

DRAFT

FROM : R. Godoy
RE : Progress report #3 on migration: descriptive, preliminary analysis of
information from 1990 census
DATE : April 8, 2000

Here I provide preliminary answers to the questions Tommy raised in his memo of February 25, 2000. The analysis rests on information from the 5% public use micro data samples (PUMS) of the 1990 census of Puerto Ricans in Puerto Rico and in the United States. One should bear in mind two caveats. First, some of the questions raised by Tommy cannot be answered with adequacy using information from the census. Second, information on the composition of personal income, household income, and total personal income contain errors that arose, I think, while transferring the information across computer programs. I will try to fix that and other smaller mistakes for the next round. I present the preliminary results here so we can start to think about where to go next.

Table 1 contains a summary of demographic and socioeconomic information for six groups of Puerto Ricans that, together, cover the entire sample: (a) Puerto Ricans living permanently in the island, (b) Puerto Ricans who engage in circular migration, (c) Puerto Rican migrants who engage in longer migration to the United States, (d) second-generation Puerto Ricans in the mainland, (e) old Puerto Rican migrants living in the mainland, (f) recent arrivals from Puerto Rico to the mainland, and (g) Puerto Ricans who move, but within the mainland. Table 1 contains definitions for each group.

[1]. Composition of population. The first two rows of Table 1 contain the number and shares of Puerto Ricans in each category. The population is almost evenly split between people living in Puerto Rico (56.47%) and people living in the mainland (43.53%). So-called circular migrants represent a small share (2.90%) of the total population, though they surpass the number of recent migrants to the mainland ($n=4832$; 2.73%) and almost equal the number of migrants based in Puerto Rico who do not engage in circular migration ($n=7208$; 4.07%). The largest group is made up of Puerto Ricans living permanently in the island (49.50%), followed by people who move within the mainland (21.73%), and second generation and old migrants residing in the mainland (each about 10%). The smallest groups include people who migrate from Puerto Rico to the mainland but who return to the island.

[2]. Motivation to migrate. The census is not well suited to answer questions about the motivation to migrate because much of the most relevant information, such as income, health, household composition and the like refer to the current period whereas the outcome variable of interest, migration, refers to event that took place over the last decade. Except perhaps for schooling, literacy, knowledge of English and other variables that may not change much during a decade, most other potential explanatory variables took place after migration. Bearing those caveats in mind we next discuss the chief findings.

Table 2 contains a summary of probit regressions that predict the probabilities of migrating when explanatory variables increase by one unit above the mean of the sample used in the regression. I ran separate regressions for the following groups: (A) people who engaged in circular migration out of Puerto Rico, (B) people who engaged in longer migration, also out of Puerto Rico, and (C) all migrants, including (A) and (B) and recent migrants (<5 years, 1990-1985) living in the mainland.

In section A of Table 2 the dependent variable takes the value of one if the person lived in Puerto Rico during the 1980s but stayed in the mainland for 6-24 months, and it takes the value of zero otherwise. In the discussion below I stress the variables that have economic not just statistical significant. As explanatory variables I include gender, age, age squared, experience (defined as age – education – six), experience squared, a dummy variable to indicate whether the person was a single mother, the number of dependent children, dummy variables for different educational levels, literacy (only for Puerto Rico census), dummies for community, and a variable for occupation and another one for industry. Future regressions could include dummies for different types of occupations, dummies for different types of job (e.g., government, self-employed), and community wages. It is not clear to me how to group occupations

and industries into meaningful categories. The variables on the right-hand side are found routinely in the literature on migration.

Circular migration (Section A of Table 2). By far the most important variable affecting the propensity to engage in circular migration is the ability to speak English well. Being fluent in English increased the probability of engaging in circular migration by four percent. One can also see that post high-school education depresses the likelihood of migration. Starting with a high-school diploma (proxied by the variable called ed16), education reduces the propensity to migrate. Several other studies using simpler regression models have documented this pattern.

Non-circular migration (Section B of Table 2). The results for people who engage in non-circular migration are almost the same as the ones just described. English ability is by far the most important, positive explanatory variable. English ability increases the likelihood of migrating for more than 24 months by 12.60%. The threshold at which education starts to lower longer-term migration to the mainland is about the same as we found with circular migration. A high school degree and some college education lowers the likelihood of migration.

Recent migrants to the mainland (Section ** of Table 2). Missing. This section should include only the recent migrants to the mainland.

All migrants (Section C of Table 2). For the pooled sample of all migrants we find again that language ability in English increases the probabilities of moving to the United States. Language ability increases the probability of moving to the mainland by 18.64% relative to those who cannot speak English well. Even low levels of schooling lower the probability of migration.

English ability is endogenous so the results need to be read with care. Occupation and industry characteristics, marital status, and various demographic characteristics all seem to affect migration, but their effect was small either in a statistical or in an economic sense. Human capital variables seem to tower above others.

[3]. Second generation Puerto Ricans in the mainland. Several attributes make the second-generation Puerto Ricans stand out from others (Column D of Table 1). They have the highest rate of high-school graduates (53.56%) and one of the highest rates of people with a college or more than a college degree (12.59%). Their total personal earnings (\$16,111) and particularly their median family income (\$37,288) are above that of any of the other groups. Their mean hourly wage (\$17.78) is surpassed only by the mean hourly wage of old migrants in the mainland (\$20.86).

At other levels similar contrasts appear. A higher share of second-generation Puerto Ricans have access to telephones (92.66%) and cars (1.69) than other groups. The average property value of their homes (\$79,534) is much higher than that of any group, whether in the island or in the mainland. They also have the lowest rates of divorce (12.66%) and fertility (1.62 births/women) of any of the groups and for obvious reasons they also have the highest proficiency in English language (94.81%).

[4]. Welfare and double dipping. The census does not allow one to detect double dipping, but an analysis of the income from public assistance suggests two tentative conclusions. First, the recent and old migrants in the mainland receive the highest levels of public assistance (about \$755). Permanent residents of Puerto Rico receive the least (\$316). Second, people who engage in circular migration receive neither too much nor too little public assistance relative to other groups. People who engage in circular migration receive in public assistance the average amount of the entire sample of Puerto Ricans. Although people who engage in circular migration receive more aid in Puerto Rico (\$438) than any of the other groups in the island, the amount is low when compared with Puerto Ricans who have migrated to the mainland.

[5]. Hypothesis about the highest marginal tax rate. For reasons discussed earlier, the most reliable information on income at this time refers to total personal earnings (sum of wages, salary, non-farm, and farm income) and to family income. Recent families of migrants in the mainland make \$18,935, higher than the family income of any of the groups in Puerto Rico (about \$10,000). There may indeed be a

threshold of income between the \$18,000 earned by a family of recent migrants to the mainland and the \$10,000 earned by a family in the island that may act as a catalyst for people to move permanently or semi-permanently to the United States.

[6]. Unemployment. The figures for unemployment confirm the common notion that unemployment is higher on the island than on the mainland. The share of people in the island who reported having worked the week before the interview took place was about 36%, much lower than the average for the mainland (about 52%). The share of people without a job or out of the labor force was higher in the island (about 62%) than in the mainland (42%). In the mainland most people said the last time they had worked was during the current (1990) year, whereas in the island half the people said they had not worked for a year or two.

[7]. Brain drain. At first sight the information on the share of people with a college degree from Table 1 would appear to lend credence to the idea that Puerto Rico has suffered from a brain drain. Among recent migrants to the United States, 15.91% had a college degree or more than a college degree. They were by far the best educated of all Puerto Rican groups, including second-generation Puerto Ricans living in the mainland.

Tables 3-4 raise doubts about that conclusion. In Table 3 I follow Rivera-Batiz and Santiago and compare the share of the most frequent jobs of the recent migrants to the mainland against the shares for the same jobs in the island. The rationale for the comparison is that if x per cent of the people over the age of 20 in Puerto Rico work in job y one ought to see among recent migrants in the mainland more than x% working on y if one is to argue for a brain drain.

The information from Table 3 suggests that recent migrants are more likely to be concentrated in low-skilled occupations, such as cashiers, maids, machine operators, or nursing aids. Put differently, the distribution of the most common occupations of recent migrants to the mainland mirrors the distribution of the most common occupations in the island. Except perhaps for machine operators, assemblers, and nursing aids we find no evidence that people in the most skilled occupations are leaving.

In Table 4 I tackle the question from another angle. Table 4 contains a summary of the most frequent occupations of college educated people in the island and compare the distributions against the occupation of college-educated recent migrants to the mainland. The results suggest that a brain drain might exist only among physicians and social workers and, to a lesser extent, among people working in electronics or electrical fields, nursing, and hotel/restaurant management. The brain drain is far from being generalized across all or most skilled occupations, though it does seem to exist in the fields of health and electronics.

Table 1: Comparison of socioeconomic and demographic attributes of Puerto Rican populations by migration status, residence duration, and mobility

PUERTO RICO					MAINLAND				
Variables	Definition and units	Stable in PR	Circular Migrants in PR	Non circ migrants (PR)	Second Gener in US	Old Migran t in US	Recent migrant in US	Movers Inside US	TOTA L
		A	B	C	D	E	F	G	H
	Observations	87600	5125	7208	15671	18069	4832	38458	176963
	% of total	49.50	2.90	4.07	8.86	10.21	2.73	21.73	100
Demography									
Age	Years	46.35	39.04	42.78	38.77	48.89	36.90	36.10	43.09
Female	% women	54.01	47.16	50.36	54.05	56.14	56.00	53.91	53.91
Divorced	% divorced, separated, widowed	19.82	21.15	21.71	12.66	19.39	15.79	18.02	18.76
Dependents:	% has own kids<6 years old	4.75	7.55	5.56	5.89	2.19	10.47	9.71	5.94
	% has own kids, 6-17 years old	13.17	10.10	12.93	13.89	15.29	12.74	12.08	13.11
Fertility	# children ever born	2.10	1.77	1.89	1.62	2.24	1.86	1.67	1.95
Hh size	# people household	3.69	3.81	3.62	4.06	3.62	3.82	3.75	3.73
Human capital									
Education	% high school graduates	30.41	31.97	28.47	53.56	27.39	38.43	44.86	34.87
	% with college+ degree	12.38	11.37	8.89	12.59	5.59	15.91	11.72	11.49
English	Speak English well or very well (%)	46.40	66.79	85.52	94.81	72.31	61.42	83.55	60.46
Healthy	No health disability lasting 6+months limiting work (%)	79.45	80.54	80.48	88.18	78.22	85.90	88.43	82.30
Income 1989									
Total personal earnings	Dollars (mean)	4798	4341	4412	16111	10723	8940	14700	8641
Family income	Dollars (median)	10063	8400	8500	37288	25000	18935	27000	15000
Household income	Dollars (median)	10280	8528	8900	11566	8303	6592	9393	9728
Total person's income	Dollars (median)	3780	3072	3300	7887	5396	4561	7125	4989
Composition of personal income:									
1.Wages/salary	Dollars (mean)	4440	4059	4082	4400	3204	2817	4249	4199
2.Nonfarm self	Dollars (mean)	344	277	323	814	422	236	675	460
3.Farm	Dollars (mean)	13	4	5	20	17	-1	18	14
4.Interest, dividends, rental	Dollars (mean)	96	53	99	488	344	220	257	193
5.Social security	Dollars (mean)	784	514	827	439	842	493	293	639
6.Public Assistance	Dollars (mean)	316	438	397	378	754	759	559	438
	Assistance as % of total income (6/9)	4.97	7.77	6.52	5.18	12.16	15.15	8.65	6.87
7.Retirement	Dollars (mean)	240	157	250	547	433	270	223	282
8.Other	Dollars (mean)	116	131	100	208	182	214	183	148
9. Total	Dollars (mean)	6349	5633	6083	7294	6198	5008	6457	6373

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Variables	Definition and units	PUERTO RICO			MAINLAND				TOTAL
		Stable in PR	Circular Migrants in PR	Non circ migrants (PR)	Second Gener in US	Old Migrant in US	Recent migrants in US	Movers Inside US	
		A	B	C	D	E	F	G	H
Employment									
Weeks, 89	# weeks worked,89	20.31	19.10	17.15	32.16	24.37	23.61	32.08	24.26
Hours, 89	# hours worked per week, 89	17.39	18.69	16.41	28.19	21.11	23.20	29.28	21.46
Hourly wage	Dollars/hour /a/	13.59	12.15	15.17	17.78	20.86	16.31	15.65	16.61
Work, 89	% who worked,89	45.43	49.01	42.07	72.13	53.97	58.50	73.00	54.98
Last worked	Year last worked (median)	1988	1989	1988	1990	1990	1990	1990	1990
Worked last week	% who worked last week	38.39	36.66	32.04	59.42	43.06	47.14	58.81	45.10
Unemployed	% with no job or out of labor force	59.25	61.30	65.92	34.69	51.15	48.73	34.85	50.99
Sector:									
Self	% self-employed	10.30	7.89	9.51	6.55	5.77	4.04	5.61	7.84
Government	% government	31.23	22.27	20.50	18.56	18.55	16.08	15.08	22.96
Private	% private	58.45	69.82	69.98	74.87	75.67	79.87	79.30	69.19
Assets									
Telephone	Percent with access	66.65	56.89	61.51	92.66	88.34	80.29	87.57	75.60
Property value	Dollars (mean)	36320	29319	30737	79534	50366	24208	45100	42728
House age	Year built (mean)	1968	1970	1971	1954	1951	1959	1959	1963
Cars	Number (mean)	1.12	0.99	0.95	1.69	1.10	1.06	1.39	1.21
Bedrooms	Number (mean)	2.89	2.78	2.77	2.79	2.46	2.06	2.39	2.70

Source: 5% PUMS, US Bureau of the Census

Notes: Sample excludes current students, people under 20 years of age, people in the military, or people who were not US citizens.

Definition of columns:

- [A]. People who had not lived in the United States during 1980-1990 but who live in Puerto Rico.
- [B]. People living in Puerto Rico in 1990 who had spent 6-24 months in the United States during 1980-1990.
- [C]. People living in Puerto Rico in 1990 who has spent more than 24 months in the United States during 1980-1990.
- [D]. People born in the mainland who had not moved from their present residence during 1985-1990.
- [E]. People born in Puerto Rico living in the mainland in 1990 who had not moved from their present residence during 1985-1990.
- [F]. People who had migrated to the mainland during 1985-1990 from Puerto Rico.
- [G]. People who had moved within the mainland during 1985-1990.

/a/ Total personal earnings/(weeks worked in 1989 * hours worked/week in 1989)

Table 2: Probit regressions to predict various types of migration

A. CIRCULAR (category B from Table 1)

Number of obs = 81154
Wald chi2(60) = 1650.07
Prob > chi2 = 0.0000
Log likelihood = -14624.999 Pseudo R2 = 0.0569

		Robust					
circpr	dF/dx	Std. Err.	z	P> z	x-bar	[	95% C.I.]
female*	-.0060665	.0017505	-3.50	0.000	.577618	-.009497	-.002636
AGE	-.0031188	.0008636	-3.62	0.000	47.9456	-.004811	-.001426
age2	.0000106	7.21e-06	1.46	0.143	2579.65	-3.6e-06	.000025
experien	-.0000328	.0005835	-0.06	0.955	28.8387	-.001176	.001111
experie2	.0000108	5.35e-06	2.01	0.044	1224.37	3.1e-07	.000021
singleF*	.0159527	.0019475	8.84	0.000	.233864	.012136	.01977
ownkid6*	-.0023038	.0027523	-0.82	0.413	.057114	-.007698	.003091
ownkid17*	-.00079365	.0019615	-3.81	0.000	.153782	-.011781	-.004092
ed4*	.0013616	.0068532	0.20	0.840	.01539	-.01207	.014794
ed5*	.0046047	.00615	0.78	0.435	.026789	-.007449	.016658
ed6*	.0055128	.0054873	1.05	0.292	.049215	-.005242	.016268
ed7*	.0017668	.0052594	0.34	0.733	.051026	-.008541	.012075
ed8*	.0034442	.0059532	0.60	0.551	.035303	-.008224	.015112
ed9*	-.0012056	.0051861	-0.23	0.818	.055844	-.01137	.008959
ed10*	-.0044214	.0054215	-0.78	0.436	.034675	-.015047	.006205
ed11*	-.0062264	.0050329	-1.16	0.245	.054538	-.016091	.003638
ed12*	-.0093515	.0048009	-1.77	0.077	.059886	-.018761	.000058
ed13*	-.0011999	.0063944	-0.19	0.853	.024608	-.013733	.011333
ed14*	-.0096313	.0052969	-1.63	0.102	.036819	-.020013	.000075
ed15*	-.009618	.0055283	-1.56	0.118	.034872	-.020453	.001217
ed16*	-.0150163	.0052883	-2.59	0.010	.224709	-.025381	-.004651
ed17*	-.0145363	.0050877	-2.45	0.014	.082436	-.024508	-.004565
ed18*	-.0164328	.0052708	-2.51	0.012	.025187	-.026763	-.006102
ed19*	-.0158094	.0055139	-2.34	0.019	.028501	-.026616	-.005002
ed20*	-.0180849	.005375	-2.77	0.006	.090864	-.02862	-.00755
ed21*	-.0033336	.008594	-0.37	0.708	.017448	-.020178	.01351
ed22*	.0017687	.0124707	0.14	0.885	.004781	-.022673	.026211
goodengl*	.0401427	.0016177	24.84	0.000	.510831	.036972	.043313
literate*	-.0047586	.0028661	-1.72	0.085	.887917	-.010376	.000859
INDUSTRY	-6.61e-06	2.63e-06	-2.51	0.012	313.956	-.000012	-1.5e-06
OCCUP	.0000188	3.16e-06	5.97	0.000	241.046	.000013	.000025
YEARWRK	.0023022	.0004688	4.92	0.000	3.64024	.001383	.003221

C. NON-CIRCULATING MIGRANTS (Category C form Table 1)

Number of obs = 81168
Wald chi2(61) = 4398.23
Prob > chi2 = 0.0000
Log likelihood = -17976.374 Pseudo R2 = 0.1342

		Robust					
noncirmi	dF/dx	Std. Err.	z	P> z	x-bar	[	95% C.I.]
female*	.0012786	.0018092	0.71	0.480	.577654	-.002267	.004825
AGE	.0003702	.0009779	0.38	0.705	47.9474	-.001546	.002287
age2	-.0000453	8.46e-06	-5.35	0.000	2579.87	-.000062	-.000029
experien	.0008971	.0006316	1.42	0.156	28.8422	-.000341	.002135
experie2	.0000288	6.33e-06	4.55	0.000	1224.66	.000016	.000041
singleF*	.0151983	.0019885	8.15	0.000	.233885	.011301	.019096
ownkid6*	-.0045414	.0031391	-1.40	0.163	.057116	-.010694	.001611
ownkid17*	-.0058298	.0020928	-2.69	0.007	.153792	-.009932	-.001728
ed3*	.1084429	.0965531	1.64	0.102	.000172	-.080798	.297683
ed4*	.001695	.0079122	0.22	0.828	.015388	-.013813	.017203
ed5*	.0036859	.0067243	0.56	0.573	.026784	-.009494	.016865
ed6*	.0117753	.006445	1.98	0.048	.049207	-.000857	.024407
ed7*	.0105606	.0063462	1.79	0.074	.051018	-.001878	.022999
ed8*	.0099585	.0069567	1.54	0.124	.035297	-.003676	.023593
ed9*	.0086074	.0062841	1.45	0.146	.055835	-.003709	.020924
ed10*	.0098912	.0070119	1.51	0.130	.034669	-.003852	.023634

ed11*	.0050459	.0062489	0.84	0.402	.054529	-.007202	.017294
ed12*	.0107941	.0067796	1.71	0.087	.059876	-.002494	.024082
ed13*	.0088535	.0077139	1.22	0.221	.024603	-.006265	.023972
ed14*	.0020943	.0067665	0.31	0.753	.036813	-.011168	.015356
ed15*	-.005796	.0062059	-0.89	0.374	.034866	-.017959	.006367
ed16*	-.019269	.0051878	-3.36	0.001	.22467	-.029437	-.009101
ed17* 	-.0266728	.0040838	-4.98	0.000	.082422	-.034677	-.018669
ed18* 	-.0324853	.0034498	-5.81	0.000	.025182	-.039247	-.025724
ed19* 	-.0295289	.00394	-5.03	0.000	.028496	-.037251	-.021807
ed20* 	-.0340075	.0038225	-6.12	0.000	.090849	-.041499	-.026516
ed21* 	-.021698	.0056656	-2.96	0.003	.017445	-.032802	-.010594
ed22* 	-.0196846	.0083059	-1.88	0.060	.00478	-.035964	-.003405
goodengl* 	.1260032	.0020934	59.61	0.000	.510755	.1219	.130106
literate*	.0017442	.0029967	0.58	0.565	.887801	-.004129	.007618
INDUSTRY	2.04e-06	2.79e-06	0.73	0.465	313.913	-3.4e-06	7.5e-06
OCCUP	.0000176	3.41e-06	5.16	0.000	241.021	.000011	.000024
YEARWRK	.0042984	.0005081	8.46	0.000	3.64062	.003303	.005294

C. ALL MIGRANTS (categories B, C, and F from Table 1)

Wald chi2(60) =7245.87
 Prob > chi2 = 0.0000
 Pseudo R2 = 0.1177

Log likelihood = -32946.472

migrant	dF/dx	Robust Std. Err.	z	P> z	x-bar	[95% C.I.]
female*	-.002306	.0022692	-1.02	0.309	.533998	-.006754 .002141
AGE	-.0028821	.0059548	-0.48	0.628	45.7205	-.014553 .008789
age2	-.0000642	9.98e-06	-6.43	0.000	2384.44	-.000084 -.000045
experien	.0026703	.0059056	0.45	0.651	26.5865	-.008905 .014245
experie2	.0000615	7.36e-06	8.34	0.000	1109.53	.000047 .000076
ownkid6*	.0044139	.0045663	0.98	0.327	.049583	-.004536 .013364
ownkid17*	-.0102526	.003028	-3.28	0.001	.130037	-.016187 -.004318
ed1* 	-.0521683	.0777204	-0.51	0.610	.045911	-.204497 .100161
ed3* 	-.0313071	.1005887	-0.27	0.790	.00018	-.228457 .165843
ed4* 	-.0358785	.0799672	-0.38	0.707	.01553	-.192611 .120854
ed5* 	-.0314845	.0803131	-0.34	0.734	.025977	-.188895 .125926
ed6* 	-.020147	.0855856	-0.22	0.828	.046371	-.187892 .147598
ed7* 	-.0246467	.077466	-0.29	0.774	.048342	-.176477 .127184
ed8* 	-.0208604	.074753	-0.26	0.798	.034263	-.167374 .125653
ed9* 	-.0203211	.0706656	-0.27	0.790	.054487	-.158823 .118181
ed10*	-.0181585	.0664544	-0.25	0.799	.034773	-.148407 .11209
ed11* 	-.0223388	.0595849	-0.34	0.731	.052695	-.139123 .094446
ed12*	-.0166663	.057478	-0.27	0.785	.058809	-.129321 .095989
ed13*	-.0093744	.0552041	-0.16	0.870	.025147	-.117572 .098824
ed14* 	-.0204663	.0454654	-0.41	0.679	.037315	-.109577 .068644
ed15* 	-.0334541	.0357334	-0.80	0.421	.036354	-.10349 .036582
ed16* 	-.0519427	.0325851	-1.40	0.161	.224881	-.115808 .011923
ed17* 	-.0599674	.0211658	-2.12	0.034	.084737	-.101452 -.018483
ed18* 	-.0669956	.0136988	-3.08	0.002	.025217	-.093845 -.040146
ed19* 	-.0634687	.0123513	-3.41	0.001	.028169	-.087677 -.039261
ed20* 	-.0718899	.0102945	-4.81	0.000	.093262	-.092067 -.051713
ed21* 	-.0409792	.0114434	-2.90	0.004	.017382	-.063408 -.018551
ed22* 	-.028925	.01373	-1.84	0.066	.004683	-.055835 -.002015
goodengl* 	.1864006	.0023874	75.79	0.000	.502737	.181721 .19108
INDUSTRY	-.0000101	3.62e-06	-2.78	0.006	319.389	-.000017 -3.0e-06
OCCUP	.0000524	4.40e-06	11.89	0.000	251.177	.000044 .000061
YEARWRK	.0057375	.0006442	8.90	0.000	3.59345	.004475 .007

Notes: regressions contain dummies for community and robust standard errors.

Table 3: Brain drain: Comparison of most frequent occupations of recent (1985-1990) migrants to US and other Puerto Rican groups (% of all occupations)

Occupation	Recent Migrants to US*	Island	All others
Janitors & cleaners	2.63	2.52	2.50
Assemblers	2.55	0.41	1.67
Cashiers	2.07	1.38	1.98
Secretaries	1.99	2.78	2.76
Elementary school teachers	1.66	2.01	1.12
Machine operators	1.45	0.59	1.20
Managers & admin	1.43	1.34	2.30
Textile sewing machine operators	1.43	1.51	0.92
Maids & housemen	1.35	0.11	0.88
Cooks	1.30	1.28	1.30
Laborers except Construction	1.24	1.21	1.13
Truck drivers	1.20	0.97	1.87
Nursing aides, Orderlies & attend	1.20	0.56	1.79
Accountants/auditors	1.12	0.78	0.63
General office clerk	1.01	1.35	1.14
Total	23.63	18.80	23.19

Source: 5% PUMS, United States Bureau of the Census

Table 4: Brain drain: Comparison of most frequent occupations of recent (1985-1990) college migrants to US and Puerto Rican college graduates living in Puerto Rico (% of all occupations)

Occupation	Island	Recent migrant
Teacher, elementary school	14.71	8.58
Secretaries	4.77	2.86
Accountants and auditors	4.52	4.29
Managers & administrators	4.43	4.42
Registered nurses	3.19	3.51
Teachers, secondary school	2.61	1.43
Physicians	2.23	4.55
Social workers	2.23	3.51
Lawyers	2.05	1.04
Supervisors and proprietors	1.96	1.95
Personnel, training, and labor Relations specialists	1.95	1.04
General office clerks	1.80	0.78
Other post-secondary teacher	1.76	0.78
Administrators, education & Related fields	1.42	0.26
Administrators and officials, Public administration	1.29	0.91
Sales representative, mining, Manufacturing, wholesale	1.21	1.43
Precision supervisors, Production occupations	1.07	0.26
Clinical lab technologists	0.72	1.30
Electrical and electronics	0.41	1.51
Nursing aides, orderlies, & Attendants	0.24	1.17
Managers food services & lodge	0.22	1.04
Maids & housemen	0.00	1.04

Source: 5% PUMS, United States Bureau of the Census