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Source: *The American Journal of Economics and Sociology*, Jul., 1980, Vol. 39, No. 3 (Jul., 1980), pp. 249-259

Published by: American Journal of Economics and Sociology, Inc.

Stable URL: <https://www.jstor.org/stable/3486104>

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Urbanization and Migration in Brazil

By F. E. WAGNER and JOHN O. WARD *

ABSTRACT. *Brazil's rural to urban migration* has been dramatic. In 1940 only 15 percent of the country's *population* lived in urbanized areas. By 1970 more than 50 percent were so classified. This trend in population concentration continues. Studies of the causes and the consequences of population shifts in Brazil when based upon "*choice models*" of *decision making* are inconclusive. The current trend in urban migration reflects the impact of structural changes in Brazil's *economy* including *industrialization*, *agricultural automation*, and the accompanying modifications of programs and policies of Brazil's changing governmental elite. *Governmental policies* designed to stem the flow of population to the cities will require *structural changes* in the economy comparable to those which precipitated the migration.

I

INTRODUCTION

ONE OF THE MOST DRAMATIC TRANSFORMATIONS occurring in the less developed countries has been the shift in population from rural to urban areas. The shift has been most pronounced in the Latin American countries and in Brazil in particular. In 1970 more than 54 percent of the population of Latin America lived in cities of 20,000 persons or more. The comparative rates for other regions were: Asia, 25.4 percent; Africa, 21.8 percent; Oceania, 7.8 percent (1). It has been projected that by this year, 1980, at least 70 percent of Latin America's population will be urban dwellers (2). It further is anticipated that by the year 2000, relative to 1970, there will be a three-fold increase in the populations of Latin America's leading cities (3).

The estimated urban population of Brazil in 1970 was 52.9 million which was 55.8 percent of the country's total population (4). Brazil has shifted from an agrarian rural society to an urban society in only a few decades. According to Costa, in 1940 only 6.3 million persons (15.3 percent of the population) lived in communities of 20,000 or more inhabitants (5). By 1950 there were 18.8 million persons classified as urban inhabitants, which was 36.1 percent of the total population (6). The 1960 census recorded an urban population of

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32 million. This was 45.1 percent of the total population of the country (7). In 1970 six cities accounted for nearly 80 percent of Brazil's urban population of 52.9 million (8). Each of these cities had a population of more than one million inhabitants (9). As is true of the other cities of Latin America, it is predicted that the population of the cities of Brazil will continue to increase significantly.

Of the three potential sources of urban population increase, natural, internal migration and foreign immigration, the latter is the least important in explaining the recent urban growth of Brazil (10). The natural increase in population and internal migration have contributed about equally to the increases in populations in Brazil's cities. Through each of the past three decades the rate of contribution through migration has tended to increase relative to the natural rate of increase. Smith estimates that the net rural to urban migration accounted for 43.4 percent of the increase during the decade of the 1940s. For the period 1950 to 1960 he estimated that urban migration accounted for 47.9 percent of the increase. And for the period from 1960 to 1970, migration contributed 49.3 percent of the urban increase (11).

The migration shift involves both a movement of people from rural areas within a state to the more urbanized areas of that state as well as a shift from the more "rural" states to the more "urban" states. During the 1960s, the State of Minas Gerais had the highest absolute loss of net migration of all of the states of Brazil. Yet the capital of the State, Belo Horizonte, had an annual population increase of 8.3 percent during the period (12). The State of Pernambuco had an annual population loss of 4.9 percent during the 1960s while Recife, the capital, had an annual increase in population of 4.9 percent (13).

II

CURRENT MIGRATION THEORY

ECONOMISTS WHEN ANALYZING urban trends and migration tend to explain the process in terms of a neo-classical choice model based upon human capital theory. This human capital methodology first suggested by Schultz in the early 1960s (14), was expanded by Becker and others (15). It is assumed that workers, like the owners of real capital, seek to maximize personal utility through profit acquisition. Thus workers as owners of human capital rationally order their preferences and having done so, systematically attempt to maximize established goals. First used to explain educational decision-making

and career selection, the choice model subsequently was applied to migration analysis in developing countries.

In the career choice analysis it is assumed that the individual reviews the returns and costs of alternative career choices and attempts attainment of the most rewarding career. The migration models are similar in form. In the "simple" migration model, workers are assumed to evaluate the net anticipated or expected benefits of migrating versus the net benefits to be gained by not migrating. If the present value of migration exceeds the present value of not migrating a move is made. Hence the standard for decision making is a comparison of the capitalized values of alternative income streams.

However, the simple model failed to explain why migration to urban areas from rural areas continued despite the relatively high levels of unemployment in the urban locales. More "complex" models were developed which took this pattern into account. Todaro, for example, argued that workers migrated on the basis of expected rather than actual returns to a move. As such, workers as potential migrants included in their evaluation some weighted risk factor regarding the period of time in which they would be unable to secure income in the modern urban sector once they had migrated (16).

Both the simple and the more complex models have been used in studies of migration patterns in Brazil. Sahota used the simple migration model to study the internal migration of adult males based upon the 1950 census data (17). He analyzed nine variables including wage rates, education, levels of urbanization, population density and aspects of gross national income including distribution and relative rates of growth. Sahota found that migration was responsive to earning differentials, that distance was a deterrent to migration and that education was positively correlated with migration. On the basis of this data Sahota concluded "economic costs and returns appear, on the whole, to dominate the behavior of migrants," though some relevance of the non-economic "push" and "pull" factors is not denied. The Sahota findings were cited in a general text on development as illustrations of the "causal" forces of migration in developing countries" (18).

Yet the Sahota findings indirectly were challenged by Eaton in a study of the urban migration of unskilled labor in Northeast Brazil (19). Using a more complex model Eaton found that income differentials between locales of destination were not significant factors in ex-

plaining migration decisions. He concluded that his finding did not deny the validity of the "homo-oeconomicus" condition but merely indicated that interregional pecuniary differentials were not of themselves an explanation of migration decisions. He also found that transportation costs did not explain distance elasticities. He concluded that the principal factor which explained migration was the "information factor." Workers who were privy to more information regarding employment options were more likely to migrate than were those without such information. In a subsequent study with Denslow of migration in Brazil and other countries Eaton reported that migrants go to places where they expect to find jobs which reasonably match their level of skill (20). Thus, "intervening opportunities" more than travel costs or access to information were for Denslow and Eaton the best explanation of the decision to migrate.

III

LIMITATIONS OF THE "CHOICE" MODELS

IT IS EVIDENT that differences of opinion exist among "choice" model theorists regarding migration motives even for a single country. Though these differences of opinion in their own right are an issue for concern, there is a more basic question regarding migration which the choice model approach fails to emphasize. The models do not explain adequately the conditions which influence the parameters which in turn define the choice possibilities of the potential migrant.

The models tend to indicate which persons may be expected to migrate and their reasons for seeking to move. It is to be expected, of course, that workers tend to prefer high paying jobs to those of low pay. Transport costs may be an influence. It is to be expected that family responsibility, sex and marital status are important in the migration decision process, as is access to information. Furthermore, the issue of "intervening opportunities" analyzed by Eaton and others provides insights as to why distance elasticities are not significant and why the more educated travel greater distances than do the less educated. However, all such analysis gives little attention to the manner in which the options available to the potential migrant are determined. The range of choices often is beyond the control of the potential migrant but is not beyond the control of other political and/or economic elements within a given social system. Under certain conditions programs are adopted which may encourage migration or discourage migration depending upon the "needs" of those in positions

of political/economic control. In other instances migration activity can be nothing more than a by-product of other policies which have received high priority by those in positions of control in industry, agriculture and/or government (21).

Wage differentials illustrate the issue. Other things being equal, workers tend to move from low wage regions to high wage regions. Though differences in rates between the rural sector and the far-off urban sector may reflect competitive market forces, the rates could have been established and enforced by "price makers" in the private sector, or by government or some combination of the two. For the potential migrant the manner in which wage rates are determined is not important. If the external rates are higher, other things being equal, the worker will move, provided that rate differences are known and provided that transportation at reasonable cost is available. If labor shortages exist in a given region, wage rates can be increased by "price makers," transportation can be provided and information made available to potential migrants. If there is reason to discourage migration, constraints can be imposed. There is evidence that even the preferences of potential migrants can be influenced (22). In this context the potential migrant is a "reactor" to larger social forces within the system. At the risk of overstating the case, it is more often the case that those who have demands for labor are in a position to "create" their own supply. Once their needs have been satisfied the condition of those not required is of little if any concern. This pattern of migration is fully apparent in the past development of Brazil.

IV

MIGRATION IN BRAZIL

THE "CHOICE MODEL" has virtually no applicability throughout Brazil's history to the late 19th century. From earliest colonization until shortly before World War II, labor shortages were a chronic problem, first for Brazil's landed plantation elite and later for the owners of the country's extractive industries. The earliest "solution" was the enslavement of local Indians (23). Some improvement was gained when slaves from Africa were imported. There are no firm figures regarding the numbers of slaves imported into the country. Furtado estimates that in the first half of the 19th century they numbered between 750,000 and slightly less than one million.

With the enforced abolition of the slave trade by England the labor

shortage in Brazil's plantation economy became critical. Consideration was given to importing Asians under a system of semi-servitude (24). In the 1850s individual coffee growers, faced with the labor shortage, financed the transportation of German peasants to work their plantations. In the 1870s the government adopted a program "to defray the transportation cost of immigrants who were to work on coffee farms" (25). This program was more successful than the program financed by the individual growers. The problem of continuing labor shortages in the plantation system finally was resolved in the late 1800s, when Italians, to escape the political conditions of southern Italy's consolidation, migrated in large numbers to Brazil. Of the 803,000 immigrants in the last quarter of the 19th century to Brazil, 577,000 were from Italy (26).

Neither the slaves of Africa nor the "free" laborers of Italy "determined" the migration pattern of Brazil. The pattern of the period was defined by the British Parliament, the British Navy, Italy's political leaders, Brazil's plantation owners and the palates of world coffee and sugar consumers. Within Brazil, the owners through control of the government set immigration policy and used public funds to finance the transportation of their necessary labor supply.

A similar pattern is evident with respect to early internal migration flows in Brazil. Because of the labor shortages of the country, internal migration was strongly discouraged by those in positions of power (27). There were some shifts in population in the 16th and 17th centuries, first in response to the development of sugar plantations in the north (28) and later with the discovery of gold in Minas Gerais (29), but these were modest in scope.

The first dramatic internal migration occurred in response to the need for workers in the Amazon rubber boom. During the boom no less than one-half million persons migrated to the region. "The populations of the States of Para and Amazonas grew from 329,000 in 1872 to 695,000 inhabitants in 1900" (30). A major source of labor was Northeast Brazil which suffered a protracted drought in the late 1870s and early 1880s. The supply was "created" by those demanding labor. The "information gap" was resolved by recruiters operating in the drought-affected Northeast, paid by the rubber producers. The "transportation gap" was resolved by the government, influenced and assisted by the private sector. When the rubber boom ended, the unemployed past migrants were left on their own. Their pattern of

accommodation and adjustment to the loss of employment in the region following the boom in itself is an interesting history (31).

The internal urban migration of Brazil began during the depression years of the 1930s. It was precipitated by the structural transformation of the country in the period, not by a change in the preference pattern of workers. Following World War I, the United States began to make significant investments in industry in Brazil. During this period the political economy of Brazil was dominated by agrarian and commercial interests who were unconcerned with industrial development and viewed industries as potential competitors for available labor. With the crash of 1929 coffee prices declined as did exports (32), investment from the United States all but ceased, labor availability was no longer of significant concern to the landed elite and, according to Frank, the Brazilian industrial class was accepted by the traditional elite of the country. Isolated from the competition of the United States and Europe, Brazilian industry, aided by government programs, expanded rapidly (33). The "freedom" from external competition acquired during the depression was preserved throughout World War II, contributing to Brazil's rapid industrialization.

The growth of Brazil's industry is reflected in the statistics of employment for the country. In 1940 agriculture employed 67 percent of the total labor force and industry 13 percent (34). By 1970, agriculture's share had declined to 44 percent while industry's share increased to 18 percent (35). The increase in industrial employment was accompanied by an increase in service employment. While 20 percent of the labor force were employed in services in 1940, by 1970, 38 percent were so employed (36). Both manufacturing and service employments are predominately urban-oriented. As such the urban sites became the points to which enterprises offering employment were attracted. Historically, Brazil's primary industrial region has been the "heartland," which includes portions of Sao Paulo, Minas Gerais, Guanabara, and the Distrito Federal. In 1969, two thirds of all workers employed in manufacturing were located within the heartland region (37). While the industrial transformation enhanced the attractiveness of the cities, particularly those in the "heartland," a delayed agricultural transformation reduced employment opportunities in rural areas.

Until the 1960s Brazil's agricultural techniques had been primitive and the country's land tenure system extremely restrictive. In 1950,

for example, only one-fourth of the farms in the country had plows (38). After the 1964 military takeover, the Government began a program of rapid modernization of the agricultural sector. Whereas only 9,908 tractors were produced in Brazil in 1960, after the change in government tractor sales increased at an annual rate in excess of 50 percent. In 1972 Brazil produced 34,000 tractors. Wheat and soybean production now is nearly 60 percent mechanized (39). Mechanization of tree cotton and sugar production in the Northeast resulted in a considerable displacement of agricultural labor (40). Moura estimates that 50 percent of the urban growth in the Northeast during the period 1950-70 was the result of the "push-out" of rural inhabitants (41). Toniatti estimates that agricultural unemployment rates of 40 percent in the Sobral area of Ceara resulted in a "push-out" of 40-50 percent of those unemployed to urban areas in 1975 (42).

V

CONCLUSIONS

THE SIMULTANEOUS GROWTH of industry and mechanization of agriculture in Brazil is not unlike the pattern which occurred in the United States and other advanced industrial countries during their years of transformation (43). However, whereas the industrial countries industry and the modern service sector were able to absorb the displaced, such has not been true for Brazil. Salmen reports:

(T)he gap between the percentage of persons employed in manufacturing and manufacturing as a proportion of output is greater in Brazil than elsewhere in Latin America, with Brazil having both the lowest percentage of workers in manufacturing and the highest share of manufacturing output (44).

Labor, whose scarcity once was of chronic concern to the agricultural elite and later to manufacturers, now has become redundant. More and more potential workers are forced to become members of the class of dispossessed. In 1970 only 36.9 percent of Brazil's urban households had gas service, 42.8 percent had sewerage links and 53.2 percent had water (45). Malnutrition in urban areas is prevalent. A study of migrants living in Fortaleza in 1976 indicated that 68 percent of the urban migrants suffered from caloric deficiencies (46). Salmen reported that in 1970 more than 70 percent of the families in Greater Sao Paulo earned less than \$100 per month (47). He estimates that "roughly 18 million persons in (the) greater Rio area,

or about 25 percent of the metropolitan area's population, live in slums of one type or another" (48).

When, in the 1960s, a new highway was constructed between Belem and Brazilia, BR-10, the population along the route increased from 100,000 to 2,000,000. Henshall and Momson describe the settlement pattern in picturesque terms.

Swarms of grileiros, or squatters, occupied the lands beside the highway unchecked and so rapidly that by 1962 it could be reported that "there is practically no unclaimed land left along the road" (49).

No longer do the elite seek to protect their limited labor supply from potential "raiders" as the agricultural elite did in an earlier period. Programs designed to meet real labor shortages no longer are in evidence. The concern now, and hence the programs of government, are keyed to reducing the economic and political volatility of the temporarily and permanently dispossessed. Policies include direct coercion as well as economic inducements to relocate. The State of Sao Paulo created the Secretariat of Social Welfare in 1968. One of the duties of the agency is to meet incoming migrants to the city. A few of those who are screened are permitted to remain in the city, most are returned to their point of origin or to some other site outside the city (50). New territories have been opened to colonization, some for the specific purpose of providing employment. Others, such as BR-10, were a by-product of other concerns. The Government has financed "make-work" projects in the Northeast. Manaus, capital of the North-Central State of Amazonas, was permitted to establish a "free trade zone" in part to improve employment opportunities in the area. There have been numerous federal agencies created whose primary function is to develop programs designed to "redistribute" the population of the country (51).

To date the programs have failed to stem the flow of population to urban areas (52). It was the structural transformation of the economy which initiated the movement to the cities. Structural changes will be required to check the current migration trend. That which is not clear is whether the government and the elite of countries like Brazil can maintain their preferred positions while effectively resolving the migration problem. The "choice model" is of little value in the analysis of such issues.

1. Manoel Augusto Costa, ed., *Estudos de Demografia Urbana* (Rio de Janeiro: IPEA, 1975), p. 42.
2. Inter-American Development Bank, *Economic and Social Progress in Latin America* (Washington, D.C.: 1973), p. 90.
3. Robert W. Fox, *Tendencias del Crecimiento de la Poblacion Urbana en America Latina* (Washington, D.C.: Banco Interamericano de Desarrollo, 1975), pp. 53-106.
4. Subcommittee on Housing and Community Development, Committee on Banking, Currency and Housing, House of Representatives, 94th Congress, *Urban Growth in Brazil and Colombia* (Washington, D.C.: Government Printing Office, 1976), p. 85.
5. Costa, p. 42.
6. Subcommittee on Housing and Community Development, p. 85.
7. *Ibid.*
8. Nicolas Sanchez-Albornoz, *The Population of Latin America* (Berkeley: Univ. of California, 1974), p. 247.
9. These cities were Rio, 7.2 million; Sao Paulo, 8.4 million; Recife, 1.8 million; Porto Alegre, 1.8 million; Belo Horizonte, 1.7 million and Salvador de Bahia, 1.0 million, as reported in Sanchez-Albornoz, p. 247.
10. Faissol reports that immigration from foreign countries to Brazil between 1950 and 1970 "has had practically no effect on the increase in the population of Brazil" (translation). Speridiao Faissol, "Migracoes Internas no Brasil e suas Repercussoes no Crescimento Urbano e Desenvolvimento Economico," *Revista Brasileira de Geografia* (Ano 34) (April-June, 1973), p. 18.
11. T. Lynn Smith, *Brazilian Society* (Albuquerque: Univ. of New Mexico Press, 1974), p. 208.
12. Sanchez-Albornoz, p. 247; and D. H. Graham and S. B. de Hollanda Filho, *Migration, Regional and Urban Growth and Development in Brazil: A Selective Analysis of the Historical Record: 1872-1970*, Vol. 1 (Sao Paulo: Instituto de Pesquisas Economicas, Universidade de Sao Paulo, 1971), p. 80, cited in John H. Sanders and Frederick L. Bein, "Agricultural Development on the Brazilian Frontier: Southern Mato Grosso," *Economic Development and Cultural Change*, 24(April, 1976), pp. 593-610.
13. *Ibid.*
14. T. W. Schultz, "Capital Formation by Education," *Journal of Political Economy*, 68(December, 1960), pp. 571-83; and "Investment in Human Capital," *American Economic Review* 51(March, 1961), pp. 1-17.
15. Gary Becker, "Investment in Human Capital: A Theoretical Analysis," *Journal of Political Economy*, 70(October, 1962), pp. 9-49; and *Human Capital* (New York, NBER, 1964).
16. Michael P. Todaro, *Economic Development in the Third World* (New York: Longman, 1977), p. 194.
17. Gian S. Sahota, "An Economic Analysis of Internal Migration in Brazil," *Journal of Political Economy*, 76(March, 1968), pp. 218-45.
18. Sahota, p. 241.
19. Peter James Eaton, *The In-Migration of Unskilled Labor in Large Urban Centers in the Brazil Northeast* (Gainesville, Fla.: University of Florida, 1976), Ph.D. dissertation.
20. David Denslow, Jr., and Peter Eaton, *Distance Elasticities of Internal Migration in Brazil and Other Countries* (March, 1978), (mimeograph).
21. The *ceteris paribus* assumption obviously does not accord with real world conditions. Workers are influenced by a range of other "non-wage" considerations. Factors such as the availability and quality of educational institutions or levels of taxes may be equally important in the decision process. See: Richard J. Cebula and Christopher Curran, "Property Taxation and Human Migration," *American Journal of Economics and Sociology*, Vol. 37, No. 1 (June, 1978).
22. The validity of the "rational choice" hypothesis goes to the heart of the neo-classical paradigm. Its validity recently was criticized by T. Scitovsky, *The Joyless Economy* (New York: Oxford, 1976). With respect to conditions in

Brazil, a recent *Time* article reported of the 16 million "hopelessly deprived children" of the country, "With nothing to look forward to, the children indulge in delusions of a glorious future." Says a psychologist, "We have illiterate seven year olds who say they are going to be doctors." "Latin America: Brazil's Wasted Generation," *Time* (September 11, 1978), p. 40.

23. Smith, p. 52.
24. Celso Furtado, *The Economic Growth of Brazil* (Berkeley: Univ. of California Press, 1965), pp. 126, 137.
25. Furtado, p. 138.
26. Furtado, p. 140.
27. Furtado, p. 133.
28. Waldo Cesar, "Internal Migration in Brazil," in ISAL, *Internal Migration in Latin America* (Geneva: World Conference of Churches, 1969), p. 25.
29. Furtado, p. 133.
30. Furtado, p. 143.
31. Charles Wagley, *Amazon Town* (New York: Knopf, 1964).
32. Andre Gunder Frank, *Capitalism and Underdevelopment in Latin America* (New York: Monthly Review, 1967).
33. Frank, 176.
34. International Labor Organisation, *Yearbook of Labour Statistics* (Geneva, 1948).
35. Donald E. Syvrud, *Foundations of Brazilian Economic Growth* (Stanford: Hoover Institution, 1974), p. 26.
36. Syvrud, p. 26; and International Labour Organisation, *Yearbook of Labour Statistics* (Geneva, 1948).
37. Janet D. Henshall and R. P. Momson, *A Geography of Brazilian Development* (London: G. Bell, 1974), p. 175.
38. Henshall and Momson, p. 76.
39. *Ibid.*, p. 102.
40. Eaton, pp. 100-110.
41. Eaton, p. 111.
42. Mario Toniatti, *Migracao Rural-Urbana no Agreste Nordestino: Suas Causes* (Fortaleza: CAEN, 1976), p. 15.
43. Everett J. Burt, *Labor in the American Economy* (New York: St. Martin's Press, 1979), p. 27.
44. Lawrence F. Salmen, "Urbanization and Development," in H. Jon Rosenbaum and William G. Tyler, eds., *Contemporary Brazil: Issues in Economic and Political Development* (New York: Praeger, 1972), pp. 423-24.
45. IBGE, *Anuario Estatistico do Brasil* (Rio de Janeiro: Instituto de Estatistico), various issues.
46. John O. Ward and John Sanders, "Nutritional Determinants and Migration in the Brazilian Northeast: A Case Study of Rural and Urban Ceara" (Monograph, 1978), p. 16.
47. Salmen, p. 426.
48. *Ibid.*, p. 423.
49. Henshall and Momson, p. 214.
50. Subcommittee on Housing and Community Development, pp. 30-31.
51. Henshall and Momson, pp. 246-78.
52. Goodman and Cavalcante provide an extensive analysis of the effects of government programs to promote industrialization in the Northeast (Sudene 34/18 programs). They conclude that because of the capital intensive nature of the programs, their effects on industrial employment have been negligible. See: David Goodman and Roberto Cavalcante de Albuquerque, *Incentivos a Industrializacao e Desenvolvimento do Nordeste* (Rio de Janeiro: IPEA/INPES, 1974).