AN ECONOMIC ANALYSIS OF INTERNATIONAL LABOR MIGRATION : THE CASE OF THE PHILIPPINES

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AN ECONOMIC ANALYSIS OF INTERNATIONAL LABOR MIGRATION: THE CASE OF THE PHILIPPINES

（国際労働移動の経済分析 ： フィリピンのケース）

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Maraming salamat po!

Maria Reinaruth Desiderio Carlos

Ashiya City, Hyogo
Japan

Chapter 1

Introduction

This research study deals with the economic analysis of international migration from the point of view of the sending country in the process of economic development. Specifically, it aims to give light on the following issues:

(1) Why do people migrate?

(2) Who migrates and who does not?

(3) How will international migration impact on the economic development and growth of the sending country?

(4) How will international migration affect the income distribution in the sending country?

We will attempt to answer these questions by using theoretical frameworks derived partly from studies in rural-urban migration, and by providing empirical support using data from the Philippines.

The movement of people across geographic borders is a phenomenon that has been going on since the olden times. Although we can treat mobility as a natural human response to the different dimensions of life, like social, cultural and political, we cannot also deny that as "*homo oeconomicus*", much of human mobility, especially of labor, take place in search of better economic

opportunities. Moreover, from the macroeconomic point of view, especially in this age of economic integration and regionalism, the freer international movement of labor has been regarded as an efficient way of allocating resources and distributing wealth among nations. For the source countries in particular, it is looked upon as an instrument for growth, albeit in the short run and despite the unsettled issue of its effectiveness as an economic policy.

Unfortunately, however, despite its relevance in the modern economic society, the study of international labor mobility has received less attention compared to international capital movement or rural-urban migration, and much more so from the point of view of the source or sending country. The existing theories on capital mobility, rural-urban migration or analysis from the point of view of the host country, however, cannot be fully employed in analyzing international labor movement because of inherent differences in their nature and properties.

This study therefore stems from the realization of the important and complicated relationship between international migration and economic development as well as the lack of and the urgent need for comprehensive economic analysis of the subject matter.

We choose the Philippines as the area of study because of its large volume of international migration, its long history of international migration and its government's active role in promoting overseas employment as an economic development policy. The Philippines is the second largest labor exporter in the world, next only to Mexico. Majority of Filipino emigrants are land-based and sea-based overseas contract workers (OCWs) who seek

temporary employment abroad but plan to return to the Philippines after their contract expires. The rest are permanent emigrants who go abroad to join relatives who are emigrants themselves or are citizens of the host country.

The Philippines has a long history of emigration dating back to the colonial times. Under the Spanish rule in the 1700s, Filipino labor went to Mexico to work in plantations. In the early 20th century, under the American colonial rule when there were no immigration restrictions for nationals of US colonies, many Filipinos went to work in Hawaii, California, and Alaska. As a result, by 1940, the number of Filipinos in the United States reached 70,000. Until now, the United States is still the major destination of permanent immigrants.

On the other hand, after the Second World War and the independence of the Philippines from the United States, Filipinos began to work in Asian countries as contract workers in the construction and service industries. In the 1970s, the Middle East was the major destination of Filipino OCWs. However, since early 1980s, the number of Filipinos going to non-Middle East destinations, particularly Asia, has significantly increased both in number and as a percentage of the total number of overseas contract workers (OCWs). In the year 1999, a total of 837,020 documented OCWs and 40,508 permanent emigrants left for abroad.

In the background of the increasing trend in international migration from the Philippines is the country's economic conditions that had gone from being the "leading economy in Asia" to become the "sick man of Asia" in the

dawning of the 21st century. In the 1950s, the Philippines had one of the highest (if not the highest) per capita GNP in Asia. Since then, however, the countries of Northeast Asia have overtaken the Philippines' economic position in the region. From early 1980's, the dramatic economic growth of the other Southeast Asian economies has been widely contrasted to the serious economic stagnation in the Philippines.

Throughout this period of economic difficulties, international migration has been treated as a major response to economic problems. Because of their perceived invaluable contribution to the economy, the Filipinos abroad are hailed as the "unsung heroes and heroines" of the country. While many developing countries have turned to foreign investors, the Philippines, though not completely voluntarily, has opted for encouraging its labor to work abroad to generate foreign currencies and expand domestic demand and production through their remittances.

In view of the continuously increasing number of Filipino migrants abroad and the government's active promotion of international migration as a crucial part of its employment, external sector and income policies, the Philippines is indeed an area of great interest in evaluating the linkage between international migration and economic development.

The rest of this study is divided into 6 chapters, as follows:

Chapter 2 is an overview of recent theoretical and empirical studies on the causes and consequences of international migration and remittances from the point of view of the developing source country. Unfortunately, research work on this study is still in the early stage, but the literature on rural-urban

migration is rich in theories that can be applied with some modifications even to international migration.

In chapter 3, we will give a descriptive, piecemeal analysis of international migration in the Philippines. It will make use of macroeconomic and survey data to create an over-all picture of international migration in the country. Specifically, we will (1) estimate the flow and stock of Filipino migrants and remittances, (2) identify the main attributes of Filipinos going abroad, or what is called in the literature as the selectivity of migrants, (3) link international migration with national economic development variables like employment, balance of payments and capital accumulation, and (4) give a brief summary of the Philippine government's policy towards international migration.

Chapter 4 discusses the macroeconomic determinants of international migration. The basic concept to be developed here is the Harris-Todaro model which posits that migration will occur as long as the expected earnings, which is expressed as the product between wages and employment rate, and not simply wages, in the rural (sending) area is less than that in the urban (host) area. We will use a logistic model of the determinants of international migration in evaluating the macroeconomic determinants of Filipino migrants in Asia, Europe and Americas.

The economic consequence of international remittances through the consumption channel is the main topic of chapter 5. The specific objectives of this chapter are: (1) to compare the income and spending patterns of households with and without migrant members. To meet this objective, data

from the Family Income and Expenditure Survey (FIES, 1997) were used to identify the behavior of these two types of households, (2) to quantify the direct and indirect effects of remittances on consumption and production through the use of Input-Output analysis. To this end, incomes in the migration and no-migration regimes as well as remittances will be estimated and incorporated in the Input-Output table as final demand, and (3) to determine the effect of remittances on employment creation, capital formation and import content of production in the Philippines.

In chapter 6, we will determine whether remittances increase or decrease overall inequality and by how much of the overall inequality can be attributed to a particular source through the decomposition of the Gini coefficient. If remittances take a big share of household income, then its distribution will surely alter the income distribution. Consequently, if remittances contribute to inequality, then a government whose main priority is a more favorable distribution of wealth can either design alternative equity-enhancing policies, or implement complementary policies side-by-side with an active participation in the international labor market.

The last chapter will consolidate the results of the various chapters of the paper, draw policy implications and identify issues for future research.

Chapter 2

Review of Related Literature

1. Introduction

In this chapter, we survey the literature on international migration and remittances, with special focus on the economic development of the sending or source country. Occasionally, we draw from studies on rural-urban migration, an area in which much research studies have been done compared to international migration.

First, we discuss recent studies on the determinants of international migration. In section 2, we present the two existing main approaches regarding this topic and show their differences using some criteria. Then, we show how economic development, as reflected in the conditions of the markets for labor, goods and services, and the external sector in the sending country, influences the volume of international migrants.

In section 3, we give special attention to the factors affecting remittances since we realize that remittances are the most visible and important impact of migration from the point of view of the source country.

Next, we explain in section 4 the recent studies on the consequences of international migration and remittances to the source economy. Specifically, we classify the impact of international migration and remittances on the

markets for labor, for goods and services and for the external sector. Here, we adopt a critical approach as to their positive and negative implications on economic development. Finally, we present our summary in section 5.

Throughout this chapter, we emphasize that the linkages between international migration and remittances to economic development, channeled through the markets for labor, goods and services and the external sector take place in both directions: i.e., international migration and remittances are causes and consequences of economic development at the same time.

2. The Determinants of International Migration

Research studies on international migration can be classified into two main approaches: the neoclassical approach and the New Economics of Labor Migration (NELM) approach. We will try to show the differences in these two approaches based on the following criteria (Massey *et al*, 1993):

(1) the economic agent of migration decision-making (whether it is the individual or the household);

(2) the criterion which is being maximized (as in earnings) or minimized (as in risk);

(3) assumptions about the relevant markets (perfect or imperfect labor, credit, insurance and capital markets); and

(4) the contextual setting wherein migration decision takes place (whether the agent considers income in its absolute form or relative to some reference group in the community).

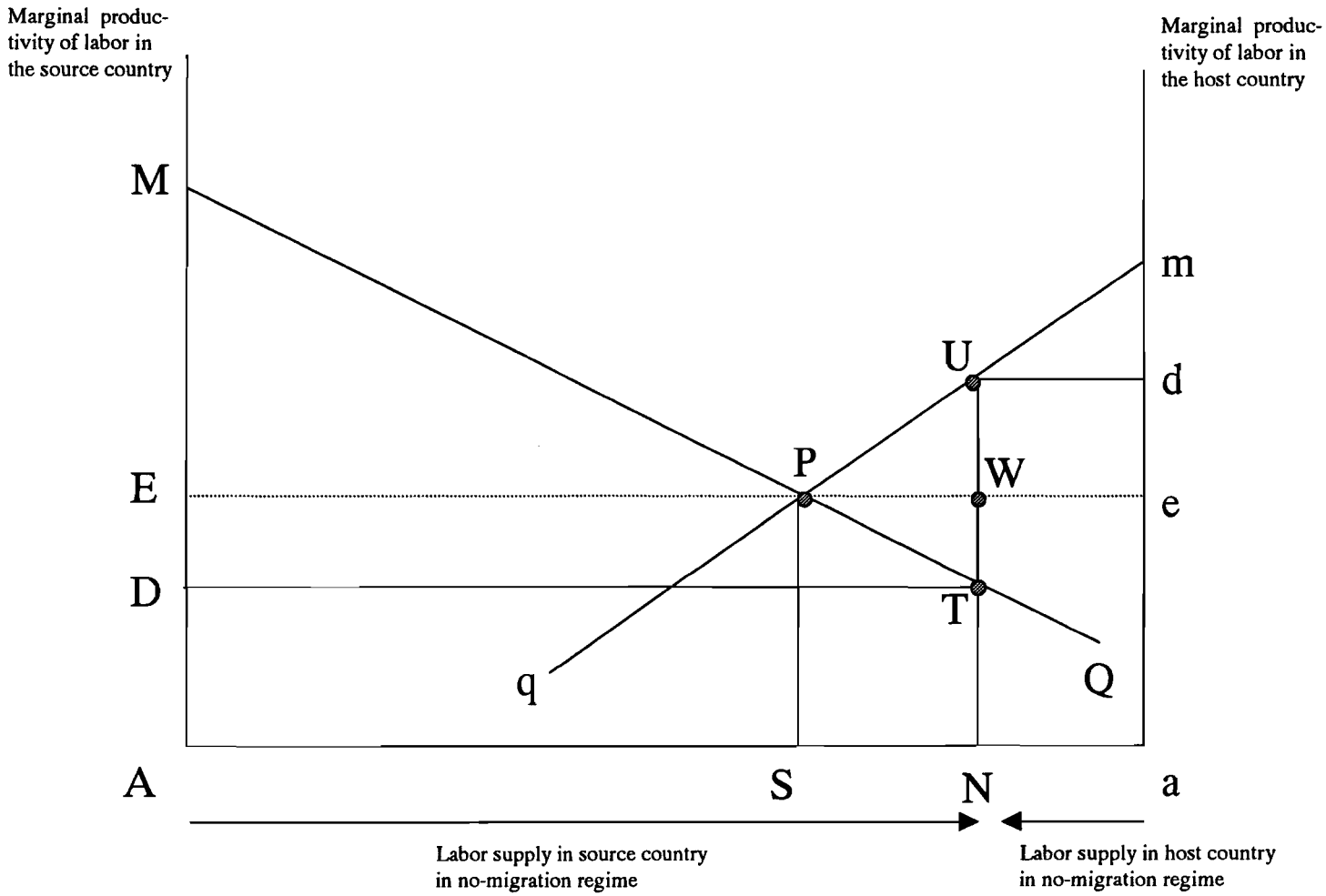
2.1. Neoclassical Economics

Neoclassical economics focuses mainly on differences in wages and employment possibilities between the sending and the host countries, and on migration costs as the main determinants of international migration. The analyses usually proceed in the cost-benefit framework.

On the aggregate level, the works of Lewis (1954), Ranis and Fei (1961) and Harris and Todaro (1970) have explored a 2-sector general equilibrium model of migration in the context of economic development.[1] Their theories and extensions propose that international migration takes place mainly due to wage differentials. In a country with abundant capital, the relative price of labor is high, while for a country with less capital but abundant labor, the relative price of labor is low. Such difference in wages causes the movement of labor from the labor-abundant to the capital abundant country. As a result, wages in the labor-abundant country will rise, while that of the capital- abundant will decrease so that migration of labor will stop when wages in these two countries converge.

We can explain their theories using a diagram below (Fig. 2.1). Let us suppose there are two countries, the labor-importing or the host country, and the labor-exporting, or the source country. Assuming that they produce the same output, the marginal productivity of labor of each country will be measured in the vertical axis. The marginal productivity of labor line (curve), MQ and mq respectively for the source and host countries, is downward sloping as long as there is full employment and technology is given. In the horizontal axis, we show the total amount of labor. The source country owns AN, while the host country only has aN amount of labor. If the source country

Figure 2.1. The Impact of International Labor Migration on the Source and Host Countries



Adapted from Ikemoto, K. (1998). *Textbook Kokusai Keizai (International Economics)*. Tokyo: Yuhikaku Books, p.142, Figure 7.1.

uses all of its labor, the national income is ANTM, while that of the host country is aNUm.

Assuming profit maximization under perfect competition, income will be divided between labor and capital as follows: For the sending country, the income share of labor is ANTD, and the income share of capital is DTM. Similarly, for the host country, the income share of labor is aNUd, and that of capital is dUm. Obviously, there is wage differential (UT) and this will be an incentive for laborers to move from the source country to the host country until it reaches equilibrium P. The amount of labor migration is shown as SN.

On the other hand, the work of Sjaastad (1962) provides an analysis of international migration from the point of view of an individual. According to this theory, migration is a form of investment by an individual in which costs are incurred initially and returns accrue over time. The decision to migrate is influenced by the present value of the difference in expected income streams between alternative locations, minus any initial or subsequent financial or psychic costs of moving, as expressed in equation (1).

$$ER(0) = \int_0^n [Y_d(t) - Y_s(t)]\, e^{-rt} dt - C(0) \quad , \quad (t = 1, \cdots, n) \tag{1}$$

where ER(0) is the expected present value of the net return from migration; $Y_d(t)$, $Y_s(t)$ are the earnings in the destination (d) and sending country (s) respectively, in period (t); r is the discount factor and C(0) is the pecuniary and the non-pecuniary cost of migration incurred due to migration. The place of work that will give the individual the highest ER(0) will be chosen by the potential migrant.

The theories above have been initially extended in two directions. The first set of extensions relaxes the assumption of full employment and perfect labor market and includes the employment rate in both the sending and host countries as determinants of migration. Harris and Todaro (1970) argued that labor movement is based on differences in *expected* earnings, which they define as earnings multiplied by employment rates, a variable representing risk. In their original paper, they assumed that wages in the urban area are institutionally or politically determined (and therefore inelastic) so that the possibility of employment in the urban area becomes the equalizing factor that determines rural-urban migration. In international migration, the risk of being unemployed in the sending area is also put into consideration so that equilibrium is set when the *expected* earnings in *both* areas reach the same value (see for example, Lucas, 1985; Salvatore, 1981).

The second set of extension tackles the problems in the assumption of homogeneous workers. In the case when the movement of labor is considered a movement of human capital, workers move to a destination where he/she can maximize the returns to his/her skills, which may very well be different from the over-all average earnings. Consequently, individual attributes that increase the relative probability of employment or relative earnings in the destination will encourage international migration. Research studies of this type, which include those of Schwartz (1973) and Schultz (1982a and 1982b), confirm that migration flows increase with education and diminish with age and distance moved. Considering these extensions, equation (1) can then be rewritten as equation (2) below. Here, the suffix x stands for the x th

individual, $P_{dx}(t)$ is the probability of employment at the destination, and $P_{sx}(t)$ is the probability of employment in the country of origin for this individual. The attributes of the individual, A_x, the attributes of the destination Z_d, or the sending country, Z_s, such as population, affect both the probability of employment and the earnings of the individual. The individual decisions are aggregated to come up with the aggregate number of migrants.

$$ER_x(0) = \int_0^n \left[P_{dx}(Z_d, A_x, t)Y_{dx}(Z_d, A_x, t) - P_{sx}(Z_s, A_x, t)Y_{sx}(Z_s, A_x, t)\right] e^{-rt} dt - C_x(0)$$

$$(t = 1, \cdots, n) \qquad (2)$$

On the empirical front, research studies in the 1970s and 1980s (though mostly on internal migration) test the role of earnings and unemployment rates on the probability to migrate based on equation (2). The basic reduced form of the migration equation, as given by Yap (1977, p. 242) is shown as equation (3)[2].

$$\overline{M}_{sd} = f(Y_s, Y_d, U_s, U_d, Z_s, Z_d, A, d_{sd}, C_{sd}) \qquad (3)$$

where $\overline{M}_{sd}$ is some measure of migration flow from the sending area, s, to the destination, d. According to Yap, the migration flow is expressed either as a percentage of population, P_s, in the sending area (M_{sd}/P_s), as absolute number of migrants (M_{sd}), or are normalized (M_{sd}/M_{ss}) where M_{ss} is the number of non-migrants (or those who stayed) in a given period. The independent variables are:

(1) wages or income levels, Y and unemployment rates (employment rates

in some cases), U, of the source and destination areas;

(2) attributes of the sending and destination areas, Z, for example, population, workforce, etc;

(3) attributes of the potential migrant, A, such as age, gender, skills, etc;

(4) distance from s to d, d_{sd}; and

(5) the presence or absence of relatives in the destination, C_{sd}.

As summarized by Yap, these studies on internal migration confirm that people move because of differences in average earnings or wage levels. Moreover, the rate of migration increases as the difference in earnings widens. When some measures of the probability to find employment, like the unemployment rate, is included independently, their coefficients are generally statistically significant and have the expected sign (one exception, though, is Falaris, 1979). Population size in the destination is also found out to have a positive impact on migration. Distance, which is treated as a proxy for relocation cost, has a negative effect on migration. Persons having access to kinship and other networks at a place of destination are more likely to choose that place for migration because it lowers the psychic cost of relocating and financial costs of resettling. Finally, the educated are less deterred by distance in migrating because they have easier access to distant information and capital to finance such moves (Schwartz, 1976). Schultz (1982a, 1982b) also found out that those with higher education have higher elasticity to migrate.

In the field of international migration, the very few existing studies using the neoclassical approach also confirm the significance of wage

differentials as a determinant of migration. For example, the study by Rotte and Vogler (1998) for migration from developing countries to Germany confirms that economic differential between countries, the political situation in the sending countries and networking are important determinants of international migration to Germany.

2.2. The New Economics of Labor Migration

The "New Economics of Labor Migration" (NELM) was pioneered by Oded Stark in the 1980s. This approach is distinct from the neoclassical approach in the treatment of the following issues:

First, the household is the main economic agent that decides on whether to send a member abroad or not. The focus is no longer on "independence of individuals" but on "mutual interdependence" of a group of individuals such as a family (Stark, 1991, p. 3) whose preferences and constraints must be included in the analysis. Migration takes place because risk averse families seek alternative modes of insuring their household incomes and lowering its variance by diversifying across alternative sources of income which are not highly positively correlated (Lucas and Stark, 1985 and Stark and Lucas, 1988). Taking migration decision as an intra-family contract, remittances by the migrant member become relevant and therefore, are also included in the analysis.

Second, for NELM, migration in the absence of wage differential, or the absence of migration when wage differentials exist, are rational decisions by the family. This implies that constraints and risks in the capital, credit and insurance markets in the sending country are also push factors affecting

migration. In this case, migration is considered a process that can minimize income risk or uncertainty by pooling income from domestic and international sources, and loosening constraints in these markets. When insurance, credit and capital become unavailable or inaccessible for migrant families in the sending countries, their incentive to migrate increases.

Third, migration can be a self-propelling process (Rotte and Vogler, 1998). The NELM recognizes the relevance of independent factors that cannot be classified as "push" or "pull" factors, i.e. economic and demographic factors in the sending and the host countries respectively, in the decision to migrate. In relation to this, the NELM looks into (1) the interaction between migrants in the host economy and the non-migrants in the source economy; (2) the interactions between the migrant and the non-migrant households in the source country. An example of the former is the "networking" theory, which suggests that having relatives in the destination country will lower the cost of information about the labor market in the host country and decrease psychological cost of separation. Therefore, networking will increase the likelihood of migration of other members of households with international migrants. A representative theory for the latter is the "relative deprivation theory" which is advanced by Stark, Taylor and Yitzhaki (1986, 1988), Stark and Yitzhaki (1988) and Stark (1991). They argue that households send its member workers abroad not only to raise family earnings but also to reduce their families' relative deprivation within the community in which they belong. A person who is poor relative to his/her home village reference group may choose to migrate to town in order to improve his/her ranking relative to

the home group. This lowers the relative position of some of the remaining households, which may consequently induce further migration.

In the empirical front, however, not much research work in economics has been done, especially in the area of international migration. In the case of migration-marriage arrangements in India, Stark et al. (Rosenzweig and Stark, 1989) found out that daughters of rural households exposed to higher income risk are more likely to marry and migrate to a farther destination. This finding coincides with the theoretical argument that distance is positively correlated with migration, but in the present case, it is not merely search costs and income differentials that caused the migration, but also risk minimization. Conversely, migration may diminish if government policies that will improve access to credit and insurance markets are in place. It also suggests that since migration is decided within the context of the family, a daughter is preferred to a son because daughters have the better capacity to reduce income risks by marriage and migration to another area. This may also explain the selectivity of migration in favor of women.

Another major finding of the NELM is that the probability that households participate in international migration (in this study, Mexico-US migration) is directly related to the household's initial relative deprivation (Stark and Taylor, 1989). This proves that the perceptions and evaluations of other households in the same group affect the migration behavior of a household. Moreover, this study also found out that since migrants are not a homogenous group, they choose the destination wherein the returns to their human capital (skills) are likely to be the highest. However, their study did

not see any significant relationship between internal (rural-urban) migration and relative deprivation or absolute income.

The dire need for empirical studies on the determinants of international migration motivated the writing of chapter 4. There, we look at the effects of population, income and unemployment rates in both the sending and destination countries on the probability to migrate using panel data on the Philippines as the sending country and the countries of East Asia, the Middle East, Europe and Australia as the countries of destination.

2.3. The Impact of Economic Development on International Migration and Remittances

Economic growth, as reflected in the conditions in the markets for labor, the external sector and goods and services, impact on the magnitude of international migration and remittances. Briefly, we explain how each of these three areas affects international migration.

Regarding the labor market, population growth and fertility rates determine the size of the labor force. In developing countries, fertility rates are high so that the next generation labor force sufficiently increases. When the economy lacks the capacity to absorb new entrants and the previously unemployed laborers, unemployment will worsen or wages will be at a lower equilibrium level. From the neoclassical point of view, this will result in greater expected wage differentials against that of the destination country and migration pressure will be stronger. On the other hand, the NELM argues that the size of the family and the number of members of working age will determine the number of members who will go abroad in order for the

variance in family income to be minimized. Also, the size of the family will determine the amount of remittances a member will send back home.

We also consider the role of the external sector in raising migration pressure and remittances. One issue regarding this matter is the substitutability or complementariness between trade and migration (see, for example, OECD Proceedings (1998) and Taylor, J. E. (1996)). Another issue is the role of real exchange rate as a determinant of migration and remittances (see for example, Faini, R. and J. de Melo in Taylor, J. E. (1996) and Haque, N.U. et al. (1994)). According to them, when local currency depreciates due to serious BOP deficit, the absolute differential between wages abroad (calculated as wage in foreign currency multiplied with the current exchange) and the domestic wage widens in favor of foreign employment. This leads to a stronger desire for local workers to earn more by working abroad. Moreover, the value of remittances in local currency sent to migrant families will be higher so that migration becomes more affordable for them.

Finally, the growth of domestic production can also encourage international migration. In the spirit of the neoclassical approach, economic expansion translates into higher productivity and income for its workforce and greater employment opportunities. As a result, expected wage differentials with that of the destination countries become smaller so that fewer laborers will want to work abroad.

It has been observed, however, that economic growth and higher domestic income levels do not reduce migration pressure at once (see, for

example, Martin and Taylor in Taylor, 1996). Higher wage levels may increase the affordability of migration for a greater number of people. Even if domestic expansion is slow, emigration may accelerate because remittances will enable its recipients to become international migrants themselves by (1) raising their capability to pay for the cost of migration without relying on the imperfect domestic financial markets and (2) when households receiving remittances spend it on investments in human and physical capital, it can raise future incomes that will enable another member of the family to leave for abroad. Some of the concrete uses of remittances that will raise future incomes are sending children to a university to obtain a degree that is in demand abroad, and the establishment of small-scale businesses.

The issue of how the magnitude of international migration is affected by economic growth in the source country is known in the literature as the "migration hump" theory. According to this theory, a temporary increase in emigration will occur during a country's take-off because of the "displacements and disruptions that accompany development" (Martin and Taylor in Taylor, 1996, p. 43). South Korea and Mexico, that adopted export-oriented economic development, experienced migration hump in the 1980s. Martin and Taylor suggested that a hump takes place if trade and migration are complements in the short-run but substitutes in the long-run. Initially, migration will increase, but it will fall "fairly quickly" when wage differences reach the ratio 4 or 5 to 1, and economic and wage growth seems assured in the emigration country (Martin and Taylor in Taylor, p. 58).

3. The Determinants of Remittances

The New Economics of Labor Migration (NELM) has greatly contributed in the understanding of the determinants of remittances. At the forefront of research on the determinants of remittances are Lucas and Stark (1985) and Stark and Lucas (1988). They tested their theoretical argument (discussed in details below) using data from Botswana, and concluded that altruism alone is not a sufficient motivation to remit. Altruism is complemented by the family members' cooperative and mutual contractual behavior towards reducing the entire family's income risk and maximizing family income.

In their paper, they identified the motivations to remit as (1) pure altruism, (2) pure self-interest and (3) tempered altruism or enlightened self-interest. In the pure altruism regime, a migrant derives utility from the utility of those left at home. In return, the remaining family derives utility from per capita consumption. We can therefore present the utility of the migrant in equations (4) and (5).

$$U_m = U\left[C_m(w-r), \sum_{h=1}^{n} a_h U(C_h)\right] \tag{4}$$

$$C_h = C_h\left[Y + \frac{r}{n}, n\right] \tag{5}$$

where in equation (4), U_m is the utility of the migrant, C_m is the consumption of the migrant, w is the migrant's wage, r is the amount remitted, a_h is the altruism weight attached to various household members and C_h is consumption per capita of the remaining household members (equation 5), which is a function of the total income per capita (which is defined as the sum

of income per capita at home, Y and per capita remittances, (r/n)), and the number of household members, n. By maximizing equation (4), with respect to equation (5), we can determine the relationship between remittances and migrant's wages, domestic income of the remaining family members and size of the household. In pure altruism regime, remittances increase with the size of remaining family, the per capita consumption of family members, the position of the migrant worker in the family, and wages of the migrant.

On the other hand, pure self-interest can also be a motivation to remit. Lucas and Stark pointed out three reasons based on self-interest as follows:

(1) aspiration to inherit. Since the migrant would like to get his share in the assets of the family, he will maintain his connections with the family by sending remittances.

(2) to invest in assets in the home area and ensure their careful maintenance. The migrant may wish to invest in the home country to obtain income when he comes back. Sending not only the capital to buy those investments but remittances to the remaining members of the family will ensure maintenance of his investments.

(3) intention to return home. This is related to the second reason. A migrant may desire to send remittances to invest in fixed capital, public assets such as prestige and political influence and social assets such as maintaining relationships with family and friends.

Therefore, in the pure self-interest regime, remittances increase with the size of pre-migration wealth and assets in the home country, migrant's investments and intention to return home, as in the case of contract workers.

Finally, Lucas and Stark combined altruism and self-interest and coined the terms "tempered altruism" or "enlightened self-interest". Under this category, remittances rise with the migrant's education and lack of insurance and capital markets. With regards to the former, remittances are regarded as repayment of the principal and interest invested by the family in the migrant. For the latter, remittances are regarded as a diversification response for lack of insurance markets for family earnings. The amount of remittances depends on the relative risk preferences and relative bargaining powers of the migrant on one side and the remaining family members on the other side. In this case, remittances may be negatively correlated with the migrant's income.

Stark further argued that remittances are elements in the self-enforcing cooperative contractual agreement between the two parties, i.e. the migrant and the remaining family members, and highlighted remittances as a sort of trade in intertemporal risks between the two parties. In such case, remittances are considered as delayed payment of a premium for the insurance taken up by the migrant in the first period, and/or as a transfer of the insurance payment to the head of the family once the unfavorable state of nature has occurred in the sending area. Both parties will have to adhere to the agreement because of altruism, self-interest and tempered altruism or enlightened self-interest.

4. The Impact of International Migration and Remittances on Economic Development

Research studies on the consequences of international migration from the point of view of the sending country are conducted basically under two approaches: (1) trade-theoretic approach[3] and (2) development economics approach. In the former, the impact of international migration on social welfare is generally assessed based on changes in the relative prices of tradable and non-tradable goods. On the other hand, the latter approach is broader in scope to include the varied impacts of migration to the different markets, on a comprehensive or piecemeal basis.

Since the role of international migration and remittances on all aspects of economic development of the sending country is central to our research study, in this section, we will focus our analysis on the second approach. Before evaluating the effect of international migration in the different markets on a piecemeal basis, we will show the general effect of international migration on national income, again using the diagram in Figure 2.1 above.

In Figure 2.1, labor migration continues until point P, in which the equilibrium wage for both countries is PS. The sending country will produce ASPM using AS amount of labor. At the same time, remittances from migrants by the amount of the area NSPW will arise. Therefore, for the sending country, the total income is the area ANWPM, which is higher than the no migration regime by the triangle, PTW. On the other hand, for the host country, the total production is aSPm, but its foreign laborers have to send remittances so that the net income is aNWPm, which is also higher by the area PUW than the no-migration regime. Due to migration, total income

in both countries increased.

The distribution of income between labor and capital will also be affected by migration. The owners of capital in the sending country will receive less (from DTM to EPM), while owners of labor in the host country will receive less (from aNUd to aNWe).

Now we are ready to evaluate the effect of international migration and remittances on economic development by looking at the conditions in the following markets:

(1) labor market (population growth rate, fertility rate, labor force growth rate, skills composition of the labor force, wages and unemployment rate)

(2) external sector (net factor income from abroad, trade and current account deficits, exchange rates)

(3) market for goods and services (consumption, savings and capital accumulation, prices)

(1) Labor Market

Providing relief in the labor market has been argued as the most evident of all the effects of international migration (see Figure 2.1. above). In Pakistan, almost one-third of the incremental labor force was absorbed by international emigration. In Korea, it has been noted that in the period 1978-1981, emigration lowered unemployment from 6.8% to 5.5% (Ghosh in Broeck, 1996). In these cases, the full effect of emigration is realized on the assumption that the emigrants are either unemployed or can be substituted by other unemployed workers in the sending country, which is feasible for

developing countries.

One drawback against the positive impact of international migration on the labor market is the loss incurred by the sending country through the loss of human capital. Migration is found to be selective of the highly educated and "more dynamic and enterprising members" (Ghosh in Broeck, 1996) so that the outflow of the best workers could potentially lower future economic growth because of the loss of human capital embodied in these workers.

Another controversial issue about the effect of emigration in the labor market is its influence on the skills composition of labor (Amjad, 1989). It has been argued that in the short-run, the outflow of specific types of skills may cause its shortage in the source country (especially if there is limited substitutability among skills), and thus, higher money wage rates in specific sectors. In such case, the net benefit from migration may be lower since losses are incurred in finding their replacements. It has been observed that in the short-run, the construction sector is the most highly affected sector in the Arab labor-sending economies, in Pakistan and in Korea. This causes temporary labor shortage and an increase in money wages exceeding the increase in average wages (see Rodrigo and Jayatissa, Kazi, and Hyun in Amjad, 1989). It is also possible that domestic production in the affected sectors shifts to capital-intensive methods so that migration will lead to further loss of jobs domestically.

Labor outflow may also affect the labor force participation rate. Depending on the substitution between leisure or intrafamily production and

domestic wages, recipients of remittances may choose not to work anymore and just depend on what they receive from abroad. This is observed in some areas wherein the father stays at home to take care of the children while the mother goes abroad to work. For women, there are two ways in which the participation of labor increases due to international migration. First, in some sectors, the migration of male laborers causes shortage (although this may be temporary) of manpower and consequently, raises wages, thus inducing female labor force participation in that particular sector. Second, the new and increasing demand for women laborers as factory workers, entertainers, domestic helpers and nurses in the host countries causes greater opportunity cost of staying at home. Therefore, more and more women are attracted to work abroad, leading to the feminization of international migration.

Another issue is the adaptability of skills learned abroad in the domestic setting. It has been argued that emigrants, especially contract workers, acquire some skills and knowledge abroad that can be used when they return to their home country. However, skills learned abroad can be useful in the origin country if overseas employment involves greater skill than that at home and if workers will return home and will be able to apply their new skills domestically. The United Nations (1998, p. 91) notes that brain waste or deskilling is common in Eastern Europe in which highly skilled workers work in relatively lower-skilled jobs in the destination. Moreover, reverse technology transfer rarely takes place (UN, 1998). This may be because returnees seldom apply their new skills in industrial activities but instead enter the domestic service sector (Straubhaar, 1988),

and, as in the case of Pakistan, there is a high degree of unemployment among the returnees (Kazi in Amjad, 1989). Such unemployment may be voluntary, but the majority is involuntary, thus, they also represent unused domestic labor and may signify the inability of the domestic economy to absorb them.

(2) External Sector

The external sector and the goods and services markets are mainly and crucially linked to migration's role in promoting economic growth in the source country through remittances sent by international migrants to the remaining members of their families. As O'Connor and Farsakh (1996, p. 21) pointed out, "the impact of remittances on the migrant-sending countries' economies is probably the most important dimension of migration." This is because remittances do not only contribute significantly to the consumption, savings and investment behavior of its recipients. It also has important implications on the sending country's balance of payment through the generation of foreign currencies and also in its income distribution.

To provide us a framework for the analysis of the role of remittances on the national economy through the external sector channel, we refer to Figure 2.2, which was taken from Glytsos (1993). The first row shows the role of remittances in relieving the foreign exchange constraints in the development process of the sending country. Migration will have a significant impact on the balance of payment of the sending country as dollar earnings sent as remittances offset the balance of payments deficit of the sending country.

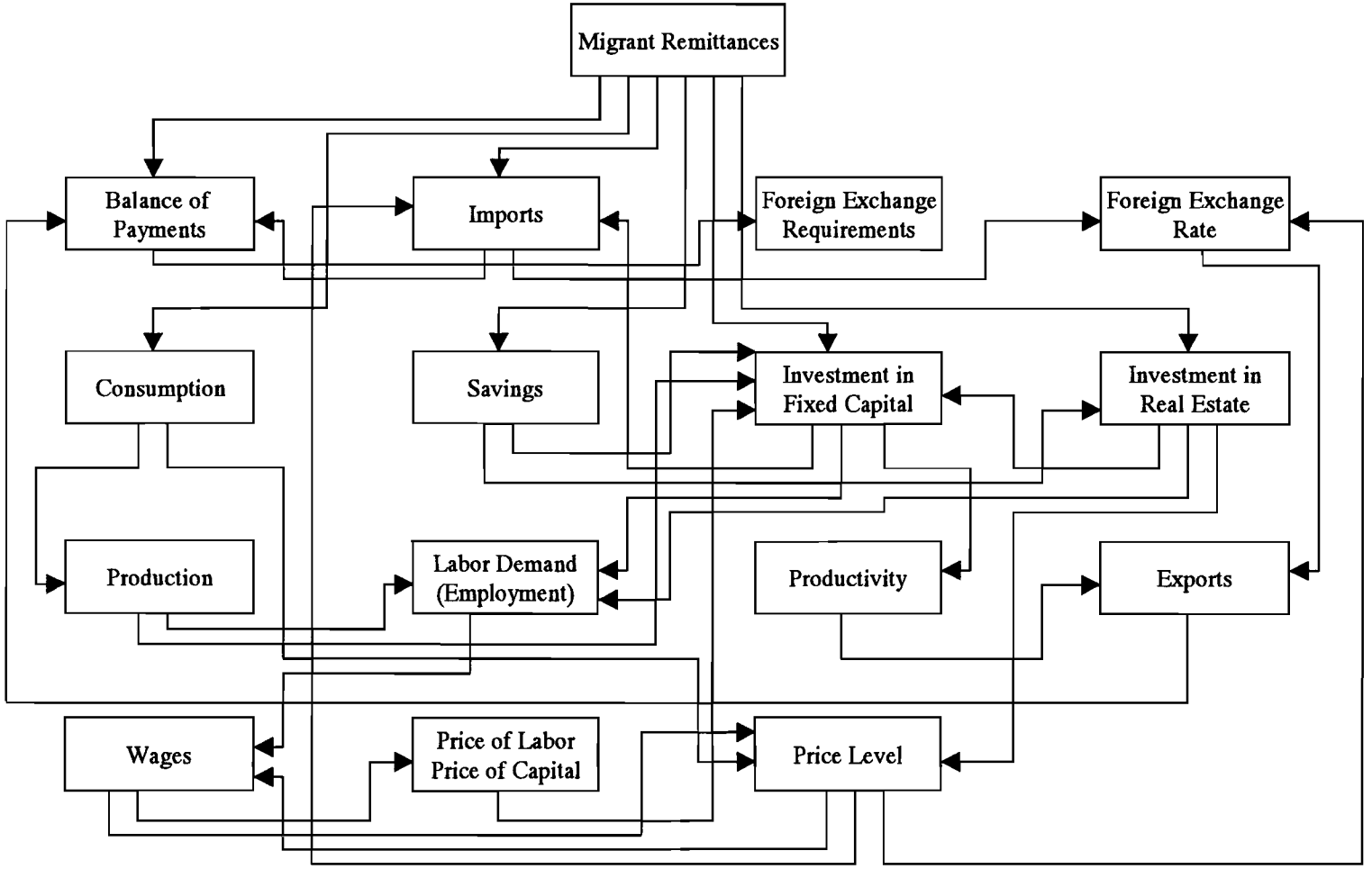


Figure 2.2. The Impact of Migrant Remittances on the Aggregate Economy

Source: Glytsos, N. (1993). "Measuring the Income Effects of Migrant Remittances: A Methodolo gical Approach Applied to Greece." *Economic Development and Cultural Change* 41:131-167.

Compared to other forms of external financing sources like foreign investments, loans and aid, remittances are a better source because they "bear no interest, do not have to be repaid, and their use is not tied to particular investments projects with a high import content, (therefore) they have a more positive impact on the balance of payments." (Straubhaar, 1988, p. 139).

At the same time, remittances may contribute to the worsening of the balance of payments. This can be explained as follows: The incremental demand for goods and services due to remittances will potentially raise domestic output and employment. However, if the import content of the consumption or capital goods the remittance recipients buy is high, then, it will be a burden on the country's balance of payment. We cannot find any previous study to support or discredit this hypothesis, and we attempt to give some observations about this in chapter 5.

(3) Market for Goods and Services

To show how remittances affect the macroeconomic variables concerning the goods and services market like prices and output, we again refer to Figure 2.2. From the second row of Figure 2.2 downward, we can see how remittances will affect the domestic economy through the consumption, investment and production channels. Although aggregate consumption will initially decline as laborers leave to work abroad, the remittances sent by these migrants to their families back home can be used to accumulate savings, or purchase consumer and capital goods. As expenditures on consumption goods and services of the remittance recipients increase, it will

induce further production of goods, causing higher demand for production inputs such as labor and capital.

One measure that is often used to measure the effect of migrant household's consumption expenditures out of remittances is the Keynesian multiplier, which can be defined as the total increase in aggregate *final demand* due to the additional *income* generated directly and indirectly from the expenditures undertaken by remittance recipients. This is in contrast to the multiplier derived from an Input-Output analysis, which is termed as the total amount of *intermediate inputs* required directly and indirectly in the production of the goods consumed by remittance recipients (Miyazawa, 1995). In this second definition, the impact of the recipients' consumption is confined to its initial, first-round contribution to final demand. In this study, we conduct an input-output analysis to determine the total amount of intermediate inputs and value-added income generated through the first-round consumption by remittance recipients (see chapter 5).

The savings and investment behavior of remittance recipients also affects economic growth. If remittances are used for savings, it will represent postponed consumption or future investment. If remittances are invested in human (like education or training) or physical (like machineries or equipments) capital, then it will induce higher future earnings for the remittance recipients. It is also possible that remittances are invested in goods that are consumed intertemporally like real estate and housing.

All these will influence aggregate prices and productivity, depending on how fast production responds to increased demand and speculation, in the

case of real assets. Depending on whether the increased demand resulting from higher remittances are satisfied by domestic output expansion, like for example, real estate properties, remittances will adversely affect domestic prices. In this case, the net effect of remittances to non-migrant households depends on the gain from higher domestic employment and loss of real purchasing power due to inflation.

We have seen above that (1) the consumption, savings and investments behavior of remittance recipients compared to non-recipients and (2) the allocation of remittances among consumption goods, savings and investment goods are crucial in determining the impact of international migration on economic growth. To give light to these two issues, we mention the findings from descriptive studies found in Amjad (1989) regarding migrant sending countries in Asia.

Regarding the differences in consumption, savings[4] and investment behaviors, it was found out that in most countries, remittance recipients do not have the same consumption, savings and investments patterns as the non-recipients, except in Sri Lanka. In Pakistan, Thailand, Philippines and Bangladesh, the average and marginal savings rates are higher for remittance recipients compared to non-recipients, although it is partly attributed to the higher average income of recipient households. Bautista and Lamberte (1990) and Tan (1991) suggested that, in the case of the Philippines, savings rates are different because households with migrant treat income for abroad as transitory income, and as such, a higher portion is saved or its consumption is "spread" intertemporally.

On the other hand, the issue of whether remittances are used mainly for unproductive or wasteful purposes has yet to be settled by economists and social scientists. The common view has been that "savings from remittances are used principally for non-productive *rentier* forms of investment, particularly land, housing and home repairs" (Brown, 1995, p.21). Studies by Mahmud for Bangladesh, Kazi for Pakistan, Tingsabadh for Thailand (all studies found in Amjad, 1989) found the same trend that a large portion of remittances are utilized for "non-commercial" investments and recurrent consumption that will improve the living standards of the migrant household.

Glytsos (1993) and Stahl and Habib (1989), however, refuted this claim and argued that even if investments are unproductive or remittances are being used for consumer expenditures, remittances still contribute to economic growth in its broader sense because of intersectoral linkages. The present study supports Glytsos and Stahl and Habib in emphasizing the importance of intersectoral linkages in assessing the contribution of expenditures from remittances to economic growth.

In addition to the microeconomic channel in which remittances affect economic growth, we can also directly assess the macroeconomic impact of remittances to national savings, which becomes possible regardless of who undertakes the actual investment. Empirical studies in Amjad (1989) showed either a negative (in the case of the Philippines and Pakistan) or a zero (in the case of India) effect of remittances to aggregate savings. However, we cannot find any convincing justification for their results.

With serious consideration of the possible avenues in which

international migration and remittances affect economic development through its impact on the markets for labor, goods and services and the external sector, and the issues concerning them, we attempt to give some light to these issues by identifying how remittances are spent and by relating these expenditures on the gross output, employment generation, capital accumulation or investment[5] and balance of payment of the Philippines in chapter 5.

Finally, another impact of remittances, which has been gaining interest is its relationship with income distribution in the sending country since remittances provide upward mobility to remittance recipients in the income distribution of the country. Empirical studies on whether remittances raise or reduce inequality were conducted by decomposing the Gini coefficient, a commonly-used measure of national inequality (see for example, Stark, Taylor and Yitzhaki (1986, 1988), Adams (1991, 1996), Taylor (1992), Rodriguez (1998) and Barham and Boucher (1998)). Most studies concluded that remittances worsen the distribution of income. We will discuss this issue and give empirical support to remittances' unequalizing effect in chapter 6.

5. Summary

In this chapter, we have tried to give a comprehensive summary of previous works in the field of international migration. We have limited our survey on the determinants and consequences of labor movement on a piecemeal basis and from the point of view of the sending country. We have also presented the existing hypotheses on the linkage between international

migration and economic development, which runs in both directions, i.e., the former is both a cause and a consequence of the other.

We have also seen that many of these hypotheses still remain to be validated, and therefore, there is a dire need for a journalistic economic research study employing empirical methods in economics. This present study is therefore an attempt to contribute to the current economic literature on international migration by testing some of these hypotheses in the case of the Philippines.

Footnotes of Chapter 2

[1] Although their studies were intended for rural-urban migration, we can apply it to international migration with slight modifications (see for example, Massey *et al*, 1993; Otsuka, 1993; Straubhaar, 1988).

[2] For a summary of previous findings regarding the Harris-Todaro type models of internal migration, see Yap, (1977), pp. 258-261.

[3] Research studies within the trade welfare-theoretical framework assume that the economy produces both traded and nontraded goods and there is fixed terms of trade. By introducing nontraded goods in the analysis, changes in factor endowments will affect the price of non-traded goods, and consequently, the welfare of non-emigrants. For details, see Bhagwati and Rodriguez (1975), Rivera-Batiz (1982) and Djacic (1986).

[4] Although the definition of savings vary among these countries.

[5] By capital accumulation and investments, we mean the amount of capital induced by higher demand for consumer goods. We do not refer to the effect of the remittances spent by its recipients on investment or capital goods.

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Chapter 3

A Descriptive Analysis of International Migration in the Philippines

1. Introduction

The purpose of this chapter is to present and evaluate the condition of international migration in the Philippines. Drawing from previous studies and using recently available macroeconomic data and national survey results, we will:

(1) estimate the magnitude of international migration and remittances,

(2) describe the attributes of Filipinos who work abroad, and

(3) assess the linkages between international migration and remittances on one hand, and economic development on the other, through the former's impact in the markets for labor, goods and services and the external sector.

The availability and accuracy of data have become some of the main constraints in conducting empirical research regarding international migration, especially from the point of view of the sending or source country. For example, there are very few available data for the stock of a country's nationals abroad. Records on international remittances usually include only that portion which is sent through the formal banking institutions.

In this chapter, for macroeconomic data, we will draw mainly from the World Development Indicators 2000 (World Bank, 2000). For microeconomic data, we will utilize survey data from Philippine government agencies like the Philippine Overseas Employment Administration (POEA), the Commission on Filipinos Overseas (CFO) and the National Statistics Office (NSO), which conducts the Survey on Overseas Filipinos (SOF) and the Family Income and Expenditure Survey (FIES). When appropriate and available, we will also quote results from studies using small-sample surveys.

This chapter is organized as follows: In section 2, we will present and compare available data from different sources regarding the flow and stock of international migrants in the Philippines and their remittances. We show that the available data are short, and that there are wide discrepancies in their estimations. In section 3, we deal with the selectivity issue in international migration. We draw some generalizations regarding the age, gender, educational attainment, type of occupation in the Philippines and in the destination, and country of destination of the migrants. Section 4 will emphasize the two-way relationship of international migration with the different macroeconomic fundamental parameters like population, employment rates, balance of payments, and capital formation. In section 5, we will give a brief introduction of the history and current situation of the overseas employment program policy of the Philippine government. The summary of this chapter is found in section 6.

2. The Flow and Stock of Filipino Migrants and Remittances

2.1. Flow and Stock of Filipino Migrants

The Filipino migrants are basically classified into (1) registered permanent emigrants, (2) documented overseas contract workers (OCWs) and (3) illegally documented aliens. Table 3.1 below shows the composition of documented Filipinos leaving the country annually since 1975.

Of all types of emigration, permanent emigration experienced the minimal increase, averaging only 7% for the past 25 years and with some periods registering negative growth. Permanent emigrants are Filipinos who eventually become naturalized citizens of the destination country. In the past, most emigration of this type was due to "chain migration" resulting from networking with Filipino emigrants in the host country or to the policy of migration "to join the family" in the host country. An emerging group of permanent emigrants comprises of Filipino women whose husbands are citizens of the destination countries like Japan, Australia and Germany.

On the other hand, the OCWs, which make up for the majority of the annual departures, consist of sea-based and land-based Filipino workers who return to the Philippines when their overseas contract expires. The contract term varies depending on the host country's immigration policies, but usually, it lasts for one and two years for sea-based and land-based workers respectively. Referring to Table 3.1, we can see that the increase in land-based OCWs was very high until mid-1980s when Middle East countries rushed its infrastructures using "oil money" or income from the sale of crude oil. The average annual increase in the number of the land-based OCWs, at 21.21%, is the highest among all types. On the other hand, international

Table 3.1. Annual Departures of Filipinos (1975-1999)

YEAR	Registered Permanent Emigrants		Overseas Contract Workers (OCWs)				Grand Total	
			Land-based		Sea-based			
	number	(%) change from previous year	number	(%) change from previous year	number	(%) change from previous year	number	(%) change from previous year
1975	14,492	NA	12,501	NA	23,534	NA	50,527	NA
1976	37,690	160.07 %	19,221	53.76 %	28,614	21.59 %	85,525	69.27 %
1977	39,451	4.67 %	36,676	90.81 %	34,059	19.03 %	110,186	28.83 %
1978	38,345	-2.80 %	53,080	44.73 %	37,280	9.46 %	128,705	16.81 %
1979	40,450	5.49 %	100,118	88.62 %	44,818	20.22 %	185,386	44.04 %
1980	45,500	12.48 %	171,006	70.80 %	57,196	27.62 %	273,702	47.64 %
1981	48,867	7.40 %	227,199	32.86 %	55,307	-3.30 %	331,373	21.07 %
1982	53,953	10.41 %	289,785	27.55 %	64,169	16.02 %	407,907	23.10 %
1983	42,481	-21.26 %	380,263	31.22 %	53,944	-15.93 %	476,688	16.86 %
1984	41,551	-2.19 %	300,378	-21.01 %	50,604	-6.19 %	392,533	-17.65 %
1985	45,269	8.95 %	320,494	6.70 %	52,290	3.33 %	418,053	6.50 %
1986	49,338	8.99 %	323,493	0.94 %	54,697	4.60 %	427,528	2.27 %
1987	56,350	14.21 %	382,229	18.16 %	67,042	22.57 %	505,621	18.27 %
1988	58,066	3.05 %	385,117	0.76 %	85,913	28.15 %	529,096	4.64 %
1989	55,703	-4.07 %	355,346	-7.73 %	103,280	20.21 %	514,329	-2.79 %
1990	63,208	13.47 %	334,883	-5.76 %	111,212	7.68 %	509,303	-0.98 %
1991	62,671	-0.85 %	489,260	46.10 %	125,759	13.08 %	677,690	33.06 %
1992	64,172	2.40 %	549,651	12.34 %	136,806	8.78 %	750,629	10.76 %
1993	66,413	3.49 %	550,872	0.22 %	145,758	6.54 %	763,043	1.65 %
1994	64,537	-2.82 %	565,226	2.61 %	154,376	5.91 %	784,139	2.76 %
1995	56,259	-12.83 %	488,621	-13.55 %	165,401	7.14 %	710,281	-9.42 %
1996	60,926	8.30 %	484,653	-0.81 %	175,469	6.09 %	721,048	1.52 %
1997	54,078	-11.24 %	559,227	15.39 %	188,469	7.41 %	801,774	11.20 %
1998	39,010	-27.86 %	638,643	14.20 %	193,300	2.56 %	870,953	8.63 %
1999	40,508	3.84 %	640,331	0.26 %	196,689	1.75 %	877,528	0.75 %
Total	1,239,288		8,658,273		2,405,986		12,303,547	
Average Change		7.55 %		21.21 %		9.76 %		14.12 %

Notes: The data shown here are the number of OCWs *deployed* by the Philippine Overseas Employment Authority. Prior to 1984, the data shown here are the number of land-based workers *processed* by POEA. It must be noted that not all workers whose contracts are processed by the POEA are eventually deployed.

Sources:

for OCWs: 1975-1983: Carino in Battistella and Paganoni (1992), Table 2, p. 8.;
1984-1999: Philippine Overseas Employment Administration (POEA)

for Permanent Emigrants: Commission on Filipinos Overseas (CFO)

shipping companies regularly employ Filipino seamen, although in the 1990s, strong competition with seamen from Vietnam and China resulted in lower increase in demand for Filipino sea-based workers.

From Table 3.1, we can also see that in the past 25 years, the total number of non-tourist, registered Filipinos leaving for abroad annually has been generally increasing, with the 1999 value (877,528 persons) more than 17 times that of the 1975 level (50,527 persons).

Finally, we do not have records of the flow of undocumented emigrants, who leave the country's international airports as tourists or slip out through the backdoors of the country. In the former, emigrants were not "illegal" during their time of entry to the host country, but have overstayed their visa, thus preventing their legal return to the Philippines. They are usually found in the United States, Japan and Korea. For the latter, the emigrants usually depart without going through the proper immigration procedures by boat, mostly from the Mindanao Island to Malaysia. About 35 percent of these undocumented workers are believed to be working in Asia and Oceania (OECD, 1998).

Next, we summarize in Table 3.2 the different estimates conducted by different institutions regarding the *stock* of Filipinos abroad. First, for permanent emigrants, based on data from CFO, the total number of registered permanent emigrants from 1975-1999 was 1.239 million persons (see Table 3.1), although we do not have data prior to 1975. Another way of estimating the stock is by utilizing data from the host countries. The United States Census has recorded that the stock of its population born in the

Table 3.2. Estimates of the Stock of Overseas Contract Workers (OCWs) and Permanent Emigrants

Type of Emigrant	Source	Estimated Value (in millions)	Year
(a) permanent emigrants	Commission on Filipinos Overseas (CFO)	1.24	1999
		1.16	1997
	Author's calculation based on US Census Survey	1.74	1999
		1.32	1997
(b) overseas contract workers	OECD	2.40	1997
	Author's calculation based on Survey on Overseas Filipinos (SOF) and POEA data	2.19	1997
(c) illegal migrants	OECD	1.80	1997

Sources: Compiled from CFO, US Census, OECD and SOF.

Philippines in 1990 was 912,700 persons and from 1991-1999, the number of registered emigrants was 338,100. Therefore, until 1999, the stock of emigrants to the US is 1.25 million. This amounts to approximately 72% of the total registered emigrants (see Table 3.10 below), giving us the total estimated stock of permanent emigrants around the world as of 1999 to be roughly 1.74 million. We also present our estimates for 1997 in Table 3.2.

Second, regarding the stock of Filipino workers, who are also called "circulatory OCWs" (Saith, 1997), its estimation is problematic since the government does not keep record of the number of OCWs who return to the country after serving their contract in the host country. Nevertheless, we can extrapolate the total number of emigrants using available census data, just to give us an idea on its magnitude.

First, according to an OECD study (1998, p. 12), the stock of Filipino workers, including undocumented workers is estimated at 4.2 million in 1997. Of this, 2.4 million laborers are OCWs, while the remaining 1.8 million persons are undocumented workers.

We can also extrapolate the 1997 stock of OCWs using past data from the SOF and POEA. It has been shown that the stock of workers deployed by POEA annually is about 35-45 percent of the estimated number of OCWs for April-September of the same year based on SOF (NSO, 1997). The total number of land-based and sea-based Filipino OCWs deployed by POEA during the same period is 384,076. From this, we can estimate the stock of overseas Filipino workers in 1997 to total 2.195 million.

Summing the estimated number of permanent emigrants, OCWs and

illegitimate workers will give us the total stock of Filipinos abroad to reach at least 5 million persons depending on the estimation method used. This is about 6.67% of the total population of 73.53 million in 1997.

2.2 Flow of International Remittances

Next, we evaluate the magnitude of international remittances in the Philippines in which, like in the case of the stock of emigrants, we also encounter estimation problems. We can cite the following three sources of data on remittances: (1) the *Bangko Sentral ng Pilipinas (BSP)* (Central Bank of the Philippines); (2) the FIES; and (3) the SOF. Their respective estimates are shown and compared in Table 3.3.

Each of these datasets has its own weakness that questions whether it is the most reliable estimation or not. The BSP has data reports on that fraction of actual remittances sent through the formal banking system and does not reflect remittances in the form of material goods and unreported cash sent through private couriers, fellow migrants and relatives.[1] In this sense, household surveys such as the FIES and SOF may give a better indication of the magnitude of remittances coming to the Philippines.

The Family Income and Expenditure Survey (FIES) asks the household respondent about the amount of money it receives from abroad according to the following classifications: (1) income from a member who is an overseas contract worker, (2) income from a member who is a permanent migrant, and (3) income from other sources like pensions, dividends and cash gifts from abroad. We give details about remittances estimated using this survey data in Chapter 5. On the other hand, the SOF extracts information

Table 3.3. Estimates of International Remittances (in current million US$)

Year	Source of Data			
	Bangko Sentral ng Pilipinas (BSP)	Family Income and Expenditure Survey (FIES)	Survey on Overseas Filipinos (SOF)	
			cash sent	cash sent + cash brought home
1980	421			
1981	546			
1982	810			
1983	944			
1984	659			
1985	694	1380		
1986	696			
1987	809			
1988	874	1514		
1989	1,002			
1990	1,203			
1991	1,649	2400		1776
1992	2,222			
1993	2,276		1165 **	1558 **
1994	3,008		1265 **	1618 **
1995	3,868		1205 **	1471 **
1996	4,307		1488 **	1808 **
1997	5,742	4020 *		
1998	4,926			
1999	6,795			

Notes:

* Computed by multiplying average income from abroad with total number of households with migrants.

** Computed by multiplying the total remittances for the last six months by 2 to obtain annual estimate.

Sources:

Bangko Sentral ng Pilipinas (Central Bank of the Philippines).

for FIES and SOF data for 1985-1991: taken from Rodriguez (in O'Connor and Farsakh, 1996), Table 3.

for FIES and SOF data for 1982-1997, author's calculation from Survey on Overseas Filipinos (SOF) and Family Income and Expenditure Survey (FIES)

for exchange rates, World Development Indicators, 2000 (in CD-ROM)

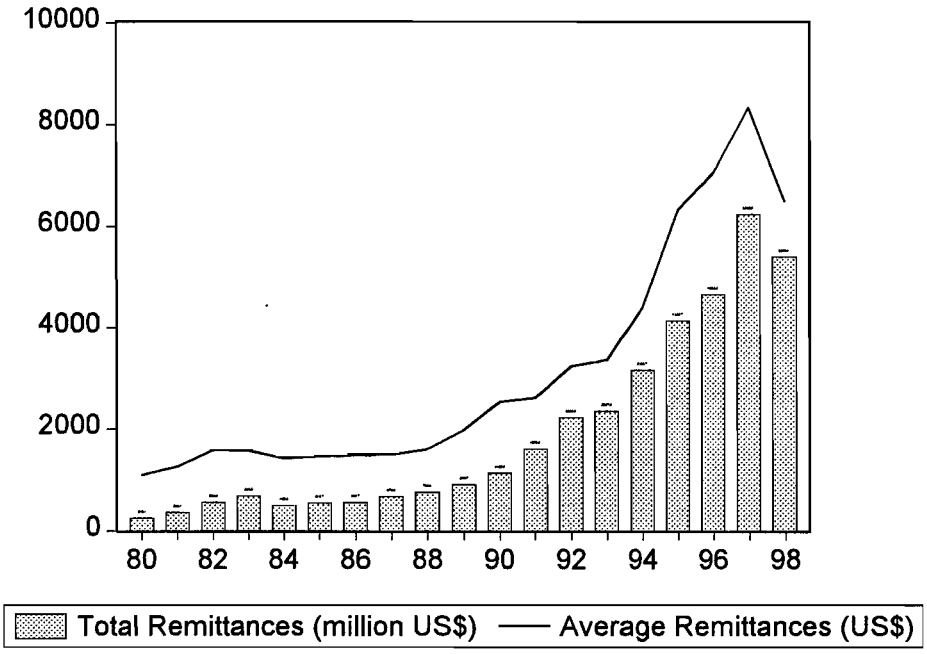
on the migrant himself/herself. The data includes remittances transferred in cash and kind, sent through the banking system, through friends or brought home by the migrant himself/herself when he returns to the country.

Survey data, however, tend to be under-reported and subject to memory-recall (Rodriguez, 1996). For 1991 when data for all sources are available, we can see that there are wide discrepancies in their values. Rodriguez (1996, p. 176) found out that the FIES data "tended to be twice as large as the BSP data" and the SOF data are "somewhere in between" for the year 1991. However, comparing SOF and BSP data for succeeding years, BSP's estimation is much higher than those derived from survey results. This suggests that survey results such as the FIES and SOF may be grossly underreported.

For our purpose, we will use BSP's results in evaluating the magnitude of total and average remittances. We refer to Figure 3.1 to show the increase in total and average remittances in the period 1980-1998. Total and average remittances steadily increased annually until 1997 when it considerably decreased due to the Asian currency crisis.

With regards to the country where the remittances came from, we refer to Table 3.4. Of the total amount of remittances in 1990-1999, about 60% - 80% originated from the United States, followed by Saudi Arabia, Hong Kong, Japan, and the United Kingdom. The large amount of remittances from the United States, even if it is not the main destination of Filipino migrants, reflects the practice of banks to transfer the remittances to their main office in the United States first before sending them to the Philippines. As a result,

Figure 3.1. Total and Average Remittances of Overseas Contract Workers (OCWs)
(Land-based and Sea-based) (1980-1998)
(in constant 1995 US$)



Sources: for remittances, Bangko Sentral ng Pilipinas
for number of OCWs: Philippine Overseas Employment Administration

Table 3.4. Overseas Contract Workers' (OCWs) Remittances in Top Ten Destination Countries (1980-1999)
(in current million U.S. dollars)

COUNTRY	1980-1984	1985-1989	1990-1994	1995-1999	TOTAL
1. United States of America	423.19	1,258.21	5,262.13	16,945.50	23,889.03
2. Kingdom of Saudi Arabia	319.51	1,144.40	593.04	244.79	2,301.73
3. Hongkong	4.61	27.59	285.87	863.17	1,181.23
4. Japan	47.98	68.87	206.79	697.29	1,020.92
5. United Kingdom	46.93	44.51	186.16	730.33	1,007.93
6. Singapore	8.03	28.02	140.52	463.85	640.42
7. Germany [a]	22.65	14.94	97.93	370.55	506.06
8. Kuwait	5.87	41.93	60.31	100.09	208.20
9. Netherlands	14.88	4.52	14.22	99.64	133.27
10. Greece	0.61	4.63	6.87	21.12	33.23
Grand Total (all OCWs)	3,380.96	4,074.16	10,358.68	25,637.39	43,415.19
Total (landbased)	2,004.16	3,279.54	8,305.03	23,797.73	37,386.47

Notes: Adjusted, to include peso conversion of Foreign Currency Deposits; include bank-to-bank remittances only.
[a]Data before 1990 include remittances from West Germany only.

Source: Philippine Overseas Employment Administration (POEA)

the Central Bank records them as remittances from the United States. This practice takes place especially in the case of remittances from the Middle East.

We can also classify remittances based on the mode of remittance. Table 3.5 shows that on the average, remittances sent in cash comprise about 70% of total remittances. Cash remittances are sent through banks, agency or local offices, friends and co-workers, and courier (door-to-door) services. That the bulk of remittances in cash are channeled through banks can be partly explained by the government's active implementation of mandatory remittance program. On the other hand, the share of remittances brought home by the migrant himself, which can be considered the savings of the migrant during his stay abroad, is on the decline.

3. Who Migrates and Who Does Not? : The Selectivity of Migrants

Next, we will draw some generalizations regarding the age, gender, skills, educational attainment and destination, of OCWs and permanent emigrants abroad. The selectivity issue is relevant because we know that migrants are not a homogenous group of people and therefore, their composition will have serious implications on their contribution to the economy of the sending country.

3.1. Age

Table 3.6 and Figure 3.2 show the age profile of Filipino OCWs and permanent emigrants in 1988, 1993 and 1996 according to gender. First, regarding OCWs, we can see that the majority of the OCWs are of prime

Table 3.5. Composition of Overseas Contract Workers' (OCWs) Remittances by Mode of Remittance (1993-1996)

Mode	1993	1994	1995	1996
Cash Sent	*66.20 %*	*71.43 %*	*71.66 %*	*73.31 %*
(as (%) of Total Cash Sent)				
Banks	63.78 %	65.45 %	64.53 %	67.78 %
Agency/Local Office	4.45 %	3.51 %	4.13 %	6.80 %
Friends/Co-workers	6.48 %	5.36 %	3.31 %	3.65 %
Courier (Door-to-Door)	22.38 %	24.05 %	24.94 %	20.80 %
Others	2.90 %	1.63 %	3.10 %	0.97 %
Total	100.00 %	100.00 %	100.00 %	100.00 %
Cash Brought Home	*22.46 %*	*19.29 %*	*15.74 %*	*15.79 %*
In Kind	*11.34 %*	*9.28 %*	*12.59 %*	*10.90 %*
Total Remittances in Cash and Kind	100.00 %	100.00 %	100.00 %	100.00 %

Note:The data include remittances in April-September of each year only.

Source: Survey on Overseas Filipinos (SOF)

Table 3.6. Gender-Age Profile of Overseas Contract Workers (OCWs) and Permanent Emigrants, 15 years and above (January, 1988, 1993 and 1996)

Age Bracket (years old)	Overseas Contract Workers (OCWs)			Permanent Emigrants**		
	January, 1988 (as % of total)	1993 (as % of total)	1996 (as % of total)	1988 (as % of total)	1993 (as % of total)	1996 (as % of total)
Both Sexes						
14 and below	0.00	0.00	0.00	21.68	18.87	19.97
15-24	17.28	14.57	14.44	19.98	21.86	22.13
25-34	43.33	43.13	42.22	22.85	23.34	21.93
35-44	25.85	29.14	28.78	13.53	12.83	11.93
45 and above	13.53	13.16	14.66	22.04	23.09	24.03
Male	59.11 *	59.26 *	55.89 *	42.44 *	39.52 *	40.13 *
15-24	7.14	8.18	10.12			
25-34	43.85	41.12	39.09			
35-44	30.11	34.33	31.94			
45 and above	18.91	15.97	18.65			
Female	40.89 *	40.70 *	44.11 *	57.56 *	60.48 *	59.87 *
15-24	31.94	23.71	19.95			
25-34	42.56	46.00	45.96			
35-44	19.7	21.71	24.24			
45 and above	5.76	7.71	9.59			

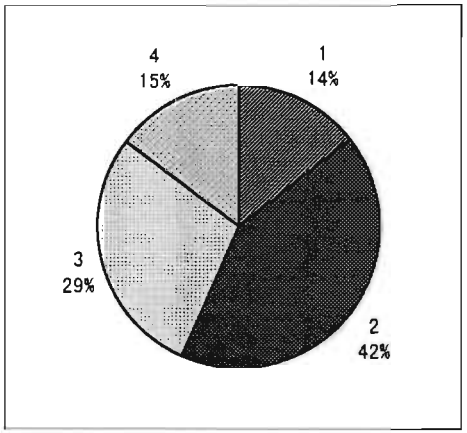
* as percentage of the total (male + female OCWs)

** No data available for gender-age profile of permanent emigrants.

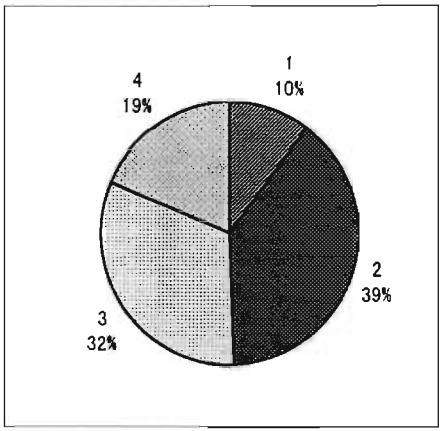
Sources:
for OCWs: 1993 Survey on Overseas Filipinos (SOF).
1996: Author's Calculations from Survey on Overseas Filipinos (SOF) Database, 1996.
for Permanent Emigrants: Commission on Filipinos Overseas.

Figure 3.2. Age Profile of Overseas Contract Workers (OCWs) (1996)

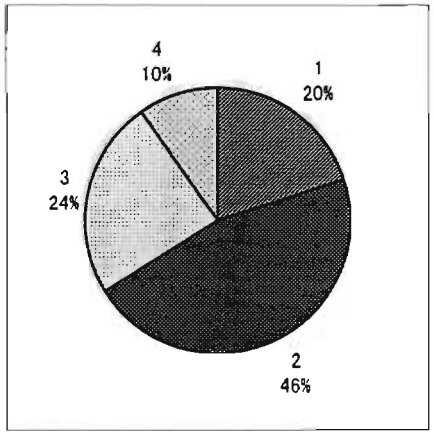
Both Sexes



Male



Female



Age Bracket	Both Sexes (as % of total)	Male (as % of total)	Female (as % of total)
1. 15-24	14.44	10.12	19.95
2. 25-34	42.22	39.09	45.96
3. 35-44	28.78	31.94	24.24
4. 45 and over	14.66	18.65	9.59
Total	100.00	100.00	100.00

working age, with more than 40% of the total OCWs in the 25-34 years old age bracket. Second, while this trend is found in both genders, we see that female OCWs are relatively younger than their male counterparts. Third, if we compare the data for 1996 with those for 1988 and 1993, we observe that (1) male workers classified into age groups have become more dispersed, (2) the share of persons above 45 years old has increased considerably for both men and women, and (3) the share of women aged less than 25 years old has significantly declined.

From these observations, we can say that younger people are still more inclined to work abroad than older people because theoretically, they have a longer time period to maximize the expected earnings in the host country. This also reflects the type of labor that is being demanded by the industries of the host country, i.e., the service and blue-collar sectors that require physical strength and youth. That the government strictly imposes age restriction, particularly for women, is reflected in the declining share of women below 25 years old to total women OCWs.

In Table 3.6, we also present the age profile of permanent emigrants. We can see that the permanent emigrants are more widely dispersed among the young and old compared to OCWs. Moreover, the share of those who are, by definition, not economically active group (less than 15 years old or more than 60 years old) is about 40% of the total. This implies that many of the permanent emigrants are dependents of parents or children who are already permanent residents in the destination countries. This also reflects the immigration policies of receiving countries which allow permanent migration

only for the purpose of joining relatives in the host country, and, at least superficially, not for employment purposes.

3.2. Gender

We can see an increasing feminization of OCWs in recent years, reflecting changes in both the demand and supply sides. Table 3.6 shows that the share of female OCWs is higher in 1996 (44.11%) compared to that in 1988 or 1993. First, on the demand for emigrant side, we can see that the share of service workers has increased (see below), and female domestic helpers make up a high percentage of the service workers (Go, in OECD, 1998). Then, on the supply side, the labor force participation rate of Filipino women (at more than 48%) is relatively high, These women have begun to participate also in the international labor market and in so doing, to assume the role of breadwinner in the family.

When we compare the gender composition of permanent emigrants from the Philippines in 1988, 1993 and 1996 (see Table 3.6), we can detect a trend that more women than men go abroad as permanent emigrants. This is especially true because more women than men in the Philippines marry nationals of foreign countries, so that annually, about 20% of all permanent emigrants are housewives who join the husband abroad. Moreover, this reflects the immigration policies of receiving countries towards family unification between its citizens, by birth or naturalized, and the remaining family members in the source country.

3.3. Educational Attainment

The majority of OCWs and permanent emigrants from the Philippines

have at least high school education, while about 10-13% of them have elementary education only, as shown in Table 3.7. If we consider educational attainment as a proxy for skills, with those with college education as skilled, and those with high school or elementary education as unskilled, then from the data in Table 3.7, we can say that around half of the total Filipino emigrants are skilled.

For OCWs, the males are slightly better educated than their female counterparts. Comparing the two periods, 1988 and 1996, we can see that the share of those with elementary education only increased slightly, implying that the opportunities in the international labor market even for this type of workers have been slowly on the rise in recent years.

That those with college education comprise a big share (about 40%) of the total is also evident in the data for permanent emigrants. However, compared to OCWs, the percentage of those with elementary education only is higher because these permanent emigrants do not necessarily go abroad to participate in the host country's labor market but they go as dependents of permanent emigrants and foreign nationals.

3.4. Occupational Jobs

The distribution of OCWs based on occupational groups for the period 1992-1997 is shown in Table 3.8 and Figure 3.3. We can identify the occupations in which the demand for Filipino OCWs is high: professional and technical workers, service workers and production workers, which in all comprise about 90% of the total. Professional and technical workers include medical and dental doctors, architects, engineers, teachers, creative artists

Table 3.7. Gender-Educational Attainment Profile of Overseas Contract Workers (OCWs) and Permanent Emigrants (January, 1988 and 1996)

Educational Attainment	Overseas Contract Workers (OCWs)		Permanent Emigrants**	
	January, 1988 (as % of total)	1996 (as % of total)	January, 1988 (as % of total)	1996 (as % of total)
Both Sexes	100.00	100.00	100.00	100.00
Elementary	10.11	12.05	20.43	18.28
High School	33.35	30.16	26.31 ***	32.43 ***
College and Post Graduate	56.26	57.79	42.39	41.65
Not Reported	0.28	0.00	10.87 ****	7.64 ****
Male	59.11 *	55.89 *	42.44 *	40.13 *
Elementary	9.99	11.01		
High School	32.13	26.47		
College and Post Graduate	57.73	62.52		
Not Reported	0.15	0.00		
Female	40.89 *	44.11 *	57.56 *	59.87 *
Elementary	10.43	13.35		
High School	35.13	34.84		
College and Post Graduate	54.17	51.81		
Not Reported	0.27	0.00		

Notes: * as percentage of the total..

** No data available for gender-age profile of permanent emigrants.

***Includes those who have received vocational training.

****Includes those with no formal education and those who are not of schooling age.

Sources: January, 1988: Integrated Survey of Households, National Statistics Office.

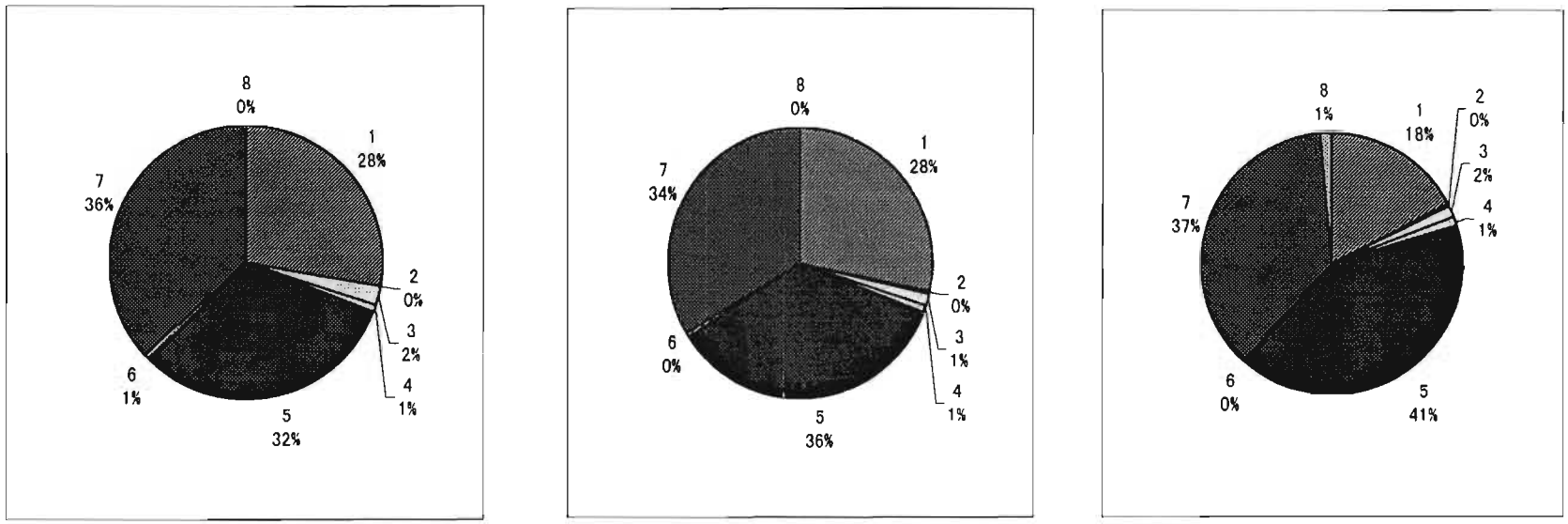
1996: Author's Calculations from Survey on Overseas Filipinos (SOF) Database

Table 3.8. Deployment of Newly Hired Overseas Contract Workers (OCWs) by Occupation Groups (1992-1997)

OCCUPATION GROUPS	1992	1994	1996	1997
	(%) share	(%) share	(%) share	(%) share
Professional and Technical Workers	27.72	28.46	17.52	23.22
Managerial Workers	0.11	0.13	0.15	0.26
Clerical Workers	2.09	1.46	1.54	1.64
Sales Workers	1.04	0.85	0.94	1.19
Service Workers	31.63	35.04	41.18	34.64
Agricultural Workers	0.78	0.49	0.40	0.25
Production Workers	36.61	33.51	36.78	38.79
Others Not Elsewhere Classified	0.03	0.05	1.49	0.00
TOTAL	100.00	100.00	100.00	100.00

Source: Philippine Overseas Employment Administration (POEA)

Figure 3.3. Occupation of Newly-Hired Overseas Contract Workers (OCWs) (1992, 1994, 1996)



1992 1994 1996

Occupation Groups

1	Professional and Technical Workers	5	Service Workers
2	Managerial Workers	6	Agricultural Workers
3	Clerical Workers	7	Production Workers
4	Sales Workers	8	Others (Invalid Category)

Source: Philippine Overseas Employment Administration (POEA)

and aircrafts and ships officers and many of them are employed in the United States and Canada. Service workers consist of those in the housekeeping service (domestic helpers), hotel and restaurant business, hairdressers and beauticians and protective service workers. They are highly concentrated in Hong Kong, Saudi Arabia and Singapore. On the other hand, the bulk of production workers (transport equipment operators, construction workers, machine operators, and manufacturing workers) are found in Saudi Arabia and Taiwan.

Let us now look more closely at the composition of OCWs based on occupation and gender in the year 1995. From Table 3.9, we can draw the following observations: First, about 4 out of 10 OCWs are in the service sector (40.63%) or the production/manufacturing sector (40.38%). Second, the majority of male OCWs are employed as production workers (68.99%), while 72.82% of all female workers are employed as service workers. Third, Filipino workers are seldom found holding jobs as agricultural or managerial workers. Lastly, we refer to column 4 of Table 3.9. Here, we can see that only 15% of all service workers from the Philippines are male, while only about 10.59% of all production workers are female. All these suggest that the demand for foreign labor in the destinations is not only highly concentrated in some types of occupation, but also, that the demand for these occupations is highly biased either towards the male or the female gender.

Another issue that has to be looked at is the possible mismatch between the occupation of the emigrant before he/she migrates and his/her job abroad. We can see from above that the majority of OCWs are college

Table 3.9. Composition of Overseas Contract Workers (OCWs) by Gender and Major Occupation Groups (1995)

OCCUPATION GROUP	All (in 1,000s)	Male (in 1,000s)	Female (in 1,000s)	% of Female Workers in each Occupation Group*
Professional and Technical Workers	94 (11.82%)	51 (12.26%)	44 (11.61%)	46.81%
Managerial Workers	3 (0.38%)	2 (0.48%)	1 (0.26%)	33.33%
Clerical Workers	21 (2.64%)	11 (2.64%)	10 (2.64%)	47.62%
Sales Workers	15 (1.89%)	6 (1.44%)	9 (2.37%)	60.00%
Service Workers	323 (40.63%)	47 (11.30%)	276 (72.82%)	85.45%
Agricultural Workers	11 (1.38%)	10 (2.40%)	1 (0.26%)	9.09%
Production Workers	321 (40.38%)	287 (68.99%)	34 (8.97%)	10.59%
Others Not Elsewhere Classified	7 (0.88%)	3 (0.72%)	4 (1.06%)	57.14%
TOTAL	795 (100.00%)	416 (100.00%)	379 (100.00%)	47.67%

Notes: * Numbers in parentheses represent percentage of total OCWs classified according to gender.
** Computed as the ratio between female OCWs and all OCWs for each occupation group.

Source: 1995 Survey on Overseas Filipinos (SOF)

degree holders. However, we can also see that many of these OCWs work as production or service workers, which may not require college education. From interviews with OCWs, we learn that some of them work as domestic helpers although they used to be elementary school teachers in the Philippines. At present, we cannot fully support this observation with detailed data. However, it is important to conduct further studies regarding this issue because it has serious implications on the misappropriation of human capital in the country.

On the other hand, about 70% of permanent emigrants are unemployed (see Table 3.10). Of those who are unemployed, the majority are housewives and students. Some of the reasons given are the receiving countries' immigration policy of family unification and the desire of young people to study abroad, and work in the host country after graduation.

3.5. Destination

We can see significant changes in the destination of the Filipino OCWs and permanent emigrants in the past 16 years. While in the 1980's, only about 20% (see Table 3.11) of workers went to Asian destination, its share has more than doubled since 1986. In contrast to this, the share of workers going to the Middle East has reduced to about half in mid-1980s. These are brought about by the structural, demographic and institutional transformations in the destination countries that triggered the change in their demand for foreign labor. We will discuss this issue in details in chapter 4.

On the other hand, we observe that permanent emigration is mostly limited to 4 countries: USA, Canada, Australia and Japan, as shown in Table

Table 3.10. Composition of Filipino Permanent Emigrants by Major Occupation Groups (1990-1996)

OCCUPATION GROUP	1990		1993		1996	
	(in 1,000s)	% of total	(in 1,000s)	% of total	(in 1,000s)	% of total
EMPLOYED	19.05	(30%)	19.51	(29%)	16.73	(27%)
Professional and Technical Workers	7.69	(12%)	7.03	(11%)	6.24	(10%)
Managerial Workers	0.41	(1%)	0.80	(1%)	0.62	(1%)
Clerical Workers	2.03	(3%)	2.30	(3%)	1.62	(3%)
Sales Workers	3.58	(6%)	3.38	(5%)	3.33	(5%)
Service Workers	1.30	(2%)	1.67	(3%)	1.01	(2%)
Agricultural Workers	2.18	(3%)	2.86	(4%)	1.18	(2%)
Production Workers	1.58	(2%)	1.38	(2%)	2.69	(4%)
Others N.E.C.	0.28	(0%)	0.08	(0%)	0.05	(0%)
UNEMPLOYED	44.16	(70%)	46.91	(71%)	44.20	(73%)
Housewives	11.28	(18%)	15.38	(23%)	14.38	(24%)
Retirees	1.83	(3%)	2.18	(3%)	2.05	(3%)
Students	13.44	(21%)	17.14	(26%)	16.84	(28%)
Minors	5.18	(8%)	4.75	(7%)	4.30	(7%)
Not Reported/Unknown	12.43	(20%)	7.46	(11%)	6.63	(11%)
TOTAL	63.20	(100%)	66.41	(100%)	60.93	(100%)

Source: Commission on Filipinos Overseas (CFO)

Table 3.11. Deployed Landbased Overseas Contract Workers (OCWs) by Major World Group (1984-1999)

Year	Asia		Americas		Europe		Middle East		Others		Total	
	(in 1,000s)	(%)	(in 1,000s)	(%)	(in 1,000s)	(%)	(in 1,000s)	(%)	(in 1,000s)	(%)	(in 1,000s)	(%)
1984	39	(13%)	3	(1%)	4	(1%)	250	(83%)	5	(2%)	300	(100%)
1985	53	(16%)	4	(1%)	4	(1%)	254	(79%)	6	(2%)	320	(100%)
1986	73	(22%)	4	(1%)	4	(1%)	236	(73%)	7	(2%)	324	(100%)
1987	90	(24%)	6	(1%)	6	(1%)	272	(71%)	9	(2%)	382	(100%)
1988	93	(24%)	8	(2%)	8	(2%)	267	(69%)	10	(3%)	385	(100%)
1989	86	(24%)	10	(3%)	8	(2%)	241	(68%)	10	(3%)	355	(100%)
1990	91	(27%)	10	(3%)	7	(2%)	218	(65%)	10	(3%)	335	(100%)
1991	133	(28%)	13	(3%)	13	(3%)	303	(64%)	15	(3%)	477	(100%)
1992	135	(26%)	12	(2%)	15	(3%)	341	(66%)	15	(3%)	518	(100%)
1993	168	(33%)	12	(2%)	13	(3%)	303	(59%)	13	(3%)	510	(100%)
1994	194	(37%)	13	(2%)	12	(2%)	286	(55%)	13	(3%)	518	(100%)
1995	167	(38%)	13	(3%)	10	(2%)	234	(54%)	12	(3%)	437	(100%)
1996	174	(41%)	8	(2%)	11	(3%)	221	(52%)	9	(2%)	424	(100%)
1997	235	(48%)	7	(1%)	13	(3%)	221	(45%)	11	(2%)	487	(100%)
1998	307	(48%)	9	(1%)	26	(4%)	280	(44%)	16	(2%)	638	(100%)
1999	300	(47%)	9	(1%)	31	(5%)	287	(45%)	14	(2%)	640	(100%)

Note: Figures in parentheses are percentage of OCWs deployed in a region to total deployed workers in a given year.

Source: Philippine Overseas Employment Administration (POEA)

3.12. However, while in the 1980's, permanent emigrants to USA made up about 70-80% of the total, in the 1990's, more and more Filipinos applied for permanent residence status in Canada and Japan so that the shares of these countries to total have increased significantly. In Japan, the increase was 16 times in actual number and tenfold in share to total from 1981 to 1999.

4. International Migration, Remittances and Economic Development in the Philippines

In chapter 2, we showed that international migration and remittances are causes and consequences of economic development at the same time. Based on this framework, we will now discuss the interrelationships between economic development and international migration in the Philippines. First, we will look at the linkage between international migration and conditions in the labor market. Second, we will show to what extent remittances help in relieving the balance of payment deficit of the country. Lastly, we will also present some evidence on the two-way effect between national income and capital accumulation in the country and international migration and remittances. In the next chapters, we will discuss the following topics: (1) difference in income, population and labor force as factors for international migration, (2) the impact of remittances in the economy through the consumption channel, and (3) the effect of remittances on the distribution of income in the Philippines.

4.1. International Migration, Remittances and the Labor Market

The size of the population, the labor force and unemployment rates

Table 3.12. Number of Registered Filipino Emigrants by Major Country of Destination (1981-1999)

Year	USA		Canada		Australia		Japan		Others		Total	
	(in 1,000s)	(%)	(in 1,000s)	(%)	(in 1,000s)	(%)	(in 1,000s)	(%)	(in 1,000s)	(%)	(in 1,000s)	(%)
1981	40.31	(82%)	5.23	(11%)	2.75	(6%)	0.25	(1%)	0.33	(1%)	48.87	(100%)
1982	44.44	(82%)	4.90	(9%)	2.93	(5%)	0.31	(1%)	1.38	(3%)	53.95	(100%)
1983	34.79	(82%)	3.95	(9%)	2.61	(6%)	0.14	(0%)	0.99	(2%)	42.48	(100%)
1984	34.68	(83%)	2.46	(6%)	2.92	(7%)	0.14	(0%)	1.35	(3%)	41.55	(100%)
1985	38.65	(85%)	2.10	(5%)	3.46	(8%)	0.13	(0%)	0.94	(2%)	45.27	(100%)
1986	40.65	(82%)	3.21	(6%)	4.37	(9%)	0.05	(0%)	1.06	(2%)	49.34	(100%)
1987	40.81	(72%)	5.76	(10%)	8.98	(16%)	0.01	(0%)	0.79	(1%)	56.35	(100%)
1988	41.40	(71%)	6.61	(11%)	9.34	(16%)	0.06	(0%)	0.66	(1%)	58.07	(100%)
1989	39.50	(71%)	8.03	(14%)	5.92	(11%)	1.27	(2%)	0.98	(2%)	55.70	(100%)
1990	43.82	(69%)	8.41	(13%)	5.86	(9%)	3.58	(6%)	1.55	(2%)	63.21	(100%)
1991	43.98	(70%)	7.23	(12%)	5.73	(9%)	3.95	(6%)	1.78	(3%)	62.67	(100%)
1992	46.71	(73%)	7.45	(12%)	4.10	(6%)	4.05	(6%)	1.86	(3%)	64.17	(100%)
1993	44.92	(68%)	11.63	(18%)	3.08	(5%)	4.53	(7%)	2.25	(3%)	66.41	(100%)
1994	40.52	(63%)	14.30	(22%)	3.22	(5%)	4.23	(7%)	2.27	(4%)	64.54	(100%)
1995	34.63	(62%)	11.29	(20%)	2.97	(5%)	4.88	(9%)	2.49	(4%)	56.26	(100%)
1996	41.32	(68%)	10.05	(16%)	2.00	(3%)	4.52	(7%)	3.04	(5%)	60.93	(100%)
1997	37.02	(68%)	8.22	(15%)	2.13	(4%)	4.17	(8%)	2.55	(5%)	54.08	(100%)
1998	24.89	(64%)	5.65	(14%)	2.19	(6%)	3.81	(10%)	2.47	(6%)	39.01	(100%)
1999	24.12	(60%)	6.71	(17%)	2.60	(6%)	4.22	(10%)	2.86	(7%)	40.51	(100%)
Total (1981-1999)	737.15	(72%)	133.19	(13%)	77.16	(8%)	44.29	(4%)	31.60	(3%)	1,023.36	(100%)

* Note : for the United States of America
1) 1981 - 1991 : Include Trust Territories of American Samoa, Guam, Marianas Islands, Saipan, and U.S. Virgin Island
2) 1992 - 1994 : Include Trust Territories of American Samoa, Guam, Marianas Islands, Saipan, U.S. Virgin Island, and the Commonwealth of Puerto Rico.

Source: Commission on Filipinos Overseas (CFO)

are main push factors affecting labor migration. To be able to assess their relationships, we first discuss the sources of imbalance between labor supply and demand in the country. Some indicators of labor supply and their growth rates are shown in Table 3.13. The high population growth, averaging 2.79% in the 1970s and 1980s resulted in a continuing increase in the population 15 years and above, and the labor force, which increased at an average rate of 3.31%. This situation, compounded by the generally increasing labor force participation rate that reached 67% in 1998 raised labor supply and has aggravated the unemployment situation in the face of stagnant economic growth of the country.

On the other hand, we can evaluate the demand for labor in the domestic economy by comparing the growths in employment and gross domestic product. The data are shown in Table 3.14. We have seen that real GDP growth rates were positive for most years. On the other hand, the percentage change in the number of employed persons registered positive growth even when the GDP growth rates were negative. Using this data, we compute for the elasticity (Table 3.14, col. 4) of employment with respect to GDP, a rough index of the absorptive capacity of the domestic economy to generate employment. We can see that for most years, the elasticity is less than one in absolute value, suggesting that the demand for labor did not increase in proportion with GDP.[2] This contributed to the increase in the actual number of unemployed in the past 18 years.

The annual rate of unemployment remains at a high level of 8%-10% level since 1987 (see Table 3.13, column 5). To what extent overseas

Table 3.13. Household Population 15 Years Old and Over, Labor Force and Labor Force Participation Rate (1981-1998)

YEAR	Population 15 years and up (A) (in 1,000s)	(% change)	Labor Force (B) (in 1,000s)	(% change)	Labor Force Participation Rate (C) (in %)	Unemployment Rate (D) (in %)
1981	29,501	NA	18,202	NA	61.7	5.40
1982	30,414	3.09	18,551	1.92	61.0	5.50
1983	31,278	2.84	19,855	7.03	63.5	4.90
1984	32,261	3.14	20,416	2.83	63.3	NA
1985	32,889	1.95	20,743	1.60	63.1	6.10
1986	33,469	1.76	21,362	2.98	63.8	6.40
1987	34,463	2.97	22,563	5.62	65.5	9.10
1988	35,478	2.95	23,449	3.93	66.1	8.30
1989	36,520	2.94	24,120	2.86	66.0	8.40
1990	37,636	3.06	24,244	0.51	64.4	8.10
1991	38,599	2.56	25,631	5.72	66.4	9.00
1992	39,831	3.19	26,290	2.57	66.0	8.60
1993	41,004	2.94	26,879	2.24	65.6	8.90
1994	42,213	2.95	27,654	2.88	65.5	8.40
1995	43,156	2.23	28,380	2.63	65.8	9.00
1996	44,599	3.34	29,733	4.77	66.7	8.60
1997	45,827	2.75	30,881	3.86	67.4	8.70
1998	47,106	2.79	31,573	2.24	67.0	10.1
Average	37,569	2.79	24,474	3.31	64.9	7.9

Source: Yearbook of Labor Statistics, various editions

Table 3.14. Overseas Contract Workers (OCWs) and the Demand for Labor in the Philippines (1981-1998)

YEAR	% Change in GDP from previous year (in constant 1985 prices) (A)	% Change in Number of Employed from previous year (B)	Elasticity of Employment with respect to GDP (A)/(B)	OCWs as % of the Labor Force (No. of OCWs/ Labor Force) x 100	OCWs as % of the Unemployed (No.of OCWs/ No. of Unemployed) x 100
1981	3.42	1.48	0.43	1.72	17.60
1982	3.62	2.31	0.64	2.07	20.30
1983	1.87	3.25	1.73	2.36	21.02
1984	-7.32	NA	NA	1.84	16.53
1985	-7.31	NA	NA	1.91	14.27
1986	3.42	2.40	0.70	1.90	14.99
1987	4.31	-0.15	-0.03	2.19	17.77
1988	6.75	3.73	0.55	2.23	20.92
1989	6.21	2.64	0.43	2.14	20.68
1990	3.04	2.95	0.97	2.09	34.07
1991	-0.58	1.34	-2.31	2.72	22.64
1992	0.34	5.36	15.87	2.86	26.63
1993	2.12	2.00	0.95	2.84	27.88
1994	4.39	2.90	0.66	2.84	27.41
1995	4.68	1.67	0.36	2.53	24.26
1996	5.85	2.77	0.47	2.51	25.81
1997	5.17	4.64	0.90	2.65	27.84
1998	-0.48	0.67	-1.40	2.56	23.71
Average	2.19	2.50	1.31	2.33	22.46

Sources:

Author's Calculations from World Development Indicators 2000,
Philippine Overseas Employment Authority (POEA), Statistical Yearbook of the Philippines

employment helped in easing the unemployment problem can be assessed through its share in total labor force (Table 3.14, col. 5) and unemployment (Table 3.14, col. 6). On the average, the annual deployment of OCWs comprised 2.33% of the current labor force. On the other hand, if we consider all departing workers to come from the unemployed, they comprise an average of 22.46% of the total unemployed persons. In this sense, we can say that international migration has indeed helped in solving the unemployment problem in the country.

At the same time, international migration may impact on the demographic variables, and eventually, the labor market of the Philippines. First, regarding population, emigration means an instant reduction in the country's population and labor force. In the long run, the selectivity and composition of the outflow of international emigrants as to age, gender, and position in the family, will affect fertility and birth rates, and the future labor force.

In the preceding section, we have observed that there is a trend towards feminization of international migration and that many women migrants belong to the 20-34 years old age bracket, which is considered to be the most sexually productive of all age groups. If this trend continues, we can predict that the fertility rate will decline because (1) studies show that the number of children of those who married in their early twenties is higher than other age groups, and (2) as women earn high incomes abroad, the opportunity cost of childbearing increases. (Abella in Battistella and Paganoni, 1992). However, the decline in fertility due to the reasons

mentioned above may be offset by the increasing marginal propensity for children as income increases, though we cannot find any study to support this claim.

Second, regarding the impact of international migration on the labor market through the skill composition of the emigrants, we have seen in the previous section that the majority of overseas Filipinos are skilled. However, there are no studies to prove that the departure of the skilled workers from the Philippines had adverse effect on wages even in specific sectors. We can cite a study by Tan (1983) which shows that the elasticity of labor supply based on skills is "elastic" and does not lead to skill shortages in the country. Vasquez (in Battistella and Paganoni, 1992) also concluded that there are no significant increases in wage levels in occupations that are in demand in the international labor market in the period 1973-1980. Even the construction industry, which has the highest demand for Filipino male OCWs, did not indicate higher than average increase in wage level (Tan, 1983).

Another relevant issue regarding the contribution of international migration to the labor market conditions in the Philippines is that of the return migrants. First is the question of whether these return migrants have developed skills in the host country that can be used for the development of the country, or the "technology transfer" issue. A survey by the Institute of Labor and Manpower Studies in the Philippines in 1982 shows that "only about 14% (of the returnees) acquired skills abroad" (quoted from Vasquez in Battistella and Paganoni, 1992, p. 47). Another study used by Rodriguez (1998)[3] revealed that 75% of the sample returnees did not learn new skills

abroad. For the 1990s, we cannot find any existing literature regarding this issue. The absence of new skills or advanced technology learned by returning migrants makes it impossible for us to assess the role of international migration in transferring technology from the technologically advanced host countries to the Philippines.

4.2. International Migration, Remittances and the Balance of Payments

Before we discuss the interrelationship between remittances from Filipino emigrants abroad and the country's balance of payment, we will explain how remittances are classified in the Balance of Payment account. Remittances, which are considered as proxy for the compensation[4] of Filipino nationals abroad in the Philippine System of National Accounts (PSNA), are part of the net factor income from abroad (NFIA). Other than remittances, NFIA also includes net property income from abroad less income earned by foreigners in the Philippines. The sum of the trade balance (defined as exports-imports of goods and services), NFIA and net current transfers (defined as any amount of goods and services that carry no provision for repayment and excludes capital) make up the current account balance of the Philippines. We can see in Table 3.15 that the country's trade deficit generally worsened from 1988 to 1997. On the other hand, the increase in the amount of remittances contributed to the positive net factor income from abroad in the 1990s. We also note that the amount of remittances compared to the trade deficit, or net imports, is high, and at times remittances are more than enough to finance the trade deficit. In 1998, remittances were about twice as

Table 3.15. The Composition of the Current Account Balance of the Philippines (1981-1998) (in constant 1995 billion US$)

Year	Exports of Goods and Services (A)	Imports of Goods and Services (B)	Trade Balance (Net Imports) (C)=(A)-(B)	Net Factor Receipts (Remittances)* (D)		Net Current Transfers (E)	Current Account Balance (C)+(D)+(E)
1981	4.90	6.25	-1.35	-0.33	(0.23)	0.33	-1.11
1982	4.72	6.57	-1.85	-0.71	(0.45)	0.34	-1.77
1983	4.93	6.67	-1.74	-0.61	(0.65)	0.34	-1.36
1984	5.32	5.49	-0.17	-1.10	(0.46)	0.30	-0.52
1985	5.37	4.69	0.69	-1.02	(0.54)	0.30	0.51
1986	6.18	4.73	1.45	-1.04	(0.55)	0.35	1.31
1987	6.68	6.54	0.14	-0.99	(0.66)	0.47	0.28
1988	8.15	8.15	-0.01	-1.02	(0.74)	0.67	0.38
1989	9.93	10.77	-0.84	-1.21	(0.87)	0.75	-0.43
1990	10.72	13.10	-2.38	-0.82	(1.11)	0.67	-1.42
1991	12.17	13.49	-1.32	-0.49	(1.59)	0.81	0.58
1992	14.57	16.83	-2.26	0.45	(2.20)	0.82	1.21
1993	16.49	21.25	-4.77	0.94	(2.29)	0.72	-0.81
1994	21.26	27.29	-6.03	1.94	(3.09)	0.99	-0.01
1995	28.62	35.60	-6.98	3.91	(4.13)	0.94	2.01
1996	36.18	44.63	-8.45	3.54	(4.65)	0.64	0.39
1997	43.79	54.77	-10.98	5.08	(6.23)	1.17	1.50
1998	40.52	43.43	-2.92	3.85	(5.40)	0.48	6.81

Note: *The figure in parenthesis is the amount of remittances.

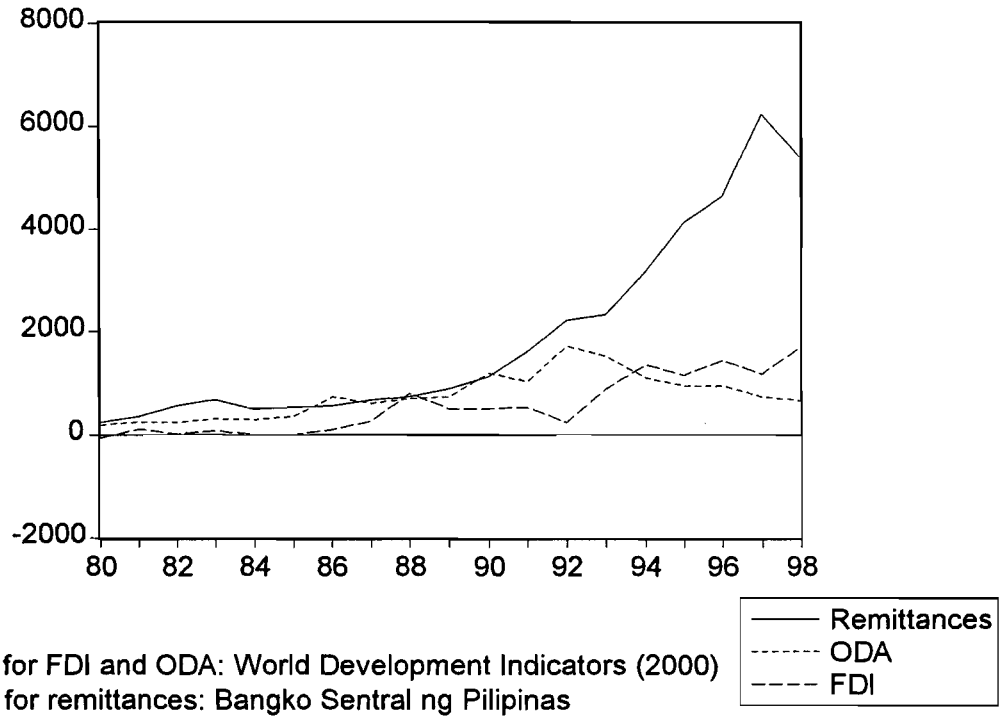
Sources: Author's Calculations from World Development Indicators 2000 and Bangko Sentral ng Pilipinas (BSP).

much as the trade deficit and this resulted in the high current account surplus of the country for this year. Apparently, remittances contributed in relieving the balance of payment constraints in the Philippines.

We can also compare the magnitude of workers' remittances with the net foreign direct investments and official development aid, two of the other sources of foreign exchange for developing countries. Figure 3.4 implies that for the Philippines, workers' remittances are a better source of foreign exchange compared to FDI or ODA, as supported by the following two points: (1) the amount of remittances is much higher than the amount of FDI and ODA, and (2) the workers' remittances are a more stable source of foreign currencies compared to FDI and ODA which suffered more serious fluctuations in the past 20 years. The higher dependence on remittances compared to FDIs could have contributed to the weaker effect of the Asian currency crisis in 1997 on the exchange rate between the peso and the dollar, compared to those of the other ASEAN countries, but there are no studies in the Philippines that show the exact relationship between exchange rates and remittances.

The observations above imply that through international migration, the country is able to raise substantial amount of foreign exchange through remittances to offset the trade deficit and the balance of payment deficit.[5] We must remember, however, that the data we used above are that which are channeled through banks and as compiled by BSP. Therefore, the contribution of international migration on the balance of payments may be much stronger if we also consider that part of remittances sent through

Figure 3.4. Remittances, Official Development Assistance (ODA)
and Foreign Direct Investment (FDI) (1980-1998)
(in constant 1995 million US$)



Sources: for FDI and ODA: World Development Indicators (2000)
for remittances: Bangko Sentral ng Pilipinas

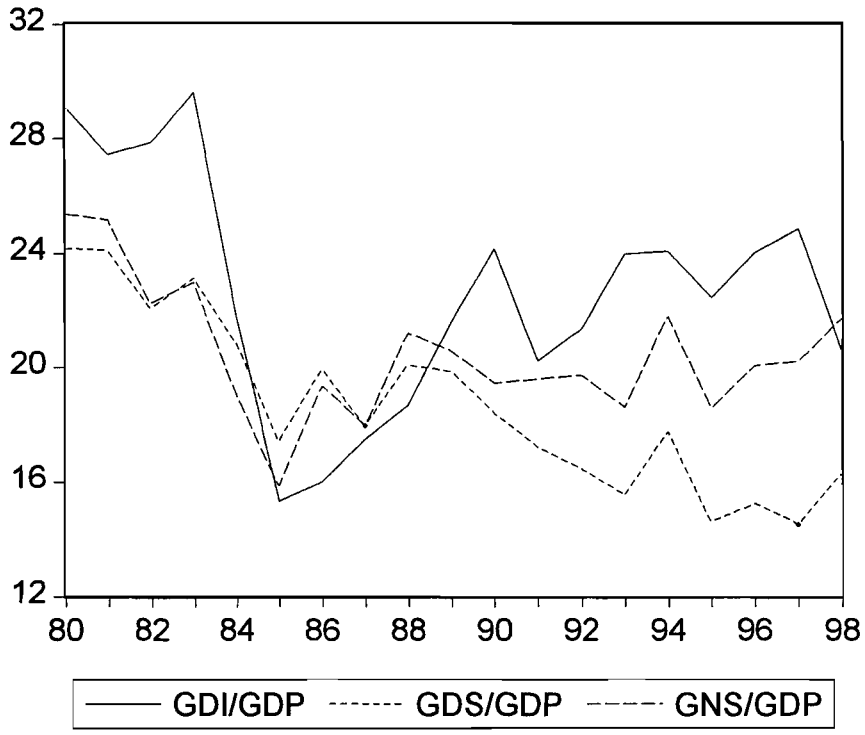
private courier services, friends and relatives or brought home by the migrant himself and are usually absorbed by the black market.[6]

4.3. International Migration, Remittances and Capital Accumulation

There are two channels in which remittances will affect income in the sending countries. The first channel is microeconomic - it depends on the consumption, savings and investment behavior of the remittance recipients. The second channel is macroeconomic - regardless of who invests, any remittances will affect national savings and investments, and consequently, economic growth. In this section, we focus on the macroeconomic channel, and discuss the migrants' consumption, investment and savings behavior in details in chapter 5.

In Figure 3.5, we present current gross national savings (GNS), gross domestic savings (GDS) and gross domestic investments (GDI) of the Philippines as percentage of current gross domestic product (GDP) for the period 1980-1998. From this, we can draw the following observations: First, GDI, GDS and GNI as percentage of GDP considerably declined until 1985. After 1985 however, GDI's share in GDP is maintained within the 20%-24% range, while GDS' share generally decreased until 1998. On the other hand, GNS' share in total GDP is at about 20% on the average. Second, the difference between GNS/GDP and GDS/GDP has widened since 1986, implying that the sum of current transfers and net income from abroad, (including remittances), have been positive and increasing more than proportionately with GDP since 1987.

Figure 3.5. Gross Domestic Investment (GDI), Gross Domestic Savings (GDS), and Gross National Savings (GNS) as Percentage (%) of Gross Domestic Product (GDP) (1980-1998)



Note: Values used are in constant 1995 pesos.
Source: World Development Indicators 2000.

To show that remittances make up a large part of domestic savings and investment, we take the ratio between remittances and GDS, and remittances and GDI, respectively. The results are shown in Figure 3.6. Though remittances on the average was only about 4% of the current GDP, if all remittances were used for savings or investments, they can be as much as a little below 50% of gross domestic savings and 35% of gross domestic investments. Since the average share of savings to income is 18%, we can compute for the share of savings from remittances to reach about 9% of GDS.

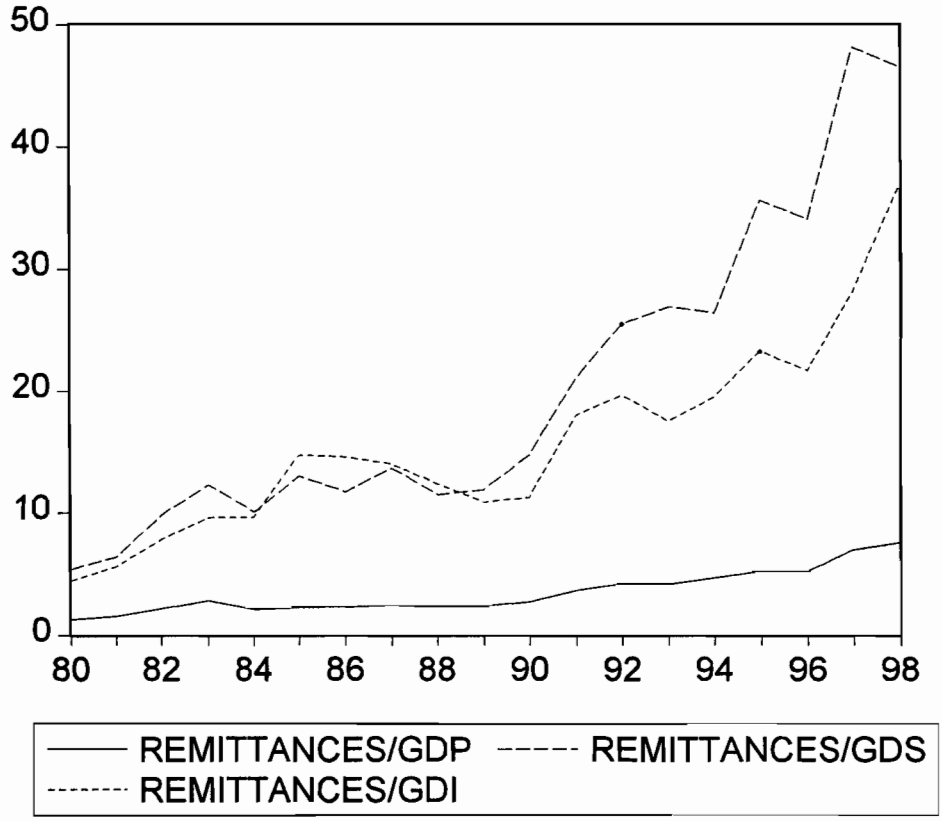
To what extent do remittances contribute in relieving the savings-investment gap of the country? Figure 3.7 shows that from 1986 to the present, the shares of both remittances and domestic investment-savings gap to GDP have been on the rise. The significance of remittances as a crucial source of finance becomes evident as we see from the data that remittances made up for more than one half of the investment-savings gap; and in 1998, total remittances were more than enough to offset it.

From the analysis above, we can say that in general, international migration and remittances have contributed considerably in the economic growth of the country. However, there is still a need to look deeper into the issues that may have negative impact, but have not been tackled in previous studies. In that way, we can evaluate the net effect of international migration on the economic development of the country.

5. The Overseas Employment Policy of the Philippines

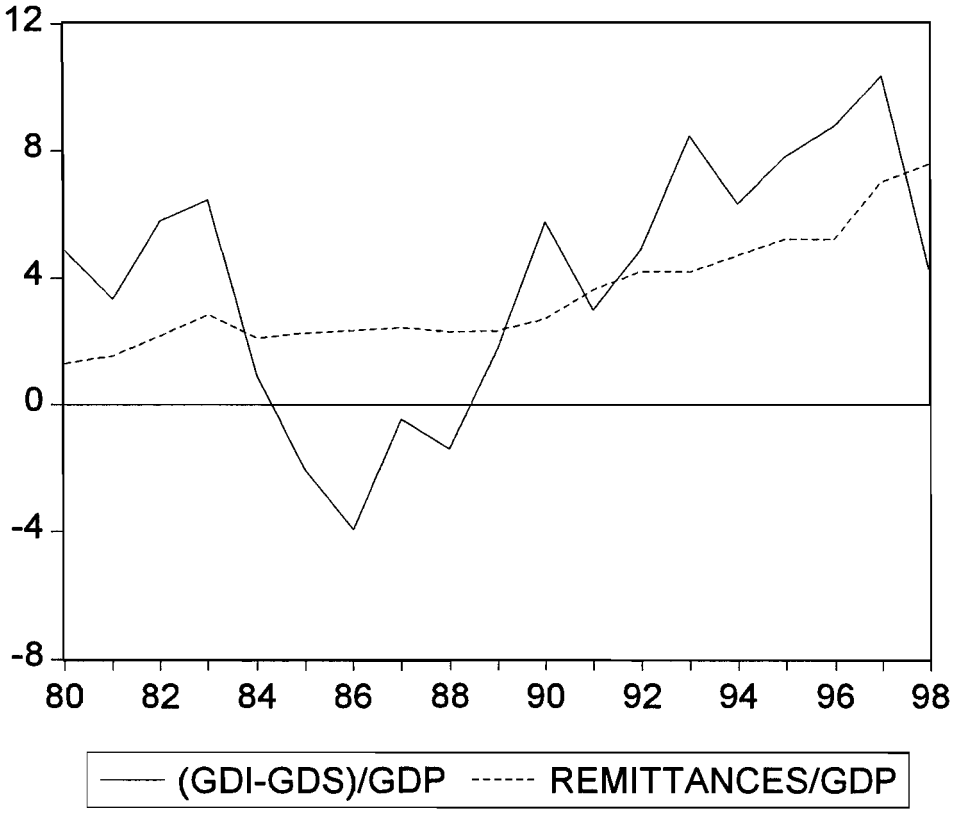
The Philippine government's stance regarding overseas employment is clearly stated in the "Migrant Workers and Overseas Filipinos Act of 1995"

Figure 3.6. Current Remittances as Percentage of Gross Domestic Product (GDP), Gross Domestic Investments (GDI) and Gross Domestic Savings (GDS) (1980-1998)



Sources: for GDP, GDI, GDS: World Development Indicators 2000.
for remittances: Bangko Sentral ng Pilipinas.

Figure 3.7. The Domestic Investment-Savings Gap and Remittances as Percentage of GDP (1980-1998, in constant pesos)



Source: World Development Indicators 2000.

(Republic Act No. 8042):

> "While recognizing the significant contribution of Filipino migrant workers to the national economy through their foreign exchange remittances, the State *does not promote* (italics supplied for emphasis) overseas employment as a means to sustain economic growth and achieve national development. ..... The State, therefore, shall continuously create local employment opportunities and promote the equitable distribution of wealth and the benefits of development." (Republic Act No. 8042, Sec. 2.c)

Although the Philippine government admits that the overseas employment policy is not a long-term solution to its economic problems, it has recognized overseas employment not only as a temporary stopgap measure to relieve domestic unemployment. It has turned its attention and interest to the potential benefits from remittances as a vital source of the badly needed foreign currencies for economic development. Thus, overseas employment, which is "characterized by a very pro-active government policy and a close partnership with the private sector," (Abella, 1995, p. 9) has evolved into a well-organized institution so that it has become a model for other labor exporting countries in Asia.

5.1. A Brief History of the Overseas Employment Policy of the Philippines

Before 1974, the government only had minimal participation in international emigration of its people. This reflects the government's perception of the "irrelevance" of an overseas employment policy, probably because labor migration was limited to a very few destinations like the United States, Vietnam and Guam. However, the conditions in the labor importing countries, particularly the Middle East, had resulted in a greater

demand for Filipino labor abroad. As OCWs increased, their expected dollar contribution increased, but at the same time, problems regarding recruitment, deployment and welfare in the destination proliferated and these conditions necessitated the regulation of the industry.

The signing of the Labor Code of the Philippines in 1974 is considered to be the beginning of the government's control over overseas employment as an important strategy to relieve domestic unemployment. It was also the beginning of the gradual institutionalization of international migration in the Philippines. In 1974, the Overseas Employment Development Board (OEDB) and the National Seamen Board (NSB) were established to (1) monopolize the recruitment of workers, (2) market them abroad, (3) safeguard their interests, and (4) enforce a mandatory remittance scheme.

The continuing increase in demand for Filipino labor abroad, however, became too difficult to handle by the government agencies, so in 1978, the private sector was again allowed to participate in recruitment activities. At the same time, the Marcos government gave more importance to strengthening the remittance policies system and welfare system of the Filipino workers. It intensified its rules on mandatory remittances by imposing severe punishments for those who fail or refuse to remit.[7] Sensing the need to protect the increasing number of Filipino workers abroad, the government established the Welfare Fund for Overseas Workers (Welfare Fund) in 1977. This agency was precedent to what is now called the Overseas Workers Welfare Administration (OWWA). It is the government agency that finances programs and services for migrant workers and their families, such

as benefits and gratuities, legal assistance, welfare services, livelihood assistance, enterprise assistance, career development and skills upgrading assistance (de Asis in Batistella and Paganoni, 1992, p. 73).

The government's involvement in the overseas employment sector further intensified under the Aquino administration. This time, however, policy-making was delegated to the legislative branch of the government and the focus of the policies was geared towards the welfare and protection of the Filipino OCWs. We summarize the main policies implemented from the late 1980's to the early 1990's in the Appendix.

5.2. The Overseas Employment Policy at Present

The present Overseas Employment System of the Philippines is legally mandated by Republic Act (RA) No. 8042, also known as the "*Migrant Workers and Overseas Filipinos Act of 1995*," which contains provisions as follows:

Government Organization

The Department of Labor and Employment (DOLE) will be in charge of the policy formulation, coordination and administration of the overseas employment sector mainly through the POEA and OWWA. The POEA will regulate the participation of the private sector in the recruitment and deployment of workers through its licensing and registration system. It is authorized to supervise the compliance of the requirements for overseas employment, such as the accreditation of agencies and the certification of the skills of workers; and impose sanctions to those which/who fail to comply with the rules.

On the other hand, as mentioned above, the OWWA will provide further assistance to the migrants and their families (see above) regarding legal, social and welfare concerns such as the provision of legal assistance in case of abuse by recruiters and foreign principals, insurance coverage and housing loans, placement assistance and remittance services. It is also given the duty to repatriate overseas Filipinos from war, disaster or epidemic-stricken destinations, and pay for the repatriation cost in case the principal or the recruitment agency is not identified.

The Department of Foreign Affairs is also tapped to represent the government of the Philippines in protecting the rights of overseas Filipinos and to extend immediate assistance to distressed Filipino migrants. The members of the Foreign Service Posts of the Philippines in the destination countries, headed by the Ambassador and consisting of officers, representatives and personnel of the different Departments (Labor, Foreign Affairs, etc.), will act as a unified "country team" to help protect and promote the welfare of Filipinos overseas and their families.

Deployment Criteria and Regulations

The government deploys and/or allows the deployment of *skilled Filipino workers only*. This is based on the government's observation that "the ultimate protection to all migrant workers is the possession of skills." (RA No. 8042 Sec. 2.g) since the unskilled workers are more vulnerable to exploitation in the destination countries. To this end, the POEA requires all overseas emigrants to obtain skill certification before their deployment.

Under Sec. 4 of RA No. 8042, the Philippines will deploy Filipino

workers only in countries *where their rights are protected.* To guarantee the protection of the rights of the Filipinos, the destination country should (1) have existing labor and social laws protecting migrant workers, (2) be a signatory to multilateral agreements for the protection of migrant workers, (3) have concluded a bilateral agreement with the Philippines regarding the protection of rights of the overseas Filipino workers, and (4) take positive and concrete measures to protect the rights of migrant workers.

Finally, the Philippine government puts special attention to women Filipino workers and has applied "*gender-sensitive*" criteria in their deployment. For example, Filipino women were not permitted to work in Singapore as domestic helpers. There are also age limits for prospective women OCWs.

Sanctions on Illegal Recruitment

As the number of Filipinos desiring to work abroad increases, cases of illegal recruitment have also proliferated. These illegal recruiters who victimize prospective migrants by charging unreasonable placement and deployment fees, recruiting without a license, giving false information regarding terms and conditions of employment, have alarmed the government. To protect the migrants, the government imposes strict regulations and penalty scheme against illegal recruiters, foreign principals and their accomplices.

Services to Filipino Migrants

The law requires that the Filipino overseas worker, regardless of whether he/she is documented (legal) or undocumented (illegal), should be

protected legally, morally and physically. Some of the measures being taken are as follows:

(1) Appointment of the Legal Assistant for Migrant Workers Affairs under the Department of Foreign Affairs which will coordinate and provide legal assistance to all Filipinos abroad.

(2) Establishment of the Legal Assistance Fund that will be used to pay for professional fees of foreign lawyers, bail for temporary release of the migrant, court fees and other litigation expenses (in both cases where the migrant is the accused or the victim).

(3) Establishment of the Emergency Repatriation Fund which will be used for the repatriation of the migrant and the transport of his/her belongings in case when the principal or the recruitment agency cannot be held responsible for it.

(4) Dissemination of information regarding labor and employment conditions, migration realities and other facts pertinent to migration. This includes the establishment of a government information system that provides database on OCWs and other Filipinos abroad, immigration policies and legal system in the destination countries and human rights provisions available for the migrant workers.

(5) Granting travel tax and airport fee exemptions upon departure, abolition of the repatriation bond and free government fees and other administrative costs of recruitment, introduction, placement and assistance to migrant workers.

Deregulation of Government Participation in Recruitment Activities

Although the government now takes a pro-active position in the deployment of Filipino OCWs, RA No. 8042 calls for the gradual deregulation of the overseas employment industry and the gradual phase-out of the regulatory functions of the POEA within 6 years (1 year for the formulation of the comprehensive deregulation plan and 5 years for its implementation) from 1995. By the year 2001, it is expected that labor migration will take place primarily between the individual migrant and his/her overseas employer.

Incentives for Returning Overseas Filipinos

The government realizes the potential contribution of Filipinos abroad to national development, especially of those working in the field of science and technology. It has now begun a program encouraging professionals and other highly-skilled Filipinos abroad to visit the Philippines for a year to share their knowledge to their countrymen.

Others

In recognition of the invaluable contribution of Filipino OCWs to national development, R.A. No. 8042 has designated June 7 of each year as Migrant Workers' Day.

5.3. Rules Governing Remittances

All Filipino OCWs are obliged to remit a portion of their salaries to his/her beneficiaries in the Philippines and have these remittances exchanged for pesos through the Philippine banking system. They are also required to submit a proof of compliance of the mandatory remittances, such as confirmed bank remittance form, employer's certification that the

remittances have been effected, certification from the Philippine bank in which the remittances were credited in pesos, receipts of sales of foreign currency from any foreign exchange dealers or receipts of International Postal Money Order. The amount of mandatory remittances depends on the type of occupation of the overseas worker, as shown in Table 3.16.

Moreover, the overseas employers are required to pay for the service fees, airfares and other costs arising from migration in the form of foreign exchange payments and its local agency in the Philippines is required to report its foreign currency earnings to the Central Bank of the Philippines annually.

6. Summary

In this chapter, we have attempted to describe international migration in the Philippines by looking at the following aspects: (1) the magnitude of OCWs and their remittances, (2) the selectivity of OCWs, (3) the macroeconomic relationship of international migration in the labor market, the balance of payment, and capital accumulation, and (4) the overseas employment policy of the Philippines.

In section 2, we estimated the flow and stock of Filipinos abroad as well as their remittances. We have presented several estimation procedures, but we also realize that there are many limitations in extracting reliable data on international migration. Nevertheless, we have shown that the number of Filipinos going abroad as contractual workers or permanent emigrants, and their remittances are large so that international migration as a phenomenon

Table 3.16. Mandatory Remittance Scheme

Type of Occupation	Mandatory Remittance (as (%) of the basic salary)
1. Seamen or Mariners	80%
2. Workers of Filipino contractors and construction companies	70%
3. Doctors, engineers, teachers, nurses and other professionals whose employment contracts provide for free board and lodging	70%
4. All other professionals whose employment contracts do not provide free board and lodging facilities	50%
5. Domestic and other service workers	50%
6. All other workers not falling under the categories above	50%

Source: Rules and Regulations Governing Overseas Employment (POEA)

will definitely affect the markets for goods and services, labor and imports.

We described in section 3 the attributes of Filipino OCWs and permanent emigrants. We observed the following characteristics of OCWs:

(1) The majority of OCWs are young members of the labor force belonging to the 25-34 years old age bracket for both men and women.

(2) There is an increasing feminization of OCWs due to the increasing demand for overseas jobs stereotyped for women.

(3) A high percentage of OCWs have college education. If we are to consider educational attainment as a measure of a migrant's skill, we can therefore say that a large percentage of the Filipino workers overseas are skilled.

(4) The demand for foreign labor in host countries is highly concentrated to some occupational groups. The majority of men are employed as production workers, while women work in the service sector.

(5) While in the 1980's, the bulk of workers were deployed in the Middle East, the number of workers going to Asia, and their share to the total number of workers deployed, have increased significantly in the 1990's.

The permanent emigrants, on the other hand, display the following attributes:

(1) About 40% of the permanent emigrants are below 14 years old or above 60 years old because the main goal of immigration policies in the destination is for its citizens, by birth or naturalization, to unite with their families- children and parents.

(2) More women than men become permanent emigrants because of the increasing cases of marriage between Filipino women and foreign men.

(3) On the average, permanent emigrants are not as skilled as the OCWs, clearly because permanent emigrants migrate not basically to work but to join their families. Many of the permanent emigrants are unemployed.

(4) About 70% of the permanent emigrants are unemployed housewives and students.

(5) Filipino permanent emigrants are highly concentrated in 4 main destinations- USA, Canada, Australia and Japan.

Section 4 dealt with an analysis of the linkage between international migration and remittances on one hand and the market for labor, the balance of payment and savings and capital accumulation in the Philippines, on the other hand.

Regarding the labor market, the high growth rates of population and the labor force and the increasing labor force participation, especially of women, are compounded by the low capacity of the domestic economy to absorb the unemployed and the new entrants, so that the unemployment rate in the Philippines remained at 9-10% levels in the past two decades. The overseas employment strategy of the Philippine government has relieved unemployment by an average of 22.5% annually. Studies found that migration did not lead to skill shortage in the country and that many of the OCWs did not learn any new skills in the host country.

International migration is also seen as an instrument to finance

balance of payment deficits and investments in the country. This is proven by the high share of international remittances on the trade deficit and savings-investment gap of the economy. Moreover, remittances have been a more stable source of foreign currency compared to foreign direct investment and official development assistance.

Finally, section 5 described the overseas employment policy of the Philippines. It included a brief history of the overseas employment policy and a summary of the present organization, administrative procedures and rules and regulations governing the deployment, mandatory remittances and welfare support for the Filipinos working overseas.

Footnotes of Chapter 3

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[1] The Central Bank of the Philippines classifies remittances under factor income from abroad. These remittances include cash sent from banks, and do not segregate income from migrants and OCWs. Obviously, this is under-reported because cash remittances are sent also through private couriers, friends or relatives, or brought home by the migrant himself. Furthermore, the Central Bank does not have data on remittances in kind.

[2] The Minimum Wage Law is one reason why labor demand does not increase as much as its supply.

[3] Rodriguez used the results from Teodisio *et al.* (1983) on a survey of 495 Filipinos employed in the Middle East. (Teodisio, V., C. Jimenez and J. Smart (1983). *Socioeconomic Consequences of Contract Labor Migration in the Philippines*. Manila: Institute of Labor and Manpower Studies)

[4] Although it must be noted that remittances are only a part of the total compensation of Filipino workers abroad.

[5] We will tackle the impact of remittances on the trade deficit of the Philippines in the context of the consumption and savings-capital accumulation in section 4.3. of this chapter and in chapter 5.

[6] Vasquez (1992) estimated that total remittances are higher than the BSP's figures by 35%.

[7] For example, non-compliance with the mandatory remittance law results in the non-renewal of passports or employment contracts, blacklisting of name, or even repatriation back to the Philippines.

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Appendix of Chapter 3

Overseas Employment Policies of the Philippines until the early 1990s

(1) The restructuring of the Philippine Overseas Employment Agency (POEA) and the Overseas Workers' Welfare Administration (OWWA) (Executive Orders Nos. 126 and 247). The functions of the POEA were expanded to include market development, employment, welfare, licensing, regulation and adjudication (Executive Order No. 247). The OWWA, on the other hand, was delegated to give mandatory life and personal accident insurance protection for all departing overseas workers (Department Order No. 14).

(2) Issuance of additional licenses for new recruitment agencies. A ban on the operation of private employment agencies was in force from 1982-1991 (Executive Order No. 450).

(3) Temporary suspension of the deployment of domestic helpers to Hong Kong (Department Order No. 16).

(4) The signing of the Overseas Investment Fund Act which aims to provide incentives to send more remittances and oversee the participation of workers' remittances and savings in the government's debt reduction and other productive activities (Republic Act 7111). To meet these objectives, (1) money couriers and delivery services were accredited as official foreign exchange remittance centers, collection agents or official couriers, and (2) incentives such as scholarship grants, housing program, credit assistance for business or livelihood projects, health/hospitalization insurance, raffles and other programs

were put in place to tap remittances.

(5) Stricter rules on the deployment of women, especially entertainers through the accreditation of foreign employers and the posting of bonds (US$20,000) to be used to cover claims by the entertainers against them.

Source: De Asis in Batistella and Paganoni, (1992).

Chapter 4

The Determinants of International Migration In the Philippines: An Empirical Analysis

1. Introduction

This chapter attempts to explain the factors affecting the remarkable increase in emigration from the Philippines to non-Middle East destinations since the 1980s, taking into consideration the dynamic demographic and structural policy changes in the Philippines and the host countries. In particular, we look at the impact of macroeconomic variables such as population, average earnings and unemployment rates, both in the sending and host countries, on the migration of Filipinos.

The study of the determinants of international labor migration, especially from the point of view of the sending country, draws so much from research works in urban-rural migration. One of the early studies on the determinants of migration is that of Sjaastad's (1962) which hypothesized that an individual's decision to migrate from rural to urban area results from maximizing the present value of his income from alternative destinations, including the place of origin, minus the initial cost of moving. Empirical studies show that the present value of the migrant's incomes in the place of origin and destination depend on the economic conditions, such as population,

average earnings and employment possibilities as well as the migrant's personal characteristics such as age, education and gender. On the other hand, the cost of moving includes both the pecuniary costs such as placement fees, airfare and relocation expenses, and non-pecuniary or psychological costs.

In this study, we also look into the following hypotheses, namely, the Harris-Todaro (H-T) expected wages hypothesis (1970) and the symmetry hypothesis as described by Schultz (1982b), both in the context of international migration. Harris and Todaro (1970) argued that the expected wages, or the average earnings discounted by the probability of being hired in the destination, is a major determinant of migration. On the other hand, the symmetry hypothesis considers the effects of the "push" factors or the variables in the area of origin to be approximately equal to the impact of the "pull" factors or the variables in the destination. The former is confirmed in internal migration, but the latter has not yet been fully explored even in rural-urban migration. In the light of intensifying movement of labor between countries, looking into these issues becomes more relevant especially in the formulation of policies that will affect the outflow of migrants from sending countries like the Philippines.

This chapter will contribute to the empirical literature on the macroeconomic determinants of international migration by determining the direction of the impact of population, earnings and employment probabilities in both the sending and host countries on international labor mobility, using panel data for 26 country destinations in the period 1981-1995. Using the

regression results, it will then test the validity of the Harris-Todaro and the symmetry hypotheses discussed in details in the next section. Finally, it will evaluate the impact of recent economic transformation and the changing immigration policies in both the sending and host countries on the number of emigrants from the Philippines.

The plan of this chapter is as follows. In the next section, we will discuss the framework for the empirical analysis that includes the basic model and the two hypotheses mentioned above. In section 3, we will present the results of the fixed effects panel data regression of the basic empirical model and of the test of the hypotheses. Section 4 will look into the influence of economic transformations in both the sending and host countries to Filipino emigration in 1987-1995. Finally, the summary of this chapter is found in section 5.

2. Theoretical Framework

2.1. The Model

Schultz (1982a, 1982b) designed a logistic model of the determinants of rural-urban migration and tested it using data from Venezuela. He divided his observations into four educational levels and looked at the effects of population, area of origin, level of urbanization, employment rate and wage rates on the probability to migrate. This study is an attempt to apply his model to international migration, using panel data from the Philippines.

Following Schultz, we assume that a person faces n alternative locations in which to reside, including his/her country of origin denoted by the

suffix i. We will call the country of origin as the sending country and the destinations, the host countries. The probability, P_{ij}, that he/she resides in location j in a specific time period is defined in equation (1).

$$P_{ij} = \frac{e^{Z^{ij}}}{\sum_{j=1}^{n} e^{Z^{ij}}}; i, j = 1, \cdots, n \tag{1}$$

where the probabilities sum to one for each i, as shown in equation (2),

$$1 = \sum_{j=1}^{n} P_{ij}; j = 1, \cdots, n. \tag{2}$$

and Z_{ij} is a vector of characteristics of the individual and the location. Equation (2) can be interpreted as follows: For every origin, i, the sum of the probabilities in migrating to j destinations, including i, must be equal to 1.

One of the possible specifications of Z_{ij} is shown below as equation (3), in which it is a linear function of the pertinent characteristics of the sending country, X_{ki}, and of the host countries, X_{kj}, and the cost of moving between the two areas, C_{ij}.

$$Z_{ij} = \alpha + \sum_{k=1}^{K} \lambda_k \ln X_{ki} + \sum_{k=1}^{K} \gamma_k \ln X_{kj} + \delta \ln C_{ij}; i, j = 1, \cdots, n \tag{3}$$

where α, δ and λ_k, γ_k for k = 1,⋯,K are the 2K + 2 parameters of the migration probability function.

Equation (3) is referred as the "uniform" specification because it treats migration and non-migration as one integrated process. Using the probability of non-migration, P_{ii}, as the normalization factor, (1) can be restated as

equation (4).

$$\frac{P_{ij}}{P_{ii}} = \frac{e^{Z_{ij}}}{e^{Z_{ii}}} \tag{4}$$

Taking the natural logarithm of both sides will give us the natural logarithm of the odds-ratio in favor of migration, as shown in equation (5).

$$\ln(\frac{P_{ij}}{P_{ii}}) = Z_{ij} - Z_{ii} \tag{5}$$

We derive equation (6) by substituting equation (3) to equation (5).

$$\ln(\frac{P_{ij}}{P_{ii}}) = Z_{ij} - Z_{ii} = \sum \gamma_k \ln(X_{kj} / X_{ki}) + \delta \ln C_{ij} \tag{6}$$

where the probability to migrate is affected only by the gap in the variables between the sending and host countries. It implies the uniform symmetric model in which conditions in the sending and host countries exert approximately equal but opposite effects on the natural logarithm of the odds-ratio. On the other hand, in the asymmetric model, economic conditions in the sending and host countries have different impacts so that their respective variables enter the equation separately.

The effects of some or all of the determinants on the probability to migrate, however, may be distinct from those in the case of non-migration. For example, the cost of relocation will not affect non-migration. This justifies the formulation of a separate equation for non-migration, as shown in equation (7) below where the coefficients of the variables in the non-migration case are represented by an asterisk (*). These variables are not necessarily equal to the coefficients of the variables in equation (3), which again represents the migration function in case of migration. The equations

for the two-stage migration function are then summarized as follows:

In case of non-migration, we use equation (7).

$$Z_{ii} = \alpha^* + \sum_{k=1}^{K} (\lambda_k^* + \gamma_k^*) \ln X_{ki}; i = 1, \cdots, n \tag{7}$$

In case of migration, we use equation (3).

$$Z_{ij} = \alpha + \sum_{k=1}^{K} \lambda_k \ln X_{ki} + \sum_{k=1}^{K} \gamma_k \ln X_{kj} + \delta \ln C_{ij}; i, j = 1, \cdots, n \tag{3}$$

Finally, Schultz proposed a two-step "hybrid" migration model derived from equations (3) and (7) and shown below as equation (8). Here, the constant term shows the difference in the intercepts of the migration and non-migration functions, and the coefficient $(\lambda_k - \lambda_k^* - \gamma_k^*)$ shows the net effect of a variable in the sending country, X_{ki}, to the logarithm of the odds-ratio in favor of migration.

$$\ln(\frac{P_{ij}}{P_{ii}}) = Z_{ij} - Z_{ii} = (\alpha - \alpha^*) + \sum_{k=1}^{K} (\lambda_k - \lambda_k^* - \gamma_k^*) \ln X_{ki} + \sum_{k=1}^{K} \gamma_k \ln X_{kj} + \delta \ln C_{ij} \tag{8}$$

$i, j = 1, \cdots, n$

Since we want to determine the effects of population, earnings and the possibility of being employed on the probability to migrate, we will specify equation (8) as follows:[1]

$$\ln\left(\frac{P_{ij}}{P_{ii}}\right) = (\alpha - \alpha^*) + (\lambda_1 - \lambda_1^* - \gamma_1^*)LPOPP + (\lambda_2 - \lambda_2^* - \gamma_2^*)LYP$$
$$+ (\lambda_3 - \lambda_3^* - \gamma_3^*)LEMP + \gamma_1 LPOPD + \gamma_2 LYD + \gamma_3 LEMD + \beta T + \varepsilon \tag{9}$$

where the left hand side of equation (9) is the natural logarithm of the ratio of probability to migrate to destination j to the probability of non-migration,

or the natural logarithm of the odds ratio. The natural logarithm of population, average earnings and employment rates[2] of the sending country are represented as LPOPP, LYP and LEMP respectively. On the other hand, LPOPD, LYD and LEMD are the natural logarithm of population, average earnings and employment rates, respectively, of the destination. The coefficients can be interpreted as the elasticity of the probability to migrate due to factors in the sending and host countries. T is the time trend whose coefficient is β, and ε is the error term.

Conventional reasoning suggests that higher population in the sending country will raise the probability to migrate, while higher population in the destination will lower it. Higher population will lead to a shortage of labor if the incremental labor required due to higher consumption is more than the increase in the labor force. Ceteris paribus, since migration is a response to labor market disequilibria, a host country that has a shortage of domestic labor will import labor from the sending country that has a surplus of labor. Higher wages in the host country increase migration, while higher wages in the sending country reduce it, but as the wage gap diminishes, fewer workers will desire to move. Higher unemployment rate in the sending country is an incentive that will raise the probability of a person to migrate. Higher employment rate at destination encourages migration.

2.2. Hypotheses Testing

In the basic regression equation (9), population, average earnings and employment rate of both the sending and the host countries enter the function of the probability to migrate individually and therefore, it is

assumed that each variable has a distinct and separate effect on the dependent variable. However, there are some testable hypotheses in internal migration that can be used to see if these effects are indeed distinct and separable. First, Harris and Todaro (1970) argued that *expected* average earnings, or average earnings multiplied by the probability to be employed, is a better explanatory variable than the average earnings.[3] Second, Schultz (1982b) found out that there is some symmetry in the impact of rural and urban economic conditions on internal migration. Therefore, we will discuss these two hypotheses in the context of equation (9) and test their validity later.

Based on the Harris-Todaro hypothesis, in a regime where rural wages are determined by demand and supply while urban wages are politically or institutionally determined and therefore inflexible, a utility-maximizing prospective migrant discounts his possible earnings by the possibility of not finding a job in the urban destination. In this sense, the employment probability in the urban area is an equalizing factor so that migration will occur until earnings in the rural sector is equal to the *expected* average earnings in the urban sector. In our basic model, this means that the impact of the logarithm of average earnings and employment rates are additive and allows us to impose the following restrictions to equation (9). However, in contrast to the original Harris-Todaro formulation, we will assume here that unemployment also exists in the sending country.[4]

Restriction Set (A)

1. $(\lambda_2 - \lambda_2^* - \gamma_2^*) = (\lambda_3 - \lambda_3^* - \gamma_3^*)$ and

2. $\gamma_2 = \gamma_3$

The next testable hypothesis, that of the symmetry of effects, compares the effect of the same economic variable found in the sending and host countries. For example, does a 1% increase in domestic wage earnings have approximately the same impact on migration as a 1% decrease in destination wage earnings? If the receiving country imposes restrictive migration policies, then, any changes in its economic conditions may not be fully reflected in the flow of migrants from the sending country. This highlights a significant difference between rural-urban migration and international migration. In the former, the same government has control over variables in both the rural and urban areas. Therefore, it is plausible to assume that any policy by the government, whether it involves the labor market in the rural or urban area, will be effective as long as it affects the gap between wages or their expected values between these areas. In international migration, policies on the push factors and the pull factors are decided and implemented independently, and thus, their impacts may be more asymmetric than in the former. Any policy that will influence the push factors may only raise migration pressure, but not actual migration. In international migration, asymmetry is more likely to be observed not only because of the restrictive migration policies but also due to geographical, cultural, and political barriers that can very well prevent international flow of labor.

By assuming symmetry of effects, we can express the average earnings and employment probabilities in the destination and sending countries as ratios. In this case, we can impose restriction set (B) to equation (9).

Restriction Set (B)

1. $(\lambda_2 - \lambda_2^* - \gamma_2^*) = -(\gamma_2)$ and

2. $(\lambda_3 - \lambda_3^* - \gamma_3^*) = -(\gamma_3)$

Lastly, we will incorporate both the Harris-Todaro and the symmetry hypotheses in the basic model and test if any change in expected wage earnings in the sending and host countries have the same impact on the probability to migrate. This means that we can use the ratio of expected earnings as the independent variable and impose restriction set (C) to the basic model, equation (9).

Restriction Set (C)

1. $(\lambda_2 - \lambda_2^* - \gamma_2^*) + (\lambda_3 - \lambda_3^* - \gamma_3^*) = -(\gamma_2) - (\gamma_3)$

We summarize the hypotheses to be tested in Table 4.1.

Table 4.1. Model Classification

	Asymmetric type	Symmetric type
Non- Harris-Todaro type	Basic Model (Equation 9)	Restriction Set (B)
Harris-Todaro type	Restriction Set (A)	Restriction Set (C)

3. Methodology and Description of Data

To measure the impact of population, average earnings and employment rates in both the sending and host countries on the probability to migrate, in the case of the Philippines and for the period 1981-1995, we will use panel data fixed effects weighted least squares regression of the basic model, equation (9), with different intercepts estimated for each pool

member.[5] The cross–section residual variances are used as weight to correct for cross-section heteroskedasticity.

We limit our study to non-Middle East countries because data on the regressors for Middle East countries are not readily available. The non-Middle East countries have gained popularity as destinations since the 1980's and offset the decreasing demand for OCWs in the Middle East labor markets. The 26 destination countries used in this study are listed in Appendix 4.A. Since it is in the 1980s that migration to non-Middle East countries began to increase significantly and that structural transformations took place in these countries, and also due to data availability, we consider here the period 1981-1995.

Our dependent variable is the natural logarithm of the odds ratio between migration and non-migration, and the independent variables are classified as the push factors, LPOPP, LYP and LEMP, and the pull factors, LPOPD, LYD and LEMD. For average earnings, LYP and LYD, we divide the gross national product by the size of the labor force. The employment rate is derived by subtracting the unemployment rate from 100%. The description of the variables and their sources are shown in Appendix 4.B. For observations with zero migration, we will assume that at least one migrant from the Philippines went to that destination. We can interpret the coefficients as the change in the weighted natural logarithm of the odds ratio in favor of migration due to a unit increase in the variable.

4. Analysis of the Regression Results

The results of the estimation are shown in Tables 4.2 and 4.3. We will divide the analysis into two parts. In Section 4.1, we will analyze the determinants of migration from the Philippines using Table 4.2. Then, in section 4.2, we will refer to Table 4.3a. and discuss the validity of the two hypotheses, namely the Harris-Todaro and the symmetry property in the case of all countries for the entire period, 1981-1995.

4.1. On the Determinants of Migration

Table 4.2 shows the results for the regression of basic equation (9) for all countries in the sample for the entire period. We can see that the coefficients are statistically significant and that LPOPP, LPOPD, LYP and LYD have the expected signs. From Table 4.2, we can draw the following implications:

First, the higher the population in the Philippines, LPOPP, the higher is the natural logarithm of the odds ratio in favor of migration. Higher population will result in higher demand for domestic labor since the economy has to produce goods and services for the additional population so migration pressure will be weaker. However, if surplus labor already exists, and if the growth rate of the labor force exceeds that of population or the economy, then migration pressure will be greater. In the Philippines, production and population cannot catch up with the increase in labor force, which is also due to high population growth rates in previous years, therefore, the coefficient of LPOPP is positive.

On the other hand, the growth of population in the destination, LPOPD, will raise the demand for labor because of the required additional

Table 4.2. Macroeconomic Determinants of International Migration in the Philippines (1981-1995 and 1987-1995)

Variable	(1981-1995)	(1987-1995)
LPOPP	22.65 ***	9.80 ***
	(8.40)	(3.57)
LPOPD	3.02 ***	9.84 ***
	(3.76)	(26.08)
LYP	-1.61 ***	-0.14
	(-7.60)	(-0.53)
LYD	0.35 ***	0.39 ***
	(4.51)	(5.32)
LEMP	2.85 ***	0.13
	(8.34)	(0.34)
LEMD	-8.41 ***	-1.97 ***
	(-10.60)	(-3.86)
TIME	-0.54 ***	-0.34 ***
	(-8.64)	(-5.33)
Adjusted R-squared	0.99	0.99
No. of Obs.	346	227

Notes:
1. The method used to estimate the Fixed Effects Model was Generalized Least Squares (Cross Section Weights) using White heteroskedasticity consistent standard errors and covariances.
2. Values in parenthesis are t-values.
3. *** significant at 1% level.
4. Unbalanced panel data for 26 countries

output generated by the incremental population. If population is positively related to the labor force, then there is no need for migrant workers. On the other hand, if the labor force cannot catch up with the growth in population or the economy as a whole, then the resulting shortage of labor will necessitate the import of workers, so that the coefficient of LPOPD is positive, as shown in our results.

Second, we look into the impact of average earnings, LYP and LYD. In this study, the coefficient of LYP turned out to be negative. As average domestic income per laborer, LYP, increases, the incentive to migrate diminishes. The net effect of an increase in earnings in the sending country depends on (1) the substitution effect that will lower the desire to work abroad because the wage gap is reduced; and (2) the wealth effect that will raise his/her probability to emigrate to a destination because now, he/she has more funds to finance his/her moving. Usually, for migrants with low earnings, the elasticity to migrate due to higher income is positive and very high because it will enable him/her to finance the cost of departure. However, as his earnings reach a higher level, the substitution effect will dominate the wealth effect. From the macroeconomic point of view, this is referred to as the "migration hump" wherein in the early stage of economic development, the wealth effect dominates the substitution effect but later, the latter will exceed the former as the gap between expected income at home and in the host country diminishes.[6] The negative net effect found in this study therefore suggests that the wealth effect is weak, and therefore, is not a decisive factor in migration. This finding seems to be incongruent with the

migration hump theory, but we can cite the following reasons to justify this trend in the Philippines. The first reason is because the migrant does not necessarily fund his departure through his own earnings. There are alternative sources of funds other than the migrant's own earnings that he/she can use to finance migration, like relatives or informal financial institutions who/that are willing to lend the prospective migrant on condition of paying back later. Also, many recruitment agencies directly deduct or fund the placement fees and airfares from the salaries of the OCWs after their deployment, while in the case of permanent migrants, their relatives abroad usually pay for their traveling and living expenses. The next reason lies on the observation that the initial cost of migration, like airfare and placement fees, does not vary among destinations. Therefore, even at lower average earnings level, a migrant's choice of destination is not restricted to countries that are geographically near the Philippines. Conversely, higher domestic earnings will not raise the probability of a prospective migrant to go to a far destination just because he can now afford the pecuniary costs to do so.

On the other hand, the coefficient of average income in the destination, LYD, is positive, showing that prospective Filipino migrants are indeed attracted by the high salaries they will get from working abroad. As the income gap between the Philippines and the destination countries widens in the future, we can expect more Filipinos aspiring to work in these countries.

Third, with regards to the effect of employment rates, the higher the employment opportunities in the local labor market, the lower should be the probability to migrate. Conversely, the higher the employment opportunities

abroad, the higher should be the probability to migrate. However, we cannot confirm these a-priori expectations in this study. Schultz argued that the partial derivative of the probability to migrate with respect to destination employment, after controlling for income, must be positive but this may not be detected in a single-equation migration model. In rural-urban migration, higher income causes higher unemployment because of the inflow of job seekers. If income is a very strong intervening variable, then the relationship between migration rate to a destination and employment rate becomes negative. This argument may not hold true for international migration, and there is still a need to explore why the coefficients of employment rates in the sending and host countries do not show the expected signs.

One possible reason on why the a-priori expectations on the impact of employment rates were not confirmed lies in the wide differences in the properties of the countries in this study. We will therefore consider these inherent differences in section 5 and group these countries based on their experiences in demographic changes, structural transformations and migration policies.

4.2. Hypotheses Testing

Our next task is to determine the validity of the Harris-Todaro and symmetry hypotheses in the migration of Filipinos to the countries in the study. In this section, we will refer to the results shown in Table 4.3a.[7]

Table 4.3a indicates the following points. First, the null hypothesis that the impacts of income and employment rates are approximately equal, or the Harris-Todaro hypothesis, is not confirmed, suggesting that the

Table 4.3. Hypotheses Testing

Table 4.3.a. Observations Stratified According to Period

Hypothesis		(1981-1995)	(1987-1995)
Harris-Todaro	F-statistics	121.4807	11.16
	Probability	(0.00)	(0.00)
Symmetry	F-statistics	51.45	4.83
	Probability	(0.00)	(0.01)
Symmetry in	F-statistics	63.13	9.61
Harris-Todaro	Probability	(0.00)	(0.00)

Table 4.3.b. Observations Stratified According to Regions

Hypothesis		Group 1	Group 2	Group 3	Group 4
Harris-Todaro	F-statistics	125.65	3.88	58.36	30.16
	Probability	(0.00)	(0.04)	(0.00)	(0.00)
Symmetry	F-statistics	142.90	1.18	87.50	37.35
	Probability	(0.00)	(0.33)	(0.00)	(0.01)
Symmetry in	F-statistics	18.97	0.10	8.70	31.68
Harris-Todaro	Probability	(0.00)	(0.75)	(0.00)	(0.00)

Note: Wald's Coefficient Test of the Following Restrictions

1. Harris-Todaro Hypothesis

$$(\lambda_2 - \lambda_2^* - \gamma_2^*) = (\lambda_3 - \lambda_3^* - \gamma_3^*)$$
$$(\gamma_2) = (\gamma_3)$$

2. Symmetry Hypothesis

$$(\lambda_2 - \lambda_2^* - \gamma_2^*) = -(\gamma_2)$$
$$(\lambda_3 - \lambda_3^* - \gamma_3^*) = -(\gamma_3)$$

3. Symmetry in Harris-Todaro Hypothesis

$$(\lambda_2 - \lambda_2^* - \gamma_2^*) + (\lambda_3 - \lambda_3^* - \gamma_3^*) = -(\gamma_2) - (\gamma_3)$$

estimation with average earnings and employment rates entering the equation separately will provide a better approximation of the impact of these economic variables. As shown in Table 4.2, the slope coefficient of employment is higher in absolute value than the slope coefficient of average earnings, implying that employment rates have stronger impact on the logarithm of the odds ratio in favor of migration. This is especially true in the Philippines, which has high unemployment rate at 8% to 13% in 1981-1995 while those of the host countries are significantly lower. Moreover, many Filipino migrants are OCWs who are assured of work in the destination country. Even if domestic wages increase significantly, it may not provide an incentive for local workers to remain in the sending country if, at the same time, its unemployment rate is also high due to the imposition of minimum wage policy or any policy that makes wage rates inflexible in the Philippines. Instead, these policies will only worsen migration pressure in the country.

Second, like in the case of rural-urban migration, the symmetry property of the impact of factors in the sending and host countries is also not detected in this study. This finding confirms the existence of barriers in both the sending and the host countries, which can be "natural," such as language, culture, religion, geographical distance; or "adaptive" such as the restrictive policies aimed to protect domestic workers from foreign competition. These barriers may prove to be more difficult to overcome compared to those found in international capital mobility and rural-urban migration.[8]

Having seen that the impacts of variables in the sending and host countries are asymmetric leads us to ask which of the two impacts is stronger.

In Table 4.2, the absolute values of the coefficients of LPOPP and LYP are greater, and therefore their impacts are stronger than those of LPOPD and LYD. These findings suggest that Filipino migrants discount working abroad because of natural barriers as perceived by the "supply-side" or the prospective migrants themselves, like being far from the family, or cultural and political differences. However, we must also note that there are "demand-side" constraints so that the prospective migrants cannot react fully and rationally, to changes in the economic condition of the destination country. In rural-urban migration, the prospective migrant's inability to react equally to changes in the destination and the sending area is attributed to the observation that he/she has relatively more complete information about local labor conditions than those of the destination, and therefore, networking with migrant workers already in the destination will partially relieve this constraint. In the case of international migration, however, the problem of asymmetric information barrier is compounded by the immigration controls imposed by the host countries.

5. Structural Adjustments in the Labor Market and International Migration

In the previous section, we discussed the period 1981-1995. However, the latter half of the 1980s saw significant reforms in the economic and labor structures of the Philippines and the host countries. Therefore, in this section, we will first describe the structural changes that the Philippines and the host countries underwent in the mid-1980s. Then we will explore the impact of

these economic reforms and the resulting changes in policies on migration from the Philippines to the host countries.

Institutional and economic reforms have serious implications on emigration pressures in the sending and host countries. In the case of the Philippines, it underwent transformations resulting from the change in administration in 1987. For the host countries, demographic factors seem to play an important role in increasing their demand for foreign labor.

The Philippines suffered serious economic stagnation in early 1980s. The economy registered negative growths in 1984 and 1985, although data showed relatively low unemployment rates in the same period (see Tables 3.13 and 3.14). Much of the economic instability was attributed to the troubled administration of Marcos. In 1986, through the "People's Power Revolution," the new government headed by Corazon Aquino was inaugurated. The new government recognized the contribution to the economy by Filipinos abroad, and had begun to implement programs that will improve their employment opportunities and welfare (de Asis in Batistella, 1992). Since then, the government has been actively participating in the organized deployment of OCWs abroad through the reorganization of the Philippine Overseas Employment Agency (POEA) and has been improving its services for permanent emigrants through the Commission on Filipinos Overseas (CFO) and, for OCWs, through the Overseas Workers Welfare Administration (OWWA).[9]

Efforts to rebuild the economy proved to be difficult for the new administration. In its first years in office, the growth of the economy was

characterized as foreign-led, as foreign direct investments and official development assistance poured in (See Table 4.4). Domestic economic reforms like trade liberalization, which resulted in the shift of exports towards non-agricultural products, contributed so much in reducing the trade deficit of the country. As a result, the country experienced high positive growth rates until 1990 (see Table 3.14).

The economic growth, however, was not sustained, mainly because of the political instability and natural disasters that struck the country in early 1990s. Economic growth decelerated, reaching its bottom in 1991, and failed to return to its 1986-1989 levels. Seriously affected by the economic slowdown was labor, when unemployment rates failed to fall from its 8%-9% level since 1987 as labor supply increased and the domestic market failed to absorb them.

The latter part of the 1980s also saw significant structural changes in the destination countries in the study when they experienced very high economic growth or demographic transformations that will have serious implications on the domestic labor market. These countries, however, vary in their levels of economic development and migration policies, so we roughly group those having somewhat similar labor market and migration needs as follows:

Group 1 consists of the East Asian countries with full employment like Japan, Korea, Taiwan, Hong Kong, Malaysia and Singapore. These countries have undergone structural transformation from agricultural to industrial to service economies and have experienced low growth rates of population and

Table 4.4. Inflow of Remittances, Foreign Direct Investment (FDI) and Official Development Assistance and Official Aid (1980-1998) (in constant million US$)

Year	Remittances	FDI	ODA
1980	249	-63	177
1981	356	112	245
1982	561	11	230
1983	683	76	307
1984	499	7	289
1985	544	9	360
1986	559	102	738
1987	671	255	607
1988	753	806	706
1989	901	506	742
1990	1,128	497	1,197
1991	1,606	530	1,025
1992	2,222	228	1,716
1993	2,338	887	1,526
1994	3,159	1,354	1,110
1995	4,133	1,153	943
1996	4,653	1,442	950
1997	6,230	1,178	739
1998	5,398	1,702	665

Sources: For remittances, Bangko Sentral ng Pilipinas (BSP) (Central Bank of the Philippines)
For FDI and ODA, World Development Indicators, 2000.

labor force, while continuing to have high economic growth in 1987-1995, as shown in Table 4.5.

The next group, Group 2, consists of Thailand, Indonesia and China. These are countries that achieved remarkable economic growth from the late 1980's until the Asian crisis in late 1997. Unlike the countries in Group 1, however, these countries managed to draw the required incremental labor for economic expansion from internal surplus labor from the rural area, the agricultural sector and the female labor force.

Group 3 includes the United States, Canada, New Zealand and Australia, the traditional destinations for permanent emigrants from all over the world. Although in the past, these countries emphasized immigration for settlement and preferential entry for family and humanitarian migrants, they have become more receptive to foreign workers in late 1980s (see UN, 1998).

Finally, the European countries make up group 4, which, of the four groups, has the lowest growth rates of population and labor force. Most of their migrants are temporary workers from neighboring countries like Eastern Europe and the Middle East. The Single European Act in 1987 and the Treaty on European Union at Maastricht (1991) as well as the political and economic changes under way in Eastern Europe, also in the late 1980s, paved the way for freer labor mobility within Europe (see UN, 1998).

We perform panel data regression for each group using equation (9). Here, we will consider the period 1987-1995 because, as shown above, (1) the Philippines experienced economic, institutional and political transformation

Table 4.5. Some Economic Indicators in the Host Countries (1982-1995 and 1987-1995)

	Period	Group 1	Group 2	Group 3	Group 4
Average Growth of	1982-1995	4.67	4.86	0.71	1.60
GNP per Capita (%)	1987-1995	6.69	7.53	1.09	1.70
Average Growth	1982-1995	1.40	1.60	1.20	0.44
of Population (%)	1987-1995	1.37	1.50	1.20	0.50
Average Growth	1982-1995	2.10	2.40	1.80	0.87
of the Labor Force (%)	1987-1995	1.48	2.30	1.70	0.91
Average Rate of	1982-1995	3.20	2.50	8.00	8.15
Unemployment (%)	1987-1995	2.70	2.40	7.90	8.40

Notes:
Group 1: Hong Kong, Japan, Korea, Malaysia, Singapore and Taiwan
Group 2: China, Indonesia and Thailand
Group 3: Australia, Canada, New Zealand and United States
Group 4: Belgium, Cyprus, Denmark, Finland, France, Germany, Great Britain, Greece, Italy, Netherlands, Norway, Spain and Switzerland
Source: Author's Calculation from World Development Indicators 2000.

in 1986 and it is feasible to assume that there is a lag in its impact on migration. Moreover, the new administration established in 1987 has initiated a program to improve the overseas deployment system of the country. (2) although not simultaneously, the host countries experienced significant economic changes in the latter part of the 1980s. (3) data sets are relatively balanced for the period considered here. We will use LPOPP, LPOPD, LYP, LYD, LEMP, LEMD and T as regressors.

The results, presented in Table 4.6, reveal some interesting implications. First, the coefficient of LPOPP is consistently positive for all groups. This confirms our previous finding that higher population in the sending country induces migration pressure. This is especially true as at the same time, the labor force increases also so that the slow-moving economy of the Philippines still cannot accommodate it.

Second, the contrast in the impact of LPOPD in Group 2 on one hand, and Groups 1, 3, and 4 is striking. Although all countries in the sample experienced positive population growth in 1987-1995, the higher population raised the Filipinos` probability to migrate to countries in Groups 1, 3, and 4, as shown by the positive value for LPOPD. On the other hand, it reduced the probability to migrate in the case of Group 2 countries of Thailand, Indonesia and China. This can be explained as follows: Higher population raises the demand for goods and services, and therefore, raises the demand for labor. In the countries in Group 2, such demand can still be met by domestic labor surplus, comprising of big surplus labor in agriculture, in rural areas, and of women and teenagers. In fact, like the Philippines, these countries are still

Table 4.6. Macroeconomic Determinants of International Migration in the Philippines according to Regional Grouping (1987-1995)

Variable	Group 1	Group 2	Group 3	Group 4	All Countries
LPOPP	39.19 ***	6.61	17.28 ***	3.36	9.80 ***
	(11.75)	(0.06)	(3.24)	(0.80)	(3.57)
LPOPD	6.29 ***	-84.57 *	13.72 **	14.37 ***	9.84 ***
	(11.76)	(-1.97)	(2.11)	(3.87)	(26.08)
LYP	-6.21 ***	11.15	-0.32	2.65 ***	-0.14
	(-17.16)	(1.35)	(-1.62)	(7.74)	(-0.53)
LYD	0.17	0.70	-0.70	0.21 **	0.39 ***
	(1.01)	(0.71)	(-1.60)	(2.30)	(5.32)
LEMP	1.96 ***	-27.07 **	-7.84 **	-2.76 ***	0.13
	(6.07)	(-2.05)	(-2.29)	(-4.73)	(0.34)
LEMD	8.36 ***	21.26	3.06 **	-5.08 ***	-1.97 ***
	(7.29)	(1.62)	(2.48)	(-5.76)	(-3.86)
TIME	-0.93 ***	1.12	-0.57 ***	-0.23 **	-0.34 ***
	(-11.58)	(0.49)	(-2.88)	(-2.17)	(-5.33)
Adjusted R-squared	0.99	0.99	0.99	0.99	0.99
No. of Obs.	54	24	36	113	227

Notes:

Group 1: Hong Kong, Japan, Korea, Malaysia, Singapore and Taiwan

Group 2: China, Indonesia and Thailand

Group 3: Australia, Canada, New Zealand and United States

Group 4: Belgium, Cyprus, Denmark, Finland, France, Germany, Great Britain, Greece, Italy, Netherlands, Norway, Spain and Switzerland

1. The method used to estimate the Fixed Effects Model was Generalized Least Squares (Cross Section Weights) using White heteroskedasticity consistent standard errors and covariances.
2. Values in parenthesis are t-values.
3. *** significant at 1% level.
   ** significant at 5 % level.
   * significant at 10 % level.
4. Unbalanced panel data for 26 countries

net senders of laborers abroad. However, the case is entirely different for the other groups in which the decline in birthrates and the already high labor force participation of women have resulted in smaller cohort of women and teenagers entering the labor. The "graying of the society" due to higher life expectancy and low birth rates aggravated the situation. The dislike of the natives to work in the "3D" (demanding, dirty and dangerous) sectors also raised the demand for unskilled workers. Thus, as population increases and economic production grows, the government is pressured to allow the entrance of foreign workers, especially the unskilled, to complement or supplement domestic workers. Thus, they have gradually adopted, albeit reluctantly, varied migration policies.[10] For these countries, the Philippines became an ideal source of migrant laborers because of geographical proximity, organized deployment system for OCWs, and ability to speak English.

Third, with regards to the direction of the impact of income and employment to the natural logarithm of the odds in favor of migration, we obtained mixed results, with some coefficients negative and some positive for the same variable in different groups. This implies that these groups indeed have dealt differently with the issue of labor importation. Nevertheless, the findings that most of the coefficients of employment are statistically significant, while those of earnings are not, provide a basis for us to say that employment conditions are more relevant than average earnings in explaining the Filipino migrant's decision to migrate in all countries in the study.

Fourth, our results also give some light on the impact of employment

rates on international migration in the Philippines. Regarding the impact of employment probabilities in the Philippines, we obtained the a-priori expected sign of a negative coefficient for Groups 2, 3, and 4, indicating that as employment probabilities in the sending country increase, the odds in favor of international migration decreases. Similarly, as expected, employment rates in the host countries positively affect international migration in almost all groups. Our findings suggest that it is necessary to disaggregate the sample into groups based on their economic and demographic conditions in order to explain to some extent how employment rates are related to international migration.

Fifth, for European destinations, the coefficient of LYP is positive and statistically significant, suggesting that as income in the Philippines increases, more workers can afford to pay for the relatively high moving cost to Europe. This is in contrast to Group 1 countries in which the coefficient of LYP is negative and statistically significant, implying that the substitution effect is stronger than the wealth effect of domestic income.

Finally, in Table 4.3b, we also show the Wald's coefficient test result for the 4 groups, and we can see that, except for Group 2 countries, there is asymmetry in the effects of earnings and employment probabilities, implying again that for the countries belonging to groups 1, 3 and 4, information about home and foreign labor markets is asymmetric, and that restrictive migration policies or barriers are still in place. The Group 2 countries on the other hand have relatively lenient migration policies compared to countries in other groups, and this may have contributed sufficiently to the symmetry of

impacts of the variables.

6. Summary

This chapter has explored the role of population, earnings and employment rates in the sending and host countries on the probability to migrate by using a model proposed by Schultz. In the period 1981-1995, population growth in the Philippines raised the probability to migrate, while average domestic earnings reduced it. It was also confirmed that population and average earnings in the host countries have opposite effects on migration from the Philippines.

The validity of the Harris-Todaro's expected wage hypothesis was not confirmed in all cases. Moreover, the coefficients of employment variables are greater in absolute terms that those of the earnings variables. Combining these findings, we can say that a prospective Filipino migrant puts greater importance on employment rates, and therefore, considering these two variables independently will give a better estimation of their impact on international migration.

In general, the asymmetry of the impact of factors in the sending and host countries holds true because of the following: (1) asymmetric information about the local and foreign labor markets; (2) "natural" barriers such as geographical proximity, language difficulty and other cultural and political factors, and (3) restrictive migration policies in the host countries. In absolute terms, factors in the Philippines exert greater influence on the probability to migrate.

The economic transformation that occurred in the Philippines and the host countries listed in this study, and their migration policies impacted differently on the magnitude and direction of Filipino migration to these destinations. Particularly, the shortage of labor due to the imbalance among rates of growth of the population, the labor force, and the economy, encouraged and opened new opportunities for Filipinos to work abroad.

Footnotes of Chapter 4

[1] In this study, we will focus on the pertinent characteristics of the sending and host countries. We will not consider migration costs, usually proxied by distance, in this study because of the following reasons: (1) The cost of moving, such as airfares, does not significantly change with distance. (2) It is doubtful if distance is a good proxy for migration cost, which should also include psychological or non-pecuniary costs. (3) Econometrically, distance as proxy for costs cannot be directly incorporated in the fixed effects panel regression because it does not vary over the time span of the study for each country. There is therefore a need to search for other proxies that will reflect costs more accurately. It is possible that distance also affects migration indirectly through its varied effect on migrants stratified according to age and skills (Schwartz, 1973). The impact of migrants' personal characteristics on his/her probability to migrate will not be discussed here because it entails the use of more detailed data regarding the age, occupation and gender of the migrants going to each destination which are not available.

[2] We define the employment rate as 100% minus unemployment rate.

[3] For a survey of the Harris-Todaro expected wage earnings hypothesis and its theoretical extensions, see, for example, Lucas (1997) and Ghatak and Levine (1996).

[4] This is a feasible assumption in international migration because like in the host country, wages in the sending country are also often not determined competitively but are institutionally or "politically" determined. For empirical analysis of this type, see Lucas (1985) and Salvatore (1981).

[5] By using the fixed effects panel regression method, we must interpret our results with caution. The findings here hold true only for migration from the Philippines to the destination countries in this study. We realize that it is also important to include all countries in this study, but we are highly constrained by the availability of data on the independent variables.

[6] For discussion on migration hump, see, for example, Martin and Taylor in Taylor (1996). This is confirmed in South Korea, Spain and Italy. These countries used to be net labor exporters until the early 1980s but now have become net importers of foreign labor. Just at what level of expected income the turning point in the "migration hump" will be and at what rate it will be achieved are interesting topics for future research

[7] Table 4.3b will be discussed in Section 4.

[8] It is more difficult to overcome barriers, especially the "natural" ones in international labor migration than in capital movement or internal migration. However, we can expect that the political/economic barriers will diminish because of recent movement towards regional integration.

[9] Through restructuring, POEA's functions were expanded to include marketing, employment, welfare, licensing, regulation and adjudication for OCWs.

[10] Countries differ in the scope and rate of implementation of migration policies. Japan and Korea implemented the trainee system in which foreign workers are allowed to work as "trainees" of local companies, which have subsidiaries in the home countries. In Japan, the shortage of labor was also eased through hiring descendants of Japanese migrants abroad (*Nikkeijin*)

and foreign students. Hong Kong, Singapore and Taiwan began to admit skilled workers and service workers like domestic helpers. The Malaysian government took steps to legalize foreign workers from Indonesia and the Philippines who entered Malaysia through its backdoor (Abella and Mori in O'Connor and Farsakh, 1996). The United States, Canada and Australia now allow the entrance of qualified and highly qualified migrants through employment-related permanent immigration and through temporary work or study visas. In many European countries, migration policies are linked to multilateral and bilateral agreements between the sending and the host countries. These are two-way agreements that do not only involve more lenient migration laws in the host countries, but also require sending countries to undertake economic restructuring to improve home conditions and therefore reduce incentives for migration. The European Union (EU) has also initiated a plan to establish a unified labor standards program among the countries of EU and Central and Eastern Europe that will improve working conditions in the sending countries and therefore, may lead to reduction in migration pressure (see OECD SOPEMI, 1998).

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Sources of Data:

1. Nippon Ginko Kokusaikyoku. (1996). *Gaikoku Keizai Tokei Nenpo* 1995 (in Japanese).
2. National Statistical Coordination Board. *Philippine Statistical Yearbook*, various editions.
3. World Bank. *World Development Indicators 2000* (in CD-ROM).

Appendices of Chapter 4

Appendix 4.A. List of Countries included in the Study

1. Australia
2. Belgium
3. Canada
4. China
5. Cyprus
6. Germany
7. Denmark
8. Finland
9. France
10. Great Britain
11. Greece
12. Hong Kong
13. Indonesia
14. Italy
15. Japan
16. Korea
17. Malaysia
18. Netherlands
19. New Zealand
20. Norway
21. Singapore
22. Spain
23. Switzerland
24. Thailand
25. Taiwan
26. United States of America

Appendix 4.B. Description of Variables in the Migration Model

Variable	Description/Definition	Source
P_{ij} (P_{ii})	number of emigrants to destination j (Philippine labor force) divided by the sum of all Filipino emigrants to all destinations and the labor force in the Philippines at the end of the period.	author's calculation
number of emigrants to a destination, j	sum of land-based overseas workers deployed by POEA and permanent emigrants	Philippine Statistical Yearbook, various eds.
average earnings	gross national product divided by labor force (expressed in constant 1995 international US$)	World Development Indicators (2000)*
Population	in thousands (1,000)	World Development Indicators (2000)*
Employment rates	100% minus unemployment rate (expressed as % of the labor force)	World Development Indicators (2000)*
Labor force	in thousands	World Development Indicators (2000)*

* except for Taiwan

Notes:
1. The data for Taiwan were taken from *Gaikoku Keizai Tokei Nenpo* 1995 (in Japanese) published by the Nippon Ginko Kokusaikyoku (1996).
2. The World Development Indicators (in CD-ROM) is published annually by the World Bank.

Chapter 5

The Effect of Migrant Remittances on the Philippine Economy: The Consumption Expenditures Channel

1. Introduction

This chapter aims to measure the direct and indirect effects of remittances on the aggregate economy through household consumption expenditures channel in the case of the Philippines. Specifically, it seeks to contribute to the literature by linking the migrant household's behavior regarding spending on consumption goods and private investments to key aggregate variables such as gross output, national income, employment, capital formation and balance of payments. It will also analyze the diffused impact of the initial increase in personal consumption expenditures (PCE) on the economy that is disaggregated on the sectoral level.[1]

As the number of migrants, especially temporary contract workers, increases due to persistent wage differentials, demographic transformations and regional integration, international migration's potential benefits and costs to the sending country's economy have caught much attention not only from academic researchers but also from government policy-makers. Although there are many channels and starting points in approaching the

issue, in this study, we will focus on the consumption spending behavior of the migrant households because PCE makes up for a greater portion of household income, especially in developing countries. Basically, there should not be any difference in the consumption, savings and investment preferences of households in the same income bracket, with or without migrant members. However, since the households with migrants have different income path and more consumption and investment choices,[2] their spending behavior must be distinct from those of households without migrant members (Tan and Canlas, 1989). Consequently, their impact on the aggregate economy must also be distinct from those without migrants, even if they are in the same income bracket and their incomes increase by the same amount.

Empirical research on the impact of remittances on the aggregate level, through the consumption expenditures-savings channel, is conducted using household survey data (see, for example, Brown, 1995; Mahmud in Amjad, 1989; and Kazi in Amjad, 1989) and time-series data (see for example, Amjad in Amjad, 1989; Saith in Amjad, 1989; Tan and Canlas in Amjad, 1989 and Straubhaar, 1988). The former group of research studies explores the income effects only on the migrant households, while the latter investigates the first-degree effects on the key aggregate macroeconomic variables generally on a piecemeal basis. All these studies have contributed much to our understanding of the role of remittances in economic development, but they do not consider the direct and indirect impact on the disaggregated sectoral level. Partly because of this reason, much evidence suggests that since remittances are used for "unproductive" or "wasteful" expenditures,

remittances contribute little to economic growth.[3]

The present chapter puts a different perspective into the relationship between remittances and economic growth by showing that remittances have stronger impact because of sectoral linkages; and that the impact differs among these sectors, depending on how the remittance incomes are spent. We seek to show some evidence that some sectors are highly favored by remittances because their output form a big share in the expenditures of remittance recipients, or because their linkage with other sectors is high.

To achieve the objectives of this chapter, we will use the results of a household survey and relate the spending pattern of the remittance recipients to the disaggregated economy represented by the Input-Output (IO) table. The use of the IO model will allow us to quantify the induced "multiplier" effect on different production sectors due to inter-industry linkages. This type of approach was used by Stahl and Habib (1989), in the case of Bangladesh, and Glytsos (1993), in the case of Greece, but studies have not been made in the case of the Philippines. Stahl and Habib found out that since the sectors in which the remittances are spent tend to have strong linkages with the rest of the economy, even "unproductive" spending can have positive impacts on the entire economy. Glytsos showed that since remittance recipients drastically change their behavior towards consumption, savings and investments, their remittances promote economic growth, employment and capital formation, but does not have serious implications on the balance of payments.

In the Philippines, remittances are a considerable source of income not only for its recipients but also for the entire economy. Income from remittances makes up a large portion of income of households with migrants. According to the Bangko Sentral ng Pilipinas (BSP) (Central Bank of the Philippines), in 1997, the average annual nominal remittance per migrant was 206,704 pesos (US$7,014). Dividing this by the average family size per household of 5.09 persons, we obtain the average annual nominal remittance per recipient of 40,609 pesos (US$1,378). The nominal GDP per capita of the Philippines in the same year was 32,926 pesos (US$1,117)[4], and therefore, the average income of a recipient from remittances alone is 1.25 times higher than non-recipients. This will potentially alter their consumption and investment decisions. On the aggregate level and based on official estimates by the BSP, total remittances make up a considerable share in annual GDP (see chapter 3). Considering the magnitude of remittances and the active stance of the government in promoting overseas employment, assessing the benefits of migration through the consumption channel is of primary importance.

This chapter is organized as follows. The next section will explain the analytical framework on the relationship between remittances and economic growth through the consumption expenditures channel. In section 3, we will describe the methodology used in this study. The findings of this study will be analyzed in section 4. Finally, we present the summary of this chapter in section 5.

2. Analytical Framework

In this section, we trace how remittances affect the entire economy through its influence on the spending behavior of the migrant household.[5] While there are other channels in which remittances will influence economic growth, like foreign exchange and balance of payments (see chapter 3), we focus on consumption expenditures because in the Philippines, a large percentage of income of recipients is spent in buying consumption or private investment goods. Here, we define personal consumption expenditures (PCE) or disbursements as the sum of (1) expenditures on current consumption goods, (2) private investment goods such as real estate, education and housing, and (3) goods for intertemporal consumption like durable furnishings and housing. On the other hand, average net savings, defined as total receipts less total disbursements, are relatively low in the case of the Philippines. For example, in 1997, net savings were only about 13.3% of total household receipts.

The utility-maximizing members of a migrant household, whom we will call recipients, choose either to purchase consumer goods or some forms of investments, such as real estate, housing or small-scale business, or save it in the form of cash. The purchase of consumer goods will raise the PCE, and of these expenditures, those spent on private investments are expected to raise future income. The initial increase in aggregate demand and PCE in these sectors due to expenditures out of remittances are the initial and direct impact of remittances on the economy.

In the sectors directly affected by the consumption and investments

behavior of the migrant households, production will increase, requiring intermediate inputs from all sectors and primary inputs. We further divide intermediate inputs and capital into domestic and imported goods, so that the initial increase in spending due to remittances will also raise imports. We can also classify the payments to the primary inputs, or the value-added, into workers' compensation, capital depreciation, indirect taxes less subsidies and other value-added such as operating surplus.

Using this framework, we can identify the following effects of a given amount of remittances on the aggregate economy and its disaggregated sectors as follows:

(1) the consumption expenditure effect

(2) the sectoral linkage or intermediate input effect

(3) the income effect

The consumption expenditure effect refers to the initial amount of remittance income spent on consumer goods. Its magnitude depends on the preferences of remittance recipients between spending and savings, and among consumer goods. For all households, with or without migrants, if income varies while prices and tastes remain unchanged, consumption expenditures will change depending on whether the goods are superior, normal or inferior goods. For superior and normal goods, the absolute amount of expenditures will increase due to remittances, while for inferior goods, spending will decrease. Therefore, the composition or allocation of consumption expenditures in the migration and no-migration regimes will vary. Consequently, the sectors that produce consumer goods, which are more

or less superior and normal for migrant households, will most likely be strongly affected by the remittance income than sectors producing consumer goods that migrant households consider inferior.

The second effect refers to the indirect or diffused effects of remittance spending to the different sectors of the economy through sectoral linkages. Even if migrants have little or no final demand for some sectors, these sectors will still be affected by remittances if their output is required as inputs for those sectors with direct final demand from migrants. The stronger the linkage of an input sector to the output sector, the stronger will the impact be to the input sector. These first two effects are the total effects of remittances on aggregate demand and gross output.

The third effect highlights the impact of remittances on the composition of national income or shares of value-added components due to increased production. Since the expenditures of migrants include imported goods, either as final or intermediate demand, national income or the value-added will not increase by the full amount of the initial increase in remittances. The higher the import contents and the lower the domestic content of the goods purchased by migrants, the less favorable will the impact of remittances on national income and the balance of payments be. Moreover, the impact of remittance expenditures on the value-added of labor, capital and entrepreneurs in each sector will also depend on how total income is distributed among these primary inputs. Even if the direct impact of remittances in a sector is strong, it may not translate to considerable benefits for workers in that sector if the relative share of labor's compensation is low

relative to those of other value-added components such as operating surplus or profits of entrepreneurs.

Indeed, the direct and diffused impacts of remittance income on the aggregate level and the disaggregated, sectoral level of the economy depend on the net compounded effects of the three factors mentioned above.

3. Methodology

Our methodology will be divided into three stages: (1) estimating the number of migrants, the number of recipients, and the amount of incomes in the migration and no-migration regimes, (2) distributing the total remittances among the different consumption goods produced by the sectors of the economy, and (3) quantifying the direct and indirect effects of remittances on production, employment creation, capital formation and import content of production. The second stage will necessitate the construction of a consumption expenditures-IO conversion matrix that will link the expenditures in each consumer item to the sectors in the IO table.

3.1. Estimating the Initial Impact of Remittance Expenditures

Let us consider a household with one migrant and the rest of its members remaining in the sending area, which we will call the recipients. Since the amounts of household income and consumption vary according to family size, we will use the household member or the recipient, and not the household, as the unit of analysis. However, we assume that all members/recipients in the same household have the same income and consumption behavior.

Let us assume that the per capita income of a member of the *ith* household, Y_i^{no}, is equal to the average per capita income in the sending area, $\bar{Y}$, when no member goes abroad to work, and therefore does not receive any international remittances (which we will call the no-migration regime). We represent the income in the no-migration regime in equation (1).

$$Y_i^{no}=\bar{Y} \tag{1}$$

We can argue that its amount depends, among other factors, on whether he/she is employed or not prior to his/her departure. If he/she is employed, his/her expected income in the no-migration regime is equal to the full amount of average income in the sending area, while if he/she is not, his/her income is zero. Therefore, our assumption above means that the migrant population comes from both the employed and unemployed, so that they offset each other's impact on the average income in the no-migration regime.

The recipient allocates his/her disposable income between total consumption expenditures, equal to $(1-s_i)(1-t_i)Y_i^{no}$, and savings, equal to $s_i(1-t_i)Y_i^{no}$, where s_i is the average propensity to save and t_i is the income tax rate. The total consumption expenditures are further allocated among the consumer items in the household survey, with the proportion of current income spent on item n $(n=1,\cdots,x)$, or the no-migration regime's average propensity to consume, c_{in}^{no}. In this case, the column vector of his/her no-migration regime's consumption expenditure is C_i^{no}, with each element, $\left[C_{in}^{no}\right]$ representing the no-migration consumption expenditure for the *nth*

item (equation (2)).

$$C_i^{no} = \left[C_{in}^{no}\right] = \left[c_{in}^{no}(1-s_i^{no})(1-t_i)Y_i^{no}\right] \quad (2)$$

On the other hand, we derive in equation (3) below the income of each recipient in the *ith* household in the migration regime, Y_i^{mig}, by adding the no- migration regime's income per recipient and the remittance from abroad per recipient in the same household, RMT_i.

$$Y_i^{mig} = Y_i^{no} + RMT_i \quad (3)$$

Similarly, income in the migration regime is distributed to the different consumer items using the average propensity to consume in the migration regime, c_{in}^{mig}. The consumption expenditures column vector in the migration regime, C_i^{mig}, with elements $\left[C_{in}^{mig}\right]$ is presented in equation (4).

$$C_i^{mig} = \left[C_{in}^{mig}\right] = \left[c_{in}^{mig}(1-s_i^{mig})(1-t_i)Y_i^{mig}\right] \quad (4)$$

We can now compute for the column vector representing the change in consumption expenditures due to remittances per recipient, R_i, by subtracting equation (2) from equation (4), as shown in equation (5).

$$R_i = C_i^{mig} - C_i^{no} \quad (5)$$

For the sending area where this migrant household lives, the total change in expenditures due to remittances, R_n, is derived by multiplying the diagonal matrix, RECIPIENTS with the column vector R_i in equation (5). The diagonal matrix contains the number of recipients in its diagonal and zero for the rest. The total number of recipients is defined as the number of migrants multiplied by the average family size per migrant household. This is

shown in equation (6).

$$R_n = RECIPIENTS \times R_i \tag{6}$$

Our next task is then to allocate the initial change in expenditures for these items to the different sectors in the IO table. Using the consumption expenditures-IO conversion matrix derived in Appendix 5.A and shown in Appendix 5.B, we compute for the initial change in PCE for each IO sector as follows:

$$\begin{pmatrix} R_1 \\ \vdots \\ R_n \\ \vdots \\ R_x \end{pmatrix}^T \bullet \begin{pmatrix} e_{1,1} & \cdots & e_{1,k} & \cdots & e_{1,m} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ e_{n,1} & \cdots & e_{n,k} & \cdots & e_{n,m} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ e_{x,1} & \cdots & e_{x,k} & \cdots & e_{x,m} \end{pmatrix} = \begin{bmatrix} X_1 & \cdots & X_k & \cdots & X_m \end{bmatrix} \tag{7}$$

where the first column vector is the transpose of the vector of initial change in expenditures due to remittances which is derived using equation (6); n is the number of expenditure items where $(n = 1, \cdots, x)$; k is a sector in the IO table where $(k = 1, \cdots, m)$ so that the matrix $[e_{n,k}]$ is the consumption expenditure-IO conversion matrix with each element representing the share of *nth* consumer item in *kth* sector's PCE. The row vector $[X_k]$ on the right-hand side of equation (7) represents the initial impact of remittance on PCE for the *kth* sector of the IO table. For those sectors where households with migrants directly buy outputs, X_k will be large relative to those of other sectors, and thus, we can say that these sectors are *highly favored* in the first-round spending by remittance recipients.

In our study, there are 28 expenditure items and 11 sectors in the IO

table so that x=28 and m=11. Moreover, the following definition (equation 8) holds for the *kth* sector, which means that the initial change in PCE for the *kth* sector of the IO table must necessarily be equal to the inner product of remittance spending on an item and that item's share in total production of the kth sector.

$$X_k = R_1 \bullet e_{1,k} + R_2 \bullet e_{2,k} + R_3 \bullet e_{3,k} + \cdots\cdots + R_{26} \bullet e_{26,k} + R_{27} \bullet e_{27,k} + R_{28} \bullet e_{28,k}$$

$$(k = 1, \cdots, 11) \tag{8}$$

3.2. Estimating the Diffused and Induced Impact of Remittance Expenditures

We begin with the material balance equation matrix for a competitive IO table, shown in equation (9).

$$Y = AY + (C + I) + E - M \tag{9}$$

where Y is the column vector representing gross domestic production or output per sector, A is the technical coefficient matrix where $\left[a_{jk} = \frac{y_{jk}}{Y_k}\right]$, and y_{jk} is the amount of *jth* intermediate input in the *kth* sector. On the other hand, the final demand matrix consists of C, or the PCE column vector; I, the gross capital formation column vector; E, the export column vector, and M, the import column vector.

We will represent the import coefficient column vector in equation (10).

$$m_j = M_j / (\sum y_{jk} + C_j + I_j) \tag{10}$$

and create a diagonal matrix, $\overline{M}$. By substituting equation (10) to equation

(9), defining $\Pi = I - \overline{M}$ or the "self-sufficiency" matrix and arranging terms, we can represent the portion of output produced domestically as equation (11).

$$Y = \Pi AY + \{\Pi(C + I) + E\} \tag{11}$$

Solving for Y, we get equation (12).

$$Y = B\Pi C + B\Pi I + BE \tag{12}$$

where $(I - \Pi A)^{-1} = B$, known as Leontief's inverse matrix.

By taking the derivative of equation (12) with respect to C, we obtain the induced demand or the required gross domestic output needed to satisfy the initial increase in demand due to remittances, and present it as equation (13) below. Here, we assume that investment or gross capital formation and exports are not affected by migrants' remittances.

$$\Delta Y = B\Pi\Delta C = [B\Pi X] \tag{13}$$

where the change in consumption, ΔC, is equal to the initial change in consumption expenditures due to remittances, $\Delta C = X$.

Similarly, we can use equation (14) to compute for induced imports.

$$\Delta M = [\overline{M}\Pi^{-1}B\Pi X] \tag{14}$$

Finally, we can also calculate for the induced increase in payments for primary inputs, or the value-added such as compensation for laborers, cost of capital and other value-added inputs. We first construct a row vector with its elements representing the share of value-added of a primary input to total cost of production in each sector, as shown in equation (15).

$$V=[v_1, \cdots, v_k, \cdots, v_m] \tag{15}$$

where V will be used as a generic name for the value-added of the primary inputs. The elements of V represent the ratio of the cost of primary input to total production cost of each sector.

We also create a diagonal matrix, $\hat{V}$, and the total amount of value-added induced by the change in final demand due to remittances can likewise be measured using equation (16).

$$\Delta V = \left[\hat{V}B\Pi X\right] \tag{16}$$

3.3. Some Indices of the Impact of Remittance Expenditures on the Economy

Based on the formulas above, we will now evaluate the three effects, i.e. the consumption expenditures effect, the sectoral linkage effect and the income effect using the following indices:

a. Sectoral Composition of Initial and Induced Expenditures out of Remittances on Gross Domestic Output, Imports and Value-Added

Using equations (7) and (13), we can derive for the initial and induced change in gross output due to remittances in the respective *kth* sector in the IO table. By dividing the values obtained in equations (7) and (13) by the total initial and induced change for all sectors due to remittances, we can evaluate the sectoral distribution of the initial and induced impact of remittance. The equations for the shares of initial and induced impact for each sector are shown as equations (17) and (18) respectively.

$$\text{Share of Initial Change in } kth \text{ sector to Total Change in All Sectors} = \frac{X_k}{\sum_{k=1}^{11} X_k} \tag{17}$$

Share of Induced Change in *kth* sector to Total Change in All Sectors = $\frac{\Delta Y_k}{\sum_{k=1}^{11} \Delta Y_k}$ (18)

The higher the share of a sector to initial total change for all sectors, the stronger is the direct impact of remittances in this sector compared to other sectors, i.e., this sector is *directly highly favored* by remittances. Similarly, the higher the share of a sector to induced total change for all sectors, the stronger is the direct and indirect effect of remittances to this sector compared to other sectors, i.e., this sector is *indirectly highly favored* by remittances. Conversely, sectors with relatively low shares are only minimally affected by remittances.

Using equations (14) and (16), we can derive for the induced imports and value-added due to remittances, respectively, for the *kth* sector in the IO table. To determine the distribution of the induced imports and value-added, we then use equations (19) and (20).

Share of *kth* sector to total change in imports of all sectors = $\frac{\Delta M_k}{\sum_{k=1}^{11} \Delta M_k}$ (19)

Share of *kth* sector to total change in value-added of all sectors = $\frac{\Delta V_k}{\sum_{k=1}^{11} \Delta V_k}$ (20)

The higher the share of the *kth* sector to total compensation to laborers induced by remittances, the greater is the impact of remittances to this sector's laborers' income compared to those of other sectors. Similarly, the contribution of remittances to capital formation in a sector is high if its share to total value-added or payment for use of capital is high compared to other

sectors.

b. Share of Induced Expenditures out of Remittances to Total PCE and Gross Domestic Output

Another way to evaluate how remittances affect sectoral production, or how dependent a sector is to remittance spending, is by looking at the share of the initial remittance spending to total PCE or total gross output in the *same* sector. Therefore, we divide the initial consumption expenditures due to remittances in *kth* sector to the annual gross production in the *same* sector. The formulae to be used are shown as equations (21) and (22).

$$\text{Share of Initial Change to total PCE in the } kth \text{ sector} = \frac{X_k}{PCE_k} \qquad (21)$$

$$\text{Share of Initial Change to total GDO in the } kth \text{ sector} = \frac{X_k}{GDO_k} \qquad (22)$$

where GDO is the gross domestic output which is defined as the sum of gross domestic product and intermediate inputs. The higher the value obtained from equations (21) or (22), the more dependent is a sector to expenditures from remittances.

c. The Multiplier and Induced Coefficient

The multiplier is the ratio of induced change to the initial change in consumption expenditures. A high value for the multiplier for a sector implies strong linkage with other sectors so that even if it is not directly affected by remittances, its output will still increase when expenditures in sectors highly linked to this sector increase due to remittances. The formula for the multiplier is shown in equation (23).

$$\text{Multiplier for the } kth \text{ sector } = \frac{\Delta Y_k}{X_k} \tag{23}$$

d. Indices of Backward and Forward Linkages

These indices show how production in one sector is important in production in all sectors either as a source of input to those sectors (forward linkage) or as user of inputs from those sectors (backward linkage).

We refer to the Leontief inverse matrix to explain the backward and forward linkages among sectors. The elements in column l, $(l = 1,\cdots,11)$ of the Leontief inverse matrix correspond to both direct and indirect sectoral output required to meet a unit increase in the final demand for that sector's (column) output. Its sum, when expressed as a ratio of total impact of all sectors, measures the degree of backward linkage, also called the index of the power of dispersion, or the relative importance of a sector as a purchaser of intermediate inputs from all sectors. The formula for the index of the power of dispersion is found in equation (24).

$$BL_l = \frac{\sum_{k=1}^{11} r_{kl}}{\frac{1}{11}\sum_{k=1}^{11}\sum_{l=1}^{11} r_{kl}} \qquad (k,l = 1,\cdots,11) \tag{24}$$

where BL_l is the index of the power of dispersion for sector l, and r_{kl}'s are the elements of the (k x l) inverse matrix.

On the other hand, the index of sensitivity measures the forward linkage of a sector to all sectors. It is expressed as the ratio of the sum of elements in a row to the total sum of all sectors and can be interpreted as the amount of direct and indirect input from this sector that will be required

when there is a 1 unit increase in the final demand of *each* sector. The formula for the index of sensitivity, FL_k is specified in equation (25).

$$FL_k = \frac{\sum_{l=1}^{11} r_{kl}}{\frac{1}{11}\sum_{k=1}^{11}\sum_{l=1}^{11} r_{kl}} \qquad (k,l = 1,\cdots,11) \tag{25}$$

As Miyazawa (1995, pp. 92-93) pointed out, the values for these indices are highly dependent on the type of Leontief's inverse matrix and they assume an increase of one unit of output in *all* sectors, therefore they may not accurately reflect the actual relationships among the sectors. Therefore, he suggested that equations (25) and (26) be multiplied by the coefficient of value-added to total production to derive for the value-added based index of power of dispersion for backward linkages (equation 26), and index of sensitivity for forward linkages (equation 27).

Index of Power of Dispersion for lth sector (value-added based) $= FL_l \times v_l$ (26)

Index of Sensitivity for kth sector (value-added based) $= BL_k \times v_k$ (27)

where $v_l = v_k$ is the coefficient, or share of total value-added in total production in each sector.

The higher the value for the indices of power of dispersion or sensitivity of a sector, the higher will be the impulse transmitted by that sector to other sectors. Therefore, if remittance expenditures tend to favor those sectors with relatively strong linkages, then remittance expenditures are a potential source of economic growth in the sending country because they provide stimulus for economic expansion in other sectors as well.

e. Coefficients of Induced Gross Output, Imports and Value-Added

Finally, we can also determine how much gross output, imports or value-added (or payments to primary inputs) are required for every dollar of expenditures due to remittances by solving for the respective coefficients enumerated below.

We use equation (28) to determine how much domestic input is necessary to produce one dollar worth of demand for goods due to remittances.

$$\text{Coefficient of Induced Gross Output} = \left[\frac{B\Pi X}{iX}\right] \tag{28}$$

where i is a row vector with all elements equal to one. Each element in this matrix is interpreted as the amount of domestic output in each sector required for a unit increase in final demand.

Similarly, we can derive for the coefficient of induced import by dividing the induced change in imports for each sector by the total initial change in expenditures due to remittances (equation 29 below). This is interpreted as the amount of imports in each sector induced by a unit increase in final demand due to remittances.

$$\text{Coefficient of Induced Imports} = \left[\frac{\overline{M}\Pi^{-1}B\Pi X}{iX}\right] \tag{29}$$

Finally, we can also evaluate the coefficient of induced value-added, or the change in value-added induced by a unit change in the initial final demand according to equation (30).

$$\text{Coefficient of Induced Value-Added} = \left[\frac{\hat{V}B\Pi X}{iX}\right] \tag{30}$$

3.4. Description of Data

To estimate the income, remittances and expenditures of a recipient, we will use data from the Family Income and Expenditure Survey (FIES, 1997) that includes information on the household level. It gives details about households with and without migrants, but not the migrant himself. As shown in Appendix 5.C, household disbursements include current consumption (food and non-food items), purchases on durable goods, educational expenses and other disbursements such as bank savings, private loans and real estate. The receipts of the household come from wages and salaries, from other sources such as remittances from domestic and foreign migrants, from entrepreneurial activities and from other receipts such as sale of real property or loans from private or business sources. Net saving, as previously defined, is the difference between total receipts and total disbursements.

Considering the significant difference in the income and spending patterns among migrant households as well as in the number of migrants and recipients in different geographical regions and income brackets, we will stratify our data into 16 regions (see Appendix 5.D) and 11 income brackets or quartiles.[6] Therefore, for incomes in the migration and no-migration regimes, we first estimate the values for each region and then aggregate them to obtain the national total. For the average propensities to spend, average propensity to save and tax rates, we apply the value for the particular income level in the specified region.

To determine the sectoral impact of remittance expenditures, we will

refer to the Input-Output Table of the Philippines (1994). Assuming it did not drastically change between 1994 and 1997, we will adjust the values to reflect economic growth from 1994 to 1997 and the current prices in 1997. The reconstructed IO table for 1997 is shown in Appendix 5.E.

1. Analysis of Results

Using the methodology in section 3, we will now investigate the relationship between expenditures from remittances and economic growth in the Philippines. In particular, we will focus on the following issues:

(1) the number of migrants and recipients, the size of income in the migration and no-migration regimes, remittances and their regional distribution;

(2) the spending and savings patterns of remittance recipients in comparison with remittance non-recipients;

(3) the direct and indirect impact of expenditures from remittances to PCE and gross output on the aggregate and sectoral levels;

(4) the impact of expenditures from remittances to imports and value-added.

4.1. Income, Remittances and Remittance Recipients

Using the methodology in section 3.1 and information from the Family Income and Expenditure Survey (FIES), we calculate the income in the migration and no-migration regimes of remittance recipients and the number of recipients on the regional and national levels. The estimated values are shown in Table 5.1, from which we can draw the following observations:

Table 5.1. Estimates of the Number of Migrants, Average Income in Migration and No-Migration Regimes and Remittances per Recipient per Region (1997)

Regions	Income in No-Migration Regime (in pesos) (A)	Average Remittances (in pesos) (B)	Income in Migration Regime (in pesos) (A) + (B)	Number of Migrants (no. of persons) (C)	Average Household Size (no. of persons) (D)	Number of Recipients (no. of persons) (C) x (D)
1. Ilocos	20,151	8,801	28,953	188,494	5.10	961,032
2. Cagayan Valley	18,936	7,177	26,113	81,886	4.58	375,436
3. Central Luzon	26,279	12,365	38,644	224,030	5.09	1,140,913
4. Southern Tagalog	26,324	14,273	40,597	266,101	5.02	1,336,484
5. Bicol	14,384	10,635	25,019	60,844	5.36	326,116
6. Western Visayas	16,706	9,958	26,664	196,929	5.19	1,022,405
7. Central Visayas	16,805	9,752	26,557	84,342	5.09	429,112
8. Eastern Visayas	14,320	10,028	24,348	50,747	4.75	241,050
9. Western Mindanao	16,973	6,211	23,184	43,240	5.27	227,676
10. Northern Mindanao	20,215	8,739	28,953	36,777	4.92	180,972
11. Southern Mindanao	18,958	6,376	25,334	67,275	4.98	334,834
12. Central Mindanao	15,053	6,842	21,895	35,067	5.41	189,550
13. National Capital	53,839	15,087	68,926	359,814	5.10	1,836,692
14. CAR[a]	22,509	10,075	32,585	37,135	5.00	185,756
15. ARMM[b]	11,784	3,627	15,410	18,439	6.09	112,362
16. CARAGA[c]	14,241	8,910	23,151	27,096	5.25	142,186
National Average	27,339	11,310	38,648	1,778,218 [d]	5.09	9,042,577 [e]

Notes:

[a] CAR : Cordillera Administrative Region

[b] ARMM: Autonomous Region in Muslim Mindanao

[c] CARAGA: Northeastern Mindanao

[d] Total number of Filipino international migrants

[e] Total number of remittance recipients

Source: Author's calculations from Family Incomes and Expenditure Survey (FIES), 1997 and Philippine Statistical Yearbook, 1998.

First, based on the survey results, the income in no-migration regime as defined in equation (1) in 1997 was 27,339 pesos (US$928). This estimate is nearly equal to the data from official government sources. On the other hand, the national average remittances per recipient are about 40% of the no-migration income, at 11,310 pesos (US$384).[7] Using equation (3), we obtain the estimated income in the migration regime, and obviously, such considerable increase in income will alter the consumption expenditures basket of the households with migrants.

Second, we comment on the estimated number of migrants and remittance recipients. We need to estimate the stock of migrants and the number of remittance recipients. However, since there are no available data for the stock of migrants from the Philippines, we estimated it using the ratio of migrants to non-migrant households in the survey and multiplied it to the total number of households in that region, assuming that there is only one migrant per household. Results show that the estimated total number of Filipinos abroad of 1.78 million persons in 1997 is more than twice as the flow of migrants or the number of departures in 1996 of about 720,000 deployed land-based and sea-based contract workers and permanent emigrants. This estimate is feasible and still conservative since contract workers, which comprise the majority of annual departures and remitters, stay in the host country for at least 2 years. Moreover, since permanent migrants send lower amount of remittances (because they opt to bring their families to the host country), their impact on the economy is weaker than contract workers. Moreover, official data do not include illegal emigrants, while the survey

includes information even for households with illegal migrant members. Multiplying our estimated total number of migrants by the national average household size of 5.09 persons per household, we obtain 9.043 million remittance recipients, about 13% of the population in 1997.[8]

Third, we can detect widening differences in incomes in the migration and no-migration regimes among the regions. Referring to Table 5.1, we can see that Region 13, the national capital region (Metro Manila), is the richest region in terms of incomes, having an average income which is almost twice as much as the weighted national average. Regions 3 (Central Luzon) and 4 (Southern Tagalog) are the urbanized regions adjacent to region 13. These regions also have high income levels (but also high cost of living). On the other hand, regions of political instability such as regions 5 (Bicol), 8 (Eastern Visayas), 11 (Southern Mindanao) and 14 (Cordillera Administrative Region, CAR) are the poorest regions with an average income of less than half of the national average. This makes international migration more affordable and accessible for households in regions 13, 3 and 4 compared to those living in the poorer regions, therefore suggesting that more migrants will originate and remit from regions 13, 3 and 4. In Table 5.1, we can also confirm that these regions are indeed the top senders of remitting migrants abroad.[9]

Fourth, average per capita remittances also exhibit the same trend, with recipients in region 13 getting the highest amount of remittances which is about 30% higher than the national average, followed by regions 3 and 4. As a result, total remittances are extremely high for these regions, implying that the impact of remittances is also relatively stronger in these areas

compared to other regions.

Considering the findings above, we can predict that remittances indeed have a large and dramatic impact not only to the households with migrants but also to the entire economy. However, we must also take note of the regional differences that will surely influence the per capita and total consumption in each region.

4.2. The Consumption Expenditure Patterns of Remittance Recipients

In section 3.1, we indicated that the average propensities to spend and save are crucial in determining the magnitude of spending due to remittances and, consequently, its impact on the economy, both on the aggregate and sectoral levels. Using data from FIES (1997), we compute for the average propensities to spend and save by dividing average spending per expenditure item by the average total receipts per region and per income level.

There are two levels in which we can assess the spending behavior of remittance recipients compared with non-recipients. First, we can look at the difference in the average spending propensities per expenditure item of these two groups. The results are shown in Table 5.2. On the average, the actual total spending of non-recipients is 23,222 pesos (US$788), which is only 64% of total disbursements of remittance recipients (36,337 pesos or US$1,233). This difference can be attributed to the higher average income for remittance recipients. Moreover, as mentioned above, even if remittance recipients and non-recipients have the same tastes and preferences, there will still be difference in the composition of their consumer baskets because of the

Table 5.2. Composition of Consumption Expenditures of Remittance Recipients and Non-Recipients (1997)

Expenditure Item	Recipients		Non-recipients	
	(in pesos)	as % of total	(in pesos)	as % of total
A. Food, Alcoholic Beverages and Tobacco	12,495	43.8	9,430	54.9
B. Fuel, Light, Water, Transportation and Communication, Household Operations	4,362	11.7	2,623	10.7
C. Personal Care and Effects, Clothing, Footwear and Other Wear	2,358	7.0	1,326	6.2
D. Education, Recreation and Medical Care	2,358	6.4	1,208	4.1
E. Durable and Non-durable Furnishings and Equipment	1,356	2.8	648	4.0
F. Taxes	530	0.9	501	0.9
G. Housing, House Maintenance and Repairs	5,481	13.6	3,242	10.8
H. Miscellaneous Expenditures Gifts and contribution to others, insurance, professional fees interest on loans	2,122	5.1	1,356	5.3
I. Other Disbursements purchase of real property, loans granted to others, major house renovation, payment of loans, bank deposits	5,275	8.6	2,888	5.2
TOTAL	36,337	100.00	23,222	100.00

Source: Author's Calculations from Family Income and Expenditure Survey, 1997

significant difference in income. This observation is also confirmed in Table 5.2, which shows that recipients spend less on food, alcoholic beverages and tobacco, durable and non-durable furnishings and equipments, and miscellaneous expenditures than the non-recipients. That recipients spend a smaller portion of their income on durable and non-durable furnishings suggest that these items, like electrical appliances and household furnishings are brought home by the migrant and thus are excluded from the remittance recipients' actual expenditures.

To further examine the difference in spending behavior of remittance recipients as against non-recipients, we shift to another level of analysis by looking at the composition of total disbursements as well as the net savings of a remittance recipient and non-recipient in the same income bracket. For our purpose, we divide the sample into 11 income levels and compute for the average propensities to spend for current consumption and private investment and intertemporal consumption, for the average income tax rates and for the average net savings. The results are shown in Tables 5.3a, 5.3b, 5.3c and 5.3d. The list of expenditure items and their classification is found in Appendix 5.C. By taking the difference between the values obtained for remittance recipients and non-recipients (shown in column 4 of each table), we can draw some meaningful distinction on their behavior that mainly resulted from differences in choices and preferences between them.

Our results show that there are significant differences in the expenditure patterns of the two groups.[10] For expenditures on current consumption (Table 5.3a), non-recipients in the lower quartile seem to spend

Table 5.3. Composition of Total Disbursements of Remittance Recipients and Non-Recipients per Income Bracket (1997)

Table 5.3a. Average Propensity to Spend on Current Consumption[a]

Income Bracket (in pesos)	Recipients (A)	Non-Recipients (B)	Difference (A)-(B)
less than 10,000	0.958	0.968	-0.010
10,001 to 20,000	0.844	0.861	-0.017
20,001 to 30,000	0.779	0.787	-0.009
30,001 to 40,000	0.731	0.737	-0.006
40,001 to 50,000	0.713	0.696	0.017
50,001 to 60,000	0.697	0.669	0.028
60,001 to 70,000	0.681	0.650	0.031
70,001 to 80,000	0.651	0.631	0.020
80,001 to 90,000	0.633	0.606	0.027
90,001 to 100,000	0.641	0.602	0.039
100,001 up	0.574	0.533	0.041

Table 5.3b. Average Propensity to Spend on Private Investment and Durable Goods[b]

Income Bracket (in pesos)	Recipients (A)	Non-Recipients (B)	Difference (A)-(B)
less than 10,000	0.043	0.027	0.016
10,001 to 20,000	0.068	0.048	0.020
20,001 to 30,000	0.093	0.076	0.018
30,001 to 40,000	0.114	0.099	0.015
40,001 to 50,000	0.137	0.126	0.011
50,001 to 60,000	0.145	0.135	0.011
60,001 to 70,000	0.166	0.149	0.017
70,001 to 80,000	0.171	0.167	0.004
80,001 to 90,000	0.183	0.171	0.012
90,001 to 100,000	0.199	0.180	0.020
100,001 up	0.218	0.217	0.001

Table 5.3c. Income Tax Rates[c]

Income Bracket (in pesos)	Recipients (A)	Non-Recipients (B)	Difference (A)-(B)
less than 10,000	0.002	0.001	0.001
10,001 to 20,000	0.002	0.002	0.000
20,001 to 30,000	0.004	0.005	-0.001
30,001 to 40,000	0.005	0.009	-0.004
40,001 to 50,000	0.009	0.014	-0.005
50,001 to 60,000	0.010	0.017	-0.007
60,001 to 70,000	0.013	0.021	-0.008
70,001 to 80,000	0.014	0.023	-0.009
80,001 to 90,000	0.013	0.028	-0.015
90,001 to 100,000	0.016	0.028	-0.012
100,001 up	0.018	0.033	-0.014

Table 5.3d. Average Propensity to Save[d]

Income Bracket (in pesos)	Recipients (C)	Non-Recipients (D)	Difference (C)-(D)
less than 10,000	-0.003	0.004	-0.007
10,001 to 20,000	0.086	0.090	-0.004
20,001 to 30,000	0.124	0.132	-0.009
30,001 to 40,000	0.150	0.155	-0.006
40,001 to 50,000	0.142	0.165	-0.023
50,001 to 60,000	0.148	0.180	-0.032
60,001 to 70,000	0.141	0.181	-0.040
70,001 to 80,000	0.164	0.179	-0.016
80,001 to 90,000	0.171	0.195	-0.024
90,001 to 100,000	0.143	0.190	-0.047
100,001 up	0.189	0.217	-0.028

Notes:

1. Household expenditures (disbursements) include current consumption, private investments and durable goods and income taxes.
2. Net savings is defined as total household receipts less total household disbursements.
3. The values in column (A) are the average propensity to spend by remittance recipients per income bracket.
4. The values in column (B) are the average propensity to spend by remittance non-recipients per income bracket.
5. The values in column (C) are the average propensity to save by remittance recipients per income bracket.
6. The values in column (D) are the average propensity to save by remittance non-recipients per income bracket.

[a] :Calculated as the ratio of expenditures on current consumption to total receipts.

[b]: Calculated as the ratio of expenditures on private investments and goods for intertemporal consumption over total receipts.

[c] : Calculated as the ratio of tax payments over total receipts.

[d]: Calculated as the ratio of net savings (total receipts-total disbursements) over total receipts.

Source: Author's Calculations from Family Income and Expenditure Survey, 1997

a bigger share of their income on food and non-durables than recipients, but for higher income quartiles, recipients spend a bigger share of their income than non-recipients. For private investment items like education, real estate, bank deposits and loans and purchase of goods for intertemporal consumption (Table 5.3b), recipients spend a bigger percentage of their income compared to non-recipients for all income brackets. These findings suggest that remittance recipients behave in accordance with the permanent income hypothesis in which consumption smoothing results in higher expenditures for goods for intertemporal consumption or private investments. Conversely, income from remittances will not appreciably raise the share of current consumption in total disbursements (at least for recipients in the lower income levels).

Generally, as shown in Table 5.3c, taxes comprise a very small part of household disbursements in the Philippines. Even for those in the higher income quartiles, income taxes are still less than 5% of total disbursements. Moreover, it seems that for most income quartiles, non-recipients pay higher taxes as percentage of their income.

Another interesting result of the survey involves the savings behavior of recipients compared to non-recipients (Table 5.3d). Net savings rate is high for non-recipients in all income quartiles, hinting at higher consumption expenditure shares for recipients. However, if we redefine gross savings to include expenditures on investment items, the "gross savings rate" is bigger for recipients than non-recipients in lower income quartiles, but lower in higher income quartiles. Especially in the case of recipients in the lower income levels, this finding reinforces our observation that recipients are more

concerned with future consumption and income generation. Therefore, compared with non-recipients, they spend a bigger share of their income on goods for intertemporal consumption, and for private investments that will generate income in the future, or use it for savings. In this sense, remittances are not completely "wasteful" or "unproductive," both for the household and for the economy as a whole because of the type of goods in which they spend their remittances.

4.3. Initial and Induced Impact of Remittance Expenditures on the Aggregate and Sectoral Levels

We now analyze the impact of the spending behavior of recipients on the disaggregated sectors of the economy by looking at the actual change in and the composition of initial and induced PCE out of remittances. We use Appendix 5.B. to convert the values in the FIES items list into the sectors in the Input-Output Table. Then, we compute for the initial and induced increase in PCE due to remittances using equations (7) and (13) respectively. Moreover, to evaluate the sectoral impact or the composition of the initial and induced changes, we use equations (17) and (18). Based on the results in Table 5.4, we draw the following points:

First, out of the total estimated remittances of 102.27 billion pesos (US$3.43 billion), the additional disposable income was 99.21 billion pesos (US$3.33 billion), or 97.7%. Of this amount, 81.89 billion pesos (US$2.75 billion) was used for consumption expenditures or disbursements. This is the total initial effect of remittances, which is equal to 4.94% of the total PCE for 1997 and 1.86% of gross output in the same year. On the other hand, the total

Table 5.4. Composition of Initial and Induced Change in Gross Domestic Output due to Remittances (1997)

Sectors	Initial Change in Gross Domestic Output (in billion pesos)	Share in Total Initial Change (in %)	Induced Change in Gross Domestic Output (in billion pesos)	Share in Total Induced Change (in %)	Multiplier
Agriculture	4.88	5.96	11.47	10.83	2.35
Mining	0.23	0.28	0.46	0.43	2.03
Manufacturing	23.89	29.17	28.50	26.92	1.19
Construction	1.50	1.83	2.50	2.36	1.67
Electricity, Steam and Water	2.89	3.52	5.35	5.05	1.85
Transportation/Communication	2.57	3.14	6.05	5.72	2.35
Trade	11.30	13.80	13.83	13.06	1.22
Finance	10.90	13.31	10.68	10.08	0.98
Real Estate and Housing	11.08	13.53	11.75	11.10	1.06
Private Services	12.61	15.39	15.25	14.41	1.21
Government Services	0.05	0.07	0.05	0.05	1.00
Total - All Sectors	81.89	100.00	105.88	100.00	1.29 [a]

Note: [a] Weighted average for all sectors.

Source: Author's Calculations from Family Income and Expenditure Survey (FIES), 1997 and the Philippine Statistical Yearbook, 1998.

induced gross domestic output due to remittances was 105.88 billion pesos (US$3.56 billion), or 6.39% of PCE and 2.41% of gross output in the same year. This suggests that even if the income of recipients dramatically increased by at least 20%, the impact on the national economy is minimal because the recipients are still a minority who are widely dispersed throughout the country.

Second, with regard to the composition of initial consumption expenditures due to remittances, as shown in column 3 of Table 5.4, manufacturing makes up almost one third of the total, at 29.17%. This is because the outputs of the manufacturing sector are heavily purchased by remittance recipients or are heavily used in the production of many consumption expenditure items, even food and durables. The manufacturing sector's share is followed by those of private services, real estate and housing, finance, and trade sectors. Private services include private education, private health, private business services, private recreational services, private personal services and hotels and restaurants, goods that are generally normal or superior so that the marginal propensities to spend out of disposable income for these items are high. In this sense, the spending behavior of migrants can be attributed to the increase in income, regardless of whether that income came from foreign or domestic sources.

Third, further inspection of the items included in private services reveals that hotels and restaurants, representing food eaten outside home, private personal services and private education have relatively higher shares in total initial increase in the private services sector. The first two items are

current consumption and therefore, do not contribute to future income for the household, but they contribute greatly to current income because they are labor-intensive industries that generate present employment. Moreover, education is investment on human resources, so that increased spending on this item will raise future income of the household. Therefore, although these items are for present consumption, or are "unproductive" in the present period, they cannot be totally classified as "wasteful" because they contribute to present or future incomes.

Fourth, the real estate and housing sector includes the imputed rent for house and purchase of real estate, the two main components of private investments and intertemporal purchases out of remittances. It can be argued that the purchase of real estate is a mere transfer of ownership so that it does not really comprise investment, and housing is only a source of employment in the construction phase. Nevertheless, we cannot again say that these items are completely "unproductive or useless" because, like expenditures on private services, they also contribute to current employment, and in the case of real estate, it will also raise the future income of the recipients when it is profitably sold in the future.

Fifth, the sectoral effect of remittance spending, however, goes beyond the initial impact. The induced demand for sectoral output due to remittances and their shares in total induced change in gross output are found in columns 4 and 5 of Table 5.4. Compared to the initial effect, some sectors have doubled their values, implying that for sectors like agriculture, mining, construction, electricity, steam and water and transportation and communication,

expenditures from remittances impact on them through their strong linkage with sectors that are directly favored by remittance spending.

Next, we discuss the dependence of a sector's production on remittance spending, another measure of the impact of remittances explored in section 3.3.b. Using equations (21) and (22), we compute for the share of initial expenditures due to remittances to total gross output in the same sector, respectively. The results are shown in Table 5.5.

From Table 5.5, we can see that the recipients' demand for goods comprises a considerable market for some sectors as shown by the share of remittance spending in that sector's private consumption expenditures and gross output. In 1997, for example, the recipients' expenditures comprised almost 30% of the total PCE of the construction sector, followed by finance, at 16.06% and electricity and water, at 14.46%. These sectors are largely identified with remittances because, of the private sector, the migrant households have the financial means which are earned for a short period of time abroad to build or renovate house. They utilize more electricity probably because of ownership of more electric appliances, and participate as borrowers or lenders of money from and to private persons and business intermediaries in the financial sector. Based on this index, we can again confirm that these sectors are *highly favored* by migration.

Finally, to quantify the direct and indirect impact of demand due to remittances on the different sectors, we will use three indices discussed in section 3.3: (1) the multiplier, and (2) the indices of backward and forward linkages and of sensitivity and dispersion (3) the coefficients of induced

Table 5.5. Share of Initial Change in Expenditures due to Remittances to Total Personal Consumption Expenditures (PCE) and Total Gross Domestic Output per Sector (1997)

Sectors	Share of Initial Change to Total PCE per Sector (in %)	Share of Initial Change to Total Gross Domestic Output per Sector (in %)
Agriculture	2.57	0.78
Mining	10.79	0.54
Manufacturing	3.26	1.44
Construction	29.67	0.65
Electricity, Steam and Water	14.46	2.44
Transportation/Communication	3.88	1.02
Trade	4.95	2.23
Finance	16.06	6.20
Real Estate and Housing	6.64	5.75
Private Services	7.06	3.53
Government Services	6.44	0.02
All Sectors	4.94 [a]	1.86 [a]

Note: [a] Weighted average for all sectors.

Source: Author's Calculations from Family Income and Expenditure Survey (FIES), 1997 and Philippine Statistical Yearbook, 1998.

value-added, which will be explained in Section 4.4.

(1) the multiplier

We solve for the multiplier using equation (23). The result is shown in the last column of Table 5.4. The multipliers for agriculture, mining, and transport and communications are more than 2, implying that for these sectors, the indirect impact of remittances due to the required inputs by other sectors to satisfy the additional PCE demanded by recipients, is much stronger than the direct effect, or the initial addition to PCE itself. Although manufacturing has a large percentage of initial effect, its multiplier is 1.19, which is relatively weak in comparison with other sectors or with the corresponding values in other countries. The same trend can be detected in the trade, finance, real estate and housing and private services sectors. We can point two possible reasons for this finding: (1) that the imports content of the output in that sector is sufficiently high, and/or (2) that the sector's linkage with other sectors is relatively weak. The first reason holds true in the manufacturing sector in which the import coefficient, or the amount of imports required, is very high at 0.3555 dollar per dollar value of manufactured goods. This means that the addition to GDP is low since imports are considered a "leakage" in the economy. The induced impact of remittances on the manufacturing industry and the aggregate economy as a whole could have been sufficiently higher if it were not for the observed high import content of manufactured goods in the country.

(2) the indices of the power of dispersion and sensitivity

To assess if the second reason is a valid explanation for low values of

the multiplier, we need to further explain sectoral linkages. Here, we will use equations (24) and (25) to calculate for the indices of power of dispersion and sensitivity, respectively. The results are found in Tables 5.6a and 5.6b.

Column 2 of Table 5.6a shows the index of power of dispersion of the different sectors. A value of less than one means that this sector has low backward linkage compared to the weighted average for all sectors. We can see that the manufacturing sector has the highest index, indicating that manufactured goods have high intermediate input content i.e. it is an important purchaser of intermediate goods from other sectors. In contrast to this, real estate and housing has very low backward linkage, followed by finance, trade and government services. On the other hand, the index of sensitivity, which shows how much of its output is required when there is a one unit demand *each* for *all* sectors, is presented in column 3 of Table 5.6a. The sectors that have high index of sensitivity are manufacturing, followed by agriculture, transportation and communication and private services.

Following Miyazawa (1995, pp.92-93), we also compute for the value-added based indices of the power of dispersion and sensitivity using equations (26) and (27) and rank them from highest to lowest. The results are shown in Table 5.6b. We can see that the manufacturing sector has the lowest value-added based index of power of dispersion so that compared to the average for all sectors, an increase in demand in this sector will *not* cause significant increase in demand for intermediate inputs from all sectors. Such low index of dispersion, however, is attributed mainly to the low share of total value-added, and therefore, high share of imports to total production, rather

Table 5.6. Indices of Power of Dispersion and Sensitivity (1997)

Table 5.6a. Indices of Power of Dispersion and Sensitivity

Sectors	Index of Power of Dispersion	Index of Sensitivity
Agriculture	0.90	1.19
Mining	1.04	0.70
Manufacturing	1.21	2.12
Construction	1.04	0.76
Electricity, Steam and Water	1.04	0.93
Transportation/Communication	1.09	1.01
Trade	0.98	0.92
Finance	0.92	0.88
Real Estate and Housing	0.78	0.73
Private Services	1.05	1.09
Government Services	0.94	0.66

Note: Calculations are based on equations (24) and (25).

Table 5.6b. Total Value Added-Based Indices of Power of Dispersion and Sensitivity

Sectors	Value-Added Coefficient	Index of Power of Dispersion	Rank	Index of Sensitivity	Rank
Agriculture	0.72	0.65	3	0.86	1
Mining	0.56	0.58	6	0.39	11
Manufacturing	0.32	0.39	11	0.68	2
Construction	0.53	0.55	9	0.40	10
Electricity, Steam and Water	0.54	0.56	8	0.50	7
Transportation/Communication	0.49	0.54	10	0.49	8
Trade	0.66	0.65	3	0.61	5
Finance	0.72	0.66	2	0.64	3
Real Estate and Housing	0.88	0.68	1	0.64	3
Private Services	0.55	0.58	6	0.60	6
Government Services	0.69	0.65	3	0.46	9

Note: Calculations are based on equations (26) and (27).
Source: Author's Calculations from Input-Output Table of the Philippines, 1994.

than weak backward linkages. In contrast to this, the value-added based index of the power of dispersion is high in the real estate and housing, finance, trade, agriculture and government services sectors because their backward linkage is high and/or the value-added coefficient is high. From these findings, we can say that since the *highly favored* sectors, except manufacturing, have high value-added based index of power of dispersion, then the potential of remittances in expanding the economy through sectoral linkages is potentially high.

Regarding the value-added based index of sensitivity, the values for agriculture, manufacturing, electricity, steam and water, trade, finance and government services are relatively high, indicating that the demand for intermediate inputs from these sectors will increase significantly if there is a one unit increase in demand in all sectors. Apparently, these sectors are important sources of inputs for all sectors so that they receive strong impulse for production as the demand for goods in all sectors increases.

In summary, the high propensities to spend on goods produced by the manufacturing, trade, finance, private services and real estate and housing have already resulted in greater initial impact of remittances compared to other sectors. With the exception of the manufacturing sector, these sectors have strong value-added based indices of linkage with other sectors so that the total impact of remittances became much larger compared to other sectors. This has caused the "polarization" of the impact of remittance spending among the different sectors of the economy in favor of sectors that either produce goods highly preferred by remittance recipients or are strongly linked

with other sectors.

4.4. Effect of Remittance Expenditures on Value-Added Components and Imports

We now evaluate the effect of remittance expenditures on imports and payments to value-added components. We first compute for the induced impact on imports using equation (14). From Table 5.7, we can see that the total induced imports of 21.56 billion pesos (US$725 million), which is equal to 2.55% of 1997's total imports, is highly concentrated in the manufacturing sector while imports in some sectors were very minimal. Furthermore, the shares of each sector to total induced import, calculated based on equation (19), show that three-fourths of the induced imports, or 15.71 billion pesos, was required by the manufacturing sector, followed by finance (2.90 billion pesos, 13% of total), and private services (1.22 billion pesos, 6%). This can again be attributed to the following reasons: (1) the high propensity of recipients to spend on goods produced by these sectors, (2) the high demand for their goods as inputs in the production of goods in the other sectors, and (3) the relatively high dependence on imports in the production of these sectors' output.

Next, we look at the impact of remittance spending on payments to primary inputs, or the value-added components using equations (16) and (20). The results are shown in Table 5.8. The total contribution of remittance expenditures to total value-added is 60.32 billion pesos (US$2.03 billion), which is equivalent to 2.61% of 1997's total value-added or national income. Despite the large increase in income of migrant households, their first-round

Table 5.7. Induced Imports due to Remittance Expenditures (1997)

Sectors	Induced Imports due to Remittances (in billion pesos)	Share of Sectoral Induced Imports to Total Induced Imports (in %)
Agriculture	0.22	1.02
Mining	1.23	5.71
Manufacturing	15.71	72.87
Construction	0.07	3.07
Electricity, Steam and Water	0.00	0.00
Transportation/Communication	0.20	9.19
Trade	0.00	0.00
Finance	2.90	13.47
Real Estate and Housing	0.01	0.04
Private Services	1.22	5.68
Government Services	0.00	0.00
Total-All Sectors	21.56 [a]	100.00

Note: [a] Total induced imports for all sectors

Source: Author's Calculations from Family Income and Expenditure Survey (FIES), 1997 and Input-Output Table of the Philippines, 1994.

impact on national income through consumption expenditures is very low, probably because migrant households are still a minority group broadly dispersed in the country.

There is a notable sectoral difference in remittances' induced impact on employment creation, capital formation, net taxes and income of other value-added components like operating surplus, as shown also in Table 5.8. In column 2, we can see how much employment was generated from remittance expenditures. As expected, employment generated in labor-intensive sectors such as private services, agriculture and trade; and in sectors with high share in remittance expenditures such as manufacturing and finance are extremely high compared to other sectors. It is relatively low in less-labor intensive sectors like real estate and housing and electricity, steam and water industries.

The values in Table 5.8, column 3 indicate how much capital, represented by depreciation costs, are induced by remittances. As expected, depreciation costs are very minimal because, generally, the share of capital per unit of production in the Philippines is low compared to other value-added components. The same trend is detected in net taxes, defined as indirect taxes less subsidy. In contrast to these findings, the cost of other value-added components, comprised mainly of operating surplus or profit is exorbitant at about 32% of total production cost. Column 5 of Table 5.8 shows that the share of other value-added to total cost is exceptionally high in sectors either directly or indirectly highly affected by remittance expenditures, such as real estate and housing (81%), trade, finance, private services and

Table 5.8. Induced Change in Value-Added due to Remittance Expenditures (1997)

Sectors	Components of Total Value-Added									
	Workers' Compensation (A)		Capital Depreciation (B)		Taxes Less Subsidies (C)		Other Value-Added (D)		Total Value-Added (A+B+C+D)	
	in billion pesos	in (%)	in billion pesos	in (%)	in billion pesos	in (%)	in billion pesos	in (%)	in billion pesos	in (%)
Agriculture	2.70	18.44%	0.65	12.47%	0.24	6.64%	4.67	12.67%	8.26	13.70%
Mining	0.08	0.55%	0.05	0.92%	0.01	0.36%	0.12	0.31%	0.26	0.43%
Manufacturing	2.43	16.59%	0.80	15.30%	0.81	22.64%	5.14	13.94%	9.18	15.22%
Construction	0.40	2.73%	0.15	2.84%	0.04	1.22%	0.75	2.03%	1.34	2.22%
Electricity, Steam and Water	0.49	3.36%	0.77	14.75%	0.12	3.46%	1.51	4.09%	2.89	4.79%
Transportation/Communication	0.99	6.77%	0.64	12.30%	0.14	4.04%	1.20	3.25%	2.97	4.93%
Trade	2.03	13.82%	0.58	11.12%	0.62	17.47%	5.85	15.87%	9.08	15.06%
Finance	1.84	12.54%	0.52	9.95%	0.97	27.15%	4.33	11.75%	7.66	12.70%
Real Estate and Housing	0.40	2.69%	0.28	5.41%	0.17	4.63%	9.47	25.68%	10.31	17.09%
Private Services	3.27	22.30%	0.78	14.96%	0.44	12.46%	3.84	10.40%	8.33	13.81%
Government Services	0.04	0.24%	0.00	0.03%	0.00	0.00%	0.00	0.00%	0.04	0.06%
Total- All Sectors[a]	14.67	100.00%	5.20	100.00%	3.57	100.00%	36.87	100.00%	60.32	100.00%
1997 Value-Added (VA) per Component	733.36	2.00%[b]	202.59	2.57%[b]	125.88	2.84%[b]	1247.68	2.96%[b]	2309.52	2.61%[c]

Notes:

[a] Sum of induced change in value-added in all sectors due to remittances per component.

[b] Induced change as (%) of 1997 total value-added per component.

[c] Induced change as (%) of 1997 total value-added.

Source: Author's Calculations from Family Income and Expenditure Survey (FIES), 1997 and Input-Output Table of the Philippines, 1994.

agriculture. Even though the manufacturing sector has the lowest share of other value-added to total production cost at 18%, since it is a sector favored by remittance spending, the total amount of national income going to operating surplus in the manufacturing sector is also high. This suggests that due to the underlying production structure of the Philippines, the production factor which is highly favored by remittance spending is other value-added components like operating surplus, and not labor or capital.

Finally, we evaluate the required amount of inputs from all sectors, imports and primary inputs for every dollar spent out of remittances. This is shown in Table 5.9, where the values were calculated based on equations (28) to (30). The values can also be interpreted as the amount of domestic gross output, imports and value-added induced by a one-unit increase in final demand due to remittances. First, an additional unit of final demand due to remittances requires 1.29 units of intermediate domestic inputs, which is equivalent to the multiplier mentioned above. Of this amount, the manufacturing sector has the highest share of 0.3480 or about 27% of the total. We can say that the sectors with high values for this coefficient are sectors that are directly or indirectly highly "favored" by a given increase in final demand. Conversely, based on the values of the coefficients, we can say that mining, construction, electricity and water, transportation and communication and government services sectors are least affected by a dollar of expenditures due to remittances. For every dollar of consumption expenditures due to remittances, 0.263-dollar worth of imports from all sectors is required, of which 0.192 dollar worth of imported manufactured

Table 5.9. Coefficients of Induced Gross Output, Imports and Value-Added Components (1997)

Sectors	Gross Output[a]	Imports[b]	Workers' Compensation[c]	Capital Depreciation[c]	Indirect Taxes Less Subsidy[c]	Other Value-Added[c]	Total Value-Added[c]
Agriculture	0.140	0.003	0.033	0.008	0.003	0.057	0.101
Mining	0.006	0.015	0.001	0.001	0.000	0.001	0.003
Manufacturing	0.348	0.192	0.030	0.010	0.010	0.063	0.112
Construction	0.031	0.001	0.005	0.002	0.001	0.009	0.016
Electricity, Steam and Water	0.065	0.000	0.006	0.009	0.002	0.018	0.035
Transportation/Communication	0.074	0.002	0.012	0.008	0.002	0.015	0.036
Trade	0.169	0.000	0.025	0.007	0.008	0.071	0.111
Finance	0.130	0.035	0.022	0.006	0.012	0.053	0.094
Real Estate and Housing	0.143	0.000	0.005	0.003	0.002	0.116	0.126
Private Services	0.186	0.015	0.040	0.009	0.005	0.047	0.102
Government Services	0.001	0.000	0.000	0.000	0.000	0.000	0.000
Total- All Sectors[d]	1.293	0.263	0.179	0.064	0.044	0.450	0.737

Notes:

[a] computed using equation (28).

[b] computed using equation (29).

[c] computed using equation (30) for respective value-added component.

[d] computed as sum for all sectors.

Source: Author's Calculations from Family Income and Expenditure Survey (FIES), 1997 and Input-Output Table of the Philippines, 1994.

goods is necessary. On the other hand, a total value-added of 0.737 dollars for all sectors is required, the bulk of which goes to other value-added components like operating surplus. The sum of imports and total value-added is equal to one, or the initial increase in consumption expenditures due to remittances.

2. Summary

This chapter is an attempt to quantify the direct and indirect, first round diffused effect of remittance spending on gross production, imports, labor, capital and other value-added components in the case of the Philippines. As tool kits, it utilizes data from a household survey and the Input-Output Table of the country. The former allows us to analyze the spending behavior of remittance recipients and measure their expenditures on different consumer items, which consist of goods for current consumption, durable goods for present and future use, and private investments that will raise future incomes. We consider their spending on these items as the initial effect of remittances on the aggregate economy, which may vary among the different sectors of the economy because of the change in spending behavior of the recipients resulting from higher income and more choices.

The impact of the first-round remittance spending on the economy, however, will reach even those sectors not favored by remittances because of intersectoral linkage. The direct and indirect effects of remittance spending, which we term induced spending, in each sector depends on the degree of dependence of one sector on inputs from other sectors and the dependence of

production in other sectors on inputs from this sector. By incorporating the estimated expenditures of remittance recipients to the IO model, we can quantify the induced impact of remittance spending on gross output, imports, and income for value-added components in each sector.

It was found out that remittance recipients have higher average income and average consumption expenditures. When the sample was divided into income brackets and geographical regions, it was found out that compared to non-recipients, recipients generally spend less on current consumption and income taxes and spend more on private investments and durable goods. Moreover, the recipients' net savings, which are defined as total receipts minus total disbursements, are lower than non-recipients in the same income bracket. However, if we combine net savings and private investments to comprise total savings, recipients in the lower income quartile have higher total savings rate than non-recipients, but not in higher income quartiles.

An examination of the composition of the initial effect of remittances on the disaggregated sectors shows that recipients spend the most in the manufacturing sector, private services, real estate and housing, finance and trade. We can classify the output of these sectors as (1) that which contributes to current consumption and current income, and (2) private investments and goods for intertemporal consumption or future income. With regards to the dependence of sectors on initial demand due to remittance expenditures, it was found out that a considerable percentage of the private sector's demand in the construction, finance and electricity and water sectors come from

demand from remittance expenditures.

The sectoral effect of remittance spending, however, goes beyond the initial impact to include the induced demand of the sectors directly favored by remittances. This depends on the linkages among the different sectors, so that as the linkage becomes stronger, the more these sectors are "indirectly" favored by remittance spending. It was found out that generally, the sectors with high backward or forward linkage are "indirectly" favored by remittances because their production is stimulated by the demand in sectors directly favored by remittance recipients.

Among the eleven major sectors of the economy, the manufacturing sector is the most heavily favored sector, because of the recipients' high propensity to spend on manufactured goods, or the strong initial impact; and the high demand for this sector's output in the production of goods highly demanded by remittance recipients. However, the manufacturing sector is also highly dependent on imports, so that the multiplier effect in this sector is alarmingly low. Such dependence on imports offsets the potential contribution of remittance expenditures due to remittances arising from the high linkage of this sector with other sectors.

With regard to the first round, initial and induced impact of remittances on payments to primary inputs like labor, capital and other value-added, the total contribution of remittance expenditures as ratio of total value-added was only 2.61% in 1997. Moreover, there was notable difference in remittances' induced impact on these primary inputs; with "other value-added," or operating surplus of entrepreneurs getting the

highest percentage of the increase in income. We can attribute this on the economic structure of the Philippine economy in which the share of operating surplus is much higher than what workers or other primary inputs receive.

In summary, we have seen that consumption expenditures potentially impact on the economy on the aggregate and sectoral levels in two ways. First, compared to non-recipients, remittance recipients spend more on private investments such as real estate, education and bank savings, and on goods for intertemporal consumption such as housing and durable furnishings, indicating that remittance expenditures are not entirely wasteful or non-productive. Remittances also generate employment because they are spent in labor-intensive service industries. Second, with regard to their expenditures on current consumption, although initially, recipients' remittances are heavily spent on some selected sectors, their effect spreads to other sectors "linked" with the said selected sectors as users or suppliers of each others' production outputs, so that the initial expenditures even on current consumer goods will potentially expand production even in sectors "not favored" by initial remittance spending. Combining these two major findings, we can conclude that remittance expenditures are not "unproductive" at all, and can therefore be tapped as a potential source of economic growth in a labor-exporting country like the Philippines.

Footnotes of Chapter 5

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[1] The general equilibrium approach can also be used to analyze the matter (see, for example, Haque, et.al, (1994), McCormick and Wahba, (2000)). Current studies using the general equilibrium approach, however, does not link information derived from migrant household's behavior, and does not look into inter-industry linkages, two of the key components in assessing the impact of remittances through the consumption-savings-investment nexus.

[2] For the migrant, he/she can now consume, save or invest in his/her country of destination, aside from his/her family's consumption, savings and investment choices at home.

[3] See for example, Amjad (1989), Brown (1995), and Battistella and Paganoni (1992).

[4] Source: World Development Indicators, 2000. World Bank.

[5] To simplify matters, we will not consider the other channels, such as foreign exchange, technology and labor productivity, and labor market adjustments in the analysis. It will also assume an economy at less than full employment so that any increase in aggregate demand will raise production rather than prices.

[6] We realize that there are more consistent stratification variables such as occupation or age, but unfortunately, we are constrained by limited data availability.

[7] We cannot establish the relationship between income in the no-migration regime and remittances. For the determinants of remittances, see Lucas and Stark (1985) and Stark and Lucas, (1988).

[8] This is a conservative estimate since in the survey, children below 15 years old are counted as 0.5 person.

[9] Since there are more migrants coming from these areas and their remaining household's incomes are higher, we can infer that there will be more emigrants coming from these areas in the future because of networking and affordability of the initial cost of migration.

[10] We use the ANOVA test to determine if the mean values for the two groups are statistically different from each other. To be able to conduct the ANOVA test, we assume that (1) the population distributions approximate the normal distribution; (2) the samples are random and independent of each other, and (3) the variances of all populations are equal. The test results show that the null hypothesis, i.e. that the average propensities to spend are equal must be rejected.

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4. National Statistics Office. *Family Incomes and Expenditures Survey 1997.*

Appendices of Chapter 5

Appendix 5.A. Estimating the Consumption Expenditure - IO Conversion Matrix

This section discusses the methodology used in converting the consumption expenditures due to remittances for each consumer item n, $(n=1,\cdots,28)$, as shown in the Family Income and Expenditure Survey (FIES), into final demand or personal consumption expenditures (PCE) in its corresponding sector k, $(k=1,\cdots,11)$ in the Input-Output (IO) table. We therefore construct a 28 x 11 matrix with element $(e_{n,k})$ representing the share of each IO sector in each consumer item. The column vector shows the share in expenditures of each IO sector in each consumer item. The row vector shows the composition of a consumer item in terms of the IO sectors in the IO table. The sum of the elements in a row is necessarily equal to one, as shown in equation (A1),

$$\begin{pmatrix} e_{1,1} & \cdots & e_{1,k} & \cdots & e_{1,11} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ e_{n,1} & \cdots & e_{n,k} & \cdots & e_{n,11} \\ \vdots & \ddots & \vdots & \ddots & \vdots \\ e_{28,1} & \cdots & e_{28,k} & \cdots & e_{28,11} \end{pmatrix} \qquad \text{where } e_{n,k} = \frac{PCE_{n,k}}{\sum_{k=1}^{11} PCE_{n,k}} \tag{A1}$$

Let us take cereal, the first item in the FIES, as an example. In the survey questionnaire, cereals are further divided into rice, corn, bread, biscuits, flour, noodles, and cereal preparations. In the 229 x 229 input-output table, PCE on cereals are also divided among several items in agricultural and manufacturing sectors since part of cereal is consumed fresh and part is

processed. We pick-out all items in the 229 IO sectors that fall under cereal and add the total PCE for that sector in the 11x11 IO table, ($PCE_{n,k}$). We then compute for $e_{n,k}$ according to equation (A1). Of the total consumption expenditures for cereals, 1.6% ($=e_{1,1}$) came from the agricultural sector and 98.4% ($=e_{1,3}$) was spent on rice, bread, biscuits, flour, noodles and cereal preparation, all of which fall under the manufacturing sector. Here, while we assume that the average propensity to consume cereals varies in each region and income bracket, the share of the detailed items (corn, rice, bread, biscuits, flour, noodles and cereal preparation) to total cereal consumption is the same for all regions, since there are no available personal consumption expenditure data on the regional level. The Consumption Expenditure-IO Conversion Matrix of the Philippines (1997) is presented in Appendix 5.B.

Appendix 5.B. The Consumption Expenditure-IO Conversion Matrix (1997)

	1	2	3	4	5	6	7	8	9	10	11
1	0.01	0.00	0.85	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
2	0.69	0.00	0.18	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
3	0.60	0.00	0.27	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
4	0.34	0.00	0.53	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
5	0.32	0.00	0.54	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
6	0.61	0.00	0.25	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
7	0.16	0.00	0.71	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
8	0.00	0.00	0.86	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
9	0.00	0.05	0.81	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.86	0.00
11	0.00	0.00	0.86	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
12	0.00	0.00	0.86	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
13	0.00	0.00	0.17	0.00	0.70	0.00	0.14	0.00	0.00	0.00	0.00
14	0.00	0.00	0.19	0.00	0.00	0.61	0.14	0.00	0.00	0.07	0.00
15	0.00	0.00	0.54	0.00	0.00	0.00	0.14	0.00	0.00	0.33	0.00
16	0.00	0.00	0.63	0.00	0.00	0.00	0.14	0.00	0.00	0.23	0.00
17	0.00	0.00	0.86	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
18	0.00	0.00	0.17	0.00	0.00	0.00	0.14	0.00	0.00	0.68	0.01
19	0.00	0.00	0.11	0.00	0.00	0.00	0.14	0.00	0.00	0.75	0.00
20	0.00	0.00	0.34	0.00	0.00	0.00	0.14	0.00	0.00	0.51	0.01
21	0.00	0.00	0.86	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
22	0.00	0.00	0.86	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.86	0.00	0.00
24	0.00	0.03	0.83	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
25	0.00	0.00	0.01	0.00	0.00	0.01	0.14	0.00	0.00	0.84	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.86	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.82	0.00	0.04	0.00
28	0.00	0.01	0.16	0.10	0.00	0.00	0.14	0.59	0.00	0.00	0.00

FIES ITEMS

1. Cereals
2. Rootcrops
3. Fruits and Vegetables
4. Meats
5. Dairy Products
6. Fish and Marine Products
7. Coffee, Cocoa and Tea
8. Non-alcoholic Beverages
9. Food Not Elsewhere Classified
10. Food Outside Home
11. Alcoholic Beverages
12. Tobacco
13. Fuel, Light and Water
14. Transportation and Communication
15. Household Operations
16. Personal Care and Effects
17. Clothing, Footwear and Other Wear
18. Education
19. Recreation
20. Medical Care
21. Non-durable Furnishings
22. Durable Furniture and Equipment
23. Housing Expenditures
24. House Maintenance and Minor Repairs
25. Special Family Occasions
26. Gifts and Contribution to Others
27. Other Expenditures
28. Other Disbursements

INPUT-OUTPUT TABLE SECTORS

1. Agriculture
2. Mining and Quarrying
3. Manufacturing
4. Construction
5. Electricity, Steam and Water
6. Transportation and Communications
7. Trade
8. Finance
9. Real Estate and Housing
10. Private Services
11. Government Services

Source: Author's Calculations from Family Income and Expenditure Survey (FIES), 1997 and Input-Output Table of the Philippines, 1994.

Appendix 5.C. List of Disbursement Items and Their Classification (FIES)

C. 1. DISBURSEMENT/EXPENDITURES ITEMS	Class[1]
a. FOOD, ALCOHOLIC BEVERAGES AND TOBACCO	
1. Food consumed at home	a
1. Cereals and cereal preparations rice, corn, bread, biscuits, flour, native cakes, noodles and other cereal preparations	
2. Roots and tubers potato, cassava, sweet potato, gabi, other roots and tubers	a
3. Fruits and vegetables fresh fruits, fresh vegetables, other crops, fruit preparations, vegetable preparations, other preparations	a
4. Meat and meat preparations fresh chicken, fresh beef, fresh pork, other fresh meat, meat preparations	a
5. Dairy products and eggs milk, ice cream, other dairy products, eggs	a
6. Fish and marine products fresh fish, shells and others, processed fish, other processed marine products	a
7. Coffee, cocoa and tea coffee, cocoa, tea	a
8. Non-alcoholic beverages softdrinks, fruit juices and non-carbonated drinks, other forms of beverages	a
9. Food not elsewhere classified (N.E.C.) sugar, sugar products, cooking oil, margarine, sauce, salt, other spices and seasonings, prepared meals bought outside and eaten at home, other food n.e.c.	a
2. Food regularly consumed outside home meals at school, office,etc, snacks, coffee, softdrinks	a
3. Alcoholic Beverages beer, wine, liquor	a
4. Tobacco cigarettes, cigars, others	a
5. Food items, alcoholic beverages and tobacco received as gifts all items above received as gifts	a
b. FUEL, LIGHT AND WATER, TRANSPORTATION AND COMMUNICATION AND HOUSEHOLD OPERATIONS	
1. Fuel, light and water charcoal, firewood, LPG, petroleum products, electricity, candle, oils, etc, water	a
2. Transportation and communications land transport fare, air transport fare, water transport fare, personal transport expenses (gasoline, maintenance, driver's salary, others), telephone bills, postage stamps, telegrams, others (moving fee, driving lesson, feeds, messengerial fees)	a
3. Household operations laundry soap and detergents, starch, floorwax, insecticides, light bulbs, etc. laundry services, dryclean services, domestic services, repair and maintenance of household appliances	a
c. PERSONAL CARE AND EFFECTS, CLOTHING, FOOTWEAR AND OTHER WEAR	
1. Personal care and effects beauty aids and toilet articles, personal effects, beauty parlor/barber shop services, others personal care and effects received as gifts	a
2. Clothing, footwear and other wear clothing and ready-made apparel, footwear, sewing materials and service fees clothing, footwear and other wear received as gifts	a

d. EDUCATION, RECREATION AND MEDICAL CARE	
1. Education education fees, allowance, books, school supplies, other educational supplies	b
2. Recreation recreational goods and supplies, musical instruments, admission fees, other expenses	a
3. Medical care Drugs and medicines, hospital room charges, medical charges, dental charges, others	a
e. FURNISHINGS AND EQUIPMENT	
1. Non-durable furnishings utensils and accessories, household linen and furnishings, other household furnishings	a
2. Durable furniture and equipment kitchen and laundry appliances, audio-visual equipment, furnitures, other appliances and equipment, minor appliances, transport equipment and household tools	b
f. TAXES	
Income tax, real estate tax, car registration, other direct taxes, residence certificate, etc.	
g. HOUSING, HOUSE MAINTENANCE AND MINOR REPAIRS	
1. Housing imputed rent	b
2. House maintenance and minor repairs carpentry materials, electrical materials, masonry, painting materials, plumbing and other materials, paid labor	a
h. MISCELLANEOUS EXPENDITURES	
1. Special family occasions food and refreshments, alcoholic beverages, services of cooks, waiters, rental of space, facilities and equipment, package tours, others	a
2. Gifts and contribution to others gifts and assistance to private individuals, contributions/donations, other gifts	a
3. Other expenditures life insurance and retirement premiums, interest payments on loans for household expenses, legal fees, professional fees, losses, association/membership fees	a/b
i. OTHER DISBURSEMENTS	
Purchase/amortization of real property	b
Payment of cash loans	b
Installment for appliances bought before 1997	b
Installment for personal transport bought before 1997	b
Loans granted to persons outside the family	b
Amount deposited in banks/ investment	b
Other disbursements - major repair and construction of house, witholding taxes, payment for goods and services acquired outside 1997	b

[1] expenditure items are classified as (a) current consumption goods or (b) private investments and durable items.

Source: Family Income and Expenditure Survey (FIES) 1997 Questionnaire

Appendix 5.D. The Geographic Regions of the Philippines

1. Ilocos
2. Cagayan Valley
3. Central Luzon
4. Southern Tagalog
5. Bicol
6. Western Visayas
7. Central Visayas
8. Eastern Visayas
9. Western Mindanao
10. Northern Mindanao
11. Southern Mindanao
12. Central Mindanao
13. National Capital
14. Cordillera Administrative Region CAR
15. Autonomous Region in Muslim Mindanao ARMM
16. Northeastern Mindanao CARAGA

Appendix 5.E. Sectoral Distribution of Intermediate Inputs, Final Demand and Value Added (1997)
(in billion pesos, 1997 current prices)

Sectors	Total Interme-diate Demand	Private Consumption	Government Consumption	Gross Capital Formation	Current Stocks	Exports	Imports	Total Final Demand	Gross Output
Agriculture	366.88	189.78	0.00	30.66	1.28	45.66	-11.12	256.26	623.14
Mining	86.41	2.09	0.00	0.00	0.50	17.33	-64.91	-45.00	41.41
Manufacturing	971.92	732.22	0.00	239.45	8.49	401.34	-693.94	687.56	1659.49
Construction	25.57	5.06	0.00	206.11	0.00	1.89	-6.10	206.96	232.53
Electricity, Steam and Water	96.95	19.96	0.00	0.00	0.00	1.37	0.00	21.33	118.28
Transportation/Communication	149.93	66.26	0.00	4.49	0.00	37.62	-7.01	101.36	251.28
Trade	120.83	228.41	0.00	56.78	0.00	101.13	0.00	386.32	507.14
Finance	104.40	67.88	0.00	0.00	0.00	40.50	-36.85	71.53	175.93
Real Estate and Housing	23.83	166.96	0.00	0.00	0.00	2.07	-0.13	168.90	192.73
Private Services	145.17	178.66	0.00	0.00	0.00	57.69	-24.06	212.30	357.46
Government Services	0.00	0.83	241.17	0.00	0.00	0.00	0.00	242.00	242.00
All Sectors	2091.87	1658.11	241.17	537.49	10.27	706.60	-844.12	2309.52	4401.39

Sectors	Total Interme-diate Inputs	Workers' Compensation	Depreciation of Capital	Indirect Taxes Less Subsidies	Other Value Added	Total Value Added	Gross Output
Agriculture	174.19	146.98	35.23	12.88	253.85	448.95	623.14
Mining	18.12	7.27	4.35	1.17	10.50	23.29	41.41
Manufacturing	1125.03	141.74	46.33	47.06	299.33	534.46	1659.49
Construction	107.84	37.27	13.71	4.06	69.65	124.69	232.53
Electricity, Steam and Water	54.32	10.89	16.97	2.74	33.36	63.96	118.28
Transportation/Communication	127.77	41.25	26.55	5.99	49.72	123.51	251.28
Trade	174.03	74.35	21.21	22.87	214.68	333.11	507.14
Finance	49.71	30.32	8.53	15.97	71.40	126.22	175.93
Real Estate and Housing	23.62	6.48	4.61	2.71	155.31	169.11	192.73
Private Services	162.26	76.67	18.23	10.42	89.88	195.20	357.46
Government Services	74.98	160.15	6.87	0.00	0.02	167.03	242.00
All Sectors	2091.87	733.36	202.59	125.88	1247.68	2309.52	4401.39

Source: Adjusted from 1994 Input-Output Table of the Philippines

Chapter 6

The Effect of International Remittances on the Size Distribution of Income in the Philippines: A Decomposition Analysis

1. Introduction

The purpose of this paper is to look into the relationship between international remittances and the size distribution of income in the Philippines. Specifically, we will:

(1) assess how much of the over-all income inequality can be attributed to a particular source of income by decomposing the Gini coefficient of total income based on its sources;

(2) determine by how much any change in international remittances or any other source of income raises or lowers the over-all inequality and social welfare; and

(3) examine how international remittances affect other incomes in the short-run. If remittances affect income from domestic sources, then, remittances' full contribution to the Gini coefficient may be sufficiently greater than or less than its direct contribution.

Many developing countries have been encouraging the export of its labor force as part of the development strategy, because of the migrants' remittances' generally favorable impact on output, consumption, capital

formation and balance of payment (see chapter 5). Its role, however, goes beyond increasing the economic pie to its impact on the size distribution of that larger economic pie. As direct impact of international remittances on income inequality, remittances will increase its recipients' income, improve the receiving household's rank in the income distribution compared to non-recipients, and this may result in the worsening or improvement of income equality, depending on their pre-migration position in the income distribution. The indirect impact, on the other hand, depends on how remittances will influence other sources of income. [1] For example, international remittances can raise domestic income if, as a result of higher income due to remittances, the recipient household becomes less risk-averse and is less financially-constrained to undertake investments to raise income from other sources (Lucas and Stark, 1985).

On the other hand, it can have adverse effect on domestic income if, because of higher income, the recipient household reduces its labor force participation and spends more time for leisure or to take over the role left by the migrant in the household, like looking after the children. These behaviors and the selectivity of migrants in favor of a specific income bracket or skills will definitely affect not only household income and its rank at present, but also, on a wider perspective of economic development due to remittances' indirect impacts. In this sense, examining the effects of remittances on the size distribution of income has powerful policy implications for the sending economy, in which the goal is not only a more equal distribution of income but also sustainable economic development.

The effect of remittances on income equality is one of the most active areas of empirical research in the field of international migration today, although no consensus has been reached about the effect in general. Table 6.1 summarizes the findings of previous studies on the decomposition of the Gini coefficient of total income according to its sources. Stark, Taylor and Yitzhaki's (1986) pioneering work initially considered remittances as an exogenous source of income and measured the contribution of international and domestic remittances as well as non-remittance income on the Gini coefficient of total income. They also derived for the marginal change in the Gini coefficient of total income due to an increase in any of the sources of income. They concluded that international remittances have an *equalizing* effect on income distribution in a Mexican rural village which has been sending its people abroad for a long time, but had the reverse effect in a village with higher internal than international migration rate. Their findings are generally confirmed in their subsequent study (Stark, Taylor and Yitzhaki, 1988) using the same data set but placing varied weights on the welfare of the poorer income recipients in the social welfare function. Succeeding studies by Rodriguez (1998), Barham and Boucher (1998), Taylor (1992) and Adams (1991, 1996), which also use the decomposition methodology using data from different countries, concluded that international remittances have an *unequalizing* effect on income distribution.

Stark et al's studies have been extended mainly in two directions. One important extension is the incorporation of the indirect impact of migration and international remittances on income inequality due to remittances'

Table 6.1. Results of Previous Studies on Remittances and Income Inequality

	Rural Mexico*	Rural Egypt	Rural Mexico**	Rural Pakistan	Philippines***	Nicaragua****
Survey year	1982	1986-87	1982, 1988	1986-89	1991	1991
Number of Households	61	1000	61	727	24,872	152
% of Households with migrants	25.8 , 70.0	10.4	43 (as % of total income)	20.2	16.6 (as % of total income)	57
Gini coefficient	0.40, 0.46	0.27	0.48, 0.52	0.381	0.314, 0.480	0.38, 0.47
Absolute change of Gini coefficient.	0.00057, -0.00048	0.035		0.002	0.006, 0.023	0.05, -0.048
% change in Gini coefficient	0.14, -0.10	14.79	0.03, 0.01	0.47	1.27, 7.90	13.16, -8.51
Authors	Stark, Taylor and Yitzaki (1986, 1988)	Adams (1991)	Taylor (1992)	Adams (1996)	Rodriguez (1998)	Barham and Boucher (1998)

Notes: * : The values are shown separately for two sample sets.
**: The values are shown for survey years, 1982 and 1988, respectively.
***: The values are shown with respect to Gini and Theil indices of inequality, respectively.
****: The values are shown with respect to actual and estimated incomes, respectively.

Sources: Author's compilation from Adams (1991, 1996), Barham and Boucher (1998), Rodriguez (1998), Stark, Taylor and Yitzhaki (1986, 1988) and Taylor (1992).

relationship with income from other sources in the short-run (Taylor, 1992). He argued that "the indirect effect of remittances on farm (other) income partially offsets the negative direct effect of remittances on the total-income Gini" (Taylor, 1992 p. 202). The second extension (Rodriguez, 1998) is an attempt to consider the potential income of the migrant and its effect on income distribution if he has stayed and worked in the sending country, which is termed the no-migration regime, and compare it with the actual income distribution in the migration regime. Using data from the 1997 Family Income and Expenditure Survey (FIES) of the Philippines, we will focus on the first extension in the main part of this paper, and present a simple treatment of the second extension in Appendix 6.E.

The Philippines is an interesting case because of the prevalent high levels of both income inequality and international emigration. It is the second largest exporter of labor in the world. At the same time, we can find in Table 6.2 that the average Gini coefficient in 1957-91 is relatively high at 47.6%, with more than 45% of income earned by the top 25% of the population. Moreover, we can see that the Gini coefficient has been increasing in the 1990s, with the lowest 25% of the households receiving lesser and the highest 25% receiving greater share in total income.

This paper is organized as follows: The next section gives a descriptive analysis of the trends in income and its size distribution in the Philippines. We compare the income of households with and without income from abroad. Section 3 will discuss the analytical framework adapted from Stark, Taylor and Yitzhaki (1986, 1988) and Taylor (1992). We divide the discussion in

Table 6.2. Income Distribution in the Philippines

Year	Gini Coefficient	Lowest 25%	Second 25%	Third 25%	Highest 25%
1957	46.140	0.065	0.143	0.279	0.515
1961	49.710	0.042	0.121	0.242	0.435
1965	51.320	0.035	0.160	0.240	0.440
1971	49.390	0.036	0.117	0.250	0.460
1985	46.080	0.052	0.143	0.276	0.479
1988	45.730	0.052	0.143	0.276	0.475
1991	48.000	0.075	0.124	0.214	0.582
1997	48.412	0.063	0.121	0.216	0.600

Sources: Deininger and Squire Data Set, World Bank (1999) for years 1957-1988.
Estimated from Rodriguez (1998) Table 4 for year 1991
Author's Calculations from Family Income and Expenditure Survey (FIES) for year 1997

section 3 into the basic model and its extension that considers the relationship between remittances and income from other sources. Section 4 will be devoted to the interpretation of results. Finally, we shall summarize our findings and discuss its policy implications in section 5.

2. A Descriptive Analysis of Income and Its Size Distribution in the Philippines

The data to be used in this study is the Family Income and Expenditure Survey (FIES) for the year 1997, which consists of information from 39,520 households representing all households in the Philippines. The survey gathers data on the different attributes of the household and the household head, the household's annual expenditures and income from different sources such as (1) wages and salaries, (2) income from entrepreneurial activities, (3) other incomes and (4) income from abroad (see Appendix 6.A). Wages and salaries include compensations received in cash and kind from regular employment, and seasonal/occasional employment in agricultural and non-agricultural sectors. Incomes from entrepreneurial activities include earnings by family members who are self-employed or operators of agricultural and non-agricultural activities. Income from abroad are further divided into (1) cash received from contract workers, (2) cash received from permanent migrants (3) cash gifts from abroad, and (4) pensions and dividends from abroad. Income from other sources include imputed rent of housing, cash receipts, gifts, support, assistance and relief from domestic sources, rentals, interests, pensions and other work benefits,

net winnings from gambling, sweepstakes and raffle, dividends from investments, profits from sale of stocks, bonds and real and personal properties, back pay and proceeds from insurance and inheritance. Throughout this paper, we will use the household as the unit of analysis.

We first discuss the amount and share of the different sources of income to total income for households with and without migrants using Table 6.3. First, the average annual income of Philippine households is 123,761 pesos (US$ 4,161) in 1997. Of this, 46.5% came from wages and salaries, 26.2% from entrepreneurial activities, 20.6% from other incomes and only 6.8% from income from abroad. Second, we also observe that 17.26% of all households receive cash income from abroad. Third, there are big differences in the average income and expenditures of households with income from abroad and those without it. The latter group receives on the average only about 64.1% of the average total income of the former. Fourth, while both types of households rely mostly on wages, income from abroad also make up for a considerable portion of the income of those that receive it, at 27.7% of the average total income. Fifth, we can further divide the households receiving income from abroad according to the type of income they receive from abroad. We can see from the last 4 columns of Table 6.3 that households with contract workers are the households which rely most on income from abroad (as 36.8% of total income), basically because the contract workers are usually the main breadwinners in the family even if they have stayed and worked in the Philippines. These observations imply the significant role of income from abroad not only from the point of view of those receiving it, not

Table 6.3. Sources of Income of Households With and Without Income from Abroad (1997)

Type of Income from Abroad	ALL Respondents	Households With No Income from Abroad	Households With Income from Abroad	Source of Income of Household with Income from Abroad			
				Contract Workers	Permanent Migrants	Gift Recipients	Retirees/ Investors
Number of Households	39,520	32,699	6,821	2,976	2,001	2,229	326
% in Total Number of Households	100.00	82.74	17.26	7.53	5.06	5.64	0.82
Average Household Expenditures (in pesos)	99,076	90,740	139,036	137,621	152,248	136,244	141,891
(in US$)	(3,331)	(3,051)	(4,675)	(4,627)	(5,119)	(4,581)	(4,771)
Average Household Income (in pesos)	123,761	112,890	175,878	176,995	192,006	168,354	189,136
(in US$)	(4,161)	(3,796)	(5,914)	(5,951)	(6,456)	(5,661)	(6,360)
Income Sources							
Wages (%)	46.5	51.0	32.6	28.7	32.5	35.6	34.0
Entrepreneurial Income(%)	26.2	29.1	17.3	15.0	17.1	20.4	13.5
Other Income(%)	20.6	20.0	22.3	19.6	23.3	25.0	25.2
Income from Abroad(%)	6.8	0.0	27.7	36.8	27.1	19.0	27.3
TOTAL(%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Type of Income from Abroad							
From Contract Workers(%)	54.3	na	54.3	93.2	8.8	15.8	9.5
From Other Migrants(%)	26.8	na	26.8	4.3	85.6	8.6	12.0
Cash Gifts (%)	15.6	na	15.6	2.0	4.4	72.8	13.0
Pensions and Dividends(%)	3.3	na	3.3	0.5	1.2	2.8	65.4
TOTAL(%)	100.0	na	100.0	100.0	100.0	100.0	100.0

Notes: The exchange rate used is 29.74 pesos per dollar.

Source: Author's Calculations from Family Income and Expenditure Survey (FIES), 1997.

only because it will increase their total income but also because it will be a "source" of upward mobility in the income distribution. On the aggregate level, income from abroad will also have serious implications because (1) further increase in the number of emigrants from the Philippines will lead to higher income from abroad and heavier dependence of the entire economy on these remittances as source of income; and (2) the remarkable difference in the amount and share of different sources of income between these two types of households will also affect their consumption, investment and savings behavior.

Attributes such as gender, urbanity, having a job or not, and education of the household head also vary between recipients and non-recipients of remittances from abroad. Here, we refer to Table 6.4. Households receiving income from abroad have a lower percentage of its head being male (70.40%) because more males than females go abroad to work, and, in this case, the wife assumes the role of household head. A larger percentage of recipients live in urban areas. This suggests that international migration is a two-step process in which workers from the rural area could have possibly migrated first to an urban area before proceeding to an international destination. This is because in the cities, there are more information on conditions in the international labor market and greater access to recruitment agencies. Having a member of the family working abroad is related to the household head having job or not, with only 68.6% of heads of households with migrants having a job. One trend found in Philippine families is that, when one of the parents (usually the father) leaves to work

Table 6.4. Attributes of Households With and Without Income from Abroad (1997)

Attributes	ALL Respondents	Households with no Income from Abroad	Households with Income from Abroad	Sources of Income from Abroad			
				Contract Workers	Permanent Migrants	Cash Gifts from Abroad	Pensions and Dividends
Age of Household Head	46.97	46.41	49.66	48.96	51.21	49.12	57.52
Household Head is male (%)	84.80	87.80	70.40	61.80	72.10	78.30	69.90
Household Size (%)	5.13	5.14	5.05	5.11	5.04	5.08	4.83
Households Living in Urban Area (%)	59.30	56.60	72.00	68.60	75.70	74.00	76.40
Household Head has a Job (%)	85.60	89.20	68.60	54.20	67.60	73.70	50.60
Household Head has Elementary Educ.(%)	48.00	50.90	33.90	35.30	31.90	32.50	36.20
Household Head has High School Educ.(%)	30.10	29.40	33.20	33.60	31.80	34.10	33.10
Household Head has College Educ. (%)	22.00	19.70	33.00	31.00	36.30	33.50	30.70

Source: Author's Calculations from Family Income and Expenditure Survey (FIES), 1997.

abroad, the other parent who assumes the role as head of the household quits his/her job to take care of the children since the income from abroad is enough to sustain the family. It is also interesting to note that families with migrants, represented by its household head, are relatively highly educated than households without income from abroad. While majority (50.9%) of the head of non-recipient households are elementary graduates, the distribution of recipient households categorized based on education of its head is equal among elementary, high school and college graduates. Whether education influences the probability to send remittances or not remains to be an interesting topic for future studies. On the other hand, the difference between migrant and non-migrant households in terms of the age and size of the household, though statistically significant,[2] is minimal.

Using the same data, we can also draw some observations on the size distribution of household income in the country in 1997. We rank total household income and divide the sample into deciles. Table 6.5 shows the percentage share of households in each income decile to total income as well as the share of each source of income to average total income per decile. From Table 6.5, we can draw the following points: (1) The bottom decile received an average annual income of 21,750 pesos (US$725), which is only 5% of what the top decile received in the same year. In terms of percentage share in total national household income, the bottom decile's share was about 1.76%, while the top decile received 37.10%. (2) In terms of household income distribution by source, in general, the household's percentage share of wages and salaries in total income increases as its rank in the income distribution improves,

Table 6.5. Income Distribution According to Source of Income (1997)

Decile	Average Income (in pesos)	% Share in Income of All Households	% Share of Each Source in Per Decile Average Income				All Sources of Income
			Wages and Salaries	Entrepreneurial Activities	Other Sources	Income from Abroad	
Bottom	21,750	1.76	23.46	42.79	32.84	0.90	100.00
Second	34,890	2.82	28.83	42.77	26.86	1.53	100.00
Third	45,090	3.64	32.77	41.57	23.91	1.74	100.00
Fourth	56,220	4.54	36.69	38.32	22.42	2.57	100.00
Fifth	69,960	5.65	42.62	33.12	20.55	3.72	100.00
Sixth	87,600	7.08	47.54	28.05	19.30	5.11	100.00
Seventh	111,840	9.04	50.56	24.15	18.94	6.35	100.00
Eighth	146,700	11.85	52.99	20.23	18.40	8.38	100.00
Ninth	204,420	16.52	54.19	18.93	18.32	8.56	100.00
Top	459,120	37.10	45.30	25.34	21.26	8.10	100.00
All Deciles (Ave.)	123,761	100.00	46.47	26.18	20.56	6.80	100.00

Source: Author's Calculations from Family Income and Expenditure Survey (FIES), 1997.

except for the top decile. On the other hand, poorer households seem to rely more on income from entrepreneurial activities, which may include activities in the underground economy like small-scale retailing or cottage industries, and other sources of income, which are on a transitory or temporary basis. (3) Income from abroad seems to be positively correlated with the household's rank in household income distribution. While the share of income from abroad of those in the bottom decile is less than 1% of its total household income, the average income from abroad of the eighth, ninth and top deciles is more than 8% of the average income. Even in absolute terms, income from abroad is very high for the top decile compared to the bottom decile group, with the former receiving 42 times as much income from abroad than the latter.

Regarding the attributes of the households classified based on income deciles, we will refer to Table 6.6 to draw the following observations: First, there are more remittance recipient households and more emigrants in the top decile compared to that in the lower deciles. This implies that the poor are still financially constrained to be able to afford the "entry cost" in the international labor market. Also, if international migration entails risk, and the poor is more risk averse than the rich, then the rich will have a higher probability to migrate and to remit. The average number of adults, representing the household's labor supply, and average family size are higher for the higher deciles. Moreover, the richer are more educated, and this is one explanation why there are more migrants from the higher deciles, since migration is selective of the highly educated (Rodriguez and Horton, 1996).

Table 6.6. Characteristics of Households by Household Income Deciles (1997)

Decile	% of Households with Income from Abroad	Average No. of Adults (25 years and above)	Average Family Size	% of Households Heads with College Education	% of House-Holds Living in Urban Areas
Bottom	3.90	1.76	3.71	0.03	28.39
Second	6.61	1.95	4.65	0.05	33.68
Third	7.35	2.03	5.00	0.07	39.14
Fourth	10.99	2.09	5.20	0.10	47.22
Fifth	14.36	2.13	5.26	0.13	57.52
Sixth	18.70	2.17	5.31	0.17	65.44
Seventh	22.42	2.28	5.30	0.24	72.44
Eighth	26.81	2.36	5.40	0.34	78.11
Ninth	29.72	2.54	5.60	0.44	82.92
Top	33.14	2.84	5.84	0.64	87.96
All Deciles (Ave.)	17.40	2.22	5.13	0.22	59.28

Source: Author's Calculations from Family Income and Expenditure Survey (FIES), 1997.

Finally, as expected, the richer households live in the urban areas.

In this section, we have been looking at income and its composition and distribution in relation to the sources of income treated independently. An equally relevant question from the point of view of national social welfare, however, is how remittances from abroad affect the size distribution of income. Do remittances from abroad contribute more to income inequality in the Philippines than domestic sources of income? Will the increase in the number of emigrants and the amount of remittances promote income equality in the country? These are the main issues which we will attempt to analyze in the following sections.

3. Analytical Framework

3.1. The Basic Model (Stark, Taylor and Yitzhaki; 1988, 1986)

Let us consider an economy in which the social welfare index, W, is presented here as equation (1).

$$W = w(\overline{y_0}, G_0) \tag{1}$$

We will adopt a social welfare index function introduced by Stark and Yitzhaki (1982) as specified in equation (2).

$$W = \overline{y_0}(1 - G_0) \qquad w'(\overline{y_0}) > 0 \text{ and } w'(G_0) < 0 \tag{2}$$

Here, the social welfare index is a function of the average total income of all member households, $\overline{y_0}$, and the index of income inequality, G_0. As $\overline{y_0}$ increases or G_0 decreases[3], the total social welfare improves.

Total income, y_0, is the sum of income from i sources, $(i = 1,2,\cdots,k)$

as shown in equation (3).

$$y_0 = \sum_{i=1}^{k} y_i \tag{3}$$

The household's income may come from wages and salaries, entrepreneurial activities, domestic remittances, international remittances, and other sources.

On the other hand, we will use the Gini coefficient as the index of inequality and define the Gini coefficient of total income, G_0, in equation (4).

$$G_0 = \frac{2}{y_0} Cov(y_0, F(y_0)) \tag{4}$$

where y_0 is the series of total income and $F(y_0)$ is the series of cumulative shares in total income when they are ranked in ascending order. Similarly, the Gini coefficient of the *ith* source, G_i, also called the source Gini from the *ith* source of income, is calculated using equation (5).

$$G_i = \frac{2}{y_i} Cov(y_i, F(y_i)) \tag{5}$$

Since total income is the sum of incomes from different sources, $Cov(y_0, F(y_0))$ can be expressed as the sum of the covariance between each income source series and the series of cumulative shares in total income, as shown in equation (6).

$$Cov(y_0, F(y_0)) = \sum_{i=1}^{k} Cov(y_i, F(y_0)) \tag{6}$$

Manipulating equation (4) using equations (5) and (6) will give us equation (7), the Gini of total income, G_0, as a function of the source Ginis.

$$G_0 = \frac{\left[2\sum Cov(y_i, F(y_0))\right]}{\overline{y_0}}$$

$$= \frac{\left[2\sum Cov(y_i, F(y_0))\right]}{2Cov(y_i, F(y_i))} \times \frac{\overline{y_i}}{\overline{y_0}} \times \frac{2Cov(y_i, F(y_i))}{\overline{y_i}}$$

$$= \sum R_i S_i G_i \qquad (7)$$

where R_i is the Gini correlation expressed as $Cov(y_i, F(y_0)) / Cov(y_i, F(y_i))$ and S_i is the share of *ith* income source to total income.[4]

Suppose income from international remittances is the *jth* source of income. Then, from equation (7), we can say that their contribution to the inequality of total income depends on (1) the correlation between international remittances and total income, R_j, (2) the share of international remittances to total income, S_j, and (3) the inequality in the distribution of international remittances, G_j. Ceteris paribus, if households with high income receive more remittances from abroad, i.e., if R_j is positive, then, the contribution of remittances to the total Gini coefficient is high. The same observation holds true if remittances from abroad make up for a large share in the total income of households, or if the distribution of international remittances is highly unequal.

3.2. The Direct Effect of an Increase in Remittances on Income Inequality and Social Welfare

The next task is then to see how a small increase in international remittances affects income equality. Suppose there is a *uniform increase* in

international remittance income, noted as y_j, by e so that the new international remittance income is expressed in equation (8).

$$y_j(e) = (1+e)y_j \tag{8}$$

As a result, the share of international remittance income to total income will increase. However, the uniform increase in remittances will not affect the source Gini's and, by assuming that the ranks of total income, R_j also do not change, we can write the new Gini coefficient, $G(e)$, as in equation (9).

$$G(e) = \sum R_i S_i(e) G_i \tag{9}$$

The marginal change in the Gini coefficient of total income resulting from an increase in income from a source, or $G(e) - G_0$, is shown in equation (10). The solution is found in Appendix 6.B.

$$\frac{\partial G_0}{\partial e_j} = S_j(R_j G_j - G_0) \tag{10}$$

Dividing equation (10) by G_0 will give us equation (11). By multiplying it by 100, we obtain the percentage change in the Gini coefficient resulting from a change in the *jth* income by one unit.

$$\frac{\partial G_0 / \partial e_j}{G_0} = \frac{(R_j G_j S_j)}{G_0} - S_j \tag{11}$$

Equation (11) can be interpreted as follows: the marginal effect of an increase in international remittance income is equal to the difference between its relative contribution (effect) to inequality and its relative contribution (effect) to total income. This implies that

(1) If R_j, the correlation between total income and remittances is zero or negative, then the right-hand side of equation (11) is negative, and any increase in international remittance income will not worsen income inequality.

(2) If R_j is positive, then an increase in international remittance income can either increase or decrease income inequality depending on the sign of $R_jG_j - G_0$ in equation (10).

Next, we examine the impact of the change in income due to remittances on the social welfare index specified in equation (2). Using equations (8) and (10), we can solve for the derivative of equation (2) with respect to e. We use the values for the marginal change in average total income w.r.t. e derived from equation (8), and the marginal change w.r.t. the Gini coefficient of total income (equation (10)) to derive equation (12).

$$\frac{\partial W}{\partial e} = \frac{\partial \overline{y_0}}{\partial e}(1-G_0) - \overline{y_0}\frac{\partial G_0}{\partial e}$$

$$= \overline{y_j}(1-G_0) - \overline{y_0}(S_j(R_jG_j - G_0))$$

$$= \overline{y_j}(1-G_0) - \overline{y_0}\frac{\overline{y_j}}{\overline{y_0}}(R_jG_j - G_0))$$

$$= \overline{y_j}(1-R_jG_j) \qquad (12)$$

Equation (12) states that the marginal effect of a small change in international remittances on social welfare depends on (1) the share of international remittances to total income, $\overline{y_j}$, which can be interpreted as the effect of remittances on the mean of total income; and (2) the effect of

remittances on the distribution of total income, $\overline{y_j}R_jG_j$. The former is always positive, while the latter's sign depends on the correlation between total income and remittances, R_j.

Dividing equation (12) by W, we obtain equation (13) which when multiplied by 100, can be interpreted as the percentage change in social welfare resulting from a uniform increase in income from the jth source (which, in our case, is international remittance income) by one unit.

$$\frac{\partial W / \partial e}{W} = S_j\left(\frac{1-R_jG_j}{1-G_0}\right) \tag{13}$$

Equations (12) and (13) imply that:

(1) If $R_jG_j = G_0$, then the change in Gini coefficient is zero, and welfare will increase by the amount of international remittances' share to total income, S_j.

(2) If the correlation between total income and remittances, R_j, is negative, then any increase in international remittance income will definitely raise the social welfare.

(3) If the correlation between total income and remittances, R_j, is positive, then there will still be an increase in social welfare since $R_jG_j \leq 1$. In this case, however, the effect to the mean of total income is weakened by the distributional effect, leading to a lower net welfare change.

3.3. The Full Effect of an Increase in Remittances on Income Inequality and Social Welfare

In this part of section 3, we will consider the full effect, or the direct

and indirect effects of international remittances on income inequality in the sending country in the short run. As mentioned above, remittances can be correlated with domestic income so our first task here is to determine how income from other sources is affected by remittances.

Following Taylor (1992), let us suppose that the k'th income is a function of international remittances (the jth income) so that equation (14) holds.

$$y_{k'} = \alpha + \beta_1 y_j \tag{14}$$

where $y_{k'}$ is the k'th source of income, and α and β_1 are the parameters of the equation. Using equation (14), we can now rewrite equations (3) and (4) as equations (15) and (16) to reflect both the direct and indirect contribution of remittances on total income and income distribution.

$$y_0 = \sum_{i \neq k'} y_i + \alpha + \beta_1 y_j \tag{15}$$

$$G_0 = \sum_{i \neq k'} R_i S_i G_i + R_j S_{k'j} G_j$$

$$= \sum_{\substack{i \neq k' \\ i \neq j}} R_i S_i G_i + R_j S_j G_j + R_j S_{k'j} G_j$$

$$= \sum_{\substack{i \neq k' \\ i \neq j}} R_i S_i G_i + (S_J) R_j G_j \tag{16}$$

where we define

$$S_{k'j} = \frac{\beta_1 \overline{y_j}}{\overline{y_0}} \tag{16-1}$$

as the indirect share of remittances in total income channeled through remittances' effect on the *k'th* income; and

$$S_J = S_j + S_{k'j} = \frac{(1+\beta_1)\overline{y_j}}{\overline{y_0}} \qquad (16\text{-}2)$$

as the full share of remittances in total income. The computation for equation (16) is found in Appendix 6.C.

From equation (16-2), if international remittances and the *k'th* income are not significantly correlated, then we go back to equation (4) as the measurement of income inequality. On the other hand, if the coefficient of remittances in equation (14) is statistically significant, then the direct contribution of remittances on income inequality can either be aggravated or offset by its indirect contribution depending on the algebraic signs of R_j and β_1. If more remittances go to the poor so that R_j is negative, the full contribution of remittances will be less than the direct contribution as long as remittances and income from the *k'th* source are positively related, i.e. $\beta_1 > 0$.

Next, using the same procedure as in solving for equation (10), we derive the marginal effect of remittances on income inequality due to a one-unit increase in international remittances in the present case. We show it in equation (17). The solution is found in Appendix 6.D.

$$\frac{\partial G_0}{\partial e} = (S_j + S_{k'j})(R_j G_j - G_0) = S_J(R_j G_j - G_0) \qquad (17)$$

The first term on the right-hand side of equation (17) represents the full share of international remittance and can take a positive or negative value depending on the relationship between remittances and income from the *k'th* source, and as before, on the difference between $R_j G_j$ and G_0.

By dividing equation (17) by G_0 and multiplying it by 100, we can

get the percentage change in the Gini coefficient due to a change in international remittances, as shown in equation (18).

$$\frac{\partial G_0/\partial e}{G_0} = \frac{(S_j + S_{k'j})(G_j R_j)}{G_0} - (S_j + S_{k'j})$$

$$= \frac{S_J G_j R_j}{G_0} - S_J \qquad (18)$$

Finally, we also derive for the marginal effect of remittances on the social welfare under the present case. We substitute equation (17) and the derivative of mean total income with respect to e, $(1+\beta_1)\overline{y_j}$, into equation (12) as shown in equation (19).

$$\frac{\partial W}{\partial e} = \frac{\partial \overline{y_0}}{\partial e}(1-G_0) - \overline{y_0}\frac{\partial G_0}{\partial e}$$

$$= (1+\beta_1)\overline{y_j}(1-G_o) - \overline{y_0}(S_J(R_j G_j - G_0))$$

$$= (1+\beta_1)\overline{y_j}(1-G_o) - \overline{y_0}\left[\frac{(1+\beta_1)\overline{y_j}}{\overline{y_0}}\right](R_j G_j - G_0)$$

$$= (1+\beta_1)\overline{y_j}(1-R_j G_j) \qquad (19)$$

If we compare equations (19) and (12), we can see that if international remittances are positively related to the *k'th* source of income, then the full effect of remittances on the social welfare is larger. Moreover, although in equation (12), the marginal change in social welfare due to e is always positive, in equation (19), the indirect effect of remittances may be large enough to offset the direct effect on social welfare so that the marginal change in social welfare in this case becomes negative.

Dividing equation (19) by W, we obtain equation (20) below.

Multiplying equation (20) by 100 will give us the percentage change in social welfare resulting from an increase in income from the jth source, international remittances by one unit.

$$\frac{\partial W/\partial e}{W} = (S_j + S_{k'j})\left(\frac{1-R_jG_j}{1-G_0}\right) = S_J\left(\frac{1-R_jG_j}{1-G_0}\right) \tag{20}$$

Since we want to know the full effect of remittances on the Gini coefficient of total income, we first conduct a regression of the natural logarithm of total income, as a function of (1) the natural logarithm of international remittances, and (2) x, a vector representing human capital and household characteristics, for households with migrants[5]. We assume that there are only two sources of income, international remittances (y_1), and income from domestic sources (y_2) so that $y_0 = y_1 + y_2$. On the other hand, the vector x will include attributes of the household head such as age, age-squared representing experience, and dummies for college education, having a job or not and marital status; and attributes of the household such as the number of adults, family size and a dummy for urbanity. The regression function can therefore be expressed as equation (21).

$$\log y_0 = \alpha + \beta_1^* \log y_1 + \beta_2 x + \varepsilon \tag{21}$$

where β_1^* is the elasticity of total income with respect to international remittances, β_2 is the vector of coefficients of the attributes, and ε is the error term. From equation (21), we can compute for the total effect of international remittances as

$$(1+\beta_1) = \beta_1^* \times \frac{\overline{y_0}}{y_1} \tag{22}$$

To test if international remittances indeed influence income from other sources, we will conduct a t-test with the null hypothesis,

$$H_0 : \beta_1^* \times \frac{\overline{y_0}}{\overline{y_1}} = 1$$

If this hypothesis is rejected, we can say that international remittances and other sources of income are correlated, and therefore, we can evaluate the direction of the effect as follows: If $(1+\beta_1)$ as defined in equation (22) is less than 1, then international remittances lower income from other sources, probably because leisure for the household is a normal good or because other household members are forced to quit their job and assume the role of the migrant in household production. In this case, the full effect of international remittances on income equality is less than its direct effect. On the other hand, if $(1+\beta_1)>1$, we can say that international remittances raise income from the k'th source (y_2) because the former loosens the liquidity and risk constraints facing the household. Using the remittances sent by the migrant member as capital, the household can now embark on mainly small and medium scale business ventures that will raise domestic income. In this case, household with migrants will further increase their income compared to non-migrant households, and income inequality may be potentially worse compared to the case when we only consider the direct effect.

4. Analysis of Results

Following the discussions in the previous section, we also divide this section into two parts, (1) when income sources are treated independently

from each other, thus we only determine the direct effect of each source to the total Gini coefficient; and (2) when other income sources are related to income from abroad, implying the full effect of remittances from abroad to income.

4.1. The Direct Effect of Remittances on Income Inequality and Social Welfare

Using equation (4), we computed for the Gini coefficient of the Philippines in 1997 for total income, and the result is found in Table 6.7. The Gini coefficient is 0.4841 (third column, last row), which is comparable to the estimation by Rodriguez (1998, p. 342) of 0.4800 using FIES data for 1991. This means that from 1991 to 1997, income distribution in the Philippines has not improved or worsened considerably even if there was a considerable increase in remittances from abroad during this period. The Gini coefficient for income from domestic sources (0.4423)[6] can be considered as a simple index that measures inequality in the absence of income from abroad. Comparing this with the Gini coefficient of total income, we can say that international remittances aggravate inequality in the Philippines.

We then decompose the Gini of total income according to its sources or components using equation (7). The results are also shown in Table 6.7. We include remittances from domestic sources, although it has a very small share in total income, to contrast its effect with that of remittances from abroad. Also, since we are mainly concerned with the impact of human migration, we will focus on cash remittances from contract workers and permanent migrants and term them international remittances. We will include cash gifts, pensions and dividends from abroad in the "other income" category.

Table 6.7. Decomposition of the Gini Coefficient based on Income Source (1997)

Income Source	Share in Total HH Income (S)	Gini Coefficient for Income Source (G)	Gini Correlation with Total Income Rankings (R)	Contribution to Gini Coefficient of Total Income (SGR)	Share in Gini of Total Income (SGR/G_0)
Wages and Salaries	0.4647	0.6670	0.7468	0.2315	0.4782
Income from Entrepreneurial Activities	0.2618	0.7359	0.5800	0.1117	0.2308
Other Incomes	0.1848	0.6314	0.8277	0.0966	0.1995
Domestic Remittances	0.0207	0.8934	0.1427	0.0026	0.0055
International Remittances	0.0680	0.9353	0.6579	0.0418	0.0864
Total Income	1.0000	0.4841	1.0000	0.4841	1.0000

Source: Author's Calculations from Family Income and Expenditure Survey (FIES), 1997.

The first column shows the share of each source of income to total income. Income from wages and salaries comprise almost half of total income (46.47%), followed by income from entrepreneurial activities and other incomes (26.18%). With regards to income from international remittance's share to total income (6.8%), it is relatively small, although this may not reflect the total amount of remittances from abroad because it excludes gifts brought to the country by the migrants or overseas contract workers themselves.

The second column shows the Gini coefficients for each source of income, computed using equation (5). International remittance is the least equally distributed income component, as shown by its very high Gini coefficient of 0.9353, followed by remittances from domestic sources. That the Gini coefficients of all income components are very high and are all highly unequally distributed imply that income for households is highly concentrated to one source. The very high value for the source Gini of international remittances means that migrants and remittances are not equally distributed among households of different total incomes. This also suggests that international, and even internal migration, are still inaccessible for many Filipinos. In the Philippines, international migration and therefore remittances are selective of the richer households, who are also more educated, who have more adult members and who live in urban areas where information on international labor market is more available.

The third column shows the Gini correlation, R_j, between total income and income from each source, as defined in equation (7). There is a

positive relationship between each income component and total income, as shown by the positive values of the Gini correlation, R. The correlation between international remittance income and total income is not as high as those between total income and wages and salaries or other incomes, but not as considerably low as domestic remittances.

Now we are ready to look at the contribution of each income source to the Gini coefficient of the Philippines in 1997. In general, remittances, both domestic and international, have the lowest contributions to the 1997 total Gini coefficient of total income. Although the distribution of international remittance income is highly unequal, it is offset by this component's minimal share in total income, thus, its contribution to the Gini of total income is considerably low. On the other hand, wages and salaries contributed most to total inequality, basically because of its high share in total income (46%) and high Gini correlation (0.75). For all income components, the percentage share in Gini of total income is almost equal to its share in total household income, suggesting a positive and almost unitary correlation between the two. We can therefore predict that the potential impact of international remittances on equality will be stronger as migration and the share of remittances to total income increase in the future.

Next, we evaluate the effect of a one-unit increase in any of the income components to inequality, computed using equations (10) and (11), and the results are shown in Table 6.8. The second column shows the absolute marginal change in total Gini resulting from a slight increase in income from each source, as computed from equation (10). Based on the results, we can

Table 6.8. Marginal Change in Inequality and Social Welfare Due to Change in Income per Source (1997)

Income Source	Gini Coefficient	Marginal Change in Total Gini Coefficient (equation 10)	% Change in Gini Coefficient (equation 11) x 100	% Change in Social Welfare Index (equation 13) x 100
Wages and Salaries	0.6670	0.0064	1.3218	45.2255
Income from Entrepreneurial Activities	0.7359	-0.0150	-3.0990	29.0882
Other Incomes	0.6314	0.0071	1.4705	17.1006
Domestic Remittances	0.8934	-0.0074	-1.5284	3.5092
International Remittances	0.9353	0.0089	1.8426	5.0694

Source: Author's Calculations from Family Income and Expenditure Survey (FIES), 1997.

divide the sources of income into two categories: those that raise the total Gini, such as wages and salaries, remittances from abroad and other sources of income, as manifested by the positive values in column 2; and those which lower it, such as income from entrepreneurial activities and domestic remittances; as shown by the negative values in column 2. That additional domestic remittances lower the Gini coefficient of total income implies that facilitating internal migration, which results in higher domestic remittances, may potentially lower income inequality compared to international migration.

The third column of Table 6.8 computes for the marginal change as a percentage of total Gini, derived by multiplying equation (11) with 100. Additional income from entrepreneurial activities has the highest potential negative contribution to income inequality (hence a positive contribution to equality) in the Philippines (-3.0990%), followed by income from domestic sources (-1.5284%). On the other hand, international remittances and wages and salaries worsen income inequality (1.8426% and 1.3218% respectively). This confirms previous findings that international remittances lead to a more uneven distribution of income in the Philippines. It also implies that a government that adopts an active policy in sending laborers abroad but at the same time wants to achieve income equality must design supplementary policies that will compensate for the higher inequality brought about by migration and remittances. In the same manner, the high absolute and percentage change in the contribution of income from entrepreneurial activities to total Gini suggests that policies that will promote proprietorship and self-employment will be effective in achieving economic equality in the

country. The results also imply that international migration and remittances should not remain as a long-term policy of the government of a sending country that prioritizes economic equality.

Finally, the last column of Table 6.8 shows the effects of a one unit increase in the *jth* income source to social welfare, computed using equation (13) and then multiplied with 100. All values are positive, meaning any increase in income, regardless of its source, will improve social welfare. The change in social welfare index is lowest for international remittances, and highest for wages and salaries. By referring to equation (13), we can attribute the very low contribution of additional remittances to the social welfare on the following factors: (1) the low share of remittances to total income. However, as the number of migrants and their remittances increase, we can expect this share to increase, resulting in a much larger increase in social welfare. (2) the high distributional effect of remittances, due to its very high inequality index of 0.9353 (see Table 6.7). Therefore, as migration intensifies due to higher wage differentials, economic integration or active government policies, the contribution of remittances on social welfare will rely on the net effect of these two factors.

4.2. The Full Effect of Remittances on Income Inequality and Social Welfare

First, we perform a regression of the natural logarithm of total income using equation (21). From the results shown in Table 6.9, we can draw the following observations: First, we can see that all variables are statistically significant at more than 95%, and except for the dummy for

Table 6.9. Regression of Total Income as Function of International Remittances and Household Attributes, the Philippines (1997)

Dependent Variable: Log of Total Income (in pesos)

Variable	Coefficient	t-statistic
International Remittances	0.210	44.91
Attributes of the HH Head		
Age (years)	0.013	4.15
Age-squared	0.000	-3.47
Education of Head (college=1)	0.280	31.53
Job (has job=1)	0.114	7.01
Marital Status (married=1)	0.042	1.22
Attributes of Household		
No. of Adult Members	0.091	14.86
Size of Family	0.035	7.65
Urbanity (urban=1)	0.339	21.96
Constant term	7.952	90.28
R-squared	0.474	
Adjusted R-squared	0.473	
F-statistic	681.927	
Prob(F-statistic)	0.000	
Number of Observations	6821	

Note: All variables are statistically significant at 99% confidence level except Marital Status.

Source: Author's Calculations from Family Income and Expenditure Survey (FIES), 1997.

age-squared, the variables positively affected household's total income in 1997. Second, we detect positive relationships between total income, on one hand, and the actual number of adults or the dummy for migrant. However, the coefficient for the former is less than that of the latter, implying that migrants contribute more to the household's total income compared to the adult members who stay in the Philippines. Third, the coefficient of international remittances, representing the elasticity of total income due to international remittances, is positive and statistically significant, therefore, we can say that for migrant households, international remittances raise total income.

Based on the result of the two-tailed t-test for the coefficient of international remittances (446.41), we reject the null hypothesis. Using equation (22), we compute for the direct and indirect effect of remittances, which is 3.0847. Ceteris paribus, this means that a one-unit increase in international remittances will raise total household income by 3.0847 units. Using this value, we can compute for the new share of international remittances to total income of all households (20.97%) as shown in the first column of Table 6.10. This considerably high contribution to total income suggests that remittance recipients efficiently use international remittances to generate income from other, especially domestic, sources and that because of international remittances, the household is relieved of its liquidity and risk constraints, especially in undertaking small- and medium scale venture businesses in the sending country. In this sense, international remittances can largely contribute to economic expansion in the sending country.

Table 6.10. The Effect of International Remittances on Income Inequality (1997)

Effects	Share in Total Household Income (S)	Contribution to Gini Coefficient of Total Income (SGR)	Percentage (%) Change in Gini Coefficient	Percentage (%) Change in Social Welfare Index
Direct	0.0680	0.0418	1.84[a]	5.07[c]
Full Effect	0.2097	0.1291	5.66[b]	15.93[d]

Notes:
[a]: Computed using equation (11)
[b]: Computed using equation (18)
[c]: Computed using equation (13)
[d]: Computed using equation (20)
The value used for $(1+\beta_1)$ is 3.0847.

Source: Author's Calculations from Family Income and Expenditure Survey (FIES), 1997.

At the same time, however, the positive correlation between international remittances and other sources of income will also result in higher inequality. For households with migrants, international remittances will sufficiently facilitate upward movement in the income distribution, leaving those without migrants behind, and eventually, international remittances will further worsen the distribution of income.

To quantify the full impact of remittances on income inequality and social welfare, we will use equations (7), (18) and (20). First, compared to the direct contribution to total inequality, the full effect is also positive and much higher at 0.1291. This is because the income of remittance recipients are further raised due to the positive relationship between international remittances and income from other sources, as shown above; and consequently, income inequality between households those with migrants and those with none becomes more pronounced. An increase in international remittances by e will now raise the total Gini coefficient by 5.66%, as computed using equation (18) and shown in the third column of Table 6.10. Finally, the increase in social welfare is higher (15.93%) than when we consider the direct effect only. This is because of the indirect contribution of remittances to social welfare resulting from the accompanying increase in income from other sources.

5. Summary

In this study, we have looked into the impact of international remittances on income distribution in the Philippines, a country which has

been experiencing high rates of international migration and income inequality. We use data from the Family Income and Expenditure Survey of the Philippines (FIES), 1997 (1) to determine how each source of income contributes to inequality; (2) to quantify this contribution and evaluate how inequality and social welfare improves or worsens due to a marginal increase in any of these sources of income; and (3) to examine the full effect of international remittances to inequality and social welfare when we include its impact on other sources of income as well.

By decomposing the Gini coefficient of the household's total income based on its sources, we have seen that each source's contribution depends on its share to total income, its distribution among households and its correlation with total income. International remittances have the least contribution to inequality while wages and salaries have the highest, mainly because the former's share in total income is much smaller than the latter, although the former is more unequally distributed among the households than the latter.

Our findings confirm the results of previous studies that international remittances lead to a more uneven distribution of income in the Philippines. A marginal increase in international remittances will worsen income inequality because any increase in income due to international remittances accrues to richer households. In the Philippines, international migration and therefore remittances are selective of the richer households, who are also more educated, who have more adult members and who live in urban areas where information on international labor market is more available. In the

light of heightening international labor mobility, we can predict that the potential negative impact of remittances on inequality will be more evident as the current trend in the selectivity of migrants continues.

We have also evaluated the full impact of international remittances on inequality and social welfare. We have found out that international remittances considerably raise income from other sources, suggesting that remittance recipients efficiently use international remittances to generate income from other, especially domestic, sources and that because of international remittances, the household is relieved of its liquidity and risk constraints in undertaking small- and medium scale ventures in the sending country. In this sense, international remittances can largely contribute to economic expansion in the sending country.

We have seen that compared to the direct contribution of international remittances to total inequality, their full effect is also positive but much higher. This is because the increase in international remittances will also raise income from other sources and, as a result, income inequality between those households with migrants and those without them becomes more pronounced. Nevertheless, the full increase in social welfare is higher than when we consider the direct effect only.

Our findings imply that a government which adopts an active policy of sending laborers abroad but at the same time wants to achieve income equality must design supplementary policies that will compensate for the higher inequality brought about by migration and remittances. Instead of direct transfer payment policies or "dole-outs", the government can facilitate

internal migration and promote small and medium scale industries for households in the lower deciles since any increase in income from *entrepreneurial activities and domestic remittances tend to improve equality.*

Footnotes of Chapter 6

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[1] In this study, we basically deal with the short-run. The intertemporal impact of international migration to household income is a subject for future empirical research subject to the availability of survey data from two or more years.

[2] ANOVA tests show that the subgroups, households with migrants and without migrants, do not have the same mean values.

[3] Keeping average income constant, a transfer of income from the rich to the poor, or an improvement in G, will raise social welfare.

[4] According to Lerman and Yitzhaki (1985), the Gini correlation displays a combination of the properties of the Spearman's rank and Pearson correlation coefficients. R_i assumes a value between 1 and –1. It is equal to zero if the source income and total income are not correlated at all, and approaches 1 (-1) if the ith source of income is an increasing (decreasing) function of total income. Also, if y_i, y_0 are normally distributed, the Gini correlation is equal to Pearson's correlation coefficient.

[5] By regressing total income only of household with migrant members, we assume that the income of households without migrants is not affected directly and indirectly by international remittances.

[6] This value is obtained by adding the Gini coefficients of wages and salaries, income from entrepreneurial activities, other incomes, and domestic remittances.

References of Chapter 6

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Source of Data:

National Statistics Office of the Philippines. *Family Income and Expenditure Survey Database 1997.*

Appendices of Chapter 6

Appendix 6.A. List of Income and Other Receipts (FIES)

INCOME

a. SALARIES AND WAGES FROM EMPLOYMENT
   1. Salaries and wages from regular employment
      agricultural and non-agricultural
   2. Salaries and wages from seasonal/occasional employment
      agricultural and non-agricultural
b. INCOME FROM ENTREPRENEURIAL ACTIVITIES
c. OTHER SOURCES OF INCOME
   1. Cash receipts, gifts, support, relief and other forms of assistance from domestic sources
      other families, government and private institutions
   2. Rentals
      non-agricultural land, building, spaces, other properties
   3. Interest
      from bank deposits and loans extended to other families
   4. Pension and retirement, workmen's compensation and social security benefits
   5. Net winnings from gampling, sweepstakes and raffle
   6. Dividend from investments
   7. Profits from sales of stocks, bonds and real and personal property
   8. Backpay and proceeds from insurance
   9. Inheritance
   10. Other sources of income Not Elsewhere Classified (N.E.C.)
d. INCOME FROM ABROAD
   1. Cash received from family members who are contract workers
   2. Cash received from family members who are working abroad
   3. Pensions, retirements, other benefits
   4. Cash gifts, support and relief
   5. Dividends from investment abroad

RECEIPTS

1. Sale of real property and personal property
2. Loans from other families and from business firms
3. Payments received for loans granted to others
4. Withdrawals from savings
5. Other receipts

Source: Family Income and Expenditure Survey (1997) Questionnaire

Appendix 6.B. Derivation of Equation (10) (Source: Stark, Taylor and Yitzhaki, 1986)

$$\frac{\partial G_0}{\partial e_j} = S_j(R_j G_j - G_0) \tag{10}$$

We would like to solve for the derivative of the over-all Gini coefficient with respect to a *uniform* percentage in remittances, here defined as the *jth* income source or y_j.

We define the over-all Gini coefficient as in equation (7).

$$G_0 = \sum R_i S_i G_i \tag{7}$$

The multiplication of the *jth* income source by 1+e does not affect the respective Gini coefficients, G_i. However, R_i may change because it is a function of total income. Also, here, we assume that incomes vary across households so that R_i's do not change and are well defined for all $i = 1, \cdots, k$. Therefore, we can write the Gini coefficient of the new income as in equation (B1).

$$G_e = \sum R_i S_i(e) G_i \tag{B1}$$

By definition, the shares of each component to total income are as follows:

For $i \neq j$

$$S_i(e) = \frac{\overline{y_i}}{\sum_{i \neq j} \overline{y_i} + (1+e)\overline{y_j}} = \frac{\overline{y_i}}{\sum_{i=1}^{k} \overline{y_i} + e\overline{y_j}} \tag{B2}$$

and for $i = j$

$$S_j(e) = \frac{(1+e)\overline{y_j}}{\sum_{i=1}^{k}\overline{y_i} + e\overline{y_j}} \tag{B3}$$

We now derive for the marginal change in the Gini coefficient as follows:

$$G = G(e) - G_0$$

$$= \sum_{i=1}^{k} S_i(e) R_i G_i - \sum_{i=1}^{k} S_i R_i G_i$$

$$= \sum_{i=1}^{k} \left[S_i(e) - S_i \right] R_i G_i \tag{B4}$$

Solving for $S_i(e) - S_i$,

For $i \neq j$,

$$S_i(e) - S_i = \frac{\overline{y_i}}{\sum_{i=1}^{k}\overline{y_i} + e\overline{y_j}} - \frac{\overline{y_i}}{\sum_{i=1}^{k}\overline{y_i}}$$

Dividing this by $\sum_{i=1}^{k}\overline{y_i}$, we obtain equation (B5).

$$S_i(e) - S_i = \frac{S_i}{1+eS_j} - S_i = \frac{-eS_iS_j}{1+eS_j} \tag{B5}$$

For $i = j$,

$$S_j(e) - S_j = \frac{(1+e)\overline{y_j}}{\sum_{i=1}^{K}\overline{y_i} + e\overline{y_j}} - \frac{\overline{y_j}}{\sum_{i=1}^{K}\overline{y_i}}$$

Similarly, dividing this by $\sum_{i=1}^{k}\overline{y_i}$, we obtain equation (B6).

$$S_j(e) - S_j = \frac{(1+e)S_j}{1+eS_j} - S_j = \frac{eS_j - eS_j^2}{1+eS_j} \tag{B6}$$

Substituting (B5) and (B6) into (B4), we get equation (B7).

$$G(e) - G_0 = \sum_{i=1}^{k} \left[S_i(e) - S_i\right] R_i G_i$$

$$= \sum_{i \neq j} \frac{-eS_i S_j}{1+eS_j} R_i G_i + \frac{eS_j - eS_j^2}{1+eS_j} R_j G_j$$

$$= \sum_{i=1}^{k} \frac{-eS_i S_j}{1+eS_j} R_i G_i + \frac{eS_j}{1+eS_j} R_j G_j \tag{B7}$$

Now, we can examine the derivative as follows:

$$\lim_{e \to 0} \frac{G(e) - G_0}{e} = -S_j \lim_{e \to 0} \sum_{i=1}^{k} \frac{S_i}{1+eS_j} R_i G_i + \lim_{e \to 0} \frac{S_j}{1+eS_j} R_j G_j$$

$$= -S_j \sum_{i=1}^{k} S_i R_i G_i + S_j R_j G_j$$

Therefore,

$$\frac{\partial G_0}{\partial e_j} = S_j(R_j G_j - G_0) \tag{10}$$

Appendix 6.C. Derivation of Equation (16)

First, from equation (14), we derive for the mean value of income from domestic sources and its covariance with $F(y_{k'})$ as follows:

$$y_{k'} = \alpha + \beta_1 y_j \tag{14}$$

$$\overline{y_{k'}} = \frac{\sum_n (\alpha + \beta_1 y_{k'})}{n} = \alpha + \beta_1 \overline{y_j} \tag{C1}$$

$$Cov(y_{k'}, F(y_{k'})) = Cov\left[(\alpha + \beta_1 y_j), F(y_{k'})\right]$$

$$= Cov\left[(\beta_1 y_j), F(y_j)\right] \tag{C2}$$

We now compute for the Gini coefficient of total income. Substituting equation (14) into equation (3), we obtain equation (C3).

$$y_0 = \sum_{i \neq k'} y_i + \alpha + \beta_1 y_j \tag{C3}$$

We get the covariance in equation (C4).

$$Cov\left[y_0, F(y_0)\right] = \sum_{i \neq k} Cov(y_i, F(y_0)) + Cov(\alpha, F(y_0)) +$$

$$Cov(\beta_1 y_j, F(y_0)) \tag{C4}$$

Similarly, we get equation (C5) from equation (4).

$$G_0 = \frac{2\left[\sum_{i \neq k'} Cov(y_i, F(y_0))\right]}{\overline{y_0}} + \frac{2\left[Cov(\beta_1 y_j, F(y_0))\right]}{\overline{y_0}} \tag{C5}$$

The first term of the right hand side of equation (C5), G_0^{1st}, which is the sum of the direct effect of all sources of income except the *k'th* one, can be manipulated and simplified as follows: (equation (C6))

$$G_0^{1st} = \frac{2\sum_{i \neq k'} Cov(y_i, F(y_0))}{\overline{y_0}} \times \frac{\overline{y_i}}{2\mathrm{cov}(y_i, F(y_i))} \times \frac{2\mathrm{cov}(y_i, F(y_i))}{\overline{y_i}}$$

$$= \frac{2\sum_{i \neq k'} Cov(y_i, F(y_0))}{2Cov(y_i, F(y_i))} \times \frac{\overline{y_i}}{\overline{y_0}} \times \frac{2\mathrm{cov}(y_i, F(y_i))}{\overline{y_i}}$$

$$= \sum_{i \neq k'} R_i S_i G_i \qquad \text{(C6)}$$

For the second term of the right hand side of equation (C5), we can compute for its Gini coefficient, G_0^{2nd}, as shown in equation (C7).

$$G_0^{2nd} = \frac{2\mathrm{cov}(\beta_1 y_j, F(y_0)}{\overline{y_0}} \times \frac{\beta_1 \overline{y_j}}{2\mathrm{cov}(\beta_1 y_j, F(\beta_1 y_j))} \times \frac{2\mathrm{cov}(\beta_1 y_j, F(\beta_1 y_j))}{\beta_1 \overline{y_j}}$$

$$= \frac{2\mathrm{cov}(\beta_1 y_j, F(y_0)}{2\mathrm{cov}(\beta_1 y_j, F(\beta_1 y_j))} \times \frac{\beta_1 \overline{y_j}}{\overline{y_0}} \times \frac{2\mathrm{cov}(\beta_1 y_j, F(\beta_1 y_j))}{\beta_1 \overline{y_j}}$$

$$= R_j S_{k'j} G_j, \quad \text{where } S_{k'j} = \frac{\beta_1 \overline{y_j}}{\overline{y_0}} \qquad \text{(C7)}$$

Therefore, the Gini of total income is the combination of equations (C6), and (C7), as shown in equation (16).

$$G_0 = \sum_{i \neq k'} R_i S_i G_i + R_j S_{k'j} G_j = \sum_{\substack{i \neq k' \\ i \neq j}} R_i S_i G_i + R_j S_j G_j + R_j S_{k'j} G_j$$

$$= \sum_{\substack{i \neq k' \\ i \neq j}} R_i S_i G_i + (S_j + S_{k'j}) R_j G_j = \sum_{\substack{i \neq k' \\ i \neq j}} R_i S_i G_i + (S_J) R_j G_j \qquad \text{(16)}$$

Taking international remittances as the *jth* source of income, its full effect on income inequality can be assessed as its direct contribution, shown here as equation (C8).

$$\text{Total Contribution to Gini} = S_j R_j G_j + S_{k'j} R_j G_j = S_J R_j G_j \qquad \text{(C8)}$$

Appendix 6.D. Derivation of Equation (17)

$$\frac{\partial G_0}{\partial e} = (S_j - S_{k'j})(R_j G_j - G_0) \tag{17}$$

Equation (16) computes for the Gini coefficient before the change. We rewrite it as follows:

$$G_0 = \sum_{i \neq j}^{K} S_i R_i G_i + (S_j + S_{k'j}) R_j G_j = \sum_{i \neq j}^{K} S_i R_i G_i + S_j R_j G_j \tag{16'}$$

On the other hand, under the same assumptions as for equation (9), the new Gini coefficient, due to the uniform change in the *jth* income by e is derived as follows:

$$G(e) = \sum_{i \neq j} S_i(e) R_i G_i + (S_j(e) + S_{k'j}(e)) R_j G_j$$

$$= \sum_{i \neq j} S_i(e) R_i G_i + S_J(e) R_j G_j \tag{D1}$$

where the first term on the right hand side of equation (D1) indicates the sum of the Gini coefficients of incomes which are independent from each other, while the second term is the Gini coefficient of the *jth* source of income, upon consideration of its influence on the *k'th* source of income.

Computing for the new shares, $S_i(e)$, we get the following equations.

For $i \neq j$,

$$S_i(e) = \frac{\overline{y_i}}{\sum_{i \neq j} \overline{y_i} + (\overline{y_j} + \beta_1 \overline{y_j}) + e(\overline{y_j} + \beta_1 \overline{y_j})} \tag{D2}$$

For $i = j$, we use equations (16·1) and (16·2) to get equation (D3).

$$S_J(e) = \frac{(\overline{y_j} + \beta_1 \overline{y_j})(1+e)}{\sum_{i \neq j} \overline{y_i} + (\overline{y_j} + \beta_1 \overline{y_j}) + e(\overline{y_j} + \beta_1 \overline{y_j})} \tag{D3}$$

We can solve for the change in the Gini coefficient, $G(e) - G_0$ by using equations (16') and (D1), shown here as equation (D4).

$$G(e) - G_0 = \sum_{i \neq j} (S_i(e) - S_i) R_i G_i + (S_J(e) - S_J) R_j G_j \tag{D4}$$

For $i \neq j$

$$S_i(e) - S_i = \frac{\overline{y_i}}{\sum_{i \neq j} \overline{y_i} + (1+e)(1+\beta_1)\overline{y_j}} - \frac{\overline{y_i}}{\sum_{i \neq j} \overline{y_i} + (1+\beta_1)\overline{y_j}}$$

Dividing this by $\sum_{i \neq j} \overline{y_i} + (1 + \beta_1)\overline{y_j}$ will give us the following.

$$S_i(e) - S_i = \frac{S_i}{1+eS_J} - S_i = \frac{S_i - S_i(1+eS_J)}{1+eS_J} = \frac{-eS_J S_k}{1+eS_J} \tag{D5}$$

where $S_i = \frac{\overline{y_i}}{\sum_{i \neq j} \overline{y_i} + (1+\beta_1)\overline{y_j}}$ and $S_J = \frac{(1+\beta_1)\overline{y_j}}{\sum_{i \neq j} \overline{y_i} + (1+\beta_1)\overline{y_j}}$

On the other hand, for $i = j$

$$S_J(e) - S_J = \frac{(1+e)(1+\beta_1)\overline{y_j}}{\sum_{i \neq j} \overline{y_i} + (1+e)(1+\beta_1)\overline{y_j}} - \frac{(1+\beta_1)\overline{y_j}}{\sum_{i \neq j} \overline{y_i} + (1+\beta_1)\overline{y_j}}$$

Dividing this by $\sum_{i \neq j} \overline{y_i} + (1 + \beta_1)\overline{y_j}$ will give us the following:

$$S_J(e) - S_J = \frac{S_J + eS_J}{1+eS_J} - S_J = \frac{e(S_J - S_J^2)}{1+eS_J} \tag{D6}$$

By substituting equations (D5) and (D6) into equation (D4), we can solve for the change in the Gini coefficient of total income, as shown in

equation (D7).

$$G(e)-G_0=\sum_{i\neq j}R_iG_i\frac{-eS_iS_J}{1+eS_J}+R_jG_j\frac{eS_J-eS_J^2}{1+eS_J} \tag{D7}$$

Since $\frac{eS_iS_J}{1+eS_J}=\frac{eS_JS_J}{1+eS_J}$ when $i=j$, we can rewrite equation (D7) as (D8).

$$G(e)-G_0=\sum_{i=1}^{K}R_iG_i\frac{-eS_iS_J}{1+eS_J}+\frac{eS_J}{1+eS_J}R_jG_j \tag{D8}$$

To obtain equation (17), we first divide equation (D8) by e.

$$\frac{G(e)-G_0}{e}=\sum_{i=1}^{K}R_iG_i\frac{-S_iS_J}{1+eS_J}+R_jG_j\frac{S_J}{1+eS_J} \tag{D9}$$

Taking the limit of equation (D9),

$$\lim\frac{G(e)-G_0}{e}=-S_J\lim_{e\to 0}\left(\sum_{i=1}^{K}R_iG_i\frac{S_i}{1+eS_J}\right)+\lim_{e\to 0}\left(R_jG_j\frac{S_J}{1+eS_J}\right)$$

$$=-S_J\sum_{i=1}^{K}R_iG_iS_i+R_jG_jS_J \tag{D10}$$

Hence,

$$\frac{\partial G_0}{\partial e}=-S_JG_0+R_jG_jS_J=S_J(G_jR_j-G_0) \tag{17}$$

We can derive for equation (18) by dividing equation (17) by G_0.

$$\frac{\partial G_0/\partial e}{G_0}=\frac{(S_j+S_{k'j})(G_jR_j)}{G_0}-(S_j+S_{k'j})$$

$$=\frac{S_JG_jR_j}{G_0}-S_J \tag{18}$$

Appendix 6.E. An Alternative Estimation of the Gini Coefficient in the Migration and No-Migration Regimes

In this appendix, we will discuss an alternative estimation that puts into consideration the potential income of a migrant and his contribution to income and its distribution in case he stays and works in the sending country. In Section 3 above, as Rodriguez pointed out, it is assumed that "the migrants contribute to household income only when they work overseas (and therefore) remittances appear as a very significant gain for the non-migrant family" (Rodriguez, 1998 p.338-339). By considering his potential contribution in a counterfactual case when the migrant works in the sending country, we can derive for the "net" contribution of international remittances to the Gini coefficient of total income. Following Rodriguez, we first estimate household income according to household characteristics. Household income is regressed using Model (A):

$$\log y_n = \alpha + \beta X_n + \delta A_n + \varphi M_n + \varepsilon_n \qquad n = (1,\cdots,m) \qquad \text{(Model A)}$$

where y_n represents the natural logarithm of the total income of the *nth* household, X_n is a vector of the attributes of the head of the family, and demographic and geographical characteristics of this household, A_n is the number of adults (members of working age), M_n is the number of migrants in the family, and $\alpha, \beta, \delta, \varphi, \varepsilon$, the parameters of the equation, corresponding to the regression coefficients and the error term respectively.

Using the coefficients obtained in Model (A), we construct two counterfactual income distributions; i.e., when the migrant is at home, or the no-migration regime, and abroad, or the migration regime (see table below).

For migration regime, we substitute the value 1 for *M*, while for the no-migration regime, we use the value, *M*=0. For the value of *A*, the FIES data show the actual number of adults in the household, represented as *A'*. For households with a migrant, we add 1 to the actual number of adults in the no-migration regime, while for households without a migrant, we subtract 1 adult from the actual number of adults recorded in the survey in the migration regime. The actual number of adults will be used for migrant households in the migration regime; and households with no migrants in the no-migration regime. This will enable us to consider the contribution of the migrant in his/her household's income if he/she has worked domestically. It is possible that the number of migrants per household is more than one, but due to data restrictions, we shall assume that there is only one migrant per household.

Type of Household and Regime	Migration regime	No-migration regime
HH with migrant	A=A', M=1	A=A'+1, M=0
HH without migrant	A=A'-1, M=1	A=A', M=0

By computing for the Gini coefficient of total income separately for migration and no-migration regimes and comparing them, we can determine if income inequality decreases due to migration.

Using Model A, we regress the natural logarithm of the household's total income, $\log(Y_n)$ as a function of age, age-squared that reflects experience, family size, number of adults, defined as household members 25 years old and above, and dummy variables for education of the household head (dummy for college education=1), gender of the household head (dummy for male=1),

household head having a job or not (dummy for having a job=1), the marital status of the household head (dummy for married=1), urbanity (dummy for urban=1), and having a migrant member or not (dummy for household having a migrant member=1). The results are shown in Table 6.11.

In Table 6.11, we can see that all variables are statistically significant at more than 95%, and except for the dummies for gender and household head having a job or not, the variables positively affected household's total income in 1997. Of the household head's attributes, his/her education, marital status and age raise household income. On the other hand, households headed by women seem to have higher income, probably because their husbands have migrated abroad. This group of female-headed households will have a big influence in the regression results especially if the income these households receive from abroad is high. Households in the urban area also receive more income than those in the rural areas. Of interest to our analysis are the positive coefficients of the actual number of adults and the dummy for migrant. The coefficient for the former is less than that of the latter, implying that migrants contribute more to the household's total income compared to the adult members who stay in the Philippines, or compared to when the migrant stays to work in the Philippines.

Using the coefficients derived from Model (A), we calculated for the income of household with and without migrant for the migration and no-migration regimes. Then, we derived for the Gini coefficients under the two regimes using equation (4). The results are shown in Table 6.12. For reference and comparison, we also included the values using actual data from

Table 6.11. Regression Results: The Household Income Function (1997)

Dependent Variable: Log of Total Income

Independent Variables	Coefficient	t-statistic
Characteristics of Head		
Education	0.435	90.81
Gender (male=1)	-0.022 *	-2.09
Job (has job=1)	-0.054	-4.77
Marital status (married=1)	0.087	4.42
Age	0.017	11.09
Age-squared	0.000	-10.88
Characteristics of Household		
urban (urban=1)	0.407	59.97
family size	0.023	11.89
no. of adults	0.160	54.40
migrant (with migrant=1)	0.356	34.64
Constant term	9.237	233.85
Number of Observations: 39520		
R-squared	0.4541	
Adj. R-squared	0.4540	
F-stat	3286.99	
Prob (F-stat)	0.00	

All variables are statistically significant at more than 99% except for gender.
*: Statistically significant at more than 95% level.

Source: Author's Calculations from Family Income and Expenditure Survey (FIES), 1997.

FIES. For the actual case, we simply subtracted international remittances from total income to derive for the values for the no-migration regime.

Regarding household income, the change in total income resulting from international remittances is lower in Model A (at 1.28%) than the actual case (at 7.29%). When we consider the potential income of the migrant if he had stayed and worked in the sending country, the impact of remittances on total income is considerably less than in the case using actual values.

A comparison of the Gini coefficients between the two regimes also reveals an interesting result that is different from Rodriguez. In the last column of Table 6.12, we can see that while in the actual case, international remittances have raised the Gini coefficient, they have lowered inequality when the potential income of the migrant at home was considered. Rodriguez obtained a positive marginal change in both cases.

Table 6.12. Income Inequality With and Without Migration (1997)

Household Income (in pesos)	Migration	No Migration	% Change
Actual	123,761	115,347	7.29
Model A	95,803	94,590	1.28
Gini Coefficient			
Actual	0.4841	0.4423	9.45
Model A	0.2609	0.3174	-17.81

Source: Author's Calculations from Family Income and Expenditure Survey (FIES), 1997.

Chapter 7

Summary and Conclusions

In this study, we have explored international migration in the context of economic development of the sending country. We have shown that international migration is a very complicated phenomenon that has very important implications not only to the migrants and their families but also on the welfare of non-migrants and on the national development of the source country in general.

In organizing this study, we have imposed the following limitations. First, we dwelt only on the issue of the economic causes and consequences of international migration in the sending country. Second, while we are aware that international migration and economic development are two interdependent phenomena, i.e., one is both a cause and a consequence of the other, we discussed them independently, and as such, we were able to show the direct impact of economic growth on international migration and the direct impact of international migration on economic development.

Third, we took the case of the Philippines to give empirical support to existing theories on labor migration. The Philippines is the world's second largest; and Asia's largest exporter of labor. It is a country with a long history of international migration dating back to the colonial times. At the same time,

it is also a country facing the hardships and challenges of economic development for a long time. Finally, its government has considered the export of labor as a solution to economic difficulties, and therefore, has been actively participating in the overseas labor deployment sector. These conditions have made the Philippines an interesting area to study the role of international migration in economic development.

Although we have already presented a summary at the end of each chapter, we will try to integrate them and give our general findings in this chapter. We will also discuss the policy implications based on our findings. Finally, we will identify some topics for future research in the field of international migration.

Why do people migrate?

We have seen that people migrate due to varied economic and demographic reasons. Using a Harris-Todaro type model of rural-urban migration, we showed that population, earnings and unemployment rates in both the source and host countries influence the flow of emigrants. The growing population in the source country increases migration pressure, while average earnings reduces it. On the other hand, population and average earnings in the host countries have opposite effects on international migration from the Philippines.

Employment rates in the source and host countries are also found to have an impact on the probability to migrate. Harris and Todaro (1970) argued that the expected earnings (average earnings multiplied by the

employment rate) are a more relevant determinant of migration, but we did not find any support for this claim. Instead, we found that for Filipino emigrants, considering the average earnings and employment rates as independent variables provided better estimation of their impact on international migration.

We also detect an asymmetry in the impact of factors in the source and in the host countries. In the case of the Philippines, factors originating from this country exert greater influence on the probability to migrate than the same variables in the host countries, and this can be explained by asymmetric information as well as natural and institutional barriers found in the host countries.

We also found out that impact of recent economic and demographic transformations in the source and host countries on Filipino migration are varied. For the Philippines, we can see that after 1987, economic conditions, measured through GDP growth, have improved. At the same time, government's participation in the overseas employment sector has intensified. The host countries, which we divided into four groups, depending on geographical proximity and economic and demographic experiences since mid-1980s, have begun to deal positively with international migration by relaxing immigration restrictions. All these contributed to the heightened migration from the Philippines since the late 1980s.

Who migrates and who does not?

Migrant labor is not a homogenous group of workers. In this study,

we have drawn some observations regarding the trends in age, gender, educational attainment, occupational jobs and destination of Filipinos overseas. The majority of overseas workers are of their prime age of 25-34 years old. We also detect a trend towards the feminization of overseas Filipino workers. This can be attributed to the increasing demand for female labor in the host countries. Many overseas workers are skilled, as shown by the high percentage of those who have college education. Moreover, the demand for foreign labor is highly concentrated in some occupational groups. We observed that the majority of male workers are employed as production workers, while majority of women work in the service industries. Finally, we can find a change in the preferences of migrants as to their destination and in the demand for foreign labor abroad. While in the past, the bulk of workers were deployed in the Middle East, the number of workers going to East Asian destinations have been on the rise since late 1980s.

There are specific patterns in permanent emigration that are quite different from those of overseas workers. People aged 15 below and 60 above comprise a big share in the number of permanent emigrants. They are in general, less educated (less skilled) than overseas workers. A high percentage of them are women, and are unemployed housewives or students. They are also highly concentrated in USA, Canada, Australia and Japan. All these observations point out that (1) the main goal of Filipinos who desire to live abroad permanently is not mainly to work but to join relatives abroad; and (2) the host countries allow permanent emigration primarily for family reunification.

How will international migration impact on the economic development and growth of the sending country?

In chapters 2 and 3, we have discussed how international migration will affect development through its impact on macroeconomic factors related to the markets for labor, imports and domestic goods and services. Overseas employment gives relief to domestic unemployment problems due to high population and labor force growth and the inability of the domestic labor market to absorb them. The remittances of international migrants definitely contribute in financing balance of payment deficits and savings-investment gap of a sending country in the process of economic development. Compared to foreign direct investments and official development assistance (grants and aid), overseas employment historically experienced less intense fluctuations, and in this sense, it is a more stable source of external financing for a developing country like the Philippines.

One of the main contributions of this study lies in its empirical treatment of the effect of remittances to economic development through the consumption expenditures channel. In section 5, we identified the consumption, savings and investment patterns of remittance recipients, and measured the aggregate and sectoral effect of remittance expenditures on gross output, employment generation and imports. We showed that remittance expenditures are not "unproductive" or "wasteful" at all, as explained below, and can therefore be tapped as a potential source of economic growth in a labor-exporting country like the Philippines.

It was found out that compared to those who depend solely on domestic earnings, remittance recipients generally spend less (in terms of its share to total expenditures) on current consumption and income taxes and spend more on private investments like education, real estate and bank savings and on durable goods for intertemporal consumption such as housing and durable furnishings, although they have lower net savings rates. However, if we combine net savings and private investments to comprise total savings, recipients in lower income bracket tend to save more than non-recipients. This leads us to infer that remittance expenditures are not entirely "wasteful" or "unproductive" as they are used actively in investments or saved, and therefore, remittance recipients have a stronger contribution to national capital formation than non-recipients.

We also quantified the initial and induced impact of remittances on the economy by using an input-output analysis of the consumption expenditures of remittance recipients. Although initially, remittances are heavily spent on some selected or "favored" sectors, their effect spreads to other sectors because of the production "linkages" among them. As a result, their initial expenditures on current consumer goods expand production in sectors "not favored" by initial remittance spending.

How will international migration affect the income distribution in the sending country?

Finally, we also looked at the impact of the inflow of remittances on the distribution of income using a decomposition analysis of total income

according to its sources. We found out that international remittances have the least contribution to inequality while wages and salaries have the highest, mainly because the share of international remittances to total income is much smaller, although it is more unequally distributed compared to wages and salaries. Nevertheless, an increase in international remittances will lead to a more serious income inequality because any increase in income due to international remittances accrues to richer households, which have more adult members and whose members are more educated and live in urban areas where information on the international labor market is more accessible. In the light of increasing international labor mobility, we can predict that the potential negative impact of remittances on inequality will be more evident as the current trend in the selectivity of migrants continues.

We also found out that international remittances considerably raise domestic income as its recipients are relieved of their liquidity and risk constraints and therefore, households with migrants are more inclined to invest in, for example, small-scale businesses. Such positive relationship between remittances and other incomes result in a stronger unequalizing effect of international remittances on income distribution. At the same time, however, it results in a stronger positive contribution of remittances to social welfare.

Policy Implications

We have seen in chapter 3 how the government of a sending country exerts efforts to encourage international migration of its people by

participating actively in their deployment, in the protection of their welfare and in the sending of their earnings to their families. As such, overseas employment policies have evolved from simply an unemployment measure into a comprehensive scheme that also taps remittances as an income strategy and balance of payment lifeline. This leads us back to the question: *Is international migration effective as a development strategy?*

The answer to this question depends on what we include in our assessment of economic development. Based on our general findings on its impact on domestic production, employment generation and balance of payment, we affirm that international migration is an important factor in economic development. In the case of the Philippines, economic situation could definitely be worse without the Filipinos abroad. However, if we consider other issues such as its effect on income distribution, on human capital formation, sustainability of foreign-led growth, or other costs that have not been adequately measured yet, we cast our doubts if international deployment of workers is *the factor* in economic development.

The task, therefore, is for the sending country to maximize the present benefits from international migration, and improvement in policies regarding remittances and return migrants can be a good starting point. It can provide incentives for migrants to send money, specifically through the formal banking sector, for example, by giving premium interest rates on remittances. In this way, the government will have a greater hand in allocating the much-needed foreign currencies in areas that can highly contribute to economic development, such as the purchase of capital imports.

Regarding return migrants, government support is necessary in finding employment in the domestic job market or in establishing small-scale enterprises when the return migrants choose to embark on it.

International migration, however, should not be a long-term answer to perennial economic problems. There is a need to implement macroeconomic reforms in the areas of trade, foreign exchange and finance that will eventually result in a more stable source of capital and foreign exchange from abroad and generate employment domestically. As shown in chapter 5, since domestic production in the Philippines is highly dependent on imports, the government exerts efforts in increasing the local content of its products, and in so doing, generate domestic employment and value-added income, and reduce its balance of payment deficit. Raising domestic wages through higher productivity is also another domestic issue that needs greater attention. We can only cite general policies, but the list of necessary policies can go on. However, one thing is clear: on a larger scale, it must think of ways to improve its macroeconomic stability that will encourage domestic-led growth.

Topics for Future Research

We consider this study as a crucial first step in conducting a full study of the relationship between international migration and economic development. As such, there is still so much work to be done, both in its theoretical and empirical aspects. Here, we identify three relevant issues in which future research studies can be undertaken.

First, in most of our analysis, distinction between skilled and

unskilled workers was advertently omitted. In reality, however, the determinants of migration and the migrants' contribution to economic development will also depend on the amount of human capital embodied in them. In our future analysis, we can therefore put into consideration the classification of workers as skilled or unskilled, and explore issues such as "brain drain" and "brain waste" or deskilling of laborers.

Second, we can also look into the intertemporal and long-run impact of international migration in the sending country. For example, we can compare the spending and savings behavior of remittance recipients in two different years and look at the dynamic changes in them, and then relate them to their contribution or impact on the economy at the aggregate and sectoral levels. We may also get interesting results by looking into the effect of actual remittances on income distribution using panel data. At present, however, the inavailability of longitudinal data in the source country imposes great limitations in conducting research studies in these aspects of international migration.

Finally, here, we have dealt mostly with the one-way analysis of the direct impact of international migration on economic development or *vice versa*. However, it is also relevant to look deeper into the interdependent relationship between international remittances and economic growth, theoretically and empirically, by constructing a model (system of equations) representing all sectors of the economy of the sending country, including an international migration sector.