

Departure delays in American airports

Econometrics Oral Presentation

ENAC

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Description of variables

- Freight
- Number of passengers
- Percentage of low-cost carriers
- Yearly average precipitations
- Yearly average temperature
- Latitude
- Longitude

n=82 American airports
Report on a fixed period : data from 2010

Description of variables

On time departures : the dependent variable

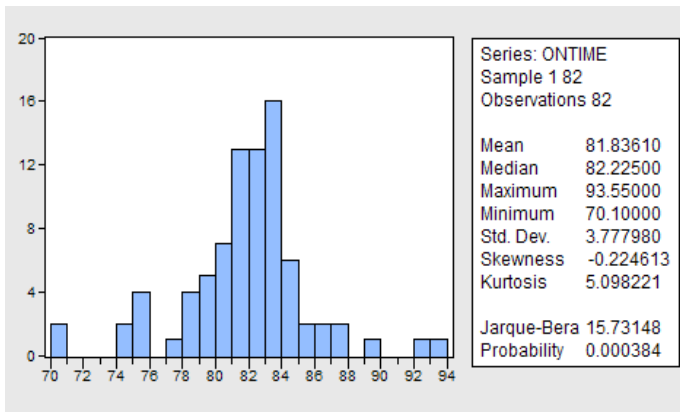


Figure 1 : On time departure histogramm

Description of variables

Freight

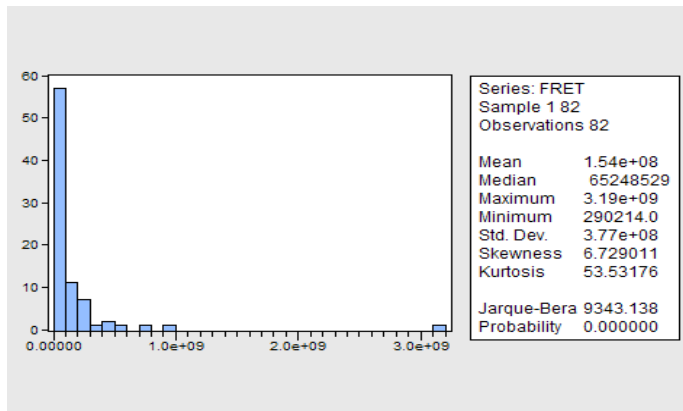


Figure 2 : Freight histogramm

Description of variables

Passengers

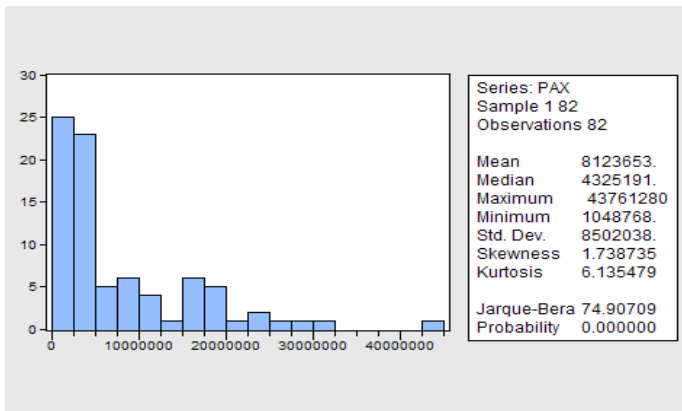


Figure 3 : Passengers histogramm

Description of variables

Low-costs carriers

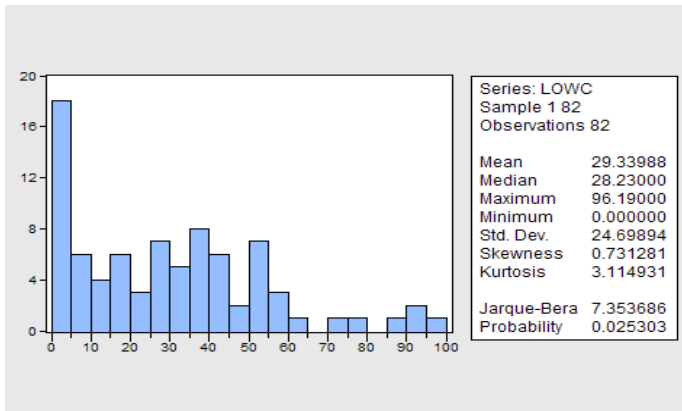


Figure 4 : Low-costs carriers histogramm

Description of variables

Temperature

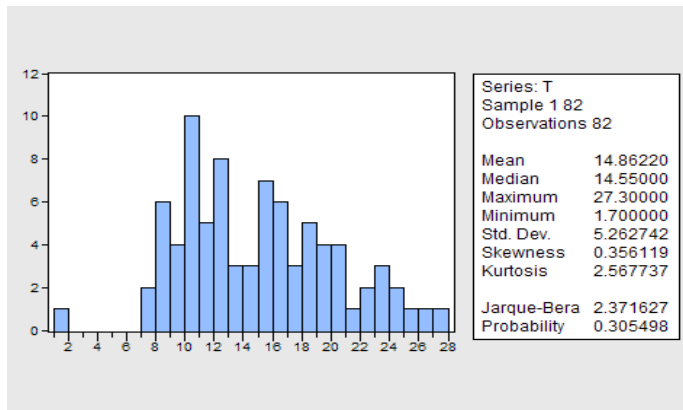


Figure 5 : Temperature histogramm

Description of variables

Precipitations

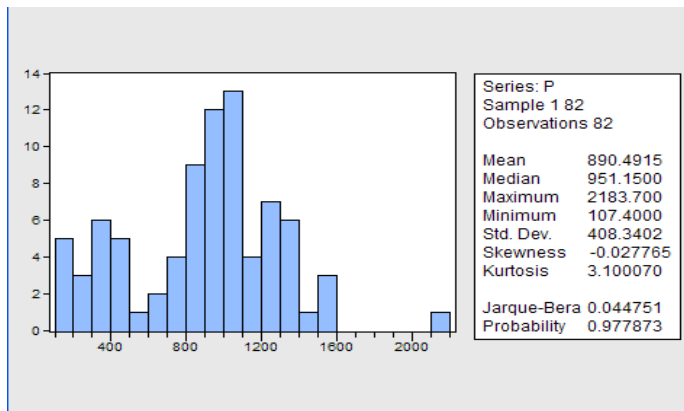


Figure 6 : Precipitations histogramm

Description of variables

Latitude

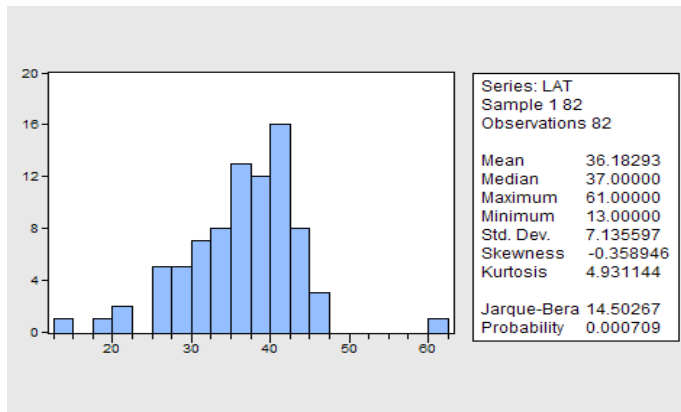


Figure 7 : Latitude histogramm

Description of variables

Longitude

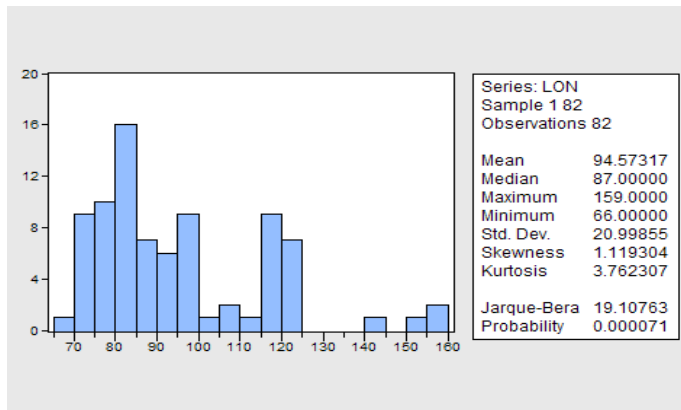


Figure 8 : Longitude histogramm

Equation

$$\widehat{TIME}_i = \beta_0 + \beta_1 \frac{FRET_i}{10^6} + \beta_2 \frac{PAX_i}{10^6} + \beta_3 LOWC_i + \beta_4 T_i + \beta_5 \frac{P_i}{10^3} + \beta_6 LAT_i + \beta_7 LON_i$$

Equation

Dependent Variable: ONTIME
Method: Least Squares
Date: 05/03/12 Time: 18:06
Sample: 1 82
Included observations: 80

	Coefficient	Std. Error	t-Statistic	Prob.
C	79.84008	7.786546	10.25359	0.0000
FRET/10 ⁶	-0.000258	0.000812	-0.317065	0.7521
PAX/10 ⁶	-0.225549	0.036796	-6.129683	0.0000
LOWC	-0.081050	0.013161	-6.158275	0.0000
T	-0.055591	0.179539	-0.309634	0.7577
P/10 ³	0.096393	1.049256	0.091868	0.9271
LAT	-0.051330	0.137792	-0.372517	0.7106
LON	0.095183	0.019204	4.956362	0.0000
R-squared	0.578499	Mean dependent var		81.85775
Adjusted R-squared	0.537520	S.D. dependent var		3.819842
S.E. of regression	2.597717	Akaike info criterion		4.841783
Sum squared resid	485.8658	Schwarz criterion		5.079986
Log likelihood	-185.6713	Hannan-Quinn criter.		4.937285
F-statistic	14.11688	Durbin-Watson stat		2.205655
Prob(F-statistic)	0.000000			

Figure 9 : Equation

Equation

$$\widehat{TIME}_i = 79,8 - 0,000258 \frac{FRET_i}{10^6} - 0,226 \frac{PAX_i}{10^6} - 0,0811LOWC_i - 0,0556T_i \\ + 0,0964 \frac{P_i}{10^3} - 0,0513LAT_i + 0,0952LON_i$$

Correlation

Correlation								
	FRET	LAT	LON	LOWC	ONTIME	PAX	T	P
FRET	1.000000	0.091297	0.106690	-0.232950	0.093756	0.100258	-0.032611	0.023782
LAT	0.091297	1.000000	-0.032893	-0.079094	0.025510	-0.052444	-0.942010	-0.324750
LON	0.106690	-0.032893	1.000000	0.026666	0.484851	-0.009312	0.129956	-0.579524
LOWC	-0.232950	-0.079094	0.026666	1.000000	-0.325987	-0.344990	0.069717	-0.090526
ONTIME	0.093756	0.025510	0.484851	-0.325987	1.000000	-0.334280	0.005457	-0.225558
PAX	0.100258	-0.052444	-0.009312	-0.344990	-0.334280	1.000000	0.075283	-0.005431
T	-0.032611	-0.942010	0.129956	0.069717	0.005457	0.075283	1.000000	0.252761
P	0.023782	-0.324750	-0.579524	-0.090526	-0.225558	-0.005431	0.252761	1.000000

Figure 10 : Correlation matrix

Correlation



Figure 11 : The United States of America

Fitted errors

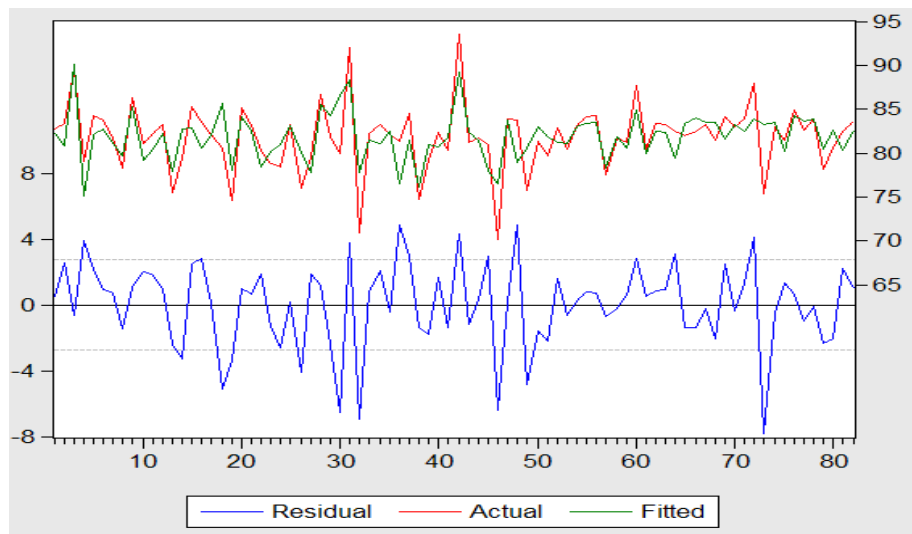


Figure 12 : Fitted errors

Conclusion

