THE IMPACT OF THE MARIEL BOATLIFT ON THE MIAMI LABOR MARKET

MOHAMMAD NADEEM
THE UNIVERSITY OF ALABAMA IN HUNTSVILLE

INTRODUCTION

One of the primary issues of immigration policy-makers is the scale to which the immigrants depress the labor market opportunities of less skilled locals. The Mariel Boatlift is a prime scenario to start our exploration on how immigrants affect the labor market and whether they depress or increase labor force. Also, do they acquire less skilled jobs from the natives causing unemployment for the locals in the region.

The story of The Mariel Boatlift dates to April 20, 1980, where the Castro regime announces that all Cubans wishing to emigrate to the U.S. are free to board boats at the port of Mariel west of Havana, launching the Mariel Boatlift. The first of 125,000 Cuban refugees from Mariel reached Florida the next day.

Extracting and using sample data from the Current Population Survey (CPS) to find out the change in wages, labor market, employment rates and changes in employment status in the years 1979 to 1985.We compare these three main topics- wages, labor market and employment changes in Miami with respect to other cities – *Atlanta, Houston, Los Angeles* and *Tampa-St. Petersburg.* These cities share similar characteristics with the city of Miami before the immigration.

BUILDING MODELS FOR THE INVESTIGATION OF CPS DATA

The models are broken down into cases for better understanding and for an organized data management.

The sample CPS data was filtered for several required fields-
1) **Race** – White, Black, Hispanic and Cuban. (If we're comparing one group of immigrants then we will need a group of races that were previously present in our geographical view of study and how they were affected by the immigration).
2) **Metropolitan Area** – Miami and '4 comparison cities'.
(4 comparison cities include Atlanta, Houston, Los Angeles and Tampa-St. Petersburg).
3) **Labor Force** (in-labor or not in-labor) and **Work status** (part-time or full-time).
4) **Education** – High School Graduate or a College Graduate.
5) **Age** – between 16-61 (as this age group makes up for more than 65% of the population).
6) **Wage.**
7) Year – We select Years 1979-1985 to examine the trends before and after immigration.

Case 1- Comparison of Unemployment rates for Different races in Miami and 4 Comparison cities.

Case 2- Log wages of non-Cubans in Miami by quartile, 1979-1985.

Case 3- Linear regression model
Target variable - Log(wage)
Chosen predictor variables - Education, marital status, sex, work status and employment status.
Case 4- Miami Labor Force for the years 1979 and 1980.

CASE 1

Unemployment Rates of Individuals Age 16—61 in Miami, 1979 and 1985.

UNMEPLOYMENT RATES IN MIAMI IN 1979

The FREQ Procedure

RACE=CUBAN

EMPSTAT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
employed	178	92.71	178	92.71
unemployed	14	7.29	192	100.00

UNMEPLOYMENT RATES IN MIAMI IN 1985

The FREQ Procedure

RACE=CUBAN

EMPSTAT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
employed	176	96.17	176	96.17
unemployed	7	3.83	183	100.00

UNMEPLOYMENT RATES IN MIAMI IN 1979

The FREQ Procedure

RACE=HISPANIC

EMPSTAT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
employed	49	92.45	49	92.45
unemployed	4	7.55	53	100.00

UNMEPLOYMENT RATES IN MIAMI IN 1985

The FREQ Procedure

RACE=HISPANIC

EMPSTAT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
employed	77	95.06	77	95.06
unemployed	4	4.94	81	100.00

UNMEPLOYMENT RATES IN MIAMI IN 1979

The FREQ Procedure

RACE=WHITE

EMPSTAT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
employed	174	94.05	174	94.05
unemployed	11	5.95	185	100.00

UNMEPLOYMENT RATES IN MIAMI IN 1985

The FREQ Procedure

RACE=WHITE

EMPSTAT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
employed	174	94.57	174	94.57
unemployed	10	5.43	184	100.00

For race=black

The FREQ Procedure

EMPSTAT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
employed	61	95.31	61	95.31
unemploy	3	4.69	64	100.00

The FREQ Procedure

EMPSTAT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
employed	61	96.83	61	96.83
unemploy	2	3.17	63	100.00

Table 1: Employment as a percentage of total sample CPS data for Miami from 1979-1985

Exploring the CPS sample for Miami in the year 1979 and 1985, we can observe a decrease in unemployment rates. While there is no drastic decrease in unemployment for the whites and blacks already living there but we can see a slight decrease for the Cubans and Hispanics in Miami. From 7.29% to 3.83% for Cubans and 7.55% to 4.94% for the Hispanics.

Unemployment Rates of Individuals Age 16—61 in 4 Comparison Cities, 1979 and 1985.

UNEMPLOYMENT RATES FOR 4 COMPARISON CITIES IN 1979

The FREQ Procedure

EMPSTAT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
employed	2265	94.65	2265	94.65
unemployed	128	5.35	2393	100.00

UNEMPLOYMENT RATES FOR 4 COMPARISON CITIES IN 1985

The FREQ Procedure

EMPSTAT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
employed	2737	93.25	2737	93.25
unemployed	198	6.75	2935	100.00

Table 1: Employment as a percentage of total sample CPS data for 4 Comp Cities from 1979-1985

Following suit, the above table does not show the same results as we thought. The unemployment rates for the 4 Comparison cities have increased in the past few years. This insight can explain that the Labor force in Miami has increased and therefore harbor more jobs to the upcoming immigrants and thereby increasing employment rates. Another reason could also be that most of the immigrants were relatively high-skilled workers and were educated enough to be employed for the job.

CASE 2

LOG WAGES OF NON-CUBANS IN MIAMI BY QUARTILE,1979-1985

LOG WAGES OF NON CUBANS IN MIAMI BY QUARTILE,1979-1985

The MEANS Procedure

YEAR=1979

Analysis Variable : lwage		
Lower Quartile	Median	Upper Quartile
8.4118327	8.8818363	9.3926619

YEAR=1980

Analysis Variable : lwage		
Lower Quartile	Median	Upper Quartile
8.6656132	8.9871968	9.5468126

YEAR=1981

Analysis Variable : lwage		
Lower Quartile	Median	Upper Quartile
8.5171932	9.1049799	9.6158055

YEAR=1982

Analysis Variable : lwage		
Lower Quartile	Median	Upper Quartile
8.6995147	9.2103404	9.6518107

YEAR=1983

Analysis Variable : lwage		
Lower Quartile	Median	Upper Quartile
8.6995147	9.2103404	9.6803440

YEAR=1984

Analysis Variable : lwage		
Lower Quartile	Median	Upper Quartile
8.8296654	9.3926619	9.8521943

YEAR=1985

Analysis Variable : lwage		
Lower Quartile	Median	Upper Quartile
8.8565185	9.5119253	10.1185989

Table 3: Log of wages for Non-Cubans in Miami by Quartile

If the Mariel immigration reduced the wages of less-skilled natives, one would expect to observe a decline in the wage of workers in the lowest skill quartile, at least relative to workers in the upper quartile. The actual averages show no evidence of this effect. Apart from the temporary increase in relative wages of workers in the lowest quartile between 1979 and 1981, the distribution of non-Cubans' wages in the Miami labor market was remarkably stable between 1979 and 1985.

Taken together with the data in Table 1, these data provide little evidence of a negative effect of the Mariel influx on the earnings of natives.

CASE 3

Linear regression model

Target variable - Log(wage)
Chosen predictor variables - Education, marital status, sex and work status.

Fit Statistics	
R-Square	0.3267
Root MSE	0.6120
Denominator DF	105

Class Level Information		
CLASS Variable	Levels	Values
EDUC	2	COLLEGE GRADUATE HIGH SCHOOL GRADUATE
MARST	2	MARRIED SINGLE
EMPSTAT	2	EMPLOYED UNEMPLOY
SEX	2	FEMALE MALE
WKSTAT	2	FULLTIME PART-TIME

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	4	8.74	<.0001
Intercept	1	6064.44	<.0001
EDUC	1	8.00	0.0056
MARST	1	0.27	0.6069
SEX	1	19.84	<.0001
WKSTAT	1	9.34	0.0028

Note: The denominator degrees of freedom for the F tests is 105.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr > |t|
Intercept	8.5503210	0.24012451	35.61	<.0001
EDUC COLLEGE GRADUATE	0.3287804	0.11624901	2.83	0.0056
EDUC HIGH SCHOOL GRADUATE	0.0000000	0.00000000	.	.
MARST MARRIED	0.0704941	0.13661984	0.52	0.6069
MARST SINGLE	0.0000000	0.00000000	.	.
SEX FEMALE	-0.5039228	0.11314020	-4.45	<.0001
SEX MALE	0.0000000	0.00000000	.	.
WKSTAT FULLTIME	0.7457436	0.24404463	3.06	0.0028
WKSTAT PART-TIME	0.0000000	0.00000000	.	.

Fit Statistics	
R-Square	0.1210
Root MSE	0.9542
Denominator DF	70

Class Level Information		
CLASS Variable	Levels	Values
EDUC	2	COLLEGE GRADUATE HIGH SCHOOL GRADUATE
MARST	2	MARRIED SINGLE
EMPSTAT	2	EMPLOYED UNEMPLOY
SEX	2	FEMALE MALE
WKSTAT	2	FULLTIME PART-TIME

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	4	4.06	0.0051
Intercept	1	1583.55	<.0001
EDUC	1	1.06	0.3068
MARST	1	1.15	0.2876
SEX	1	6.43	0.0135
WKSTAT	1	0.07	0.7863

Note: The denominator degrees of freedom for the F tests is 70.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr > |t|
Intercept	9.1791823	0.38002909	24.15	<.0001
EDUC COLLEGE GRADUATE	0.4054132	0.39378131	1.03	0.3068
EDUC HIGH SCHOOL GRADUATE	0.0000000	0.00000000	.	.
MARST MARRIED	0.2642358	0.24660006	1.07	0.2876
MARST SINGLE	0.0000000	0.00000000	.	.
SEX FEMALE	-0.5672818	0.22372036	-2.54	0.0135
SEX MALE	0.0000000	0.00000000	.	.
WKSTAT FULLTIME	0.0774275	0.28442793	0.27	0.7863
WKSTAT PART-TIME	0.0000000	0.00000000	.	.

Table 4: Linear regression model for log(wage) for the year 1979(left) and 1985(right) for Cubans living in Miami

According to our regression model, for Cubans living Miami –

1) College graduates earn about 8% more than high school graduates in 1985 than in 1979.
The Mariel Influx had many individuals who were skilled and educated and that resulted in an increase in wages for the respective college graduates.
2) Married Cubans now earn 20% more than Cubans who are single in 1979.
3) Females now earn 6% lesser wages than males in 1985.
4) Individuals who work Full time now earn only 7.7% more than part time which was not the case in 1979 where Full-timers earned more than 74% than part-timers. Which goes to show that there has been economical development and many more jobs were created due to the immigration so that now part timers only earn a little lesser than full-timers. This in turn increases the labor force of Miami.

The SURVEYREG Procedure

Regression Analysis for Dependent Variable lwage

Data Summary	
Number of Observations	15
Mean of lwage	9.06451
Sum of lwage	135.96765

Fit Statistics	
R-Square	0.5809
Root MSE	0.9907
Denominator DF	14

Class Level Information		
CLASS Variable	Levels	Values
EDUC	2	COLLEGE GRADUATE HIGH SCHOOL GRADUATE
MARST	2	MARRIED SINGLE
SEX	2	FEMALE MALE
WKSTAT	2	FULLTIME PART-TIME

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	4	56.87	<.0001
Intercept	1	6161.84	<.0001
MARST	1	27.09	0.0001
SEX	1	7.81	0.0143
WKSTAT	1	9.08	0.0093
EDUC	1	0.00	0.9697

Note: The denominator degrees of freedom for the F tests is 14.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr > |t|
Intercept	8.3397338	0.30485927	27.36	<.0001
MARST MARRIED	2.2809983	0.43821797	5.21	0.0001
MARST SINGLE	0.0000000	0.00000000	.	.
SEX FEMALE	-1.2940776	0.46314672	-2.79	0.0143
SEX MALE	0.0000000	0.00000000	.	.
WKSTAT FULLTIME	-0.6535888	0.21694719	-3.01	0.0093
WKSTAT PART-TIME	0.0000000	0.00000000	.	.
EDUC COLLEGE GRADUATE	0.0169844	0.43882167	0.04	0.9697
EDUC HIGH SCHOOL GRADUATE	0.0000000	0.00000000	.	.

The SURVEYREG Procedure

Regression Analysis for Dependent Variable lwage

Data Summary	
Number of Observations	17
Mean of lwage	9.39817
Sum of lwage	159.76883

Fit Statistics	
R-Square	0.7543
Root MSE	0.6234
Denominator DF	16

Class Level Information		
CLASS Variable	Levels	Values
EDUC	2	COLLEGE GRADUATE HIGH SCHOOL GRADUATE
MARST	2	MARRIED SINGLE
SEX	2	FEMALE MALE
WKSTAT	2	FULLTIME PART-TIME

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	4	522.33	<.0001
Intercept	1	1584.30	<.0001
MARST	1	0.03	0.8763
SEX	1	0.47	0.5049
WKSTAT	1	0.80	0.3857
EDUC	1	130.69	<.0001

Note: The denominator degrees of freedom for the F tests is 16.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr > |t|
Intercept	9.5751452	0.38548216	24.84	<.0001
MARST MARRIED	-0.0744244	0.47038052	-0.16	0.8763
MARST SINGLE	0.0000000	0.00000000	.	.
SEX FEMALE	-0.2417519	0.35437996	-0.68	0.5049
SEX MALE	0.0000000	0.00000000	.	.
WKSTAT FULLTIME	0.2244137	0.25165724	0.89	0.3857
WKSTAT PART-TIME	0.0000000	0.00000000	.	.
EDUC COLLEGE GRADUATE	-3.7150616	0.32497273	-11.43	<.0001
EDUC HIGH SCHOOL GRADUATE	0.0000000	0.00000000	.	.

Table 4: Linear regression model for log(wage) for the year 1979(left) and 1985(right) for Cubans living in 4 Comparison Cities

Due to the insufficiency of data and heavy filtering the sample CPS data, we can only look at the work status variable between 1979 and 1985.

During 1979, Cubans living in other parts of US, individuals working part-time earned more than full-time, the reason could be that there were comparably more number of part-time workers than full-time. This could also mean that the Cubans living in other parts of US are less-educated and less-skilled.

In 1985, this scenario changed and Full-timers started earning more than part-timers and then wages were 22% more than part timers.

CASE 4

Miami Labor Force for the years 1979 and 1980.

MIAMI LABOR FORCE FOR THE YEAR 1979

The FREQ Procedure

LABFORCE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	195	29.19	195	29.19
2	473	70.81	668	100.00

MIAMI LABOR FORCE FOR THE YEAR 1980

The FREQ Procedure

LABFORCE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	146	25.35	146	25.35
2	430	74.65	576	100.00

Here LABFORCE 2=in-labor and 1=not in-labor

The above tables represent the Miami labor force for the years 1979 and 1980. There is a 4% increase in the labor force after the Mariel immigration. Therefore, it is safe to assume there was an increase in the labor force due to the Mariel influx.

CONCLUSION

The decrease in unemployment rates in Miami and compared to other cities, the stable trend of wages based on skill for non-Cubans residing in Miami, the increase in Labor force by 4% in Miami and the steady changes in income for Cubans in Miami based on education and work status.

The Mariel immigrants increased the Miami labor force by 4%, and the percentage increase in labor supply to less-skilled occupations and industries was even greater because most of the immigrants were relatively unskilled. Nevertheless, the Mariel influx appears to have had virtually no effect on the wages or unemployment rates of less-skilled workers, even among Cubans who had immigrated earlier.

Codes Used in SAS-

Case1-

```
**unemployment rates**;
title "UNEMPLOYMENT RATES FOR 4 COMPARISON CITIES IN 1979";
proc freq data=work.import;
tables empstat;
where YEAR = 1979;
run;
proc sort data=WORK.IMPORT3 out=Work.SortTempTableSorted;
        by HISPAN;
run;
proc freq data=Work.SortTempTableSorted;
        tables EMPSTAT ;
        by HISPAN;
        WHERE YEAR=1979;
run;
title "UNEMPLOYMENT RATES FOR MIAMI IN 1979";
proc freq data=work.import;
tables empstat;
where YEAR = 1979;
run;
proc sort data=WORK.IMPORT3 out=Work.SortTempTableSorted;
        by HISPAN;
run;
```

```
proc freq data=Work.SortTempTableSorted;
        tables EMPSTAT ;
        by HISPAN;
        WHERE YEAR=1979;
run;
```

Case 2-

```
TITLE "LOG WAGES OF NON CUBANS IN MIAMI BY QUARTILE,1979-1985";
data work.import1;
set import;
lwage= log(INCWAGE);
run;
proc means data=work.import1 q1 median q3 ;
var lwage;
by year;
run;
```

Case 3-

Regression Model-

```
data work.import;
set import;
lwage= log(INCWAGE);
run;
**FOR CUBANS LIVING IN MIAMI**
proc surveyreg data=work.import;
class EDUCNEW MARITALSTATUS EMPSTATUS SEXNEW;
model lwage= EDUCNEW MARITALSTATUS EMPSTATUS SEXNEW / solution;
where YEAR=1979;
run;
proc surveyreg data=work.import;
class EDUCNEW MARITALSTATUS EMPSTATUS SEXNEW;
model lwage= EDUCNEW MARITALSTATUS EMPSTATUS SEXNEW / solution;
```

```
where YEAR=1985;
run;
**FOR CUBANS LIVING IN REST OF USA**
proc surveyreg data=work.import4;
class EDUCNEW MARITALSTATUS EMPSTATUS SEXNEW;
model lwage= EDUCNEW MARITALSTATUS EMPSTATUS SEXNEW / solution;
where YEAR=1979;
run;
proc surveyreg data=work.import4;
class EDUCNEW MARITALSTATUS EMPSTATUS SEXNEW;
model lwage= EDUCNEW MARITALSTATUS EMPSTATUS SEXNEW / solution;
where YEAR=1985;
run;
```

Case 4-

```
**calculate the laborforce**;
title "MIAMI LABOR FORCE FOR THE YEAR 1979";
proc freq data=work.import5;
tables labforce;
where YEAR = 1979;
run;
title "MIAMI LABOR FORCE FOR THE YEAR 1980";
proc freq data=work.import5;
tables labforce;
where YEAR = 1980;
run;
```

References-

Castro announces Mariel Boatlift. (n.d.). Retrieved April 16, 2018, from https://www.history.com/this-day-in-history/castro-announces-mariel-boatlift

Card, D. (1989). The Impact of the Mariel Boatlift on the Miami Labor Market. doi:10.3386/w3069