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Measuring the Income Effects of Migrant Remittances: A Methodological Approach Applied to Greece*

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I. Introduction

There is an ongoing debate on how the often voluminous migrant remittances are used and to what extent they contribute to the development of the migrant's country of origin. There are surveys on how remittance recipients spend their income and discussions on how effective government policies are in attracting remittances. In fact, there is quite a literature, often negative, concerning the contribution of remittances to productive investment.

This literature looks at remittances in a variety of ways. Concerning the substance of the inquiry, some of the writers investigate the impact of remittances as a compensating factor for the losses of the human capital invested in emigrants or, in a more general way, as a parameter in the overall impact of migration.¹ Others discuss the impact of remittances alone, separated from the impact of migration flows.²

From a methodological point of view, some of the theoretical analyses are cast in macroeconomic terms and are based on a traded-nontraded goods model, in which labor is exchanged for remittances, whereas capital is immobile.³ Other writers examine the welfare effects of remittances alone or jointly with the effects of migration.⁴

Most of this literature, however, focuses on the first round of remittance spending and ignores the diffused multiple effects, thus producing inconclusive evidence on the impact of remittances on the economy.⁵ There is, in particular, little specific research on how aggregate output and employment are affected, and very limited sectoral and regional investigation of the issue.⁶

This article attempts a disaggregated sectoral analysis of the income effects of remittances on consumption, production, imports, em-

ployment, and capital formation.⁷ The impact of remittances on the consumption pattern in localities with heavy migration is also selectively investigated.

The analysis concerns itself first with an assessment of the spending behavior and the standard of living of individual remittance recipients and, then, with the local and aggregate effects of individual spending.⁸

Overall, during the period 1960–87, migrant remittances summed to about \$17.5 billion, covering, in the 1960s, about one-third of Greece's trade deficit but much less in later years. In 1971 alone, which is the reference year of the analysis here, remittances amounted to \$470 million, equal to 14,090 million drachmas. Preceded by a decade of very high emigration—800,000 persons, that is, 9.5% of the 1971 Greek population—and followed by a period of declining emigration and rising repatriation, 1971 is an appropriate year for a summary account of migration effects.⁹ Fortunately, enough relevant data from sources such as the population census, the household survey, and the input-output table as well as regional data were available for this migration period.

II. Methodology and Assumptions

Measuring the impact of migrant remittances beyond the first round of spending, in the depth depicted in figure 1, would be a very complex and formidable task, especially if some disaggregated sectoral analysis is attempted. To overcome these difficulties, some have suggested an informal case-by-case approach.¹⁰ One of the proposed possibilities is to conduct a statistical survey for obtaining the pattern of expenditure of remittance recipients, inserting these data into an input-output table, and then estimating the diffused direct and indirect effects on production and employment by industry.¹¹ In this article I proceed partly in this spirit.

The tool kit of this analysis contains one Greek household survey, two input-output tables of Greece, a matrix converting the pattern of consumer expenditures into a structure of industry final demand, and, finally, the labor/output and capital/output ratios by industry. Given the difficulties noted, the handling of the analysis requires considerable simplifications for quantifying the effects of remittances on the various sectors of the economy. Such simplifications concern mainly the assessment of pre- and postmigration income and the consumption patterns of remittance recipients, number of recipients, their spending behavior vis-à-vis that of their neighbors, and its impact on the neighbors' attitudes toward consumption.

To deal with these problems, the pertinent questions of who emigrates, with what occupation, and from which neighborhood must first be answered. Certainly, the probability to emigrate would be higher

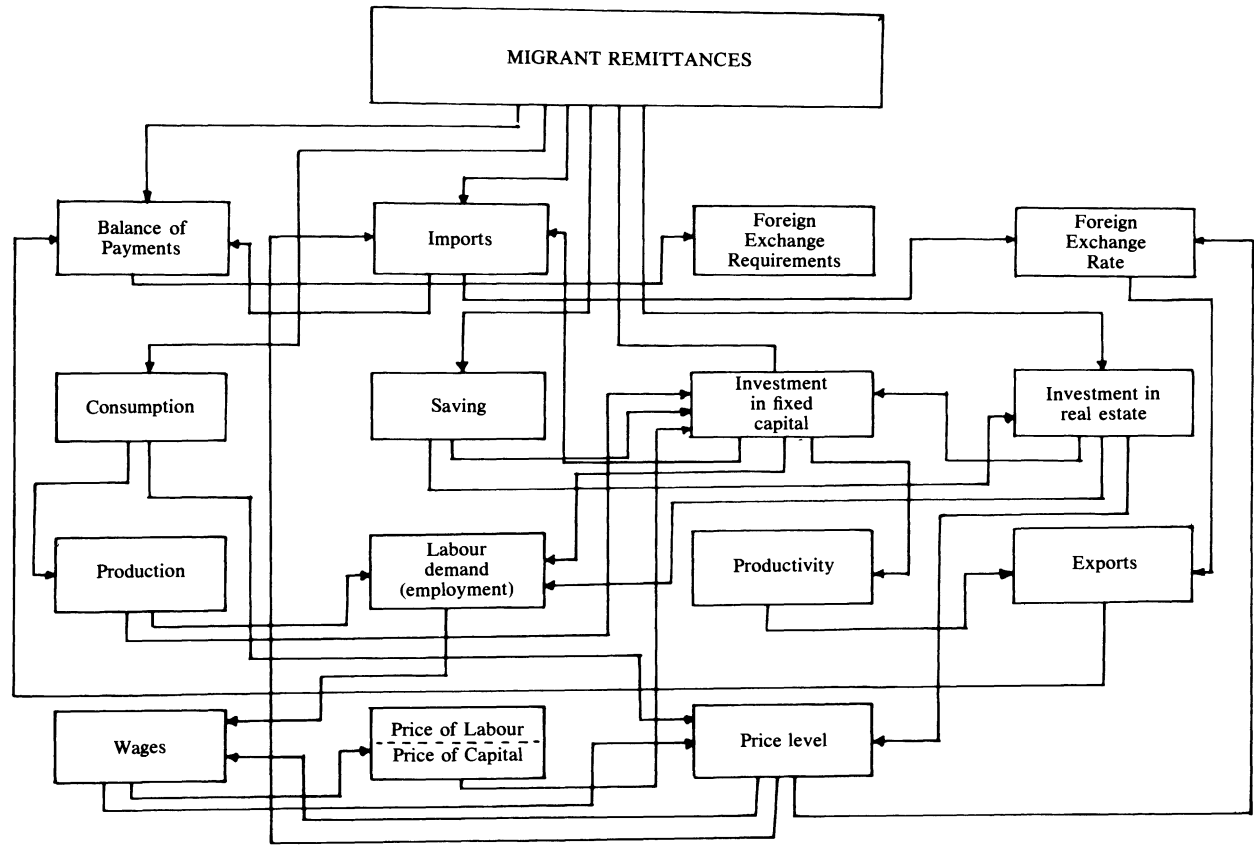


FIG. 1.—Potential chain impact of migrant remittances on the Greek economy

for members of larger families, for members of families with more economically nonactive persons, and for members of families with more unemployed.¹²

But apart from these family characteristics, the potential emigrant's occupation has a strong bearing on premigration income. Under given macroeconomic conditions, occupation determines the relative position of a potential migrant in the labor market and his or her ability to compete for desirable jobs and good earnings.

Finally, the community environment, and the relative economic and social status of a potential migrant family in it, exercises considerable influence on the migrant's income, the decision to emigrate, and the remittances to be sent to those left behind.¹³ More specifically, the macroeconomic conditions of the community affect premigration income through the job and income opportunities offered to workers and families in different occupations (economic effect). These conditions can also affect postmigration income by commanding a social minimum amount of remittances, high enough to enable the family to catch up with neighbors, so that the decision to emigrate is justified and the social status of the migrant family in the community is elevated (social effect).¹⁴

So much for the factors that influence migrants and their remitting behavior. But can remittances change the consuming behavior of migrant families? There are diverging views on this. According to one view, the dissemination of information regarding foreign consumption patterns may induce spending on imported consumer durables.¹⁵ In contrast, others suggest that since remittance recipients are poor, they spend their additional income on basic domestic goods or on housing.¹⁶ Still others claim that part of the remittances may be consumed in the form of leisure, which, if it is substantial, may have some negative effects on agricultural production.¹⁷

Finally, the question of whether the pattern of consumption of migrant families has some influence on the pattern of consumption of nonmigrant families is also raised.¹⁸ Some evidence for this points out that, except for spending on real estate and consumer durables, consumption patterns of migrant and nonmigrant families are not very different.¹⁹ In fact, under certain conditions, and especially in small countries or local areas with high migration, nonmigrant families may benefit from remittances.²⁰ One wonders whether there is, in such circumstances, some psychological drive pushing remittance recipients and others toward more urbanized consumption patterns and lifestyles, which became affordable with migration incomes.

Empirical analysis in Mexico found that the spending behavior of migrant families has a bearing on the family distribution of income in villages where remittances are a very high part of the income of the recipients.²¹ In the case of rural areas in Greece, migrant remittances

are indeed claimed to be an important means for emulating urban consumption attitudes.²² This emulation is exercised by imitating the dress, automobile-buying habits, and consumption of foreign spirits demonstrated by returning migrants.²³ Thus, farm consumption patterns converge into urban consumption patterns not so much through consumption needs but, rather, through the means of consumption.²⁴

For the purposes of this article, I assume that the average consumption pattern of the entire Greek population cannot be affected, because the consequences of the individual behavior of remittance spenders are evaporated at the aggregate level. However, in regions that have experienced heavy emigration, remittance spending may have an impact on the local population's consumption pattern, a hypothesis that is tested in this article.

III. Assessing the Income of Remittance Recipients

A. Premigration Income

It has been suggested that, although migrants may come from the less well-to-do sections of the population, they must nevertheless have the essential means to finance the cost of moving.²⁵ This permits the plausible assumption that the average income per person of a potential migrant family within a broad occupational group in a given community would be lower than the corresponding average income per employed person in that occupational group and community. How much lower will depend on the relative demographic and economic characteristics of the potential migrant family in its environment.

Setting g_{ijc} as the ratio of economically active members over all members of the i family in the broad occupational group j in community c and setting u_{ijc} as the corresponding rate of family unemployment, the average income per person of this family (Y_{ijc}^m) will be:

$$Y_{ijc}^m = g_{ijc} (1 - u_{ijc}) Y_{jc}, \quad (1)$$

where Y_{jc} = the average income per employed person within the j occupational group and the c community.

This expression takes care of the responsibility for family dependents and the family unemployed in formulating the average premigration income on which the decision to emigrate and the flow of remittances depend.²⁶ The lower the value of $g_{ijc}(1 - u_{ijc})$ is, the higher would be the probability that such a family will send some of its members abroad.

But for lack of statistical data on individual families, potential migrants will be identified at a more aggregated level by occupational and community characteristics in equation (1), dropping subscript i

from the variables and grouping, in effect, family structures (g) and family employment ($1 - u$) accordingly. In other words,

$$g_{jc} = g_{ijc} \text{ and } u_{jc} = u_{jc}, \quad (2)$$

where g_{jc} , u_{jc} = respectively, the ratio of economically active to total family members and the unemployment rate of the j occupational group in c community.

Substituting from (2) into (1), the average premigration income of potential remittance recipients (Y_{jc}^m) by occupational group and community is obtained as:

$$Y_{jc}^m = g_{jc} (1 - u_{jc}) Y_{jc}, \quad (3)$$

by occupational group across communities as

$$Y_j^m = \sum_c m_{jc} Y_{jc}^m, \quad (4)$$

and the national average across occupational groups as

$$Y^m = \sum_j m_j Y_j^m, \quad (5)$$

where $m_{jc} = M_{jc}/M_j$ = the share of migrants from j occupational group of c community in total national migration from j occupational group; and $m_j = M_j/M$ = the share of migrants from j occupational group in total national migration, and

$$\sum_c m_{jc} = 1 \text{ and } \sum_j m_j = 1.$$

To conclude, there is a community effect on premigration income by occupational group, expressed by (4), and an occupational effect on average national premigration income, expressed by (5).

B. Remittances

For the purpose of estimating remittances per recipient, I assume that the flow of remittances depends jointly on the capacity of the migrant to remit to the family left behind (supply) and on the claim of the family on the income of their emigrated members (demand).²⁷ Supply is constrained by the migrant's saving target—assuming he is a temporary migrant, as the majority of the Greek migrants in Europe were—and demand is enhanced by the “needs” of the family in Greece.

Two kinds of needs, already hinted at, are the driving force for remittance demand, a livelihood need and a social need. The higher (lower) the livelihood need (i.e., the basics of subsistence), the lower (higher) is the premigration level of income (Y_{jc}^m). And the higher (lower) the social need (often generated by the desire or necessity to catch up with neighbors) the higher (lower) is the difference ($Y_{jc} - Y_{jc}^m$) between recipient's and neighbors' income.

Thus, the minimum amount of required ex ante remittances (R_{jc}^{\min}) for migration to be justified should be equal to

$$R_{jc}^{\min} = Y_{jc} - Y_{jc}^m. \quad (6)$$

Ex post, however, this minimum remittance requirement may or may not be forthcoming, depending on the actual capacity of the migrant to remit per unit of his relatives' income. That is,

$$r_{jc} = \frac{R_{jc}^m}{Y_{jc}^m}, \quad (7)$$

where R_{jc}^m = remittances per migrant belonging, before migration, to j occupational group and coming from the c community.

The ratio r_{jc} is a coefficient of adjustment of the ex ante expectations to ex post reality, giving actual remittances per recipient (R_{jc}^r) as

$$R_{jc}^r = r_{jc} (Y_{jc} - Y_{jc}^m). \quad (8)$$

According to whether

$$r_{jc} > 1, r_{jc} = 1, r_{jc} < 1, \quad (9)$$

remittances per migrant are more than enough, just enough, or less than enough to satisfy the minimum sine qua non social need for remittances per recipient. On the other hand, any amount of R_{jc}^m contributes to the satisfaction of the livelihood need by raising the recipient's standard of living.

Aggregating analogously, occupational figures of average remittances per migrant (R_j^m) and per recipient (R_j^r) are obtained as

$$R_j^m = \sum_c m_{jc} R_{jc}^m, \quad (10)$$

$$R_j^r = \sum_c m_{jc} R_{jc}^r, \quad (11)$$

and national figures as

$$R^m = \sum_j m_j R_j^m, \quad (12)$$

$$R^r = \sum_j m_j R_j^r. \quad (13)$$

Respective numbers of remittance recipients are calculated with

$$Z_{jc} = \frac{R_{jc}^m}{R_{jc}^r}, \quad (14)$$

$$Z_j = \sum_c Z_{jc}, \quad (15)$$

where R_{jc} = amount of remittances received by families in j occupational group and c community.

C. Postmigration Income

Adding premigration income and remittances per recipient according to our occupational and community distinctions, corresponding figures of postmigration incomes are obtained as follows:

$$Y_{jc}^r = Y_{jc}^m + R_{jc}^r, \quad (16)$$

$$Y_j^r = \sum_c m_{jc} (Y_{jc}^m + R_{jc}^r), \quad (17)$$

$$Y^r = \sum_j m_j Y_j^r. \quad (18)$$

D. Data

A detailed account of the compilation of the data used in this article is found in Appendix A. Some of these data are presented in the tables of the text and others in the tables of Appendix B.

The evidence on the 1961–70 emigration (800,000 persons) clearly indicates the presence of a considerable number of dependent family members and of remittance recipients. This is manifested in the fact that 84.3% of emigrants were in the 15–44 age brackets, 49.5% were married, and 58.5% were economically active. Finally, the fact that 60.1% of emigrants moved to Germany is an indication of the predominantly temporary character of migration (table B1 in App. B).

Concerning the occupational structure of migrants, two broad occupational groups—namely, farmers and farm workers (for reference called “farmers”) and craftsmen, production-process workers, miners, and workers in transport and communications as well as simple laborers (called, collectively, “nonfarm workers”)—constitute, respectively, 36% and 52% of the 1961–70 sum of migrants. The remaining 12%—including 2% of professional and administrative workers (called “other”)—complete the picture.

Our regional data permit the identification of 51 communities and, thence, 51 individual groups of potential migrant families by occupational category, reflecting the average family and employment characteristics of the 51 geographic departments of Greece. This connection between the characteristics of regions and of migrants is supported by empirical evidence.²⁸

Consequently, the family and occupational conditions of farmers and nonfarm workers, as defined, and their relative economic and social position in their communities would prevail in identifying potential emigrant families and in determining their pre- and postmigration income (App. A and table B2). The more concise community-weighted estimates by occupational group presented in table 1 show that the income per person of a migrant family before remittances was, on average for the three occupational groups, 38% of the weighted income per employed person, 24% of the income per employed person in Greece, and 58% of the per capita GNP. Farmers have a relatively higher proportion (41%) and nonfarm workers a relatively lower proportion (33%) of the weighted group average. These two major groups of recipients receive remittances exceeding by about one-third their premigration income, and the small group of other recipients receive a much lower amount.

IV. Empirical Model for the Impact of Remittances

Under the previous assumption of uniform consumer behavior of migrant and nonmigrant families, the premigration level of consumption per person of migrant family within the j occupational group ($C_j^{m\phi}$) is given by

$$C_j^{m\phi} = (1 - s) Y_j^m, \quad (19)$$

and the postmigration level ($C_j^{r\phi}$) is given by

$$C_j^{r\phi} = (1 - s) Y_j^m + (1 - q) R_j^r, \quad (20)$$

where s = average propensity to save out of premigration income, assumed to be equal for all occupational groups; q = the proportion

TABLE 1
INCOMES AND REMITTANCES (in Drachmas) PER RECIPIENT BY OCCUPATIONAL GROUP, 1971

Occupational Groups	Sum of Emigrants 1961-70 (M_j) (1)	Income per Employed in Greece (Y_j) (2)	Premigration Income per Remittance Recipient (Y_j^m) (3)	Remittances per Migrant (R_j^m) (4)	Remittances per Recipient (R_j^r) (5)	Number of Remittance Recipients (Z_j) (6)	Postmigration Income per Recipient (Y_j^p) (7)	Ratio of Remittance Recipients over Migrants (Z_j/M_j) (8)
Farmers	352,800	37,900	17,500	20,840	23,300	315,600	40,800	.89
Nonfarm workers	354,700	61,200	20,200	15,560	26,500	208,200	46,700	.59
Other Workers	81,400	67,900	27,400	15,000	21,800	56,000	49,200	.69
All Occupations	788,900	51,500*	19,700	17,860	24,300	579,800	44,000	.73

SOURCES.—Calculated from M. Papadakis, "Greece: Migration Statistics, 1955-1977" (KEPE, Athens, 1981); E. Voloudakis and E. Panourgias, "An Estimate of the Regional Distribution of National Income, 1961, 1971," in *The Greek Economy*, ed. Bank of Greece (Athens: Bank of Greece, 1980) (in Greek); National Statistical Service of Greece (NSSG), *Census of Population, 1971* (Athens: NSSG, 1977), and *Household Survey of Greece 1974* (Athens: NSSG, 1977); app. A; table B2.

* Weighted average of the three occupational groups. The overall income per employed in Greece was about Dr 81,000, and the per capita GNP Dr 33,677.

of remittances per recipient spent on nonconsumption goods; and ϕ = the expenditure bracket in which C_j^m and C_j^r fall. The pre- and postmigration patterns of consumption are correspondingly obtained by interpolation from the household survey, as described in Appendix C.

The aggregate consumption expenditure by item h , that is, R_h^c , is obtained from the individual remittance expenditure as

$$R_h^c = \sum_j \zeta_j R_{jh}, \tag{21}$$

where

$$\zeta_j = \frac{Z_j}{\sum_j Z_j} \text{ and } R_{jh} = C_{jh}^{r\phi} - C_{jh}^{m\phi}. \tag{22}$$

To introduce this consumption in the form of final demand in the input-output table, R_h^c must be distributed to the industries of the table by a relevant conversion matrix using the formula:

$$C_v^r = \sum_h b_{vh} R_h^c, \tag{23}$$

where C_v^r = consumption expenditure (final demand) for v industry, and b_{vh} = conversion matrix coefficient of v industry and h consumption item, with some $b_{vh} = 0$.

Remittances spent on nonconsumption goods by industry (I_v^r) are added at this stage to obtain total final demand (D_v^r):

$$D_v^r = C_v^r + I_v^r. \tag{24}$$

Inserting D_v^r in the input-output table, we get, along the μ row vector, the production of the μ industry (X_μ) induced by the first round of remittance spending in each v industry. That is,

$$X_\mu = \sum_v d_{\mu v} D_v^r. \tag{25}$$

We also get, down the v column vector, the production from each μ industry used in a single v industry as a result of spending in the v industry. That is,

$$X_v = \sum_\mu d_{\mu v} D_v^r, \tag{26}$$

where X_μ = production (output) of the μ industry, X_ν = inputs in ν industry from other industries, and $d_{\mu\nu}$ = inverse matrix coefficient of the μ row and the ν column of the input-output table and

$$\sum_{\mu} X_{\mu} = \sum_{\nu} X_{\nu}.$$

The imports (V_μ) contained in X_μ can be extracted by using an import content coefficient (γ_μ), so that

$$V_{\mu} = \gamma_{\mu} X_{\mu}. \quad (27)$$

The employment created by remittances is estimated by applying industry labor/output ratios $(L/O)_\mu$ to gross output (X_μ), an approach proposed also by other authors.²⁹ That is,

$$L_{\mu} = (L/O)_{\mu} X_{\mu}. \quad (28)$$

Capital formation is also estimated in a way similar to employment, by applying industry capital/output ratios $(K/O)_\mu$ to gross production:

$$K_{\mu} = (K/O)_{\mu} X_{\mu}. \quad (29)$$

V. Evidence and Data Used in the Model

The prevailing view in the literature is that the marginal propensity to consume out of remittances is generally very high.³⁰ This evidence comes from analytical studies and statistical surveys, referring to international migration and to rural-urban labor movements alike. This, and the fact that a high proportion of migrant earnings goes for the support of the family members at home, has motivated a number of authors to view remittances entirely as consumption expenditure.³¹

However, some studies and surveys find no difference in the propensity to consume between comparable levels of incomes from remittances and from other sources.³² Also, a considerable proportion of remittances are found to be spent on housing, land, and machinery.³³

In the case of Greece, most remittances are spent on consumption but a substantial part goes into housing and a moderate amount into investment.³⁴ This evidence is supported by a survey conducted in Germany on the spending intentions of returning Greek migrants and is complemented by some macroeconomic data of remittance spending on housing. The evidence from these two entirely different sources, jointly evaluated in Appendix A, indicates that 62.6% of remittances are spent on consumption, 22.3% on housing, 3.5% on machinery,

4.0% on investment in trade, 0.4% on investment (nonmachinery) in agriculture, and 7.2% on the purchase of agricultural land. Notice that, by sheer coincidence, my calculated proportions on consumption and housing are almost identical with I. Gilani, M. F. Khan, and M. Igbal's figures for Pakistan (62% and 22%, respectively).³⁵ Based on this evidence, the 1971 flow of remittances, amounting to 14,090 million drachmas, are disposed of as presented in table 2.

To answer the question posed earlier in this article whether remittances are a driving force for a more urbanized pattern of consumption in localities with heavy migration, I chose for testing the geographic department of Florina in northern Greece. Florina has experienced the highest population exodus in Greece. From 1961 to 1970, 41.4% of its population, of which 61.7% were farmers, emigrated to foreign countries. Florina is, in fact, farm country, with 71.3% of its population living in rural areas and 64.4% working in agriculture (table B3).

In 1971 remittances in Florina represented 48.9% of private output and were received by about one-third of the population. Remittances made up 62.4% of the income of recipients and 32.5% of the income of the population as a whole.

For empirical estimates, I use the 1974 household survey of Greece, the 1971 Greek input-output table, and a consumption-industry conversion matrix contained in a study on the intersectoral impact of public expenditure.³⁶ The import content coefficients are taken from a 1970 input-output table.³⁷ Finally, capital in the *K/O* ratio refers to installed horse power capacity in manufacturing.

VI. Empirical Results

A. Individual Effects

Individual consumption patterns of recipients, before and after remittances, are obtained separately for farmers, nonfarm workers, and other workers in 1971 through equations (19) and (20) and Appendix

TABLE 2
COMPOSITION OF REMITTANCE SPENDING, 1971 (in Million Drachmas)

Remittance Expenditure On	Amount	Percentage
Consumption	8,822	62.6
Investment	4,253	30.2
Housing	3,140	22.3
Machinery	498	3.5
Trade	557	4.0
Agriculture	58	.4
Land	1,015	7.2
Total	14,090	100.0

SOURCE.—See App. A.

C.³⁸ The relevant figures are presented in table 3 and figure 2. According to these findings, remittances just about double the overall consumption expenditure of farmers, fall short of doubling it for nonfarm workers, and raise it by a little over half for other workers, giving an overall increase of about 91%.

Top priority spending for farmers and nonfarm workers alike is recreation, with a common increase of expenditure by 225%, whereas top priority for other recipients is transportation, with an expenditure increase of 114%. Although education comes first for all occupations combined, with remittances raising expenditure by 226.3%, it is a second priority for nonfarm workers, and it is seventh for farmers, whose second priority is apparel and footwear. Nonfarm workers and other workers increase considerably their consumption of durables. At the other end of the spectrum, all three groups of recipients raise relatively moderately (19%–61%) their after-remittances expenditures on heating and lighting and on beverages and tobacco.

B. Local Effects

The same procedure as for individual effects is applied to the relevant data of Florina, with the exception that there is no distinction among occupational groups, as it is not necessary for our purposes here. The aim is to test the move toward more urbanized consumption patterns, not only of remittance recipients but also of the whole population of the department. Therefore, incomes per recipient and per capita of the population, without and with remittances, are compared with the average rural, semi-urban, and urban consumption patterns, as given by the corresponding household surveys.³⁹

These calculations (table 4) show that remittances have raised the standard of living of recipients in Florina from a level equal to 72% of the average level of expenditures in rural areas of Greece to a level exceeding it by 60%, overshooting even the average standard of living in semi-urban areas.

Postremittance expenditures on all items of consumption, except health and personal care, surpass corresponding average expenditures in rural areas, and in some cases—communications, recreation, and education—they more than double. For most items, the after-remittances expenditures have, in fact, exceeded the average of semi-urban areas of Greece. And, in five cases in particular, including beverages, apparel and footwear, and durables (which, as noted above, are means for emulating urbanized standards of living), expenditures with remittances actually surpass the average for urban areas.

But apart from recipients, the whole population of Florina has also benefited from remittances. Their standard of living was raised from a level equal to 81% of the average for rural areas to a level just passing it. In nine items, including current household expenses,

TABLE 3
MONTHLY CONSUMPTION EXPENDITURE (in Drachmas) PER REMITTANCE RECIPIENT BY OCCUPATIONAL GROUP,
WITHOUT AND WITH REMITTANCES, IN GREECE, 1971

CONSUMPTION CATEGORY	FARMERS			NONFARM WORKERS			OTHER WORKERS			ALL OCCUPATIONS		
	Without Remittances	With Remittances	Increase (%)	Without Remittances	With Remittances	Increase (%)	Without Remittances	With Remittances	Increase (%)	Without Remittances	With Remittances	Increase (%)
Food	575	941	63.6	676	1,085	60.5	838	1,147	36.9	665	1,050	57.9
Beverages	44	71	61.4	33	48	45.4	39	52	33.3	33	46	39.4
Tobacco	65	87	33.8	66	94	42.4	80	98	22.5	65	93	43.1
Apparel and footware	130	398	206.1	120	359	119.2	203	418	105.9	114	326	186.0
Rent and water	33	92	178.8	89	214	140.4	142	230	62.0	86	205	138.4
Heating and lighting	88	109	23.9	114	144	26.3	125	149	19.2	113	141	24.8
Durable consumer goods	62	172	177.4	56	170	203.6	93	196	110.7	53	155	192.4
Current household expenses	57	123	115.8	34	66	94.1	45	72	60.0	33	62	87.9
Health and personal care	35	68	94.3	62	135	117.7	87	149	71.3	60	127	111.7
Transportation	51	138	170.6	64	186	190.6	100	214	114.0	62	170	174.2
Communications	11	26	136.4	19	44	131.6	26	50	92.3	19	41	115.8
Recreation	28	91	225.0	36	117	225.0	68	132	94.1	34	108	217.6
Education	15	35	133.3	21	66	214.3	40	72	80.0	19	62	226.3
Miscellaneous services	46	104	126.1	41	85	107.3	55	99	80.0	39	77	97.4
Total	1,240	2,455	98.0	1,431	2,813	96.6	1,941	3,078	58.6	1,395	2,663	90.9

SOURCES.—Calculated from tables B4, B5, 1, and 2.

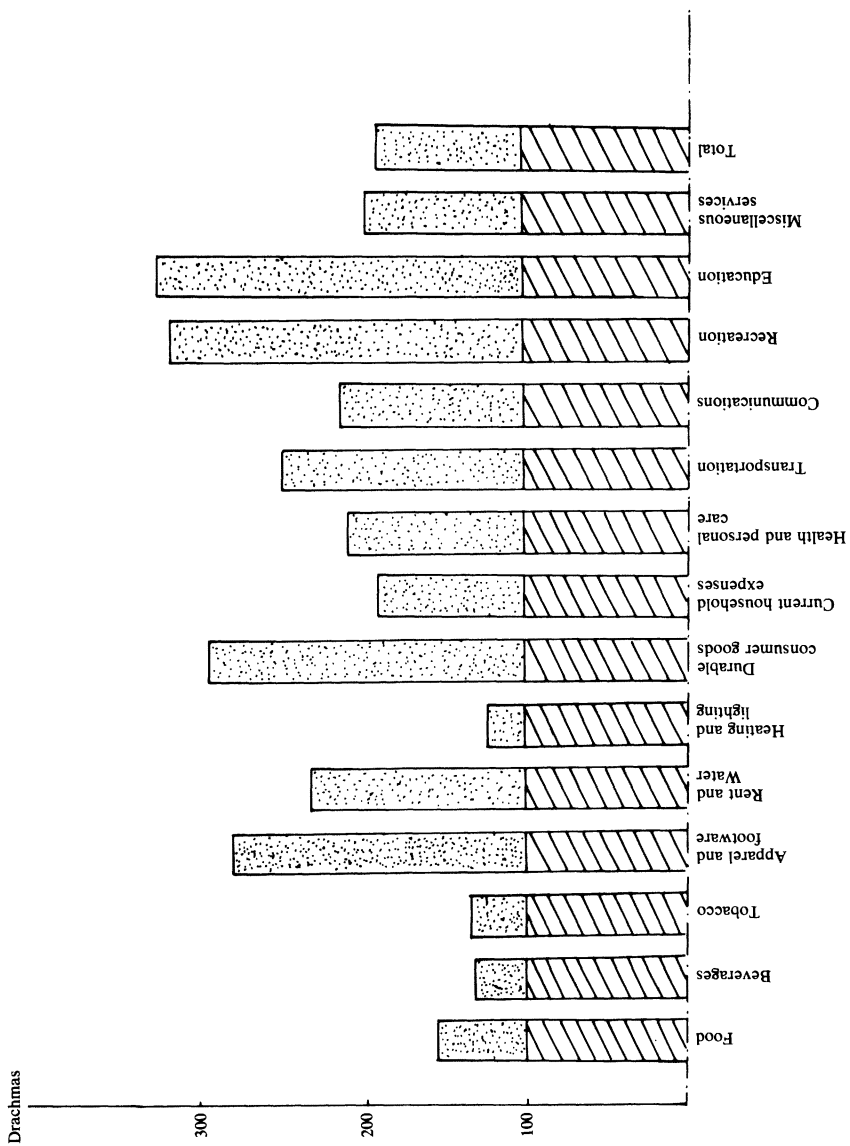


FIG. 2.—Monthly consumption expenditure per remittance recipient before and after remittances (expenditure before remittances = 100).

TABLE 4

MONTHLY CONSUMPTION EXPENDITURE (in Drachmas) PER REMITTANCE RECIPIENT AND PER CAPITA OF POPULATION,
WITHOUT AND WITH REMITTANCES IN FLORINA, 1971

CONSUMPTION CATEGORY	RECIPIENTS						POPULATION					
	Without Remittances			With Remittances			Without Remittances			With Remittances		
	Florina, Rural Areas	Florina, Semi-urban Areas	Florina, Urban Areas	Without Remittances	With Remittances	Ratios	Without Remittances	With Remittances	Ratios	Without Remittances	With Remittances	Ratios
Food	607	1,059	.86	1.50	1.13	.89	653	860	.93	1.22	.92	
Beverages	47	78	.85	1.42	1.53	1.95	50	63	.91	1.14	1.23	
Tobacco	66	92	.95	1.31	1.18	.96	68	80	.97	1.14	1.03	
Apparel and footwear	159	524	.56	1.85	1.61	1.31	201	292	.71	1.03	.90	
Rent and water	37	152	.32	1.32	1.00	.50	43	73	.37	.63	.48	
Heating and lighting	91	117	1.03	1.32	.94	.71	93	102	1.05	1.16	.82	
Durable consumer goods	71	234	.53	1.76	1.08	1.14	85	124	.64	.93	.57	
Current household expenses	63	160	1.66	4.21	2.96	1.78	72	96	1.89	2.53	1.78	
Health and personal care	38	84	.43	.95	.69	.51	43	60	.49	.68	.50	
Transportation	56	185	.43	1.43	.87	.52	62	111	.48	.86	.52	
Communications	11	32	.85	2.46	1.00	.60	12	20	.92	1.54	.62	
Recreation	37	115	1.06	2.09	1.16	.67	49	73	.89	1.33	.74	
Education	18	43	.90	2.15	.93	.46	23	29	1.15	1.45	.63	
Miscellaneous services	53	134	.64	1.61	1.74	1.47	64	73	.77	.88	.95	
Total	1,354	3,009	.72	1.60	1.19	.88	1,518	2,056	.81	1.10	.82	

SOURCES.—National Statistical Service of Greece (NSSG), *Household Survey, 1974* (Athens: NSSG, 1977) (rural areas); tables B3, B4, and B5.

communications, and education, the after-remittance expenditures well exceeded the average of rural areas, whereas in three cases, namely, beverages, tobacco, and household expenses, they exceeded the average of semi-urban areas.

In conclusion, these findings appear to affirm that the consumer behavior of people, in localities highly exposed to migration movements, could be affected by the spending habits of returning migrants and their relatives, driving them to more urbanized patterns of consumption.

C. Macroeconomic Effects

Despite the vast increase in individual consumption expenditures brought about by remittances, their share in aggregate consumption is only 3% (table 5). Relatively higher are the shares in education, apparel and footwear, communications, and recreation, ranging between 3.8% and 4.4%. It is clear thus that, dispersed in the economy at large, individual spending affects rather thinly aggregate consumption expenditure.

Inserting the consumption and nonconsumption expenditures by industry as final demand in the 35×35 Greek input-output table, the overall impact of remittances on production by industry is obtained

TABLE 5
AGGREGATE CONSUMPTION EXPENDITURE FROM REMITTANCES AND TOTAL CONSUMPTION EXPENDITURE IN GREECE, 1971 (in Million Drachmas)

Consumption Category	Consumption from Remittances (1)	Total Consumption Expenditure (2)	Proportion (%) (3)
Food	2,679	105,698	2.5
Beverages	90	4,818	1.9
Tobacco	195	9,005	2.2
Apparel and footwear	1,475	37,211	4.0
Rent and water	828	23,850	3.5
Heating and lighting	195	14,234	1.4
Durable consumer goods	710	19,168	3.7
Current household expenses	202	7,312	2.8
Health and personal care	466	14,108	3.3
Transportation	751	27,826	2.7
Communications	153	4,008	3.8
Recreation	515	13,245	3.9
Education	299	6,849	4.4
Miscellaneous services	264	9,132	2.9
Total	8,822	296,464	3.0

SOURCES.—Tables B5 and 3.

NOTE.—Column 1 is obtained by multiplying individual monthly expenditure of remittances by 12 and by 579,800, which is the number of remittance recipients. Col. 3 = (col. 1:col. 2) \times 100.

with equations (25) and (26). Then, based on this production, equations (27)–(29) give, respectively, the imports, employment, and capital formation generated by remittances. These findings are presented in table 6.

The analytical results show that spending about Dr 14 billion of migrant remittances generates Dr 24 billion worth of gross output—equal to 4.1% of total gross production in the economy—giving a multiplier of 1.7. In nearly one-third of the industries, the multiplier is over 2.0, with highest values of 2.6–2.7 in apparel and footwear, leather, and electrical machinery industries. A multiplier below 1.3 appears in the service industries at the bottom of table 6. In construction, which is affected by the demand for housing, the multiplier is 2.0.

Only a rather small number of industries is affected strongly by remittance spending. Seven of them—agriculture, food, textiles, construction, transport, trade, and miscellaneous services—produce about 56% of total induced production. Equally high proportions are found in mining (10.2%), paper (9.1%), and machinery (16.2%). As a result of these developments, remittances have, in effect, contributed by half in the 8% real growth rate of GDP in 1971. Imports share by 12.8% in induced gross production, with food, chemicals, machinery, and electrical machinery jointly claiming 47% (machinery alone 18.7%) of these imports.

The employment potentially created by remittances amounted to about 74,000 new jobs in the nonagricultural sector of the economy, excluding public services.⁴⁰ These jobs represent 4.7% of the 1971 corresponding level of employment. Higher proportions of employment were created in mining (10.3%), manufacturing (5.2%), construction (4.7%), trade (4.4%), and services (4.2%). In manufacturing industries, the addition to employment was relatively high in machinery (16.2%)—in which 3.5% of remittances are spent—in paper (9.1%), and in metallurgy (7.5%). Strong generators of employment, with a contribution of 58% to new job creation, are apparel and footwear, construction, transportation, trade, and other services.

The capital generated by remittances, expressed in horsepower capacity, equals 8% of the installed capacity in manufacturing.⁴¹ Relatively higher proportions are observed in machinery (25.3%), oil (15.5%), apparel and footwear (12.5%), and the paper industry (1.8%). All other industries are around or below the average for manufacturing.

Focusing on the effects of spending on consumption in general and on investment, the findings of this study give similar production multipliers of 1.8 and 1.9, respectively (table 7). What is perhaps of particular interest is that, contrary to popular opinion, expenditure on housing is very productive, with a multiplier of 2.0, which is actually much higher than the multiplier of spending on machinery (1.7).

With the first round of spending, the production induced by the demand for consumption goods consists of only 2.9% of investment

TABLE 6

ORIGINAL (First-Round) SPENDING OF REMITTANCES AND THEIR DIFFUSED (Indirect) EFFECTS IN THE GREEK ECONOMY, 1971
(Values in Million Drachmas)

INDUSTRY	REMITTANCES SPENT IN EACH INDUSTRY (1)	INPUTS FROM ALL INDUSTRIES INDUCED BY REMITTANCE SPENDING IN EACH INDUSTRY (Sum of p col. [x _i] of the input-output table) (2)	MULTIPLIER (3)	GROSS PRODUCTION IN EACH INDUSTRY INDUCED BY TOTAL SPENDING OF REMITTANCES IN ALL INDUSTRIES (Sum of μ row [x _i] of the input-output table) (4)	IMPORT CONTENT IN GROSS PRODUCTION Amount (5)	% (6)	SHARE OF GROSS PRODUCTION INDUCED BY REMITTANCES TO TOTAL GROSS PRODUCTION BY INDUSTRY (%) (7)	JOBS CREATED BY REMITTANCES, 1971 (in persons)* (8)	PROPORTION OF JOBS CREATED BY REMITTANCES IN TOTAL LEVEL OF EMPLOYMENT (%) (9)	PROPORTION OF CAPITAL CREATED BY REMITTANCES IN TOTAL INSTALLED CAPACITY (%) (10)
1. Agriculture	1,101.2	1,766.0	1.6	2,242.2	76.2	3.4	2.8	...	...	...
2. Mining	...	...	...	617.5	...	...	10.2	...	...	...
3. Food	966.4	2,359.0	2.4	1,369.2	273.8	20.0	2.9	10.3	...	...
4. Beverages	60.5	122.5	2.0	72.8	4.4	6.1	1.1	2.9	5.3	...
5. Tobacco	171.5	293.0	1.7	187.1	9	5	1.6	1.1	1.4	...
6. Textiles	219.2	448.2	2.0	1,349.0	85.0	6.3	5.6	1.6	4.0	...
7. Shoes	133.1	357.1	2.7	145.6	1.7	1.2	4.4	5.6	8.5	...
8. Clothing	824.1	2,133.1	2.6	849.2	12.7	1.5	4.3	4.3	...	...
9. Wood	2.9	5.0	1.7	281.9	229.5	81.4	6.3	6.3	...	...
10. Furniture	115.4	213.5	1.8	142.4	2.0	1.4	4.2	6.3	7.6	...
11. Paper	58.2	132.2	2.3	363.7	92.4	25.4	9.1	4.3	5.1	...
12. Printing	50.3	98.5	1.9	178.8	18.2	10.2	5.9	9.1	11.8	...
13. Leather	33.0	88.2	2.7	179.9	9.2	5.1	5.5	5.9	6.2	...
14. Rubber	12.3	23.3	1.9	84.6	80.8	95.5	6.5	5.4	8.3	...
15. Plastics	20.4	36.6	1.8	115.8	8.7	7.5	4.7	5.3	6.3	...
16. Chemicals	141.6	262.6	1.8	599.1	298.9	49.9	5.3	5.3	7.8	...
17. Oil	114.8	166.8	1.4	685.7	196.8	28.7	5.6	5.7	15.5	...
18. Cement	...	...	...	168.9	...	...	5.5	...	...	...
19. Glass	9.0	14.4	1.6	70.2	62.1	88.5	6.8	6.6	...	...
20. Nonmetallic minerals	6.9	11.9	1.7	335.8	229.0	68.2	7.2	...	...	...
								1.721.0	8.0	

21. Metallurgy	.1	.2	2.0	691.5	...	...	7.4	715.0	7.5	8.2
22. Metal products	61.5	131.9	2.1	544.5	91.5	16.8	5.1	2,022.0	5.1	7.3
23. Machinery	499.0†	824.4‡	1.6	667.6	566.8	84.9	16.2	3,353.0	16.2	25.3
24. Electrical machinery	192.0	464.1	2.4	632.0	288.2	45.6	5.4	1,302.0	5.5	9.1
25. Transport equipment	54.5	102.5	1.9	354.2	182.4	51.5	4.0	1,848.0	4.0	7.5
26. Other manufacturing	39.4	60.9	1.5	61.4	34.6	56.3	3.9	460.0	3.9	5.9
27. Construction	3,149.9§	6,359.5¶	2.0	3,216.8	32.2	1.0	4.6	12,022.0	4.7	...
28. Electricity	74.9	101.9	1.4	384.9	2.7	.7	4.8	1,197.0	4.8	...
29. Transportation	778.8	1,340.2	1.7	1,297.5	68.9	5.3	3.6	6,681.0	3.6	...
30. Communications	164.5	183.0	1.1	252.3	9.1	3.6	4.7	1,308.0	4.7	...
31. Trade	1,819.9#	2,754.3**	1.5	2,328.6	20.9	.9	4.4	12,294.0	4.4	...
32. Banking	75.9	100.3	1.3	586.6	...	...	5.7	1,705.0	5.7	...
33. Other services	1,086.7	1,433.4	1.3	1,490.3	40.2	2.7	4.2	7,868.0	4.2	...
34. Dwellings	797.3	964.1	1.2	797.3	...	...	3.0	...	...	...
35. Public services	239.8	239.8	1.0	247.5	4.0	1.6	.7	...	...	...
36. Land	1,015.0	...	...	...	...	...	...	...	...	...
Total	14,090.0	23,592.4	1.7	23,592.4	3,023.8	12.8	-4.1	74,182.0	4.7	8.0††

SOURCES.—National Statistical Service of Greece (NSSG), *Census of Population, 1971* (Athens: NSSG, 1977), and *Census of Industry, 1969, 1973* (Athens: NSSG, 1971, 1973); T. Skountzos and G. Mattheos, *Input-Output Tables of the Greek Economy, 1958–1977* (Athens: Centre of Planning and Economic Research [KEPE], 1980) (in Greek); N. Mylonas, *Analytical Input-Output Tables of the Greek Economy for 1970* (Athens: KEPE, 1980) (in Greek); J. Vartholomeos, *Inter-sectoral Impact of Public Expenditure*, Studies Series, no. 11 (Athens: KEPE, 1984) (in Greek); and tables 2 and 5.

NOTE.—Column 3 = column 2:column 1.

* For agriculture and public services, there is no sense in estimating job creation. In the former, employment is continuously decreasing, and in the latter, there is an excess of underutilized personnel.

† Investment in machinery: 498.0 million drachmas.

‡ Production from spending on machinery: 822.7 million drachmas.

§ Investment in housing: 3,140.0 million drachmas.

¶ Production from spending on housing: 6,339.5 million drachmas.

Investment in trade (shops): 557.0 million drachmas.

** Production from spending on trade: 843.0 million drachmas.

†† Total manufacturing.

TABLE 7
THE IMPACT OF CONSUMPTION AND INVESTMENT EXPENDITURE OF REMITTANCES ON GREEK PRODUCTION, IMPORTS, AND EMPLOYMENT, 1971
(Values in Million Drachmas)

CATEGORY OF FIRST-ROUND SPENDING OF REMITTANCES	FIRST-ROUND SPENDING OF REMITTANCES (1)	PRODUCTION (Including Imports)				IMPORTS					EMPLOYMENT	
		Gross Production (in All Industries) (2)	Multiplier (3)	Investment Goods		Total Imports		Investment Goods			Jobs Created by Remittances (11)	Jobs Created per Million Drachmas of Remittances (12)
				Amount (4)	% (5)	Amount (6)	Proportion on First Round of Spending (%) (7)	Proportion on Gross Production (%) (8)	Amount (9)	Proportion of Total Imports (10)		
Consumption	8,822	15,493	1.8	451	2.9	1,648	18.7	10.6	178	10.8	35,536	4
Investment	4,253	8,099	1.9	3,629	44.8	1,376	32.3	17.0	628	45.6	38,586	9
Housing	3,140	6,340	2.0	2,933	46.3	832	26.5	13.1	141	16.9	22,388*	7
Machinery	498	823	1.7	549	66.7	481	96.6	58.4	461	95.8	3,481†	7
Trade	557	843	1.5	147	17.4	56	10.0	6.6	26	46.4	12,717‡	23
Agriculture	58	93	1.6	0	0	7	12.1	7.5	0	0	0	0
Land	1,015	0	0	0	0	0	0	0	0	0	0	0
Total	14,090	23,592	1.7	4,080	17.3	3,024	21.5	12.8	806	26.6	74,182	5

SOURCES.—Calculated from table 6; T. Skountzos and G. Matheos, *Input-Output Tables of the Greek Economy, 1958-1977* (Athens: Center of Planning and Economic Research [KEPE], 1980) (in Greek); and N. Mylonas, *Analytical Input-Output Tables of the Greek Economy for 1970* (Athens: KEPE, 1980) (in Greek).

NOTE.—Column 3 = column 2:column 1. Column 5 = column 4:column 2. Column 7 = column 6:column 1. Column 8 = column 6:column 2. Column 10 = column 9:column 6.

* 11,774 jobs were created in construction industry.

† 2,705 jobs were created in machinery industry.

‡ 9,899 jobs were created in trade industry.

products. In contrast, the production induced by the demand for investment goods consists of 17.3% of investment products. The purchase of machinery, in particular, generates production of investment goods equal to 66.7% of induced production. Investments in housing and investment related to trade and agriculture generate corresponding investment products equal to 46.3%, 17.4%, and 0%, respectively, of induced production.

Concerning the controversial issue of remittance leakages to foreign countries, a proportion of 21.5% of remittances are found to be spent directly and indirectly on imported goods. That is, out of each dollar spent in Greece, about 22 cents go abroad, a considerable amount of which goes to the migrant host countries for buying final and intermediate goods and for machinery. This evidence corroborates the claim of the Organization of Economic Cooperation and Development (OECD) that a high proportion of remittances goes to imports, although they seem to refer only to the first round of spending.⁴² The demand for consumption goods induces imports equal to 18.7% of original spending, and the demand for investment goods induces imports equal to 32.3% of original spending. An extremely high proportion (96.6%) of imports stems from the demand for machinery, a relatively moderate proportion (26.5%) from the demand for housing, and rather low proportions from the demand for investment goods related to trade (10.0%) and to agriculture (12.1%).

Imports make up 10.6% of the production induced by demand for consumption goods and 17.0% of the production induced by demand for investment goods. Purchase of machinery brings imports equal to 58.4% of induced production and investment in housing brings imports equal to 13.1% of induced production. The corresponding figures for trade and agriculture are much lower.

Investment goods make up 26.6% of imports, and consumption goods 73.4%. Of the imports that are induced by the demand for consumption goods, 10.8% are investment goods; and of the imports induced by the demand for investment goods, 45.6% are capital goods. An extremely high content (95.8%) of capital goods have imports due to the demand for machinery, a relatively high content (46.4%) due to the demand for investment goods related to trade, and a relatively low content (16.9%) is induced by the demand for housing.

The employment-generating capacity is highest in the case of demand for investment goods related to the trade industry, referring to the opening of small mostly touristic shops by returning migrants. Each million drachmas spent on establishing such shops creates about 23 jobs. Much lower is the job capacity creation in housing and machinery, with seven jobs each per million drachmas of expenditure. Overall, remittances spent on investment goods generate about twice as many jobs as remittances spent on consumption (nine and four jobs, respectively, per million drachmas of remittances).

It appears, thus, that the findings clearly demonstrate the fallacy of the assumption that first-round spending of remittances on noninvestment goods—consumption and housing—does not constitute productive spending. On the contrary, spending even on final consumer goods has a considerable impact on industries producing investment goods, whereas investment in housing is very productive and keeps the multiplier benefits well within the domestic economy. Investment (machinery) spending, on the other hand, which is generally considered to be productive, turns a substantial part of the benefits over to foreign countries through the purchase of imported goods.

It must be pointed out, however, that despite the rather high proportions of imports induced by remittances, these imports represent only 4.9% of Greece's total imports. Therefore, the macroeconomic consequences of remittance leakages to imports should not be serious for the trade deficit. This rather moderate aggregate effect on imports seems to conform to the experience of other countries.⁴³

These findings also demonstrate that the impact of remittances on employment and capital formation is not negligible. This evidence challenges the claims that remittances do not create employment opportunities⁴⁴ and that they do not contribute to capital formation because they are spent on imports and on investment in housing.⁴⁵

VII. Concluding Remarks

This article proposes a methodology for a comprehensive empirical analysis of the impact of migrant remittances on the migrant source country. Probing below the surface of the first round effects of spending, the purpose of this methodology is to test various often contradictory views and popular convictions as to the pros and cons of the effect remittances have on economic development. The effort is to provide an overall picture of individual and aggregate income effects of remittances, using the case of Greece as an example.

My calculations of direct and indirect effects show considerable benefits and limited costs for the Greek economy. The individual pattern of consumption of remittance recipients improves very drastically, as does the local standard of living in areas of heavy migration, as the recipients shift to more urbanized consumption habits. At the aggregate level, remittances do not seem to have the power to impose any serious burdens on the balance of payments, despite their strong import-generating effect. On the contrary, remittances promote economic growth, employment, and capital formation.

If there are any merits in this methodology, they lie in the fact that perhaps it has captured some additional effects of remittances that other more traditional approaches, concentrating only on the first round of remittance spending, could not bring out. This is, it is hoped, an advancement enriching the relevant literature, and it may possibly

contribute to the resolution of some fallacies and false conclusions stemming from doctrinaire convictions or partial analyses.

Appendix A

Data

Regional Income per Employed by Occupational Group

Agricultural income, wages and salaries net of social security contributions, and the income of self-employed are the figures used as proxies of corresponding incomes of farmers, nonfarm workers, and other workers by geographic department. Regional incomes by department are taken from E. Voloudakis and E. Panourgias.⁴⁶ The regional employment data for the three occupational groups are taken from the 1971 *Population Census*.⁴⁷

Economically Active and Nonactive Family Members

Figures on g_{jc} are not directly available and are approximated by setting $g_{jc} = h_c g_j$, where h_c = the ratio of family size in c community over family size in the country, obtained from the 1971 *Population Census*, and g_j = the ratio of economically active to total family members in j occupational group in the country, taken from the 1974 *Household Survey*; these figures are 0.47 for farmers, 0.38 for nonfarm workers, and 0.42 for other workers.⁴⁸

Unemployment by Occupational Group

Regional unemployment rates are not available by occupation of previous employment, but they are available by three subdivisions of geographic departments—that is, rural, semi-urban, and urban areas.⁴⁹ Each of these areas has a different weight in the number of migrants from the department; that is, farmers come mostly from rural areas, and nonfarm workers are more likely to come from semi-urban and urban areas. Therefore, the weighted average unemployment rate by occupational group and department can be approximated by

$$u_{jc} = \sum_r \alpha_{jcr} u_{cr}$$

where α_{jcr} = the share of workers of j occupational group in r area of c community in total workers of j occupational group in c community; u_{cr} = the unemployment rate in r area of c community; and $r = 1, 2, 3$ (rural, semi-urban, and urban areas).

The unemployment rate u_{jc} is then the reflection of the relative employment conditions in each area in the department (u_{cr}) and of the relative significance of each occupational group in each area of the department (α_{jcr}).

Migrants (Remitters) by Occupational Group and Department

Migrants by occupational group and geographic department (M_{jc}) are calculated by the equation:

$$M_{jc} = l_{jc} M_c \frac{M_j}{M}$$

where

M_c = total number of migrants from the c department during the period 1961–70;

M_j = total number of economically active migrants from occupational group j in Greece (1961–70);

M = total number of migrants from Greece (1961–70);

$l_{jc} = L_{jc}/L_c : L_j/L =$ ratio of the proportion of workers in j occupational group in c department, over the corresponding proportion in Greece, 1971; taken from the *Population Census*;

$m_{jc} = M_{jc}/M_j$; and

$m_j = M_j/M$.

The data for M_c and M_j are taken from M. Papadakis.⁵⁰

However, since M_c refers to the total migration of a department—there is no breakdown by economically active and nonactive migrants— M_{jc} also refers, by necessity, to total migrants that are related (dependent family members) to economically active migrants within j occupational group. For Greece, the stock of migrants abroad in 1971, which is the basis for calculating remitters by occupational group and region, is approximated by the sum of the 1961–70 emigration flows, 1961 being the first year of the mass emigration to Europe.⁵¹

Remittances per Migrant by Occupational Group and Region

The figures by occupational group are derived by splitting remittances of geographic departments, given in Voloudakis and Panourgias, according to the occupational shares of migrants in the total migration of the department as calculated above.⁵² Implicit here is the assumption of uniform conditions of remitters, irrespective of their working possibilities abroad.⁵³ The estimated regional values of $r_{jc} = R_{jc}^m/Y_{jc}^m$ range for farmers between 0.43 in Attika (including major Athens), with the highest $Y_{jc}^m =$ Dr 38,372, and 3.3 in Lefkada, with the lowest $Y_{jc}^m =$ Dr 6,911. The lower limits of 0.23 for nonfarm workers and 0.26 for other workers refer also to Attika, and their corresponding upper limits of 1.8 and 1.0 refer to Eurytania, one of the poorest departments in the country.

Breakdown of Remittance Expenditure

Macroeconomic data show that in 1971 the flow of capital from Greeks abroad (migrants and seamen) for the purchase of housing was US\$122 million.⁵⁴ Splitting this figure according to the shares of migrant and seamen remittances in 1971's total remittances—that is, 85.8% and 14.2%, respectively—gives $122 \times 0.858 =$ US\$105 million, equivalent to $105 \times 30 =$ Dr 3,150 million of migrant remittances spent on housing.⁵⁵ This amount equals 22.3% of the 1971 flow of migrant remittances of Dr 14,090 million. Almost the same figure is provided by T. Giannitsis, who notes that 15.3% of housing purchases in the period 1970–73 were paid with capital inflows from migrants and seamen.⁵⁶ Given that in 1971 total investment in dwellings was Dr 23,603 million, the proportion of migrant remittances invested in housing would be: $(23,603 \times 0.153 \times 0.858) : 14,090 = 22\%$.

In addition, a survey conducted in Germany on the spending plans of

returning Greek migrants found that they intended to spend 29% of their accumulated savings to buy houses, 2.6% to buy machinery (agricultural and other), 7.7% to open small shops, and 9.3% for the acquisition of agricultural land, leaving 51.4% for consumption.⁵⁷

The difference between the two proportions of spending on housing—that is, 29% of accumulated savings of migrants and 22.3% of the current flow of remittances—can be attributed to the different spending attitudes of repatriating migrants and of relatives receiving remittances for support. The former alone should be expected to spend more on housing or on any other investment than they would jointly with their relatives, to whom the annual flow of remittances refers. This being so, the ratio $22.3/29.0 = 0.77$ can be used as an adjustment coefficient, turning the intended investment of repatriating migrants into actual joint investment of migrants and relatives. This way, the investment expenditure, given above, is expressed on the basis of the 1971 flow of remittances. The figures so obtained are housing, 22.3%; machinery, 2.0%; small shops, 5.9%; and agricultural land, 7.2%, leaving for consumption 62.6%.

There still remains the problem of allocating investment in small shops to industries, which is needed for the input-output analysis. I split this proportion (5.9%) on the basis of information from the Ministry of National Economy relative to the approved (for subsidization) investment projects of migrants. According to this information, about 64.2% of the approved investment in value during the period 1982–84—there is no good reason to believe that things would have been much different in 1971—went to the tertiary sector, mostly in touristic shops, which I put in the trade industry (3.9%).⁵⁸ Another 27.2% of investment went to the secondary sector, which I put in the machinery industry (1.6%), and finally, the rest, 8.6% of investment, went to agriculture (0.4%). With this allocation, the final breakdown of remittance expenditure is 62.6% for consumption, 30.2% for nonconsumption goods (investment)—of which 22.3% is in housing, 3.6% in machinery, 3.9% in trade, and 0.4 in agriculture—and 7.2% for agricultural land. These percentages, together with the corresponding absolute figures are given in table 1.

A final note in this context is that the purchase of agricultural land will not be used as final demand in the input-output table, assuming that it actually constitutes transfers of cultivated land whose effects on the economy are already accounted for. Naturally, some of the proceeds from the sale of land may be invested elsewhere.⁵⁹ But since we have no knowledge of it, such proceeds cannot be allocated to particular industries and are therefore omitted.

Appendix B

TABLE B1
SELECTIVE CHARACTERISTICS OF GREEK EMIGRANTS, 1961-70

Characteristics	Number of Emigrants	Proportion (%) of Subtotals
Age and sex:		
Males:		
0-14	39,642	8.2
15-44	416,068	86.2
45+	27,088	5.6
All ages	482,798	100.0
Females:		
0-14	36,330	10.4
15-44	284,226	81.8
45+	27,070	7.8
All ages	347,626	100.0
Both sexes:		
0-14	75,972	9.2
15-44	700,294	84.3
45+	54,158	6.5
All ages	830,424	100.0
Occupation:		
Professional and administrative	10,198	2.1
Farmers	174,639	35.9
Nonfarm workers	254,153	52.3
Other	47,303	9.7
Total economically active	486,293	100.0
Males	398,506	81.9
Females	87,787	18.1
Marital status (1968-70):		
Single	108,884	46.3
Married	116,356	49.5
Other	9,859	4.2
Total	235,099	100.0
Destination:		
Europe	563,992	67.9
Germany	499,372	60.1
United States, Canada, Australia	239,388	28.8
Other	27,044	3.3
Total	830,424	100.0
Males	482,798	58.1
Females	347,626	41.9

SOURCE.—Assembled from M. Papadakis, "Greece: Migration Statistics, 1955-1977" (Center of Planning and Economic Research [KEPE], Athens, 1981).

TABLE B2

REGIONAL DATA ON POPULATION, MIGRATION, INCOMES, AND REMITTANCES (in Drachmas), 1971

GEOGRAPHIC DEPARTMENT	POPULATION	MIGRATION, 1961-70				PREMIGRATION INCOME OF REMITTANCE RECIPIENTS				INCOME PER EMPLOYED	REMITTANCES PER RECIPIENT	NUMBER OF RECIPIENTS
		Nonfarm Farmers	Other Workers	Other Workers	Total	Nonfarm Farmers	Other Workers	Other Workers	Total			
Major Athens	2,540,241	1,195	10,856	27,757	132,808	3,751	26,313	23,335	25,337	119,619	11,416	70,582
Rest of Attika	257,608	1,001	4,130	1,168	6,299	38,372	23,039	33,942	28,380	118,404	24,592	4,246
Etoloakarnania	228,989	6,792	3,102	620	10,514	11,035	21,433	39,672	15,075	47,675	23,680	9,614
Viotia	114,675	1,125	1,423	183	2,731	32,957	25,641	42,233	30,433	107,950	25,407	2,269
Evia	165,369	2,483	4,249	593	7,325	35,250	19,470	31,506	27,094	96,799	26,413	4,996
Eurytania	29,533	1,773	620	180	2,573	9,608	14,526	25,489	11,487	38,737	33,898	2,028
Pthiotida	154,542	1,605	1,092	222	2,919	23,351	17,722	34,091	22,456	69,806	21,162	2,302
Fokida	41,361	575	563	107	1,245	18,252	20,007	27,302	19,656	72,284	35,408	818
Argolida	88,698	2,752	1,991	363	5,106	18,321	19,292	28,274	19,270	58,683	22,555	4,598
Arkadia	111,263	7,464	3,341	876	11,681	15,458	24,288	24,417	17,977	60,089	28,972	9,692
Achaia	239,859	4,486	8,203	1,552	14,241	21,403	18,903	31,901	21,330	78,428	23,321	11,192
Ilia	165,056	7,657	3,891	883	12,431	21,812	22,999	59,850	24,477	65,330	21,698	12,143
Korinthia	113,115	3,688	2,930	599	7,217	21,842	19,358	28,132	21,537	66,331	20,817	6,336
Lakonia	95,844	11,185	2,928	901	15,014	11,156	16,452	39,818	13,448	45,038	31,191	10,809
Messinia	173,077	12,473	5,585	1,401	19,459	18,036	19,125	24,956	18,707	57,730	26,906	15,759
Zakynthos	30,187	1,869	929	227	3,025	17,553	19,166	64,338	20,932	61,817	26,467	2,365
Kerkyra	92,933	7,619	5,177	1,159	13,955	10,358	13,598	29,212	12,766	50,879	29,762	10,169
Kefalinia	36,742	2,136	1,661	441	4,238	14,113	15,247	43,314	17,288	61,777	31,225	3,047
Lefkada	24,581	1,748	599	161	2,508	6,911	15,254	22,561	9,269	34,934	28,303	2,027
Arta	78,376	3,278	1,881	406	5,565	20,766	15,624	48,876	21,270	59,259	24,297	5,122
Thesprotia	40,681	8,675	6,018	1,313	16,006	13,114	22,429	40,489	18,022	54,821	23,218	13,417
Ioannina	134,688	10,450	9,635	1,962	22,047	12,051	16,488	23,862	14,669	55,450	33,752	15,059
Preveza	56,586	6,630	3,714	875	11,219	18,238	17,880	34,522	19,328	53,195	22,184	11,352
Karditsa	133,776	5,791	1,818	434	8,043	19,873	18,539	28,278	20,067	50,310	20,112	8,126
Larissa	232,226	6,895	5,748	1,174	13,817	27,735	14,833	33,636	23,931	72,416	22,047	11,738
Magnissia	161,392	1,630	3,490	620	5,740	20,419	14,266	30,984	18,323	82,028	23,383	3,634
Trikala	132,519	11,013	6,033	1,127	18,173	16,920	18,918	35,176	18,451	54,611	23,056	17,024
Drama	91,009	19,821	11,679	2,851	34,351	17,011	15,021	24,718	17,065	60,770	28,148	24,882

TABLE B2 (Continued)

GEOGRAPHIC DEPARTMENT	POPULATION	MIGRATION, 1961-70				PREMIGRATION INCOME OF REMITTANCE RECIPIENTS				INCOME PER EMPLOYED	REMITTANCES PER RECIPIENT	NUMBER OF RECIPIENTS
		Farmers	Nonfarm Workers	Other Workers	Total	Farmers	Nonfarm Workers	Other Workers	Total			
Imathia	118,103	7,427	4,859	953	13,239	28,526	17,087	36,943	25,858	78,613	23,313	11,387
Thessaloniki	710,352	7,724	32,143	6,382	46,249	20,600	15,812	18,092	17,201	85,682	19,927	25,690
Kavala	121,593	11,699	10,364	2,209	24,272	12,550	19,517	21,875	15,706	65,451	32,211	15,547
Kastoria	45,711	3,104	6,473	568	10,145	20,487	20,190	22,933	20,464	64,993	27,535	7,664
Kilkis	84,375	14,531	3,706	1,164	19,401	23,531	24,462	31,395	24,073	63,695	24,789	16,561
Kozani	170,984	17,486	16,041	2,601	36,128	18,146	21,119	42,853	20,926	81,710	26,141	29,849
Pella	126,085	13,875	4,723	1,083	19,681	23,725	19,308	32,873	23,390	62,112	22,790	18,472
Pieria	91,728	12,616	6,368	1,233	20,217	15,621	15,344	30,033	16,331	50,359	23,376	18,103
Serres	202,896	25,620	8,625	2,147	36,392	18,016	16,949	23,215	18,095	52,554	22,557	31,736
Florina	52,264	13,349	6,643	1,644	21,636	19,734	15,637	24,878	19,119	57,265	31,727	16,972
Chalkidiki	75,582	2,186	2,317	344	4,847	21,349	16,610	22,000	19,509	66,353	33,976	3,041
Evros	138,988	22,720	10,059	2,391	35,170	19,185	16,283	27,169	19,038	60,548	28,681	26,401
Xanthi	82,917	7,396	2,737	601	10,734	11,161	14,077	27,592	12,407	41,285	22,079	9,849
Rodopi	107,677	7,468	1,961	475	9,904	13,721	14,822	66,367	15,933	42,442	20,558	9,381
Dodekanissa	121,017	5,481	12,431	3,087	20,999	17,593	15,422	26,891	17,883	72,665	28,113	14,021
Cyclades	86,337	606	820	160	1,586	14,941	16,659	25,515	16,757	73,770	27,510	909
Lesvos	114,802	7,412	5,046	1,142	13,600	12,507	13,003	60,297	16,411	63,259	40,740	7,117
Samos	41,709	2,431	1,873	426	4,730	7,276	13,667	27,767	11,084	56,333	37,124	2,433
Chios	53,948	1,779	2,384	595	4,758	11,749	14,137	29,383	14,955	70,869	34,129	2,978
Iraklion	209,670	5,889	3,937	843	10,669	12,785	16,771	30,329	15,191	56,006	32,320	7,129
Lassithi	66,226	1,405	515	140	2,060	9,447	14,432	21,059	11,129	45,290	38,952	1,157
Rethymno	60,949	2,429	953	227	3,609	7,373	19,662	23,534	10,752	42,616	37,047	2,297
Chania	119,797	4,347	3,394	851	8,592	12,190	18,344	29,926	15,774	59,456	32,550	5,810
Total for Greece	8,768,641	352,789	354,658	81,421	788,868	17,500	20,200	27,400	19,700	81,219	24,300	579,850

Source.—See App. A.

TABLE B3
 SELECTED CHARACTERISTICS RELATIVE TO REMITTANCES AND INCOMES
 IN THE GEOGRAPHIC DEPARTMENT OF FLORINA, 1971

Characteristics	Figures
Population	52,264
Population over 65 years of age (%)	11.6
Proportion of population in rural areas (%)	71.3
Percentage of population emigrated, 1961-70	41.4
Employment structure (%):	
Primary sector	64.4
Secondary sector	13.7
Tertiary sector	21.9
Proportion of farmers in total employment (%)	61.7
Share of remittances in private output (%)	48.9
Percentage of remittance recipients in total population	32.5
Remittances per recipient (Dr)	31,727
Remittances per capita of population (Dr)	10,303
Premigration income per recipient (Dr)	19,119
Postmigration income per recipient (Dr)	50,846
Premigration income per person (Dr)	21,437
Postmigration income per person (Dr)	31,740

SOURCES.—National Statistical Service of Greece (NSSG), *Census of the Population, 1971* (Athens: NSSG, 1977), and *Statistical Yearbook* (Athens: NSSG, various issues); and table B2.

NOTE.—Dr = drachmas.

TABLE B4
AVERAGE MONTHLY CONSUMPTION EXPENDITURE (in Drachmas) PER PERSON BY EXPENDITURE BRACKET, 1974
(Semi-urban and Rural Areas of Greece)

CONSUMPTION CATEGORY	EXPENDITURE BRACKETS									ALL BRACKETS
	1	2	3	4	5	6	7	8	9	
Food	200.0	358.6	432.3	552.0	661.0	856.6	1,000.2	1,265.1	1,588.1	762.7
Beverages	6.1	15.6	27.8	42.7	50.9	62.4	76.9	84.2	95.8	54.1
Tobacco	16.8	36.1	47.7	64.3	68.3	79.8	91.1	94.3	124.2	72.3
Apparel and footwear	8.9	35.6	64.4	109.1	208.8	287.6	475.5	693.3	1,077.0	293.8
Rent and water	10.0	16.8	20.6	29.8	44.1	71.9	105.6	313.8	1,021.9	124.1
Heating and lighting	62.0	72.5	72.8	86.8	93.8	101.9	114.7	124.6	132.8	96.9
Durable consumer goods	1.7	13.5	28.8	55.0	87.5	122.4	207.2	326.2	639.5	139.2
Current household expenses	8.4	19.2	33.3	52.6	73.0	94.6	142.7	219.8	293.9	96.6
Health and personal care	8.9	15.6	20.6	32.7	43.9	59.5	73.2	123.4	163.0	56.3
Transportation	7.8	13.9	23.9	48.2	63.6	109.7	158.5	279.2	1,178.8	149.9
Communications	1.7	4.9	5.5	10.5	12.2	19.3	30.3	37.7	48.6	18.2
Recreation	.6	4.5	9.8	21.9	51.2	71.9	103.5	154.2	251.2	66.9
Education	.6	2.9	6.9	12.0	24.1	29.3	39.6	55.1	74.4	26.3
Miscellaneous services	12.8	20.9	30.7	40.0	66.2	72.2	126.6	160.4	266.7	80.9
Total	346.3	630.6	825.1	1,157.6	1,548.6	2,039.1	2,745.6	3,931.8	6,955.9	2,038.2

SOURCE.—Adapted from National Statistical Service of Greece (NSSG), *Household Survey*, 1974 (Athens: NSSG, 1977).

TABLE B5
 AVERAGE MONTHLY CONSUMPTION EXPENDITURE (in Drachmas) PER PERSON BY EXPENDITURE BRACKET, 1974
 (Total for Greece)

CONSUMPTION CATEGORY	EXPENDITURE BRACKETS										ALL BRACKETS
	1	2	3	4	5	6	7	8	9	10	
Food	211.2	384.9	475.9	643.0	766.2	972.3	1,148.3	1,399.2	1,697.8	2,167.0	1,004.7
Beverages	5.3	13.3	21.6	31.5	38.3	40.4	52.3	61.9	75.9	113.8	45.8
Tobacco	15.8	33.8	46.0	63.1	74.8	88.9	97.4	107.8	122.5	153.9	85.6
Apparel and footwear	7.6	34.7	52.5	100.0	175.5	252.6	419.5	624.1	832.2	1,605.5	353.7
Rent and water	26.5	30.7	51.8	78.8	118.3	185.9	229.9	369.9	491.9	1,164.5	226.7
Heating and lighting	64.7	85.4	90.3	111.1	120.0	135.2	149.2	161.6	174.3	221.4	135.3
Durable consumer goods	.6	13.8	26.6	47.6	78.3	121.1	196.9	308.5	472.4	1,024.9	182.2
Current household expenses	8.8	15.1	19.1	31.6	40.5	54.6	72.1	105.4	158.2	308.3	69.5
Health and personal care	8.2	23.2	33.4	57.1	75.3	108.6	149.6	224.3	303.3	479.8	134.1
Transportation	8.8	18.7	25.9	57.1	82.0	134.1	215.0	431.3	931.4	1,938.0	264.5
Communications	3.5	7.1	9.3	18.1	22.3	34.1	50.3	59.3	72.7	104.5	38.1
Recreation	.6	5.8	11.1	28.8	56.2	89.2	132.0	206.7	345.3	717.1	125.9
Education	.6	3.6	9.4	16.8	31.9	54.3	72.1	109.1	146.6	323.9	65.1
Miscellaneous services	11.8	20.9	28.1	36.4	52.4	58.7	99.4	138.9	198.5	354.4	86.8
Total	374.0	691.0	901.0	1,321.0	1,732.0	2,330.0	3,084.0	4,308.0	6,023.0	10,677.0	2,818.0

SOURCE.—Adapted from National Statistical Service of Greece (NSSG), *Household Survey, 1974* (Athens: NSSG, 1977).

Appendix C

Interpolated Consumption Patterns of Recipients

The values of $C_j^{m\phi}$ and $C_j^{r\phi}$ are split by consumption item on the basis of the 1974 *Household Survey* as follows:

$$C_{jh}^{m\phi} = \alpha C_{jh}^x + (1 - \alpha) C_{jh}^y$$

$$C_{jh}^{r\phi} = \beta C_{jh}^x + (1 - \beta) C_{jh}^y,$$

where

C^x, C^y = respectively, total consumption for expenditure brackets x and y , confining the expenditure bracket (ϕ) of remittance recipients;

h = item of consumption;

$$\alpha = \left(\sum_h C_h^y - C_j^{m\phi} \right) / \left(\sum_h C_h^y - \sum_h C_h^x \right); \text{ and}$$

β = same as α , except that $C_j^{r\phi}$ is in place of $C_j^{m\phi}$.⁶⁰

Notes

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1. On the impact of remittances, see R. Goldfarb, O. Havrylyshyn, and S. Mangum, "Can Remittances Compensate for the Manpower Outflows: The Case of Philippine Physicians," *Journal of Development Economics* 15 (May–June–August 1984): 1–17. More generally, see M. Lundahl, "International Migration, Remittances and Real Incomes: Effects on the Source Economy," *Scandinavian Journal of Economics* 87, no. 4 (1985): 647–57, esp. 647; F. L. Rivera-Batiz, "International Migration Remittances and Economic Welfare in the Source Country," *Journal of Economic Studies* 13, no. 3 (1986): 3–19, esp. 3.

2. O. Stark, J. E. Taylor, and S. Yitzhaki, "Remittances and Inequality," *Economic Journal* 96 (September 1986): 722–40, esp. 723.

3. Lundahl, p. 648.

4. For the effects of remittances alone, see S. Djajic, "International Migration, Remittances and Welfare in a Dependent Economy," *Journal of Development Economics* 21 (May 1986): 229–34; F. Kirwan and D. Holden, "Emigrants' Remittances, Non-traded Goods and Economic Welfare in the Source Country," *Journal of Economic Studies* 13, no. 2 (1986): 52–58; Rivera-Batiz. On the effects of remittances and migration, see Kirwan and Holden.

5. O. Stark, "On the Role of Urban-to-Rural Remittances in Rural Development," *Journal of Development Studies* 16 (April 1980): 369–74; B. Banerjee, "The Probability, Size, and Uses of Remittances from Urban to Rural Areas in India," *Journal of Development Economics* 16 (December 1984): 293–311; T. Straubhaar, "The Determinants of Workers' Remittances: The Case of Turkey," *Weltwirtschaftliches Archiv* 122, Heft 4 (1986): 728–40; C. W. Stahl, "Overview: Economic Perspectives," in *The Impact of International Migration on Developing Countries*, ed. R. Appleyard (Paris: Organiza-

tion of Economic Cooperation and Development [OECD], 1989; J. W. Huguet, "International Labour Migration from the ESCAP Region," in Appleyard, ed., p. 100; Stahl, "Overview," p. 368.

6. Stahl, "Overview," p. 370.

7. For the impact of remittances on the structure of the Greek balance of payments, see D. Maroulis, *Economic Development and the Structure of the Balance of Payments*, Studies Series no. 18 (Athens: KEPE, 1986).

8. For the remitting behavior of migrants, see N. P. Glytsos, "Remittances in Temporary Migration: A Theoretical Model and Its Testing with the Greek-German Experience," *Weltwirtschaftliches Archiv* 124, Heft 3 (1988): 524–49, and *Theoretical and Empirical Analysis of Migratory Movements and of Remittance Flows between Greece and Germany*, New Studies Series no. 7 (Athens: KEPE, 1991) (in Greek).

9. L. T. Katseli and N. P. Glytsos, "Theoretical and Empirical Determinants of International Labour Mobility: A Greek-German Perspective," in *European Factor Mobility: Trends and Consequences*, ed. I. Gordon and A. P. Thirlwall (London: MacMillan, 1989), pp. 95–115.

10. R. E. B. Lucas, "International Migration: Economic Causes, Consequences and Evaluation," in *Global Trends in Migration: Theory and Research on International Population Movements*, ed. M. M. Kritz, C. B. Keely, and S. M. Tomasi (New York: Center for Migration Studies, 1981), pp. 84–109; H. Körner, "International Labour Migration—Theoretical Considerations and Evidence from the Experience of the Mediterranean Sending Countries," *Pakistan Development Review* 26, no. 4, pt. 2 (Winter 1987): 723–31, esp. 727.

11. Stahl, "Overview," p. 370.

12. A relevant sample survey gives 4.6 persons per migrant family, compared with 3.4 persons for the average family in Greece (see T. Kollaros and L. M. Moussourou, *The Return Home: Socioeconomic Aspects of Re-Integration of Greek Migrant Workers Returning from Germany* [Athens: Re-integration Center for Migrant Workers, 1978], pp. 251–52).

13. Glytsos, "Remittances in Temporary Migration," and *Theoretical and Empirical Analysis of Migratory Movements and of Remittance Flows between Greece and Germany*; and M. Kanetakakis, "Regional Behavior of Migration," in *Research Project of Migration-Repatriation*, ed. General Secretariat of Greeks Abroad (GSGA), vol. A (Athens: GSGA, 1990) (in Greek), pp. 27–57.

14. On the connection between the social status of migrant families and the capability of migrants to send remittances, see also O. Stark and R. E. B. Lucas, "Migration, Remittances, and the Family," *Economic Development and Cultural Change* 36 (April 1988): 465–81, esp. 470.

15. S. Paine, *Exporting Workers: The Turkish Case*, Department of Applied Economics, Occasional Paper 41 (Cambridge: Cambridge University Press, 1974); H. Körner, "European Sending Countries," in *The Future of Migration*, ed. OECD (Paris: OECD, 1987), pp. 64–85, esp. p. 70.

16. C. P. Kindleberger, *International Economics*, 4th ed. (Homewood, Ill.: Irwin, 1968).

17. P. L. Martin and A. Richards, "International Migration of Labor: Boon or Bane?" *Monthly Labor Review* 103 (October 1980): 4–9; C. W. Stahl, "Labor Migration and Economic Development," *International Migration Review* 16 (Winter 1982): 869–99.

18. Stahl, "Overview" (n. 5 above), p. 371.

19. S. S. Russell, "Remittances from International Migration: A Review in Perspective," *World Development* 14 (June 1986): 677–96, esp. 687, referring to the findings of I. Gilani, M. F. Khan, and M. Iqbal, "Labour Migration

from Pakistan to the Middle East and Its Impact on the Domestic Economy," Final Report, Research Project on Export of Manpower from Pakistan to the Middle East (World Bank, Washington, D.C., June–July 1981), p. 43.

20. Djajic (n. 4 above), p. 229.

21. Stark, Taylor, and Yitzhaki (n. 2 above), p. 724.

22. K. Karavidas, *Agrotika* (Athens: Papazissis, 1978) (in Greek), pp. 439–41; K. Tsoukalas, *Dependence and Reproduction: The Social Role of Educational Mechanisms in Greece (1830–1922)* (Athens: Themelio, 1977) (in Greek), pp. 125–27.

23. Karapostolis, *Patterns of Consumption in the Greek Countryside*, Studies for the Rural Economy, no. 8 (Athens: Agricultural Bank of Greece, 1979) (in Greek), p. 47.

24. *Ibid.*, p. 137.

25. Lucas (n. 10 above), p. 89; G. Swamy, "Population and International Migration," World Bank Staff Working Papers, no. 689 (World Bank: Washington, D.C., 1985), p. 30.

26. For instance, in a family of five, of which three are economically active but only two have jobs, $g_{ijc} = 0.6$ and $u_{ijc} = 0.33$. The average per-person income of this family would then be $Y_{ijc}^m = 0.6(1 - 0.33) Y_{jc} = 0.40 Y_{jc}$, i.e., about 40% of the average income in this family's occupational group and community. If, on the other hand, all members are economically active and all have jobs, $g_{ijc} = 1$, and $u_{ijc} = 0$, so that $Y_{ijc}^m = Y_{jc}$. Thus the former family is more likely than the latter to generate migrants.

27. Glytsos, "Remittances in Temporary Migration" (n. 8 above).

28. See, e.g., K. Unger, "Greek Emigration and Return: Structural Factors and Characteristics of the Migrants" (paper presented at the symposium Return Migration and Reintegration, Saarbrücken, October 1980). He found in a sample survey of 600 Greek repatriates that departments with larger families, with high proportions of people over age 65, and with higher unemployment manifested a higher proportion of emigrated population. High proportions also had departments with fast population growth, high employment in agriculture, low proportion of wage and salary earners, and low numbers of employers (Unger, esp. p. 10).

29. See, e.g., Stahl, "Overview" (n. 5 above), p. 370.

30. Stahl, "Labor Migration and Economic Development" (n. 17 above), p. 9; A. Richards and P. L. Martin, "The Laissez-Faire Approach to International Labor Migration: The Case of the Arab Middle East," *Economic Development and Cultural Change* 31 (April 1983): 455–74, esp. 467; Banerjee (n. 5 above), p. 308; Lundahl (n. 1 above), p. 648; C. H. Wood and T. McCoy, "Migration, Remittances and Development: A Study of Caribbean Cane Cutters in Florida," *International Migration Review* 19, no. 2 (1985): 251–77, esp. 274; Rivera-Batiz (n. 1 above), pp. 4, 14; Russell (n. 19 above), p. 687, Körner, "European Sending Countries" (n. 15 above), p. 70.

31. On earnings committed to the support of family at home, see R. King, "Return Migration and Regional Economic Development: An Overview," in *Return Migration and Regional Economic Problems*, ed. R. King (Kent: Croom Helm, 1984), p. 27. For remittances as consumption expenditure, see Djajic (n. 4 above); Kirwan and Holden (n. 4 above).

32. Russell, pp. 687–88.

33. *Ibid.*, p. 687. For Pakistan, e.g., it was found (Gilani, Khan, and Iqbal [n. 19 above]) that 62% of remittances are spent on consumption goods, 22% on real estate, 11.5% on real investment, and 1.4% on financial investment. An empirical survey in Portugal found that 56% of remittances are spent on consumption goods (including 24% on education) and 38% on the purchase of

land and housing, whereas analogous conclusions are reached for Turkey (see M. J. MacMillen, "The Economic Effects of International Migration," *Journal of Common Market Studies* 20 [March 1982]: 245–67, esp. 263).

34. Regarding remittances spent on consumption and housing, see I. Emke-Pouloupoulos, *Problems of Migration and Repatriation* (Athens: Institute of Study of the Greek Economy and Greek Association of Demographic Studies, 1986) (in Greek), pp. 365–66, 368.

35. Gilani, Khan, and Iqbal.

36. T. Skountzos and G. Mattheos, *Input-Output Tables of the Greek Economy, 1958–1977* (Athens: KEPE, 1980) (in Greek); J. Vartholomeos, *Inter-sectoral Impact of Public Expenditure*, Studies Series no. 11 (Athens: KEPE, 1984) (in Greek).

37. N. Mylonas, *Analytical Input-Output Tables of the Greek Economy for 1970* (Athens: KEPE, 1980) (in Greek).

38. National Statistical Service of Greece (NSSG), *Household Survey, 1974* (Athens: NSSG, 1977). The mixed semi-urban and rural household survey (in App. B) is used for farmers—the single rural survey not giving expenditure by bracket—and the general household survey (in App. B) for nonfarm workers and for other recipients. Both surveys refer to the year 1974, the closest to our reference year 1971. Concerning remittance spending, I assume that farmers, nonfarm workers, and other recipients have common consumption and saving habits, each group consuming 62.6% of the remittances received and saving 15% of their premigration incomes, i.e., $s = 0.15$ and $(1 - q) = 0.626$. Moreover, a zero net saving (saving = dissaving) is assumed for incomes from remittances.

39. Data for the rural areas of the 1974 household survey would be more appropriate for a department in which 71.3% of the population live in rural areas. But since no breakdown of expenditure by bracket is given for rural areas I use instead the combined data of semi-urban and rural areas. I retain the assumption of a 15% saving on premigration income and of a 62.6% proportion of remittances spent on consumption.

40. Underlying these estimates is the implicit assumption that the new jobs are created under a situation of full employment. This assumption was valid in 1971, when GDP increased by 8% in real terms and manufacturing value added by 10.8%. Particularly in some industries, the growth was tremendous: textiles, 17.2%; chemicals, 11.3%; metal products and machinery, 17.7%; transport equipment, 24.3%; and construction, 14.1%. No doubt the contribution of remittances would be substantial in this growth, as noted in the text.

41. A similar implicit assumption and the same justification for it, as in n. 40 above for employment, also applies to capital.

42. OECD, *The Migratory Chain* (Paris: OECD, 1978), p. 28.

43. *Ibid.*, p. 16.

44. *Ibid.*, p. 28.

45. See, e.g., MacMillen (n. 33 above), p. 263.

46. E. Voloudakis and E. Panourgias, "An Estimate of the Regional Distribution of National Income, 1961, 1971," in *The Greek Economy*, ed. Bank of Greece (Athens: Bank of Greece, 1980) (in Greek).

47. NSSG, *Population Census, 1971* (Athens: NSSG, 1977).

48. *Ibid.*; NSSG, *Household Survey, 1974*.

49. NSSG, *Population Census, 1971*.

50. M. Papadakis, "Greece: Migration Statistics, 1955–1977" (KEPE, Athens, 1981).

51. K. Kassimati, *Migration—Repatriation: The Concern for the Second*

Generation (Athens: National Center for Social Research, 1984) (in Greek), p. 16.

52. Voloudakis and Panourgias.

53. Evidence of such uniformity is actually found by Gilani, Khan, and Iqbal (n. 19 above), cited in Russell (n. 19 above), p. 685.

54. Bank of Greece, *Monthly Statistical Bulletin* (Athens: Bank of Greece, March 1974) (in Greek), p. 66.

55. Bank of Greece, *Bulletin of Foreign Transactions of Greece* (Athens: Bank of Greece, December 1971) (in Greek), table 1.

56. T. Giannitsis, "Problems of Greek Development," *Economy and Society* 1 (1979): 26-45, esp. 45 (in Greek).

57. A. Kontis, "Investment Behavior of Greek Migrants: A Theoretical-Empirical Approach," in General Secretariat of Greeks Abroad, ed. (n. 13 above), pp. 207-28.

58. *Ibid.*, p. 218.

59. Russell, p. 688.

60. NSSG, *Household Survey, 1974*.



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