

CHAPTER TWO: LITERATURE REVIEW

2.0 INTRODUCTION

This chapter will deal with the theoretical background and existing empirical evidence underlying the export-growth relationship.

2.1 CLASSICAL AND NEOCLASSICAL ECONOMICS³

The Classical and Neoclassical economists argue that there is a strong positive relationship between exports and economic growth. The **Adam Smith (1776)**'s model of international trade assumes that resources are not fully utilized prior to trade and that trade raises the level of economic activity.

The 'vent for surplus' model propounded by **Adam Smith (1776)** shows how previously unemployed factors can be put to work. Trade may procure even more advantages when an isolated underdeveloped area where extensive underemployment of resources is a characteristic is brought into contact with the world through trade. Improvements in international transport and communications provide a market where none existed before. Imported consumer goods become available and are the incentives for increased efforts. In this respect, trade becomes a vent for surplus.

According to the 'vent for surplus' model, a country can move outside its production

3. The Classical trade theory dates back to the publication of the 'Wealth of Nations' by Adam Smith in 1776

possibility frontier from a heavy underemployment situation. The vent, however, ceases to have its beneficial impact once the underutilized resources are absorbed into production. It is, thus, a once-for-all non-cumulative phenomenon. Furthermore, it must be noted that since there will be no effect in the absence of surplus factors of production, the model, certainly, does not apply to all countries.

In fact, trade promotes specialization in the production of export products, which in turn boosts the productivity level and causes the general level of skills to rise in the export sector. This, then, leads to a shift of resources from the non-trade sector to the efficient export sector. Consequently, the entire economy witnesses an increase in productivity due to spillover effects from the trade sector (**Baldwin, 1963**).

Thus, Classical and Neoclassical economists support the notion that trade would make an impressive contribution to a country's development. Trade is considered to be not only a device for achieving productive efficiency but also an 'engine of growth'.

Furthermore, it is argued that although specialization based on comparative advantage yields direct benefits, there are additional dynamic aspects of trade beyond static gains that are important to the growth transmitting process of exports (**Bhagwati, 1988**).

2.2 EXPORTS TO GROWTH CAUSALITY

Various export-based models have been formulated, due to the dynamic gains from trade, to present a macro-dynamic view of how an economy's growth can be determined by an

expansion in its exports.

One version of these models is the **Harrod-Domar model** which stipulates that given that the formation of capital is the only source of economic growth and that imports are solely for consumption, it follows that exports and investment compete for limited domestic resources. As a result, the rate of growth of GDP and exports are negatively related.

Another version of these models is the **Staple model** which argues that a country is able to enjoy higher rates of economic growth resulting from the discovery of a primary product in which the country has a comparative advantage or from an increase in the world demand for its export commodity. According to **Lundahl (1991)**, international trade starts to take place when a staple enjoying a high and increasing demand in international markets is discovered, when a technological breakthrough takes place which allows unutilized resources to be used in production, when capital for their exploitation is made available or when a sudden increase in demand takes place which makes exploitation profitable.

However, it is argued that booming primary exports may fail to stimulate development in an economy because: firstly, the low income elasticity of demand for such products may result in lower prices in international markets following a boom in supply. Secondly, the linkages generated may be very weak or practically inexistent and the export sector may remain an enclave without much contact with the other sectors of the economy (**Lundahl, 1991**).

Further, the large influx of foreign exchange may cause what is known as the 'Dutch Disease'⁴. The key idea behind this paradox is that exports booms influence a country's real exchange rate which adversely affects other exports industries. With a fixed nominal exchange rate, domestic inflation exceeding world inflation results into a fall in exports profits. With a fall in their profits, exporters tend to produce less for exports which will consequently reduce incomes and employment in export industries.

In addition to these models, the **Two-Gap model**, propounded by **Chenery and Associates (1962, 1966, 1970)**, also establishes the link between exports and economic growth. The idea behind the Two-Gap model is that there are two limits to the amount of capital formation: domestic investment and foreign capital. According to these economists, the relationship between exports and growth depends on whether the domestic or foreign resource constraint is operative. They argue that if the domestic constraint is operative, then exports and investment will be competing for limited resources. They, thus, argue that a negative relationship between the proportion of exports to aggregate output and the latter's rate of growth will tend to exist. However, if the foreign constraint is operative, the model specifies a positive relationship between the proportion of exports and the rate of economic growth, the intermediate link being the positive relationship between exports and capital goods imports.

4. This syndrome receives its name from the experience of Netherlands after 1960 when major reserves of natural gas were discovered. The ensuing export boom and the balance of payments surplus promised new prosperity. Instead, during the 1970s, the Dutch economy suffered from rising inflation, declining exports of manufactures, lower rates of income growth and rising unemployment.

2.3 GROWTH TO EXPORTS CAUSALITY

Is economic growth the result of export promotion or does economic growth cause exports expansion? In explaining this vicious circle, **Bhagwati (1988)** argues that increased trade produces more income and more income facilitates more trade.

There are also strong theoretical arguments which make the reverse causality from GDP to export growth possible. This reverse causality may occur when the long run accumulation of physical and human capital, combined with up-to-date technology, increase the overall productive and allocative efficiency of a country and in the process tip the scales of comparative advantage in international trade in favour of that country overtime (**Afxentiou and Serletis, 1991**). This idea stems from the Neo-Factor proportions and Neo-Technology approaches to comparative advantage and the less conventional Linder Theorem (see **Dodaro, 1993**).

Causality from GDP to exports may additionally be justified in some of Kaldor's contributions to the theory of growth. Specifically, **Kaldor (1967, pp42)** writes:

‘ The very fact of a faster growth of output... could be expected to act as a stimulus to exports; when output and capacity are both enlarged, productivity is increased and unit costs are reduced.’

Kaldor (1967) suggested that causality runs from GDP growth to exports rather than vice-versa, due to the positive impact of productivity growth on per unit cost reduction of tradables whose international competitiveness is thus improved.

2.4 EMPIRICAL EVIDENCE

2.4.1 Cross-Sectional Studies

In the 1970s, prominent economists (like **Krueger, 1978; Bhagwati, 1978; Little et al., 1970**) advanced theoretical grounds which favoured export promotion as a superior development strategy to import-substitution. The superiority of the export-oriented strategy draws on an extensive list of empirical studies. Evidence consists of tests in cross-country format that use bi-variate correlation and/or production function type regressions to demonstrate a strong positive relationship between exports and GDP growth as shown in Table 1A (in chronological order).

2.4.2 Time Series Evidence

Despite the fairly robust positive relationship found in previous cross-sectional regression type studies, recent time series studies do not unanimously support the export-led growth hypothesis. The empirical evidence is rather mixed. The time series evidence is shown in Table 1B.

TABLE 1A: CROSS-SECTIONAL EVIDENCE

STUDY	DATA SET	ECONOMETRIC TECHNIQUE	OTHER VARIABLES	FINDING ⁵
Michaely (1977)	Cross-country(41) 1 time-period (1950-73)	Spearman Rank Correlation(per capita GNP growth on growth of export share)	none	SEP
Balassa (1978)	Cross-country(10) 2 time periods (1960-66, 1967-73)	OLS (GNP growth on export growth or real export growth)	Labour force growth; Domestic investment/ Output; Foreign investment/output	SEP
Tyler (1981)	Cross-country(55) 1 time period (1960-77)	OLS(GDP growth on export growth)	Labour force growth Investment growth	SEP
Feder (1982)	Cross-country(31) 1 time period (1964-73)	OLS(GDP growth on exports growth and export change/output)	Labour force growth Investment/output	SEP
Ram (1987)	Cross-country(88) 2 time periods (1960-72,1973-82)	OLS(GDP growth on exports/output)	Investment/output Country dummy	SEP
Ahmad & Kwan (1991)	Pooled time series and cross section(47) (1981-87)	Granger causality between exports and GDP growth	none	WEP

5. SEP refers to Strong Export Promotion

WEP refers to Weak Export Promotion

Source: computed by the author

TABLE 1B: TIME SERIES EVIDENCE

STUDY	DATA SET	ECONOMETRIC TECHNIQUE	RESULTS
Jung & Marshall (1985)	37 Developing countries	Standard Granger Causality Test	Unidirectional exports to growth causality for only Indonesia, Egypt, Costa Rica and Ecuador
Rana (1986)	14 Asian LDCs (1965-82)	Rank Correlation & Regression Analysis	Exports growth to output growth causality
Chow (1987)	8 NICs	Standard Causality Tests	one-way causality: Mexico bi-directional causality: Brazil, Hong Kong, Israel no causality: Argentina, Singapore, Korea, Taiwan
Kwan & Cotsomitis (1990)	China	Granger Causality Tests	bi-directional causality: period 1952-1985 no causality: sub-period 1952-1978
Ghartey (1993)	US(1960-90)	Pairwise Causality Tests	Economic growth causes exports growth
	Japan(1955-91)		only Terms of Trade causes exports growth
	Taiwan(1960-90)		Exports growth causes economic growth
Dhawan & Biswal (1999)	India (1961-1993)	Cointegration Analysis	Causal relationship from GDP growth to exports growth
Moosa (1999)	Australia (1900-1993)	Cointegration and causality tests	Export-led growth hypothesis does not hold
Fountas (2000)	Ireland	non-stationary time series	1950-90: no causality between exports and GDP 1981-94: one-way causality from exports to output

Source: computed by the author

As has been discussed above, it can be inferred from Table 1B that some time series studies found no causality between exports and economic growth (**Jung and Marshall, 1985; Moosa, 1999**). In contrast, some studies depicted unidirectional relationships. **Ghartey (1993)** observed that unidirectionally economic growth causes exports growth in United States and exports growth causes economic growth in Taiwan. Similarly, some studies found bi-directional relationships (**Chow, 1987**).

Therefore, existing empirical evidence based on testing for causality between exports and growth is, at best, mixed and conflicting. In this context, **Kwan and Cotsomitis (1990)** found bi-directional causality in China for the period 1952-85 and no causality for the sub-period 1952-78. The heterogeneity in these results is due to different testing procedures being used, to the lag structure specified or to the filtering techniques (**Chowdury, 1987; Gordon et al., 1993**).

2.5 LIMITATIONS OF PREVIOUS STUDIES

A major shortcoming of the cross-country studies is that they do not test for the direction of causality between exports and economic growth. Since exports represent a component of GDP, a correlation between the two variables can also imply that GDP causes exports.

Likewise, there are two major shortcomings associated with the time series studies. First and foremost, none of these studies has checked for the cointegrating properties of the time series involved. Standard Granger tests are only valid if the original time series from which growth rates are generated are not cointegrated. If the time series are cointegrated,

then as Granger argues, any causal inferences will be misleading. More precisely, **Granger (1988)** writes:

‘ Thus many of the papers discussing causality tests based on traditional time series modeling techniques could have missed some of the forecastability and hence reached incorrect conclusions about noncausality in mean. On some occasions, causation could be present but would not be detected by the testing procedures used. This problem only arises when the series are $I(1)$ and cointegrated.’

Therefore, it is necessary to check for the cointegrating properties of the original export and output series before using the Standard Granger test. If a country’s exports and output are found to be cointegrated, then the conclusions reached in previous studies using the standard Granger test are all nullified.

Coupled with these, most economic time series such as exports and output growth exhibit non-stationary tendencies that result in spurious regressions. To remedy this problem, the time series studies have used rates of change of output and exports that are close to the concept of first differencing. As argued by **Miller (1991)**, first differencing filters out low frequency (long run) information. For this reason, cointegration and error-correction modeling techniques are generally recommended under these circumstances. Error-correction models, in fact, try to establish causality between two variables after reintroducing the low frequency information (through the error-correction term) into the analysis.