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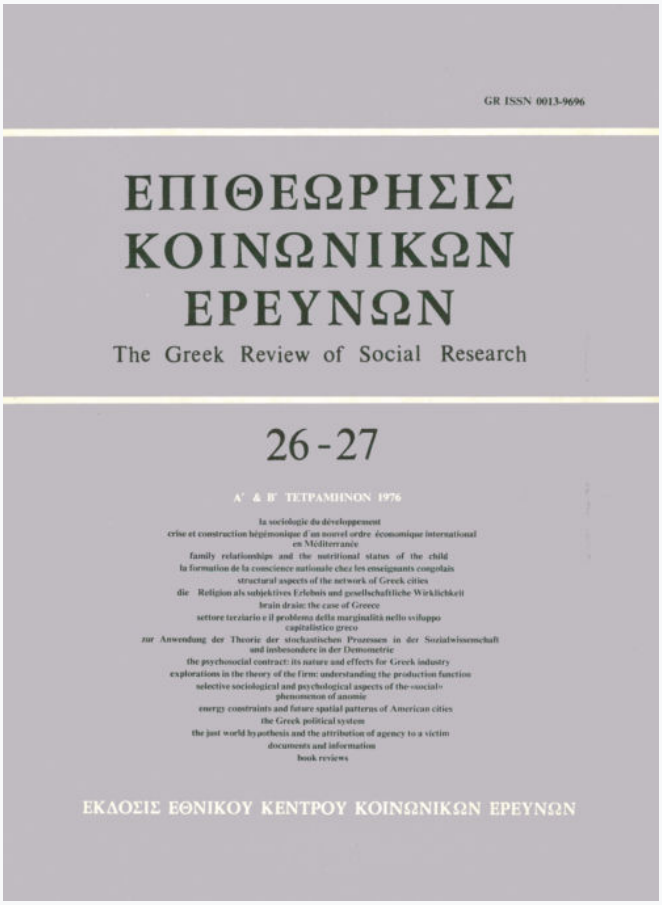

Brain drain: The case of Greece

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This article is a summary overview of the Greek brain drain problem. First, the necessary data are presented; then the causes of the brain drain are examined, and the advantages and disadvantages to sending and receiving countries are considered. Finally, it is suggested that the brain drain cannot be understood in a strictly economic context; an attempt is made to place it inside a broader perspective.

I

Greece is a small country with a population of 8.7 million and a Gross National Product of approximately 9 billion dollars (in 1971).[1] There is a labor force of 3.5 million in 1971, as compared to 3.6 million in 1961; during the last decade, the distribution of the labor force among sectors of economic activity has altered radically:[2]

	1961	1971
Primary Sector	53%	41.7%
Secondary Sector	19%	25 %
Tertiary Sector	27%	33.3%

Thus, in the span of one decade, there took place a significant movement of labor from agricultural activities to manufacturing and services. In 1970, 18.9% of the Gross Domestic Product originated in the primary sector, 34.2% in the secondary, and 46.9% in the tertiary sector.[3] «Professional, technical, and related workers,» i.e. the occupational category identified with «brains,» were 5.5% of the labor force in 1971, i.e. 186,000 persons.[4] Finally, there were 76,198 students enrolled in institutions of higher education in 1970-71, while 9,866 graduated that year.[5]

The data on the Greek brain drain are both unreliable and incomplete. The National Statistical Service of Greece provides annual data on permanently emigrating persons («Greek citizens permanently residing in Greece, who go abroad to settle there for a period exceeding one year») and on temporarily emigrating persons («Greek citizens permanently residing in Greece, who (a) go abroad for less than one year to work in and be paid by the destination country, and (b) go abroad for signing on»). Since 1968, data have also been provided on returnees (i.e. «Greek citizens, who, after having permanently and continually stayed in a foreign country for more than a year, return to Greece for a permanent stay, or at least for a stay exceeding

1. *Statistical Yearbook* 1972, p. 24, 355.
2. *Draft Model*, p. 201-2.
3. *National Accounts*, p. 10.
4. *Draft Model*, p. 210.
5. *Statistical Yearbook* 1972, p. 112-3.

TABLE 1. *Emigration of Greek Professional, Technical, and Related Workers: 1963-1974*

Category	1963-1967 Annual Average					1968-1971 Annual Average					1972-1974 Annual Average				
	Permanent Emigrants	Temporary Emigrants	Returnees	Graduates	Drain Rate	Permanent Emigrants	Temporary Emigrants	Returnees	Graduates	Drain Rate	Permanent Emigrants	Temporary Emigrants	Returnees	Graduates	Drain Rate
A. Architects, Enginreers, & Surveyors (with university diploma)	136	81	—	489	27%	67	40	121	957	7%	86	69	112	904	9%
B. Chemists, Physicists, Geologists, & other physical scientists	44	40	—	748	10%	32	18	40	1683	3%	31	23	42	2473	2%
C. Biologists, Veterinarians, Agronomists, & related scientists	34	46	—			25	25	27			35	32	22		
D. Physicians, Surgeons, & Dentists	108	146	—	682	15%	77	69	133	1099	7%					
E. Nurses & Midwives	100	29	—	—	—	67	13	39	—	—	122	105	167	—	—
F. Professional Medical Workers n.e.c. & Medical Technicians	12	7	—	—	—	6	3	14	—	—					
G. Teachers	144	215	—	—	—	177	59	122	—	—	206	101	196	—	—
H. Clergy and related members of religious orders	17	5	—	—	—	15	1	16	—	—	7	3	12	—	—
I. Jurists	46	31	—	—	—	26	11	44	—	—	31	24	44	—	—
J. Artists, Writers, & related workers	116	1236	—	—	—	132	509	128	—	—	97	388	136	—	—
K. Draughtsmen & science & engineering technicians n.e.c., & other professional, technical, & related workers	169	317	—	—	—	126	360	74	—	—	38	41	44	—	—

Source: Estimated from data in Statistical Yearbook of Greece, 1964 (p. 156-8, 393, 397), 1965 (p. 123-5, 349, 353), 1966 (p. 106 297, 301), 1967 (p. 53, 57), 1968 (p. 46, 49, 98), 1969 (p. 46, 52, 103), 1970 (p. 46, 52, 95), 1971 (p. 50, 60, 110), 1972 (p. 60, 70, 113-4), 1973 (p. 50, 61, 128), 1974 (p. 55, 66, 137), and 1975 (p. 60, 74, 147).

Explanatory Note: The data have been presented in terms of the periods 1963-1967, 1968-1971, and 1973-1974, mainly for practical reasons: (i) For the period 1963 - 1967, no data for returnees are available; (ii) For the period 1972-1974, new occopational classification has been used by the Statistical Service, and thus some of the figures for this period are not strictly comparable with those of previous years. Specifically, for the period 1972-1974, occupational category A does not include surveyors; ceategory B includes «related technicians» as well; category C excludes vaterinarians, but includes «related technicians»; categories D, E, and F have been consolidated under the general heading «Medical, dental, veterinary, and related workers», and thus veterinarians have been moved here, although it is not clear whether nurses and midwives are actually included; category J has been obtained as the sum of the new categories called «1-5», «1-6», and «1-2» in the Yearbook; category K is the sum of the new categories «0-3» and «1-9», although it is not clear whether it is as all-inclusive as before.

The graduates corresponding to category A are those of the Polytechnic Schools of Athens, Salonica, and Patras.

The graduates corresponding to categories B and C are those of the Schools of Physics and Mathematics of the Universities of Athens, Salonica, Yanina, and Patras, the Veterinary School and the School of Agriculture and Forestry of the University of Salonica, and the Higher Agricultural School of Athens. The fact that the data for graduates include mathematicians, who are not included in the data for emigrants, leads to an underestimation of the «drain rate» for categories B and C

Finally, the graduates corresponding to category D are those of the Shools of Medicine and Dentistry of the Universities of Athens and Salonica.

The data for graduates do not include those who received doctoral degrees (they are very few, anyway).

one year»).[1] Further, data are available from the US or other countries on the flows of Greeks into these countries.

Unfortunately, the statistical definitions quoted above are very inadequate. First of all, they depend on the declared *intentions* of emigrants; thus, the Statistical Service has no way of knowing whether a person who says he or she is going abroad to work for six months will actually stay for two years or for ever. Further, emigrants have reasons of their own to lie to the authorities: if they say they are leaving for good, they might not be given a passport or an army deferment. Thus, the figures for permanent emigrants are certainly an underestimate, since some of the «temporary» emigrants turn out to be «permanent.» On the other hand, the temporary emigration category is distorted by those who go abroad for «signing on,» i.e. to work on ships A physician or an engineer working on a Greek-owned merchant marine vessel is certainly not a part of the brain drain. Finally, the returnee category may be inflated, since it includes those who return to stay for at least one year; the limit of one year is too low, since it would include many persons coming back

1. *Statistical Yearbook* 1969, p. 17.

TABLE 2. *Emigration of Greek Professional, Technical, and Related Workers to the USA, France, and Canada, 1956-1967*

	Engineers	Natural Scientists	Social Scientists	Drs.	Nurses
Emigrants to USA, Annual Average 1956-61	50	14			
Ratio of Above Emigrants to 1959 Graduates	20.7%	3.6%			
Emigrants to USA :					
1956	66	19	1	41	18
1962	43	10	4	32	14
1963	52	36	1	36	11
1964	49	18	1	32	7
1965	33	11	5	27	8
1966	50	36	3	40	13
1967	96	39	12	55	23
Emigrants to Canada : 1962-66	36	30		38	31
Working Licenses Granted to Greeks by France : 1962 - 66	100	50			
Ratio of Emigrants to US, France, Canada to Graduates of Period : 1962-1966	26.6%	12.2%	0.2%	7.7%	8.3%

Source: Thomas, «Brain Drain Again», p. 257; 90th Congress, The Brain Drain, Tables I-VI; Henderson, The Emigration of Highly-Skilled Manpower from the Developing Countries, Tables I-III, V, XIII.

to work or rest for one or two years (e.g. Greek professors, permanently residing abroad, coming to Greece to do research, rest, or work for the government for a limited period of time), although those persons have no intention to settle in Greece. The above are technical arguments; one should also point out that the military junta which held power in Greece during 1967-1974 had a stake in showing that it had succeeded in stopping the brain drain; other instances where the junta distorted statistics (e.g. balance of payments figures) are well known; thus, the brain drain figures cannot be completely trusted.

Table 1 presents data on emigration of highly-skilled manpower in 1963-1974, and on returnees in 1968-1974. Table 2 presents some fragmentary data on Greek emigrants of the same category to the US for the years 1956-1967 and to Canada and France for 1962-1966. To make these data more meaningful, it should be mentioned that the emigration of Greek professional and technical workers is only a part of a huge wave of emigration: for example, during the period 1961-1971, there was a net outflow of emigrants (of all occupations) of 460,000, i.e. more than 10% of the labor force.[1]

As the tables show, in the middle 1960's and in certain professions (especially architecture, engineering, and medicine), the outflow of emigrants was equivalent to between one sixth and one third of the number of new graduates in the same field (this ratio is called the «drain rate»). Since 1968, however, the drain rate has decreased, not so much because the outflow of emigrants lessened, but rather because of the explosion in the number of new graduates. What else do the tables tell us? If we look only at the figures for emigrants, we have a brain drain of relatively enormous proportions. But for the years 1968-1974, when figures for returnees are available, *net* outflow seems to be insignificant, at least when we compare *permanent* emigrants with returnees. Unfortunately, the data are vulnerable, as explained above. Further, they contradict everyday experience: in Greece, the press, professional people, the government itself, respected economists, all are talking about a Greek brain drain problem. One look at the faculties of European and American universities can convince any observer that a great number of Greek «professional and technical workers» are permanently residing abroad.

The Greek brain drain is made up of two components: (a) the already established professionals or the university graduates who emigrate, and (b) those who go abroad for study and stay there. The latter component is of special interest. Accurate data are not available, but the following points can be made: (i) In 1964-65, an American researcher, Myers, conducted a survey of foreign students in the United States; he found that 15.6% of the Greek students in that country intended not to return home (the rest intended to return or were undecided—thus, 15.6% is an underestimate of nonreturn);[2] (ii) According to data quoted by Myers, there were 9,053 Greeks studying abroad in 1965, i.e. 14.4% of *all* Greek students at the time;[3] this is in rough agreement with the data presented by Coutsoumaris *circa* 1966: on the average, he claimed, 8,000 Greeks were studying abroad at any given time, and approximately 1,000 Greeks were going abroad to study every year; 10% were doing graduate work, and 90% were undergraduates; of them, 91% were in the natural sciences or in engineering (at the graduate level, the percentage dropped to 62%) in the period 1959-63; finally, it was estimated that in the period since the end of the war and up to

1. *Draft Model*, p. 196.
2. Myers, p. 378.
3. *Ibid.*, p. 386.

TABLE 3. *Foreign Exchange Granted to Greeks Studying Abroad: 1963-1974*

Year	Foreign Exchange (in $)
1963	7,031,000
1964	6,745,000
1965	6,952,000
1966	7,291,000
1967	9,534,000
1968	9,263,000
1969	9,771,000
1970	12,818,000
1971	19,393,000
1972	27,238,000
1973	37,214,000
1974	47,155,000

Source: Bank of Greece, Monthly Statistical Bulletin: September 1972, p. 68; January 1976, p. 68.

1966, some 6,000 Greeks had studied and remained abroad.[1]

Still, the above data should not be taken at face value; *Xasteria*, a monthly review published by Greek university students during the junta period, presents some other estimates in a 1973 article. According to this, approximately 10,000 go abroad for study each year; further, a 1972 Greek government document is quoted as saying: «It is a common belief that there are approximately 50,000 students abroad today...»; the same number is quoted from another study.[2] The Bank of Greece, which is responsible for granting foreign exchange to students studying abroad, must have accurate figures, but these have never been published. The Bank, however, does publish the total amount of foreign exchange granted annually for purposes of study. Table 3 presents these figures for 1963-1974. They show that the amount of foreign exchange granted to students grew approximately seven times in this period, from $7 million in 1963 to $47 million in 1974. This reflects the increase in the number of students studying abroad, as well as inflation. The question is: what is the number of students hidden behind these figures? According to Bank of Greece regulations, the maximum amount of foreign exchange granted per person was—back in 1969-70—$200 per month ($290 for students in the US and Canada, 30-45% more for graduate students). Since many students receive scholarships and since many don't need the whole amount or return to Greece for the summer, one could conclude that the average student receives $1,000 to $2,000 a year in foreign exchange. This would lead to an estimate of 27,000 to 13,500 Greeks studying abroad in 1972; this is very far from the 50,000 estimate for the same year. Unfortunately, the issue cannot be resolved. It is plain, however, that a lot of Greeks study abroad and that this costs the country a lot of foreign exchange.

1. Coutsoumaris, p. 196, 199.
2. *Xasteria*, January 1973.

II

What are the causes of the brain drain? In the case of Greece, one can look at three big areas: (a) the state of demand for and supply of highly-skilled manpower; (b) the state of the educational system; and (c) the political situation. There is a multitude of factors, of course, but most of them can be subsumed under these three rubrics. Several economists have written on the subject; here I will draw on the views of—among others—Thomas, Henderson, Hoek, Zolotas, and Coutsoumaris; the last two have dealt specifically with the case of Greece, as have also the anonymous writers of the review *Xasteria*. To understand the brain drain phenomenon, we have to look both at the country of origin, i.e. Greece, a small developing country, and at the receiving countries of Western Europe, Canada, Australia, and the US.

Greece entered the road of industrialization, which implies increased requirements for high-level manpower, only very recently and very hesitantly. It would take a very long digression to explain the reasons for this fully, but it is directly related to the investment proclivities of Greek capitalists; for historical and political reasons, they have been dominated by a «commercial» mentality, i.e. the pursuit of easy and fast profits, that has kept them, unless under extreme pressure, from directing their investments towards industrial capital formation; instead, they preferred trade, real estate speculation, conspicuous consumption, and deposits in foreign bank accounts.[3] The monopolistic structure of the banking system has also helped in creating an artificial shortage of capital available for industrial ventures.[4] The above, combined with the small size of the home market and the non-competitiveness of Greek products in foreign markets, resulted in science and technology playing a very small role in the Greek economy; hence the very low demand for highly-skilled manpower.

In the US and the other advanced capitalist countries, on the other hand, due to the very rapid developments in science and technology in the post-war period, capital formation and economic growth came to depend not on unskilled, raw labor as be-

3. See Alexander for some documentation of this.
4. See Psilos.

fore, but on high-quality «human capital.» It was this that generated a very increased demand for skilled and educated personnel; existing institutions were very slow in responding to the challenge (due to the very long period of «gestation of human capital,» among other things) and this led to a «dynamic shortage» in the supply of human capital, wherein actual prices kept chasing after, but never reaching, runaway equilibrium prices.[1] This, coupled with the situation in the developing countries and the immigration laws of the developed countries, brought about a net outflow of «human capital» from the former to the latter. Indeed, the immigration laws of countries like the US, Canada, and Australia, explicitly favor highly-trained emigrants to such a degree that the British economist Brinley Thomas has exclaimed: «Immigration policy has come to resemble tariff policy as a flexible instrument for pursuing national advantage.»[2]

To go into the role of the educational system, one would have to examine both that of the developed and that of the developing countries. Hoek says that a primary reason for the brain drain is «the absence or great weakness of educational planning and forecasting of manpower needs in most developing and developed countries.»[3] In this article, however, I will focus on the Greek educational system. Greek higher education is now in a period of transition; until very recently, however, it fit very well Hoek's statement that the university in developing countries «was and often still is largely an emanation of the liberal professions and the administration.»[4] Greek universities lack developed programs in applied science and industrial management, while graduate studies and research facilities are almost nonexistent; the bulk of the graduates are to be found in the fields of law and the humanities, geared towards high-school teaching and civil service jobs.[5] Thus, until recently, Greek higher education almost exclusively served to guarantee social stability, rather than provide personnel for industry as well. An attempt was made in the early 1960's (when industrialization finally started) to change this and turn the university into a technocratic one, producing more scientists, engineers, and managers. This process was greatly complicated by the policies of the military junta in 1967-1974.[6] Today, the issue of educational reform is not yet resolved. Thus, those who wish to study certain subjects and study them well, have no choice but to go abroad. In 1972, for example, 50,000 applicants took the university entrance examinations, but only 12,000 were accepted, i.e. 24%; in 1975, there were 69,112 applicants, but 15,612 were accepted, i.e. 22.5%;[7] those who remain, can try their luck the following year, or go to technical-vocational schools, or go abroad. As *Xasteria* says: «There is no doubt that student emigration is the reflection of the deficient and antiquated educational system of our country.»[8]

Of course, after Greek students study abroad, it is very easy for them to stay there. A number of factors favor this. Living conditions are probably better, research facilities are readily available, salaries are higher.[9] Further, the training they have received is geared more to the requirements of their «host» country than to those of Greece.[10] Thus, it is difficult to find a job in Greece corresponding to their training. The investment preferences of Greek capitalists result in a very low priority being assigned to research and development; research and development do not yield quick returns, while building an apartment complex does; the monopolistic structure of industry prohibits innovations; the bureaucratic structure of the government apparatus leaves very little initiative to those scientists that might be employed by the government.[11] For the last few years, this state of events has been changing in a very slow and sometimes contradictory manner; but it is too early to see the results and make a definitive analysis. It can be seen from all this that income differentials between countries—an important factor in orthodox theory[12]—play a rather secondary role in the decision to emigrate or not to return. As Coutsoumaris says:

> «Many Greek scientists and intellectuals would be willing to return to their country, with an income reduced to a fourth or even a fifth of what they can get abroad, under the condition that their services will be appreciated and utilized properly and that they will be offered work conditions that will permit them to achieve some results.»[13]

The effect of the political situation on the brain drain has been excellently formulated by Hoek:

> «(There are) countries where political institutions not only create an unfavorable climate for development, but more specifically, prevent academic freedom in writing and speech as well as the constructive participation of educated people outside government in the shaping and application of appropriate

1. Hoek, p. 9; Thomas, p. 272.
2. Thomas, p. 269.
3. Hoek, p. 24.
4. *Ibid.*, p. 26.
5. Coutsoumaris, p. 198-9.
6. See Yataganas, p. 37-52.
7. See Athenian newspapers, October 16, 1975.
8. *Xasteria*, January 1973.
9. Zolotas, p. 26; Henderson, p. 88 ff.
10. Henderson, p. 69.
11. Coutsoumaris, p. 201-5.
12. Scott, p. 245.
13. Coutsoumaris, p. 198.

development policies. Such attitudes mostly lead to feelings of isolation and frustration which, in turn, form an incentive to emigrate (except in extreme cases in which it may lead to the grouping of such people in a revolutionary movement of one kind or another).»[1]

Greece has been such a country for the greatest part of the post-war period, and especially during 1967-1974. The Civil War in 1944-49 brought about a situation where the maintenance of the social regime necessitated the imposition of severe restrictions on the freedom of thought and speech; higher education was a citadel of conservatism and new ideas were immediately branded as leftist and excommunicated. The beginning of the 1960's saw the resurgence of liberalism, but then the junta came. Thus, more and more intellectuals had or chose to leave the country, while those studying abroad decided to stay there, waiting for better days. Of course, the situation is very different today and many intellectuals have returned, but things are still far from perfect.

The foregoing analysis amply confirms Coutsoumaris' conclusion that the «migration of highly-qualified manpower is intimately connected with the entire socioeconomic structure of the developing countries and with the manner the latter utilize their resources.»[2] It also helps to explain the following paradox (observed by most authors : Hoek, Henderson, Zolotas, Coutsoumaris) : There is a discrepancy between a developing country's «human capital» *requirements*, and the *effective demand* for the same. Greece, for example, needs huge amounts of «human capital» in order to develop. (This was realized and said even during the junta period: it is stressed in the 1972 *Draft Model for the Long-Term Development of Greece* that extensive reforms in the educational system are needed immediately, so that the necessary «human capital» will be available by 1987; nevertheless, shortages of engineering graduates are predicted for 1987, even if the reforms are immediately carried out.) But the demand for such «capital» is not forthcoming, because of the preferences of the capitalists and the policies of the governments, which do not encourage the utilization of research. If, on top of this, the educational system and the political situation—as was the case during the junta years—do not provide any incentives for staying, highly-skilled persons will emigrate. This further compromises the chances of development and brings about more emigration. It is a vicious circle combined with a downward spiral! But how can it be broken? The answer to this is outlined in the end of this article.

1. Hoek, p. 27-9.
2. Coutsoumaris, p. 195.

III

The theoretical discussion on the costs and benefits of the brain drain was started by the Grubel and Scott article.[3] The authors attacked «nationalistic» approaches to the problem and took the «cosmopolitan» view. A country was «an association of individuals whose collective welfare its leaders seek to maximize»; then, the brain drain is beneficial when «first, the emigrant improves his own income and, second, the migrant's departure does not reduce the income of those remaining behind.»[4] Since the first condition is usually fulfilled, the second one is of key importance. For one thing, the emigrant takes away both his contribution to production and his share in income; if «factors of production» are substitutable, there is no problem. There is a diminution in production, of course, when he departs, but this is only temporary, until the emigrant is replaced. The same holds for the external effects generated by the emigrant; if these are associated with his occupation and not his person, then it is only a matter of time until he is replaced. Further, the emigrant takes away his taxes, but he also takes away his potential children, whose education his taxes would finance. Thus, possible losses from the emigrant's departure are either nonexistent or negligible. On top of that, there are possible benefits. The emigrant sends back remittances; he subtly influences policy towards his country in his new country of residence; the pure research he does abroad (better than he could do it at home), benefits his home country, since knowledge is a free good, available to the entire world; the applied research he does results in reduced costs of production, and, in a perfectly competitive world, these spread everywhere.[5] Or so the Grubel and Scott argument goes.

Most of these arguments can be, and have been, criticized, directly and indirectly.[6] Grubel and Scott assume factor substitutability and speedy adjustment, but this is not always so in the real world. «Human capital» and physical capital are not fully interchangeable, and the period of production of «human capital» is quite long (12 to 16 years, say), so that replacements take time. Highly skilled persons involved in teamwork *do* generate considerable externalities and provide leadership; it is not easy to replace them. The emigrant's taxes would not merely pay for his children's education, but also

3. Grubel and Scott, «International Flow of Human Capital».
4. *Ibid.*, p. 242 - 3.
5. *Ibid.*, p. 244 - 9.
6. Henderson, p. 109, 116-35; Hoek, p. 34-8; Zolotas, p.12-35; Coutsoumaris, p. 205-7; Thomas, p. 263-8.

for the pensions of his elders, who *do* stay behind. The emigrants who belong to the brain drain category do not usually send remittances back; on the contrary, when they leave as students, they drain Greece's foreign exchange reserves; if they leave as established professionals, they take their families with them, and have no reason to send back remittances. Most of the research done by foreign scientists (especially in the USA) is for the government or for the army and is in no sense a free good; if it is done for industry, its results are *sold* to firms in other countries and their use is controlled by the sellers. In Greece, for example, in 1971 and 1972 the Federation of Greek Industries asked the military government to finance local research, since buying patents and know-how from abroad had proved uneconomical.[1] Finally, the contention that emigrants influence their «host» country's policies towards their home countries is not always true. On the contrary, if these emigrants eventually return to their home country, they might represent and promote the interests of the «host» country, and might even prefer its products.[2]

Further, the Grubel and Scott analysis is static, since it ignores, as Zolotas says

«the dynamic effects that the depletion in the ranks of the natural leaders of economic development would have (...). It is intuitively obvious that the socioeconomic growth potential of a country is severely impaired when the skilled and the educated are gone.»[3]

Finanlly, two more general points of criticism made by Thomas[4] are the following: (i) The Grubel and Scott criterion for evaluating the brain drain is essentially the criterion of Pareto optimality; the emigrant is better off and none of the persons staying behind is worse off; when this holds, then the brain drain is a Pareto-optimal move; but for this to be true, the conditions of perfect competition must hold. Otherwise, we have a «second-best» situation, and according to the «theorem of the second-best»[5] piecemeal improvements are not necessarily optimal. In our case, where many rigidities exist and where marginal products do not necessarily equal factor incomes, we are certainly dealing with a «second-best» situation. (ii) Since the «problem of inducing economic growth in an underdeveloped country usually involves *structural*, not marginal changes», then, to the extent that growth or stagnation are related to the brain drain and to the extent that Grubel and Scott make a marginalist and static analysis, this analysis is inadequate. As Thomas says:

«If it is left to purely marginal incentives, skilled workers and highly-qualified personnel who cannot be employed at home will emigrate to richer countries, and yet this human capital is essential in the long run if the poor country's comparative advantage is to be realized. Unless there is interference with market forces in order to provide a breathing space, the developing country will be deprived of a cumulative flow of benefits and will remain poor. It is for these reasons, among others, that reliance on the verdict of the free market economy can lead to a widening of the gap between rich and poor countries.»[6]

1. Federation of Greek Industries, *Bulletins*.
2. *Xasteria*, January 1973.
3. Zolotas, p. 19.
4. Thomas, p. 267.
5. Lipsey and Lancaster, «The General Theory of Second Best».

IV

There are many other interesting sidelights to the brain drain cost-benefit controversy. But the above are the most important. The discussion seems to indicate that, at least for Greece, the brain drain is not beneficial. If so, what can be done? The literature is full of policy proposals, but most are halfway measures. The analysis of the causes of the brain drain made above indicates that the entire socioeconomic structure is involved. Certainly, half-way measures will bring about some improvements, but the fundamental gap between Greece's «human capital» requirements and the effective demand for «human capital» in this country will not be bridged unless there is a major reorientation of economic policy, and this involves both the capitalists and the government. To put it very briefly (and somewhat abstractly): it seems that only if both investment and education are planned with the same goals in mind, namely to maximize social welfare, will the brain drain go away.

6. Thomas, p. 267-8.

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