The Underground Economy: Estimation Techniques and Policy Implications

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Montreal, Canada.

Abstract

This thesis analyzes the estimation procedures and policy implications of an underground economy. In completing this task, we reviewed the techniques developed by Gutmann, Feige, Tanzi, and others. Further attention was also given to the estimation processes, such as the survey approaches, used by various governments.

In analyzing the policy implications of an underground economy, we examined the effects of fiscal and monetary policy, the aggregate statistics, the exchange rate, and other equally important indicators. We concluded that the consequences of a large and growing submerged sector can be devastating to the economic variables.

Finally, this paper attempts to examine the Canadian underground economy. However, since the studies performed on the Canadian underground economy are limited, the task of both reviewing the literature, and determining the Canadian policy implications was perplexing. We concluded that there is a definite need for further study of the Canadian hidden sector.

Résumé

Cette thèse analyse les procédés d'estimation et les implications politiques de l'économie souterraine. Pour faciliter cette tâche, les techniques développées par Gutmann, Feige, Tanzi, et al ont été prises en compte. Nous avons également porté attention aux processus d'estimation y compris les méthodes d'enquêtes développées par plusieurs gouvernements.

En analysant les implications politiques du secteur non-déclaré, nous examinons l'effet du secteur caché sur les buts des politiques fiscales et monétaires, les données aggrégées, le taux de change, parmi d'autres indicateurs importants. Nous concluons qu'un secteur important et en croissance peut entraîner des conséquences dévastatrices sur la representatitivité des données économiques.

Finalement, nous analysons l'économie noire canadienne. Les études antérieures canadiennes restent très limitées, ce qui a rendu difficile l'élaboration de la revue de la litterature, ainsi que l'analyse des implications politiques. Nous concluons qu'il serait important d'effectuer plus de recherches approfondies sur le secteur caché canadien.

I Introduction

Until the 1970s there was a general belief among economists that the prevailing body of theory was adequate in formulating policy prescriptions to aid in both regulating and stabilizing the economy. However, since this time many became disgruntled with traditional theory as they realized it was unable to grapple with the problems of increasing inflation, increasing unemployment, and the supply-side shocks. No longer could the Phillips curve, which showed a stable downward sloping trade-off in unemployment and inflation, be used in constructing policy. In addition, such large fluctuations in the economy made it difficult for policy-makers to pursue conventional Keynesian practices to fine tune the economy.

With traditional theory unable to adequately explain the events of the 1970s, many economists moved toward supply side and expectational theories in an attempt to explain the persistence of inflation and recession, otherwise known as stagflation.

It was during this time that a few economists ventured into what was until then a rarely examined area of economics. These individuals put forward the notion that, perhaps, the theory was not at fault for the government's inability to restore the economy to a stable equilibrium. Instead, as Tanzi suggests, it was possible that the "facts of economic life had become systematically distorted as the result of our failure to notice the growth of an "unobserved" or "underground" sector of economic activity."[1]

Most of the economics profession acknowledged the existence of an underground economy, but, in many cases it was assumed to be of the size and dimension that rendered it unimportant. Although there had been reference to the unobserved sector in Cagan's study (1959) on money demand, it was not until 1977 when Peter Gutmann's analysis forced

1 Vito Tanzi, *The Underground Economy in the United States and Abroad* (Lexington Lexington Books, 1982), p 14

economists to recognize the potential importance of a shadow economy on the above-ground economy.

The underground income hypothesis (UIH) raises a whole new set of questions. Not only does it cause substantive concern about the reliability of our broad economic indicators, like Gross National Product, but also, since policy is often based on these indicators, there exists the potential for misguided policy formulation. Furthermore, the growth in unreported income reduces the ability of the fiscal authority to generate revenues and, *ceterus paribus*, generates budgetary deficits.

1.1 The Meaning of the Underground Economy

Black, parallel, hidden, shadow, subterranean, informal, unobserved, are just a few of the many terms that are used to describe the underground economy. However, terms such as these often conjure up images of illegal or immoral activities. The hidden economy, therefore, includes all those activities not captured by the current official measurement system.

However, as Rolf Mirus and Roger Smith point out, many economists would not be satisfied with the above definition.

> Although it is agreed that unobserved economic activity is the result of a complex interaction of legal, economic, political, cultural, and other institutional factors that vary from country to country, it is also apparent that there is no uniformly accepted definition of unobserved economic behavior.[2]

2 Edgar Feige, ed., *The Underground Economies Tax Evasion and Information Distortion* (Cambridge Cambridge University Press 1989), p 267

There are those who contend that the problem in defining the underground economy is one of identifying the boundary between the unobserved and the informal or household sector of the economy. Here, informal encompasses all of the underground economy while the household, or home production of goods and services, is but one sector of the overall entity. Michael O'Higgins uses the simplistic example of when baby-sitting moves from being part of a household to part of the unobserved economy. He explains that "these exchanges fall outside the definitions of the hidden economy that are based on concealed factor incomes but might be within Edgar Feige's (1979) definition, which focuses on unmeasured activity rather than unmeasured income."[3]

Feige has expanded the definition of the underground economy to cover income produced in a legal activity that is not set down in the recorded statistics. In other words, he includes tax evasion in his definition. In contrast, Vito Tanzi defines the subterranean economy as "gross national product that because of unreporting and/or underreporting is not measured by official statistics."[4] Tanzi' definition would thereby include any legal or illegal production not captured by GNP.

Whatever the case, it is certain that underground activities are carried out in a different manner than in the observed sector. For instance, transactions in the shadow economy are unregulated. As Philip Mattera states, "by keeping their activities secret from the government, participants in the underground economy are able to escape compliance with a multitude of laws that have arisen to regulate exchanges between employers and employees as well as between buyers and sellers."[5]

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3 Ibid., p. 176

4 Vito Tanzi, "The Underground Economy in the United States: Annual Estimates, 1930-80," *IMF Staff Papers* 30 (1983): 115

5 Philip Mattera, *Off the Books* (New York: St. Martin's Press, Inc., 1985), p. 4

The problem of adequately defining the underground economy is, perhaps, one of the most important reasons why it is so difficult to estimate it. For the purposes of this thesis the shadow economy will take on the "conventional" definition, which happens to be the broadest of all the definitions. The underground economy includes all those transactions that are unregulated, untaxed[6], and unmeasured.

1.2 Objective

Given the newly created interest in the subterranean economy, there are a number of topics that one might discuss in this thesis However, probably the most important issues that require examination are the methods, techniques, and criticisms associated with measuring the shadow economy. Since Gutmann's 1977 article, where he stated that approximately 10% of Gross National Product (GNP) is due to the unrecorded economy, other economists have put forward a variety of different approaches to measurement. These various approaches have initiated a tremendous debate in the economics profession.

The second section of this paper will examine the implications that the underground economy has on the national accounts, exchange rate fluctuations, and savings and investment levels. In particular, we will discuss the viability and usefulness of the broad economic indicators, such as GNP and unemployment statistics, that governments seem to rely on so greatly.

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6 One should be careful in interpreting the untaxed nature of underground transactions Many economists mistakenly believe that all hidden transactions go untaxed For instance, a vendor who does not declare income tax or pay the required sales tax on his revenues might have already been taxed in other ways Such taxes could include excise, customs, or sales taxes that have already been paid by the importer or distributor of the product Thus, the product in question is not totally untaxed and, thereby, includes some taxes in the price of the product

Moreover, this body of the paper will explain with a rational expectations model the concept of "policy illusion". By assuming that the underground and above-ground economies are interrelated and overlap, it will be demonstrated that it is possible for policy-makers to misconstrue economic indicators such as unemployment. The potential outcome is over-stimulative policy that only aggravates unemployment even more.

Finally, chapter two concludes with a discussion of the "social safety valve" argument. Many individuals have suggested that the underground economy, especially in less developed countries, alleviates some of the pressure for the state to furnish adequate social assistance.

The final chapter of this paper will analyze the Canadian underground economy. Here, a summary of the recent estimates of the Canadian shadow economy will be provided. These estimates are based on the techniques presented in chapter one. In addition, the chapter will conclude with a discussion of the ways in which Canada is dealing with the shadow economy, and how well these various initiatives are working.

II Measuring the Underground Economy

In light of the various definitions of the submerged economy it is hardly surprising that the various methods that have been employed to estimate it often measure different things. For instance, the estimations derived from the monetary type of analysis will not include barter transactions. Also, the survey methods used by institutions like the Internal Revenue Service (IRS) in the United States, or the Central Statistical Office (CSO) in Britain, only focus on unreported income that is related to tax evasion.

The measurement issue, as Mattera explains, may be broken down into three categories. First, there are direct approaches based on amounts of hidden income discovered in a thorough examination of a small sample of taxpayers. Such investigations are usually carried out by offices like the IRS or CSO.

Secondly, there are indirect approaches based on discrepancies in expenditure and income. Feige developed the transaction-ratio method which provides a good example of this category.

Finally, there are indirect approaches which examine traces of underground activity in the economic aggregates like the money supply. These procedures include the methods of Gutmann (1977), Feige (1979), and Tanzi (1982).

In summary, direct methods tend to be microtheoretic in their approach since they often yield information on the composition of an underground economy at a specific point in time. In comparison, indirect methods tend to be macrotheoretic in their approach and as Carol Carson puts forth "yields a single aggregate and a time series."[7]

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7 Carol Carson, "The Underground Economy An Introduction," *Survey of Current Business* 64 (May 1984) 25.

2.1 The Indirect Methods

2.1.1 The Big Bill Approach

Perhaps the most compelling evidence concerning the existence of the underground economy involves the remarkable level of per capita currency holdings. James Henry, in his 1976 study, concluded that despite the advent of cheque accounts, credit cards, funds transfer, and other institutional developments, the amount of currency in circulation remained high.

Henry estimated that people kept an average of $238 on hand in 1968. Furthermore, he explained, "that within the expanding pool of cash the steepest increase was for the large denominations like 50 and 100 dollar bills."[8] For instance from 1960-1970 bills between $1-$10 rose 37 percent while big bills increased approximately 75 percent.

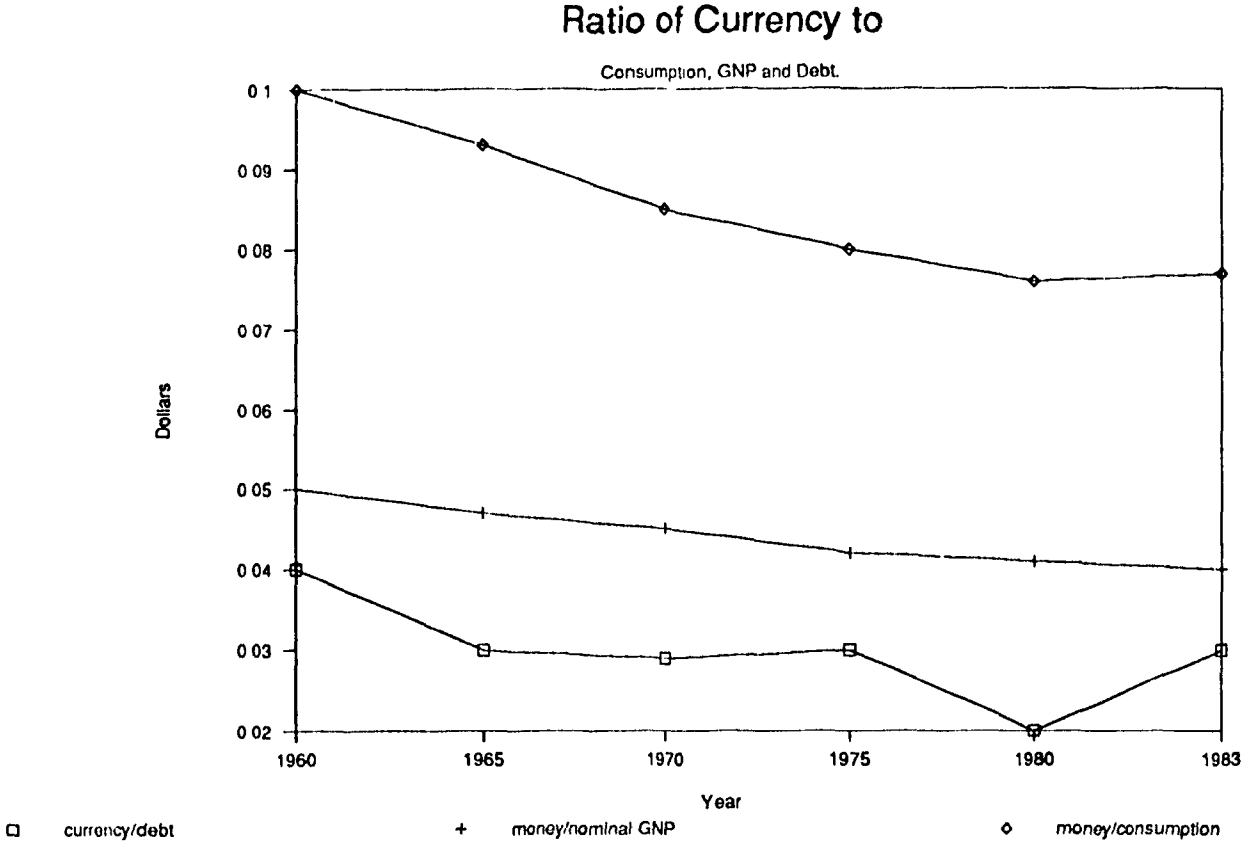
There is no doubt that high per capita currency in circulation has given credence to claims about the growth in underground economic activities. However, despite high levels of currency balances per household, the evidence does not seem to support the idea that growth in currency has been excessive, relative to deposits or expenditures. In fact, by examination of figure 1 and figure 2 one may conclude that in the United States over the last two decades total currency has been declining relative to other financial aggregates such as M2, travellers cheques, or relative nominal expenditures like GNP

8 Mattera, *Off the Books*, p 44.

and measured personal consumption.

Amanda Porter and Richard Bayer investigate Henry's theory and derive even larger levels of per capita holdings.

Figure 1



Source: P. Barthelemy, "The Macroeconomic Estimates of the Hidden Economy: A Critical Analysis", *Review of Income and Wealth* 34 (1988):184.

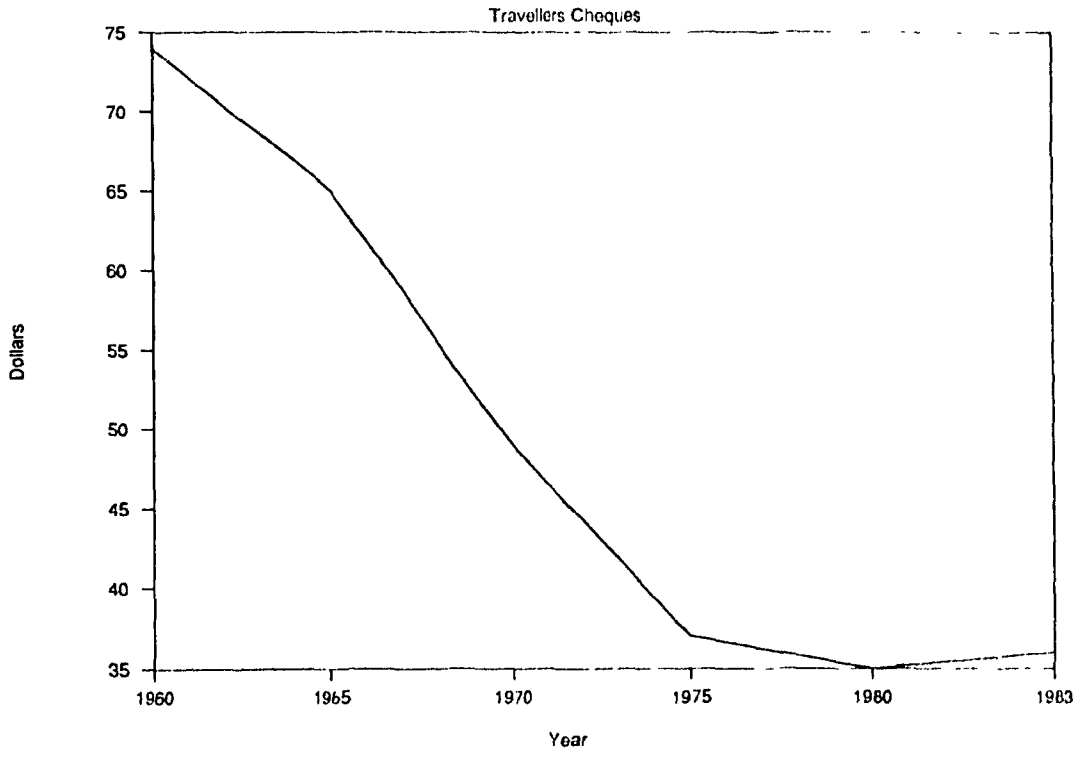
The two economists estimated that, "by the end of 1982, currency holdings, including vault cash, stood at $675 per capita with just under 40 percent in $100 bills."[9] This would

9 R Porter and A Bayer, "A Monetary Perspective on the Underground Economic Activity in the United States," *Federal Business Bulletin* (March 1984) 180

seem to call into question the evidence put forward above, since one would expect, for instance, total currency to increase relative to, say, travellers cheques. If underground activities were prevalent in the overall economy, one would expect the use of travellers cheques to decline as they leave a so called "paper" trail or easy method of detection.[10]

Figure 2

Ratio of Currency to Travellers Cheques



Source: P. Barthelemy, "The Macroeconomic Estimates of the Hidden Economy: A Critical Analysis," *Review of Income and Wealth* 34 (1988):184.b

10 This, of course, would only be the case if the travelers checks were signed

Feige criticized the currency denomination method extensively. He pointed out that "with real growth and relatively high inflation it would be expected that composition of currency holdings would change over the years."[11] Further, when per capita currency is expressed in 1972 dollars it appears that, despite the substantial growth in real income since World War 11, per capita currency was much higher during World War 11 than in 1980.[12][13]

James Henry's analysis was primarily concerned with convincing the US federal authorities to carry out a recall of large bills which he felt would have the effect of making all illegitimately accumulated cash worthless.[14] However, the recall never took place. Henry was successful, though, in setting the stage for Gutmann's article that provoked a lively controversy in the economics profession by forcibly arguing the importance of the underground economy.

2.1.2 The Currency-Demand Deposit Ratio

Gutmann's article had an astounding impact on the economic community. The fact that an estimated 176 billion in 1976 may be attributable to the shadow economy could, as many realized, have severe implications for both the reliability of the aggregate statistics

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11 Feige, *The Underground Economies Tax Evasion and Information Distortion*, p 27

12 For a more detailed analysis of this see Vito Tanzi, "The Underground Economy in the US - Annual Estimates, 1930-1980," *IMF Staff Papers* 30 (1983) 286

13 One should keep in mind that higher per capita currency during the Second World War would be not unusual as there were no credit cards, etc during this time

14 Henry believed that any recall had to take place in the US since the US dollar was so widely used as a standard for international transactions. However, authorities were aware that probably most underground entrepreneurs had either already laundered illegal cash and were taking advantage of Euromarket bank secrecy laws, or dealt with methods such as credit cards Yet, Henry's contribution should not be underestimated since in January 1991 the Soviet Union performed such a recall of large bills, at short notice, in an effort to squelch the black economy in that country

and policy formulation.

The analysis developed by Gutmann was the first of the monetary approaches. Like James Henry, Gutmann put forth the notion that the only way to measure underground activity was indirectly, by calculating the additional demand for currency created by those who had to carry out transactions in cash. Yet, instead of looking at absolute cash balances in circulation, Gutmann chose to examine the composition of the money supply. In other words, he examined the ratio of currency to checkable deposits.

The currency ratio, as it is referred to, requires three critical assumptions in order that an estimate may be derived. First, all underground transactions involve currency exclusively. Secondly, above-ground activity has a currency ratio that is constant over time. Finally, the income velocity of underground activity is the same as that of the above-ground holdings in that year.[15]

In arriving at an estimate of the underground economy, Gutmann required a benchmark period, which is assumed to be free of underground activities.[16] Normal or above-ground currency is then calculated by assuming that the ratio of currency to demand deposits, in any given period, is proportional to that of the base period. Any difference was defined as underground currency or as Gutmann described "currency beyond that for legitimate transactions". He calculated underground currency to be approximately 29 billion.

The estimated size of the underground economy is determined as the product of

15 For Gutmann's analysis refer to his paper Gutmann, P M "The Subterranean Economy." *Financial Analysts Journal* 33 (November December 1977).26-28.

16 Gutmann used the years prior to the Second World War since he believed that income taxes were quite low during this period. The practice of using the benchmark period is quite common for most of the monetary methods and is widely criticized by the opponents of the approaches as we will see later.

underground currency and income velocity[17] of above-ground M1, which is the sum of above-ground currency and all checkable deposits. Gutmann concluded that underground GNP was equal to more than 10% of officially calculated income in 1976.[18]

2.1.3 The Modified Currency Ratio Method

Whereas the simple currency ratio method postulates that currency is the exclusive medium of exchange in the underground, Feige argued that some firms and households use checks for such transactions because these individuals perceive that "the ease in doing so outweighs the cost of leaving a "paper" audit trail."[19] Feige further modified the Gutmann approach by contending that the underground sector was more service oriented than the above-ground economy. "Because fewer transactions occur in the production of services, the amount of money balances per dollar of output is smaller in this sector than in the above-ground."[20]

Feige went on to assume that the currency ratio in the underground sector equals two. That is, for every two dollars underground participants hold in currency, they hold one dollar in demand deposit balances.[21] Finally, he pointed out that the transactions velocity of underground money is 10% higher than in its above-ground counterpart. Feige believed that this higher velocity in the underground economy was the result of

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17 Gutmann assumes that velocity in the over ground and underground sectors are identical.

18 For computed underground GNP estimates using the currency demand deposit ratio and other estimation procedures see Appendix A.

19 Edgar Feige, "A Re-examination of the Underground Economy," *IMF Staff Papers* 33 (1986) 776.

20 Ibid., p 777.

21 This assumption is given arbitrarily by Feige and is criticized extensively by Tanzi and others

fewer intermediate transactions occurring in the that sector, than in the above-ground sector.

The modified currency method is based on the quantity theory of money developed by Irving Fisher. Given the equation:

$$MV + M'V' = PT \qquad (1)$$

where M and M' represent notes and demand deposits; V and V' the transaction velocity of M and M'; and PT the product of the amount of transactions T by the general price level P, Feige calculates his estimate of the submerged economy. The analysis proceeds as follows.

First, it is necessary to determine the values of M and M' which presents no difficulty as they are calculated by most governments.[22] On the other hand, V and V' are somewhat more tedious to calculate. However, Feige explains in detail how he arrived at these particular values. He points out that "the number of times a note circulates in the economy is calculated by knowing a stock and a flow.[23]" The stock is the volume of currency in circulation and the flow the number of denominations withdrawn, because of material deterioration, and reintroduced each year. Hence, V and V' are arrived at independently of PT. This represents much of the criticism of the modified currency-demand deposit approach to estimating the underground economy.

The methods of Gutmann and Feige are indeed quite similar. Both assume some

22 Feige assumes that M is in domestic circulation only

23 Ibid , p. 774.

"golden" period where there is believed to be no underground activity. For Gutmann this period would be the late 1930s while, for Feige, either the late 1930s or the mid-1960s form a base period. The similarity in the two models is also evident from the assumption that the monetary ratio, $\frac{C}{D}$ in Gutmann's case, and $\frac{MV}{GNP}$ in Feige's model, would have remained constant over time, were it not have been for the underground economy.

The differences in the two currency ratio approaches stem from the estimation technique.

> In Gutmann's method the estimation is indirect, in the sense that he first calculates "excessive" currency in circulation (induced by the existence of underground activities) and then, by making assumptions about its income velocity , estimates the underground economy. In Feiges's method the estimation is direct, as the change in the $\frac{MV}{GNP}$ ratio over time allows a direct estimation of underground GNP.[24]

Feige's estimate of underground activity in the United States is startling. He calculated 700 billion or approximately 27% of official GNP in 1978 was attributable to submerged activities.

2.1.4 A Variant of the Currency Ratio Model

The major difference in Tanzi's (1983) model, when compared with the other approaches, is that he incorporates the effects of taxation on the currency ratio. "Based on the original version of Cagan's model and on the theory of portfolio choice in the more elaborate versions, Tanzi's model is not likely to be accused of being a summary of

24 Vito Tanzi, "The Underground Economy in the United States Annual Estimates, 1930 1980," *IMF Staff Papers* 30 (1983) 284

Gutmann's method."[25]

Tanzi's method begins with the specification of a money demand equation, so that one is able to infer the effect of a change in the tax level on that demand. Yet, before doing this, Tanzi puts forth two critical assumptions. First, he states that demand for currency rises whenever real per capita income or interest rates on time deposits fall, or, whenever the share of wages and salaries in national income or the level of taxes rises. The second assumption required is that currency is the primary method used to carry out transactions, or for storing wealth.

Using annual data from 1930-1980 Tanzi then proceeds in the following way. Specifying the equation,

$$\ln\frac{C}{M2} = \beta_0 + \beta_1 \ln T + \beta_2 \ln\frac{WS}{NI} + \beta_3 \ln R + \beta_4 \ln Y + \varepsilon \qquad (2)$$

where $\frac{C}{M2}$ is the ratio of currency holdings C to money (defined as $M2$)[26]; Y is real per capita income; R is the rate of interest paid on time deposits; $\frac{WS}{NI}$ is ratio of wages and salaries to national income; and T is the tax variable.

The empirical implementation of the model employs three alternative measures for taxes. Tanzi uses a weighted average tax rate on interest income, the top bracket statutory tax rate, and the ratio of total net tax payments to adjusted gross income. According to

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25 P Barthelemy, "The Macroeconomic Estimates of the Hidden Economy A Critical Analysis," *Review of Income and Wealth* 34 (1988) 187

26 Tanzi used ratio of currency to $M2$ to prevent shifts in demand and time deposits from influencing the results

Tanzi, all three of these explicit tax terms provide, "the incentive to evade taxes."[27]

Two simulations are then carried out. Initially, all explanatory variables take on their actual historical values to produce a predicted currency series that is consistent with the actual tax rates in each period. Then, the tax rates are set equal to zero rather than their historical values.

Tanzi defines both of these estimates as $\hat{C}$ and $\hat{C}$ respectively. "The difference in $\hat{C}$ and $\hat{C}$ gives an estimation of how much currency holding is tax induced, in other words, it indicates by how much taxes induce people to hold larger amounts of currency -- presumably because of their attempt to evade the taxes." Tanzi calls this difference "illegal money". In contrast, he states that the difference in total currency and deposits (i.e. total M1) and estimated illegal money yields "legal" money used for transaction purposes.

By dividing GNP by legal money, Tanzi was able to derive an estimate of the income velocity of legal money. Since he assumes that the income velocities of the hidden and above-ground sector are identical, underground GNP is then the product of underground currency balances (illegal money) and the above-ground income velocity of above-ground M1 balances.

In comparison to Feige, it is interesting to note that, the estimates that Tanzi arrived at are quite low. In fact, the tax driven model generates estimates in a relatively narrow range of about 5% of GNP.

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27 Vito Tanzi, "The Underground Economy in the United States," *IMF Staff Papers* 33 (1986) 781

2.1.5 The Transactions Ratio Method

The second approach developed by Feige is what is known as the transactions ratio method. The main ingredient of this analysis is the ratio of total transactions to Gross National Product.

Feige puts forward the idea that monetary transactions in the submerged economy will be recorded in measures of total transactions, but excluded from recorded income. Hence, changes in the ratio of transactions to income will reflect changes in underground activities.

The key assumption in this analysis is that "total transactions, the sum of debits to checkable deposits and the total dollar volume of currency transactions, are proportional to total economic activity."[28][29]

However, Feige recognized that a measure of gross transactions might not be appropriate for this method. Specifically he was concerned about "the changing pattern of transfer payments over time and the purely financial transactions associated with asset exchanges which probably had increased dramatically in response to various financial innovations."[30] In order to derive the transactions measure appropriate for estimating underground activities, Feige deducted a number of major financial transactions to arrive at a net transaction figure.

As in the previous two methods, it is now necessary to detail the technical

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28 Total here means the sum of above ground and underground activity

29 R Porte and A Bayer, "A Monetary Perspective on Underground Activity in the United States," *Federal Reserve Bulletin* (March 1984) 185

30 Feige, *The Underground Economies Tax Evasion and Information Distortion*, p 134

explanation of Feige's analysis. The approach borrows many of the aspects of the simple quantity theory of money, which specifies an relationship between MV which are the total volume of payments, and PT which are total transactions. "If it were possible to obtain a estimate for the two then any difference between the measures would represent an estimate of the total volume of transactions."[31] However, without estimates for the total volume of transactions it is essential to employ estimates of the total volume of payments (MV) which may in turn be used to estimate total unreported income.

Following Feige's exposition, let $(py)^*$ = total income, D = checkable deposits, $(py)_r$ = recorded income, V_d = checkable deposit velocity, $(py)_u$ = unreported income, PT = total transactions, C = currency, V_c = currency velocity. Then,

$$py^* = py_r + py_u \tag{3}$$

and

$$CV_d + DV_d = PT \tag{4}$$

If total transactions is assumed to be proportional to total income then the equation of exchange implies that

31 Ibid., p. 49

$$\frac{(PT)}{(py)^*} = k^* = \frac{(CVc + DVd)}{(py)^*} \tag{5}$$

and

$$(py)_u = \left[\frac{(CV_c + DV_d)}{k^*}\right] - (py)_r = (py)^* - (py)_r \tag{6}$$

"Given estimates of total payments and recorded income it is possible to obtain estimates of unreported income, given the benchmark parameter $k^* - k^*$ is obtained either by assuming there is some period when income was recorded properly, or from an independent estimate of the proportion of total income that is unreported in any given year."[32]

Feige contends that the transactions method of estimating underground activity is quite different from the currency ratio methods. First, he explains that there are no assumptions concerning the exclusive use of money as a medium of exchange or the assumption that fixes the ratio of currency to check use in either recorded or unreported transactions. Moreover, no assumption is required concerning the size of the income velocities in the above-ground or submerged sectors.

Yet, as Feige later acknowledges, the transaction ratio does not avoid the

32 Ibid , p. 48.

requirement of some sort of benchmark period where no underground activity exists. In reference to the above exposition, this would involve some estimation for k^*.

The transactions ratio method estimates of the shadow economy produce even larger estimates than the currency ratio techniques. Using 1939 and 1964 as base periods, the estimates range from 30.2 to 36.6% respectively in 1975, to as high as 59.8 and 67.7% of GNP in 1981. These values remain the highest estimates of underground activity in the United States.

2.2 Criticisms of the Monetary Approaches

It is quite apparent, from our review of the literature on underground estimation procedures, that there is a wide controversy surrounding the usefulness of the monetary methods. Indeed, many economists point out that the only advantage of monetary approaches is the production of some sort of approximation. This advantage is, however, usually overshadowed by the numerous criticisms and disadvantages of the theoretical methods.

Although each method of estimation is somewhat different, all of the various monetary analyses either use, or modify the following assumptions:

(1) a benchmark or base year where underground activity is assumed to be zero;

(2) the currency/demand deposit ratio k_0 remains constant over time except for changes induced by the growth of unreported income;

(3) currency is assumed to be the exclusive medium of exchange in unreported transactions;

(4) the income velocities of the above-ground and underground sector are the same.

The most widely used assumption is (1); that is, the necessity of a base period or benchmark year. Gutmann's, Feige's modified version, and Tanzi's method all employ this assumption in their analysis. For instance, Gutmann and Feige both used the years preceding the Second World War as their base period, since they believed that, during this time, income in the unobserved sector was zero. They justified this approach by specifying that prior to the introduction of income tax, the incentives for unreported transactions were nil, and therefore, no unreported economy existed at this time.

This benchmark assumption has been widely criticized since it is most apparent that the evasion of income taxes is not the only motive for hiding income flow. There are many illegally based profit motives that require this degree of anonymity in order to dodge regulations unrelated to income tax. Drugs, gambling, prostitution, and smuggling are just a few underground activities that provide ample incentive to avoid reporting income.

A further problem, associated with the use of a base period, is that a small change in this assumption could drastically change the estimated size of the underground economy.[33] For example, underground GNP can take on negative values whenever the actual currency ratio becomes smaller than the benchmark ratio.

The second assumption of a constant k_0 is another major shortcoming of the monetary analysis. Both Feige and Gutmann put forward that the currency-demand deposit ratio is constant over time and any change in it is due to an increase in submerged activities. Yet, both economists fail to explain that an increase in the ratio may not only be the result of increased cash demand, by individuals engaging in hidden activities, but also may be due to a weakness in demand deposits. For instance, Tanzi has suggested that "the [existence of]

33 For an example of this refer to Appendix A where two alternate base years are used in conjunction with the transaction method

NOW accounts in the United States has lowered the opportunity cost of holding transaction balances making it more attractive to hold money in these accounts."[34] This might lead to attributing induced changes in the above-ground economy to the underground economy.

Tanzi proceeded, in his exposition, to estimate k_0 using interest rates with the dependent variable $\frac{c}{M2}$. He considered k_0 to be a function, rather than a constant over time. In his opinion, this assumption is advantageous since it takes account of those economic factors that are believed to have affected variations in the currency ratio over time.

The third assumption states that currency is the exclusive medium of exchange in the underground economy. This assumption is only necessary in Gutmann's original analysis since Feige (1980) went on to modify the approach by assuming that $\frac{c}{D}$[35] is equal to two. Feige's reasons for this modification are somewhat counter-intuitive since it would seem that the use of checks in the underground economy would be limited, in fear of leaving a paper trail. His position weakens further when he points out in a later paper, that the ratio may be perhaps 3 instead of 2.

The final critical assumption of these various models is that dealing with the relative income velocities of the underground and above-ground sector. Gutmann (1976) assumed that velocities are identical in both sectors. This position is also taken by Tanzi in his model. The majority of economists, however, are not convinced that the illegitimate and legitimate economies generated identical income velocities. Instead, many believe that the submerged economy should have a much higher velocity due to the nature, organizational structure, and service orientation of underground activities.

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34 Richard Porter and Amanda Bayer, "A Monetary Perspective on Underground Economic Activity in the United States," *Federal Reserve Bulletin* (March 1989) 182.

35 For every $2 use of currency in the underground economy there is a $1 use of checks.

In an effort to modify the income velocity assumption, Feige put forth that "the service orientation of the underground sector leads to a higher assumed velocity for this sector relative to the above-ground sector."[36] The ensuing debate was fervent, as various articles were published by those who disagreed with Feige. Most notably, Tanzi in his 1986 criticism pointed out that, "if Feige has any strong reason to make a different assumption he should state it and declare what the precise value of β he would use and why he would use that value."[37]

Indeed, Feige does state that he believed underground income velocity to range from anywhere between 7% and 12% higher than its official counterpart. However, as Tanzi and a variety of others criticized, "his analysis is an interesting academic exercise, but does not carry our knowledge of the underground economy much further."[38] Although, the arbitrary nature in which Feige arrives at his estimate for the underground velocity is questionable, yet, his effort should not go unnoticed. In all probability, transactions in the underground economy do have a higher turnover than in the legitimate one. We might speculate that this is the result of less regulations, the service oriented nature of the parallel economy, and the illegal nature of the transactions which provides the incentive to increase the speed and quantity of overall transactions.

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36 Feige, "How Big is the Irregular Economy," *Challenge* 22 (November December 1979) 7.

37 Vito Tanzi, "The Underground Economy in the United States," *IMF Staff Papers* (1986) 802

38 Ibid , p 802.

2.3 The Direct Methods

2.3.1 The Survey Approach

The monetary approaches were by nature more indirect, whereas the survey, or as some term, labour market methods, "are more direct since they are based on surveys of real or potential agents of the hidden economy."[39]

Perhaps, the most well known of the survey approaches are those used in the Tax Compliance Measurement Program (TCMP). The TCMP initiative is to run checks on returns and to audit suspicious ones. In a special study, carried out in the the United States, the Internal Revenue Service (IRS) used TCMP data to estimate unreported incomes of non-filers. The estimation process proceeded as follows. First, the IRS matched survey information with administrative records from social security. Secondly, the matched survey records were compared to social security numbers. "These matched records then produce[d] a filer series while mismatched records indicate[d] that the survey record belongs to a pool of delinquent filers, legitimate or illegitimate, depending on if income exceeded or fell short of the filing threshold."[40] With crime statistics to determine the amount of illegal source income and more survey information to determine unreported income of "informal suppliers", the IRS was able to calculate an estimate of unreported income.

The initial IRS study (1979) concluded that an estimated 75-100 billion in legal

39 P Barthelemy, "The Macroeconomic Estimates of the Hidden Economy. A Critical Analysis," *Review of Income and Wealth* 34 (1988):188.
40 Mattera, *Off the Books*, p 50

source income was not declared. This amounted to a revenue loss by the United States Government of approximately 12.8 - 17.1 billion dollars. These estimates more than nearly doubled with a further study in 1983.

However, we should note that the IRS estimates, like most estimates of the underground activities, must be viewed with caution. As Feige pointed out,

> ...each component of the IRS study required a myriad of assumptions. Further, the complexity and confidential nature of some of the data makes it difficult to assess the reliability of the final results.[41]

Aside from this, there still remain important difficulties with the survey type approach. For instance, as Philippe Barthelemy states, "if the field of enquiry is restricted (one area or one trade over a restricted geographical region), the results might be precise but it would not be possible to extend them."[42] More importantly, the IRS study explicitly assumes that all household incomes are accurately reported in surveys. This might be quite difficult to believe, as evidence suggests that there is a tendency for most filers to under-report their actual income.

2.3.2 Discrepancy Method

The discrepancy method of estimating underground activities is widely used by governments. Although there are many different methods that fall under the discrepancy category, the most important procedure is the calculation of discrepancies in income and

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41 Feige, *The Underground Economies Tax Evasion and Information Distortion* p 34

42 P Barthelemy, "The Macroeconomic Estimates of the Hidden Economy A Critical Analysis," *Review of Income and Wealth* 34 (1988) 189

expenditure. This particular method has provided agencies, like the CSO in Britain and IRS in the United States, with approximations that are added to preliminary GDP calculations, in an effort to include underground activities in the aggregate statistics.

The primary assumption in the analysis is the premise that while people might conceal their incomes, they are less likely to hide their true expenditure levels. Information on the various incomes comes from tax returns, while details on expenditure are often calculated from voluntary household surveys. However, as mentioned above, surveys tend to be unreliable in information gathering. This is most apparent from participation levels in expenditure surveys in Britain, where only 70% of those asked agreed to cooperate.[43]

There is no doubt that great care must be exercised when examining the discrepancy estimates. The procedure of estimation itself is not well documented by many governments, and often the raw discrepancies between the two sides of the accounts are not published. Instead, the initial amounts are often manipulated to the point where sizable discrepancies are revised and generally reduced. Hence the published estimate which is referred to as the "statistical discrepancy" does not provide an adequate approximation of unrecorded activity.

Another problem with the discrepancy procedure is the fact that "the observed discrepancy between two measures often reflects conceptual differences in what the two measures purport to estimate"[44] Furthermore, it is important to note that if both income and expenditure estimates are either directly or indirectly affected by submerged

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43 Mattera, *Off the Books*, p 48

44 Feige, *The Underground Economies Tax Evasion and Information Distortion*, p. 29.

activities, then the discrepancy in the two procedures simply measure its difference, rather than the "absolute magnitude of the unobserved sector."[45]

Most of the discrepancy, or, accounting approaches estimate the hidden economy to be in the range of 2 to 5 percent, depending on the country, the year, and the method employed. However, as we have explained above, this procedure is in all probability not a robust estimator of unrecorded activities. Instead, as Langfelt explains, "the discrepancy method does not provide a measure of the size of the unobserved sector: it can only give a hint as to the efficiency of the fiscal administration."[46]

2.4 Conclusions

Our review of the empirical literature has provided some interesting results. First, from the substantial body of research, one is able to see the increase in awareness of the underground economy. Secondly, it is evident that estimating the underground economy is no easy task. It requires the creation of substantial and sometimes unrealistic assumptions, and the use of methods that produce estimates that are extremely vulnerable to any small change in the assumptions. Thirdly, the estimates derived from each of the approaches are, given their range, inconclusive as to the overall size of the subterranean economy. Finally, more skepticism is introduced when one closely examines the underlying assumptions of each of the models put forth.

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45 Ibid , p 29
46 Ibid , p 201.

However, one should not disqualify the estimation results on the basis of results that do not coordinate or on the unrealistic nature of the assumptions. Instead, the models analyzed here are intended to give a broad indication of the size of the shadow economy and not a precise estimate. As Tanzi states,

> The results obtained should not be taken as a precise estimate of the underground economy; they are, at best, broad indications of trends and of orders of magnitude because they are sensitive to the assumptions made as well as to data revisions.[47]

47 Vito Tanzi, "The Underground Economy in the United States Annual Estimates, 1930-1980," *IMF Staff Papers* 30 (1983) 304.

2.5 Appendix A

The table below provides a summary of computed underground GNP for the United States. The various derived estimates are interesting for a variety of reasons. The results obtained by the estimation procedures show a substantial variance. Secondly, it may be concluded that the transactions method gives the largest of all the estimates. However, one should be careful in interpreting the transactions results since, as shown by the chart, they are extremely sensitive to the base year used.

Whatever the case, the results obtained from the various alternative methods are surprisingly large and have led many economists to the conclusion that the submerged economy can no longer be defined as simply an empirical oddity.

Table 1: Computed underground GNP in the United States using alternative methods for selected years (in billions).

year	simple currency ratio	modified currency ratio	Transactions		Variant of C/D	
			1939 base	1964 base	TW	T
1950	15.9	21.5	27.6	43.1	14.5	9.4
1955	14.7	15.6	1.7	21.6	12.8	10.9
1960	17.3	17.1	-3.4	21.5	20.7	13.2
1965	31.6	38.6	9.6	44.3	26.3	17.1
1970	62.4	88.6	101.0	155.2	45.6	25.3
1975	150.8	246.0	467.3	567.1	77.0	46.6
1978	226.1	460.2	551.1	685.6	114	80.9
1979	317.8	558.5	628.4	779.2	130	88.6
1980	372.8	666.9	1095.6	1280.1	159	116.9
1981	427.1	767.6	1765.6	1999.2	n.a.	n.a.
1982	449.7	810.5	n.a.	n.a.	n.a.	n.a.

C/D = currency ratio
TW = weighted average tax rate on interest income
T = ratio of total tax payments to adjusted gross income

Source: Edgar Feige ed., *The Underground Economies: Tax Evasion and Information Distortion* (Cambridge: Cambridge University Press, 1989), p. 131.

III The Policy Implications of an Underground Economy

The objective of this section of the paper is to analyze the implications that an underground economy has on such items as, the national statistics, savings and investment capabilities, exchange rate movements, fiscal and monetary policy, and the structure of financial markets. In order to fulfill the above task, we will first put forward a theoretical rational expectations model that is convenient in explaining the notion of "policy illusion". In other words, governments incorrectly interpret economic indicators, and react with the use of over-stimulative economic policy. The results of this model are extremely controversial in that stagflation, defined as rising unemployment and inflation, may, perhaps, be only a "statistical illusion".

The rational expectations model is quite robust since it may be used to explain policy prescription problems in both developed and developing countries. This fact is extremely important, as many individuals are of the opinion that underground activities are only a problem in less developed countries like Colombia, Peru, and Mexico. However, underground activities are no longer limited to less developed countries as is apparent by the recent policies of the United States and Britain who, both led by the supply side doctrine, instituted a vast array of reforms in an effort to decrease shadow activities.

At the same time, one should not forget the importance of the underground economy in less developed countries. In most instances, subterranean activities have aggravated economic malaise to the point of no return. The parallel economy has severe implications for exchange rate fluctuations, debt-management policy, and technological advancement. Moreover, money

laundering, capital flight, uncertainty for investment, and tax evasion, have all contributed to successive devaluations of the currencies in these nations, thus reducing that country's competitive position and making for an unfavorable investment climate.

Hence it is the objective of this section to analyze, and attempt to understand the effects of an underground economy in both developed and developing countries.

3.1 Two Fallacies surrounding the Underground Economy

Before dealing directly with the implications that the underground economy exerts on economic conditions, it is first necessary to explain two fallacies surrounding the whole notion of a hidden economy. First, in theory, it is incorrectly assumed that submerged activities are distinct and separate from the above-ground economy. For instance, when one speaks of national income or any other of the broad based economic statistics, these indicators are referring to legal or legitimate activities only. Secondly, as Alejandro Portes and Manuel Castells point out, there is a widespread belief that the underground economy is a euphemism for poverty.[48] This, as we shall see later, is not the case.

In order to properly assess the conventional wisdom of the separateness of the parallel economy, it is necessary to return to our definition of submerged activities. Mattera states that "transactions in the informal sector are different from conventional ones because they are unregulated, not taxed and unmeasured."[49] Carson provides examples of what such activities

48 A Portes and M Castells, *The Informal Economy studies in advanced and less developed countries* (Baltimore: The John Hopkins University Press, 1989), p 12.

49 Mattera, *Off the Books*, p 4.

might include. Smuggling; the illegal trade in drugs, tobacco, and alcohol; moonlighting; padding expense accounts; working for tips which are only partially declared to the authorities; and illegal prostitution are only a few of the many types of underground activities.[50]

It is clear from these examples that they are not entirely distinct from the formal sector. For instance, not declaring tips while working in a bar or restaurant is part of the informal sector but takes place in the formal sector. The same is true for the padding of expense accounts. The activity is performed within the formal or above-ground economy. These examples are particularly useful in that they also help to disprove the myth that the underground economy is based on entirely criminal activities.

According to Portes, there is strong evidence of the systematic linkage between the formal and informal sectors. For example, individual workers may switch between the two economies, even during the same work day. Similar results were verified by a much publicized study known as the "Detroit experiment".[51] Here it was found that, in many cases, it was necessary for individuals, in order to survive, to moonlight and not declare the wages from these after-hours jobs. "The informal economy is thus not an individual condition, but a process of income-generation, characterized by one central feature: it is unregulated by institutions of society , in a legal and social environment in which similar activities are regulated."[52]

It is also possible to take an abstract approach to the whole notion of the underground economy, by stating that the informal economy exists because of the formal economy. In an

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50 Carol Carson, "The Underground Economy: An Introduction," *Survey of Current Business* 64 (May 1984) 21

51 Carl Simon and Ann White, *Beating the System The Underground Economy* (Boston Auburn House Publishing Co , 1982), p 35

52 A. Portes and M Castells, *The Informal Economy studies in advanced and less developed countries*, p 12

ideal market economy, with no regulation of any kind, the distinction between formal and informal would lose meaning since all activities would be performed in the manner we now call informal. At the opposite end of the scale, the more society institutionalizes its economic activities, and the more individual agents attempt to escape this institutional structure, the deeper the division between the two sectors. Thus, it is because of the formalized economy that the informal one exists.

Perhaps, no where else was this abstract approach examined more carefully than in Britain, where part of Margaret Thatcher's supply side strategy was to remove institutional rigidities and decrease taxes.[53] The logic behind these proposals were twofold. First, it was hoped that the removal of institutional rigidities would allow capital and labour to operate more effectively. This would have the effect of increasing productivity and wages, which would create a transfer from the informal to formal economy. The fact that it was necessary for wages to increase was extremely important since many believed that "the emergence and proliferation of informal relations are closely related to the prevalence of low wages."[54]

However, in hindsight, it is safe to say that the British experiment was a failure. Socioeconomic inequality has grown, household income distribution has worsened, and the most outstanding outcome has been the huge loss of jobs. Author Guy Standing argues that, in fact, the situation is worse for unemployment than is implied by the figures. "The reason is during the last decade the labour process has become more flexible, that is, far more precarious and informal to the extent that fewer workers have full time regular employment."[55]

53 Similar policies were initiated in the United States in the early 1980's under President Reagan

54 A Portes and M Castells ed *The Informal Economy studies in advanced and less developed countries*, p 95.

55 Ibid , p 289

The second fallacy surrounding the underground economy is the close association that it seems to have with poverty. However, as Portes explains, the subterranean economy is not a euphemism for poverty but is instead a specific "form of relationships of production, while poverty is an attribute linked to distribution."[56] The informal economy is universal and is not only limited to developing countries but is also very prevalent in developed economies. This is substantiated by the empirical findings of Gutmann, Feige, and others that were discussed in the previous chapter.

Whether the underground economy is larger in some countries than in others is something beyond the scope of this paper. Instead, our task is to analyze the implications that a large black economy has on the various economic indicators, and policies that are used by governments to create a stable and robust economic environment.

3.2 The Macroeconomic Effects of Underground Activities

3.2.1 Effects on the Aggregate Statistics

In principle, GNP provides an indication of the value of all final goods and services produced for a given time frame. In practice, however, not all economic activity is accounted for in GNP. Most of the OECD countries try to include undeclared legal production in the GNP, either by using basic sources that are believed to be free of bias or by making, in some cases, *ad hoc* adjustments to the basic sources that appear to be

56 Ibid., p 12.

biased downwards. Yet, only Italy and the United States include any estimate of illegal production in their national accounts and as Derek Blades points out, the amounts involved are trivial.[57]

For instance, in the United States it has been calculated by the OECD that, in 1976, illegal production amounted to 1.5% of GNP; undeclared legal production amounted to 2.2% of GNP; and fiddles, or employee theft was 0.5% of GNP. Out of the 4.2% of total underground activities, only 1.5% was already included in GNP.

The methods employed by the OECD in their study are similar to the approaches used by various governments. The following are a few of the ways the OECD calculate an estimate of various underground activities: the use of statistics from tax audits as the TCMP does in the US; the examination of estimates of GDP or its components that have been derived from independent sources; the comparison of the expenditure side of GNP to its income counterpart. Although as explained in Chapter 2, these methods of estimation, like all methods, have serious disadvantages and they, perhaps, contribute to the conservative estimates put forth by the OECD.

However, there are those who view the OECD figures with more credibility than the estimates arrived at by Inland Revenue in Britain. There, in an attempt to estimate undeclared legal production, Inland Revenue took various hypothetical levels of total under-reporting--15% of GDP, 10% of GDP, 7% of GDP--and converted them to a per worker basis and then selected one that was considered to be not plausible.

> According to Inland Revenue 6.5% GDP underreporting could potentially have arisen on the assumption that the two million self employed persons in the UK conceal an average of £1000 of income

57 Derek Blades, "The Hidden Economy and the National Accounts," *OECD Economic Outlook. Occasional Studies* (1982) 28

> per annum and secondly six million wage earners conceal (out of 23 million) earnings of about £1000 per annum mainly from working on their own account in their spare time.[58]

It is interesting to note the *ad hoc* fashion in which Inland Revenue uses to derive their "guesstimates". More importantly however, it is critical to realize that this method, and the various others described, are to be used only as broad based approximations of underground activity. This is due to the complex nature of the estimation process, and of the shadow economy itself. Both factors make it extremely difficult to arrive at any conclusive estimates.

Given that an underground economy exists, then depending on its size and growth there might be dire consequences for a country's aggregate statistics. If a substantial underground economy is not included in, say, GNP, the result is a performance indicator that will be underestimated. Italy, for instance, in an attempt to include submerged activities in its GNP, reevaluated that country's whole estimation process based on improved survey procedures and more accurate mailing lists. The debate was intense, as many economists questioned the process that changed Italy's GNP substantially. Table 1 presents the impact of the changes in GNP by activity.

The percentage increase, in the revised estimates of Italy's GNP, is remarkable. However, some economists accept these revisions on the basis that it would not be

58 Ibid , p 36.

unusual for Italy to have a larger underground economy than the United States or Britain. This is due to the fact that Italy is presumed to have proportionately more peasant farmers and self-employed individuals who make up a large source of hidden activities.

TABLE 1

Comparison between former and revised estimates of GDP by kind of activity: Italy
Percentage increases in revised estimates

	1975	1976	1977
Agriculture, etc.	-	0.2	2.3
Mining and Energy Products	0.1	-0.3	1.3
Construction	7.2	7.2	8.6
Other Industrial Output	14.3	13.7	15.3
Trade, hotels, etc.	14.0	15.1	16.6
Transport, etc.	12.1	7.1	8.7
Non-market Services	19.3	18.7	18.4
Other Services	-2.0	-1.7	-3.1
GDP	9.0	8.9	9.8

Source: Derek Blades, "The Hidden Economy and The National Account", *OECD Economic Outlook: Occasional Studies* (1982):34.

The result of a large underground sector on macroeconomic activities is clear. The black economy makes accurate measurement of economic performance impossible, and thereby not representative of reality. As we will see, fiscal, unemployment, international, and industrial policy based on official statistics, which do not account for a sizable parallel sector, will have misguided effects. This is the result of what economists term as "statistical illusion".

In economies with extensive shadow activities, three factors are most apparent with respect to the aggregate statistics. First, unemployment will be understated as those

working in the subterranean economy are counted as officially unemployed individuals in the above-ground economy. Second, the rate of growth will be understated as it is actually higher than the measured rate of growth if the underground economy is growing faster than measured GNP. Third, the inflation rate will be exaggerated as prices in the parallel economy are likely to be growing at a lower rate than those in the legal economy. Incidentally, these lower prices often provide much of the incentive for the switch from overground to underground activities.[59]

When governments base many of their policies on the statistics that are described above, the result is overly stimulative monetary and fiscal policies, that threaten to introduce stagflation. In order to properly assess these conclusions it is pertinent to put forth two models that explain policy effects in an economy with an underground economy.

3.2.2 Monetary Policy and the Underground Economy

The development of policy based on biased statistics will be over-stimulative, and may cause inflation. In fact, some analysts claim that the apparent breakdown of standard macroeconomic theory in the 1970's, manifested as stagflation, may be a direct result of this misguided macroeconomic policy.

59 The theory of lower prices in the underground economy has been widely disputed. Given higher velocity, and close integration of the above ground economy with the hidden economy, it has been suggested that price differentials would not be large enough to affect the overall inflation statistics. Moreover, since the parallel and overground economies are closely related, it is highly probable that information regarding prices of products or services in the subterranean economy, would be readily accessible from above ground markets

Hence, it the object of this section to explain, by way of a theoretical model, the concept of "policy illusion" whereby policy-makers react to observed economic information without regard to the existence of the unrecorded economy.

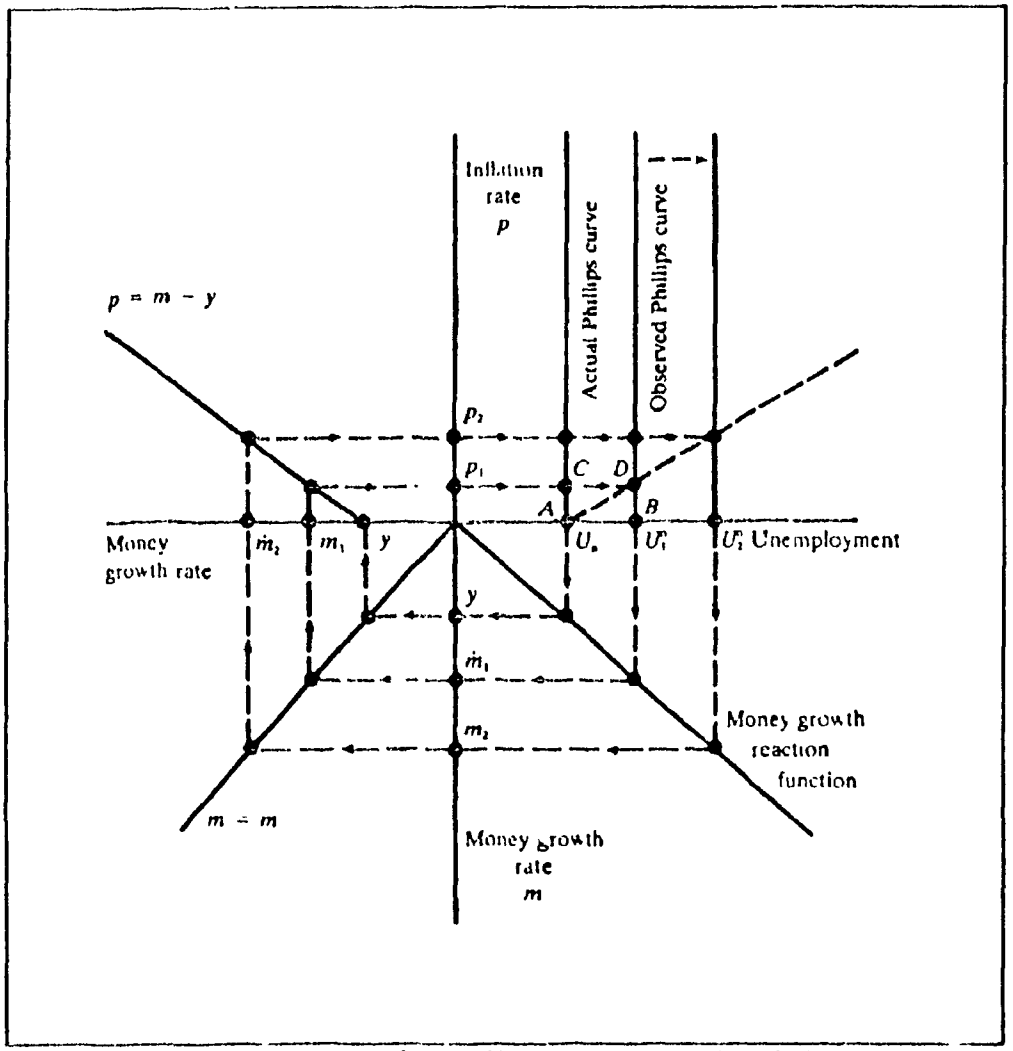

Figure 3 Effect of an Exogenous Shift to the Unrecorded Sector Where the Long Run Phillips Curve is Vertical and Monetary Policy is Countercyclical

Source: Edgar Feige ed., *The Underground Economies: Tax Evasion and Information Distortion.* (Cambridge: Cambridge University Press, 1989), p. 87.

Following the exposition put forward by Feige[60] we will examine in this, and the next section two rational expectations (RE) models and explain the results when each system is shocked by an exogenous growth in submerged activities.

Through the examination of figure 3, one is able to see that the Phillips curve, which shows the trade-off between inflation an unemployment, is vertical. This implies that the monetary authority is charged with the responsibility of maintaining full employment. The rational expectations equilibrium is point A where initially there is no inflation. The model is constructed to conform with the RE type of world where stability occurs when the monetary growth rate mi equals the rate of growth in real income y. Hence, equilibrium will be maintained at A so long as $mi = y$ Points lower than U_n will only increase inflation and cause a movement back to U_n.

With the model now explained, it is necessary to shock the system with some sort of occurrence in order that we may proceed with the comparative statics analysis. In this case, the shock will take the form of an increase in submerged activities which may be the result of, a war, or increase in taxes. Whatever the case, either shock has the effect of creating a transfer of individuals from the recorded, to the unrecorded sector. The reason for this transfer is that the incentive to engage in shadow activities is assumed to have increased. The individuals who have moved to the parallel economy are now declared officially unemployed.

The new observed unemployment is U_{10}. This induces a monetary expansion, as the Central Bank seeks to limit unemployment effects. The increased money growth mi_1 will

60 For Feige's analysis see Feige, E ed. *The Underground Economies Tax Evasion and Information Distortion* Cambridge Cambridge University Press, 1989.

act to increase prices to p_1 since the monetary growth rate now exceeds the growth rate in real income. The new equilibrium is at point D which is characterized by increased inflation, and where observed unemployment is higher than actual unemployment.

The result of this shock is the appearance of stagflation. Moreover, the effects of this are further exacerbated by every other exogenous shock that will cause another round of actual inflation, and even more perceived unemployment.

The model has surprising results. Stagflation, in the presence of a large hidden economy, may be no more than a "statistical illusion".[61]

3.2.3 The Effects of Fiscal Policy

As with monetary policy, the effects of fiscal policy may also be more aggravating than useful. Given a sizable and growing submerged economy, the tax burden falls on a group whose numbers are in decline--tax compliers. As economies grow and mature, the state's need to supply more public goods increases. As individuals and firms relocate their activities underground, governments are forced to increase the tax burden on the remaining compliers to keep revenue stable. This, of course, forces more activity underground. The result is, in many cases, a vicious cycle that many countries are unable to escape.

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61 This is also the case when the model is modified to include an upward sloping Phillips curve. Although, the results are even more devastating, than in the simplified version that we have explained here. For a detailed analysis of the upward sloping Phillips curve model see: Feige, E. ed., *The Underground Economies: Tax Evasion and Information Distortion* Cambridge: Cambridge University Press, 1989

It is useful to explain the effect of fiscal policy by means of a theoretical model. Once again, the analysis put forward by Feige has exacting results which question the use of fiscal policy in association with a subterranean economy. The model here, however, is

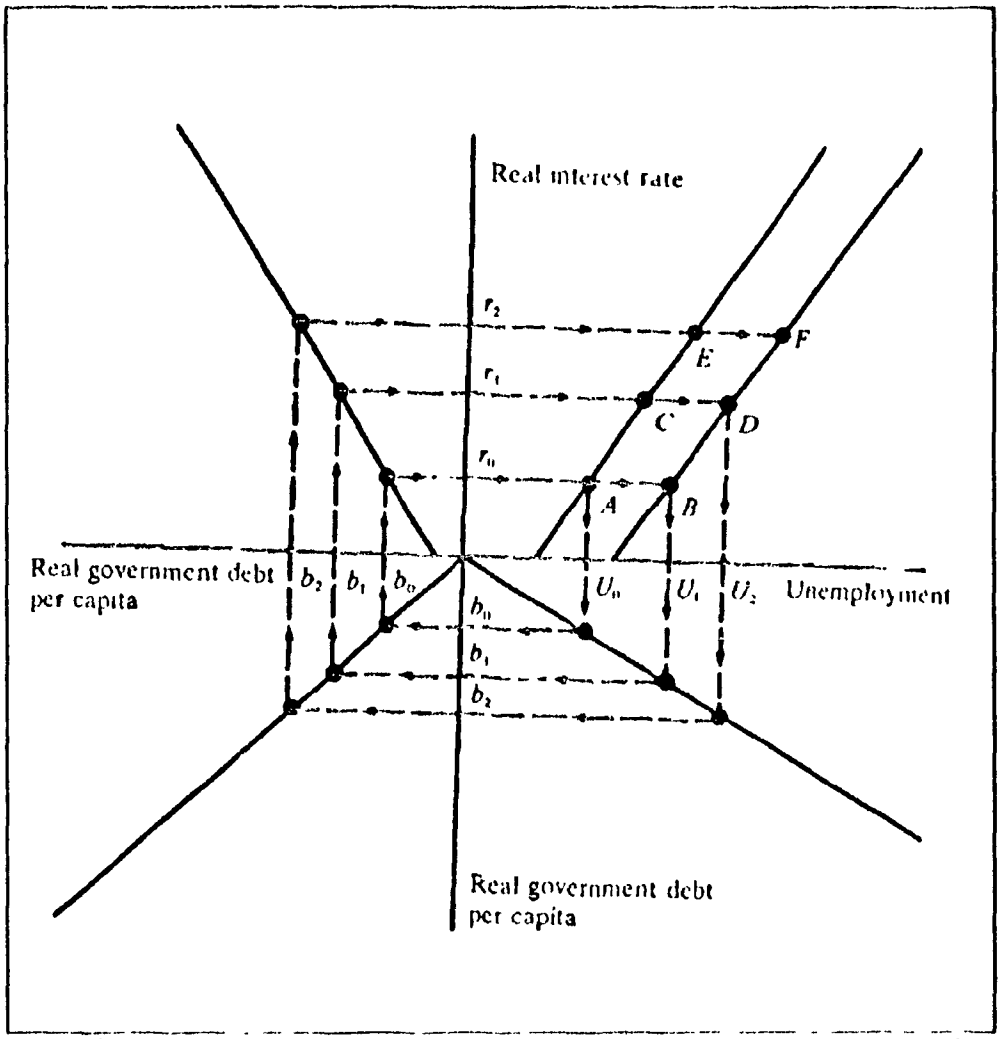

Figure 4 Effect of an Exogenous Shift to the Unreported Sector Where Monetary Policy Pursues a Price Stability Target and Fiscal Policy Relies on Automatic Stabilizers

Source: Edgar Feige ed., *The Underground Economies: Tax Evasion and Information Distortion.* (Cambridge: Cambridge University Press, 1989), p. 95.

somewhat different than that in the monetary case. The main difference is the approach of policy-makers to stabilization goals. Unlike before, stricter control of the money supply, and hence reduced inflation, is favored to interest rate stabilization and full employment goals.[62]

A similar position of stricter control of the money supply was, in fact, adopted by the Bank of Canada around 1974 under the direction of Gerald Bouey. In the United States, the Federal Reserve Board followed more stringent monetary policy around 1979. In both countries, the burden of income and employment stabilization now fell more heavily on fiscal policy.

Figure 4 provides an example of a system where the monetary authorities succeed at fixing a money growth rule with the effect of stabilizing inflation at a low level. The points ACE represent the trade-off in unemployment and interest rates that are consistent with equilibrium. As real interest rates increase, investment decreases, capital stock decreases, and unemployment is created.

The lower right quadrant represents the exogenous relationship between the level of unemployment and level of real government debt. As Feige explains, when unemployment increases, real tax revenue falls as the income tax base shrinks. At the same time, government expenditures will rise to meet the the higher need for unemployment benefits. As a result of monetary policy being fixed, revenue shortfalls must be financed by public borrowing which increases the pressure on interest rates. This is explained by the locus of points in the upper left quadrant of figure 4 which depicts the trade-off in

62 Edgar Feige, *The Underground Economies Tax Evasion and Information Distortion* p 93.

government borrowing and interest rates.

A shock to this system, exemplified by an increase in underground activities will have the effect creating higher unemployment and thus moving the line ACE to BDF. However, BDF. is an illusionary position. Unemployment is the same as before since individuals leaving the overground economy have sought employment in the submerged economy. With the fiscal authority only able to see the perceived unemployment, fiscal policy will be invoked automatically, and thus produce a larger deficit.

In figure 4, the larger deficit is depicted by an increase in b to b_1, which in turn forces interest rates to increase from r to r_1. Increased interest rates act to produce a real supply side effect in both actual unemployment to point C, and observed unemployment to U_2. "Equilibrium inflation is unaffected but the mere illusionary effect of higher unemployment has created the reality of higher interest rates and increased real unemployment."[63] Further increases in the underground economy will only act to send a second round of increased interest rates, and real unemployment.

3.2.4 Savings and Investment

The effect of a large underground economy on an economy's potential to save and invest is hazardous. This is particularly the case when it comes to developing countries, who require domestic savings to finance needed investment.

However, the savings-investment problem is not only limited to developing

63 Edgar Feige, ed., *The Underground Economies Tax Evasion and Information Distortion* p. 96

countries but is also of increasing concern to policy-makers in more advanced nations. As the illegal sector expands, informal industries are able to avoid a variety of taxes and regulations which results in a loss of government revenue. Therefore, businesses in the formal sector will bear an unfair burden of the taxes which, in turn, reduces their investment capabilities. Declining investment and capital formation have serious consequences since both often signal decreased productivity or lower growth in GNP.

Moreover, policy decisions, relating to savings, can be misguided when there is a large irregular economy. As Joel Houston points out, since policy-makers base their decisions on historical data, reported income and consumption estimates might lead the authorities to conclude that household saving rates are either too low, or in decline. At the same time, however, individuals might be earning income in the underground economy. The belief by the authorities of low savings in the economy, could potentially result in ill-defined savings policies due to incomplete information about the economy's performance.[64]

The savings-investment problem described above is even more aggravated by the capital flight problem. There are many reasons put forth in the literature, that attempt to assess the underlying causes of capital flight. Overvalued exchange rates, higher interest rates in foreign countries, and undesirable investment conditions are only a few suggested causes of the capital flight problem. Whatever the case, as Cumby and Levich explain, capital flight has serious implications since "hot money flows may destabilize financial markets by raising a country's borrowing needs; capital flight raises the marginal cost of the foreign debt; and once capital leaves, it never returns, resulting in lower domestic

64 J. Houston, "The Underground Economy: A Troubling Issue for Policy-makers," *Federal Reserve Bank of Philadelphia*, Working Paper (1987) 7

investment and a lower tax base."[65]

Declining investment is not only due to the savings constraint or capital flight problem, but also is the result of the nature of the underground economy. As Hernando de Soto explains, the subterranean economy is typified by businesses whose technology is usually labour intensive since the costs of operation, of an illegitimate business, are often higher than a legitimate one. An example of this increased cost, to an entrepreneur operating in the hidden economy, is the much higher rate of return on loans that these underground businesses must pay financiers. This is due to the risk involved of transactions where there are no enforceable contracts.[66]

The switch to labour intensive technology is associated with two severe problems. Firstly, it reduces overall capital investment and formation. Secondly, excessive labour intensity results in a capital/labour ratio that is too low. This imbalance produces an arbitrary and inefficient specialization of a country's resources that has far reaching implications for the terms of trade and comparative advantage of that country.

3.2.5 Exchange Rate Implications

In many countries the black economy is made up of a variety of illegal dealings Some of the activities of the underground economy involve enormous sums of money that necessitates discretion from the eyes of the authorities. These activities might

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65 Lessard and Williamson, *Capital Flight and Third World Debt* p 31

66 Hernando D E. Soto, *The Other Path*, (New York Harper and Row Publishers, 1989), p 175

include transactions that involve drugs or tax evasion. At the same time, these transactions are responsible for major inter-country transfers that have serious ramifications for various exchange rate regimes.

In a country with a fixed exchange rate, capital flight results in severe balance of payments problems. Evidence of these problems is provided by Brazil, where between 1973-84 most of that country's foreign borrowing was used to finance its current account deficit. The results were an increase in external debt, and decrease in foreign reserves that was brought about by the need to accommodate the excess demand for currency.

The problems associated with a floating exchange rate are equally as aggravating. Between 1974-84 Argentina, Mexico, and Venezuela's foreign borrowings went largely into financing capital flight, due mainly to open overvaluation of their respective currencies in an environment of free convertibility. The problems in less developed countries are even more accentuated when foreign financing is no longer available. Therefore, the budget must adapt to servicing the external debt. As Dornbusch explains, since it is hard to raise taxes, and because of the difficulty in cutting the budget, the remaining route is inevitably money creation. This, in turn, creates an inflation tax that, in many cases, induces a secondary round of capital flight.[67]

In order to affect the transfer of money out of a country, a real depreciation is required. This depreciation, however, also has severe implications for the economy. The cost of servicing the existing foreign debt is increased, which results in a widened budget gap and subsequent inflation tax. Furthermore, a real depreciation would require "wages in dollars to decline which causes the standard of living to be cut as labour is now put on

67 Lessard and Williamson, *Capital Flight and Third World Debt*, p 148

sale."[68]

Capital flight financed by foreign borrowing is extremely detrimental to a developing country's economy. Since developing countries are usually capital importers, capital flight hinders growth potential for several reasons. First, as a result of foreign exchange and savings shortages, financing of development projects is more difficult which causes GNP growth shortfalls and unemployment. Secondly, when capital flight is financed by borrowing, the negative effects on the economy become even more pronounced. For instance, there have been estimates that the direct cost of capital flight has meant a doubling of the debt burden for some Latin American countries.[69] Finally, capital flight causes income and wealth redistribution effects to be more pronounced as a few individuals gain access to subsidized foreign exchange and transfer their wealth abroad with the result of tremendous capital gains. This export of funds results in a huge public sector debt that falls mainly on workers and firms.

The exchange rate effects, in association with a large underground economy, are quite perverse. As individuals seek to acquire foreign reserves to facilitate capital flight, an excess supply of the home currency is created. This results in a depreciation of the home country's exchange rate. However, this depreciation is often not enough to correct the balance of payments problems. Capital flight that is financed by external borrowing only acts to create inflation, declining living standards, and a capital account deficit which, more than often, accounts for an overall terms of trade deterioration.

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68 Ibid., p 148

69 M Carter, "Issues in the Hidden Economy A Survey," *The Economic Record* 60 (1984) 56

3.3 Is the Underground Economy a Social Safety Valve?

There are many economists who firmly advocate that the underground economy is an entity of such size and dimension that it will never be erased. At the same time, for these individuals, the existence of the underground economy is sufficient, in many cases, for the state to forsake its commitment to social programs or "the social safety valve".

The basic premise of the social safety net theory is that individuals, who are unable to find work in the legal economy, may turn to the submerged one for employment. Indeed, evidence suggests that in many developing countries such as Peru, Bolivia, and Colombia, the populace that make their living in the illegal economy rivals that of the legal one. In many instances, this provides the grounds to reduce a country's expensive commitment to the welfare state, as essentially the same mechanism is provided by the underground economy, at a fraction of the cost.

The idea that the subterranean economy might reduce the direct cost of social programs to the state is not a new one. In fact, in many developing countries, governments have openly supported and tolerated the informal economy as a way to resolve potential social conflicts. Moreover, in some Latin American countries the informal sector is more productive than the state. For instance, in Lima, Peru 274 of 331 markets in the city are built by underground entrepreneurs. At the same time, the submerged sector owns 95% of public transportation; half of the population live in housing built by the black market; and informal investment in housing between 1960 and 1984 was 8.3 billion US dollars as compared to

state investment of 173.6 million.[70]

Other Latin American countries are equally as supportive of the underground economy. In 1976, the Colombian government attempted to curtail capital flight by setting up *la ventanilla siniestra* at the national bank. This move allowed people to convert black market money into clean pesos. In Bolivia, the Garcia Meza dictatorship of 1980 81 intervened to strengthen cocaine related production and marketing. The Ministry of the Interior became the main regulator of trade in cocoa and the armed forces became directly involved in the manufacture and export of cocaine. The objective of the regime was to concentrate the industry and make it easier to control while, at the same time provide the appearance of possessing an anti-narcotic policy for an international audience.[71]

On the surface the benefits accruing directly from an informal sector seem quite advantageous. Many have argued that during the 1980's, when other developing countries were scrambling to meet the service charges on their debts, Colombia was able to retain its favorable credit rating among the Western banks due to that country's reliance on drug money. Particularly, the state laundering service, *la ventanilla sinestra*, allowed Colombia to use huge amounts of "narco-bucks" pouring in and out of the country's borders. The same was true for Bolivia where the export of cocoa has generated huge revenues for the economy. "Cocoa dollars have effectively kept Bolivia afloat during the acute recession "[72]

The motivating factor of why these governments support the underground economy is not only revenue related. Often many countries support the growth of the submerged economy as a way to quell social unrest. Evidence of this is the informal housing polices that

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70 Soto, *The Other Path*, p 15.

71 Portes and Castells, *The Informal Economy studies in advanced and less developed countries*, p. 146

72 Ward, *Corruption, Development and Inequality*, p 40

are promoted in many developing nations. Portes and Castells point out that "most governments support informal sector squatter settlements in Third World cities since they provide a cheap and easy solution to the housing crisis while predisposing squatters to political allegiance."[73] This situation is no more evident than in Peru, where in 1948, the Odria regime was in a position to assist the poor by helping in the acquisition of land and provision of services, while at the same time reduce political unrest by allowing the poor to put up homes without major cost to the national treasury. Odria's policy was twofold. Firstly, it helped real-estate in the city by establishing the informal sectors on the city's outskirts. Secondly, it calmed private landowners fears of invasion by informal sector to establish settlements by encouraging the takeover of state-owned rather than private wasteland.[74]

The many benefits that governments seem to reap from the underground economy are more than often overshadowed by serious social costs. A careful examination of the submerged sector of any country, especially those in the developing nations, reveals that the vast majority of those working there are doing so involuntarily. Wages are extremely poor, the lack of regulation often implies dangerous working conditions, and living conditions of these individuals are deplorable. Governments, who rely on the underground economy as a social safety valve, only exacerbate these problems.

On a larger scale, a substantial hidden economy can, as we have seen, distort economic statistics through the process of "policy illusion". There are also grave consequences for inflation, the exchange rate, productivity, fiscal policy, and monetary policy. Moreover,

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73 Portes and Castells, *The Informal Economies studies in advanced and less developed countries*, p 27

74 Soto, *The Other Path*, p 40

when industries resort to backward and exploitative informal labour arrangements, it creates a disincentive for technological innovation. Instead countries with a large underground economy often exhibit a capital/labour ratio that is too low resulting in an inappropriate use of resources.

Most importantly, in countries such as those in Latin American, where underground activities are widely known, there is beginning to be a number of diplomatic, political, and financial problems. These problems are no better evident than in Colombia, where "violent consequences of narcocracy currently threaten the political fabric of Colombian society."[75] The effect of the underground economy, on countries such as these, is to curtail the much needed technological innovation and long term investment so desperately required.

It seems that a large underground economy should imply an enhanced commitment to social welfare on the part of the state through job creation and training. Given the alternative, most underground workers would gladly join the legitimate work force if they would be assured of jobs and adequate training.

Further, turning a blind eye to the underground sector is a "band-aid" solution to the problems faced by developing countries. In fact, by doing so, off-the-books activity is rewarded and encouraged. Problems of criminal activity are exacerbated by expanding the frontier of acceptable economic activity as more people have room to maneuver within the system, and are also provided with more and better facilities to launder their illegal earnings.

Clearly, one must conclude that the underground economy is not a social safety valve.

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75 Ward, *Corruption, Development, and Inequality*, p 50

Instead, in most cases, submerged activities only aggravate a country's economic fabric in a number of detrimental ways. More, not less, state-sponsored programs are required to alleviate the ills of societies plagued with pervasive hidden activities.

3.4 Conclusions

Contrary to what many believe, the underground economy is not distinct and separate from that of the overground. Instead, submerged sector production and transactions often overlap, and are carried out in a similar fashion as in the legitimate sector.

The underground economy can have far-reaching implications for the overground economy. First, aggregate statistics, in the presence of a large and growing parallel sector, are not representative of reality. For example, unemployment will be overstated as many individuals declared unemployed in the legal economy may be, in fact, employed in the underground economy. As we have seen, misrepresented employment figures can result in over-stimulative monetary or fiscal policy. Further, Gross National Product will be underestimated as production in the hidden economy is not accounted for. Since GNP provides a standard of a country's economic well-being, underestimated GNP may result in, once again, improper policies on behalf of the government.

Finally, a large subterranean economy in developing countries has the effect of creating an inhospitable investment environment, and shortages in savings that are drastically needed to carry out investment. Nevertheless, in many cases, local governments have encouraged hidden activities as a way to ease political tensions or gather foreign reserves. Moreover,

many developing nations are of the opinion that the underground economy acts as a social safety valve and thus alleviates some of the economic problems in these countries. This attitude, as we have discovered, is misguided.

IV The Canadian Underground Economy

Measurement of the underground economy in Canada has proven to be a difficult task. This is due to the limited amount of empirical work performed on the submerged Canadian sector. It is therefore the object of this chapter, to examine the various estimates of the hidden economy in Canada and, further, discuss the Canadian Government's initiatives in dealing with the parallel sector.

4.1 Defining the National Accounts in Canada

Unlike the OECD, Italian, and US estimation procedures, Canadian GNP measurement is limited as a measurement of total underground activity.

> ...it is only the measurement of those particular unrecorded activities which conform to the same principles by which the estimate of GNP is made in the Canadian System of National Accounts, i.e. the activities must constitute economic production giving rise to goods and services which are, by and large, exchanged for money in the market economy; and furthermore, activities or production of such goods and services must not be prohibited by law.[76]

Since the Canadian National Accounts definition encompasses those activities that involve the exchange of money, GNP estimates exclude those sectors of the underground economy such as household production and criminal activities. Hence, the Canadian hidden economy

76 Seymor Berger, "The Unrecorded Economy Concepts, Approach and Preliminary Estimates For Canada, 1981," *Canadian Statistical Review* (April 1986) viii

is defined as "the portion of market production which is missing from GNP, because earning from legal economic activities are misreported, or not reported, as required, to statistical, tax, customs, employment, and immigration and other authorities."[77][78]

4.2 Canadian Studies of the Underground Economy

As one might suspect, Canadian studies of the submerged sector are not abundant. The pioneering estimates of Canadian underground activities were arrived at by the Bank of Canada. Nevertheless, since the results were only circulated within the Central Bank, they have not been widely reported. The two studies, performed by Hass (1978) and Wong and Rose (1980), are both based on the role of currency as a medium of exchange in the economy.

Hass studied per capita currency holdings in Canada and assumed that they would decline, as a result of the introduction of credit cards, and other financial innovations. However, Hass concluded quite the opposite. In fact, he found that during the 1960's and 1970's per capita holdings increased, which he attributed to a rise in the underground economy.

Wong and Rose, in their exposition, went on to criticize the method employed by Hass. Both economists put forward that the estimation process, employed by Hass, neglected three essential characteristics. First, demographic changes had been ignored; second, velocity was

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77 Ibid., p ix.

78 Incidentally, in 1989 the statistical discrepancy in the Canadian GDP calculation amounted to 5.1%. This figure is in line with the other OECD countries discrepancy approximations

not adjusted to reflect observed activity; and third, the income elasticity of real per capita currency holdings was assumed to be zero. Nevertheless, one should be careful not to disqualify Hass's analysis since, "the approach is promising in that it avoids the difficulties besetting the methods used by Gutmann (1977) and Feige (1982), namely, drawing inferences about additional currency holdings by studying the movement of currency relative to demand deposits or a broader economic aggregate."[79]

The study performed by Wong and Rose comprised of estimating the black economy based on the procedures developed by Gutmann and Feige. With respect to the Gutmann approach, Wong and Rose concluded that, in the Canadian setting, the simple currency-demand ratio method encountered difficulties. They maintained that when dividing currency into their two components, currency declined relative to personal checking deposits throughout the 1970's. Hence, the observed increase in the currency-demand deposit ratio had to be the result of the rapid growth in current-account balances. Moreover, when holding the share of currency transfers and bank note quality constant, the two economists demonstrated that currency transfers relative to demand deposit transfers declined during the period of 1950 to 1978. "This decline implies that the stock of currency grew at a rate insufficient to support much growth in unobserved transactions."[80] Wong and Rose rejected the Gutmann approach and instead favored Feige's transactions method as the theoretically strongest, although they did not pursue any estimations using Feige's procedure.

Mirus and Smith (1981) did estimate underground activities in Canada using Feige's transactions method. However, their attempt to measure the underground economy by the

79 Feige, *The Underground Economies Tax Evasion and Information Distortion*, p 268
80 Ibid, p 268

transactions approach proved to be precarious, as it was necessary to make an adjustment for purely financial transactions. Therefore, after omitting check-clearing transactions in major banking centers, and assuming 125 lifetime transactions per bank note, the two economists calculated the underground economy to be in the range of 28.1% of GNP in 1976, using 1939 as their benchmark period.

Mirus and Smith also used the Tanzi model, or variant of the currency ratio model, to estimate the Canadian parallel economy. They expressed the currency-demand deposit ratio as a function of, among other things, the average personal tax burden and calculated that an increase in tax evasion activities, attributable to an increase in taxes, could result in a generated underground income equivalent of 5.3 - 7% of Canadian GNP.[81]

Further estimates of the Canadian underground economy involve the use of such methods as the large denomination bank note theory. Once again, Mirus and Smith projected that between 1969-1979 GNP grew by 226% while the use of $100 and $1000 notes grew by 288 and 641% respectively.[82]

More recently, concern for the growth in large bills has been echoed by senior executives at the Bank of Canada who acknowledge, "since 1977 the amount of paper money circulating in Canada - has mushroomed to about $20 billion from $8 6 billion."[83] However, these same officials are quick to point out that the increase in the money supply is probably, "thanks to an expanding economy and inflation."[84] Indeed, evidence does support the inflation hypothesis where, "in Canada from 1960-1980 average note denomination grew by

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81 Ibid , p 269.

82 Ibid , 271.

83 "Demand for Bank notes grows every year," *The Gazette*, 17 November 1990, sec D, p D1

84 Ibid , p D2.

241.7% while the consumer price index grew by 283.8%."[85]

The survey method has not, at least to our knowledge, been widely used as an estimation technique for Canada's underground economy. Therefore, the discrepancy measure procedure remains to be discussed.

Seymor Berger, in his 1981 study, uses the discrepancy method in an extensive analysis of the expenditure and income components of Canadian GNP. Berger concluded a number of results of which, perhaps, the most important is that "the demand for unrecorded labour is likely to be industry specific and centered on businesses with a small number of employees."[86] Primary examples of these types of industries would include manufacturing, construction, trade, and community, business and personal services.

The reasons given by Berger, as to why underground activity would be centered around the above industries, are not new. First, he points out that there is a high opportunity for labour to work off-the-books in these particular areas as most of the commodities produced, in these industries, do not require a great deal of capital investment. Hence, these businesses are able to remain small, while having the advantage of avoiding a variety of rules and regulations. In essence, it is more difficult for the government to detect the underground economy in the small business sector. A similar instance is evident in Italy, where industries employing under 15 individuals are much less scrutinized than larger businesses.

Berger concluded that Canadian GNP is understated by between 2.9 and 3.5%. Furthermore, like Gutmann, Feige and others, he points out that this estimate should be interpreted as merely a rough estimate of the size of the hidden economy in Canada.

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85 Feige, *The Underground Economies Tax Evasion and Information Distortion*, p 271

86 Seymor Berger, "The Unrecorded Economy Concepts, Approaches and Preliminary Estimates for Canada," *Canadian Statistical Review* (April 1986) vi

Once again, it is apparent that the underground estimation procedures, when applied to Canada, are unable to produce estimates that are not subject to a wide degree of speculation. The Canadian experience is even more accentuated by the difficulties involved with using the approaches developed by Gutmann and Feige. This fact provides, perhaps, more than enough evidence as to how sensitive the monetary approaches are to, in particular, the data set employed.

4.3 The Canadian Response to the Underground Economy

The methods employed by governments to curtail underground activities are numerous. However, more often than not, governmental efforts take the form of some kind of legislation, intended to deter, and inevitably halt submerged activities. Nevertheless, this is not always the case, as rules and regulations are simply side-stepped, by individuals taking part in the hidden sector.

Ultimately, the analysis begs the question of what course of action should governments take when a portion of their economy is made up of a parallel sector? The British experience tells us that the answer is not to reduce rules or regulations drastically, since this might only act to stimulate the underground economy even more. On the other hand, evidence suggests that rules and regulations should not be stifling, as in the case of Bolivia[87], where individuals find it almost impossible to take part in the above-ground economy. Perhaps, the answer to the question would be, ideally, to make everything in the underground economy legal and

87 For a in depth analysis of the Peruvian experience, see De Soto, *The Other Path*, p 134

hence, inclusive in the overground economy. The problem of enforcing some regulations may be solved, but what of the role of governments in an economy where tax evasion, money laundering, fiddling, and a host of other activities, that are now illegal, are legal? Clearly, the answer seems to be that, in fact, there would be virtually no role for a government.

Assuming that a government's role, when faced with the problems associated with an underground economy, is to enact and enforce legislation, it is, therefore, necessary to examine the Canadian experience. In particular, the discussion will closely follow policies that are directly related to the Canadian hidden economy, namely, tax evasion, monetary and fiscal policy, the exchange rate, money laundering, and unemployment insurance fraud.

4.3.1 Money Laundering

Money laundering has never played a major role in the Canadian underground economy due to strict corporation and banking laws. Nonetheless, a recent federal report on money laundering has concluded that under the free trade agreement between the United States and Canada, international crime syndicates have found it much easier to send their dirty dollars to Canada. This is the result of the liberalization of trade restrictions that eliminates trade barriers, while making transactions seem much more commonplace.[88]

Reaction to this report was swift as the Canadian Government had already finished its first reading of bill C-89, or, the proceeds of crime (money laundering) act. The bill

88 "Money laundering easier under free trade," *The Gazette*, 21 November 1990, sec D, p D2

will presumably improve Canada's ability to investigate and prosecute money laundering offences by requiring those in the financial field to keep records of large transactions. The regulations will initially define a large transaction as one or more transactions totalling more than $10,000 on a given day.

Similar legislation has been in place in many states in the US such as Florida, for some time now. However, the US experience suggests that this sort of law is limited, in the sense that it is only applicable to money laundered transactions that involve cash. Hence, the various other methods of money laundering such as, cashiers checks, smuggling gold or precious stones, falsified airline tickets, and bearer bonds are exempt, and thereby do not require any sort of notification to the authorities.

The most prominent effect of money laundering on a country's economy is decreased domestic savings and, thus, decreased investment. With respect to Canada, evidence suggests that even if money laundering was a problem, it seems that Canadian savings and investment have not been largely affected. This is substantiated by both a personal savings rate that is one of the highest among the OECD countries, and an excellent investment climate.[89]

89 It is important to note that the personal savings rate has been declining in recent years. However, evidence supports the notion that this decline is merely a shift from personal savings to other means of savings such as Registered Retirement Savings Plans, life insurance, and trusteed pension plans. For further explanation, see Canada Year Book, 1990.

4.3.2 Fiscal and Monetary Policy, and the Exchange Rate

The limited amount of research performed on the Canadian underground economy combined with the Canadian Government who does not officially acknowledge the hidden sector, makes it extremely difficult to analyze. Hence, the task of interpreting the effectiveness of policy initiatives in Canada, given the submerged sector, is also rather arduous.

One might speculate, given the previous discussion of policy implications, that fiscal policy in Canada could be somewhat over-stimulative. This is due to the fact that Canadian fiscal policy has generally followed a direction geared to dealing directly with unemployment, while monetary policy has pursued tight money targets.[90] Following our rational expectations model, the result of an increase in underground activities is an increase in perceived unemployment. If the government is concerned with unemployment than the fiscal authority will react to this perceived unemployment with measures that have the effect of being over-stimulative.

With respect to the exchange rate, there are no exchange controls in Canada and, thereby, no explicit policy in dealing with submerged activities. Nevertheless, it is interesting to note the statistical discrepancy in the Canadian National Accounts. In 1989 this discrepancy measured - $5,832 million[91], almost equal to Canadian direct investment abroad. The Canadian Government accounts this large of a figure to "the growing

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90 Recently, however, fiscal policy under Finance Minister Michael Wilson has pursued deficit reduction and somewhat neglected the unemployment problem

91 The minus sign denotes an outflow of capital

number of international transactions."[92] However, one might guess that probably much of the discrepancy is a means of taking into account, at least, some of the activities in the hidden economy.

4.3.3 Tax Evasion

In Canada, the Department of National Revenue is responsible for overseeing tax related activities. Since the Canadian system of tax collection is based on self-assessment, the Revenue Department uses a substantial portion of their resources for enforcement and compliance measures. Enforcement duties involve tax audits which may include; an audit that requires a visit to the filers' home or business; an office examination which does not involve any visit; or finally a matching process where comparisons are made in the tax payers return with information from other sources.

The majority of the enforcement activities undertaken by the Revenue Department are tax audits. The department's enforcement mandate is to correct instances of failure to comply with the law, particularly by taxpayers in higher income brackets, and those who, such as the self-employed, have more opportunity to avoid complying.[93]

The costs of tax evasion to an economy can be severe. First, tax evasion results in a loss of government revenue as well as a direct cost of increasing compliance programs. In addition, social costs from evasion activities can be substantial, since citizens must pay

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92 *Minister of Supply and Services* Vol 38 no 3 Ottawa Government Publishing Centre, 1990

93 Canada, The Department of National Revenue, "Enforcing the Income Tax Act," *Inside Taxation* 24 (1990) 556

either increased taxes, or forego a variety of social services. Finally, the effects of tax evasion are seen through biased aggregate statistics and, most importantly, false information. As Cowell points out, "the distortion of information lies at the heart of the state's problem of exercising control and authority in the economy."[94]

Most economists would probably agree that in order to decrease the instances of tax evasion, it is necessary to increase the costs and thereby decrease the benefits of that activity.[95] In other words, governments must convince society that it will not benefit from evasion activities. As Carl Simon and Ann White explain, the approach, used by most governments, including the Canadian Government, to accomplish the above goal, is often morally or psychologically based. "It is generally referred to as general deterrence where we seek to convince people that they are likely to be caught quickly and to be given penalties that largely wipe out the gains achieved by their illegal activity."[96]

In Canada, it is believed that general deterrence is achieved through a wide exposure of taxpayers to enforcement activities. However, "if one accepts that enforcement has a significant deterrent effect, then the decline in audits, office examinations, and post assessing must be cause for concern."[97] Moreover, in 1987 the Revenue Department adopted a policy of not informing the public on specific prosecutions which has consequently resulted in a large decline in the publicity surrounding the prosecution of tax evaders. Evidence of the department not informing the public is substantiated by the following,

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94 Frank Cowell, *Cheating the Government: The Economics of Evasion* (Cambridge: MIT Press, 1990), p. 40

95 It is interesting to note that in an effort to curtail tax evasion activities the Canadian Government recently introduced the goods and services tax. By taxing such a large array of products and services, many economists and governments believe that it is more difficult to evade taxes.

96 Carl Simon and Ann White, *Beating the System: The Underground Economy* (Boston: Auburn Publishing Co., 1982), p. 110

97 Canada, The Department of National Revenue, "Enforcing the Income Tax Act," *Inside Taxation* 24 (1990) 559

> ...of 291 prosecutions undertaken by the Department between August 1981 and September 1983, all but one received some media coverage, with 275 cases covered by the newspapers. However, only one-half of the prosecutions resulting in convictions between March 1988 and February 1989 received any media coverage.[98]

The lack of suitable deterrent standards in Canada is further witnessed by the fact that, in the past, the Department of Revenue has wavered penalties for gross negligence so long as taxpayers disclose their non-compliance before an audit. Furthermore, it is the policy of National Revenue, to advise the Attorney General, to not recommend prosecution of tax evaders unless attempted evasion is in excess of $100,000 in taxes. "In contrast to the tax evasion penalty, fraud over $1,000 is an indictable offence under the criminal code and may result in imprisonment for up to ten years."[99]

Clearly, from the discussion of tax evasion in Canada, one might conclude that the deterrent methods employed by the Canadian authorities are not stringent enough. However, in response to these criticisms, Revenue Canada has stated that given government cutbacks, there are simply not the resources or manpower available to improve its enforcement measures at this time.[100]

4.3.4 Unemployment Insurance Fraud

The problem of unemployment insurance fraud in Canada is of increasing concern as a growing number of Canadians attempt to illegitimately collect the social assistance.

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98 Ibid., p. 560
99 Ibid., p. 561
100 Ibid., p. 566

In the best of times, the drains on government coffers are enormous and are even more pronounced during recessionary periods, when the demand for benefits increases remarkably.

To qualify for unemployment insurance (UI) in Canada, one must have worked from 10 - 20 weeks depending on the regional unemployment rate. Regions with higher unemployment allow individuals with fewer weeks worked to qualify for benefits. Moreover, those who collect unemployment must declare all money earned while receiving benefits and are not permitted to engage in full time studies.

Nevertheless, despite these and other regulations, it seems that collecting unemployment and avoiding detection is relatively easy. First, when applying for assistance, many people have realized the importance of seeking low-demand occupational preferences combined with over-inflated salary expectations. These actions make it difficult for the unemployment authorities to match applicants with an occupation, and thus divert attention away from the claimant's file.

Fraudulent behavior is also evident from the collusive behavior of employers and employees. The most common type of collusion are between claimants who seek under-the-table employment to supplement their benefits and employers who benefit from the cheap subsidized labour.

As in the case of tax evasion, Canadian authorities believe that the most effective way in dealing with unemployment insurance fraud is through prevention and dissuasion methods. Such methods might include public campaigns to increase awareness, or strong penalties. Indeed, the penalty in Canada for unemployment abuse has tripled in the last two years to include prosecution or fines from $500 - $2000.

However, the weakness of the Canadian authorities ability to detect fraudulent behavior lies in its detection procedures. Section 94 of the UI act states that no institution is legally bound to furnish any information or names of any people it serves. Hence, the only way to access such information is through a difficult and time-consuming legal request through the courts.

Other problems associated with detection are the lack of adequate contact with the claimant. Even though all claimants are legally obliged to genuinely search for work while receiving benefits, in the majority of cases the UI office does not contact the individual. When the authorities do make contact with the claimant, in most instances it is sufficient enough grounds not to call an investigation if the individual has registered with a job bank, or a Canada Employment Centre.

It seems that the policy complication surrounding UI abuse and fraud is the need to amend section 94 of the UI Act which would enable the authorities greater legal access to names and information from various unions, employers, and other institutions. Further improvements would be more stringent job search requirements, reduced benefits, and longer waiting periods, and even more stringent penalties imposed on fraudulent claims.

4.4 Conclusions

It is apparent from our discussion of the Canadian underground economy that it is extremely difficult to estimate. This is evident from the complications involved in using Gutmann's currency ratio method and Feige's transactions approach. Furthermore, the big

bill approach is proven to be infeasible in the Canadian context, as it is believed that increased demand for large notes is simply a result of higher inflation and an expanding economy. Finally, Berger's comprehensive study and subsequent estimate of the submerged economy, using the discrepancy method, does little to verify the actual size of the hidden sector.

This chapter has also attempted to review and assess Canadian initiatives that have been undertaken by the Government. One must conclude that the Money Laundering Act, although welcomed by the authorities, will do little to reduce money laundering activities. Secondly, methods employed by the Department of National Revenue, to combat tax evasion, are also not effective enough in solving that problem. Thirdly, laws associated with unemployment insurance fraud must be updated and strengthened in order to make fraud more difficult and increase deterrence. Clearly, the Canadian Government must examine more closely, and introduce better policies to deal with parallel economy.

V Summary and Conclusions

Our review of the underground economy has been at the very least, perplexing. The apparent failure by economists and various governments to realize the importance and extent of the submerged sector, has made the task of analyzing the underground economy extremely difficult.

It seems that the primary problem in the e 'imation techniques employed economists is the fact that no one is able to agree on an adequate definition of the underground economy. Feige, Tanzi, Gutmann, and Mattera all disagree on what activities actually make up the black sector. Indeed, each analyst is often measuring only a portion of the underground economy. We have concluded that the inability to correctly define the underground economy is one of the primary reasons that economists are unable to produce credible estimates.

Furthermore, the assumptions used in many of the estimation procedures are unrealistic, extremely sensitive to the analysis, and are often presented in an *ad hoc* fashion. For instance, the benchmark assumption requires the use of a year where no underground activities take place. However, finding such a period is often intractable. Other barriers to the analysis include the measurement of velocity in the underground and its degree of consistency with the value of velocity in the overground. Although most individuals agree that the former is higher, they are unable to settle on an exact value for velocity.

Many observers who study the underground economy are aware of the criticisms we have mentioned here, but point out that the purpose of these estimations are to simply give a general indication of the size of the parallel sector. However, one might ask how estimates ranging from

anywhere between 4% and 28% of GNP are able to provide even a general indication of the size of the subterranean economy.

There is no doubt that a large and growing hidden economy has a number of substantial implications for many of the economic indicators and policies in the overall economy. As we have seen, the effects of submerged activities are disastrous for less developed countries. The exchange rate, savings and investment, and the balance of trade are all affected adversely by huge capital outflows, namely, money laundering and tax evasion. When activities such as these occur, governments' often have no alternative but to increase their debt load which may bring on another round of capital flight. For less developed countries, breaking free of this cycle is an onerous task.

In more developed nations, the consequences are equally problematic as witnessed by biased economic indicators, over-stimulative fiscal and monetary policy, and increased clandestine activities. We believe that governments are not dealing with these issues effectively. Many advanced countries, except the US and Italy, largely ignore the hidden sector. The statistical discrepancies, whether in the national accounts or current accounts, are attributed to no more than a correction for problems in the data. Clearly, from our review of the hidden economy we have seen that activities in this sector have been increasing and should therefore receive greater consideration by the authorities

From the analysis of the Canadian underground economy, we conclude that there is a definite need for more studies to be performed This is apparent from the limited work done on the application of Canadian data to the various estimation processes developed by Feige, Tanzi, and others. Furthermore, examination of the policy implications for Canada have been largely ignored which is evident from the lack of information surrounding monetary, fiscal, and

exchange rate policies.

Three prominent submerged activities were studied in the Canadian context. They include unemployment insurance fraud, tax evasion, and money laundering. In all three cases, the Canadian Government fares poorly in its attempt to deal with and curtail these illicit activities. The Money Laundering Act has only recently been introduced and its effect will probably be limited in decreasing laundering activities, as this legislation only covers transactions at financial institutions that are in excess of $10,000. Similar legislation is in place in many US states but has not been very successful in hampering laundering activities. With respect to tax evasion, we conclude that the recent decline in investigations and deterrence methods have not aided in reducing evasion activities.

Finally, in examining unemployment insurance fraud in Canada, we reached conclusions similar to those encountered in the analysis of tax evasion. Deterrence methods and regulations governing unemployment insurance candidacy are too lenient. Longer waiting periods, more consultations with claimants, and greater access to information by the unemployment agency are necessary if fraudulent claims are to decrease in the near future.

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