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**The Parallel Economy in Malawi: Size, Effect on Tax Revenue,  
and Policy Options**

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**Abstract**

This study looks at the dynamics of the Parallel Economy. I estimate the size of the Parallel Economy in Malawi and its relationship with Tax Revenues. The Parallel Economy in Malawi was 12.3%, 23.1% and 17.3% of GDP in the 1970s, 1980s, and 1990s respectively. Income Taxes were a major driver of the Parallel Economy as compared to Import and Consumption Taxes. An increase in Tax Revenue led to an increase in the Parallel Economy and a decrease in tax Revenue led to a decrease in the Parallel Economy.

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*Key words: Parallel Economy, Official Economy, and Tax Revenues,*

## **SECTION 1**

### **1.1 Introduction**

The existence of Parallel Economies in the world is now widely accepted. There are several reasons which have been advanced as to why such economies exist. Tanzi (1982) summarizes these as the restrictions that exist for economic agents to participate in the Official Economy and the taxation system. There are several disadvantages that are attributed to the existence of Parallel Economies, ranging from a loss of government revenue (since most of these activities are not taxed), to their distorting effect on both the market-based economy and the macroeconomic statistics upon which governments base policies. There are some known advantages, however, such as the ability to offer alternative employment and the fact that almost all income earned within them ends up in the Official Economy.

Another intriguing issue relates to the size of Parallel Economies. There are many different measurements of the size of Parallel Economies in literature, such as that of Tanzi (1982), Bhattacharyya (1990), Ogunc and Yilmaz (2000), and Schneider (2004). An analysis of the results from this body of literature reveals that Parallel Economies are larger in developing and transition countries.

## **1.2 Objectives and Rationale**

The alleged disadvantages of Parallel Economies warrant a thorough study. This is especially true for developing countries like Malawi, where disadvantages such as the impact on government revenue and the distorting effect on the market and macroeconomic variables may lead to misallocation of resources as well as an incorrect application of macroeconomic policies. It is therefore plausible to study Parallel Economies, as they are a potential source of revenue and a source of inequity in taxation. This study will have the following general objectives:

1. To establish the size of the Parallel Economy in Malawi.
2. To look at the effect of the Parallel Economy on tax revenues in Malawi
3. To propose policy options for dealing with the Parallel Economy in Malawi

This study looks at the dynamics of the Parallel Economy in Malawi, a developing country in sub-Saharan Africa. Section 2 is a literature review, Section 3 gives a brief history of taxation in Malawi, and Section 4 contains the empirical analysis, while the results and their discussion are set down in Section 5. Section 6 provides the conclusion for the study.

## SECTION 2

### 2.0 Literature Review

#### 2.1 Definition of the Parallel Economy

The term Parallel Economy is widely defined in literature and hence has many other synonyms<sup>2</sup>. What becomes clear though is that each definition is made to suit the particular interest of the authors. The result is that there has not been any agreement on how to define this phenomenon, even after studies spanning four decades. For instance, authors interested in tax evasion refer to it as representing the income that is not reported to tax authorities, regardless of whether such income is or is not measured by national accounts. For authors simply interested in the validity of national accounts, it is the relationship between the measured size of the economy and the actual size that becomes important (Tanzi 1982).

De Gracia (1982) refers to the Parallel Economy as clandestine because he submits that the majority of the work is performed clandestinely and illegally. From this perspective it is recognizable that his interest was in the employment sector of the Parallel Economy. Molefsky (1982) refers to it as the Underground Economy and defines it as the income generated by activities that occur outside the government purview (hence it is generally

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1. Some terms that are synonymous to Parallel Economy are Underground Economy, Black Economy, Shadow Economy, Hidden Economy, Informal Economy, Unrecorded Economy, Unmeasured Economy, Unofficial Economy, Illegal Economy, Clandestine Economy, Second Economy, Irregular Economy, Submerged Economy, and Subterranean Economy.

not reported for tax purposes or for the determination of public assistance, social insurance, or other income benefits) and that these activities may be partially reflected in official economic data. Tanzi (1982), while also referring to an Underground Economy, defines it as the gross national product (GNP) that, because of a lack of reporting or underreporting, is not measured in official statistics. He expands his definition to indicate that since this missed GNP would be taxable, it would therefore be associated with a loss of tax revenue. Thus Tanzi's interest has predominately been in the association between the Parallel Economy and tax evasion. Schneider (1986) uses the term Shadow Economy and defines it as all economic activities that contribute to added value, which should be included in national income (according to national accounting conventions), but are presently not captured by national measurement agencies.

Feige (1990) departed from previous methods of defining this phenomenon by adopting what he called the "new institutional economics" approach. His approach was based on the fact, previously alluded to in this section, that there exist numerous ways of defining the concept of the Parallel Economy because of the vast number of activities. Feige argues that due to a variety of analytical and empirical issues, there is a need to have a unified conceptual framework capable of clarifying distinctions among the different activities of this economy. With the existence of so many institutions in an economy (each having a different sets of rules), there should also be a variety of Parallel Economies (each with a distinct character), depending on which institutional rules have been bypassed. With this argument he went on to distinguish four Parallel Economies. First, he defined the Illegal Economy as consisting of the income produced by those

economic activities performed in direct violation of the legal statutes which define the scope of legitimate forms of commerce. Participants in this economy are engaged in the production and distribution of prohibited goods and services. Second, he defined the Unreported Economy as consisting of economic activities that circumvent or evade the institutionally established fiscal rules as codified in the tax code; income that is not reported to the tax authority. Thirdly, he defined the Unrecorded Economy as consisting of those economic activities that circumvent the institutional rules that define the reporting requirements of government statistical agencies. Finally, he defined the Informal Economy as comprising economic activities that circumvent costs, and are excluded from the benefits and rights incorporated in the laws and administrative rules covering: property relationships, commercial licensing, labor contracts, torts, financial credit, and social systems. However, Feige also noted that there are conceptual linkages among all these activities. I contend that it is these linkages that have made it very difficult to not only distinguish between different Parallel Economies but also to define them precisely.

While agreeing to all the definitions given above I adopt the definition given by Drummond et al (1994). They contend that the Parallel Economy is not only comprised of unmeasured activities, but also measured activities that are not reported for tax purposes. They argue that from a fiscal point of view, where the major concern is the potential of tax revenue from the Parallel Economy, it is clear that the definition is tipped towards the amount of transactions of legal goods and services that are hidden in order to evade or avoid taxation. From the national statistics point of view, the definition is tipped

towards the amount of economic activities that are missed in the actual estimation of GDP. They also point out that the fundamental difference between the two views is that national accounts can reliably capture some transactions that are hidden from the fiscus (i.e. those transactions that are measured but not reported). I am also in agreement with their view that not all Parallel Economy activities are missing from national accounts. However, for the sake of measurement, it is rather difficult to isolate that part of GDP that is also part of the Parallel Economy. I also exclude non-market transactions and illegal activities. Even though the latter cannot form part of the tax base, they may distort allocation of resources and where the government imposes monetary penalties, they may also represent a loss of non-tax revenue.

## **2.2 Causes of the Parallel Economy**

The literature cites many factors that may lead to the development and growth of Parallel Economies. However there are three factors that come up most and these are: a perceived tax burden, regulation of the Official Economy, and general dissatisfaction with government services. I discuss each one in detail below. It is also worth noting that these factors are interlinked.

### **2.2.1 Tax Burden**

Most researchers, including Tanzi (1982), Ogunc and Yilmaz (2000), and others, view the tax burden as the major reason why economic agents decide to operate in the Parallel



Economy. Thus, they state that if economic agents perceive that they are paying too much tax, and they also see that operating in the Parallel Economy allows them to reduce this burden, they rationally opt to operate there. So it would appear, upon first impression, that it is the chance to evade taxes that drives economic agents to the Parallel Economy. Again there is a small uncertainty as to whether tax evasion causes the Parallel Economy or whether the Parallel Economy causes tax evasion. Whichever is the case, it is clear that the evaded tax becomes part and parcel of the Parallel Economy. Tanzi (1982), however, specifically lists the causes of tax evasion as: the perceived fairness of tax laws, the attitude of taxpayers towards the government, the basic religious and cultural characteristics of taxpayers, the severity of the penalties imposed on tax evaders that have been apprehended, the facility with which taxes can be evaded and the monetary rewards associated with not paying taxes. It is clear that incomes associated with the Parallel Economy also greatly contribute to tax evasion and many authors (see Chipeta 2002, Kemal, 2003, and Drummond et al 1994 for example) calculated levels of tax evasion by using inferences from the Parallel Economy they had estimated in their studies.

### **2.2.2 Regulations and Restrictions**

The presence of regulations and restrictions in the Official Economy has also acted as a catalyst for economic agents to opt for the Parallel Economy. These regulations, coupled with the restrictions, more often than not act as barriers to entry into the Official Economy. While, for those that are already in the Official Economy, they act as an

incentive to leave it and opt for the Parallel Economy. Feige (1990) argues that adherence to established rules constitute participation in the Official Economy, whereas non-compliance with regulations constitutes participation in the Parallel Economy. Furthermore, Tanzi (1982) argues that even in the absence of taxes, the Parallel Economy would still exist because of the various restrictions in the Official Economy. He contends that in the presence of high penalties and efficient enforcement of the regulations the existence of the Parallel Economy would be prevented. However, in reality it is the inefficiency of the regulatory authorities that plays a part in bringing about the Parallel Economy. This is especially true when regulations are riddled with red tape and hence increase the transaction costs of participating in the Official Economy. In such a scenario an economic agent may opt to operate in the Parallel Economy as it gives them a chance to circumvent such costs. If such an anomaly is not addressed, it may also lead to further growth of the Parallel Economy. Friedman et al (2000) conducted an empirical evaluation of 69 countries to find out what drives economic agents to start operating in the Parallel Economy. They found that even after controlling for per capita income, that more bureaucracy, greater corruption, and a weaker legal environment are all associated with larger Parallel Economies. On the other hand, they found that higher tax rates are associated with small Parallel Economies even though such results did not obtain when they controlled for per capita incomes

### **2.2.3 Dissatisfaction with Provision of Public Goods and Services**

If there is general dissatisfaction especially with the provision of public goods and services, the populace may engage in hiding their activities so as to avoid taxes. This is a result of a decrease in the desire to pay the legal amount of tax. Generally, taxpayers expect the government to be accountable in both its revenue and expenditure. The Parallel Economy may grow as a reaction to the absence of accountability and transparency by the government. This scenario may create a vicious circle that may be hard to break, especially when the government reacts by increasing tax rates in order to increase revenue.

### **2.3 Advantages and disadvantages of the Parallel Economy**

There is great controversy as to whether the existence of the Parallel Economy is advantageous or not. However, to determine this would require a cost-benefit analysis. Another factor worth considering is that there can be no universal answer to this controversy; what can be an advantage in one scenario may not necessarily be an advantage in a different scenario. Thus whether the existence of the Parallel Economy is advantageous or not is case-sensitive or case-specific.

#### **2.3.1 Purported Advantages of the Parallel Economy**

The Parallel Economy is said to be a response to the failures that exist in the Official Economy. Thus, more often than not, the Official Economy fails to provide the required goods and services to consumers and the Parallel Economy fills that gap. This goes a

long way towards fostering the spirit of entrepreneurship and creativity of the economic agents within the Parallel Economy. These agents usually become official players in the economy when their activities become so large that they can no longer be hid and when it becomes economically beneficial to leave this sector.

The Parallel Economy also acts as an unofficial watchdog of the Official Economy especially when it comes to pricing of goods and services. Since the pricing of goods and services in the Parallel Economy is usually low, this encourages efficiency in the Official Economy as it tries to reduce costs and enhance productivity to match and beat prices offered in the Parallel Sector.

The Parallel Economy also acts as a safety valve for the Official Economy. For instance, it lessens the pressure of unemployment on the Official Economy during economic slumps, as it gives displaced workers new opportunities. This also reduces dependence on the public system.

The Parallel Economy still interacts with the Official Economy in a mutually beneficial way and not in a parasitic form. It has been argued that almost two thirds of the income generated by economic agents in the Parallel Economy is spent in the Official Economy.

### **2.3.2 Purported Disadvantages of the Parallel Economy**

#### **2.3.2.1 Reduction in the Capacity of Governments**

Governments are supposed to play roles that are aimed at both supporting the social sector, for example the provision of health facilities and education, as well as creating an enabling environment for the operation of the economy in general. To carry out such roles, governments raise revenue from taxable economic activities. The Parallel Economy therefore deprives governments of much needed revenue which it can use to carry out these roles. This loss of revenue can have two major impacts: either the government is forced to reduce or stop altogether some of its activities, or it decides to raise more revenue by increasing tax rates. The former action has the effect of a reduction in the level of social welfare available to the public, while the latter action has the impact of further distorting markets, thereby breeding inefficiency. The other side is that for governments that use taxes for income distribution purposes, the Parallel Economy renders such policies less effective since income generated within it is not taxed.

#### **2.3.2.2 Distortion of Macroeconomic Data**

The existence of a large Parallel Economy means that policies that are formulated on the basis of macroeconomic data such as GDP, unemployment, and labor productivity are almost bound to fail. Such policies may eventually prove to be expensive for the country as they may lead to outcomes that may not have been envisaged at the time of formulation and implementation. For example, a policy aimed at decreasing information asymmetry in the market might implement a system of food labeling, which would require enforcement. Since activities in the Parallel Economy are usually less regulated, this would render such a policy less effective.

### **2.3.2.3 Breeding of Unfair Competition.**

Goods and services that are produced in the Parallel Economy or that are produced with inputs such as labor from the Parallel Economy may fetch cheaper prices on the market compared to those that are produced in the Official Economy. This is because such goods and services escape the tax net and may have been produced with cheaper inputs (such as labor), which then gives them a competitive edge over other goods.

### **2.3.2.4 Reduction of Productivity and Efficiency in the economy.**

Economic inefficiency may result from the presence of the Parallel Economy in several ways, the chief of which is tax evasion. Tax evasion may lead to misallocation of resources. Economic agents may choose to put more resources into the production of goods or services which are easily concealed from tax authorities, rather than there being any economic merit in their production. Such practice may also force efficient producers out of business and leave the economy with inefficient producers, just because there is leeway for them to exist.

The Parallel Economy makes government operations more costly since the government has to spend more resources to police activities (for example by hiring more tax auditors). Such resources could be spent on other productive avenues.

## **2.4 Measuring the Parallel Economy (Methods)**

### **2.4.1 Direct Methods**

These methods entail the use of a structured questionnaire to economic agents about their income, and/or the use of tax audits. The extent of the Parallel Economy can be established after careful examination and analysis of the questionnaire results. The main advantage of this method is that it can yield actual estimates if the questionnaire is well designed and the interview is systematically conducted. Again the methods can reveal the structure and characteristics of those that are engaged in the Parallel Economy. This can be used as an effective policy-planning tool; if it can be established that there is need for policy intervention. However, the main drawbacks of the survey method are that it depends heavily on the honesty of the respondents and by nature not many economic agents would voluntarily disclose their Parallel Economy engagements or their undeclared income. Use of tax audits have a drawback in that it may not be feasible to audit all taxpayers and, even where it is possible, not all undeclared income can be detected. Furthermore, Schneider (2004) observes that the use of tax audit results and tax compliance data has sample bias. This is because those candidates chosen for audit are, more often than not, already suspected of fraud. In addition, these methods automatically leave out those operating in the Parallel Economy who does not submit tax returns.

### **2.4.2 Indirect Methods**

Indirect methods are also known as macroeconomic approaches since they rely on the use of macroeconomic indicators to determine the size of the Parallel Economy. The major

attraction of these methods is that they are able to circumvent the problem of withholding of information, which is typical of direct approaches such as questionnaire surveys where the respondent may chose not to reveal the truth. I now briefly look at some of the most common indirect methods used.

### **2.4.2.1 Discrepancy Approaches**

#### **2.4.2.1.1 National Accounts Discrepancies**

This method uses techniques employed in calculating the GNP or GDP of a country. In general GNP or GDP can be obtained either by calculating total expenditure on goods and services by all economic agents in a country, or by summation of all their receipts such as wages, salaries, or rents. Both are valid economic methods and they are expected to yield the same results when applied to an economy. However, more often than not, there is a difference between the two. This difference is what is referred to as the Parallel Economy in this method. A positive difference between the income and expenditure of a country indicates that purchases have been made in the Parallel Economy and a negative difference indicates that income may have been produced in the Parallel Economy (Easton, 2001).

If an independent measure of both the expenditure and income based GDP exists, the results can reliably indicate the size of the Parallel Economy. In practice, however, national statisticians seem to be interested in reducing the difference between these two methods and hence the measure cannot be reliable.



#### **2.4.2.1.2 Discrepancies in the Labor Force**

This method is based on the participation of the labor force in the Official Economy. If there is a decrease in the rate of labor participation in the Official Economy, and assuming that there was some known constant ratio before, this decrease can then be construed to be an indicator of an increase in the labor participation rate of the Parallel Economy. This method though suffers from two major drawbacks: the first is that there could be other reasons for the decrease. Ogunc and Yilmaz (2000) point to the impact of immigration as one possible cause affecting the ratio. The second drawback being the fact that, it is usually common for people to have two or more jobs; a phenomenon referred to as moonlighting. These two drawbacks make this method unattractive.

#### **2.4.2.2 Electricity Consumption Method**

Empirical observation has shown that there is a relationship between electricity consumption and economic activity. This means that the growth of total electricity consumption is an indicator for growth of overall GDP (Schneider 2004). Thus electric consumption can be used as a proxy measure of GDP. To come up with a measure of the Parallel Economy, all that is needed is to find the difference between this proxy measure and the official GDP measure. Ill known studies that used this method are those of Kaufmann and Kaliberda (1996) and Maria Lacko (1996). Lacko used a variation of this method and also incorporated an econometric model, even though her study was mainly

based on households. This method suffers from a number of setbacks including the fact that not all economic activities of the Parallel Economy need electricity and that not all Parallel Economy activities take place in the household (Lacko 1996). Again, for developing countries, where use of electricity may not be widespread, this method can be biased and yield results that would grossly underestimate the Parallel Economy.

#### **2.4.2.3 Monetary Approaches**

There is a general belief that most transactions in the Parallel Economy are done on a cash basis. The rationale is that cash prevents any paper trail that would easily leave a trace of the transaction. With this premise, the monetary approaches try to predict the movements of cash in the general economy, which can be easily tied to transactions, and any discrepancies are then tied to the activities of the Parallel Economy. There are several assumptions (both general and specific) that are advanced in order for the monetary approaches to yield the intended result. A good summary of these assumption are found in Drummond et al (1994) and I list some of the general assumptions below:

1. The Parallel Economy is cash based. This, however, entirely ignores the role of barter trade.
2. The demand for cash in the Official Economy is a stable function of observable economic factors such as real income, price levels and interest rates.
3. The demand for cash in the Parallel Economy is a stable function of tax rates and other factors contributing to the Parallel Economy.

Next, I review some of the commonly used indirect monetary approaches.

#### 2.4.2.3.1 Guttman Method

The monetary approach can be traced back to 1958 when Phillip Cagan first used it. Guttman developed it and in 1977 came up with a model that was based on the general movement and demand for currency. He assumed that the level of currency in circulation and the demand deposits within an economy are in a constant ratio. Any increase in this ratio translates into an increase in the use of cash and can be attributed to an increase in the activities of the Parallel Economy. Another specific premise for his model was that, in the distant past, there was a period in which there was no Parallel Economy and if that trend had prevailed, there would have been no increase in the currency to demand deposit ratio. The Parallel Economy is therefore estimated by calculating the product of the estimated income velocity and the estimated currency used in the Parallel Economy.

$$Y_P = \left[ \frac{Y_o}{DD (1 + CC / DD_B)} \right] [M - DD (1 + CC / DD_B)]$$

where  $Y_P$  = the Parallel Economy GDP

$Y_o$  = the Official Economy GDP

$MI$  = Narrow money

$DD$  = demand deposits

$CC$  = Currency in Circulation

$CC/DD_B$  = the ratio of currency in circulation to demand deposits in a base year.

The major criticism of Guttman's approach is that it does not take into account the effect of financial innovations on the currency to demand deposit (Shabsigh, 1994).

#### 2.4.2.3.2 Transaction Method

In 1979, Feige presented a new methodology that he based on the quantity theory of money developed by Irving Fisher, given below:

$$MV=PT$$

Where, M=Money Supply  
V=Velocity of Income  
P=Price level  
T=Volume of transactions

This method is commonly referred to as the transaction method. Unlike Guttman, Feige introduced the idea that bank deposits are also used in the Parallel Economy in addition to cash. Therefore, using the relationship between the total volume of transactions and income measured in an economy, he postulated that it is possible to calculate the size of the Parallel Economy. Since total transactions include sales of intermediate and second hand goods, while the GDP only accounts for final goods and services, this would imply that the difference between total transactions and the actual GDP equates to the Parallel Economy. Siddiqui and Mahmood (2003) give a fair coverage of the transaction method. However, this method also suffers from the general assumption that constant ratios remain over long periods i.e. the volume of transactions and the total Official Economy GDP (Shabsigh 1994).

### 2.4.2.3.3 Currency Demand Equation

Tanzi developed this monetary method in 1982 and it is the most applied method in the literature. Tanzi developed his method following a comprehensive study of demand for currency that was done by Phillip Cagan in 1958. Tanzi alluded to the fact that his method was a modified version of Cagan's original model but his analysis has more to do with the relationship between tax evasion and currency use. He presented his model as:

$$(CC/M2) = \alpha_0 + \alpha_1 T_t + \alpha_2 W_t + \alpha_3 Y_t + \alpha_4 R_t + U_t$$

Where

CC/M2= Ratio of currency holdings to money defined as M2

T = The tax variable that would take three forms: either as a ratio of personal income taxes to personal income net of transfers, or as the top bracket statutory tax rate, or as the weighted average tax rate on interest income.

W = Share of wages and salaries in personal income

R = Interest rate on time deposits

Y = Real per capita income.

U = The Error term

Tanzi assumed that the currency ratio is affected by legal and illegal factors. In the above equation, he took R as the legal factor and T as the illegal factor. The rationale for the dependent variable was that since currency transactions are untraceable they are a good

medium of exchange in the Parallel Economy and hence an increase in the ratio would indicate an increase in the Parallel Economy. He hypothesized that an increase in per capita income would bring about a decrease in the currency ratio and hence he expected it to be negative, since a higher level of economic development should lead to a decrease in the ratio, due to an increase in demand for deposits (Shabsigh 1995). He further expected the interest rate to be negative, as an increase in the rate would lure economic agents to deposit their money with banks and hence reduce currency hoarding. He expected both the W and T figures to be positive, as an increase in wages would increase currency holdings and an increase in the tax rate would lead to economic agents increasing cash transactions so as to avoid detection from tax officials. Tanzi also proposed that there are other legal factors such as use of credit cards, degree of urbanization, other illegal factors such as the attitude of taxpayers to governments, and the severity of penalties. Considering their nature these factors are difficult to model due to a lack of data.

Tanzi applied his model to the United States for the period 1929 to 1976. He first estimated in a log form the above equation and derived the currency holding and the equation. Secondly he estimated the same equation by assuming that the Parallel Economy was caused by the presence of a tax and the changes in the tax rate. Then he estimated two more equations: first with the tax rate equal to zero, and secondly, with the least tax rate in the period. The difference between the estimates was assumed to be due to the activities of the Parallel Economy. However, in order to establish the real magnitude of the Parallel Economy, he first calculated what he termed illegal money. Secondly he calculated legal money as being the difference between illegal money and

M1 (narrow money). Thirdly, he calculated income velocity, which was assumed to be equal in both the Parallel and Official Economies as the quotient of GDP and legal money. Finally, he determined that the product of illegal money and income velocity yielded the Parallel Economy.

Over time, this method has also attracted its fair share of criticism. A good summary is found in Schneider (2004). Assuming that all transactions are done using cash, is at best an under-qualification as, among other things, it rules out barter trade and hence this method may underestimate the size of the Parallel Economy. The idea of only incorporating the tax variable in the analysis creates problems too, as it is possible that other factors may compound the problem at larger magnitudes, or even reduce the tax effect all together. However Schneider (2004) cites some studies that indicate that the tax variable has by far the strongest impact on the size of the Parallel Economy. There may also be other factors that influence an increase in currency demand deposits such as a slow down in demand deposits. The assumption of equal income or money velocity between the two economies is also contested in the literature. However Schneider (2004) cites studies by Ahumada et al (2004) that this assumption can only obtain if the income velocity is equal to one. Again, just as with the other monetary approaches, the idea of the existence of “a year without a Parallel Economy”, is also questioned.

Most of these criticisms have so far not yielded a convincing alternative to the current method of measuring the Parallel Economy. Instead, the literature is now much more

replete with variants of the Tanzi approach, which are said to overcome such drawbacks, but in most cases the variation is not that significant.

#### **2.4.2.4 Model Approach**

The criticism that monetary approaches do not take into consideration other factors that may give rise to the Parallel Economy led to the birth of the model approaches. B.S. Frey and Weck Hannelore are cited as the pioneers in this approach (Schneider 1986, Fethi et al 2006). Recently the works of Giles (1997, 1999, and 2002) also used the model approach. This approach tries to incorporate other factors into the model that can give rise to the Parallel Economy instead of just the tax variable. A review of Giles (1997) reveals that the method drew strength from the work of A. Zellner and A.S. Goldberger who worked on estimation of regression models with unobservable variables and structural equations. Thus these models (also called dynamic multiple-indicators and multiple causes or DYMIMC) include other variables such as the burden of state regulations and tax morale as other possible causes of the Parallel Economy. Again, this method is well reviewed by both Giles (1997) and Schneider (2004). Assuming the availability of data for the other difficult-to-measure variables, this method could yield more plausible results. This would be even more difficult to apply to developing countries where data is usually unavailable and, if it is available, it is either scanty or unreliable. There are other drawbacks to this method. Schneider (2004) cites instability in the estimated coefficients with respect to sample size changes, alternative specifications, and the reliability of variables.



### 2.4.3 Some Measurements of Parallel Economies in Literature

There are many varied measurements of the Parallel Economy in the literature<sup>3</sup>. The different measurements are derived using a combination of the various methods presented previously. A good summary of the measurements can be found in Schneider and Enste (1999) who present estimates from 76 developing, transition, and OECD countries. In their study, they found that the average size of the Parallel Economy varies from 12% of GDP for OECD countries, up to 23% for transition countries, and up to 39% for developing countries. Schneider (2004) followed up with another study in which he presented the size of Parallel Economies in 145 countries in the years spanning 1999 to 2003. Using the DYMIMC approach he found that the Parallel Economy in 2002/2003 in terms of official GDP was 39.1% in developing countries, 40.1% in transition countries, 16.3% in OECD countries, 33.4% in South Pacific countries and 21.8% for communist countries. What became clear was the fact that the Parallel Economy is much bigger in developing countries compared to other countries. Among the developing countries, the average size is even higher in African countries; averaging 41.3%, 42.3%, and 43.2% of official GDP in 1999/00, 2001/02 and 2002/03 respectively. This study will shed some more light on Parallel Economies in developing countries.

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<sup>3</sup>Such as that of Tanzi (1983), Skolka (1983), Broesterhuizen (1983), Pestieau (1983) Bhattacharyya (1990) Schneider (1986, 1994, 1997, 1998, 1999, 2004), Shabsigh (1995) Fethi et al (2006) and Ogunc and Gilles (1997, 1999), Yilmaz (2000)

## **SECTION 3**

### **3.0 A Brief History of Taxation in Malawi**

The British colonized Malawi after they declared it a British Protectorate in 1891. However, Malawi gained independence on the 6<sup>th</sup> of July 1964.

There is not much documentation on the history of taxation in Malawi during the pre-colonial period (i.e. before 1891). Oral history however indicates that locals paid some form of taxes to tribal chiefs, who in turn provided them with security against invading tribes. Payment was made with garden produce and/or livestock.

During the colonial period (1891-1964), there was a form of taxation called Hut Tax, which was heavily resisted by the natives. It was seen as an act of oppression by the colonizers. In 1963, the first Taxation Act was enacted and it became effective in January 1964. This act basically covers corporate and income taxes only.

After independence, specifically on 1<sup>st</sup> June 1969, the Customs and Excise Act that basically covers trade taxes, and a form of consumption tax called VAT, was enacted. However in 2001, a separate act was enacted which covered VAT, and now this tax is levied on the value added at the various stages in the production distribution chain. From

unlike 1970 to 2001 it was levied only on imports, the supply of manufactured goods, and some service provisions. The name was changed to Value Added Tax (VAT) in 2005, in line with the global trend of consumption taxes

Soon after independence taxes are being collected by two departments in the Ministry of Finance: namely the Income Tax Department which mainly collected pay roll and corporate taxes, and the Customs and Excise Department, which collected import and excise duty in addition to VAT on domestic and imported goods and services.

In the early 1990s, the Malawi government, with assistance from the International Monetary Fund and the World Bank, undertook a structural review and reform of its various government departments. The structural reform also included a functional review that saw the merging of the two tax collecting departments of the Ministry of Finance into a more efficient and effective body called the Malawi Revenue Authority (MRA). This body was enacted in 1998 and was officially launched in 2000. It was established as permanent corporate body and is governed by a board responsible for policy direction. It has a Commissioner General heading it as the Chief Executive. It has seven divisions namely: Customs and Excise, Income Tax and VAT (these two are headed by a Commissioner and are the main tax collecting divisions), Information Technology, Finance and Administration, Policy Planning and Research, and Tax Audit and Investigation (each headed by a Director). It also has other functional departments including Legal, Public Relations and Taxpayer Education, Security, and Internal Audit. The Finance and Administration department has four divisions: Human Resources and

Corporate Services, Finance, Procurement and Supplies, and the Institute of Tax Administration.

### 3.1 TAXES

As is the case in many countries, Malawi levies taxes on income, consumption, and international trade (imports and exports even though taxes on exports are abolished in 1998 to encourage exports). Table 1 is a summary of these taxes, their bases and applicable rates as of 2005.

Table 1: Major Taxes of Malawi

Tax Base	Name of tax	Applicable rate	Division responsible	
Income	Cooperate	30%	Income Tax	
	Individual	Ranges from 10% to 40% depending on the level of income		
	Fringe Benefit	35%		
	Withholding	Pay As You Earn (for Salaried employees)		Ranges from 10% to 40% depending on the level of income
		Other		Ranges from 4% to

			20% depending on the activity being taxes	
	Non resident		15%	
	Provisional (an advance payment of income Tax paid in quarterly installments)		Almost 90% of the estimated total amount due	
Consumption	Domestic VAT		0% to 17.5%	VAT
International trade	Customs		0 to 25% depending on commodity	Customs and Excise
	Excise		10% to 80% depending on commodity	
	Import VAT		0% and 17.5%	

### 3.2 Revenue Performance 1967-2000

Tax revenue collection has generally been good. This is evidenced by an increase in revenue trends from one year to the other. In the 1970s, tax revenue as a percentage of GDP was about 11%. This ratio rose to about 17% in the 1980s and the ratio was almost the same in the 1990s (figure 1). Regarding the performance of individual taxes income taxes contributed the greatest amount to tax revenues in this period. Income tax contribution was 44%, 40.5%, and 39.9% in the 1970s, 1980s, and 1990s respectively. Consumption taxes made the second largest contribution being 27%, 37% and 36.4% in the 1970s, 1980s and 1990s respectively. Import taxes lagged in their contribution to total

tax revenues. They contributed 28%, 22%, and 23% in the 1970s, 1980s and 1990s respectively (figure 2). These results have been further summarized in table 2.

Figure 1: Tax Revenue/GDP Ratio 1967 to 200

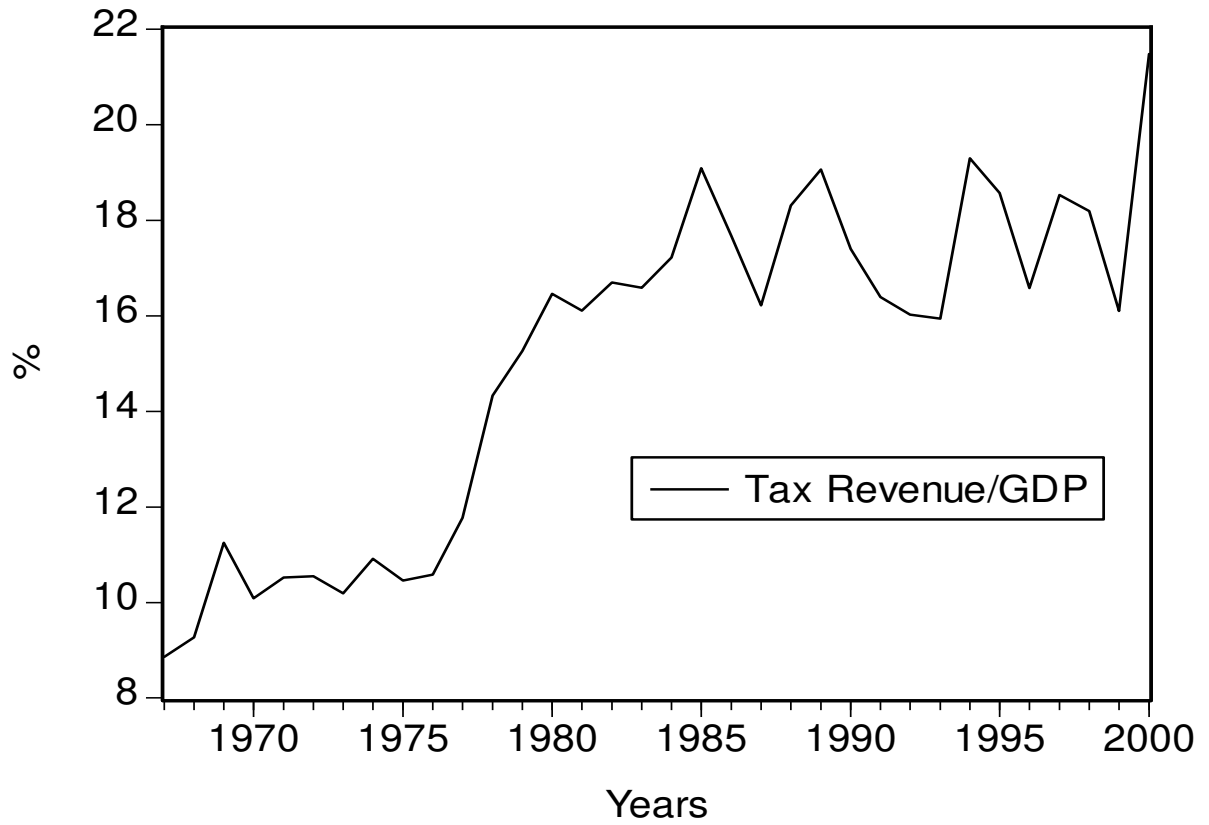


Figure 2: Contribution of each type of Tax to Total Tax Revenue

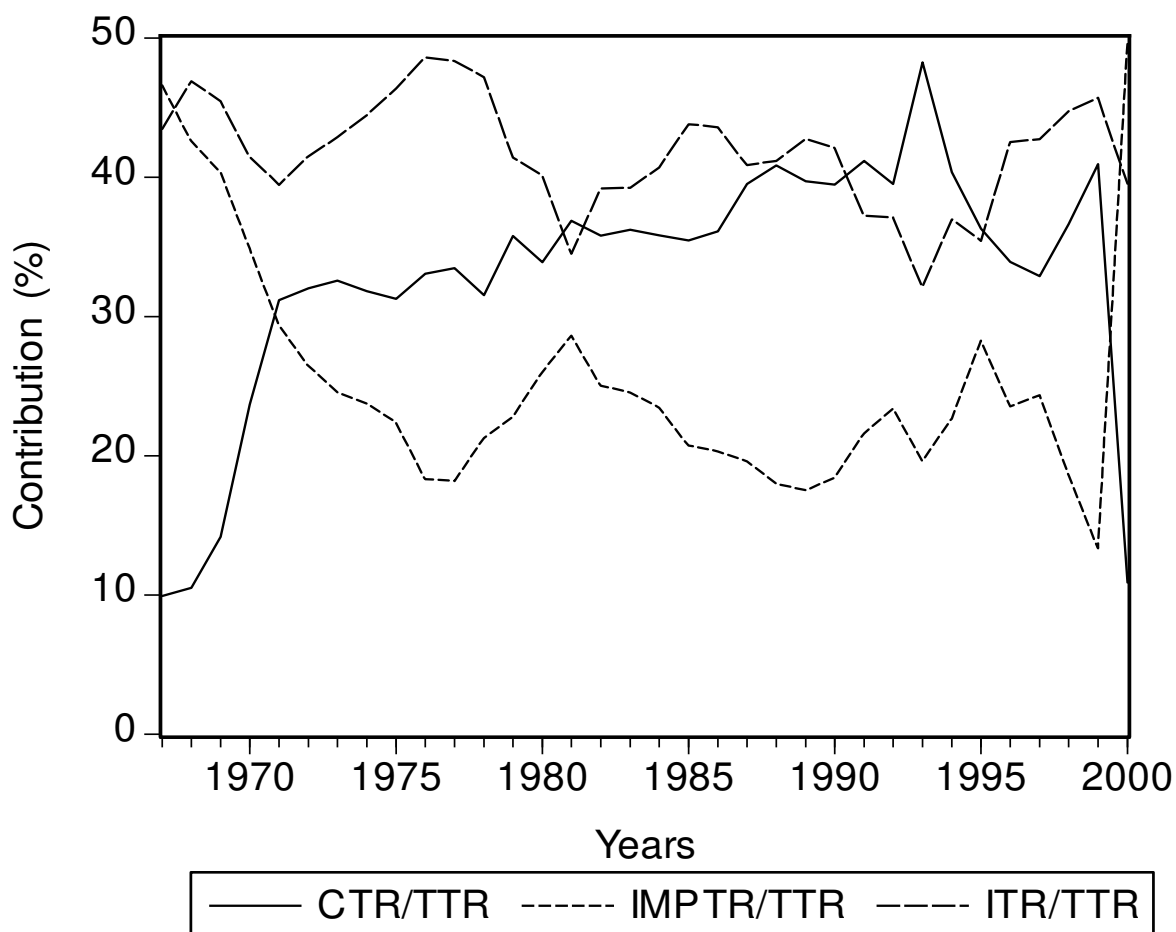


Table 2: Summary of figures 1 and 2.

Type of tax	Average Contribution of Individual Taxes and the Tax Revenue/GDP ratio as a percentage. (%)			
	1967-1979	1980-1989	1990-2000	Overall
Income Tax	44.4	40.5	39.6	41.7
Consumption tax	27.0	37.6	36.4	32.9
Import tax	28.5	22.3	23.9	25.2

TR/GDP ratio	11.0	17.34	17.68	17.3
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### 3.4 Causes of the Parallel Economy in Malawi

In Malawi, the Parallel Economy can theoretically be attributed to the perceived high rates of taxes as well as government regulations, especially when it comes to taking part in the Official Economy. Table 3 is a comparison of tax rates in Malawi and its neighboring countries.

Table 3: Comparison of Tax rates in Malawi and selected Neighbors

Country	Income Tax rate (%)		Consumption Tax rate (%)	Customs Duty Rate (%)	
	Individual (highest bracket)	Cooperate		Highest	Average
Malawi	35	30	17.5	30	12
Mozambique	32	32	17	30	14
Tanzania	30	30	20	25	14
Zambia	40	35	17.5	25	14
Zimbabwe	45	30	15	600	22
South Africa		30	14	55	13
Botswana	25	25	10	55	13



Of paramount importance is the fact that, despite the high number of regulations, enforcement of those regulations is weak due to the low capacity of the MRA and the large amount of red tape. Since data on red tape is unavailable, see table 4 for data on personnel capacity in the MRA. The number of tax auditors shown in the table is also notable.

Table 4: Personnel Capacity in Malawi Revenue Authority.

Division	Number of technical staff		Required number	Variance
Income Tax	243		287	44
Value added tax	120		290	170
Customs and Excise	534		754	220
Tax audit and investigation	Income tax	8	(Assessment unavailable)	
	VAT	8		
	Customs	14		
	Total	30		
Institute of tax Administration (Trainers)	Income tax	3	(Assessment unavailable)	
	VAT	3		
	Customs	3		
	Total	9		
Total	936		1331	395

Schneider (2004) argues that it is important is for governments not to increase the number of regulations, or even the number of staff who enforce them, but instead to improve regulations themselves. The understanding here is that improving the regulation will translate into a reduction in red tape thereby reducing the cost of doing business in the official sector. However, this paper looks mainly at the role of tax rates in the growth of the Parallel Economy in Malawi, and does not deal specifically with regulations, restrictions (though sometimes a tax can act as a restriction by itself), and dissatisfaction with the provision of public goods and services.

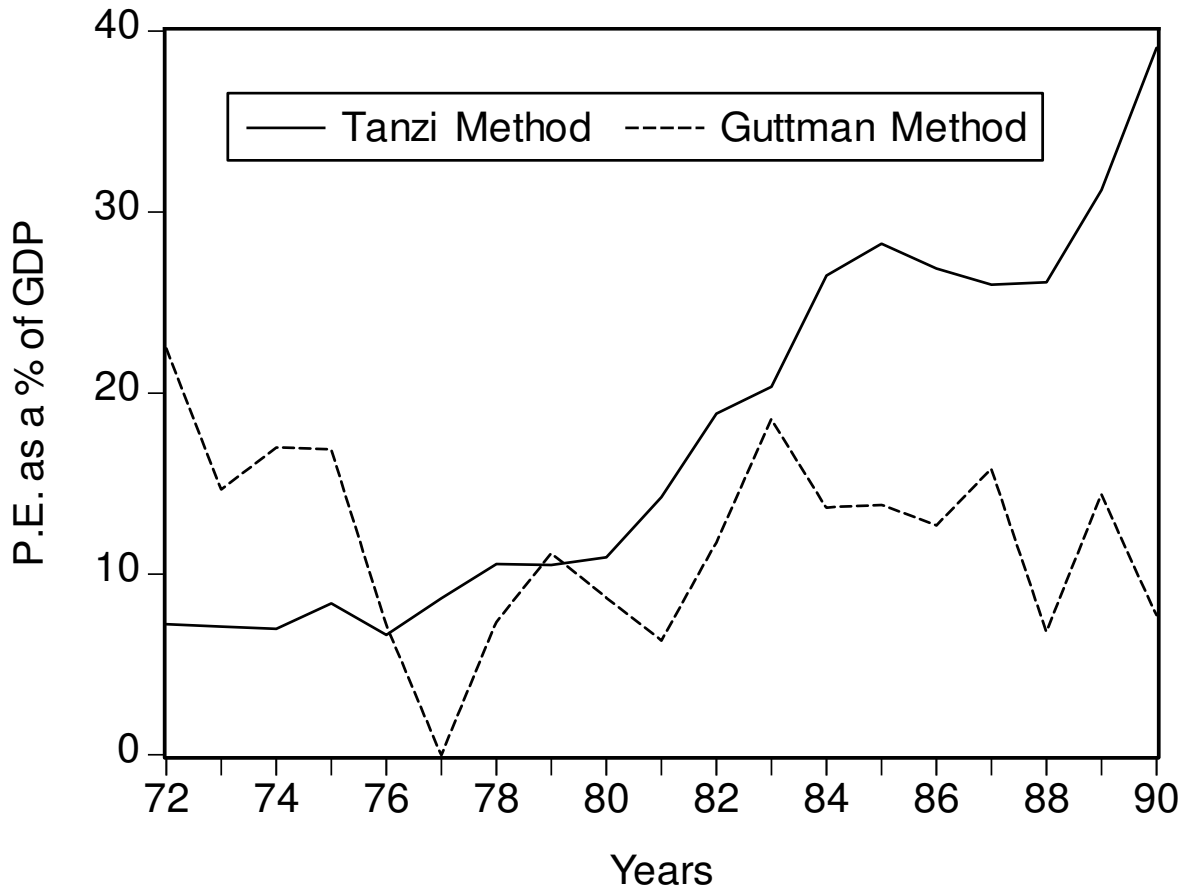
### **3.5 Size of the Parallel Economy in Malawi in Literature**

There have not been many specific studies about the Parallel Economy in Malawi, except for the study by Chipeta (2002). The objective of his study was two fold: first to establish the size of the Parallel Economy in Malawi and secondly to establish the extent of tax evasion. He employed the monetary approaches of Guttman and Tanzi to come up with the size of the Parallel Economy from 1965 to 1990. Figure 3 presents the results obtained by Chipeta using the two methods<sup>4</sup>:

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3. Note that the results in the graph are only from 1972 to 1990. This is because Chipeta (2002) found negative result for the periods before 1972 and after 1990.

Figure 3: Parallel Economy In Malawi 1972 to 1990

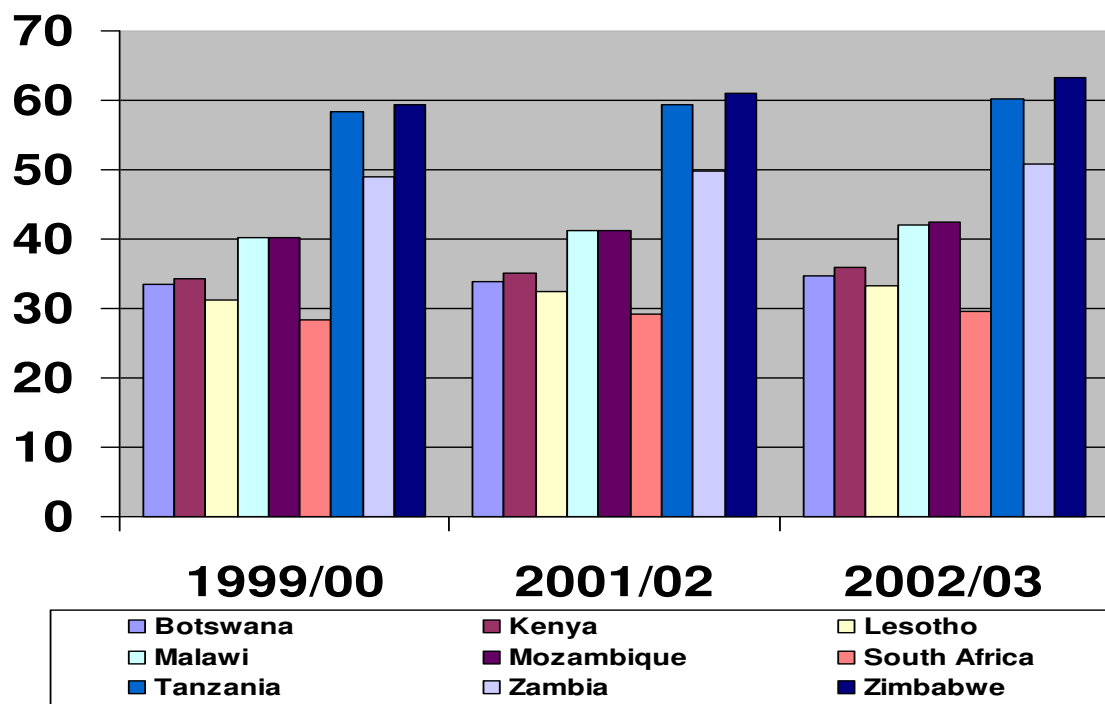


Note that the two methods yield different results. Chipeta (2002) attributes this difference to the manner in which these two methods calculate income velocity. Note also that there are still some convergences in the results for the years 1976, 1979, 1980, and 1983 after which there seem to be a divergence. There are some major tax reforms in the fiscal years 1982/83 and 1983/84, which might explain this divergence, as the tax rate is a major variable in the Tanzi method. Furthermore, note that the value for 1977 is zero with the Guttman method; this is just in concomitance with the assumption of “a year with no Parallel Economy” in the method.

Chipeta (2002), reports that the Parallel Economy was fairly static in the 1970s, and then rose from 7% in 1972 to about 11% in 1980. However in the 1980s the Parallel Economy rose from 14% in 1981 to 39% in 1990. He attributes this rapid increase to the tough economic conditions that the country was going through and to the tax reforms referred to above.

Apart from Chipeta, Schneider (2004) also presents some findings from a number of African countries, including Malawi. This presents an opportunity to compare the Parallel Economy in Malawi with other countries in Africa. I selected some of the countries neighboring Malawi that have similar macroeconomic conditions and present them in figure 4. South Africa serves as a standard since Chipeta reported it as having the smallest Parallel Economy in Africa (on a percent basis).

Figure 4: Parallel Economy in some selected African Countries



## **SECTION 4**

### **4.0 Empirical analyses**

#### **4.1 Methodology and Model Specification**

This study employs Tanzis empirical approach in establishing the size of the Parallel Economy. As pointed out in Section 2, this is one of the macroeconomic methods available in literature. Ideal macroeconomic indicators for the Parallel Economy are those which are first observable and available for a long time. Their measurement must not be significantly distorted due to the existence of the Parallel Economy. Finally the indicators must be causally dependent on changes in the unreported fraction of the total economy (Rubenson 1986). These characteristics are ill displayed in Tanzis empirical approach as it mainly relies on monitoring the movement of monetary aggregates whose measurements are done by central banks. Other reasons for opting for this method are that it allows the estimation of the Parallel Economy for a long period (because it analyses time series that are relatively easy to obtain especially for a developing country like Malawi, where empirical analysis is hampered by lack of data), and that they allow the application of econometric methods specific to time series data. Again this method has been widely applied and hence provides a good platform for comparative analysis with the situation in other countries. Tanzi's method is comprised of two basic steps: the estimation of a currency demand equation and the calculation of the Parallel Economy itself.

##### **4.1.2 Estimation of a Currency Demand Equation.**

Cash transactions are preferred in the Parallel Economy because they do not leave a paper trail. In this study though, I estimate a variant of Tanzi's currency equation by taking into consideration the core factors that influence currency in circulation in developing countries like Malawi. The equation is:

$$\frac{CC}{M2} = \alpha_0 + \alpha_1 CTR_t + \alpha_2 IMTR_t + \alpha_3 ITR_t + \alpha_4 IR_t + \alpha_5 INF_t + \alpha_6 GDP_t + U_t \quad (1)$$

Where CC = Currency in circulation.

M2 = Broad money.

CTR = Consumption tax rate.

IMTR= Import tax rate.

ITR= Income tax rate.

IR = Interest rate.

INF = Inflation rate.

GDP = Gross domestic product.

U = The error term.

### 4.1.3 Description of Variables

#### 4.1.3.1 The Currency Ratio

In the equation, the currency ratio (which is also given as the dependent variable) is the ratio of currency in circulation to broad money. Currency in circulation refers to notes and coins held outside banks and this is the most liquid monetary aggregate. Broad money is the summation of: currency in circulation, demand deposits, checks, and saving deposits. The share and dynamics of currency in circulation to money supply is often considered as an indicator of monetization or demonetization of an economy. For Malawi this share shows a high degree of cash utilization (Mwale et al 2004). This ratio is used in this analysis as it gives a complete indicator of real shifts in demand for currency.

#### **4.1.3.2 Tax Variables**

The equation uses three tax rate variables rather than the one used by Tanzi. The tax rates are constructed based on their respective tax bases and tax revenues realized in each of the years under study. Thus the consumption tax rate was obtained by calculating the ratio of consumption tax revenue to total private consumption. The import tax rate was obtained from the ratio of import tax revenue to total imports. The income tax rate was obtained from the ratio of income tax revenue to the GNP. This method is a slight variation of that employed by Shabsigh (1995) for Pakistan. It is expected that a tax burden has a positive effect on the currency ratio as an increase in tax burden raises the relative price of taxable against non taxable economic activities. In this study, however, the formulation of the tax rate for input is the equation proposed by Tanzi: Natural Log of  $(K + \text{Tax Rate})$ , where K is a constant and in our case  $K=1$ . In this analysis, these variables are taken as the main causes of the Parallel Economy and again I use the first



lag of the taxes, with the assumption that usually economic agents will decide to cheat in the second period after perceiving that they overpaid in the present period.

#### **4.1.3.2 Interest Rates**

Interest rates act as the cost of holding money in the form of cash. It is expected that a higher interest rate on bank deposits increases the opportunity cost of holding currency. Thus a rational expectation is that an increase in this rate will make economic agents hold less cash and opt for deposits while a lower rate will act as a disincentive to holding deposits. Ultimately, interest rates will have a negative effect on the currency ratio. In this study I use nominal interest rates on time deposits in their natural log form.

#### **4.1.3.4 Inflation**

Inflation, defined as a general increase in prices of commodities, is one of the factors that affect money in circulation. Malawi has faced high levels of inflation since its independence in 1964. A survey of inflation in Malawi is given by Simwaka (2004). Inflation in Malawi is due to cost-push factors, as it is land locked and relies on imports, the chief of which is oil. With such a scenario, it is only legitimate to include this variable in the equation and it is one of the significant departures from the original Tanzi equation. It can be assumed that Tanzi did not include it in his analysis because he was dealing with a developed economy where inflation rates are basically stable and hence fairly predictable which may not be the case for developing countries like Malawi. Fethi

et al (2006) also included inflation in their study of the Parallel Economy of Cyprus. The best indicator for inflation dynamics in an economy is the Consumer Price Index (CPI). However, in this study I use the GDP deflator as a proxy of the CPI, since the time series data for the CPI available for Malawi does not cover a long enough period compared to the data available for the GDP deflator. Thus in the equation the inflation variable is given as the first difference of the natural log of the GDP deflator.

#### **4.1.3.5 Gross Domestic Product Variable**

GDP is a basic indicator of economic growth and development of an economy. It is believed that economic growth leads to an increase in demand deposits (Shabsigh 1995) and a replacement of currency with checks (Chipeta 2002). With this presumption, it is expected that GDP should have a negative influence on the currency to money supply ratio being studied. The reasoning is that economic growth should lead to a bigger increase in the denominator of the ratio (M2), rather than in the numerator (Currency in Circulation). Schneider (1986), when estimating the currency demand equation for Denmark, did not use a currency to money supply ratio. Hence, he expected a positive influence from the economic growth variable in the equation. However it seems this could be situation specific as it is not possible to predict with certainty whether economic growth would really lead to an increased usage of non-cash monetary aggregates. In this equation I employ the first difference of the natural logarithm of the GDP.

#### **4.1.4 Equation Specification**

Finally, with all the adjustments taken into consideration, equation (1) becomes:

$$CC/M2 = \alpha_0 + \alpha_1 \ln(1+CTR)_{t-1} + \alpha_2 \ln(1+IMTR)_{t-1} + \alpha_3 \ln(1+ITR)_{t-1} + \alpha_4 \ln(IR)_t + \alpha_5 d(\ln GDPdef)_t + \alpha_6 d(\ln GDP)_t + \alpha_7 CC/M2_{t-1} + \alpha_8 CC/M2_{t-2} + U_t \quad (2)$$

Note that equation (2) now includes the first and second dependent lagged variables. This is done for two reasons: firstly to eliminate possible serial correlation in the error terms, and secondly it is assumed that the equation is estimated over time using the ordinary least squares method and that the lag in adjustment of the actual to long run desired currency holdings can be modeled by the two lagged dependent variables (Shneider1986). Table 5 is a summary of the equation variables, plus their expected signs (negative/positive), to explain the currency demand equation for the economy in Malawi.

Table 5: Summary of variables in the equation and their expected sign

Type of variable	Variable explanation	Expected sign
Dependent Variable	CC/M2 Currency to money supply ratio	
Independent Variable	$\ln(1+CTR)_{t-1}$ Consumption tax rate, a proxy for all taxes on consumption	+
	$\ln(1+IMTR)_{t-1}$ Import tax rate a proxy	+

	for international trade taxes	
	$\ln(1+ITR)_{t-1}$ Income tax rate, a proxy for all taxes on income	+
	$\ln(IR)$ Interest rate on time deposits	-
	$d(\ln GDP_{def})$ GDP deflator, a proxy for inflation	+
	$\ln(GDP)$ Natural logarithm of Gross Domestic product a proxy for economic development and volume of transaction	-
	$CC/M2_{t-1}$ First lag of the dependent variable	+
	$CC/M2_{t-2}$ Second lag of the dependent variable	+

## 4.2 Estimation of the Parallel Economy

After estimating equation (2), the next step involves the calculation of the Parallel Economy.

### 4.2.1 Estimating the currency in circulation

This involves obtaining the currency in circulation from the currency to money supply ratio. Let the equation (2) be presented as below:

$$CC/M2 = Z \tag{3}$$

where  $Z$  is the string on the right side of the equation while  $CC$  and  $M2$  still retain their earlier definitions. Therefore equation (3) can be written as:

$$ECC = (Z) \times (M2) \tag{4}$$

Thus equation (4) gives us an estimation of the currency in circulation ( $ECC$ ).

#### **4.2.2 Estimating tax induced currency in circulation (illegal money)**

The procedure is repeated but this time the tax rates in the equation are set to zero. For instance  $\ln(1+CTR)$ , becomes  $\ln(1+0)$ , which resolves to zero. The resulting estimated currency in circulation obtained at this stage, which I shall call  $ZTECC$  (zero tax estimated currency in circulation), is then used to estimate tax-induced currency in circulation. This is given by the simple equation below and yields illegal money:

$$\text{Illegal Money} = ECC - ZTECC \tag{5}$$

#### **4.2.3 Estimating legal money**

After estimating illegal money the next stage is to come up with legal money, and thus the amount used for transaction purposes. This is basically the difference between M1 (currency in circulation plus demand deposits) and illegal money, as shown in the equation below:

$$\text{Legal Money} = \text{M1} - \text{Illegal Money} \quad (6)$$

#### 4.2.4 Estimating income velocity

Income velocity is derived from the Quantity Equation which links transactions and money. In its basic form the quantity equation is:

$$(\text{Money}) \times (\text{Velocity}) = (\text{Price}) \times (\text{Transaction}) \text{ and hence}$$

$$\text{Velocity} = [(\text{Price}) \times (\text{Transaction})] / (\text{Money}) \quad (7)$$

I proxy the right side of the above equation without loss of generality with GDP and legal money obtained in equation (6) and this yields the equation below:

$$\text{Income velocity} = \text{Nominal GDP} / \text{Legal Money} \quad (8)$$

#### 4.2.5 Parallel Economy estimate

Having obtained the income velocity of money, then one can estimate the Parallel Economy by first assuming that the velocity of money is the same in both the Official

and the Parallel Economies. This is achieved by multiplying the income velocity figure obtained in equation (7) and the illegal money figure obtained in equation (5). Thus:

$$\text{Parallel Economy (PE)} = (\text{Income Velocity}) \times (\text{Illegal Money}) \quad (9)$$

#### **4.2.6 Parallel Economy due to each tax**

The study went further to calculate the components of the Parallel Economy due to each tax. This is accomplished by recalculating EZTECC (see 4.2.2) but this time setting each tax rate to zero while leaving the rest of the variables unchanged. This is done to see which tax has the most influence on the formation of the Parallel Economy with the objective of finding the influence of the Parallel Economy on tax revenue.

### **4.3 The Relationship Between Parallel Economy and Tax Revenue**

Comparative ratios are used in this study to examine the relationship between tax revenue and the Parallel Economy. The basic ratios employed are the contribution of each type of tax to the total tax revenue as depicted in figure 2 in SECTION 3 (Section 3.2), and the contribution of each type of tax to the total Parallel Economy obtained from calculations of the Parallel Economy due to each tax as explained in this Section 4.2.6.

Apart from looking at the ratios, the general trend of the ratios is observed over time so as to establish whether there are any emerging patterns.

#### **4.4 Data Sources and Data Analysis**

For the empirical analysis, data was obtained from World Bank Africa Data Base CDROM, The National Statistics Office of Malawi, The Reserve Bank of Malawi and the International Monetary Fund IFS CDROM. The model was calibrated with annual data from 1965 to 2000.



## SECTION 5

### 5.0 Results and Discussion

In this section I present the major results obtained from calculations described in Sections 4.1, 4.2 and 4.3.

#### 5.1 Results of Currency Demand Equation

Equation 2 was estimated used the Ordinary Least Squares procedure and table 6 contains the results that ire obtained.

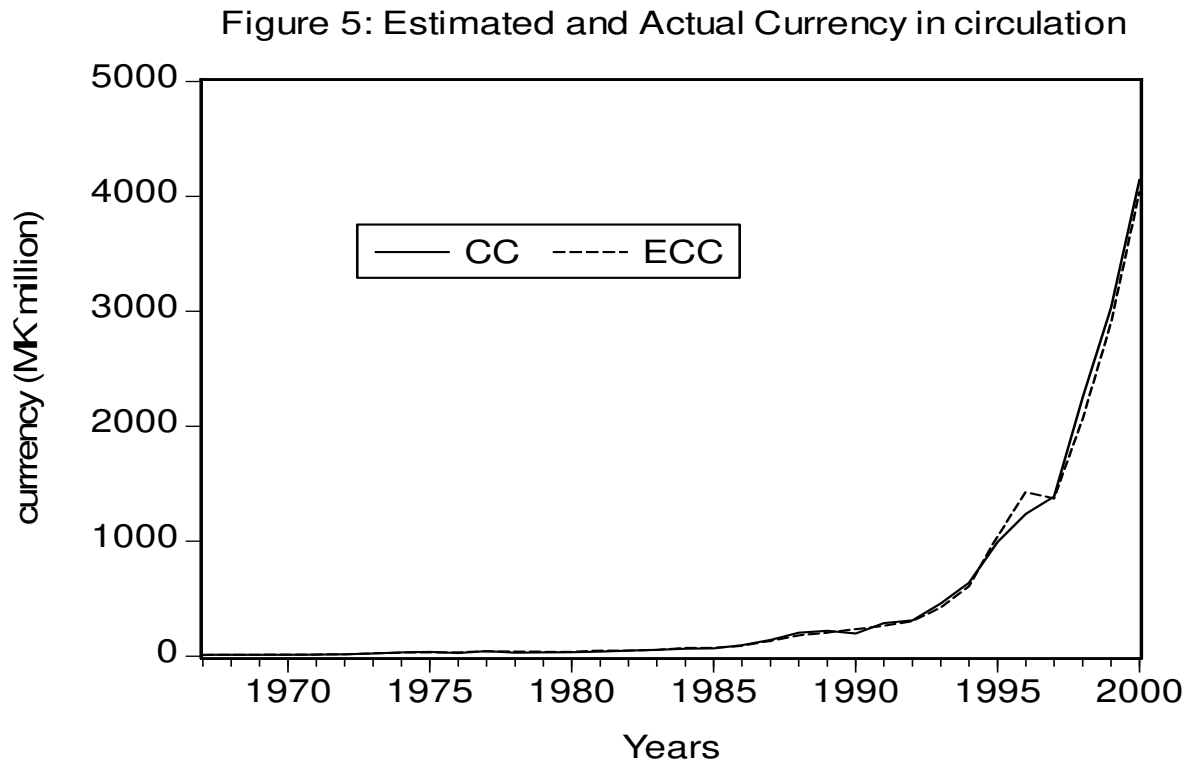
Table 6: Results of currency demand equation.

Dependent Variable: CC/M2				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.021781	0.144119	-0.151130	0.8811
CTR	0.008142	0.033088	0.246085	0.8076
IMTR	0.009288	0.023388	0.397107	0.6947
ITR	0.013985	0.029272	0.477761	0.6370
INF	0.212262	0.119724	1.772923	0.0884
IR	-0.020045	0.014178	-1.413816	0.1697
GDPGR	-0.087416	0.088691	-0.985620	0.3338
(CC/M2) <sub>t-1</sub>	0.418873	0.186821	2.242103	0.0341

(CC/M2) <sub>t-2</sub>	0.449360	0.227387	1.976189	0.0593
R-squared	0.780383			
Adjusted R-squared	0.710105			
S.E. of regression	0.025161			
Durbin-Watson stat	2.060128			
F-Statistic	11.10429			
Prob (F-statistic)	0.000002			

Table 6 clearly shows that all the variables have either the negative or positive value that was expected. However, most of the variables are not statistically significant except the interest rates and the inflation variables, which are significant at 10%. This is possibly because of the short period employed in the study - only 34 years. The R-squared value is high at 78%. Due to the characteristics of the results, some diagnostic tests are carried out and they are presented in Appendices 2, 3 and 4.

From the currency demand equation I estimated the currency in circulation, as elaborated in Section 4.2.1. Figure 5 is a graph of the estimated currency in circulation and the actual currency in circulation.



From figure 5, it is clearly demonstrated that the equation returns a close estimate of the currency that was in circulation from 1967 to 2000.

## 5.2 Results of the Parallel Economy in Malawi

The Parallel Economy obtained is presented in table 7 and Appendix 5 contains the rest of the results.

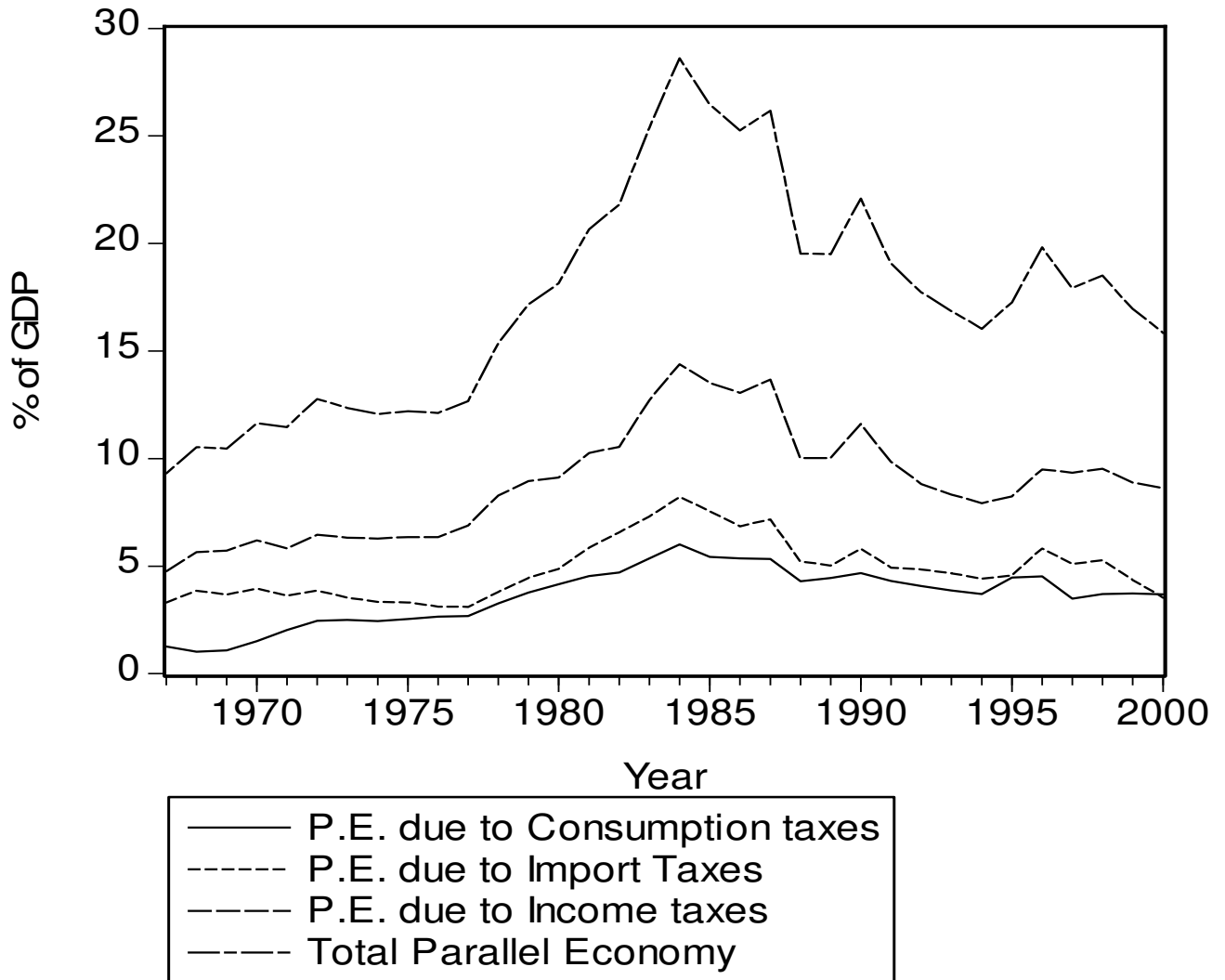
Table 7: Calculations of the Parallel Economy (as a % of Official GDP)

Year	Total PE	PE due to consumption taxes	PE due to import taxes	PE due to income taxes
1967	9.318387	1.254966	3.307304	4.756118
1968	10.52506	1.017289	3.851239	5.656536
1969	10.45952	1.079769	3.665126	5.714624
1970	11.64331	1.510276	3.944536	6.188494
1971	11.46279	2.030262	3.621369	5.81116
1972	12.77031	2.460877	3.850211	6.459223
1973	12.35423	2.494444	3.539176	6.320608
1974	12.06354	2.448489	3.342798	6.272255
1975	12.19686	2.54451	3.302453	6.3499
1976	12.11506	2.651798	3.111926	6.351335
1977	12.66976	2.678376	3.106562	6.88482
1978	15.34635	3.267119	3.794768	8.284458
1979	17.16584	3.770342	4.447689	8.947813
1980	18.15572	4.160783	4.872723	9.122216
1981	20.6622	4.53617	5.864113	10.26191
1982	21.81808	4.70654	6.575638	10.5359
1983	25.3807	5.355182	7.311943	12.71358
1984	28.61532	6.014186	8.215752	14.38539
1985	26.48741	5.432547	7.549649	13.50521
1986	25.25941	5.362708	6.842276	13.05442

1987	26.17305	5.327646	7.169972	13.67544
1988	19.52844	4.302438	5.216102	10.0099
1989	19.49814	4.446376	5.022375	10.02939
1990	22.09493	4.67372	5.807744	11.61347
1991	19.07891	4.315648	4.923412	9.839851
1992	17.72592	4.080645	4.835317	8.809959
1993	16.85111	3.865938	4.659545	8.325623
1994	16.02978	3.695912	4.412781	7.921085
1995	17.25766	4.460059	4.559199	8.238398
1996	19.82363	4.51875	5.814598	9.490277
1997	17.92974	3.497257	5.088567	9.343913
1998	18.50818	3.704262	5.273829	9.530093
1999	16.96822	3.725038	4.357317	8.885869
2000	15.83873	3.680532	3.538326	8.619873

A graphical representation of the result in table 7 is shown in figure 6.

Figure 6: The Parallel Economy in Malawi



The results from table 7 and figure 6 can also further be summarized, as shown in table 8 below:

Table 8: Average size of the Parallel Economy as a percentage of Official GDP

Type of Parallel Economy	Period			
	1967-1979	1980-1989	1990-2000	Overall
Due to income tax	6.5	11.7	9.1	9.1
Due to consumption tax	2.2	5.0	4.0	3.7
Due to import tax	3.6	6.5	4.8	5
Total Parallel Economy	12.3	23.1	18	17.3

The results obtained show that the Parallel Economy in Malawi has been increasing since the 1970s. It had almost doubled by the 1980s, followed by a slight decrease in the 1990s. Again, the results show that income taxes have been a major driver of the Parallel Economy compared with other types of taxes. For comparative purposes, figure 7 compares our results with that of Chipeta (2002), which are previously presented in SECTION 3. However, only the results obtained by the Tanzi method are considered.

Figure 7: P/Economy Results from this study and that of Chipeta (2002)

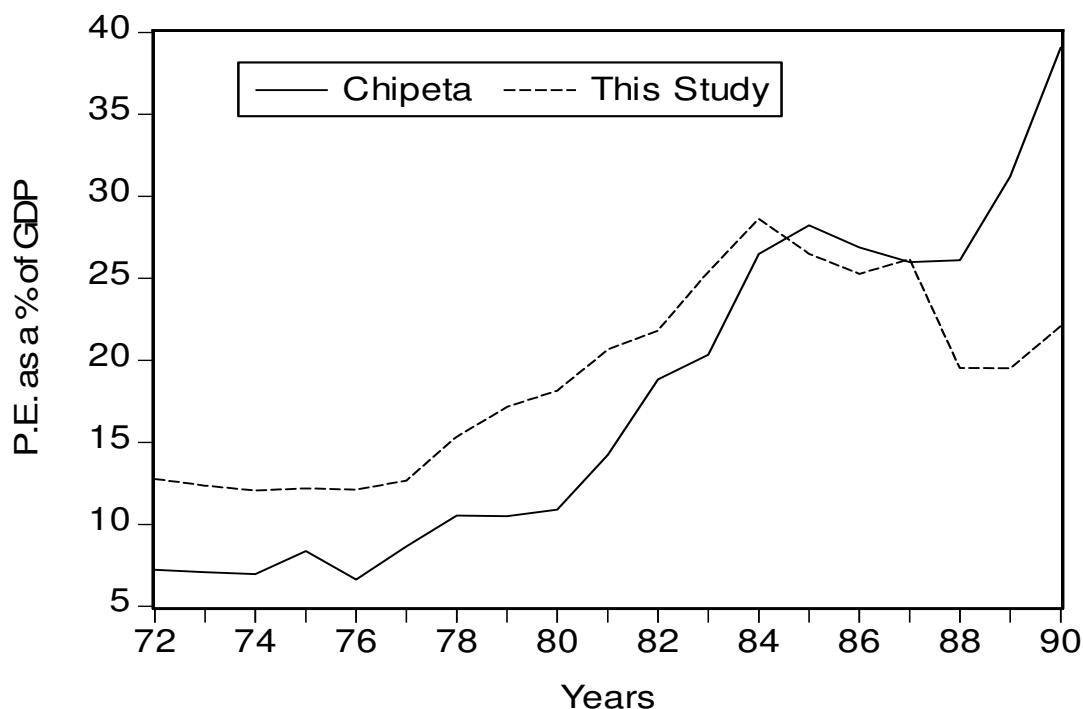


Figure 7 shows that there is a divergence in the results from this study and that of Chipeta (2002). This is due to two basic reasons: first the choice of the tax variables and, secondly, the difference in the variables used in the estimation of the currency in circulation. This study used effective tax rates, while Chipeta (2002) did not actually specify the type of tax rates that he used. In addition, this study used lagged variables of the tax rates, while Chipeta (2002) did not lag the tax variables in his study. Again, while this study employed inflation in the analysis, Chipeta (2002) did not, even though he widely used real variables. In general, while this study used a variant of the Tanzi Method, Chipeta applied the method in its totality, except for the specification of the taxes. However what emerges from figure 7 is that the two results have almost the same trend indicating the Parallel Economy.



### 5.3 Result of Relationship between the Parallel Economy and Tax Revenue

As explained in SECTION 4 (Section 4.3) the results of the comparative ratios given in figures 8, 9, and 10 below are further summarized in table 9:

Figure 8: Contribution of Consumption Taxes to the Total Tax Revenues and the Parallel Economy

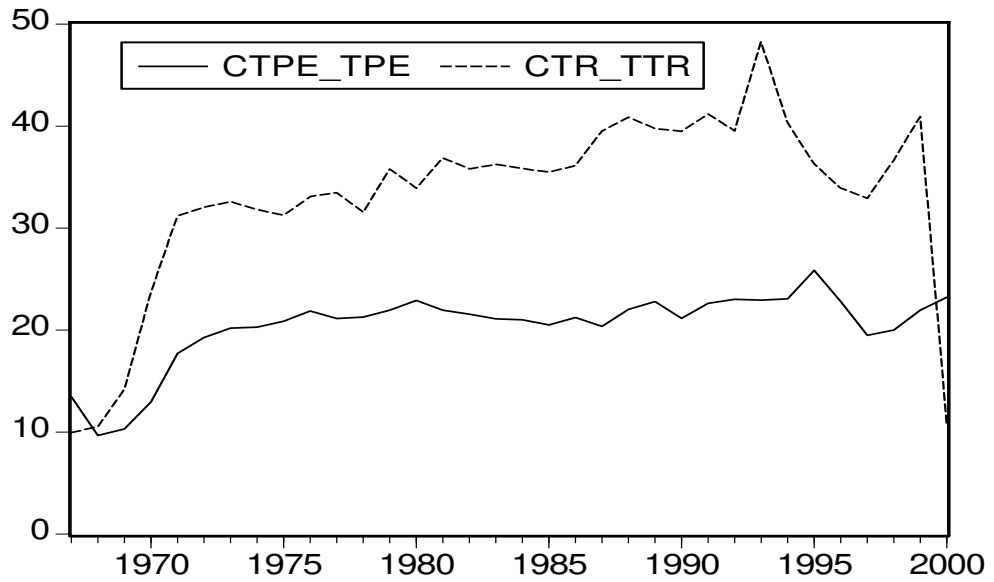


Figure 9: Contribution of Import taxes to the Total Tax Revenues and the Parallel Economy

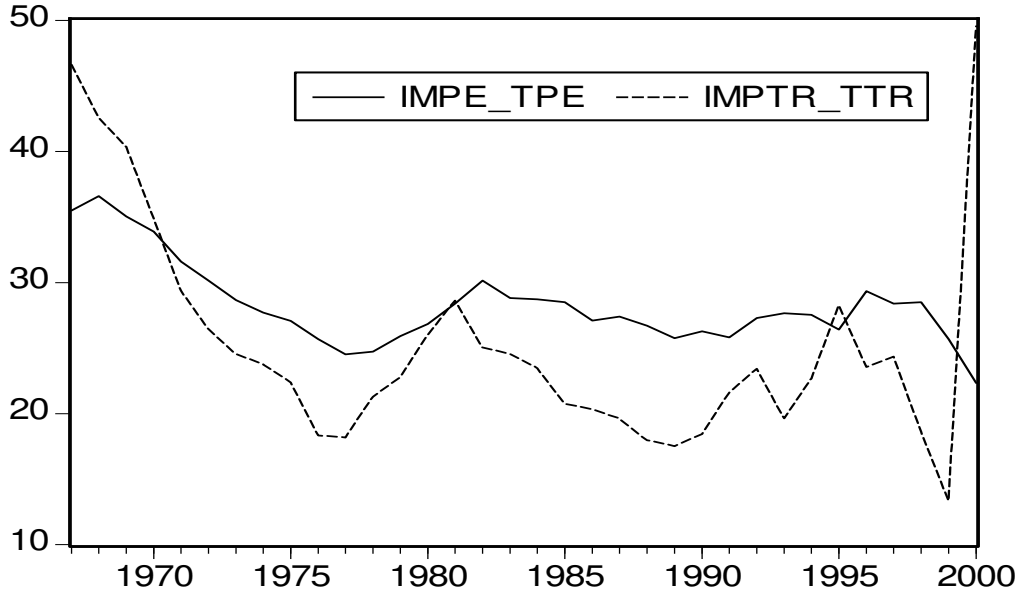


Figure 10: Contribution of Income taxes to the Total Tax Revenues and the Parallel Economy

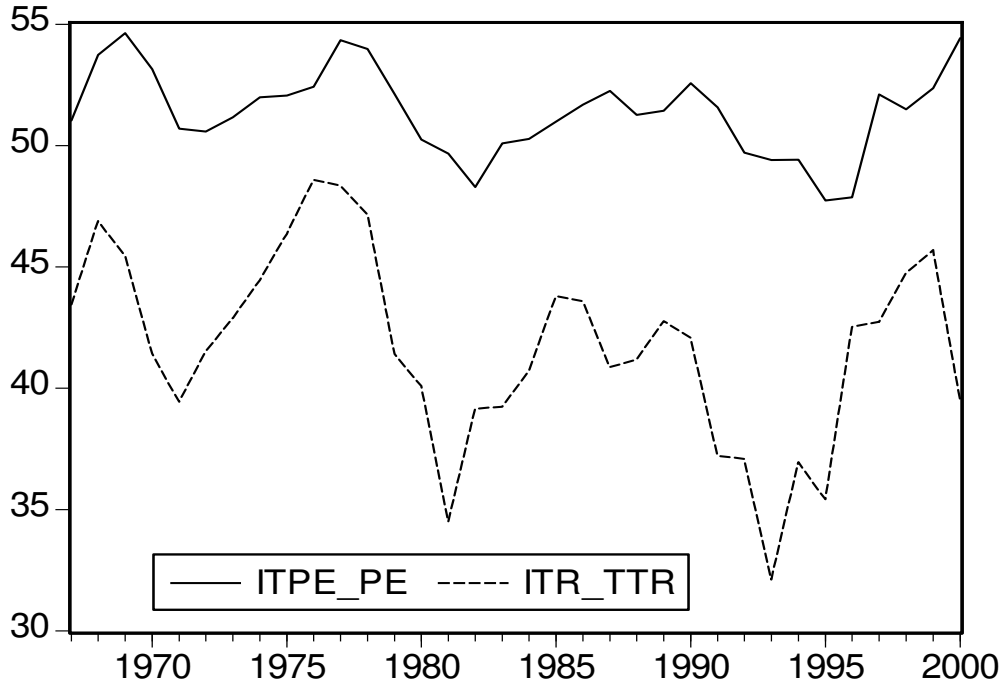


Table 9: Average contribution of each tax type to the Parallel Economy and Tax Revenues (%)

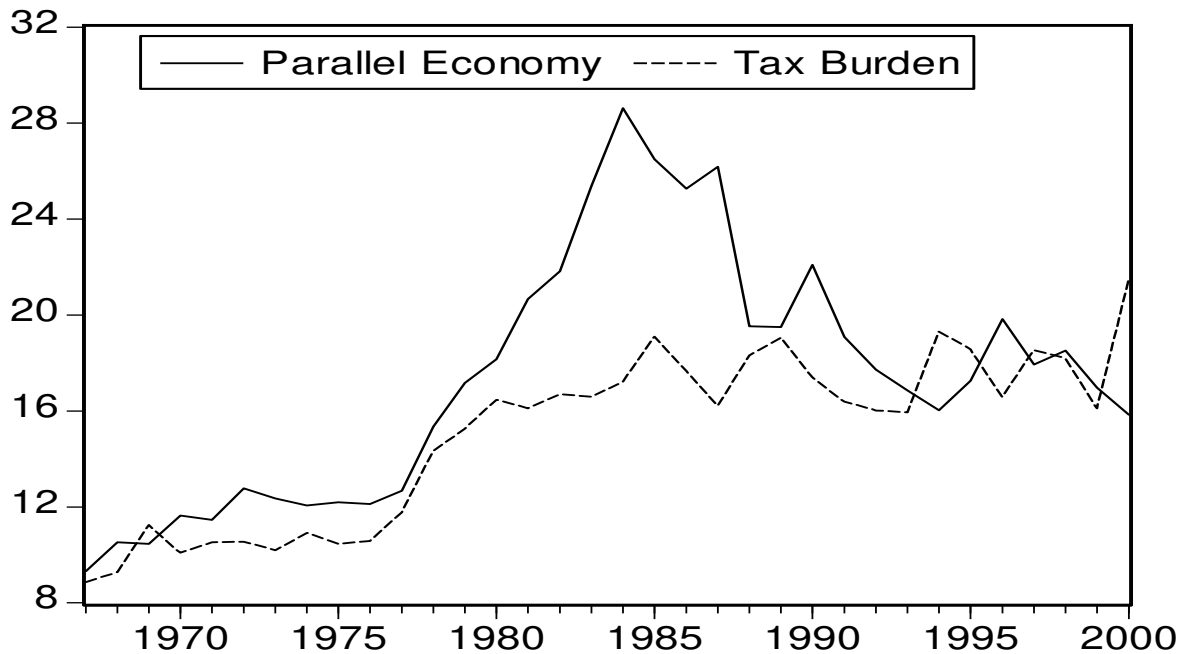
Type of tax and direction of contribution		Period			
		1967-1979	1980-1989	1990-2000	Overall
Consumption tax	Parallel Economy	17.7	21.5	22.5	20.3
	Tax revenue	27.0	37.6	36.4	32.9
Import tax	Parallel Economy	29.7	26.8	26.8	28.2
	Tax revenue	28.5	22.3	23.9	25.2
Income tax	Parallel Economy	52.4	50.6	50.7	51.3
	Tax revenue	44.4	40.5	39.6	41.7

The results show that during the period under study, income taxes contributed greatly to both the Parallel Economy and to tax revenues, 51.3% and 41.7% respectively. Consumption taxes contributed the least to the Parallel Economy, only 20.3%. Import taxes contributed the least to tax revenues (25.2%) but at the same time their contribution to the Parallel Economy was higher than consumption taxes at 28.2%. Observing the trends in figures 7, 8, and 9 reveals that there was a positive relationship between the Parallel Economy and tax revenues. Thus, an increase in tax revenue led to an increase in the Parallel Economy and a decrease in tax revenue led to a decrease in the Parallel Economy.

#### 5.4 Discussion of the Results

The Parallel Economy in Malawi has been growing steadily, experiencing a doubling in the mid-1980s and decreasing again in the 1990s, though not by such high magnitudes. The high growth of the Parallel Economy can be linked to several macroeconomic adjustments that took place in 1980, most importantly the introduction of structural adjustment programs, spearheaded by the World Bank in 1981, and major tax reforms of the 1980s, especially the income tax regime. The Government of Malawi increased tax rates in the 1980s to finance a number of major public expenditures, for example the financing of food imports following a drought in 1980, and financing of military operations due to a deteriorating security situation in Mozambique, which was involved in a civil war. This also led to an influx of about one million refugees that had to be provided for, as well as increased transport costs as a result of the severing of the shorter sea route through Mozambique due to the same war (Chipeta 1998). In the fiscal years 1989 to 1994, there were some major reversals in the tax regime, most of which saw a reduction in various tax rates, after the government realized that high tax rates did not really lead to an increase in tax revenues but, instead, reduced incentives to produce and to supply factors of production (Chipeta 1998). Of significance here was a reduction of the personal income tax from the maximum marginal rate of 50% to 35% and the abolition of a minimum tax that was applicable to all males aged 18 years and above. At this point it is imperative to look at the relationship between the tax burden (measured by the ratio of tax revenue to GDP) and the Parallel Economy (also as a ratio of GDP). This is shown in figure 10 and the result reinforces the classic theory that an increase in tax burden also increases the Parallel Economy.

Figure 11: Tax Burden and the Parallel Economy



Thus, while Chipeta (1998) observed that a higher tax burden restricted economic activities, the reality is that there was a generous transfer of resources from the Official Economy to the Parallel Economy, as displayed in figure 10. The result has also shown that income taxes are the main drivers of the growth of the Parallel Economy. Chipeta (1998), reports that the tax reforms mainly targeted a narrow tax base of employees of the public sector and large firms, incomes of the official sector private firms, and traditional excisable products and imports. With this as a background it can therefore be understood why income taxes had a greater effect on the Parallel Economy.

## 5.5 Policy Lessons and Options

This study has shown that the growth of the Parallel Economy is a fiscal policy issue. Thus the growth of the Parallel Economy in Malawi described in this study was a result of an expansionary fiscal policy which the government undertook in the 1980s. The intention was noble, but the result of the policy created negative changes such as the growth of the Parallel Economy, which presented several disadvantages, as discussed to in Section 2.

From this study one can also develop a simple tax policy-evaluating tool. Among other things, a desirable tax should be evaluated by looking at the ratio of the average contribution to the Parallel Economy and to the average contribution to the total tax revenue (where both figures are evaluated over time and expressed as percentages). A desirable tax is one that raises a significant amount of revenue but does not contribute significantly to the Parallel Economy. This means therefore that the aforementioned ratio will be less than one for a desirable tax and greater than one otherwise. An ideal tax would yield a ratio equal to zero. Applying this simple tool to the study yields the results in table 10.

Table 10: Parallel Economy/Tax Revenue Contribution Ratios

<b>Type of Tax</b>	<b>Contribution Ratio</b>	<b>Result</b>
Consumption tax	20.3/32.9	0.61
Import tax	28.2/25.2	1.11
Income Tax	51.3/41.7	1.23

From the results in table 10, it is shown that income taxes, though contributing highly to total tax revenue, fuel the Parallel Economy and hence, may not be desirable. This is also true for import taxes whose contribution ratio is greater than unity. Consumption taxes on the other hand, while able to raise a significant amount of revenue, do not significantly contribute to the growth of the Parallel Economy. Taxation policy needs to strike a delicate balance between raising revenues and at the same time mitigating any resultant increase in the Parallel Economy.

## SECTION 6

### 6.0 Conclusion

This study has managed to establish the size of the Parallel Economy in Malawi and to shed more light on its dynamics from 1967 to 2000, using a variant of the Tanzi currency demand equation. The study has also revealed that income taxes are the main driver of growth in the Parallel Economy following an expansionary fiscal policy that was used between 1979 and 1990. Thus, while most studies on this topic mainly concentrate only on establishing the size of the Parallel Economy and tax evasion, our study has gone a step further to evaluate the relationship between the Parallel Economy and tax revenues.

There is, however, a need for similar studies to be conducted at a micro-level, such as studying the phenomenon of the Parallel Economy on a sector-by-sector or on an industry-by-industry basis. Such studies could also look at, and possibly quantify, the interactions between the Parallel and Official Economies. If such research can yield similar results as this present study, then the following two options would be beneficial for Malawi to follow:

- (1) There will be a need to revise income taxes downwards. This has the advantage of reducing the Parallel Economy, as it has been demonstrated that there is a positive relationship between tax revenues and the Parallel Economy. At the same time this would mean a decrease in total tax revenues. To correct the decrease in revenues, consumption taxes, which have the advantage of being imposed on a



wider tax base, could be increased, while carefully looking at their contribution to the Parallel Economy.

- (2) There is a need to break the positive relationship between tax revenue and the Parallel Economy. While this study has established that the outcome of this relationship is an increase in the tax burden (as a result of an increase in taxes), it is also important to look at tax revenue collection procedures in general. Malawi, for instance, still employs an official assessment system for income taxes. This system forces tax officials to concentrate on the assessment, rather than the auditing, of taxes. Moving to a self-assessment system would free more tax officers to concentrate on taxpayer identification and audit. The way the system is set up at the moment, means that any fiscal policy that leads to an increase in the tax burden, actually leads to a narrowing of the tax base. This new tax base is composed of economic agents who will have a greater desire to lessen their tax burden by switching to the Parallel Economy.

## Appendices

### Appendix 1: OLS Results for the Currency Demand Equation

Dependent Variable: CCBYMII

Method: Least Squares

Sample: 1967 2000

Included observations: 34

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Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.021781	0.144119	-0.151130	0.8811
LGCTR	0.008142	0.033088	0.246085	0.8076
LGIMTR	0.009288	0.023388	0.397107	0.6947
LGITR	0.013985	0.029272	0.477761	0.6370
INF	0.212262	0.119724	1.772923	0.0884
LIR	-0.020045	0.014178	-1.413816	0.1697
DLGDP	-0.087416	0.088691	-0.985620	0.3338
LGDV1	0.418873	0.186821	2.242103	0.0341
LGDV2	0.449360	0.227387	1.976189	0.0593

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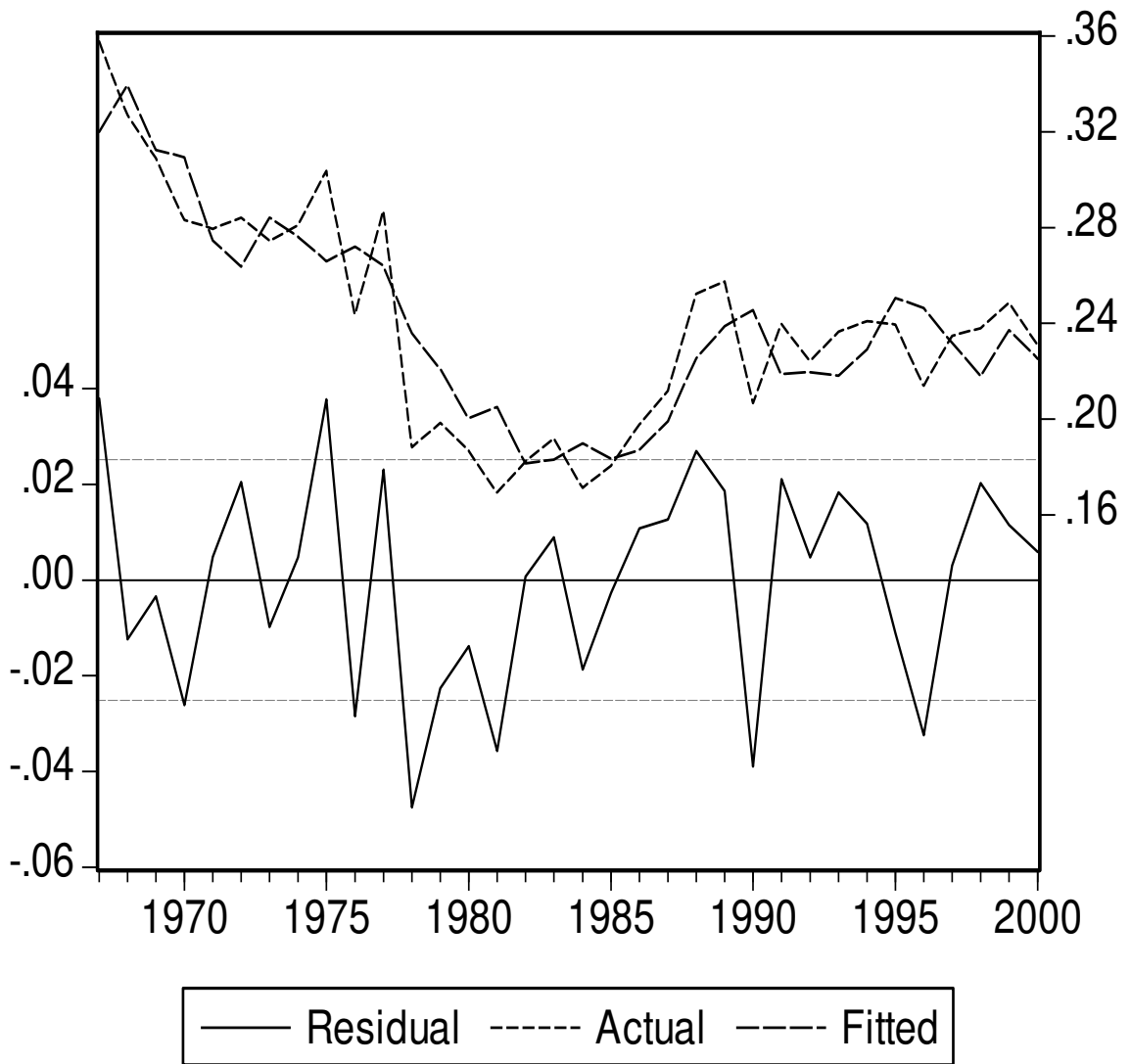
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R-squared	0.780383	Mean dependent var	0.240361
Adjusted R-squared	0.710105	S.D. dependent var	0.046731
S.E. of regression	0.025161	Akaike info criterion	-4.305125
Sum squared resid	0.015827	Schwarz criterion	-3.901088
Log likelihood	82.18712	F-statistic	11.10429
Durbin-Watson stat	2.060128	Prob(F-statistic)	0.000002

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**Appendix 2: OLS Results for the Currency Demand Equation, a Graphical Presentation**



### Appendix 3: Correlogram of the Estimated Currency Demand Equation Residual

Sample: 1967 2000

Included observations: 34

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. *  .	. *  .	1	-0.076	-0.076	0.2170	0.641
.   .	.   .	2	0.048	0.042	0.3040	0.859
.   .	.   .	3	-0.027	-0.021	0.3335	0.954
. **  .	. **  .	4	-0.200	-0.207	1.9636	0.742
.  * .	.  * .	5	0.124	0.101	2.6131	0.759
.  * .	.  * .	6	0.102	0.144	3.0643	0.801
. **  .	. **  .	7	-0.268	-0.302	6.3317	0.502
.   .	.   .	8	0.035	-0.049	6.3890	0.604
. *  .	. *  .	9	-0.161	-0.059	7.6533	0.569
.   .	.   .	10	-0.017	-0.033	7.6676	0.661
.  * .	. *  .	11	0.072	-0.066	7.9435	0.718
.   .	.  * .	12	0.062	0.126	8.1547	0.773
. *  .	. **  .	13	-0.183	-0.202	10.114	0.685
.   .	.   .	14	0.054	-0.045	10.291	0.741
. *  .	.   .	15	-0.104	-0.025	10.984	0.754
.  * .	.   .	16	0.105	0.055	11.735	0.762

## Appendix 4: Unit Root Test of the Residual of the Estimated Currency Demand

### Equation

Null Hypothesis: RESIDUAL OF THE CDE has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 0 (Automatic based on SIC, MAXLAG=8)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-6.384888	0.0000
Test critical values: 1% level	-4.262735	
5% level	-3.552973	
10% level	-3.209642	

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

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(CCBYMII)

Method: Least Squares

Date: 12/20/06 Time: 00:00

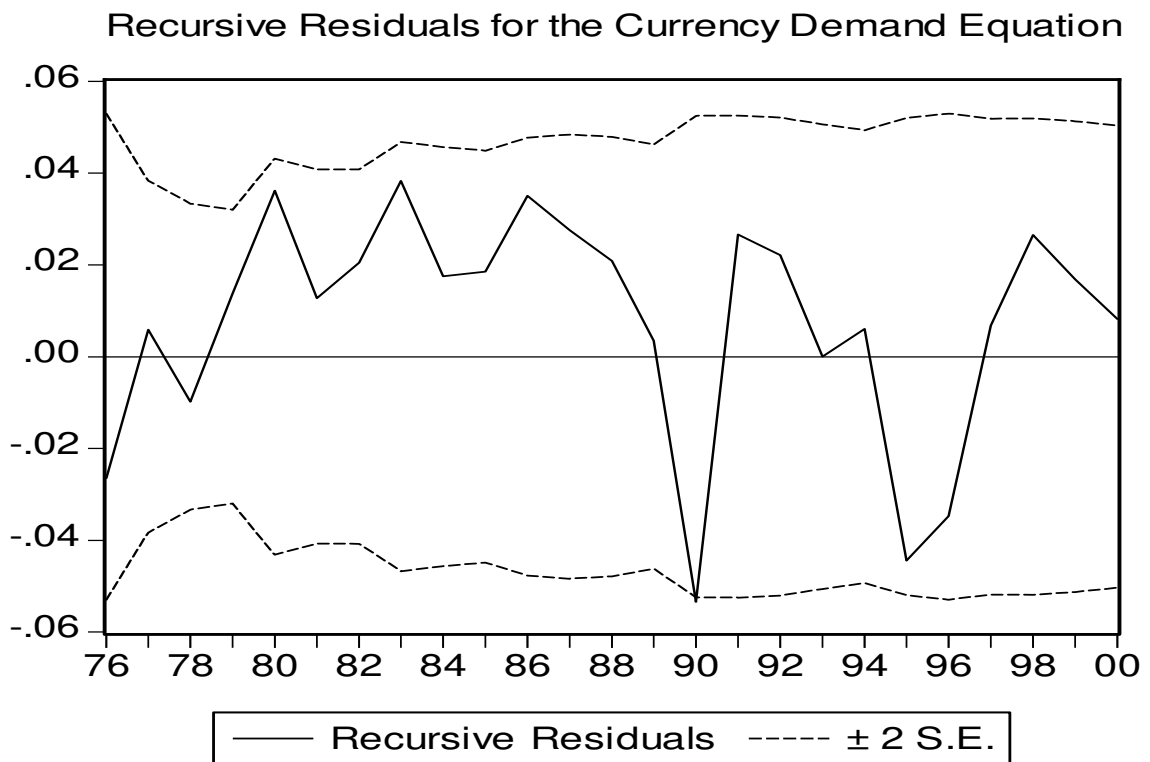
Sample (adjusted): 1968 2000

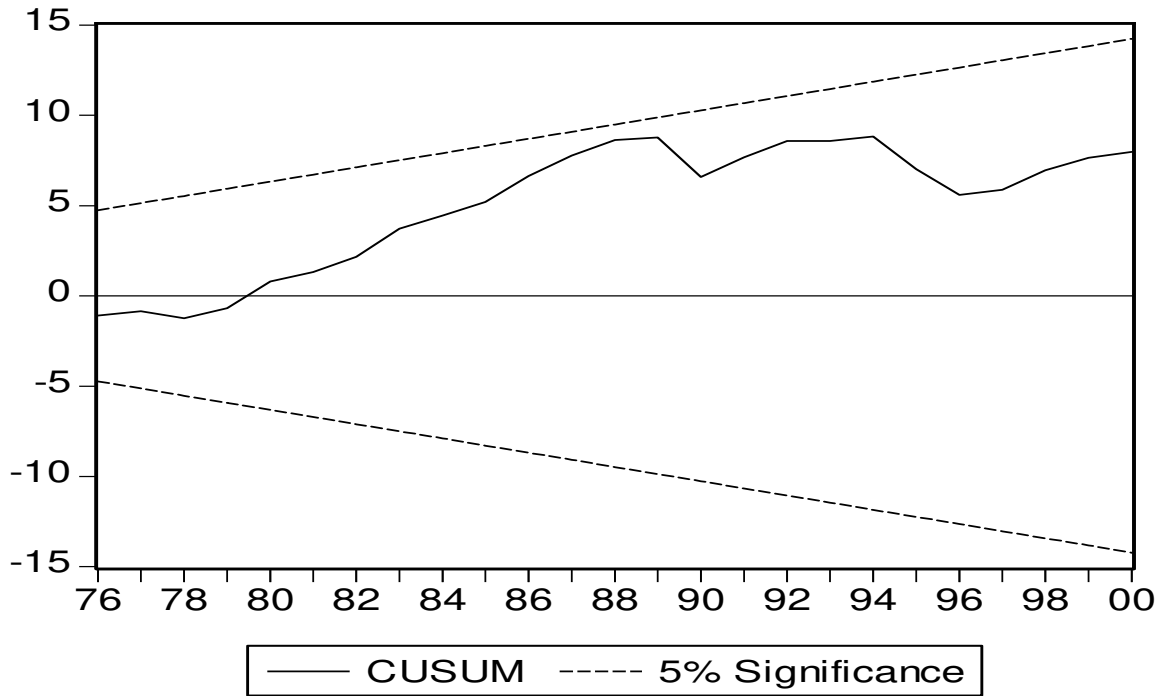
Included observations: 33 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESIDUALCDE(-1)	-1.089528	0.170642	-6.384888	0.0000

C	-0.009128	0.008330	-1.095827	0.2819
@TREND(1965)	0.000419	0.000392	1.069177	0.2935
<hr/>				
R-squared	0.578476	Mean dependent var	-0.000971	
Adjusted R-squared	0.550375	S.D. dependent var	0.031905	
S.E. of regression	0.021394	Akaike info criterion	-4.764931	
Sum squared resid	0.013731	Schwarz criterion	-4.628885	
Log likelihood	81.62136	F-statistic	20.58518	
Durbin-Watson stat	1.985610	Prob(F-statistic)	0.000002	
<hr/>				

#### Appendix 5: Coefficient Stability Test of the Currency Demand Equation





**Appendix 6: Major Results of the Parallel Economy Calculations**

Year	Z	ECC*	ZTECC*	ILMONEY*	LMONEY*	INCVEL*	PEGDP*	PE-TT**	PE-CT**	PE-IMT**	PE-IT**
1967	0.32	11	9	2	22	9.60	20	9.32	1.25	3.31	4.76
1968	0.34	12	10	2	23	9.92	24	10.53	1.02	3.85	5.66
1969	0.31	13	10	3	26	9.48	26	10.46	1.08	3.67	5.71
1970	0.31	15	11	3	29	9.11	31	11.64	1.51	3.94	6.19
1971	0.27	16	12	4	35	9.62	38	11.46	2.03	3.62	5.81
1972	0.26	17	12	5	36	9.97	46	12.77	2.46	3.85	6.46
1973	0.28	24	18	6	49	7.42	45	12.35	2.49	3.54	6.32
1974	0.28	32	24	8	66	7.04	56	12.06	2.45	3.34	6.27
1975	0.27	33	24	9	70	7.55	65	12.20	2.54	3.30	6.35
1976	0.27	33	25	8	65	9.42	74	12.12	2.65	3.11	6.35
1977	0.26	42	31	11	89	8.19	92	12.67	2.68	3.11	6.88



1978	0.24	40	27	12	81	9.84	123	15.35	3.27	3.79	8.28
1979	0.22	38	24	13	77	11.18	148	17.17	3.77	4.45	8.95
1980	0.20	38	23	15	82	12.22	182	18.16	4.16	4.87	9.12
1981	0.21	50	30	20	95	11.65	229	20.66	4.54	5.86	10.26
1982	0.18	50	27	23	107	11.60	272	21.82	4.71	6.58	10.54
1983	0.18	54	28	26	102	14.10	365	25.38	5.36	7.31	12.71
1984	0.19	74	39	34	120	14.24	489	28.62	6.01	8.22	14.39
1985	0.18	70	36	35	132	14.74	515	26.49	5.43	7.55	13.51
1986	0.19	91	47	45	176	12.47	555	25.26	5.36	6.84	13.05
1987	0.20	133	71	62	236	11.07	684	26.17	5.33	7.17	13.68
1988	0.23	183	112	71	365	9.37	667	19.53	4.30	5.22	10.01
1989	0.24	206	132	74	379	11.08	819	19.50	4.45	5.02	10.03
1990	0.25	235	148	87	395	12.84	1,120	22.09	4.67	5.81	11.61
1991	0.22	263	161	102	532	11.60	1,179	19.08	4.32	4.92	9.84
1992	0.22	305	191	114	643	10.09	1,149	17.73	4.08	4.84	8.81
1993	0.22	424	277	147	873	10.28	1,511	16.85	3.87	4.66	8.33
1994	0.23	608	396	212	1,323	7.92	1,680	16.03	3.70	4.41	7.92
1995	0.25	1,039	714	325	1,886	11.33	3,686	17.26	4.46	4.56	8.24
1996	0.25	1,426	970	456	2,301	15.18	6,922	19.82	4.52	5.81	9.49
1997	0.23	1,371	882	488	2,724	16.07	7,852	17.93	3.50	5.09	9.34
1998	0.22	2,061	1,241	820	4,429	12.48	10,231	18.51	3.70	5.27	9.53
1999	0.24	2,890	1,874	1,017	5,991	13.07	13,286	16.97	3.73	4.36	8.89
2000	0.23	4,038	2,706	1,331	8,405	12.35	16,443	15.84	3.68	3.54	8.62

\*All monetary values are in MK`Millions.

\*\*The Parallel Economy are given as a percentage of Official Economy

GDP

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