The Question of the Brain Drain in the Philippines

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The Question of the Brain Drain from the Philippines

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INTRODUCTION

A salient feature of recent international migration is what has by now become well-known as the "brain drain" from the less developed to the developed countries, particularly to the United States. This was triggered by the October 1965 amendments to the U.S. national immigration law, suddenly bringing about a dramatic shift in the source of migrant skills and professional manpower to the United States. From 1949 through 1965 the bulk of immigrant professionals came from Europe, but after 1965 Asian countries became the principal source (National Science Foundation, 1972: 1). In fiscal year 1970, of the 13,300 scientists and engineers immigrating to the United States, a record for the past 20 years, 7,500 or 56.4 percent originated in Asia. And of the 3,200 immigrant physicians and surgeons in the same year, 1,700 or 53.1 percent came from the same source (National Science Foundation, 1972: 3).[1] Among Asian countries, India stood out as the leading supplier (or loser) of engineers and scientists and the Philippines of physicians and surgeons during the decade of the 60s.

By looking at the absolute figures on international migration of professionals, many government officials and students have asserted unqualifiedly that there is a brain drain problem plaguing the less developed countries. A comparative analysis between countries is not usually done nor are figures on emigrant professionals related to the total number of emigrants. Much less are attempts made to analyze the exodus of skills within the social and economic framework of a country in question.[2]

This paper attempts to examine the brain drain problem of the Philippines within a simple economic framework.[3] What is the extent of

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[1] In 1965 the proportions for both groups of professionals were only about 10 percent of much smaller numbers.

[2] Fortney (1970) makes international comparisons but does not consider the institutional structures of the countries of emigration.

[3] Keely (1973) surveys Philippine emigration in general to the U.S.

the problem? Why is there such a problem? These are the main questions that will be addressed to.[4]

We shall argue that the real problem of the Philippines is not so much the brain drain as misdirected training and skills formation, hence the inability of the economy to absorb high-level professional skills. Specifically, the thesis is that given a large supply of physicians, scientists, and engineers superimposed on a low level and speed of economic progress, an exodus of a considerable number of these professionals may be expected.

The next section will present a comparative analysis of the extent and nature of professional emigration from the Philippines and other Asian countries that also recorded notable losses during the 1960s. Then, an attempt will be made to relate the loss of professionals to economic circumstance in the Philippines and in other countries at various development stages. Finally, the conclusion will be presented with some general implications for policy.

EXTENT OF PROFESSIONAL EMIGRATION FROM THE PHILIPPINES AND SELECTED ASIAN COUNTRIES

Table 1 presents data on immigrant physicians and surgeons in the United States from Asian countries that were major sources during the 60s. The Philippines clearly stands out as the number one supplier (or loser) throughout the period. Between 1965 and 1966, the number of

TABLE 1

IMMIGRANT PHYSICIANS AND SURGEONS* IN THE UNITED STATES FROM SELECTED ASIAN COUNTRIES, 1962-1970

Country	1962	1963	1964	1965	1966	1967	1968	1969	1970
Philippines	119	101	63	66	259	550	639	785	769
India	12	16	8	11	40	87	96	129	242
South Korea	18	19	10	11	35	70	63	128	228
Hong Kong	3	15	2	4	26	42	42	39	41
Taiwan	—	—	—	2	11	34	21	27	36
Japan	8	35	4	11	31	40	23	28	35

*Includes dentists

Note: These 6 countries alone account for more than 90 percent of physician/surgeon emigrants from the Far East and over 40 percent of the total from all countries in 1970.

Source: National Science Foundation, *Scientists, Engineers, and Physicians from Abroad,* Washington, D.C., June 1972, p. 29.

[4]Only the "drain" to the U.S. is considered since it is by far the principal country of destination.

emigrant physicans and surgeons almost quadrupled from 66 to 259, just absolutely dwarfing the figures of the other countries. The next biggest absolute jump was India's from 11 to 40. The marked spurt for all countries ranged from a low of 182 percent for Japan to a high of 550 percent for Hong Kong. This turning point in international migration was ushered by the October 1965 revisions of the U.S. immigration law which favored professionals. By 1970 the Philippines supplied 769 physicians, accounting for 24 percent of all (including non-Asian) immigrant physicians coming to the United States or changing to immigrant status during that year alone. India was responsible for the next largest share of 8 percent or 242 physicians and surgeons.

The extent of immigrant scientists and engineers in the United States from the same Asian countries is shown in Table 2. Here, India furnishes the lion's share, followed by the Philippines for most of the time after 1965. The long jump between 1965 and 1966 is again conspicuous as in the case of the physicians. In this interval, India's supply increased about 850 percent from 94 to 894, followed by Taiwan's which shot up 548 percent from 25 to 162. The Philippine volume grew 482 percent from 22 to 128. The least responsive to the U.S. immigration law revisions was Japan. By the end of the decade, India provided the United States with 2,899 scientists and engineers or 22 percent of all immigrants in these professions. The Philippines figured second with 12 percent of 1,549 scientists and engineers immigrating to the United States.

When looked at in the context of total emigrants, however, the magnitude of emigrant physicians and surgeons from these countries is not as staggering as when considered absolutely (Table 3). Nevertheless,

TABLE 2

IMMIGRANT SCIENTISTS* AND ENGINEERS IN THE UNITED STATES FROM SELECTED ASIAN COUNTRIES, 1962-1970

Country	1962	1963	1964	1965	1966	1967	1968	1969	1970
Philippines	21	115	22	22	128	475	752	1427	1549
India	57	340	108	94	894	1422	1232	1477	2899
S. Korea	37	147	35	23	119	231	182	220	313
Hong Kong	16	90	36	38	174	351	200	181	221
Taiwan	—	—	—	25	162	1121	626	515	943
Japan	32	83	41	25	83	143	109	101	152

*Includes social scientists

Notes: These 6 countries alone account for about 90 percent of scientist/engineer emigrants from the Far East and over 40 percent of the total from all countries in 1970.

Source: National Science Foundation, *Scientists, Engineers, and Physicians from Abroad,* Washington, D.C., June 1972, p. 27.

TABLE 3

RATIO OF IMMIGRANT PHYSICIANS AND SURGEONS TO TOTAL IMMIGRANTS IN THE UNITED STATES FROM SELECTED ASIAN COUNTRIES, 1962-1970 (per thousand)

Country	1962	1963	1964	1965	1966	1967	1968	1969	1970
Philippines	34.6	27.9	21.0	22.3	43.9	53.2	39.7	38.7	25.2
India	30.8	16.6	16.4	23.6	17.4	21.1	23.1	24.8	27.5
S. Korea	11.7	7.4	4.2	5.1	14.5	18.2	17.5	21.9	25.7
Hong Kong	4.6	21.1	3.1	1.8	1.9	2.7	4.3	2.8	4.2
Japan	2.0	8.4	1.1	3.3	8.9	9.7	6.0	6.8	7.4

Sources: Table 1; Bureau of the Census, *Statistical Abstract of the United States,* (various years); and Immigration and Naturalization Service, *Annual Report.*

the Philippine rates are still prominent. After falling to a low of 21.0 per thousand in 1964, it climbed to a high of 53.2 in 1967, the second year after the U.S. immigration law revisions. Thereafter, the rates steadily declined to 25.2 per thousand in 1970. The next highest professional emigration rates are those of India and the lowest are those of Japan before 1965 and Hong Kong subsequently.

Table 4 shows that the emigration rates of scientists and engineers from the Philippines were generally lower than the rates in the case of physicians from 1962 to 1967; after 1967, they surpass those of physicians. Excepting 1963, some trend can be gleaned here going from 6.1 per thousand in 1962 to 70.4 in 1969. Trends are harder to discern for the other countries. What stand out sharply in Table 4, however, are the very high rates of Indian scientist and engineer immigration to the United States. It rose to as high as 390 per thousand in 1966, the year after the immigration law revisions, but fell to 330 in 1970. The next highest rates are Korea's except for the last two years when the Philippines rates higher. Again, the lowest rates are those of Japan until 1965 and Hong Kong thereafter.

Two distinct impressions can be derived from the above presentation. First is that professionals respond vigorously to favorable changes in immigration laws. In the second half of the 60s, this was especially true of countries with pent-up stocks of potential emigrants, like the Philippines and India. Second is that, except in the case of Indian scientists and engineers, professional migrants from Asian countries do not figure outstandingly as proportions of total migrants. Admittedly, professionals are migrating to the United States in droves but so are non-professionals in much larger volumes. This suggests that both skilled and less skilled personnel have been attracted to, *inter alia,* better work opportunities and higher incomes. At the same time, it reflects a general condition of

un- and underemployment, not to mention adverse social and political factors, in the countries of origin.

PROFESSIONAL EMIGRATION AND ECONOMIC DEVELOPMENT

We shall now try to view the emigration of professionals in the context of the economic circumstance of the Philippines. Ideally, this should be approached by examining manpower supply vis-á-vis the economic and social structures, in terms of employment level and creation by industry and occupation, wages and salaries by industry and occupation, income distribution, welfare payments, working conditions, professional mobility, etc. It would be better yet if political factors can be incorporated in the analysis. Lacking these refined indexes, we shall use crude indicators of personnel/population ratios to reflect personnel availability and income per capita along with its rate of growth to mirror the capacity to absorb personnel supply. We shall look at the Philippine situation in the context of Asian countries (including the U.S. being the beneficiary country) for which data are available. Asian countries that are not notable senders of professional manpower are included so that a comparison can be made with sender countries.

Table 5 shows physician/surgeon availability as well as economic circumstance in selected countries. Except for the last 3 countries that are developed, the Philippines exhibits the highest ratio of 10.5 physicians per 10,000 population, in fact close to Kuwait's 13.1, in 1966. (This was the year the exodus started). Among the lowest are South Vietnam (0.4), Pakistan (1.7), Thailand (2.1), and West Malaysia (2.6), none of which was a significant exporter of physicians or surgeons to the United States

TABLE 4

RATIO OF IMMIGRANT SCIENTISTS AND ENGINEERS TO TOTAL IMMIGRANTS IN THE UNITED STATES FROM SELECTED ASIAN COUNTRIES, 1962-1970 (per thousand)

Country	1962	1963	1964	1965	1966	1967	1968	1969	1970
Philippines	6.1	31.8	9.3	7.4	21.7	46.0	46.8	70.4	50.8
India	146.2	352.0	221.3	201.3	389.9	344.4	295.8	283.8	329.6
S. Korea	24.1	57.0	14.8	10.8	49.3	60.1	50.7	37.6	35.2
Hong Kong	24.5	126.4	56.3	16.9	12.6	22.3	20.3	12.8	22.7
Japan	7.9	20.0	10.9	7.6	23.9	34.7	28.6	24.7	32.1

Sources: Table 2; and Bureau of the Census, *Statistical Abstract of the United States,* (various years); and Immigration and Naturalization Service, *Annual Report.*

in the 60s. Turning to GNP per capita, we note that as of 1968 the Philippine level of $180 was closer to the low-income than to the middle- or high-income countries. Hong Kong, Taiwan, and West Malaysia had significantly higher incomes ($270-710) but physician/population ratios markedly lower (2.6-4.9) than the Philippines. To the other low-income countries correspond low stocks of physicians and surgeons, and to the high-income countries large stocks ranging from 13.1 to 19.9 per 10,000 population. The correlation coefficient (R^2) between physician/surgeon stock and GNP per capita is high, 0.80, when the Philippine data are excluded. It falls to 0.70 when disturbed by the deviant Philippine case.

The general pattern that emerges from the first two columns of Table 5 seems to be as follows: (a) the most developed countries (with incomes per capita in the $1,000-4,000 range) have from 13 to 20 physicians/surgeons per 10,000 population; (b) the moderate-income countries ($200-700) can afford only from 3 to 5 physicians per 10,000 population; and (c) the low-income countries (below $200) can barely afford more than 2 physicians per 10,000 population. The Philippines

TABLE 5

PHYSICIAN/SURGEON AVAILABILITY AND ECONOMIC CIRCUMSTANCE IN SELECTED COUNTRIES

Country	P-S/10,000 Population (1966)	GNP Per Capita U.S. $ (1968)	GNP Per Capita Annual Growth Rate (1961-1968)
South Vietnam	0.4	130	1.9
Pakistan	1.7	100	3.1
Thailand	2.1	150	4.6
India	2.2	100	1.0
West Malaysia	2.6	330	4.3
South Korea	4.5	180	5.6
Hong Kong	4.5	710	8.1
Taiwan	4.9	270	6.5
Philippines	10.5	180	0.8
Kuwait	13.1	3540	-3.3
Japan	14.5	1190	9.9
United States	19.9	3980	3.4

Note: Countries are ordered from lowest to highest Physician-Surgeon/Population ratio. R^2 between P-S/population and GNP per capita: with Philippines 0.6951; without Philippines 0.7989.

Sources: Physician-Surgeon/Population ratios—World Health Organization, *World Health Statistics Annual,* Vol. III, 1966, Tables 2.1 and 2.2
GNP Per Capita—International Bank for Reconstruction and Development, *World Bank Atlas,* 1970

pronouncedly deviates from this general pattern, suggesting that its stock of physicians and surgeons is far beyond its economic capacity. This situation may thus have led to the exodus of "surplus" physicians and surgeons that has been noted above. This inference seems to be supported by the last column of Table 5, which presents the rates of growth of GNP per capita, reflecting more or less the dynamic capacity to absorb manpower supply. Between 1961 and 1968, the Philippines manifested the slowest annual rate of economic growth of only 0.8 percent (ignoring the unusual case of Kuwait). India's growth rate for the period was also a slow 1.0 percent, and to some extent it may also explain the huge outflow of professionals especially scientists and engineers mentioned earlier. The rates of economic growth for the other countries are much faster which may imply a greater ability to utilize profitably whatever professional manpower is available.

Table 6 exhibits a similar pattern as to scientist/engineer availability and economic development although the countries compared are fewer.[5] Among the five less developed countries compared, the Philippines had

TABLE 6

SCIENTIST/ENGINEER AVAILABILITY AND ECONOMIC CIRCUMSTANCE IN SELECTED COUNTRIES

Country	S-E	S-E/10,000 Pop.	GNP Per Capita U.S. $ (1968)	GNP Per Capita Annual Growth Rate (1961-1968)
Thailand	5,583	1.7 (1969)	150	4.6
S. Vietnam	4,424	2.7 (1966)	130	1.9
Hong Kong	3,726	10.4 (1965/66)	710	8.1
W. Malaysia	9,885	12.4 (1965)	330	4.3
Philippines	81,600	25.7 (1965)	180	0.8
Kuwait	1,752	33.7 (1966)	3540	-3.3
U.S.	1,694,300	83.6 (1969)	3980	3.4

Note: Countries are ordered from lowest to highest Scientist-Engineer/Population ratio. R^2 S-E/population and GNP per capita: with Philippines 0.7254; without Philippines 0.8022.

Sources: Scientists/Engineers—UNESCO, *Statistical yearbook,* 1971, Table 3.1.
Population—U.N., *Demographic Yearbook,* 1971
GNP per capita—I.B.R.D., *World Bank Atlas,* 1970

[5]No information on India's domestic stock of scientists and engineers could be obtained although it supplied the largest share of these professionals during the second half of the 60s. Suffice to say that its low level and rate of economic progress (shown in Table 5) must have led to this consequence.

the highest ratio of scientists/engineers per 10,000 population, 25.7 in 1965. This was more than double that of West Malaysia, which was the next highest in the less-developed category, and close to Kuwait's 33.7 in 1966. The same inference can be made, as in the previous case of the physicians, when scientist/engineer supply is viewed against the level and rate of growth of GNP per capita. Here again it seems that the Philippines has a low absorptive capacity, resulting in a high volume and rate of scientist/engineer outflow, which was next only to India's after 1965. The correlation coefficient between Scientist/Engineer availability and GNP per capita rises from 0.72 to 0.80 when the Philippine case is dropped.

In sum, the Philippine case is one that satisfies the conditions conducive to the emigration of professionals. These are: (a) relatively large domestic stock of high-level professionals, and (b) low level and rate of economic development. In other words, the Philippines apparently cannot fully utilize a manpower supply which befits more an advanced country.

SOME QUALIFICATIONS

The conclusions that may be drawn from the foregoing analysis should be taken with caution for several reasons. First, the measures used for socio-economic circumstance and absorptive capacity are probably crude. Second, the analysis covers only a few selected countries during a limited, if relevant, period of time. This is due to lack of data on domestic stock of professionals for other pertinent countries. Third, different kinds of technical skills are aggregated; for, obviously, there are different categories of physicians, surgeons, scientists, and engineers as well as different kinds of needs in the various countries. And, fourth, nothing is said about the domestic distributions of professionals, especially in the case of physicians, e.g., as between rural and urban sectors, towns and cities, high-, medium-, and low-income family groups, etc. For instance, a country may have a high physician/population ratio but, since physicians may be concentrated in a few urban centers, they become too competitive; thus, they may leave the country even if the national need is far from adequately met.

Notwithstanding these qualifications, the study does give some general indications as to what areas need further research and as to the directions policy might take.

CONCLUSION

That there is a "brain drain" problem confronting the Philippines and other less developed countries is hard to dismiss. The extent of the

problem, however, has to be qualified. If the drain refers to "raw" brains, then the statistics almost speak for themselves. In other words, if the brains that had emigrated were only trained in the right direction, they would probably have remained and would have become assets to the country. Also, it can be assumed that these brains are of high quality relative to non-professionals. On the other hand, if the drain refers to brains as they were actually trained, i.e., in non-harmony with economic and social needs, then the magnitude of the drain is far less than what the statistics manifest. The real loss would be limited to a few key personnel, "binding agents" according to Hirschman (1958), who because of their rare creative and entrepreneurial attributes might have significantly contributed to the development effort had they not emigrated. The list might be extended, at the most, to some supporting technical personnel. But, although caused by only a relatively small number of emigrant professionals, this opportunity loss may be enormous indeed. For the benefits that may have been reaped are not only of the direct or first-order type but also of the second-order, comprising complementarities and externalities (Thomas, 1967). This second aspect of the "brain drain" is difficult to measure and is not grappled with in this paper.

The analysis attempted in this paper demonstrates some *prima facie* evidence that the Philippines' general "brain drain" problem stems from the basic inability of its economy to absorb the going supply of certain high-level skills. Conversely, the basic problem appears to be that the domestic supply of professionals, especially physicians, scientists and engineers, has been outrunning the country's economic capacity. It seems to be, therefore, a problem of misdirected education and training, leading to the difficulty of dovetailing the output of certain skills with the actual needs of the country in a given economic and social setting.[6]

This conclusion in no way ignores or belittles the lamentable loss of high-quality human resources. It suggests, however, that the issue should not be approached emotionally by crying over the symptoms (in the form of "spilled milk") while losing sight of the root disease. The implications for policy are clear. In order to minimize further "brain drain", nothing short of facing up to and remedying the true malady is required. Involved here are: (a) an education and training policy that directs itself to society's actual needs and objectives; (b) a manpower planning policy, flexible and continually updated, that tries to match supply with demand; and (c) an effective system of incentives, such as identifying professionals and scientists with the development endeavor, opportunities for scientific advancement, professional mobility, etc.

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[6]This, of course, is the familiar case of the discrepancy between personal and societal preferences and costs/benefits.

In order to function well, however, these policies and instrumentalities have to be cast in a wholesome national framework. For, as Don Patinkin (1968: 95) suggests: ". . . the problem of the 'brain drain' in many underdeveloped countries is an inextricably tied-up aspect of their general problem of creating a political, social, and economic milieu that will encourage development. It can accordingly be approached only within the framework of this far more basic and difficult problem." Thus, when a reasonably healthy milieu can be achieved, inasmuch as professionals are usually the more sensitive citizens, not only would potential emigrants be retained but even those that are away would be attracted back home.

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