A MACROECONOMIC APPROACH TO THE GROWTH OF THE BOLIVIAN INFORMAL SECTOR

THESIS

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By

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This thesis attempts to measure the growth of the Bolivian informal sector. The study estimates the growth of the informal sector by defining it as the difference between the formal sector's reported real gross national product (GNP) and forecasted values of real GNP.

The first chapter describes the Bolivian economy, defines its informal sector, and presents reasons for this sector's growth. Related research in informal activity, theoretical discussions, and perspectives are presented in the second chapter. Chapter III describes methodological research used in the analysis of the data. Chapter IV describes the results of the investigation. Conclusions and recommendations for the informal sector are provided in chapter V.

The results show that it is possible to measure informal activity in a macro setting.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF TABLES</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF ILLUSTRATIONS</td>
<td>vi</td>
</tr>
</tbody>
</table>

## Chapter

### I. INTRODUCTION

- Statement of the Topic
- Significance of the Topic
- Characteristics of the Bolivian Economy
- The Informal Sector in the Bolivian Economy
  - Informal Sector Before the Crisis
  - The Development of the Informal Sector During the Crisis
    - External Forces
    - Internal Forces
- Hypotheses
- Summary

### II. A SURVEY OF RELATED RESEARCH

- History of the Informal Sector
- Characteristics and Classification of the Informal Sector
- Locating the Informal Sector
- Theoretical Discussions
  - Classical
  - Reformist
  - Marxist
  - Populist
- Theoretical Perspectives
  - Evolution
  - Involution
- Dualistic Approach to the Economy
- Criticism of the Literature on the Informal Sector
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>III. METHODOLOGY</td>
<td>48</td>
</tr>
<tr>
<td>Statement of Purpose</td>
<td></td>
</tr>
<tr>
<td>Selection of Variables</td>
<td></td>
</tr>
<tr>
<td>Data Collection</td>
<td></td>
</tr>
<tr>
<td>Summary</td>
<td></td>
</tr>
<tr>
<td>IV. RESULTS</td>
<td>54</td>
</tr>
<tr>
<td>Model of Best Fit</td>
<td></td>
</tr>
<tr>
<td>Autocorrelation</td>
<td></td>
</tr>
<tr>
<td>Parameters</td>
<td></td>
</tr>
<tr>
<td>Multicollinearity</td>
<td></td>
</tr>
<tr>
<td>Interpretation of Results</td>
<td></td>
</tr>
<tr>
<td>Summary</td>
<td></td>
</tr>
<tr>
<td>V. CONCLUSIONS</td>
<td>67</td>
</tr>
<tr>
<td>Review of the Hypothesis</td>
<td></td>
</tr>
<tr>
<td>Analysis of Findings</td>
<td></td>
</tr>
<tr>
<td>Comments and Recommendations for the Informal Sector</td>
<td></td>
</tr>
<tr>
<td>Summary</td>
<td></td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>75</td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table                                           Page
1. Total Value of Tin Exports                  7
2. Gross Domestic Product of Cocaine           7
3. Relation GDP Cocaine/GDP Formal Sector      8
6. T-Statistics for Selected Variables         57
7. Predicted Real GNP, Actual Real GNP, and the Informal Sector 60
8. Percentage Change in the Informal Sector    62
<table>
<thead>
<tr>
<th>Figures</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Characteristics of the Informal Sector</td>
<td>26</td>
</tr>
<tr>
<td>2.</td>
<td>Informal Sector Enterprises</td>
<td>28</td>
</tr>
<tr>
<td>3.</td>
<td>Locating the Informal Sector</td>
<td>31</td>
</tr>
<tr>
<td>4.</td>
<td>The I.L.O's Distinction Between Informal and Formal Sectors</td>
<td>41</td>
</tr>
<tr>
<td>5.</td>
<td>Signs of Informal Sector Activity</td>
<td>61</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

Statement of the Topic

The growth of the informal sector of the economy in Latin America and in other underdeveloped countries has been studied by various economists. As in other underdeveloped countries, the macroeconomic activity of Bolivia is characterized by two sectors depicted in the literature as formal and informal (Hart 1973). The Bolivian formal economy, or sector, is characterized by a small number of industrial sectors with most of the industries operating in an oligopolistic or monopolistic fashion. The informal economy, on the other hand, can be divided into positive endeavors and negative endeavors.

Positive endeavors are termed so because these activities serve as buffers, or economic stabilizers, for workers who cannot find employment in the formal economy. For example, unemployed or underemployed workers often turn to the informal sector in search of income. The informal sector exists and operates legally in the sense that the government is aware of its existence and does not outlaw or regulate its operations. Technically, however, the sale of products obtained through black market activities is illegal, but unofficially sanctioned.
Negative endeavors, on the other hand, are clandestine activities such as production and sale of illegal drugs and prostitution, activities which are neither officially nor unofficially sanctioned. These negative endeavors, particularly the production and sale of cocaine, generate high financial returns and are livelihoods for many Bolivians (Doria Medina 1986).

It is important to distinguish the informal sector in developing nations like Bolivia from the informal sector in an industrialized or developed nation. "In the studies about developing nations informal is considered to be the entity of production excluded from modern industry and in the case of developed countries informal is that group of underground activities that illegally operates in their markets." (FORO ECONOMICO, 1986) This definition suggests that the informal sectors in developed and underdeveloped countries are disparate based on the legality of the activities. However, when the informal sectors are divided into positive and negative endeavors, what differentiates the informal sector of underdeveloped countries from that of developed countries is the relative size of the components. Thus, what distinguishes the Bolivian informal sector from the informal sector of industrialized nations is not the existence of illegal activities, but the massive employment of workers, who, without an informal sector, would not have any means of income generation.
Comparing the Bolivian informal sector to the informal sector of an industrialized nation like that of the United States would involve an analysis in terms of the size of this sector relative to the size of the formal sector, as well as an analysis of composition of the informal sector. The Bolivian informal sector stands out not only because of the large number of people employed in informal activities, but also because of the income potential of operations within this sector. How does this compare to the informal sector in the U.S? The informal sector of the U.S. economy, referred to as the underground or black market economy, is not as developed, relative to its formal economy as the Bolivian informal sector. Moreover, as the designation "underground" implies, the informal sector in the U.S. consists mainly of illegal activities punishable by law. To conclude, when the activities of an informal sector are grouped according to positive and negative endeavors, the magnitude of the components of the informal sectors in underdeveloped countries differentiates them from the informal sectors in developed countries.

Significance of the Topic

This thesis is concerned with the growth of the Bolivian informal sector from 1980 through 1985. The growth of this sector is particularly evident in the urban economies, which are the areas of commerce, housing, coca production, and services. For several years the government
of Bolivia has ignored the informal sector and its relevance to the overall performance of the Bolivian economy. This avoidance could have been understood in the past when this sector was relatively small. However, as it stood in 1986, Bolivia's peculiar reality today is marked by the fact that over 50% of national production takes place in the informal economy and a major part of the sources of employment are also closely tied to such informality.

(Paz Zamora 1986, 15)

The prominence and significance of the informal sector in the Bolivian economy cannot be ignored for various reasons. Among these are:

1. A large, unaccounted portion of the labor force participates in it.
2. The conditions in which these laborers work and live are substandard.
3. The growth of the informal sector increases the need for study of its impact on the development and performance of Bolivia's economy.

Economists, sociologists, anthropologists, and social workers, have investigated the informal sector from different perspectives. Some are concerned with the expansion of this sector and the consequent inability to maintain an accurate accounting of the GNP; others have investigated the poverty in which the members of this sector live. Still others are concerned with outlooks for growth, planning, and economic development. Marxist scholars have viewed the workers in the informal sector as the exploited...
"reserve army of unemployed or underemployed." (Hart 1973, 61) The basis of the widespread interest in the concept of an informal sector seem to be its capacity to accommodate a variety of approaches to the study of it. As Lisa Peattie (1987) observes:

The concept of an "informal sector" is coming into more and more general use because it appears to serve the purposes of many different groups with a number of different— even conflicting— purposes. It appeals to liberals with an interest in problems of poverty; to economic planners who want their accounting systems to represent the actual economy more accurately; to radicals who want to bring into planning analysis a more structuralist view of the economy; and to those who would like to "privatize" activities such as housing production, either out of a populist commitment to action by "the people" or out of conservative commitment to restraint in government welfare expenditures (857).

The present study of the importance of the Bolivian informal sector derives from the government's inability to accurately report the economic achievement of its inhabitants. The fact that real gross national product (GNP) in Bolivia falls at increasing rates during the eighties does not accurately represent the Bolivian economy. Economists and other observers would, by glancing at real GNP values for 1980-1985, conclude that Bolivia experienced a depression during those years. However, the data for these values of the GNP reflect only the formal sector and omit or ignore the informal sector's contributions. Hence, the failure to report the growth of the informal sector results in a largely distorted view of Bolivia's overall
economic performance. No other explanation (except to consider a recession as a fractional cause) seems to account for the drastic decline in reported productivity of the formal sector, for the decline in real GNP cannot be explained as the result of a decline in resources or technology.

**Characteristics of the Bolivian Economy**

As in other countries, the economic crisis was caused in part by international factors, particularly a sharp drop in prices for Bolivia's major export commodities. However, the crisis also had important internal causes, manifested in steadily declining growth rates, a burdensome debt, rising unemployment and declining per capita income (Malloy 1987, 9).

For decades, the Bolivian economy, has been characterized by its dependence on a single export industry: mining. Like most Latin American countries, Bolivia has concentrated its resources in a single industry which tends to be highly dependent on external forces. While the demand for tin, of which Bolivia was once the world's largest exporter, has been relatively stable with a tendency to fall over time, the worldwide supply of tin has increased, forcing down the price. Beginning in 1980, when a crisis is said to have occurred in the Bolivian economy, Bolivia's extraction and export of tin dropped considerably. When production plunged, several thousand miners were left without jobs. The decline in tin exports is illustrated in Table 1.
TABLE 1
TOTAL VALUE OF TIN EXPORTS
(In Millions of Dollars)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TIN</th>
<th>YEAR</th>
<th>TIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>373,679</td>
<td>1983</td>
<td>207,906</td>
</tr>
<tr>
<td>1979</td>
<td>395,567</td>
<td>1984</td>
<td>247,748</td>
</tr>
<tr>
<td>1980</td>
<td>378,149</td>
<td>1985</td>
<td>186,747</td>
</tr>
<tr>
<td>1981</td>
<td>343,096</td>
<td>1986</td>
<td>89,810</td>
</tr>
<tr>
<td>1982</td>
<td>278,344</td>
<td>1987</td>
<td>47,638</td>
</tr>
</tbody>
</table>


While the production of tin and other minerals dropped, Bolivians found areas of comparative advantage in the production of coca leaves. Table 2 demonstrates the growth in production of coca leaves. Table 3 shows that production of cocaine rose from 30% of the GDP of the formal sector in 1980 to 95% of the GDP of the formal sector by 1984.

TABLE 2
GROSS DOMESTIC PRODUCT OF COCAINE
(In Millions of Dollars)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>COCAINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>1,125.0</td>
</tr>
<tr>
<td>1981</td>
<td>1,350.0</td>
</tr>
<tr>
<td>1982</td>
<td>1,875.0</td>
</tr>
<tr>
<td>1983</td>
<td>2,377.5</td>
</tr>
<tr>
<td>1984</td>
<td>3,000.0</td>
</tr>
</tbody>
</table>

TABLE 3

RELATION GDP COCAINE/GDP FORMAL SECTOR
(In Millions of Dollars)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>GDP FORMAL (1)</th>
<th>GDP COCAINE (2)</th>
<th>RELATION % (2)/(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>3,759.0</td>
<td>1,125.0</td>
<td>30</td>
</tr>
<tr>
<td>1981</td>
<td>3,786.0</td>
<td>1,350.0</td>
<td>36</td>
</tr>
<tr>
<td>1982</td>
<td>3,552.0</td>
<td>1,875.0</td>
<td>53</td>
</tr>
<tr>
<td>1983</td>
<td>3,271.0</td>
<td>2,377.5</td>
<td>73</td>
</tr>
<tr>
<td>1984</td>
<td>3,149.9</td>
<td>3,000.0</td>
<td>95</td>
</tr>
</tbody>
</table>


Even though the cultivation and consumption of these leaves is legal in the country, the cocaine derive from them is illegal. Nonetheless, thousands of people are employed in the cultivation of coca leaves and the production of its derivatives.

The Informal Sector in the Bolivian Economy

For analytical purposes the Bolivian economy can be subdivided into two sectors: formal and informal. Within each of these sectors, further subdivisions can be made. In the formal sector are private and public activities, whereas in the informal sector the subdivisions consist of those establishments which are registered with the government and those which are not (Ministerio de Trabajo y Desarrollo Laboral 1980, 8-9). Even though the informal sector has always been a part of the economic system in Bolivia, its rapid development in the past 10 years has caused distress
among politicians and Bolivians in general, who are accustomed to a few street vendors and to family members' assistance in certain economic ventures, traditional features of the informal economy. These small scale vendors did not present a problem or conflict with the activities of the formal economy. Prior to 1980, the Bolivian informal sector went almost unnoticed by most.

In order to obtain a clear idea of the increase in the Bolivian informal sector, I will analyze the informal sector before the crisis and discuss the development of the informal sector during the crisis. The crisis to which I refer is the period of political turmoil and violence which occurred from 1979 through 1985. During this time, Bolivia underwent a series of riotous presidential depositions. Although these events began in 1979, 1980 has generally been considered the starting point of their consequences in economic affairs.

The Informal Sector Before the Crisis

To give an idea of the extent of the informal sector prior to the crisis, information provided in a study entitled *Work in the Informal Sector in the City of La Paz* is used. This study describes the informal sector prior to the 80's. Table 4 summarizes the breakdown of the labor force.
### TABLE 4

**LABOR FORCE BY LABOR MARKET SECTORS,**

**1977**

<table>
<thead>
<tr>
<th>LABOR FORCE TOTAL</th>
<th>ABSOLUTE NUMBERS</th>
<th>PERCENTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUB-TOTAL FORMAL SECTOR</td>
<td>87,705</td>
<td>38.8</td>
</tr>
<tr>
<td>Private Formal Sector</td>
<td>50,668</td>
<td>22.4</td>
</tr>
<tr>
<td>Public Formal Sector</td>
<td>37,037</td>
<td>16.4</td>
</tr>
<tr>
<td>SUB-TOTAL INFORMAL SECTOR</td>
<td>127,415</td>
<td>56.5</td>
</tr>
<tr>
<td>Registered Informal Sector</td>
<td>41,266</td>
<td>18.3</td>
</tr>
<tr>
<td>Non-Registered Informal Sector</td>
<td>86,149</td>
<td>38.2</td>
</tr>
<tr>
<td>UNSPECIFIED ACTIVITIES</td>
<td>10,534</td>
<td>4.7</td>
</tr>
</tbody>
</table>


There were around 225,000 workers in the city of La Paz in 1977. The formal sector employed some 87,000 workers (38.8% of the total). The informal sector employed approximately 127,000 people (56.5% of the total population eligible for work). Employment in the informal sector is segregated according to those workers who are registered (employed under the law) and those who are not registered (employed outside the law). In the informal sector, the number of registered, employed individuals was just over 41,000, the equivalent of 18.3% of the total labor force in La Paz. The Non-registered workers in the informal sector accounted for 38.2% of the total labor force, with approximately 86,000 persons employed (Ministerio de Trabajo
Another way of determining the size of informal market activities is to consider the operation of commercial establishments in Bolivia prior to the crisis. Almost all commercial establishments were small food and beverage stores, which represented 44.8% of the total registered informal market. In the city of La Paz, there was a small food store for every 17 homes and every 70 people in 1976. The data used for the number of households and individuals come from the National Institute of Statistics (INE) in a National Census of Population and Household conducted in 1976. Some explanations of this situation include the ease of financial access to this market, the ease with which these small enterprises could be organized, and the minimum level of education required to run such ventures.

The 1976 national Census makes no mention of the illicit production of cocaine or the sale of it. From this it can be inferred that in 1976 cocaine production was not considered widespread in the informal sector, or that its production and sale were not significant enough to warrant discussion. During the crisis, however, production of coca...
urban informal sector.

As shown in Table 5, employment in the informal sector increased, and employment in the formal sector decreased from 1976 to 1984.

<table>
<thead>
<tr>
<th>SECTORS</th>
<th>1976</th>
<th>1980</th>
<th>1984</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>FORMAL</td>
<td>43</td>
<td>42</td>
<td>37</td>
</tr>
<tr>
<td>INFORMAL</td>
<td>47</td>
<td>53</td>
<td>58</td>
</tr>
<tr>
<td>DOMESTIC</td>
<td>10</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>SERVICE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: a National Census of Population and Housing, 1976
b Urban Interview of Migration and Employment, 1980
c Permanent Interview of Homes, 1983.

The factors contributing to the growth of the informal sector can be divided into two groups: those forces which are external to the economic activities of the country, and those forces which are internal.

External Forces

With the decline of world tin prices, Bolivia's revenue from the production of this metal declined. Along with the decrease in tin production came a decline in employment in mining. Given such economic circumstances, miners who had no way of making a living or supporting their families migrated to cities in search of employment.

One other external factor forcing the labor force to
find informal sources of employment was the decline in loans and aid the country received during the 80's. Bolivia's inability to fulfill its current debt payments decreased the availability of credit and loans. Employers in the formal sector, unable to obtain credit, were limited to the amount of people they employed. The labor force was growing faster than the number of jobs available.

Internal Forces

Among the internal factors which contributed to the growth of the informal sector during the crisis are:
(1) the role of the government and its policies and
(2) migration from rural areas. Oscar Salas, a labor leader, comments that the government created unemployment consciously and coldly. According to Salas, the government created unemployment to protect large industries in the formal sector. The government, it seemed, preferred to deal with a few private, capital-oriented businesses rather than with large numbers of workers demanding raises in their wages (Salas 1987, 55).

According to Ernesto Kritz (1986), employment in the informal sector increased because of government intervention to prevent the market system's operation. When the minimum wage level is imposed above the value of the marginal physical productivity of workers, businesses restrict the employment of such workers. This, in turn, given the absence of unemployment compensation or other forms of
remuneration, forced the unemployed to become involved in informal economic activities.

It was pointed out earlier that one of the factors contributing to migration was the decline in exports. [Miners were forced to migrate to the cities when the mines were closed.] In addition, many farmers migrated to the cities in search of higher income (Harris and Todaro 1970). In addition, many workers moved to the city because they had heard about the certainty of employment in the informal sector. Vargas Llosa comments on the migration of the rural population to the city because of droughts, inundations, decline of agriculture and mining, and overpopulation. He goes on to say that these migrants went to the cities in search of jobs and better pay but instead found a state which obstructed access to the formal sector. Unable to find jobs, lacking capital, education, or technical skills, these rural migrants had no admittance in the formal sector, either as workers, or as beneficiaries of that sector's services. Confronted with this situation, a large number of rural citizens faced no other choice than to go into the informal sector, creating jobs and working outside the law and government control. Hernando de Soto (1986) regards migration as:

Migration is not an irrational act done for pleasure or gregarious instinct, rather the product of a rational appraisal of possibilities done by the rural migrants (10).

His views are bitter towards the state and its creation of
artificial barriers to entry into the formal sector. De Soto goes on to argue that reality shows the rural migrants that they not only have to compete against people but also against the system. Given the impossibility of employment in the formal sector, workers resort to using illegal methods to satisfy legal objectives such as the construction of houses, sale of goods and services, and even the development of small businesses (De Soto, 1986).

The increase in migration to urban areas by unemployed miners and farm laborers who were unable to gain employment in the formal sector contributed to the surge of the informal sector.

Hypothesis

The purpose of this thesis is to present evidence of the extent of economic activity in the informal sector of Bolivia. Specifically, I intend to estimate the rate of growth of the Gross National Product during 1980 to 1985, under the assumption that the Bolivian economy grew at a stable rate during the period. The projected rate of growth is then compared to the actual rate of growth of the GNP. Assuming that a considerable gap will be evident, I contend that it represents the growth of the informal sector unaccounted for in national accounts. The growth of the informal sector will demonstrate its relevance to the overall Bolivian economy.
Summary

The economic system in Bolivia can be separated into two sectors: formal and informal. Furthermore, the informal sector can be segregated into two kinds of activities: positive endeavors and negative endeavors. Even though both sectors of the economy have always characterized Bolivia, it was not until 1980 that close attention was given to the existence and growth of the informal sector. The expansion of this sector is at issue because of the growing number of workers it employs. Moreover, an important aspect of the growth of the informal sector for the Bolivian economy is its role in the underestimation of the country's total production.

This thesis attempts to estimate in a macro setting the rate of growth of the Bolivian informal sector. External and internal causes for this growth are presented. The problem is tied to dependency on foreign markets, but internal problems like government market regulation and expansive urban migration have also contributed to the growth.


CHAPTER II

A SURVEY OF RELATED RESEARCH

The growth of the Bolivian informal sector in the 1980's generated the concern of countless individuals interested in its roots, evolution, and difficulty of measurement. This interest has been, in part, to obtain a more precise view of the nation's overall economic performance. To describe what the informal sector constitutes, a history of its development follows. Once the origins of this sector are stated, a discussion of the relationship of this sector to the rest of the economy follows. Furthermore, the diverse theoretical discussions offered to explain the surge of this sector and the potential prospective for growth of this sector are presented. The dualistic approach to the analysis of the Bolivian economy, a common approach to economic analysis, is also discussed. Finally, certain deficiencies in the literature about this sector are discussed.

History of the Informal Sector

To define or describe the informal sector has been as difficult as to explain when and how this sector emerged. Most authors agree that the slow expansion of productive employment at times of economic growth leaves behind unemployed workers who, in turn, find employment in
'informal' undertakings (Souza and Tokman 1976). More specifically, Souza and Tokman comment that with the advent of Latin America's industrialization, giant corporations left their mark on the kind of goods produced and the technology employed. While the new technology saved capital, its greater efficiency created structural unemployment. The number of workers migrating to cities intensified the existing problem of labor surplus. Souza and Tokman (1976) suggest:

In this way an economic sector has grown up in which the demand for labour depends not on its own capacity for capital accumulation but on the labour surplus in the "organized" sector of the employment market and on the possibilities of producing and selling anything that will generate an income (255).

In a study of employment opportunities in Ghana, Keith Hart (1973) presented for the first time the concept of 'informal' as it pertained to the economy. Hart described the problem of unemployment and underemployment in the city of Accra. Workers' desires to improve their living standards and their financial retirement securities were frustrated by the low wages they received in the formal sector. Disavowed of opportunities within the formal structure, "these members of the urban sub-proletariat seek informal means of increasing their incomes" (Hart 1973, 61). Like Souza and Tokman, Daniel Carbonetto maintains that the informal sector consists of the group of employment positions generated by the labor force which is excluded
from the formal sector. Its roots, he explains, are of two main origins:

1. The first one is structural in form. It develops from the separation between demand for labor in the modern sector and the accelerated growth of the labor force.

2. The second is the result of the cyclical activity of the formal sector which in recessionary periods excludes a fraction of workers (Doria Medina 1986, 22).

These discussions help explain the growth of the informal sector, but they do not explain the origin of the informal sector.

The real roots of the informal sector abide in its cultural facets. Jorge Dandler views the informal activity of this sector not as a temporary, but, as a strategy for a permanent way of living. Furthermore, he attests that in Latin American countries like Bolivia, informal activities are basic to the structure and development of the economy (Doria Medina 1986, 16). Most of the activity in this sector involves family and community assistance. Its networks supplement the shortcomings of capitalism, but this "'conventional'" economy has always been the natural way for man's economic behavior (Gaughan and Ferman 1987). That is, the norm for man's economic conduct has always been the casual barter and trade. Hence, the formal sector is an
artificial creation of mankind and not the natural way of doing things.

Capitalism has certainly substituted a different set of organizing principles in the large-scale operations that constitute the economic core of industrial societies. Yet the old kinship structures have proved more durable than has been frequently assumed (Gaughan and Ferman, 25). Consequently, the activities that characterize the modern informal sector may be thought of as evolving from the early barter and trade economy.

The informal sectors in Peru and Bolivia are quite similar. Even though Mario Vargas Llosa’s foreword in De Soto’s *El Otro Sendero* (1986) is about the informal sector in Peru, his descriptions parallel the Bolivian economy. He asserts that the informal sector may indeed present a problem to the state because its participants evade tax payments and operate outside the law. Moreover, he adds, it is made up of individuals who act against what has been established by the formal sector. Nevertheless, Vargas Llosa comments that the informal sector in Bolivia and other Third World countries cannot be blamed for a country’s backwardness, nor does its existence constitute a problem per se. He argues that one must search beyond simple explanations of the causes of the development and growth of the informal sector.

On the contrary, the state is responsible for the underdevelopment of its economy. Growth in the informal
sector is a response to the state's inadequacies. The Bolivian informal sector has developed as a spontaneous and creative response of Bolivians to satisfy their basic human needs.

Union leaders have a keen feeling against the state, legitimate and authentic, which expresses a sensation and an objective reality innate in artisans and petty producers of the country; a just anti-state feeling, historically legitimate, which is also found in all other informal members. . . . it is an attitude of rejection towards a State which does not know how to reproduce its social agents (Inch 1987, 31).

When participation in the formal sector is a privilege obtained through political or economic power, as in Peru and Bolivia, those who lack this power--the lower class--see no other survival alternative than to participate in what is known as the informal economy. This arises as a result of the country's legal system which seems to have been conceived exclusively to favor those wealthy few. At the same time the system excludes those who are kept at the margin of the law--generally the poor (Vargas Llosa 1986).

President Banzer's regime (1971-1978) serves as an example of the system favoring particular groups that existed.

. . . the regime aped many of the characteristics said to be common to what were to be called bureaucratic authoritarian regimes, particularly in terms of the political exclusion of the popular sectors, a privileged position for local and international business interests . . . In Bolivia, . . . they masked the deeper process of ongoing decay in the nation's political institutions and fundamental long-term structural problems in the economy (Malloy 1987, 10).
Hernando de Soto asserts that the development of an informal sector can be traced to the corruption of the Spanish and Portuguese Conquistadores who went to South America taking with them the concept of a "market system," a concept which was misinterpreted and assimilated by various Latin American states as a "mercantilist system." Here a "mercantilist system" is defined as a bureaucratic state that rules giving priority to 'redistribution' rather than to economic efficiency and growth. 'Redistribution' refers, then, to favoring elite classes and granting favors to monopolies and private groups. These groups, in turn, depend on the state for their existence as the state depends on them for its existence (De Soto 1986).

The economic model in Bolivia... was really a neomercantilistic mode of capitalism, in which individuals in the private sector benefited from personal prebends. ... (Malloy 1987, 10).

Thus, adopting this system the state never has been an expression or representation of its people. Instead, whoever ruled at any given time governed by following closely the aforementioned features of a "mercantilist system." Consequently, the informal sector has developed, and it projects an image of the masses against a "mercantilist system" which has made them victims of an economic and legal apartheid. What should Bolivians do when confronted with a formal economic sector which closes its doors on them, frustrates their desires to work, and ignores their need for subsistence? The result has been obvious:
the renunciation of such a sector. Accordingly, the informal sector grows, creating jobs where none existed and finding innovative ways to make a living (De Soto 1986).

To sum up, the informal sector is a cultural phenomenon of various societies—including Bolivia. During industrialization, many workers were replaced with machinery and had, therefore, to find other means of employment. Simultaneous decline in formal market employment, underemployment, and rural migration aggravated the situation, making the informal sector a necessary means for survival. In addition to these factors, the corrupt nature of the state in Bolivia contributed to the formation of this sector. No analysis of the growth of the informal sector surpasses that of the Soto. What follows is an application of his discussion of the Peruvian informal sector to the Bolivian economy. The informal sector was always condoned as a manifestation of cultural identity. In its first stage, informal sector participants were confined mainly to the sale of cold and warm drinks, as well as to the provision of services, doing so as street vendors. Because street vendors have always constituted a traditional aspect of Bolivia's economy, once the informal sector started to develop, new entrants had no difficulty filtering into this sector. Once in the sector, they began to diversify their products and services. In this fashion, the food or drinks previously sold were replaced by clothing, perfumes, and
cosmetics. It must also be pointed out that at this stage the products sold were no longer manufactured by the vendors; these products excluded those bought or smuggled from other countries. Given time, the volume of sales increased, posing a threat to the members of the formal economy. Members of the formal sector responded by appealing to the state for protection (De Soto 1986). The Bolivian informal sector continues to grow. Services, manufacturing, construction, and transportation follow the pattern outlined above. Most of these activities begin as means for survival, and as time passes, they evolve into profitable endeavors. The following section addresses the various ventures which can be found in the informal sector.

**Characteristics and Classification of the Informal Sector**

Activities in the informal economy are characterized mainly by one or more of the following traits: labor-intensive, small-scale, and outside of government regulation or registration. The following Venn diagram by Nicoli Nattrass characterizes the informal sector in a study about street trading in Transkei, Africa. This diagram can also be applied to the Bolivian informal economy.
Most frequently informal enterprises fall into group A; that is, they are labor-intensive enterprises of small-scale operation and are not registered or regulated by the government. However, some enterprises operate with a license, (that is, registered and regulated by the government) but at a very small-scale and are labor-intensive (not much use of capital). Notwithstanding their legality, such operations fall under the informal sector as represented by area B. Some other illegal informal business can be characterized as large-scale and labor-intensive. This area, represented by group C, consists mainly of those in the cocaine market and organized crime. As regards to section D, a small-scale, capital-intensive, unregulated and officially unrecognized sector, is very difficult to observe. It is said that the few members that could be found operating in it are on their way out of the informal
sector, the main reason being that those in this group, having access to capital, may want to be protected by the law in order to have greater possibilities for capital accumulation. (Nattrass 1987) In short, the heterogeneous activities in the informal sector can be most easily recognized when they involve all three of the discussed attributes, but the other aspects of an informal sector must not be ignored.

A more widely accepted representation of the informal sector is the one provided by the International Labor Organization. In its description the informal sector is viewed as a "way of doing things and characterized by:

(a) ease of entry;
(b) reliance on indigenous resources;
(c) family ownership of enterprises;
(d) small scale operation;
(e) labor-intensive and adapted technology;
(f) skills acquired outside the formal school system;
(g) and unregulated and competitive markets" (Peattie 1987, 854).

In terms of the activities found within the informal sector, these are most commonly subdivided into: trade (street selling and other petty retailing), services (repair and other personal services), manufacturing (crafts), construction, and transport (rickshaws) (Amin 1987). Figure 2 illustrates the criteria for identifying
informal sector enterprises.

1. Manufacturing. A manufacturing enterprise may be included in the informal sector if it satisfies one or more of the following conditions:
   (a) It employs 10 persons or less (including part-time and casual workers).
   (b) It operates on an illegal basis, contrary to government regulations.
   (c) Members of the household of the head of the enterprise work in it.
   (d) It does not observe fixed hours/days of operation.
   (e) It operates in semi-permanent or temporary premises, or in a shifting location.
   (f) It does not use any electricity in the manufacturing process.
   (g) It does not depend on formal financial institutions for its credit needs.
   (h) Its output is normally distributed direct to the final consumer.
   (i) Almost all those working in it have fewer than six years of formal schooling.

2. Construction. A construction enterprise may be included in the informal sector if it satisfies one or more of the following conditions.
   (a) Any of 1 (a)-(c) or (i) above.
   (b) It does not own power-operated construction machinery and equipment.
   (c) It is engaged in the construction of semi-permanent or temporary buildings only.

3. Transport. An enterprise provides services related to transport, storage and communications may be included in the informal sector if it satisfies one or more of the following conditions.
   (a) Any of 1 (a)-(e), (g), or (i) above. Condition 1 (e) does not apply to transport activity per se.
   (b) It does not use any mechanical power.

4. Trade. A trading enterprise may be included in the informal sector if it satisfies one or more of the following conditions.
   (a) Any of 1 (a)-(e) above.
   (b) It deals in second-hand goods, or sells prepared food.
5. **Services.** A service may be included in the informal sector if it satisfies one or more of the following conditions.
   Any of 1 (a)-(e) above.

Figure 2. Informal Sector Enterprises

Addressing underdeveloped countries in Latin America, Jose Luis Ortiz characterizes the informal sector as a large sector of the population facing an employment structure made up of the ensuing attributes.

1. The informal sector is made up of small scale producers and income generating services.

2. The structure of ownership and employment is either singular or by family members.

3. Their operations are economically limited; they operate with very low levels of capital and without a legal enforcing agent. For the most part the labor force is made up of members of a family working under no wage or salary contracts.

4. Because of the hither to mentioned characteristics the informal sector faces lower costs of production than the formal sector and operates under a less developed technological structure. As can also be noted the actions and kinds of work involved in developed nation's informal sectors seem to be rather small compared
to the vast informal activities in lesser developed countries. This could be observed in the different depictions of informal work (Ortiz 1985). Another way of describing the informal sector is presented in a paper by Raymond E. Phal where he categorizes informal actions, in an industrialized nation, noting four types of work:

- "self-provisioning" or "domestic" economy, in which members of a household work with their own tools and in their own time for themselves.
- "working on the side" which involves remunerated activities outside the formal economy.
- work done for others, outside the formal economy, which is paid in favors or in kind.
- work outside the household to obtain food or materials without involving anyone else or without it necessarily being illegal (Phal 1987).

Once again it can be observed that the differences between activities, and the size of the activities, that constitute the informal sector in developed and underdeveloped nations is of considerable dimensions.

**Locating the Informal Sector**

It is, at this point, necessary to correlate the informal sectors' location in the overall economic activity of Bolivia. An integrated theory formulated by Nicoli Nattrass (1987) will be used. A description of its
representation in terms of the Bolivian informal economy follows.

![Diagram of the informal sector in Bolivia]

Figure 3. Locating the Informal Sector

One way of looking at the Bolivian economic system is by dividing it into three areas or triangles as the graph above illustrates.

1. The industrial reserve army
2. The marginal pole
3. The formal sector

These three sectors are separate from each other, yet they share a common attribute - the informal sector (as represented by the inner circle overlapping the meeting-point of all three triangles).

The industrial reserve army is composed of the labor surplus that occurs when macroeconomic forces oblige workers to be unemployed. Area "A" represents the unemployed - members of the labor force who are actively seeking
employment but cannot find it (in the formal economy). The unemployed do not contribute to productivity and are believed to live off some previous savings. These persons were participants in the formal sector prior to a decline in economic activity that left them unemployed. Despite the fact that those in this sector are cyclically unemployed, they have the qualifications to be employed. There is hope that these workers will be reincorporated to the formal sector if the economy improves. Area "B" constitutes those workers who, discouraged by nonexistent jobs in the formal sector, turn to informal activities. The members of this sector are said to be there temporarily. However, as informal workers they are contributing to unreported production in the economy.

The next triangle consists of people in the marginal pole - outside the informal sector and the industrial reserve army. Individuals in this area are peripheral to the industrial economy. Generally, its members are unskilled workers with no education or training that could facilitate their entry into the formal sector. [Sub-sector "C" is made of those individuals completely marginalized]. People who do not contribute to output - beggars are examples. The part of the marginal pole triangle that is employed in informal activities, sub-sector "D", includes mainly migrants from rural areas. As previously described, these people lack the education, skills or training to find
employment in the formal sector. Thus, in order to subsist they find employment in the informal sector.

The formal sector embodies all those workers holding full time or part time jobs. Those workers whose only means of income is the employment in the "modern" economy are represented by area "E." Finally, area "F" includes those workers who, besides having a job in the formal sector want to supplement their salaries by "moonlighting", finding additional employment in the informal sector.

I believe the diagram is very helpful in clarifying the whereabouts of the informal sector within the framework of the whole system. However, if one criticism could be made to Nattrass' description of the diagram it would be - he leaves the impression that all individuals view employment in the formal sector as a goal and aspiration - which does not always holds true. In the case of Bolivia other researchers have pointed out that informal activities can be so lucrative that their members are reluctant to work in the formal sector - under government regulation. Jorge Lazarte is among those writers who believes that not everyone in the informal sector is there for subsistence or need. Many citizens take part in it because they find better and more lucrative employment and income possibilities. For example, large producers in Buenos Aires Avenue (an avenue well known in La Paz -Bolivia's capital- for its informal activities), are not there for reasons of survival, since they live
better than many who are employed in the formal sector. (Lazarte 1987) Many involved in coca growth and cocaine production also enjoy advantageous positions in the economy.

Theoretical Discussions

In the existing literature about the informal sector several theories have emerged. Some theories attempt to provide possible explanations for this sectors' formation, others give a differing viewpoint on what the informal sector encompasses, yet others are concerned with perspectives for the future of this sector. The myriad of aspects contributing to the formation of this sector were discussed at the beginning of this chapter. In what follows, four common theoretical discussions are presented. These represent diverse views on a common concern - the informal sector.

Various economic theories have evolved throughout the years attempting to explain how economic systems operate. At the same time, these theories have elaborated policies that would ensure a prosperous system. To see how the informal sector operates within these differing economic theories they have been grouped into four categories (Gerry 1987).

Classicals

The classical, or neo-classical, economic theory is based on the liberation of markets from state intervention.
According to its ideological founder Adam Smith in the late 18th century the role of government in economic matters should be limited. Government should let the market forces of demanders and suppliers, driven by their own self interest, determine economic activities. With this theory in mind, participation in the informal sector would probably be minimal because there would be less unemployment in formal markets - unemployment caused by minimum wage legislation for example. Furthermore, without government intervention, in the absence of price freezes (price controls) real prices of products and resources would not be altered. Therefore, once again, economic activity would show slight or no signs of an informal sector. Neoclassical thinkers are strong advocates of the liberation of markets. In their belief the problem rests with the state and its intervention in economic activities. One must consider that a decrease in formal unemployment caused by government intervention would alleviate the burden of the informal sector, but by no means would eliminate it.

Factors other than government intervention in the economic aspects of the formal sector also affect the size and relevance of the informal sector. Factors such as the nation's large economic dependence on industrialized nations, its small industry, and its inability to educate and integrate all of its citizens play also consequential roles in informal activities.
Reformist

These theories call for a system of protectionism. "The reformist school, championed by the ILO and the World Bank, sees the informal sector as having a vast potential for employment creation and growth and recommends government aid to facilitate this" (Nattrass 1987, 862). They call for increased government intervention in the economy to protect those less able to protect themselves - the poor. In this sense, protectionism would apply to members of the informal sector. On one hand, it could present them with programs of financial aid as well as with more opportunities of employment. On the other hand, it could stop the prosecution of informal activities and instead encourage the informal sector's growth with links to the formal sector. This reformist belief seems, however, a naive approach to the growing problem of informality in Bolivia. A major cause in the formation of an informal sector, as explained earlier, was the corruption of the State and its legislators; consequently, more intervention of the State in the Bolivian case would not alleviate, but rather exacerbate the growth of the informal sector in this country.

Marxist

The Marxist view of an economic system is one in which a deep contrast exists between capitalist producers and those who are not. Capitalists are said to have control of the formal market system. Members of this system do, in turn,
one of two things: they either create surplus labor by artificially impeding the entrance of rural workers to this sector, thus creating a "reserve army" of the unemployed, or they use formal sector workers by paying them exploitive salaries. In both situations capitalist activities take advantage of the poor. For instance, in the former situation, the large pool of unemployed workers lacks compensation of any kind. When members of the "reserve army" of the unemployed turn to the informal sector for employment, their participation in this sector suppresses even more the salaries of those in the formal sector.

... the informal sector acts solely as an associated method to reduce production costs such as labor and also to free the formal sector of a social responsibility ... (Cartaya 1987, 82).

The Marxist approach seems more relevant to the Bolivian experience but data on employment and wages of informal and formal sectors would be consequential to support its relevance.

Populist

This theory is based on anti-industrialism. It simply reveals a preference of small self-owned or family oriented enterprises over large capitalist modes of production. Under this viewpoint informal activities are chosen to exist and endure capitalistic threats. This theory is not generally observed as being very relevant since the problem is said to be in the informal sector's imposed anomalous development rather than in a chosen or planned growth.
After evaluating these theories it can be concluded that the Marxist theory seems to have more validity in the Bolivian example. Nevertheless, an eclectic view, all theories taken together, could provide a better contribution to how the system works.

**Theoretical Perspectives**

In 1973, a publication by the anthropologist Hart shed light on the concept of informality. At that time the problem represented a sector who employed a large part of the labor force in jobs which did not resemble or comply to the laws of a formal capitalistic economy. Since then various studies have been published, mainly concerning informal activities in Third World countries. Moreover, each additional article presents an increasing concern not only with the grounds for this sector's formation, but also with the growth or perspectives for growth that this sector has displayed. The following presentation is based mainly on Richard Hosier's (1987) study of growth perspectives in Kenya's informal sector. Two perspectives are generally accepted as theories concerning the future of the informal sector: "evolutionist" or "involutionist."

**Evolutionist**

An evolutionist, also called a developmentalist, theory describes an informal sector composed of small-scale, efficient entrepreneurs who compete in unregulated markets to sell their goods and services. This sector shows
potential for growth by increasing the number of workers and income generation. This sector's existence signifies a tool for the alleviation of poverty - it can provide for the basic needs of the poor. Workers within this sector are permanently committed to it; consequently, this aspect of the economy will continue to exist. A propitious effect of the permanence of this sector would be the chances it provides for the unemployed, but even more so for the ability of these workers to grow and prosper in this sector. This theory seems to be in accord with the people involved in the cultivation of coca leaves and their transformation into cocaine. Under this theory the members of the informal sector can take advantage of significant income-earning opportunities. In any case, the governmental support of this sector would be beneficial for the economy according to "evolutionists." Given that it has potential for production, income, and employment generation

... instead of hindering informal sector production, the best approach for authorities is to give support, in terms of credit or training, to the informal sector (Eades, 203-18).

Involutionist

An involutionist, or marginalist, theory describes the informal sector as a subordinate form of production within the capitalist mode of production - a sector exploited by the formal sector and incapable of capital accumulation. The informal sector is said to consist of petty commodity producers dominated and exploited by the formal sector.
Involutionists state this sector has arisen because of the barriers to entry in the formal sector. Barriers which characterize an underdeveloped system controlled by international capital. The members of this sector commit themselves to living in eternal poverty. Expansion of this sector, from an involutionist perspective, would be considered calamitous since it simply stretches poverty and allows it to pervade. From this perspective:

Attempts to stimulate informal sector growth will not redistribute income, rather maintain ever larger number of workers at the margins of subsistence (Hosier 1987, 386).

The involutionist position states that the informal sector is a natural remnant formed in the transition from a precapitalist to a capitalist form of production. Because of the capitalist domination, any attempt to promote the informal sector would result in the intensification of labor exploitation and the extension of poverty. Even though it temporarily solves the problem of unemployment, it is not a long-run solution to it. This sector possesses the potential only to maintain more workers at a lower standard of living.

**Dualistic Approach to the Economy**

The use of a dichotomous model has helped conceptualize economic systems by describing them as having two essentially separate and autonomous components. A dualistic approach produces a dichotomy between an informal and a formal economic sector. The distinction between these two
sectors is found in their disparate characteristics and activities (Rogerson 1985). Figure 4 classifies the distinct features of both sectors.

<table>
<thead>
<tr>
<th>Informal Sector</th>
<th>Formal Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of entry</td>
<td>Difficult entry</td>
</tr>
<tr>
<td>Indigenous inputs</td>
<td>Overseas inputs</td>
</tr>
<tr>
<td>Family property predominates</td>
<td>Corporate property</td>
</tr>
<tr>
<td>Small scale of activity</td>
<td>Large scale of activity</td>
</tr>
<tr>
<td>Labour intensive</td>
<td>Capital intensive</td>
</tr>
<tr>
<td>Adapted technology</td>
<td>Imported technology</td>
</tr>
<tr>
<td>Skills from outside school system</td>
<td>Formally acquired (often expatriated) skills</td>
</tr>
<tr>
<td>Unregulated/competitive market</td>
<td>Protected Markets</td>
</tr>
<tr>
<td></td>
<td>(e.g. tariffs, quotas, licensing arrangements)</td>
</tr>
</tbody>
</table>

Figure 4. The I.L.O.'s distinction between the informal and formal sectors. I.L.O. (1972): 6.

A dichotomy of "Formal/Informal" modes of economic activity have been adopted in the early seventies. This "two-sector" approach was derived from the recognition of modern and traditional sectors in the economy. The modern sector is said to have evolved with the introduction of new and advanced technologies as well as with foreign influence and investments. The traditional sector is, on the other hand, made up of those economic agents which existed prior to the capitalist invasion and resisted it. (Bromley 1978)

Often this dualistic method represents the modern sector as relatively profitable and privileged while the other as relatively disadvantaged (Peattie, 852).

The "modern" firms are often seen as favored and given
special access by government; the other firms, however, may derive advantages from escaping regulation.

... modern capitalist enterprise enters into a backward society, and until such time as it comes to transform the backward society (perhaps an extended period) makes for a sharp contrast between the two types of economy (Peattie 1987, 852).

The terminology "informal sector" and "formal sector" now describe the traditional and modern forms of production. Before these terms were widely accepted and recognized other scholars referred to them in diverse ways. (e.g. unprotected-protected, bazaar economy, firm-centered economy, lower circuit-upper circuit, peasant production-capital production). Even though the dualistic approach to recognizing components of economic activities is the most popular in the literature, it has some flaws which are worth pointing out and discussing. The next section takes care of not only this point but it looks into a broader insight on criticisms made to the literature on the informal sector.

**Criticism of the Literature on the Informal Sector**

Some deficiencies have been pointed out by Bromley with regards to the manner in which the concept of informal sector is handled. One criticism regards as equivocal the common presentation of informal and formal sectors as separate and independent of each other. Studies done in Third World countries have disproved the previous dichotomous definition. For instance, Sethuraman writes on studies done in Africa, particularly Ghana, where he
describes intersectoral and intrasectoral linkages existing between the formal and informal sectors of that economy. Sethuraman describes the interaction between these two sectors demonstrating certain dependency among them. That is, forward and few backward linkages within the informal sector and with the formal economy.

... there is a significant strengthening of such linkages as the size of the informal sector firm increases. In these cases backward linkages with other informal sector enterprises are also much stronger (Sethuraman 1977, 347).

It is possible to recognize two differing sectors in the economy, specially in underdeveloped nations, but to say that these sectors are independent is incorrect. Bonds exist between these sectors and not only in terms of production or distribution, but more so in the formation and domination of one sector as a consequence of the other.

A second deficiency in the literature is the tendency to address it as if the phenomenon would only be present in urban areas. It is true the informal sector stands out more in urban areas when contrasted with modern ways of production, but this certainly should not mean that rural areas don't experience informal sector activities. Another criticism is the often depiction of the informal sector as having a present but not a future. Bolivia's informal sector developments demonstrate otherwise. Yet another censure is the tendency to consider the informal sector as synonymous to the poor. Again, in the case of Bolivia, it
was shown that within the informal sector some may operate at survival levels but others are engaged in very profitable endeavors. Therefore, the tendency to make that claim also reflects an erroneous perception of the informal sector. An additional inadequacy is the proclivity to group the economy into formal/informal and forget the role of the government or other actual components of the national system. Derived from these weaknesses in the literature a supplemental deficiency arises—the belief that a single policy prescription will do away with the heterogeneous dilemmas it presents.

Keeping all the above mentioned flaws, of the literature on the informal sector, in mind one can perceive that the informal sector is not a simple characterization of a sector. Furthermore, it is a functional description of human interactions which concerns diverse areas of studies. Economically speaking, the measurement of economic activity, employment prospects, income production, and the sector's functioning are of concern. In terms of social issues, the marginality of this sector's members and the treatment of rural migrants is of importance. Moreover, the fiscal and regulatory aspects are also major concerns. These include legality or illegality of its activities in terms of tax collections, crime, child labor, and dangerous work environments.

This presentation should provide an insight into the
concern with the growth of the Bolivian informal sector for the various reasons presented throughout its discussion. However, the purpose of this thesis is to measure this sector in a macro setting.


CHAPTER III

METHODOLOGY

Statement of Purpose

The measurement of the Bolivian informal sector's growth involved an indirect macroeconomic approach. In order to discuss the growth of the informal sector in a quantitative manner a model was constructed to implicitly show its development. The method selected was one that would run a regression on gross national product (GNP) for some years prior to 1980. The parameters obtained from this regression were then submitted to a model that would forecast the values of a predicted GNP for the years 1980-1985. The standard deviation from the regression was subtracted from the predicted values of real GNP, to provide a more accurate estimate. Ultimately, the size of the informal sector was found as the difference between the forecasted GNP after the adjustment and the formal sector's reported GNP. This model was built under the assumption that the forecasted GNP would provide an unbiased estimate of GNP growth from 1958-1985. The gap created when the predicted and the actual GNP were compared were used to derive estimates of the informal sector.

Selection of Variables

The dependant variable selected was Gross National
Product (GNP). The criteria for selecting the independent variables was to select some financial, economic, and demographic statistics to aid in forecasting gross national product activity. The variables thought to contribute most significantly to the development of GNP included employment, health, demographic statistics, net exports, tin prices and exports, exchange rate, interest rates, and growth of money supply to name a few. The regression model was to show the ability of independent variables to explain behavior in formal sector's GNP. The variables selected were to represent Bolivia's economic activities.

Data Collection

The data used for this study were compiled, with only one exception, from the International Financial Statistics (IFS) Yearbook for 1986, a publication of the International Monetary Fund (IMF). Data on tin prices were obtained from American Metal Market in a Standard and Poor's publication. The observations are annual and cover the years 1957 through 1985, inclusive. Two multiple regression models were developed. Both models were elaborated with nominal data transformed to real data through the use of the Gross Domestic Product (GDP) deflator. The GDP deflator was used instead of the Consumer Price Index (CPI) due to errors detected in the values for the CPI. Existing employment statistics were not included in the models because observations for many successive years were not available.
The same held true for statistics pertaining to health and education. The problems incurred while gathering these statistics were that either the observations available did not date back far enough for this thesis' purpose or that their observations were discontinued. In some instances the method used to collect these observations (in the source used) changed and the categories were either omitted or grouped with some other statistics.

Given the limitations imposed on the availability of the data the variables selected and included in the regression entailed GNP as the dependent variable, with money supply, exchange rate, tin prices, and net exports minus tin exports as the independent variables.

One of the models built contained real GNP as the dependent, left-hand side, variable regressed against the real growth rate of money supply, the prices of tin, the exchange rate, and the real value of net exports minus tin exports as independent, right-hand side, variables. Basically, the model was constructed by running a regression for the years 1957 through 1979, inclusive. After adjusting for autocorrelation, the parameters obtained from this regression were used in forecasting the values of GNP for the years 1958 through 1985.

Equation (1) shows the relationship between these variables.

$$\text{RGNP} = \beta_0 + \beta_1 \cdot \text{RMS}_t + \beta_2 \cdot \text{EXCHRATE}_t + \beta_3 \cdot \text{TPP}_t + \beta_4 \cdot \text{RNOTINET}_t + \epsilon_t$$  (1)
for $t = t_1$ to $t_2$

where: $\beta_0, \ldots, \beta_4 =$ the parameters obtained from the regression

$\text{RGNP}_t =$ real gross national product $t$ expressed in Bolivian Pesos.

$\text{RMS}_t =$ real growth rate of money supply in Bolivian Pesos.

$\text{EXCHRATE}_t =$ exchange rate in terms of how many Bolivian Pesos it takes to buy a dollar

$\text{TPP}_t =$ tin prices quoted by the New York exchange in dollars and converted to pesos by multiplying by the exchange rate

$\text{RNOTINET}_t =$ real value in Bolivian Pesos of net exports (exports - imports) minus tin exports. Tin exports are subtracted to avoid multicolinearity among this variable and tin prices

$\epsilon_t =$ error terms.

The other model performed basically the same test except for the variance in the monetary terms in which the model was expressed. In this instance the model was expressed in dollars whereas the previous model was expressed in Bolivian pesos. This was achieved by dividing the value of real GNP by the exchange rate (expressed in Bolivian pesos per dollar). Necessarily all right-hand side variables were also expressed in dollars by submitting them to the same transformations; that is, dividing each variable by the exchange rate. After this transformations the model consisted of the variables as shown in equation (2) below.
\[ \text{RGNPX}_t = \beta_0 + \beta_1 \cdot \text{RMX}_t + \beta_2 \cdot \text{TP}_t + \beta_3 \cdot \text{RNOTINEX}_t + \epsilon_t \] (2)

for \( t = t_1 \) to \( t_2 \)

where: \( \beta_0, \ldots, \beta_4 \) = the parameters obtained from the regression

- \( \text{RGNPX}_t \) = real gross national product divided by the exchange rate. Expressed in dollars
- \( \text{RMX}_t \) = real growth of money supply divided by the exchange rate
- \( \text{TP}_t \) = tin prices expressed at current market prices, dollars
- \( \text{RNOTINEX}_t \) = the real value in dollars of net exports minus tin exports
- \( \epsilon_t \) = error terms.

Both models used time series data which made obvious the need to correct for correlated errors. The problem of autocorrelation was expected and the application of the Cochrane-Orcutt method reduced this disturbance. After the regression model was run, the first order autocorrelation coefficient obtained from it was then used as rho \((\rho)\) and applied to the same regression. The same regression was run over again until the value of \( \rho \) used in the regression provided a Durbin-Watson statistic that was significant under a different level of significance. Once the autocorrelation was accounted for, the parameters of these regressions were used to forecast the predicted real GNP. The forecasted values of real GNP were adjusted by subtracting the residual’s standard deviation. In this manner a more realistic forecast was obtained, which
subtracting reported values of real GNP from it accounted for informal sector activity.

**Summary**

The methodology used in this study includes time series multiple regression and forecasting. First, two separate multiple regressions were performed on the years 1957 through 1979 using real gross national product (GNP) in Bolivian pesos as the dependent variable in one and real gross national product in dollars in the other. The independent variables consisted of money supply, exchange rate, tin price, and net exports minus tin exports. Second, the parameters obtained from these regressions, after correcting them for autocorrelation, were used separately in the forecasting of real gross national product for the years 1980 through 1985. Finally, the values obtained for the predicted GNP in both models were adjusted by subtracting the standard deviation of the regression error terms. The growth of the informal sector could be obtained by comparing the adjusted predicted values of real GNP to the actual real values of GNP.
CHAPTER IV

RESULTS

This chapter contains a presentation of the results of one of the regression models discussed in the previous chapter. The models' results and an interpretation of their significance follows. The explanation of the outcome, of the regression and forecast, are presented through a historical view of the nation's political environment and its economic policies.

Model of Best Fit

The two models contemplated in Chapter III regressed real gross national product (GNP) on economic variables like money supply, exchange rate, tin prices and net exports minus tin exports. One of the models presented the results in Bolivian pesos whereas the other expressed it in U.S. dollars. Since no considerable difference between the models was evident in terms of the results, the model that described the results in Bolivian pesos was selected.

It was expected that the independent variables of each model show explanatory significance in GNP behavior. In terms of the signs of the parameters, it was expected that all, with the exception of the exchange rate, be positive. The model that presented real GNP in dollars stated:

\[ RGNP_{Xt} - \beta_0 + \beta_1*RMX_t + \beta_2*TP_t + \beta_3*RNOTINEX_t + \epsilon_t, \]
real GNP regressed against real growth of money supply, tin prices, and net exports minus tin exports. The model whose results are explained in this chapter state:

$$RGNP = \beta_0 + \beta_1 * RMS_t + \beta_2 * EXCHRATE_t + \beta_3 * TPP_t + \beta_4 * RNOTINET_t + \epsilon_t$$

The values of ($\beta_0 \ldots \beta_4$) parameters will include transformations made through iterative Cochrane-Orcutt procedure (Kmenta 1986, 314-317, and Johnston 1984, 366). This method was used to correct for autocorrelation.

Autocorrelation

After using the Cochrane-Orcutt procedure, the value of the Durbin-Watson statistic was 1.557. The Durbin-Watson statistic tests the assumption that the error terms follow a normal distribution. The hypotheses are:

- $H_0$: no correlation exists
- $H_a$: positive autocorrelation exists

The testing procedure shows inconclusiveness if the DW falls in $d_L < DW < d_U$. Four independent variables and 22 observations were used in the regression. Following the table of Critical Values for the Durbin-Watson DW Statistics (Kvanli, Guynes, Pavur, 1986, 833) at a .05 level of significance, the lower and upper values are .96 and 1.80, respectively with the value obtained from the regression being 1.557. Even though the DW statistic is inconclusive in this range, it does not necessarily constitute a burden in the explanatory significance of the model.
Parameters

The parameters for money supply, net exports, and tin prices were expected to be positive. Table VIII shows the values of all parameters and their significance in the model. The estimate of these three variables show a direct influence in GNP's behavior. An increase in the value of any of these independent variables would cause an increase in the value of real GNP. In the case of the exchange rate, however, the exchange rate parameter being positive developed some concern. Generally, one would expect an inverse relationship between real GNP and the exchange rate. That is, the higher the value of the exchange rate (the larger the number of pesos to buy a dollar) the lower the value of the gross national product, and vice versa. In this case the situation was just the opposite. An article by Sebastian Edwards (1989) commented on the impact of exchange rates, mainly their devaluation, in Latin America. His conclusions and findings revealed that the effects of a currency's devaluation will not always or necessarily show improvement in the foreign sector, hence, growth in real GNP. Furthermore, he certified that the effects of a devaluation in the economy will be highly dependent on the macroeconomic policies of that country's government, for a period of one to three years before and after a devaluation. Observing the raw data on Bolivia's money supply and exchange rates, as well as on a correlation matrix between these two
variables, it was visible that the positive sign of the exchange rate parameter could be attributed to this situation. Loose fiscal and monetary policies at, before, and following devaluations of the Bolivian peso caused increases in the value of RGPN.

**TABLE 6**

| Variables                              | Parameter Estimates | Prob > |T| |
|----------------------------------------|---------------------|--------|--|
| Intercept                              | 4.707477 (.5983)    |        |  |
| Real Money Supply                      | .544115 (.0001)*    |        |  |
| Tin Price                              | .090527 (.2395)     |        |  |
| Real Net Export minus Tin Export       | .062247 (.1851)     |        |  |
| Exchange Rate                          | 1.592659 (.0284)*   |        |  |

An * marks the significance of the variables in the model.

Looking at Table IX it can be observed that tin price and the value of net exports minus tin were not significant contributors to the regression equation. Despite this, the tin price variable was kept in the model. The relevance of tin to the Bolivian economy made this variable an indispensable component of the regression. Given that tin is the largest export of Bolivia, it definitely influences the level of GNP; furthermore, how much tin is exported depends largely on the price of tin. Tin is important enough to include its price as an explanatory variable of GNP. The other variable under question, net exports, is a
component in the measurement of GNP and as such theory asserts its relevance in GNP calculation. Theoretically both variables are involved in the process and therefore are included in the model. Errors of measurement or in the data could be the reason for their lack of significance. In terms of the R-Square, which reflects the variation in the dependent variable accounted for by a linear combination of all the independent variables, it was .995. This result was expected since the model made use of time series data. The F-Value was 725.307, again expected to be a large number for the same reason that the R-square value was expected to be high.

Multicollinearity

Multicollinearity between variables was observed with the help of a correlation matrix. The variables of exchange rate showed .767 correlation with the money supply variables. As explained earlier this does not necessarily represent a problem, but rather an explanation of the effect of exchange rates in real GNP through the use of monetary policy. The other set of correlated variables was the exchange rate and tin prices. Given the relevance of tin prices to the Bolivian economy, a decision was made not to drop this variable out of the model.

Once the regression parameters were gathered, they helped create a forecasting model that would predict the values of real GNP for the years 1958 through 1985.
RGNPt = 4.707477 + .544115*RMS_t + .090527*TPP_t + .062247*RNOTINET_t 
+ 1.592659*EXCHRATE_t + \epsilon_t
The values from the model were then compared to the actual values of real GNP (to create the variable "I") as seen in the following equation.

Real GNP predicted - Real GNP actual - \epsilon = I \quad (3)

At this point it is necessary to recall the purpose of this project. The growth of the Bolivian Informal Sector is estimated through a macroeconomic model. The variable "I" represents the deviation of the formal sector's real GNP from a predicted or natural real GNP. It accounts for most of the informal sector's production. However, the standard deviation from the regression's residuals must be subtracted from the equation to have a more realistic approach. This is done in the equation below:

Informal Sector - I - standard deviation \quad (4)

Consequently, the informal sector is explained by taking a predicted value for real GNP growth minus the actual value of real GNP minus the standard deviation of the regression residuals. Table IX shows the results obtained from the forecast (RGNP1HAT), the data on actual real GNP (RGNP), and the size of the informal sector (INFSEC).
<table>
<thead>
<tr>
<th>YEAR</th>
<th>RGNP1HAT</th>
<th>RGNP1</th>
<th>INFSEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1958</td>
<td>40.0835</td>
<td>41.772</td>
<td>-6.33712</td>
</tr>
<tr>
<td>1959</td>
<td>43.4157</td>
<td>41.758</td>
<td>-2.99092</td>
</tr>
<tr>
<td>1960</td>
<td>43.7901</td>
<td>46.392</td>
<td>-7.25052</td>
</tr>
<tr>
<td>1961</td>
<td>46.0433</td>
<td>47.115</td>
<td>-5.72032</td>
</tr>
<tr>
<td>1962</td>
<td>46.4949</td>
<td>47.748</td>
<td>-5.90172</td>
</tr>
<tr>
<td>1963</td>
<td>51.5213</td>
<td>50.893</td>
<td>-4.02032</td>
</tr>
<tr>
<td>1964</td>
<td>56.4526</td>
<td>52.893</td>
<td>-1.08902</td>
</tr>
<tr>
<td>1965</td>
<td>59.2096</td>
<td>55.039</td>
<td>-0.47802</td>
</tr>
<tr>
<td>1966</td>
<td>67.3532</td>
<td>59.398</td>
<td>3.30657</td>
</tr>
<tr>
<td>1967</td>
<td>67.0721</td>
<td>62.411</td>
<td>0.01247</td>
</tr>
<tr>
<td>1968</td>
<td>71.2952</td>
<td>71.223</td>
<td>-4.57642</td>
</tr>
<tr>
<td>1969</td>
<td>72.6377</td>
<td>74.306</td>
<td>-6.31692</td>
</tr>
<tr>
<td>1970</td>
<td>78.2565</td>
<td>81.208</td>
<td>-7.60012</td>
</tr>
<tr>
<td>1971</td>
<td>83.1760</td>
<td>85.897</td>
<td>-7.36962</td>
</tr>
<tr>
<td>1972</td>
<td>98.6500</td>
<td>89.894</td>
<td>4.10737</td>
</tr>
<tr>
<td>1973</td>
<td>97.7273</td>
<td>96.241</td>
<td>3.16732</td>
</tr>
<tr>
<td>1974</td>
<td>98.2407</td>
<td>101.190</td>
<td>-7.59792</td>
</tr>
<tr>
<td>1975</td>
<td>93.54</td>
<td>108.036</td>
<td>-19.1446</td>
</tr>
<tr>
<td>1976</td>
<td>110.84</td>
<td>114.876</td>
<td>-8.68462</td>
</tr>
<tr>
<td>1977</td>
<td>117.91</td>
<td>118.250</td>
<td>-4.98862</td>
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<tr>
<td>1978</td>
<td>115.60</td>
<td>119.704</td>
<td>-8.75262</td>
</tr>
<tr>
<td>1979</td>
<td>126.30</td>
<td>120.278</td>
<td>1.373376</td>
</tr>
<tr>
<td>1980</td>
<td>140.03</td>
<td>116.300</td>
<td>19.08137</td>
</tr>
<tr>
<td>1981</td>
<td>132.76</td>
<td>116.253</td>
<td>11.85830</td>
</tr>
<tr>
<td>1982</td>
<td>525.65</td>
<td>105.825</td>
<td>415.1763</td>
</tr>
<tr>
<td>1983</td>
<td>1108.32</td>
<td>105.453</td>
<td>998.2183</td>
</tr>
<tr>
<td>1984</td>
<td>18336.86</td>
<td>105.331</td>
<td>18826.88</td>
</tr>
<tr>
<td>1985</td>
<td>3910654.60</td>
<td>102.402</td>
<td>3910547</td>
</tr>
</tbody>
</table>

The table above reveals rising values for the informal sector during the years 1979 through 1985. Some slight growth is also apparent during 1965-66, as well as, during 1971-72. It must be pointed out that even though growth in the informal sector is likely to be observed between years when the negative values obtained get smaller, the concern is aimed at the growing positive values of the informal sector.
sector. The following graph shows that between 1958 and 1979, only during the years previously pointed out, positive values of informal sector growth are observed. Furthermore, this increase is short lived and controlled in the succeeding years. The years 1979 through 1985 were not included in the graph due to the accelerated growth in this sector during this period. Figure 5 displays informal sector activity prior to 1980.

![Graph of Informal Sector Behavior](image)

**Figure 5.** Signs of Informal Sector Activity

Another way in which the growth or decline of this sector can be appreciated is by calculating the percentage change of the informal sector from year to year. Table X displays this information. The signs on the % change
columns are of particular importance. A negative sign reflects a decline in informal sector activity. That is, the value of the informal sector for the previous year was a smaller negative value than the value for the year under observation. No sign indicates growth of the sector, however, the growth does not reach positive values. A positive sign represents growth in the positive range of activities of the informal sector.

**TABLE 8**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>% CHANGE</th>
<th>YEAR</th>
<th>% CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1958</td>
<td></td>
<td>1972</td>
<td>+155.7</td>
</tr>
<tr>
<td>1959</td>
<td>52.8</td>
<td>1973</td>
<td>-176.9</td>
</tr>
<tr>
<td>1960</td>
<td>-142.4</td>
<td>1974</td>
<td>-140.3</td>
</tr>
<tr>
<td>1961</td>
<td>21.1</td>
<td>1975</td>
<td>-151.9</td>
</tr>
<tr>
<td>1962</td>
<td>3.2</td>
<td>1976</td>
<td>54.6</td>
</tr>
<tr>
<td>1963</td>
<td>31.9</td>
<td>1977</td>
<td>42.5</td>
</tr>
<tr>
<td>1964</td>
<td>72.9</td>
<td>1978</td>
<td>-75.4</td>
</tr>
<tr>
<td>1965</td>
<td>-56.1</td>
<td>1979</td>
<td>115.7</td>
</tr>
<tr>
<td>1966</td>
<td>+791.7</td>
<td>1980</td>
<td>+1289.4</td>
</tr>
<tr>
<td>1967</td>
<td>-99.6</td>
<td>1981</td>
<td>-37.8</td>
</tr>
<tr>
<td>1968</td>
<td>-36781</td>
<td>1982</td>
<td>+3401.1</td>
</tr>
<tr>
<td>1969</td>
<td>-38.0</td>
<td>1983</td>
<td>+140.4</td>
</tr>
<tr>
<td>1970</td>
<td>20.3</td>
<td>1984</td>
<td>+1725.9</td>
</tr>
<tr>
<td>1971</td>
<td>3.0</td>
<td>1985</td>
<td>+21354.8</td>
</tr>
</tbody>
</table>

As can be seen in the table above, growth in the informal sector is manifested largely during the eighties. However, some informal sector growth can also be observed in the years 66 and 72.

**Interpretation of the Results**

As was mentioned in Chapters I and II, the growth
of the informal sector has been the result of a variety of variables acting simultaneously, to decrease the value of the formal sector's GNP. A few of the variables mentioned, which significantly affect the growth of this sector, are: political instability, dependence on a single exporting industry, rural migration, and continuous borrowing from foreign countries. The results of the model constructed reflect notoriously the impact on the economy of periods of political turmoil. It would be meaningful to describe, briefly at this point, a political chronology of the years comprising 1958-1985. Figure 6 depicts this information.

1960-1964  Second presidency of Víctor Paz Estenssoro. Third presidency of Paz Estenssoro, however, a military coup led by Barrientos deposes him.
1964-1966  Barrientos governs along with Ovando.
1969      Vice President Siles Salinas becomes president but is later deposed in coup by Ovando.
1970      Ovando is removed by General Miranda who later is deposed by General Juan Jose Torres.
1971      Torres is overthrown in a violent coup by Hugo Banzer.
1971-78  Banzer rules from 1971-1973 with the support of the National Revolutionary Movement (MNR), a large and popular party. From 1974-1978 Banzer rules under military rule.
1979 Under fraudulent elections with no candidate receiving majority vote, Pereda declares himself president. He is later deposed by Padilla who calls for elections later that same year. Again no candidate receives a majority vote and Senate President Walter Guevara serves as interim president. Colonel Natush Bush overthrows Guevara to serve as president for 15 days. President of Chamber of Deputies, Lidia Gueiler, is named interim president.

1980 Lidia Gueiler is ousted in coup by Major General Luis Garcia Meza.

1981 Meza forced to resign in favor of General Bernal who later resigns in favor of General Torrelio.

1982 General Vildoso deposes General Torrelio in coup. Congress reconvenes and names Siles Suazo as president.

1985 Siles Suazo holds early elections and Victor Paz Estenssoro becomes president for a fourth time.

Figure 6. Brief Political Chronology (1958-1985)

The political instability of the mid 1960’s created a slight growth in the informal sector. The other evident growth of the informal sector occurred from 1971-1972. Explanation for this surge can be assumed to represent a lagged effect of the late 60’s and early 70’s economic disruptions. The most significant growth in the informal sector arose, however, during 1980-1985. In accordance with this growth is the political chaos that the country experienced between the years 1979-1982. In the short period of four years Bolivia had nine different presidents. The constant change of authorities and a large debt inherited from the Banzer regime, among other factors, gave rise to disastrous years of economic performance. Along
with the decline in the real value of goods and services produced in the formal economy, a deteriorating tin industry (due to a decline in world market tin prices) forced workers out of their employment in the formal sector. These workers, added to the increased number of migrants to the cities, were among the many that found employment in the informal sector. Thus, they caused alarming growth rates in this sector.

Summary

The regression executed, the forecast obtained, and, hence, the results captured in this project are valuable at least in the sense that they revealed the hypothesized growth in the informal sector. Hence, the null hypothesis tested in this paper can be accepted. It is worth reiterating, however, that a more descriptive model could have been possible if some essential variables could have been obtained.
CHAPTER BIBLIOGRAPHY


CHAPTER V

CONCLUSIONS

Review of the Hypothesis

The purpose of this thesis was to examine the growth of the Bolivian informal sector during the period 1980 through 1985. Given the econometric model used in the macroeconomic approximation of the growth of the informal sector, the results of this model failed to reject the hypothesis postulated. Therefore, the null hypothesis, stating that growth of the informal sector was evident during the eighties, was accepted. The results showed that, (perhaps not as accurately as one had hoped), there is a way in which the informal sector can be accounted for in a macro setting. If anything at all, it can be concluded that the violent political turmoil of the late seventies are reflected in the performance of the Bolivian economy during the eighties. Yet it must be mentioned that the rise of the informal sector, as measured in the model, reveals growth of informal activity beginning with 1979 and not with 1980 as it was earlier believed to be the case.

Analysis of Findings

Empirical evidence exists to assert that Bolivia experienced a drastic decline in the formal sector's productivity (in real values) during 1980-1985. A simple


Glance at GNP statistical data for this country would certainly make more than one person attribute the decline in real GNP to either a brutal destruction of resources or to a harsh economic depression. One explanation or the other seem plausible, but the true reason for the sharp decline is not as simple as speculated. The growth of an informal sector, well known to Bolivians, accounts for most of GNP's presumed deterioration. Ever decreasing values of real GNP meant that the country was experiencing a recession on the one hand, but most indicative on the other hand, was the reality that workers were leaving the formal sector to find employment in the informal sector. While the activities of the formal sector are reported, measured as an increase in unemployment and a decline in productivity, the fact that those workers are still being productive is omitted. In this manner, the formal sector's statistics undervalue the nation's true productivity levels and its rates of employment. Thus it makes a recession look, on paper, as an unparalleled economic depression.

The surge of the informal sector is a blessing and a curse. Informal sector workers increase the efficiency of resource utilization through their ability to make use of discarded materials, either by reselling them or by developing them into other products. In addition, innovation also plays an important role since in most instances informal sector workers make things at a fraction
of the cost of importing them. (Sethuraman, 347)

Furthermore, this sector is a blessing because the unemployed or underemployed can find in it means for survival. The informal sector plays an important role in employment and income generation. It has made the assimilation of rural migration possible and it has contributed to potentially higher remunerations. However, the activities within the informal sector are also a curse for the following reasons: the existence of an informal sector supports, through the formation of a large pool of unemployed or underemployed workers, an artificial wage repression in the formal sector. Furthermore, the income possibilities within the informal sector are, for the most part, low and require more than a full time (40 hours) week's work. Besides the low pay and long hours of work, there is also the disadvantage of the lack of benefits that a similar job in the formal sector might provide (Social security, medical insurance, and so on).

The informal sector serves the role of automatic stabilizer in the economy. It absorbs, in times of recession, the surplus labor of the formal economy and allows its members to generate some income. However, there is a problem with this stabilizer. The kind of employment it generates is meant to be only temporary while economic activity in the formal sector is down. Nonetheless, the Bolivian experience shows it to be a way of life and a
permanent mean of survival. The results of the model utilized to display the concern of the informal sector's growth are significant; therefore, some possible solutions need to be addressed. The following section offers policy implications and recommendations for possible solutions to reduce the size of the Bolivian informal sector.

Comments and Recommendations for the Informal Sector

The hypothesis tested indicates that indeed accelerated growth of the informal sector occurred during the eighties. This anomalous development posed concern for various reasons, but mainly for the inability to accurately describe the country's true contributions to production. Even though the emphasis of this paper is on the failure of National Accounts to reveal the productivity in this nation, accounting was not, under any circumstance, considered an end in itself.

With regards to solutions to the existing informal sector, some recommendations follow. It is essential to emphasize that the problem of the informal sector's growth will require more than a single policy measure. Given the various activities that this sector entails, the solutions will also have to be addressed individually. The only comment that applies to Bolivia as a whole is the desperate need for a calm political environment. This first observation, given Bolivia's political history, may seem too ambitious; nonetheless, it is necessary that a relatively
undisturbed political climate be established.

Severe punishment should be implemented to discourage, to some extent, the illegal and negative endeavors of the informal sector. The production and sale of cocaine, despite it being a large contributor of gross domestic production, should be condemned and done away with, not because of its income potential but because on moral grounds. Any kind of income generation that involves harming society ought to be repelled.

The positive endeavors of the informal sector call for diverse policies depending on the activities involved. Yet a majority of scholars indicate the assimilation of the informal sector by the formal sector to be the best solution. The most successful way of achieving this would be by strengthening forward linkages of the informal sector. "In order to strengthen these links more cross-sector subcontracting should be promoted." (Sethuraman, b, 264) Large scale production may enable informal sector producers to exploit some economies of scale. The following suggestions are made:

1. The informal sector should be organized through the establishment of co-operatives with direct access to formal markets. This would ensure control of the business by the owners and at the same time enable them to interact with other entrepreneurs.

2. Credit to the informal sector should be enhanced to
promote vertical growth.

3. Technology and scientific development should be transferred or diffused to the informal sector. Thus, improving product quality, raising productivity, and standardizing productivity.

4. On the job training should be facilitated to refine existing skills and develop new ones.

All of the above listed recommendations would have the effect of encouraging informal sector activities, while connecting them to formal markets in a way not exploitive of either sector but rather as complementary to their activities. Hence, given a relatively serene political atmosphere, the implementation of the suggested policies would increase the accountability of informal sector's production contribution. Likewise its effect on migration might also be positive. Rural workers may not find the need to migrate to the cities if they can find jobs that provide them with skills and training while using better technology (especially in agriculture and mining).

**Summary**

The problem which the atypical growth of the informal sector represents, can be ameliorated through the implementation of programs and policies that will incorporate the positive endeavors of the informal sector to the formal economy. These programs should consist of training, technology and credit facilitation to informal
workers. Strengthening of forward linkages should be encouraged in the pursuit of better ties between the formal and informal economies. As it pertains to the negative endeavors of the informal sector, these must at any time be discouraged and condemned.
CHAPTER BIBLIOGRAPHY


BIBLIOGRAPHY


