

供給面環境中的需求面立法：非法移民政策的困惑

Demand-Side Legislation in a Supply-Side World: The Muddle Over Illegal Immigration Policy

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摘 要

這個實證研究是藉由現存的總體性資料來分析影響墨西哥移民美國的因素。藉由 Suits 模型的應用，本研究獲致一項結論，就是移出國中的就業機會比移入國者對移民過程有較大的影響。最後，本研究建議移民政策的決策者在制訂政策時應傾向於考慮移民供給面力量的重要性。

Abstract

This empirical study investigates the determinants of Mexican migration to the United States by using extant aggregate data. Applying Suits' model, it concludes that employment opportunities in the migrant-sending country have a greater effect on migration processes than opportunities in the migrant-receiving country. Finally, it suggests that makers of immigration policy should attend to the magnitude of supply-side forces of migration while making policy decisions.

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Introduction

During the policy debate over the 1986 Immigration Reform and Control Act (IRCA), much attention had been directed toward the potential impact that migrants would have on the United States. For instance, some groups held that migrants' contributions to the decreased labor costs was a positive effect, strengthening the competitiveness of American products in global markets. Conversely, the proponents of banning illegal immigrants were concerned with job displacement, wage depression, and unbroken dependence of American industries on foreign labor. Although the passage of IRCA had attempted to take into account both sides' concerns, it is not clear that the goal of IRCA--- cutting off the dependence on foreign labor---will be achieved because its regulatory mechanism ignores both the push and pull factors which drive migration.

Table 1 summarizes the major concerns, debate foci, and highlights of the IRCA and its unsolved problems. We concentrate on the problem of ignoring the forces driving and/or attracting migration, to explore why the IRCA is not workable in solving the illegal immigration problem.

Table 1--- Policy Concerns, Debate Foci, and Highlights of IRCA and Its Unsolved Problems

Concerns	Debate Foci	Highlights
1. Job Displacement	1. Employer Sanctions	1. Family Reunification
2. Wage Depression	2. Amnesty	2. Employer Sanctions
3. Dependence on Foreign Labor	3. Temporary Worker Program	3. Amnesty
4. Non-economic Impacts		4. Temporary Worker Program

Unsolved Problems

1. Family reunification might become a lure for unneeded labor.
 2. The effect of foreign labor on the economy is uncertain.
 3. The possible effects of the temporary worker program, especially when workers are allowed to work in non-farm jobs, are unclear.
 4. The forces driving and/or attracting migration are not taken into account.
 5. The effect of employer sanctions on employers needs further examination.
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It is obvious that there is a gap between legislative immigration policy and an understanding of the migrants who want to move to the United States. Most policy makers see the intent of migrants to find jobs in the destination as their sole motivation to migrate. This view easily justifies policies of employer sanctions to curtail employment opportunities in the destination for which seek to deter the influx of unexpected migrants. Yet, it is doubtful that this perception, on which immigration policy is usually based, can provide a basis for effective limitation of illegal immigration. We must recognize that migrants' search for employment opportunities motivates only a partial explanation of migration across the border and indicates only the pull factors of migration. The push factors cannot be negligible.

Demographic and mobility studies have argued that both push and pull factors can substantially explain migrants' motivations for moving back and forth between the origin and the destination, and many researchers have attempted to identify the specific factors stimulating migration. Nevertheless, much research intended to gauge the magnitude of pull and push factors is confined purely to theoretical deduction. It is seldom capable of grounding explanations of international migration phenomenon on extant aggregate data (eg., Ethier, 1986). Other research emphasizes only one-sided forces, and is unable to tell us whether supply-side or demand-side forces would be more important (eg., Blejer et.al., 1978). Without understanding the relative magnitude that each force has on the migratory process, we can see only a partial profile of migration between the United States and Mexico. Only when the rational choice elements on both sides of the migratory process are considered simultaneously can we provide solutions to the illegal immigration problem. Otherwise, no matter how restrictive an immigration policy might be, we should have no reason to expect that the migrant flow would be eased, especially the flow across the U.S.-Mexican border.

In order to remedy this deficiency, we employ a variation of the Suits model (1985) to measure observed migratory flows and determinants of migration simultaneously. In the following, we will delineate the models designed for explicating the migration across the U.S.-Mexican border, then test and analyze the results of the models, and finally point out the policy implication inferred from the tests of

the models.

Expanding Suits' Sectoral Mobility Model

In Suits' model, one important factor explicitly employed to predict the migrant flow is the unemployment rate in the destination of migration--the urban sector. The model, as commonly implemented, holds that unemployment in the destination will deter migrants from the origin--the rural sector, insomuch as people will not move to a place with a lower labor income. Rising urban unemployment is expected to deter the out-migration from the rural sector and increase the equilibrium population in the rural sector.¹ As a result of incorporating the unemployment factor, the annual flow of migrants from the rural sector to the urban sector can be obtained as the difference between the equilibrium and actual population in the rural sector (Suits, 1985).

We believe that models predicated on only a single factor, such as the unemployment rate in the destination, cannot explain the complex migration process between the United States and Mexico. On the basis of the assumption that the economic relationship between the United States and Mexico can be regarded as similar to the urban and rural relationship, we modify Suits' well-defined dual sector model to explore the factors stimulating and/or deterring the out-migration from Mexico. In contrast with Suits' model, we incorporate both pull and push factors affecting the observed migratory flow. Our model is formulated as follows:

$$M_t^* = K \{ [b + b' (1 - U_{ust}) - b'' (1 - U_{mt})] F_{mt}^* - F_{mt-1} + I_{mt} \} + E_t \quad (1)$$

Here, M_t^* represents the net number of people with the intention to migrate from (→) Mexico, but apprehended along the U.S.-Mexican border in year t .² U_{ust} stands for the unemployment rate in the United States in year t .³ F_{mt}^* is estimated equilibrium population in year t , and derived from the equations as follows:⁴

$$a) \ln F_{mt} = a + a' \ln P_{mt} + a'' \ln P_{umt} + E_t$$

$$b) F_{mt}^* = F'_{mt} CLF_t / R_{mt}$$

where \ln means logarithm. F_{mt} is fraction of labor force employed in Mexico in

year t . P_{mt} and P_{ust} are average productivity per worker of Mexico and the United States in year t , respectively. The residual term E_t is a vector consisting of variables capable of influencing the fraction of labor force employed in Mexico. F_{mt}^* is the corresponding equilibrium Mexican population based on the estimation of equation (a). F'_{mt} is calculated value from equation (a). CLF_t is the sum of civilian labor force in Mexico and the selected states in the United States in year t , and R_{mt} is the ratio of Mexican workers to Mexican population in year t . F_{mt-1} and I_{mt} represent the Mexican population in the preceding year($t-1$) and the naturally increased Mexican population in the current year(t), respectively. k , b , b' , and b'' are constants and statistically determined. U_{mt} represents the unemployment rate in Mexican urban areas in year t . We hypothesize that b' will be positive because higher employment opportunities in the destination will increase the inflow of Mexican migrants, and b'' will be negative, as lower employment opportunities in the origin would tend to force people to leave.

The basic motivation expressed in this equation is that migrants' expectations of seeking economic profits both in the destination and in the origin directly influence their willingness to migrate, and indirectly determine the size of the equilibrium population in the origin. In other words, people must choose to leave or to stay by comparing the prospects in both places of finding jobs. Of course, the unemployment rates in Mexico have been usually higher than those in the United States in past decades. Yet, recognizing difficulties in the process of migration might lead people to choose the place which has lower job possibilities but would make them feel more secure over the place with higher possibility of finding jobs. Note that in equation (1) $(1-U_{mt})$ acts as a deterrent to migration, and $(1-U_{ust})$ as a force attractive to migration from Mexico.

Our approach, similar to Suits', stresses the importance of "optimal size of population" in the delineation of population mobility between areas. The model assumes that when the job market in one area has reached its highest capacity of absorbing workers, the area must emit the surplus labor to find jobs elsewhere. Based on this assumption, we can derive the equilibrium population in the model and predict that the population in excess of the equilibrium population level would be forced or would volunteer to leave.⁵ In addition, by considering both ac-

tual and equilibrium population in the origin, we see that out-migration from Mexico to a substantial degree reflects the existence of population pressure in Mexico. In other words, when the actual population in Mexico exceeds the optimal level of population that Mexico can retain, as a consequence of its lower employment opportunities, conditions become sufficient and necessary for outmigration from Mexico.⁶

Were employment opportunities in the destination not to affect in-migration to the United States, a simple method to infer the effects of the unemployment factor on the equilibrium population in the origin would be to incorporate only the deterrent force--the possibility of finding jobs in the origin-- into the model. This simple approach is believed to be able explicitly to indicate the rational action that people might take in face of employment opportunities available to them. On the basis of this assumption, we can formulate the equation as follows:

$$M_t^* = K \{ [b - b'(1 - U_{mt})] F_{mt}^* - F_{mt-1} + I_{mt} \} + E_t \quad (2)$$

In theory, higher Mexican employment opportunities are expected to increase the equilibrium Mexican population. We hypothesize that the coefficient of $(1-U_{mt})$ will be negative, because the lower employment opportunities would lead to increased out-migration from Mexico.

Application to Mexico-U.S. migration from 1945 to 1985

When dealing with the immigrant problem, an explicit obstacle is the collection of proper data to fit into the models specified. Collecting even a limited number of annual estimates of Mexican demographic data and economic statistics on the Mexican population requires reconciliation of multiple sources.⁷

Standard sources were used for M_t^* , U_{us} , U_m , and so forth. We adopt the models outlined above to a longitudinal regression analysis. Because of sparseness of Mexican data, additional measures were taken to supplement data missing for some periods. (See also the Appendix for detailed explanation of the data set.) For example, missing data for the size of Mexican civilian labor force (1945-1955)

ployment opportunities in the origin, Mexican people often choose to leave even when unemployment is increasing in the United States. The fact that post-1920s immigration reached its peak in the late 1970s and early 1980s when unemployment in this country was growing rapidly supports this argument. In other words, the period from 1970 to 1982 in which the unemployment rates were rising rapidly both nationwide and in California was also the period in which millions of foreign born people accounted for almost 20 percent of California's population (Muller & Espenshade, 1985).

On the basis of these two results, it might be fair to say that both pull and push factors are important in construing the population mobility, but the push factors seem to take a leading role in the case of migration between the U.S. and Mexico. This finding not only supports the view that the solution to the illegal immigration problem facing both the U.S. and Mexico lies in seeking ways to reduce unemployment in the origin, but also supports the argument that reducing the gap between economic opportunities in Mexico and the United States could diminish the flow of Mexican migrants (Blejer, Johnson, and Porzecanski, 1978). In other words, methods for increasing employment opportunities in Mexico should be of great concern to makers of U.S. immigration policy. Any simple unilateral endeavor implementing restrictive immigration quotas or simply conducting a closed door policy would prove to be ineffective and wasteful. In the absence of policy designed to increase the employment levels in Mexico, the sole attempt to diminish demand for alien labor in the migrant-receiving country fails to address the conflict between the inevitable inflow of migrants and the nativist agenda of reducing dependence on foreign labor. Imposition of employer sanctions would not only be unable to prevent migrants from entry, but also makes migrants looking forward to better economic conditions more vulnerable to possible exploitation by the potential employers. Unless the border were tightly closed to stop any possible penetration, myriads of illegal slum dwellers must likely emerge in U.S. cities and towns.

Conclusion

By incorporating the unemployment rate of Mexican urban sector as an indicator of deterrent or driving force into the model,⁹ we can argue that Mexican migrants would take both the employment opportunities in Mexico and in the United States into account irrespective of their sectoral origins. Nevertheless, considering the magnitude of employment opportunities in both countries respectively, job opportunities in Mexico appear implicitly more important. In short, when thinking about whether to migrate or not, Mexican people would to a large extent consider first the possibility of finding jobs at home. Unemployment in the destination is relatively unimportant, especially since overpopulation, poverty, and proximity to the United States have been notable in encouraging migration from countries in Central America (Brown and Shue, 1983).

In this paper, we have shown that in the case of migration between Mexico and the United States, job-seeking pressure generated from the origin appears to have greater effect on the migration across the border. This finding that the push factors have gradually become more significant is also revealed in immigration history. Although the migrants would first consider employment opportunities in their homeland, the migration process from the Mexican rural sector to the United States or from the Mexican rural sector to the urban sector and onward to the United States that the migrants will choose cannot be fully identified. In order to develop a more adequate model of the migration process, we must turn to individual data, in the absence of more accurate aggregate data with respect to Mexican demographic mobility.¹⁰

Notes

1. Following Suits' argument, the equilibrium farm population can be reached in a sense that the farm and expected non-farm earnings are equalized without motivating farm population to leave.
2. There is no appropriate estimate with respect to the annual inflow of illegal immigrants; therefore, we use the annual number of apprehendees along the border as a proxy estimate. The number is a proxy which indexed the volume of people who intend to migrate and suggests the trend of migrant flow under the economic and immigration law enforcement conditions in the origin and in the destination respectively.
3. Because of the unavailability of unemployment rates of the selected states, we therefore use U_{ust} as a surrogate. People migrate in an attempt to locate jobs in a broadly defined labor market in the destination, although it might be much easier for them to be hired in a particular sector or occupation. For this reason we use the general labor market unemployment rate instead of particularly occupational unemployment rate as an indicator for people in the migration decision.
4. Following Suits (1985), we use these averages as surrogates in the two countries to allow estimation of the proportion of labor force working in Mexico, although the theoretical model demands marginal productivity. Because of the estimation of available data, we can employ only the average productivity. In addition, according to the property of Cobb-Douglas production function, marginal productivity is a proportion of average productivity; therefore, the substitution of average productivity for marginal productivity would not result in appreciable bias.
5. "Optimal size of population" can sometimes be identified when the average product per worker or per capita in a population community reaches its highest peak (Mishan, 1970:117-18).
6. According to the optimum theory of population, when the size of population

exceeds the optimum level, the surplus population must move out in order to retake the pareto- optimal condition of the greatest real income of commodities and services per capita (Issac, 1947:71-74).

7.Existing data collections are available from such statistical sources as World Population Data Sheet(Population Reference Bureau, 1962-1988), United Nations (U.N.) Demographic Yearbook(1948-1986), World Health Statistics-Annual(World Health Organization, 1947-1984),World Table (World Bank, 1983) , Handbook of International Trade and Development Statistics (U.N., 1967-1987) ,Statistical Yearbook (U.N., 1970-1983), International Financial Statistics (International Monetary Fund, 1955- 1987), Yearbook of Labor Statistics (International Labor Office, 1950-1988), The Europa Yearbook (Europa Publication Ltd. , 1968-1988) Economic Survey of Latin America (U.N., 1963-1985), Statistical Abstract of the United States (1965- 1988), and Immigration and Naturalization Services Annual Report(1945-1987).

8.In terms of the Census population data, we select such states-- Texas, California, Arizona, New Mexico, Colorado, Kansas--as the destinations for Mexican migrants, because of the high concentration of Mexicans in these states (more than 500 Mexican inhabitants in 1950). The high concentration of Mexican migrants is believed to establish the network to attract the further inflow of Mexican people to the United States (Statistical Abstract of the United States, 1965-1988).

9.Using unemployment in the Mexican urban sector produces an estimate of the unemployment coefficient which is more statistically significant than that for unemployment in Mexico as a whole.

10.For example, in Massey's (1987) research work, a proper redesign of the regression model can reveal the motivations driving the migration across the U.S.-Mexican border on the basis of micro analysis.

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Appendix A : Data Set Employed in the Regression Model

year	U_{us}	M^* (.000)	P_{us} (.000)	CLF_m (million)	U_m	P_m (.000)
1944	0	0	0	0	0	0
45	0.019	63.3	3.7	8.0	0.152	0.33
46	0.039	84.8	4.2	8.1	0.144	0.39
47	0.039	165.2	4.3	8.3	0.136	0.48
48	0.038	166.8	4.4	8.5	0.128	0.51
49	0.059	245.3	4.4	8.6	0.119	0.49
50	0.052	378.6	4.7	8.8	0.098	0.65
51	0.033	440.1	5.3	8.9	0.079	0.75
52	0.031	440.9	5.5	9.1	0.016	0.82
53	0.029	756.4	5.6	9.2	0.042	0.80
54	0.056	986.9	5.9	9.3	0.017	0.65
55	0.043	254.5	6.1	9.4	0.018	0.78
56	0.042	124.2	6.4	9.7	0.022	0.86
57	0.043	74.4	6.7	10.2	0.022	0.97
58	0.068	44.6	6.9	10.5	0.023	1.05
59	0.055	37.6	7.2	10.8	0.054	1.10
60	0.045	45.9	7.4	10.9	0.082	1.22
61	0.067	55.6	7.6	11.4	0.086	1.26
62	0.056	69.2	8.1	11.8	0.090	1.33
63	0.057	74.9	8.6	12.3	0.098	1.41
64	0.052	55.2	9.0	12.8	0.106	1.57
65	0.044	68.2	9.6	13.3	0.119	1.75
66	0.038	92.2	10.1	13.9	0.135	1.93
67	0.037	101.4	10.6	14.4	0.146	2.04
68	0.035	120.3	11.3	14.9	0.154	2.21
69	0.034	152.2	11.9	15.4	0.186	2.36
70	0.048	196.3	12.8	15.9	0.213	2.69
71	0.058	249.9	13.4	16.1	0.186	2.85
72	0.055	303.3	14.3	16.4	0.174	3.19
73	0.048	398.3	15.5	16.6	0.146	3.75
74	0.055	505.9	16.4	16.8	0.126	4.71
75	0.083	457.0	18.1	17.1	0.103	5.61
76	0.076	549.4	19.5	17.7	0.091	5.47
77	0.069	595.6	20.1	18.3	0.077	4.86
78	0.060	667.1	22.7	18.9	0.081	5.92
79	0.058	659.7	24.5	19.7	0.096	7.51
80	0.070	57.9	26.6	22.2	0.147	9.75
81	0.075	642.3	29.4	22.7	0.117	11.95
82	0.095	606.4	30.8	23.5	0.161	8.48
83	0.095	807.3	32.7	24.2	0.191	7.29
84	0.074	830.1	34.8	24.9	0.187	8.53
85	0.071	907.8	36.4	26.1	0.103	7.74
86	0	0	0	0	0	0

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U_{us} = U.S. unemployment rate (Statistical Abstract of the U.S., 1965 – 1988)

M^* = number of Mexican migrants (INS Annual Report, 1945 – 1987)

P_{us} = average productivity per worker of the U.S. (Statistical Abstract of the U.S., 1965 – 1988), tabulated by authors.

CLF_m = Mexican labor force (Yearbook of Labor Statistics ILO 1950-1988; Economic Survey of Latin America, 1963-1985)

U_m = Mexican unemployment rate (Yearbook of Labor Statistics ILO, 1950-1988; The Europa Yearbook, 1968-1988), tabulated by authors.

P_m = average productivity per worker of Mexico (Yearbook of Labor Statistics ILO, 1950-1988; Statistical Yearbook, U.N., 1970-1983; and International Financial Statistics IMF, 1955-1987), tabulated by authors.

Appendix A : Data Set (continued)

year	F _m (million)	I _m (million)	ME (million)	CLF _{us} (million)
1944	21.988	0.519	0	11.236
45	22.576	0.565	6.791	11.494
46	23.183	0.552	6.995	11.750
47	23.811	0.689	7.205	12.005
48	24.461	0.683	7.421	12.261
49	25.132	0.679	7.644	12.516
50	26.380	0.757	7.954	12.773
51	26.949	0.726	8.174	13.407
52	27.522	0.786	8.380	13.869
53	28.113	0.816	8.600	14.259
54	28.724	0.961	8.886	14.647
55	29.355	0.970	9.106	15.059
56	30.010	1.059	9.332	15.493
57	30.685	1.071	9.563	15.894
58	31.385	1.043	9.785	16.392
59	32.109	1.192	9.985	16.787
60	34.923	1.205	10.221	17.215
61	37.255	1.258	10.521	17.643
62	38.535	1.302	10.800	18.071
63	39.930	1.344	11.031	18.499
64	41.251	1.441	11.285	18.928
65	42.684	1.484	11.515	19.355
66	43.320	1.530	11.753	19.784
67	44.814	1.561	12.000	20.211
68	46.374	1.605	12.299	20.640
69	47.952	1.579	12.734	21.061
70	49.244	1.647	13.198	21.486
71	52.452	1.773	13.781	21.913
72	54.279	1.869	14.125	22.362
73	56.177	2.113	14.739	22.769
74	58.143	2.089	15.295	23.198
75	60.004	1.819	15.700	23.626
76	62.059	1.911	16.236	24.035
77	64.179	1.929	16.857	25.096
78	66.361	1.928	17.351	26.327
79	68.618	1.846	17.909	26.715
80	69.199	2.012	19.121	27.854
81	71.250	2.106	20.043	28.990
82	73.120	1.981	19.683	29.807
83	74.980	2.196	19.572	30.390
84	76.490	2.035	20.092	30.925
85	78.520	2.111	22.940	31.751
86	0	0	23.667	32.575

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F_m = Mexican population in mid-year (World Population Data Sheet, 1962-1988; U.N. Demographic Yearbook, 1948-1986).

I_m = natural increase of Mexican population in mid-year (World Population Data Sheet, 1962-1988; U.N. Demographic Yearbook, 1948-1986; and World Health Statistics-Annual WHO, 1947-1984), tabulated by authors.

ME = number of Mexican workers employed (Yearbook of Labor Statistics ILO, 1950-1988; The Europa Yearbook, 1968-1988; and Economic survey of Latin America, 1963-1985), tabulated by authors.

CLF_{us} U.S. civilian labor force (Statistical Abstract of the U.S., 1965-1988).