improvement in trade openness will lead to a decrease of merchandise exports by -7.745224.This could be attributed to the fact that Zimbabwe is still a developing economy and trade openness would lead to an influx of imported goods from well industrialised nations like South Africa, distorting the ability of the local industry to have any command in foreign markets.

It is however important to underscore that trade openness is a broad phrase in the sense that the degree of openness depends on the intentions of the policy itself. Trade policy is interpreted differently. Some scholars assume that it is the volume of trade as a percentage of total output produced, some scholars derive openness by juxtaposing the differences between imports and exports of a nation or a region, some attach a dummy variable for example from 1 to 5, 1 indicating that there is no trade openness, and 5 representing the presence of free trade among trading players. This could also mean the presence of import tariffs and export taxes that are beyond businesses ability to cope. There are different ways of explaining trade openness, depending on context and perspective. The research has deduced that the elements of trade openness ought to be narrowed for clear analysis.

Conclusions

The findings of the research have proved that tax subsidies play a critical role in improving exports of manufactured goods. This therefore set the ground for policy making. Chapter five will proffer policy prescriptions that will help in improving the export position of a nation.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS

5.0 Introduction

This present chapter will proffer conclusions and recommendations on the subject matter. The ultimate goal is to develop a subsidization framework, if need be, for the purposes of guarding against unnecessary expenditures and diagonally, to cushion strategic industries that may need help.

5.1 Summary and conclusions of the study

This research was premised on rationalizing tax subsidies for merchandize export development for the period from 1985 to 2020, using the data from World Bank. A rational reconstruction approach was used, reconstructing theoretical underpinnings of subsidies, narrowed to tax subsidies. A positive relationship was found, signifying that tax subsidies are an important component in leap-frogging the inertia of being not visible in the international markets.

Gross domestic product, value addition and trade openness are other variables that were used in this research and trade openness produced negative relationship. The researcher has also noticed that trade openness has many variants and the feasibility of using it in policy making depends on the policy intentions. This is because the stage of international trade has different players, many of which are in for different reasons. It would be misleading for a country to view international markets with two eyes, rather a third eye and a sixth brain is needed.

5.2 Policy Recommendations

There are very few researches that have tried to optimize tax subsidies that are extended to manufacturing firms. Subsidies in general are considered to be a draw-down in the Consolidated Revenue Fund (CRF). This compels policy makers to have a policy framework that is designed to help firms when it is necessary.

The discussion above has shown that there are many reasons why different scholars apply scrutiny when studying and analysing expenditure on subsidies. Most if not all subsidies are a major component of government expenditure and therefore there is need for feedback on the productivity of tax subsidies measured by an increase in the value of exports. It is also important to note that policy makers should be cognisant of developments of narrower elements of tax subsidies that address specific needs otherwise it will be an aimless short.

Quantifying and measuring subsidies are somehow problematic especially if it is done cross country. It is however, prudent to apply it selectively so much so that the results will inform the reasons for applying such a policy. Explicit and implicit elements of different types of subsidies should be brought to light before implementing to inform decision making. There are situations where some policies may achieve two or more conflicting outcomes simultaneously, hence the need to diagnose the symptoms and derive appropriate remedies.

Overally, policy makers ought to apply rational reconstruction in both research and policy. Rational reconstruction is a well conceptualised philosophical view that assumes that certain conventions need to be reconstructed for the them to suit the structure of the country. Policies are not one size fits all, and therefore they need to be applied after a thorough scrutiny, ascertaining if they resonate well with the structure of the economy.

5.3 Suggestions for future studies

This research was premised on rationalizing tax subsidies for merchandise export development. However, it is important to underscore that there are many factors that affect and influence the viability, effectiveness and efficiency of tax subsidies for example exchange rate regimes, the political atmosphere and other variables. Future researches could focus on including instrumental variables that have a bearing on tax subsidies.

Again, other future researches could also focus on developing frameworks that help firms in gaining economic competitiveness on the world market. The mantra of free-trade should be scrutinized to determine its practicality to developing and emerging economies. Heavily

industrialised nations can easily influence prices on the world market compared to the emerging and developing nations. Researches should therefore focus on how to navigate these intricacies and complexities of international trade.

All in all, future researchers should focus on developing framework for improving exports of manufactured goods and services. Rational reconstruction approach should also be applied to measure the effectiveness and efficiency of certain policies especially those ones that are aimed at improving the volume of exports.

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APPENDICES

Appendix A: Dataset

YEAR	ME	TS	VA	TO	GDP	GDP*2*
1985	5.2362	3.6156	4.5896	0.0644	6.9444	48.22469
1986	18.4171	3.5701	5.2865	0.0298	2.099	4.405801
1987	12.1042	3.4932	5.9486	-0.0062	1.1507	1.32411
1988	2.2011	3.3231	6.7074	-0.027	7.5524	57.03875
1989	2.493	3.0471	4.0252	0.0214	5.1998	27.03792
1990	4.1317	2.7065	3.9945	0.0131	6.9886	48.84053
1991	3.0758	2.3548	1.2381	0.1056	5.5318	30.60081
1992	-10.8478	2.0343	-5.067	0.1987	-9.0156	81.28104
1993	-0.7	1.7484	-6.2225	-0.0086	1.0515	1.105652
1994	7.5962	1.5118	15.4381	0.1118	9.2352	85.28892
1995	-1.1496	1.3141	-7.0565	0.1015	0.158	0.024964
1996	9.1128	1.1372	9.4586	-0.0983	9.3607	87.6227
1997	1.6935	0.966	1.5423	0.1233	2.6806	7.185616
1998	2.0634	0.802	-0.3147	0.0713	2.8852	8.324379
1999	-1.4524	0.6419	8.6939	-0.248	-0.8178	0.668797
2000	-3.5386	0.4958	-9.7933	0.0425	-3.0592	9.358705
2001	1.0786	0.3565	-10.2081	-0.0909	1.4396	2.072448
2002	-9.1255	0.2544	-9.9154	-0.0163	-5.894	34.73924
2003	-17.1886	0.2334	-16.6336	0.0517	-9.9951	99.90202
2004	-6.1029	0.314	1.0372	0.0735	-5.8075	33.72706
2005	-6.1544	0.4713	1.1561	0.0001	-5.7111	32.61666
2006	-4.0873	0.6503	-4.152	0.0818	-3.4615	11.98198
2007	-4.4428	0.8228	-3.7677	0.0161	-3.6533	13.3466
2008	-18.4911	1.0037	-20.9141	0.2314	-1.6689	2.785227
2009	10.7013	1.1838	9.6607	-0.7728	9.0196	81.35318
2010	18.066	1.3539	48.4443	0.2568	9.6753	93.61143
2011	12.4529	1.5364	17.8638	0.0709	9.1939	84.5278
2012	14.7012	1.698	6.7505	-0.2064	6.6654	44.42756
2013	0.1925	1.7776	3.2494	-0.2644	1.9895	3.95811
2014	0.5962	1.7547	-2.4833	-0.0729	2.3769	5.649654
2015	0.1005	1.6638	0.043	0.0366	1.7799	3.168044
2016	-0.7936	1.5498	1.3281	-0.108	0.7559	0.571385
2017	3.1864	1.4601	2.4649	-0.0238	4.704	22.12762
2018	3.3611	1.4108	3.1681	-0.0005	4.8297	23.326
2019	-1.1198	1.4197	2.6535	0	-8.1	65.61
2020	-3.1673	1.4258	1.3086	0.0016	3.3734	11.37983

Appendix B1 Summary of Descriptive Statistics

Date: 11/22/24
Time: 14:40
Sample: 1985 2020

	ME	TS	VA	TO	GDP	GDP2
Mean	1.227778	1.530631	1.931189	-0.006672	1.651583	32.47820
Median	0.837400	1.422750	1.435200	0.014600	2.044250	22.72681
Maximum	18.41710	3.615600	48.44430	0.256800	9.675300	99.90202
Minimum	-18.49110	0.233400	-20.91410	-0.772800	-9.995100	0.024964
Std. Dev.	8.379688	0.961309	11.26745	0.173064	5.531771	32.59981
Skewness	-0.071659	0.787942	1.685151	-2.468379	-0.404729	0.762276
Kurtosis	3.290968	2.858039	9.584124	11.95627	2.290826	2.157407
Jarque-Bera	0.157804	3.755340	82.06444	156.8796	1.737224	4.551335
Probability	0.924131	0.152946	0.000000	0.000000	0.419533	0.102728
Sum	44.20000	55.10270	69.52280	-0.240200	59.45700	1169.215
Sum Sq. Dev.	2457.671	32.34401	4443.439	1.048286	1071.017	37196.18
Observations	36	36	36	36	36	36

Appendix B2: Unit Root Test

1.) Gross Domestic Product Unit Root Test

Null Hypothesis: GDP has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.716572	0.0005
Test critical values:	1% level	-2.632688	
	5% level	-1.950687	
	10% level	-1.611059	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GDP)
Method: Least Squares

Date: 11/22/24 Time: 14:52
Sample (adjusted): 1986 2020
Included observations: 35 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	-0.561415	0.151057	-3.716572	0.0007

R-squared	0.288690	Mean dependent var	-0.102029
Adjusted R-squared	0.288690	S.D. dependent var	6.094459
S.E. of regression	5.140018	Akaike info criterion	6.140146
Sum squared resid	898.2728	Schwarz criterion	6.184584
Log likelihood	-106.4525	Hannan-Quinn criter.	6.155486
Durbin-Watson stat	2.036201		

2) Merchandise Exports Unit Root Test

Null Hypothesis: ME has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.526132	0.0009
Test critical values:	1% level	-2.632688	
	5% level	-1.950687	
	10% level	-1.611059	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(ME)
Method: Least Squares
Date: 11/22/24 Time: 14:57
Sample (adjusted): 1986 2020
Included observations: 35 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ME(-1)	-0.532046	0.150887	-3.526132	0.0012

R-squared	0.267213	Mean dependent var	-0.240100
Adjusted R-squared	0.267213	S.D. dependent var	8.816521
S.E. of regression	7.547206	Akaike info criterion	6.908387
Sum squared resid	1936.651	Schwarz criterion	6.952826

Log likelihood	-119.8968	Hannan-Quinn criter.	6.923727
Durbin-Watson stat	1.886008		

3) Squared Gross Domestic Product Unit Root Test

Null Hypothesis: GDP2 has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.334893	0.0015
Test critical values:	1% level	-2.632688	
	5% level	-1.950687	
	10% level	-1.611059	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GDP2)
Method: Least Squares
Date: 11/22/24 Time: 15:00
Sample (adjusted): 1986 2020
Included observations: 35 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP2(-1)	-0.477863	0.143292	-3.334893	0.0021

R-squared	0.246058	Mean dependent var	-1.052710
Adjusted R-squared	0.246058	S.D. dependent var	45.20653
S.E. of regression	39.25275	Akaike info criterion	10.20608
Sum squared resid	52386.45	Schwarz criterion	10.25051
Log likelihood	-177.6063	Hannan-Quinn criter.	10.22142
Durbin-Watson stat	2.416718		

4) Trade Openness Unit Root Test

Null Hypothesis: TO has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.898705	0.0000
Test critical values:	1% level	-2.632688	
	5% level	-1.950687	
	10% level	-1.611059	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TO)
Method: Least Squares
Date: 11/22/24 Time: 15:13
Sample (adjusted): 1986 2020
Included observations: 35 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TO(-1)	-1.292552	0.163641	-7.898705	0.0000

R-squared	0.647250	Mean dependent var	-0.001794
Adjusted R-squared	0.647250	S.D. dependent var	0.282312
S.E. of regression	0.167673	Akaike info criterion	-0.705446
Sum squared resid	0.955885	Schwarz criterion	-0.661007
Log likelihood	13.34530	Hannan-Quinn criter.	-0.690105
Durbin-Watson stat	2.080906		

5) Tax Subsidies Unit Root Test

Null Hypothesis: D(TS,2) has a unit root
Exogenous: None
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.577090	0.0000
Test critical values:	1% level	-2.639210	
	5% level	-1.951687	

	10% level	-1.610579

6) Value Added Unit Root Test

Null Hypothesis: VA has a unit root
Exogenous: None
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.106126	0.0002
Test critical values:	1% level	-2.632688	
	5% level	-1.950687	
	10% level	-1.611059	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(VA)
Method: Least Squares
Date: 11/22/24 Time: 15:35
Sample (adjusted): 1986 2020
Included observations: 35 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
VA(-1)	-0.660882	0.160950	-4.106126	0.0002

R-squared	0.331468	Mean dependent var	-0.093743
Adjusted R-squared	0.331468	S.D. dependent var	13.31598
S.E. of regression	10.88765	Akaike info criterion	7.641291
Sum squared resid	4030.394	Schwarz criterion	7.685730
Log likelihood	-132.7226	Hannan-Quinn criter.	7.656631
Durbin-Watson stat	1.905679		

Appendix C: Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.234244	Prob. F(2,28)	0.3064
Obs*R-squared	2.916639	Prob. Chi-Square(2)	0.2326

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 11/22/24 Time: 15:40
Sample: 1985 2020
Included observations: 36
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
VA	-0.039386	0.092880	-0.424055	0.6748
TO	-1.175248	4.299544	-0.273342	0.7866
TS	0.178795	0.837668	0.213443	0.8325
GDP	-0.015203	0.186306	-0.081602	0.9355
GDP2	0.005609	0.024770	0.226460	0.8225
C	-0.349402	1.624121	-0.215133	0.8312
RESID(-1)	0.045118	0.191548	0.235542	0.8155
RESID(-2)	-0.319512	0.204036	-1.565961	0.1286

R-squared	0.081018	Mean dependent var	3.95E-16
Adjusted R-squared	-0.148728	S.D. dependent var	3.856565
S.E. of regression	4.133417	Akaike info criterion	5.869216
Sum squared resid	478.3839	Schwarz criterion	6.221109
Log likelihood	-97.64589	Hannan-Quinn criter.	5.992036
F-statistic	0.352641	Durbin-Watson stat	1.905407
Prob(F-statistic)	0.921718		

Appendix D: Heteroscedasticity Test Results

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.547941	Prob. F(5,30)	0.2050
Obs*R-squared	7.382923	Prob. Chi-Square(5)	0.1937
Scaled explained SS	6.597720	Prob. Chi-Square(5)	0.2523

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 11/22/24 Time: 15:50
Sample: 1985 2020
Included observations: 36

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.204262	8.800930	0.591331	0.5587
VA	0.121403	0.487361	0.249103	0.8050
TO	-16.88569	23.20374	-0.727714	0.4724
TS	9.912094	4.540688	2.182950	0.0370
GDP	-0.405796	1.006831	-0.403043	0.6898
GDP2	-0.172207	0.132839	-1.296354	0.2047

R-squared	0.205081	Mean dependent var	14.45996
Adjusted R-squared	0.072595	S.D. dependent var	23.52682
S.E. of regression	22.65677	Akaike info criterion	9.229806
Sum squared resid	15399.88	Schwarz criterion	9.493726
Log likelihood	-160.1365	Hannan-Quinn criter.	9.321921
F-statistic	1.547941	Durbin-Watson stat	2.279337
Prob(F-statistic)	0.205011		

Appendix E: Multicollinearity Test Results

	ME	TS	TO	VA	GDP	GDP2
ME	1.000000	0.494766	-0.238577	0.765644	0.764308	0.175160
TS	0.494766	1.000000	0.053903	0.266237	0.445720	0.002113
TO	-0.238577	0.053903	1.000000	-0.047968	-0.218524	-0.012572

VA	0.765644	0.266237	-0.047968	1.000000	0.629614	0.443612
GDP	0.764308	0.445720	-0.218524	0.629614	1.000000	0.185912
GDP2	0.175160	0.002113	-0.012572	0.443612	0.185912	1.000000

Appendix F: Model Specification Test Results

Ramsey RESET Test
Equation: UNTITLED
Specification: ME TS TO VA GDP GDP2 C
Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	0.725087	29	0.4742
F-statistic	0.525752	(1, 29)	0.4742
Likelihood ratio	0.646812	1	0.4213

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	9.269350	1	9.269350
Restricted SSR	520.5584	30	17.35195
Unrestricted SSR	511.2890	29	17.63066

LR test summary:

	Value
Restricted LogL	-99.16668
Unrestricted LogL	-98.84328

Unrestricted Test Equation:
Dependent Variable: ME
Method: Least Squares
Date: 11/22/24 Time: 15:56
Sample: 1985 2020
Included observations: 36

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TS	1.837000	0.847364	2.167900	0.0385
TO	-7.181645	4.369934	-1.643422	0.1111
VA	0.445200	0.093688	4.751922	0.0001
GDP	0.425575	0.189088	2.250679	0.0322
GDP2	-0.024641	0.028624	-0.860862	0.3964
C	-1.929661	1.663365	-1.160095	0.2555

FITTED^2	-0.008399	0.011583	-0.725087	0.4742

R-squared	0.791962	Mean dependent var	1.227778
Adjusted R-squared	0.748920	S.D. dependent var	8.379688
S.E. of regression	4.198888	Akaike info criterion	5.880182
Sum squared resid	511.2890	Schwarz criterion	6.188089
Log likelihood	-98.84328	Hannan-Quinn criter.	5.987650
F-statistic	18.39960	Durbin-Watson stat	1.859068
Prob(F-statistic)	0.000000		

Appendix G: Regression Results

Dependent Variable: ME
Method: Least Squares
Date: 11/22/24 Time: 16:00
Sample: 1985 2020
Included observations: 36

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TS	1.909113	0.834829	2.286830	0.0294
VA	0.427150	0.089604	4.767088	0.0000
GDP	0.447777	0.185111	2.418961	0.0218
TO	-7.745224	4.266130	-1.815515	0.0795
GDP2	-0.035230	0.024423	-1.442494	0.1595
C	-2.166276	1.618097	-1.338780	0.1907

R-squared	0.788190	Mean dependent var	1.227778
Adjusted R-squared	0.752889	S.D. dependent var	8.379688
S.E. of regression	4.165567	Akaike info criterion	5.842594
Sum squared resid	520.5584	Schwarz criterion	6.106513
Log likelihood	-99.16668	Hannan-Quinn criter.	5.934709
F-statistic	22.32732	Durbin-Watson stat	1.889808
Prob(F-statistic)	0.000000		