Demographic and Related Determinants of Recent Cuban Emigration[1]

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This article highlights some of the principal demographic determinants of recent Cuban emigration, while also considering how these demographic variables interact with other social and economic determinants, utilizing a broad conceptualization of emigration. It also makes reference to Cuban military activities abroad. The conclusions that follow suggest that labor migration is more responsive to demographic factors than some theorists assume.

The events leading to the emigration of over 125,000 Cubans to the United States in 1980 via the Mariel sea-lift should not have come as a complete surprise. With the hindsight provided by a number of studies, some of the underlying reasons for such an exodus now appear obvious. To the Cuban authorities, and particularly to the politically astute Fidel Castro, a series of events with a potentially negative impact on the Cuban image—those preceding and following the incidents at the Peruvian embassy in Havana when over ten thousand would-be emigrants sought asylum—were skillfully manipulated to provide the ideal justification for the government to promote large scale emigration from the country. In retrospect, the Mariel sea-lift was a most effective use of the emigration safety-valve. It was a grandiose replay of the opening of the Camarioca port

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in 1965[2] and perhaps an attempt to force the United States into negotiating with Cuba a new understanding to permit the orderly and large scale permanent departure of Cubans wishing to emigrate.

That the Cuban authorities, now committed for two decades to a centrally planned economy and with an increasingly sophisticated system of gathering economic, social and demographic data, were seeking the opening of the emigration door to cope with perceived and anticipated internal difficulties has been fully documented. Barry Sklar (1980:4-5), for example, noted in a report completed while the sea-lift was in progress:

> There are indications that the Cuban government in the past months, for a number of reasons—economic, political and those dealing with foreign affairs—was interested in permitting emigration to the United States. Recent economic and political developments have had an unsettling effect on Cuban life, and pressures on the government were definitely building within the population. In this period, quiet discussions between U.S. and Cuban officials in Washington and Havana focused on the application of the recently passed Refugee Act of 1980 to the question of permitting additional Cubans, principally released political prisoners, to emigrate to the United States... . In these discussions the Cubans made references to past experiences of mass migration to the United States. Based on these conversations, State Department officials did not believe that the Cuban government would unilaterally exercise the option of lifting the gates to allow discontented elements to leave the country, although a CIA report prepared in January discussed the possibility of such an occurrence!

Sklar goes on to observe that just a few days before the incidents at the Peruvian embassy, Castro issued a warning to the United States that Cuba's emigration gates might be opened if the United States did not move to discourage illegal departures from the country (Sklar, 1980:6). As Sklar concluded, "the spontaneous Peruvian embassy incident of April 1 provided the set of circumstances by

[2] A "memorandum of understanding" between the Cuban and U.S. governments in 1965 established an airlift between Varadero and Miami that brought about 257,000 Cubans to the United States during the next eight years.

which Cuba's emigration policy was implemented" (Sklar, 1980:6) Castro had again outfoxed the United States. At the time he was well aware of certain demographic realities then probably unknown to Sklar, or to most of the American officials negotiating with the Cuban government.

This article attempts to specify some of the principal demographic determinants of recent Cuban emigration, while also considering how these demographic variables interact with other social and economic determinants. A broad conceptualization of emigration is used. The term should be understood to include permanent emigration, such as that observed during the Mariel sea-lift when people dissatisfied with conditions in revolutionary Cuba left the country. It also includes other population movements which in many respects are more akin to various forms of labor migration. The latter includes the civilian activities of Cuban nationals in a number of developing countries, and also encompasses temporary labor migration to Eastern European states. In addition, reference is made to Cuban military activities abroad.

As will be shown, these population movements that on first sight appear to have such a disparate character, in fact have some common underlying roots. Their combined analysis adds a rather unique perspective to theoretical explanations of migration in general, and particularly of international labor migration. While some of the conclusions that follow from this analysis do not invalidate the role commonly ascribed by theorists to certain economic systems in influencing labor movements (specifically capitalism and a world capitalist system), the Cuban experience does suggest that labor migration is more responsive to demographic factors than some theorists are likely to assume or admit for conceptual or ideological reasons. The perspective that emerges from assessing the Cuban experience is particularly illuminating to understanding labor movements from developing countries. The analysis is facilitated by Cuba's rather unique demographic situation that permits the study of population factors in relative isolation from other determinants of migration. The socialist character of Cuba's economy and its partial integration into the international nonmarket economy provide some additional controls not commonly found in the study of emigration from other developing countries.

BACKGROUND TO PERMANENT AND TEMPORARY EMIGRATION

Demography of the Labor Force

During the 1960s Cuba experienced a baby boom that disrupted a long established trend of declining fertility (Díaz-Briquets and Pérez, 1981). This baby boom caused the population growth rate to accelerate considerably. The crude rate of natural increase, that during the 1950s had not exceeded two percent per year, began to rise in 1959, reaching 2.8 percent in 1964. Between 1960 and 1972 it remained above 2.2 percent per year.

The children born during the first years of the baby boom began reaching working ages in late 1974 and 1975. The size of the Cuban population in the prime ages of entry to the labor force, roughly 15 to 19, increased from an estimated 800,000 persons of both sexes in 1975 to some 1,136,000 in 1980 (Table 1). This is an absolute increase of nearly 336,000 persons, or 42 percent, in a five-year span, a dramatic expansion following a history of gradual increments (Díaz-Briquets and Pérez, 1981:22). In the past a slower rate of population growth facilitated the entry of young persons into the labor force and permitted the assimilation of substantial numbers of women. Also easing the process of labor assimilation were the emigration of hundreds of thousands of people in the economically active ages, a substantial expansion of the educational system that delayed the beginning of working careers for many youths, economic inefficiencies leading to less than optimal utilization of labor, and other measures such as easing of retirement regulations (Mesa-Lago, 1981).

However, this situation has changed because of the baby boom and its aftermath. Between 1975 and 1990 the Cuban population aged 15 to 29 will increase by over one million persons, or nearly 45 percent.[3] (this increment can be placed in perspective by recalling that Cuba's total population amounted to approximately ten million people in 1980).

[3] The population increase by 1990 will be larger, in fact, than assumed by the projection. The population projections were made assuming that Cuba will experience a net emigration of 297,500 persons between 1980 and 1990. Of these emigrants 130,354 would be aged 15 to 29. One wonders where the individuals making these assumptions believe the migrants will go? For details, *See,* Dirección de Demografía and CELADE (1980:41).

TABLE 1

ESTIMATED AND PROJECTED[a] POPULATION IN SELECTED AGE-GROUPS, CUBA 1970-2000

	1970	1975	1980	1985	1990	1995	2000
MALES							
15-19	388155	407233	581521	589439	540709	387013	406951
20-24	366235	382768	396325	564049	580796	538525	386412
25-29	331782	357537	370023	376651	553829	577927	535961
15-29	1086172	1147538	1347869	1530159	1675334	1504365	1329324
FEMALES							
15-19	375552	392420	554362	562127	516813	371206	390563
20-24	353710	370703	380555	535007	553528	515950	370664
25-29	319473	348574	358206	360832	525729	552089	514784
15-29	1048735	1111697	1293123	1457966	1596070	1439245	1276011
BOTH SEXES							
15-29	2134907	2259235	2640992	2988125	3271404	2943610	2605335
ABSOLUTE CHANGE							
		124328	381757	347133	283279	-327794	-338275

NOTES: [a] Median Variant.

SOURCE: Dirección de Demograífa, Comité Estatal de Estadisticas (República de Cuba) and Centro Latinoamericano de Demografía (CELADE), *Proyección de la Población Cubana 1950-2000, Nivel Nacional: Metodologia y Resultados* (Actualización en Junio de 1980), Havana, 1980, Table 9, pp. 78-79.

The implications of such an explosive acceleration in the population growth rate on employment generation during the 1970s and 1980s can be illustrated with some simple calculations. Under the conditions implied by the population projections shown in Table 1, the 20 to 29 age group will increase by over 700,000 persons between 1980 and 1990, as compared to an increase of 134,000 between 1970 and 1980. Based on the assumed male and female economic participation rates used in the illustration (not too different from the ones prevailing in 1980), it would be necessary to create five times as many jobs during the 1980s as in the preceeding decade (Table 2). This represents quite a challenge to Cuba as it tries to adjust to a deteriorating international economic environment and

TABLE 2

HYPOTHETICAL NUMBER OF JOBS REQUIRED TO SATISFY DEMAND GIVEN ASSUMED PARTICIPATION RATES AND ACTUAL GROWTH OF THE POPULATION IN AGES 20 to 29

	Decadal Population Increase in Age Group 20-29	Assumed Sex-Specific Participation Rate (Percent)	Decadal Increase In No. of Jobs Required
1970-80			
Male	68,193	90	61,365
Female	63,578	40	26,231
Total	133,761		87,596
1980-90			
Male	368,277	90	331,449
Female	340,496	40	136,198
Total	708,773		467,647

Source: Data on Table 1 and assumed participation rates.

as the leadership makes efforts to raise labor productivity and improve the performance of the economy. Further complicating this situation, Cuban development strategies have favored capital intensive methods which have reduced the capacity of the economy to absorb labor, particularly in the agricultural sector. The Cuban economy must, in effect, try to satisfy essentially opposite objectives. However, given the present circumstances, increasing the capacity to absorb labor would be incompatible with a more efficient economy.

Demographic Implications of Housing Policy

Demographic pressures do not occur in a vacuum and certainly do not operate independently of social and economic factors. The fact that persons born in the 1960s are now reaching adulthood is creating tremendous pressures not only on the work force, but also on the already difficult housing situation. In the past a number of observers have noted a tendency for the nuptiality rate in Cuba to rise during periods of substantial emigration (Díaz-Briquets and Pérez, 1981:17-18). It is assumed that nuptiality rates are kept low when housing is in short supply as young persons delay marriage until

they are able to establish their own separate households. The housing problem undoubtedly is more acute in the cities where there is less possibility of using traditional rustic materials to build homes, and where the higher living standards and aspirations of the population make this alternative less desirable than in the countryside.

Table 3 provides a crude approximation of the extent to which population growth and the deterioration of the existing housing stock contribute to the housing shortage. This table presents official estimates of the housing needs of the country over the period 1970-85. It is based on the housing data gathered in the 1970 census and on a series of official assumptions regarding the expected useful life of dwellings, projected rates of population growth, and average household and dwelling size. In order to err on the conservative side, the numbers shown refer to the one of two assumptions which projects lower housing needs. The projections were adjusted by subtracting the official reported number of housing units built by the state sector during each 5 year period and do not, therefore, consider housing units built privately. Given the known shortage of construction materials in Cuba, however, it seems safe to assume that the number of housing units built by private initiative is low, and more likely than not to be of substandard quality. Thus, most private construction should not be included under the official designation of "adequate" housing.

Briefly summarized, Table 3 indicates that during the 1971-75 period, the deficiency in adequate housing increased by some 62,000 units each year, while during the 1976-80 period the deficit rose by about 55,000 units a year. The emigration of some 220,000 persons between 1971 and 1980 (Mariel and earlier emigration) could have reduced the housing deficit by some 45,000 units (assuming five persons per dwelling, the approximate average number of inhabitants per dwelling used in the projections). This is less than the housing deficit created in any single year during the decade.

Allowing for the private construction of an unspecified number of housing units, the large scale upgrading of a sizable quantity of previously inadequate units (highly unlikely), and a drastic decline in the rate of population growth since 1973 (not likely to be a significant factor, because most of the demand for housing is tied to the segment of the population reaching marriage age), the deficit of "adequate" housing, as officially defined, could have been reduced

TABLE 3

ESTIMATED DEFICIT OF "ADEQUATE" HOUSING IN CUBA ACCORDING TO OFFICIAL ESTIMATES, 1970-1980
(IN THOUSANDS OF UNITS)

	1970	1971-75	1976-80	1981-85
Housing deficit in 1970 according to estimates based on census data	1,045[a]			
Estimated number of housing units that need to be replaced during five year period because of deterioration		230	172	81
Estimated number of housing units required during five year period to accomodate demographic growth		162	186	200
Yearly average number of housing units required to replace deteriorated units and to accommodate demographic growth		(78)	(71)	(56)
Cumulated housing deficit at the end of each five year period		1,437	1,715	1,914
Housing units built in each five year period [b]		80	82	
Net deficit at the end of each five year period		1,357	1,633	
Absolute increment in housing deficit during each five year period		312	276	
(yearly average)		(62)	(55)	
Net deficit at the end of 1980 after rough adjustments for emigration, housing built under private initiative and slower population growth				1,500

Notes: [a] as of December 31, 1970.
[b] Official data.

Source: Data from the 1970 Cuban Census of Population and Housing and estimates in Departamento de Demografía, Dirección de Estadística, de Población y Censos, Junta Central de Planificación (Republica de Cuba), *La Situación de la Vivienda en Cuba en 1970 y su Evolución Perspectiva.* Editorial Orbe, Havana, 1976, pp. 54-63), and data on official housing construction in Carmelo Mesa-Lago. *The Economy of Socialist Cuba: A Two Decade Appraisal,* University of New Mexico Press, Albuquerque, 1981, Table 46, p. 173.

to perhaps 1.5 million units by the end of 1980. However, even this figure amounts to an increase in the housing deficit of half a million units, or nearly 50 percent, in the 1970 decade.

As the baby boom generation continues to reach marriage age in the 1980s, the demand for housing will surely escalate. The projected

increase can be estimated in the hundreds of thousands of units, even if we assume no lossess in the housing stock due to deterioration (Table 3). These added housing pressures came on top of those induced by already married couples who, at least in part because of crowding and the unavailability of larger quarters, have drastically curtailed their fertility in recent years (Díaz-Briquets and Pérez, 1982; Gonzales Pérez, 1981).

These demographically induced pressures on the labor market and housing emerge as important determinants of the Mariel sea-lift. Other factors, such as visits by emigres enjoying comparably higher living standards, undoubtedly contributed to the discontent already felt by many Cubans. However, the government's awareness of the current and future negative impact of the aging of the baby boom cohort explains why the Cuban leadership promoted the emigration of 1980. Indeed, it explains why Cuba will probably continue to explore ways of facilitating, if at least temporarily, the emigration of as many people as it possibly can.

VARIOUS FORMS OF TEMPORARY EMIGRATION

The Mariel sea-lift and other channels of permanent emigration represent only one approach used by the Cuban authorities to cope with internal pressures generated by the interaction of social, economic and demographic variables. There is a growing body of literature documenting the different ways in which Cuba has embarked on a concerted effort to export surplus labor. To be sure, some of the mechanisms used to export surplus labor have emerged as a response to spontaneous events over which the Cuban leadership had no control, but of which they took advantage. However, using spontaneous events within the framework of a planned strategy is becoming increasingly common as Cuba tries to deal with internal, social and economic difficulties associated with the demographic trends already discussed.

Overseas Military and Civilian Involvement

One way Cuba has exported surplus labor has been through overseas military and civilian activities which have been a part of Cuban

foreign policy since the early days of the revolution. Large scale military involvement abroad, however, did not occur until the Cuban intervention in Angola in 1975 and accelerated with Cuba's participation in the Ethiopian-Somali conflict in 1977. Much has been written about the reasons behind Cuba's African involvement (*See*, Mesa-Lago and Belkin, 1982, for a comprehensive overview). The consensus appears to be that the decision to intervene was made on the basis of ideological and political commitments on the part of the Cuban leadership and partly on the basis of a coincidence of interests between Cuba and the Soviet Union in that part of the world. There are strong grounds to believe that Cuba's military support also was provided as partial payment for past Soviet economic assistance and as an effective bargaining tool to secure even more generous support. It is estimated that by the late 1970s Soviet support to Cuba ranged from eight to nine million dollars a day, or between one-fourth and one-third of the national Gross Domestic Product (Recarte, 1980; Theriot and Matheson, 1979).

What really concerns us here, however, is the role of demographic factors in that socioeconomic context. As Jorge Dominguez (1980:28) observed in 1980, Cuba's military involvement in Africa coincided with the "demographic accident" associated with the rapid expansion of the population aged 15 to 19, the most relevant ages for entry into military service and the labor force. In addition that period saw a severe deterioration of the national economy and open unemployment as the government began to implement measures to increase economic efficiency. Thus, "Angola and Ethiopia represented a benefit to Cuba because of the exportation of surplus labor via the military draft" (Roca, 1980:65).

Of interest to this analysis is the civilian counterpart to Cuba's military activities abroad, *i.e.*, Cuba's foreign assistance program. This long-standing program has enabled Cuba to make friends and gain influence among developing countries, particularly in African states with much lower levels of development than Cuba, and where even a minor contribution of skilled personnel in selected areas (*e.g.*, medicine and public health) can have a high payoff and visibility.

As with many other features of Cuba's history over the past quarter of a century, the origins of Cuba's foreign assistance program can be found in the personal idiosyncrasies of Fidel Castro and in his

desire to have Cuba attain an international role under his leadership. A reading of Castro's speeches in the early 1960s indicates how he foresaw Cuba as a source of technicians for other developing countries even at a time when the very survival of the revolution at home was at stake. In 1963, when members of Cuba's medical establishment criticized the medical education program he advocated for being too ambitious (they felt that it would lead to the creation of a physician surplus), Castro described what had been his response in a nationally televised speech:

> ...Too many? And when revolutions take place in other countries of Latin America and they won't have physicians and they ask us to provide them...and they ask for engineers, and they ask for agronomists, and they ask for architects, and they ask for teachers? We are few but such will be the day in which our needs will already be satisfied, or with certainty, they will not be as urgent. Haven't we sent 50 physicians to Algeria? How many countries in the world won't someday ask that we give them our technical assistance? Thus, we should not only calculate our needs...There is another thing: our duty to help, to provide technical assistance to other countries that need help" (Castro, 1963:7).

Castro's prediction almost two decades ago did not really materialize in Latin America until the 1979 Nicaraguan revolution (and on a much smaller scale in Jamaica during Manley's government and later in Grenada). Earlier, however, he had been able to achieve his ambitions in a number of African states as well as in Vietnam and parts of the Middle East.

An interesting feature of Cuba's foreign assistance program is that it provided technical and professional support solely on the basis of politics and ideology to poor countries that could not afford to pay for it. Increasingly, however, this aid program is becoming a way for Cuba to earn hard currency. This appears to be particularly true in the case of a number of oil-rich states in Africa and the Middle East with which Cuba has close political ties who find it more politically palatable—and possibly cheaper—to receive technicians from another developing country, especially since a portion of Cuba's population shares a common racial background.

In the case of Angola, for example, there is some evidence

suggesting that the nature of military assistance, originally provided for ideological and political reasons (but with the financial backing of the Soviet Union) has changed, since Angola now earns over $2 billion a year through the sale of oil. According to recent reports, Angola pays Cuba $40 a day for each soldier stationed in its territory (Wilson, 1981). Since there were reportedly about 10,000 Cuban soldiers in Angola in 1981, Cuba may have earned as much as $170 million. Other accounts claim that Angola pays Cuba $600 per month for every Cuban teacher serving there (Bender, 1980:53).

In addition, many countries are paying Cuba in hard currencies for the services of trained physicians and other technicians and for the use of other workers employed in service contracts. Castro recently reported that in mid-1981 Cuba had nearly 15,000 civilian workers in 36 countries, including 1,196 physicians and 2,264 other health workers, as well as 3,562 educators. Approximately 7,000 of these workes were involved in construction projects in ten countries. During the first six months of 1981 these workers produced nearly $100 million worth of construction (Castro, 1981:13-14, 20). In the past, some of these contracts included the provision of workers and technicians to Libya for the construction of housing projects and highways, and to Angola for the fabrication of apartment buildings and bridges (Roca, 1980:66).

The export of skilled, semi-skilled and unskilled labor represents a novel—if uncertain and unpredictable—way in which Cuba can earn badly needed foreign exchange through the repatriation of foreign earnings. This brief review suggests that at present Cuba is earning hundreds of millions of dollars a year through the provision of civilian and military personnel abroad. Whatever the amount might be, it is a sizable portion of Cuba's earnings of hard foreign currency, the remainder of which mostly comes from the sale of sugar abroad. This is a particularly important source of revenue at a time when sugar prices are low and many banks are refusing to extend new loans to Cuba, which has already accumulated a debt of over $2.5 billion to the West.

However, there is evidence that Cuba's activities in other countries have also implied costs to the national economy (*See,* Mesa-Lago and Belkin, 1982). For example, in order to successfully compete for international contracts, Cuba must export some of its most skilled personnel, thus depriving the national economy of their services.

Domestic needs have often been sacrificed in order to gain foreign exchange or influence abroad. The domestic housing shortage gets worse, for instance, while Cuban construction workers are employed overseas. But, as will be demonstrated, demographic trends appear to have lessened somewhat the costs that Cuba has had to pay, and in balance may more than compensate for them, at least in the short to medium term.

Teachers

It is probable, for example, that Cuba is experiencing a surplus of primary school teachers. During the 1960s, Cuba's baby boom generation reaching school age demanded a very rapid increase in the number of teachers required for a dramatically expanding primary school system. After the 1974-75 school year, however, the number of children enrolled in primary school began to decline, with the decline becoming even more pronounced towards the end of the decade. Given recent fertility trends, primary school enrollments will continue to decline well into the 1980s.

As expected, demographic pressure began to shift to the upper grade levels. During the 1970s the baby boom cohorts placed tremendous pressures on secondary schools and institutions of higher learning. At the secondary level alone, as Table 4 shows, enrollment more than tripled between 1971-72 and 1979-80.

The enrollment trends in higher education are comparable to those noted for secondary schools. Enrollment at the pre-university and technical and professional school levels increased during the 1970s by a factor of seven or more. It is remarkable that Cuba was able to accomodate such increases in such a short period of time. There should be no doubt, however, that the quality of instruction must have been limited, largely because of a dearth of qualified teachers at the higher levels.

It is logical to assume, and there is some evidence to suggest, that the Cuban educational authorities tried to cope with this increasing enrollment by upgrading the skill levels of some primary school teachers so that they could teach at more advanced levels. While this is a rational approach, there are bound to be practical limitations to the skills and knowledge primary teachers could acquire, particularly when one considers, the very low levels of formal training with

TABLE 4

BASIC EDUCATIONAL DATA, CUBA 1971-1980

School year	Students (in thousands)	Teachers (in thousands)	Students Per Teacher	Percent of Students with Scholarships	Annual Percent Growth of Student Population
		Primary			
1971-72	1631	65	25.0	3.0	—
1972-73	1733	69	25.2	3.0	6.2
1973-74	1781	72	24.8	2.6	2.7
1974-75	1801	78	23.0	2.6	1.2
1975-76	1796	82	21.9	2.7	-.3
1976-77	1748	86	20.4	2.9	-2.7
1977-78	1694	78	21.8	3.1	-3.1
1978-79	1626	78	21.0	3.3	-4.0
1979-80	1550	77	20.1	3.3	-4.5
		Secondary			
1971-72	186	15	12.5	21.1	—
1972-73	200	15	13.0	28.1	7.7
1973-74	239	20	12.1	37.1	19.4
1974-75	307	25	12.5	40.0	28.3
1975-76	383	30	12.7	41.0	24.6
1976-77	486	41	11.8	46.7	27.0
1907-78	557	42	13.2	43.1	14.6
1978-79	646	49	13.1	39.1	16.0
1979-80	691	51	13.6	37.5	6.9

TABLE 4 (continued)

BASIC EDUCATIONAL DATA, CUBA 1971-1980

School year	Students (in thousands)	Teachers (in thousands)	Students Per Teacher	Percent of Students with Scholarships	Annual Percent Growth of Student Population
			Primary		
			Pre-University		
1971-72	16	1.1	14.5	22.5	—
1972-73	22	1.3	17.0	18.3	40.4
1973-74	26	1.7	16.0	29.2	18.7
1974-75	30	2.0	15.0	44.6	15.9
1975-76	38	2.7	13.9	52.6	24.3
1976-77	49	3.8	12.8	60.3	30.2
1977-78	89	7.4	12.0	67.9	81.0
1978-79	13	8.8	12.9	63.4	27.7
1978-80	135	9.7	14.0	61.3	19.4
			Technical and Professional		
1971-72	30	4.4	7.0	62.5	—
1972-73	42	4.7	9.0	58.5	37.8
1973-74	57	5.5	10.4	64.1	35.8
1974-75	95	6.2	15.3	63.5	66.1
1975-76	115	7.1	16.2	63.6	21.2
1976-77	159	8.8	18.2	62.4	39.1
1977-78	194	11.7	16.6	53.1	21.6
1978-79	198	14.6	13.6	50.7	2.2
1979-80	214	15.0	14.3	46.6	8.2

Source: Comité Estatal de Estadística (República da Cuba), *Anuario Estadístico de Cuba, 1978,* Havana, Cuadro 7, pp. 211-212, and *Anuario Estadístico de Cuba, 1979,* Havana, Cuadro 7, pp. 211.212.

which many of the teachers started. Many of these teachers were inducted into this activity with skill levels barely above those of the students they were supposed to teach during the 1960s when the coverage of the educational system was being expanded and the much larger cohorts of baby boom children were reaching school age. Thus, it seems unlikely that these teachers could improve their attainment levels sufficiently to give adequate instruction to students at higher educational levels. Some of these teachers would have to be employed in areas other than education, or, if they remained in teaching, would displace younger, better trained individuals who were now being trained and assimilated into the primary school system at a slower pace.

The surplus in primary teachers probably was made more acute by a fertility drop more rapid than Cuban demographers had anticipated. Population projections released in Havana as late as 1978 and 1980 did not assume that fertility would reach the levels it did in 1978-80 until the period 1995-2000 (Direción de Demografía and CELADE, 1978; Valdés Suarez, 1980). A 1980 update of the 1978 projections shows a decline of 125,970 children aged 0- to 4 in 1980 and a drop of 177,664 children in that age group in 1985 (Dirección de Demografía and CELADE, 1980). The highest number of children anticipated in earlier years may have led to the training of more teachers than necessary.

One obvious way to productively employ some of the surplus primary school teachers is to send them abroad, and this may have been one of the alternatives adopted by the Cuban authorities. Since most teachers employed abroad are engaged in literacy campaigns, the level of formal training required is low compared to that needed for teaching more advanced students. Table 4 shows that the number of primary school teachers was reduced by some 9,000 between 1976-77 and 1979-80. Despite this, the student-teacher ratio declined by 20 percent since the early years of the decade. While this probably suggests an offical policy of reducing student-teacher ratios, it may also be a reflection of the surplus of teachers. Recarte (1980:126) has noted that the "teaching brigades" sent to Angola and Nicaragua consisted primarily of first year students at the national teaching schools. This, too, is consistent with the declining need for teachers at the primary level.

Data on the percentages of students attending school on scholarships at each educational level are particularly interesting (Table

4). In primary school the percentage has remained relatively stable throughout the decade. A different picture emerges at higher educational levels, however. During the first part of the decade the percent of secondary students with scholarships rose steeply, reaching its peak during the 1976-77 school year, then declining nearly 10 percent by 1979-80 (a somewhat similar tendency can be observed at the pre-university level).

At the technical and professional level, on the other hand, the trend is almost the opposite. The percentage of students with scholarships was higher at the beginning of the decade than at the end. From a peak in 1973-74 of 64.1 percent it dropped to 46.6 percent in 1979-80. Even more revealing than the percentage decline is the change in absolute numbers: between 1977-78 and 1979-80 there was an absolute decline of over 3,000 students with scholarships despite the fact that enrollments continued to increase. The annual rate of increase in the late 1970s was much lower than it was earlier in the decade, a trend that is not consistent with the growth of the overall student population.

A number of interpretations are suggested by these trends. The most obvious is that Cuba's educational system is being taxed to the limit as it attempts to make good on Castro's promises to make educational opportunities, including higher education, available to all who want them. While this was difficult enough to achieve at the primary and then at the secondary level, it may be proving unattainable at higher levels of education. For one thing, it is doubtful that sufficient numbers of trained teachers are available for these relatively demanding positions. The educational authorities appear to be manipulating the rate at which students pursue higher education by establishing admission standards (Recarte, 1980:126), and obviously by reducing the number of scholarships that are being offered. These trends are consistent with policies recently announced to reduce university enrollment by 30 percent (Simons, 1980). The expulsion of many students from national universities in 1979-1980 on ideological and political grounds is also in accord with that policy.

One possible interpretation of the limits set to university admissions is that the country wishes to avoid the expense and disruption of expanding institutions of higher education, because it perceives the baby boom cohort as a passing phenomenon, to be followed by much smaller student cohorts.

Physicians

In not all areas where there is an overabundance of trained personnel are the Cuban authorities attempting to reduce their numbers. Despite an already ample supply of physicians, for example, many continue to be trained. In 1981, there were nearly 16,000 Cuban physicians, or approximately one for every 600 inhabitants (United Nations, 1981a), one of the most favorable ratios in the world. Still, plans are underway to increase the stock of doctors. In the 1980-81 school year, for instance, first year medical school enrollment reached almost 4,000, an increase of almost 500 over the previous academic year. Since 1979 a declining trend in the number of medical graduates was reversed and over the next several years the number of medical school graduates is certain to rise to over 1,000 per year. Some of these graduates, however, are likely to be foreign nationals who are being trained at Cuba's expense, or (in the case of students coming from oil rich states) at the expense of the home country.

The emphasis on the expansion of medical education is fully in accord with Castro's assessment that the need for physicans in Third World countries—both in those that can afford to pay for their services as well as in those that cannot—is insatiable. Cuba seems willing to help fill that need in exchange for political good will or badly needed foreign currency.

These attempts to increase the number of Cuban doctors, while beneficial in many respects (*e.g.*, as an example to other countries of the success of the Cuban social and political system), can be questioned on demographic grounds. Will Cuba run into problems with the unwieldy surplus of doctors that will surely materialize in the future? As Recarte (1980:127) has noted, the average period of foreign service will not likely exceed five years in a normal professional life of 35. Thus, over time Cuba will have an exceedingly large number of physicians for the needs of its population, which grows at a slower pace each day. This, in turn, may lead to emigration pressures among the more skilled—a "brain drain" induced by a surplus of skilled workers.

Demographic trends contribute to the growing availability of Cuban physicians for international service in a number of ways. Physician services are most needed during the earliest and later years of life. Cuba's recent drop in fertility has contributed to a

steep decline in the medical needs associated with the youngest age groups. By comparing the annual number of graduates in selected medical fields to the yearly number of births (Table 5), we can see that the ratio of pediatricians to live births and of obstetricians/gynecologists to live births has declined very rapidly since 1975. This declining trend is the result of both an increase in the number of graduates and a drop in the number of births. These trends are likely to intensify in the future as the number of physicans continues to rise and the birth rate remains low.

TABLE 5

TRENDS IN ABSOLUTE NUMBER OF BIRTHS AND ON PHYSICIAN AVAILABILITY BY SPECIALTY

Year	Cumulative Number of Trained Pediatricians by year	Cumulative Number of Trained Obstetricians/ Gynecologists by year	Annual Number of Live Births	Ratio of Live Births to Pediatricians	Ratio of Live Births to Obstetricians/ Gynecologists
1962-75	238	142	192941	811	1359
1976	290	208	187555	647	902
1977	348	256	168960	486	660
1978	378	322	148249	392	460
1979	463	399	143551	310	360
1980	539	484	136900	254	283

Source: Ministerio de Salud Pública (Republica de Cuba), *Informe Anual 1979,* Havana, Cuadro 40, p. L, and *Informe Anual 1980,* Havana, Cuadro 43, p. 52.

As with teachers, the export of physicans was in part determined by the long-term ambitions of the revolutionary leadership (*e.g.*, Castro's desire to make Cuba a prime exporter of technicians) and by unrelated political events (*e.g.*, events in Africa, the Nicaraguan Revolution) which presented the opportunity for Cuban intervention. In both instances, demographic trends facilitated Cuba's actions. All in all, the analysis suggests that much of the skilled personnel that Cuba is exporting, although by no means all, is in surplus supply. Therefore, it is rational for the Cuban government to use these workers abroad to gain political influence or earn foreign exchange. In extreme cases, like Mariel, it may even pay to

allow them to emigrate. Approximately ten percent of the Mariel emigrants, according to data gathered by Bach, Bach and Triplett (1982:43) in four refugee camps in the United States, were employed as professionals or technicans before their departures.

Labor Movements to Soviet Bloc Countries

More recently the Cuban government has set in motion a third mechanism to ease the labor surplus: labor migration to Soviet bloc countries. In July, 1981 Castro announced that 12,000 young Cubans were working in the German Democratic Republic, Czechoslovakia and Hungary (Castro, 1981:21). Negotiations were underway for similar arrangements with other countries. This announcement followed earlier reports indicating that Cuba was in the process of negotiating labor transfers to Eastern bloc countries, including sending some 10,000 Cuban workers to assist with the harvesting of Siberian wood (Rodríguez, 1980:9). Supposedly, the availability of Cuban workers in Siberia would help accelerate deliveries of Soviet lumber to Cuba. Bottlenecks associated with wood shortages have been implicated in Cuba's low rate of housing construction.

It has not yet been documented whether Cuba will receive some sort of compensation from the countries accepting its workers. There is speculation that by providing these workers, Cuba may be paying back to the Soviet Union and other socialist countries part of the sizable economic debt it has accumulated.

Few specific details are available about the use of Cuban workers in Eastern bloc countries. It is known that the workers are young and largely unskilled. According to official rhetoric, individual workers stand to gain from their experience abroad since they will be receiving training and work experience. The rationale appears at least superficially similar to that used by Western European countries when they first began to recruit labor from countries in Southern Europe and Northern Africa. It seems safe to assume that most of these workers will travel unaccompanied by their families. The Cuban migrant workers program, in short, seems to be a socialist variation of the guest worker concept. Every current indication suggests that the movement of Cuban labor to socialist European countries will increase during the 1980s (assuming that no unforeseen events take place, as for example, problems of adjustment for the Cuban workers abroad). As Cuba begins to experience labor shortages by the early 1990s, the situation is sure to change.

IMPLICATIONS OF THE CUBAN EXPERIENCE FOR EXPLANATIONS OF LABOR MIGRATION

The issues reviewed in this article, aside from shedding some light on some of the determinants of recent Cuban emigration, are of special significance to the refinement of labor migration theory. To at least some extent, the underlying premise of most contemporary accounts of labor migration (*See,* recent review by Portes, 1978; Kritz, Keely and Tomasi, 1981) is that they are the result of the emergence, consolidation and continual expansion of a world capitalist system. Within this system, differences in economic development between regions induce migration, as workers from peripheral regions seek the advantages offered by the core areas (while at the same time perpetuating the economic imbalance).

These theories, while generally correct on a broad conceptual level, seldom assign more than a small contributory role to demographic factors. In extreme cases, as with many Marxists theorists, demographic variables are almost completely discounted. Marxist analysts tend to view the determinants of labor migration as almost exclusively arising from factors associated with existing economic systems and their manipulation of available labor.

The Cuban experience provides enough evidence to challenge some of these more extreme assertions. Not only does the 1960s baby boom provide an excellent "test case", the closest thing to a quasi-experimental situation that we can hope for, and through which the effects of demographic factors can be partially isolated, but Cuba is also a socialist state, that is largely, although not fully, integrated into the economic system of the Eastern bloc.

As the analysis has shown, Cuba has come to find some highly original ways with which to cope with a rapidly growing number of labor force entrants. Some of those alternatives, for obvious reasons, are not open to other countries facing similar pressures. What is very significant is that Cuba's demographic expansion has been modest in relation to that of other Third World countries. Most Central American countries as well as Mexico, for example, have been experiencing population growth rates of three percent or higher since 1950-55. Cuba, in contrast, only reached growth rates above two percent during the 1960s (United Nations, 1981b:22-24). Cuba's period of high growth rates was brief in comparison to that of other countries where much higher population

growth rates have been sustained for decades. In light of the Cuban experience, therefore, it seems obvious that theories about population movements from these other countries should be assigning more weight to rapid population growth as a determinant of labor migration.

The other important issue arising from the preceding analysis is that labor migration is not the monopoly of the capitalist world. The flow of Cuban unskilled workers to East Germany, Czechoslovakia, Hungary and possibly the Soviet Union and other communist countries is not an isolated phenomenon. Recent news accounts indicate that 50,000 Vietnamese laborers are working in the Soviet Union, East Germany and Bulgaria (*Christian Science Monitor,* 1981). Unconfirmed reports claim that, according to the terms of an agreement between Vietnam and other COMECON countries, Vietnam will provide half a million workers to those countries during the current five year plan (personal communication). Anticipated labor shortages in Eastern socialist countries have been noted by Western observers for some time (for a recent account, *See,* Breindel and Eberstadt, 1980), and for several decades have been the object of discussions within the socialist bloc (Macura, 1981:33). It is known, furthermore, that minor flows of temporary workers have been taking place between various Eastern bloc countries since the end of the Second World War (Macura, 1981; Schulz, 1975; Beyer, 1973). As in the case of Cuba, Vietnam has a large excedent of workers that it is willing to make accessible to the labor hungry economies of Eastern Europe. Vietnam reportedly hopes to pay part of its huge financial debt to the Soviet Union with this labor, and Cuba may be doing the same.

Recent labor migration from Cuba and Vietnam to Eastern Europe reflects the official acceptance of demographic complementarity between labor sending and labor receiving countries (Rodríguez, 1980). The onset of labor migration from peripheral underdeveloped socialist states to core developed socialist states comes at a time when more and more questions are being raised about an economic slowdown and the long term prospects of labor supply in Eastern European countries. Efforts to raise fertility levels in Eastern Europe appear to have had only limited success and not to have been long lasting. These efforts have ranged from the almost complete banning of induced abortion (Romania), to limits on the access to contraceptive supplies, to the establishment of pro-natalist economic

incentives to encourage childbearing (David and McIntyre, 1981; David, 1982).

The evidence discussed in this article suggests, in brief, that the importance of demographic factors as determinants of labor migration has been underestimated in some theoretical and empirical studies. This is not to say that in certain situations population growth plays more than a minor role, but to underscore that in other cases it may be a crucial determinant.

A final observation is that within the next decades Cuba will almost certainly attempt to implement various policies to alter the downward course of fertility as the country itself begins to face the specter of labor shortages (*See,* Valdés Suarez, 1980:41 for a discussion). It remains to be seen whether Cuba will have more success than the Eastern European countries to which it is currently exporting its excess labor, unless it alters those conditions which have produced the unexpectedly rapid fertility decline of recent years (Díaz-Briquets and Pérez, 1982).

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