Electronic Documentation of Economics Senior Thesis
"Moral Hazard and the National Flood Insurance Program"
by Mary McGee, Colgate University, April 2014

DATA APPENDIX

Table 1: Variable definitions and Sources

Variable	**Definition**	**Missing Values**	**Original Variable Name**	**Changes to Original Variable**	**Source**
Δnfip_policies	Change in the total number of NFIP policies in force from the previous year	0/33	"Number of Policies in Force"	Copied values for 1978 - 2010, omitted commas, calculated first difference	2013 Congressional Research Service Report, *The National Flood Insurance Program: Status and Remaining Issues for Congress* (King, 2013)
ln*claims*	Number of claims paid by the NFIP, logged	0/33	"Total number of Claims Paid"	Copied values for 1978 – 2010, omitted commas, logged values	2013 Congressional Research Service Report, *The National Flood Insurance Program: Status and Remaining Issues for Congress* (King, 2013)
ln*claimvalue*	2010 value of claims paid by the NFIP, logged	0/33	"Total Payments Made to Policyholders"	Copied values for 1978 – 2010, omitted commas and dollar signs, converted to 2010 dollars, logged values	2013 Congressional Research Service Report, *The National Flood Insurance Program: Status and Remaining Issues for Congress* (King, 2013)
ln*sba*	2010 value of Disaster Loans paid by the SBA, logged	0/33	"Total: Dollar"	Copied values for 1978 – 2010, omitted commas and dollar signs, converted to 2010 dollars, logged values	Freedom of Information Act Request (FOIA Request # 2013-1202-1) (FOIA, 2013)
ln*drf* ln*drf*	2010 value of total appropriations to the Presidential Disaster Relief Fund, logged	2/33	"Total Appropriations: Nominal"	Copied values for 1978 – 1988 into excel, omitted commas, multiplied by 1,000,000 (originally reported in millions), converted to 2010 dollars, logged values	1978-1988: 2005 Congressional Research Service Report, *Federal Stafford Act Disaster Assistance: Presidential Declarations, Eligible Activities, and Funding* (Bea, 2005)

			"Total Nominal"	Copied values for 1989 – 2010, omitted commas, multiplied by 1,000,000 (originally reported in millions), converted to 2010 dollars, logged values	1989-2010: 2011 Congressional Research Service Report, *Disaster Relief Funding and Emergency Supplemental Appropriations* (Lindsay and Murray 2011)
ln*damages*	2010 value of total amount of damages caused by natural disasters, logged	1/33	"Total damages ('000 USD)"	Copied values, multiplied by 1,000 (originally reported in thousands), converted to 2010 dollars, logged values	The International Disaster Database: Centre for Research on the Epidemiology of Disasters (EM-DAT, 2013)
lagln*damages*	ln*damages* lagged 1 year (t-1)				
floods	Number of significant flood events	0/33	"Significant Flood Events"	Counted number of flood events recorded for each year	*Flood Insurance Statistics: Significant Flood Events* (FEMA, 2014)
lag*floods*	*floods* lagged 1 year (t-1)				
year	each year 1978-2010				
fira94	dummy variable taking a 1 after 1994 and a 0 before				
*fira94*trend*	*fira94* interacted with *year*, it takes the value of each year after 1994 and a 0 before				
fira04	dummy variable taking a 1 after 2004 and a 0 before				
*fira04*trend*	*fira04* interacted with *year*, it takes the value of each year after 2004 and a 0 before				

grant06	dummy variable taking a 1 after 2006 and a 0 before				
*grant06*trend*	*grant06* interacted with *year*, it takes the value of each year after 2006 and a 0 before				

Table 2: Summary Statistics – Level Variables

	nfip_policies	***Δnfip_policies***	***nfip_claims***	***nfip_claimvalue****	***sba****	***drf****	***damages****	***floods***
Min	1466354	-188786	7758	27.7	59.1	0	0	0
Max	5704198	552884	212778	15900	10300	40400	142000	9
Mean	3419090	127905	41006.24	975	930	3140	13500	2.97
Standard Deviation	1400266	160298.3	34997.22	2750	1780	7190	26400	2.11
N	33	32	33	33	33	33	33	33

Note: * = Statistics reported in millions

HISTOGRAMS

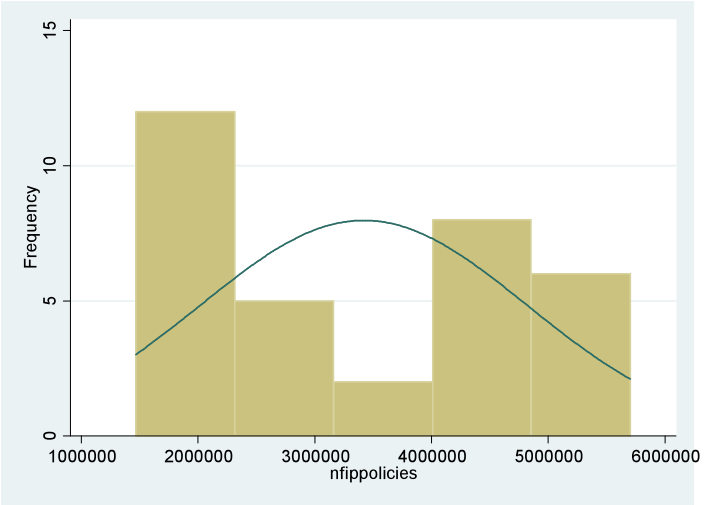

Figure 1: *nfip_policies* histogram

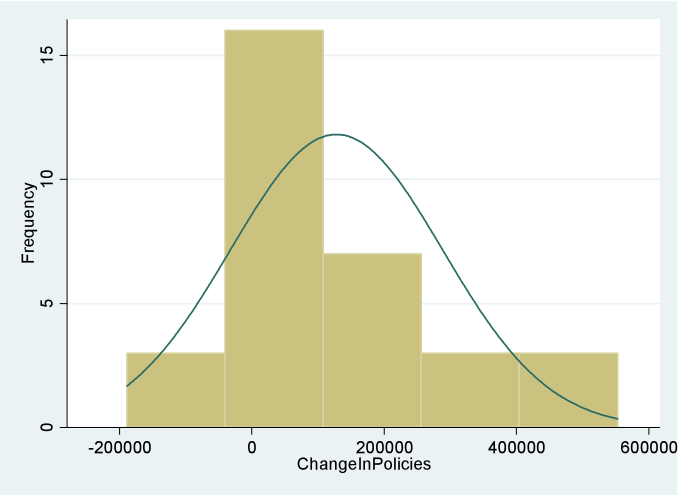

Figure 2: Δ*nfip_policies* histogram

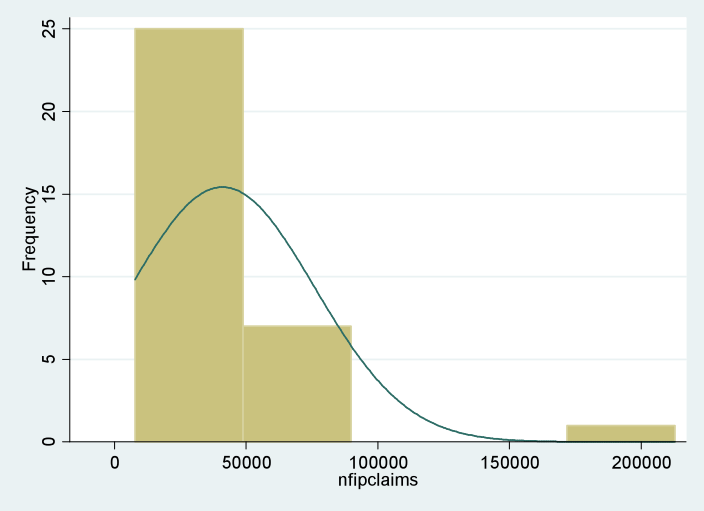

Figure 3: *nfip_claims* histogram

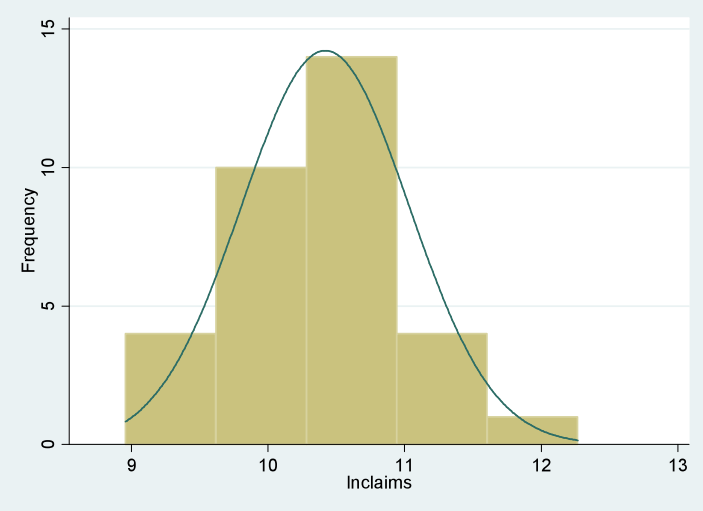

Figure 4: ln*nfip_claims* histogram

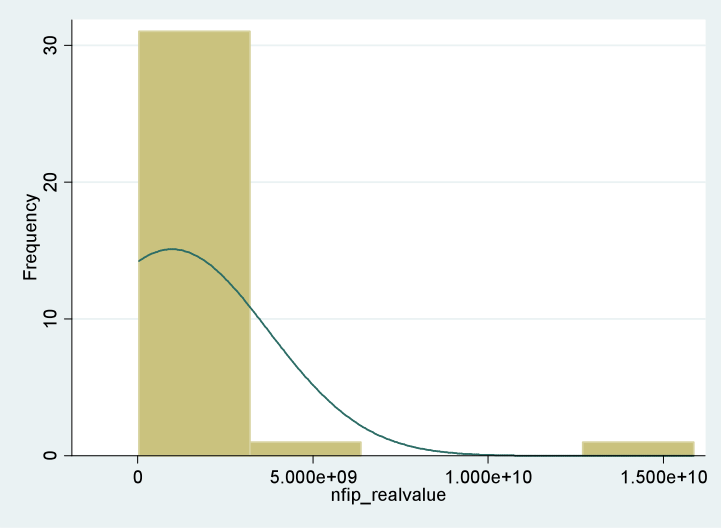

Figure 5: *nfip_claimvalue* histogram

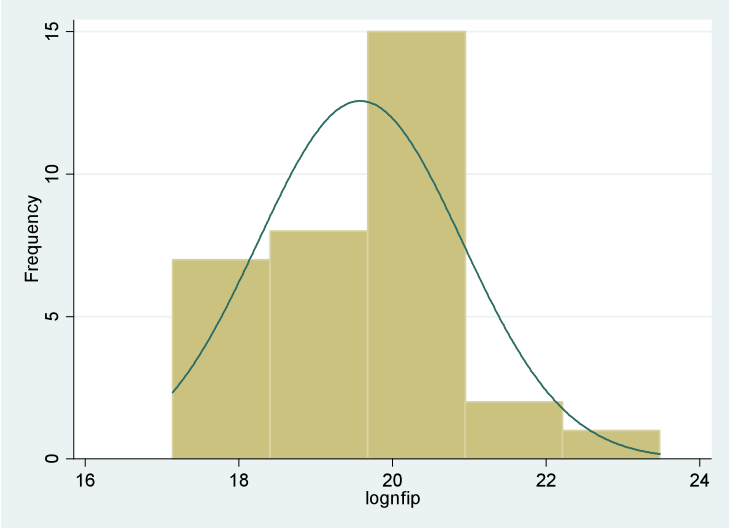

Figure 6: ln*nfip_claimvalue* histogram

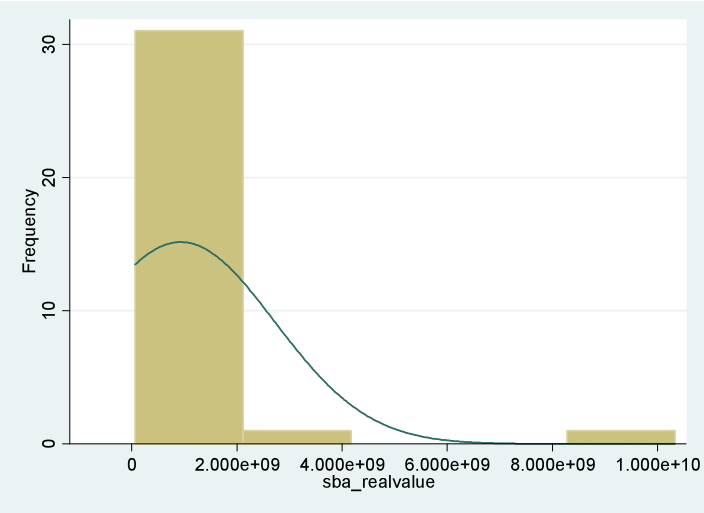

Figure 7: *sba* histogram

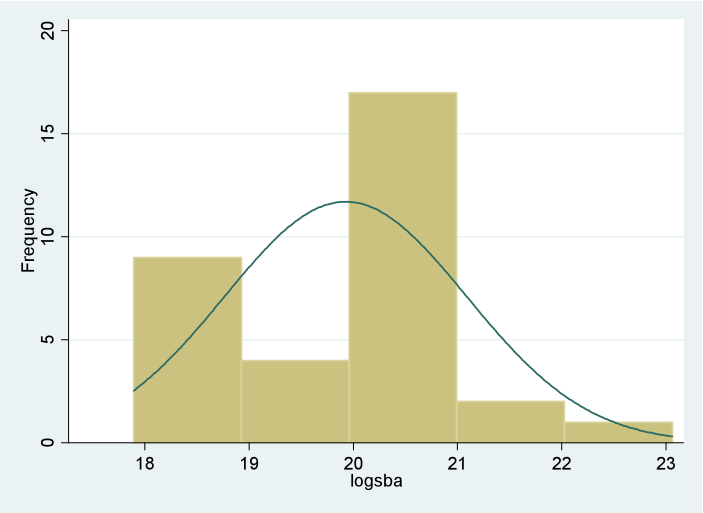

Figure 8: ln*sba* histogram

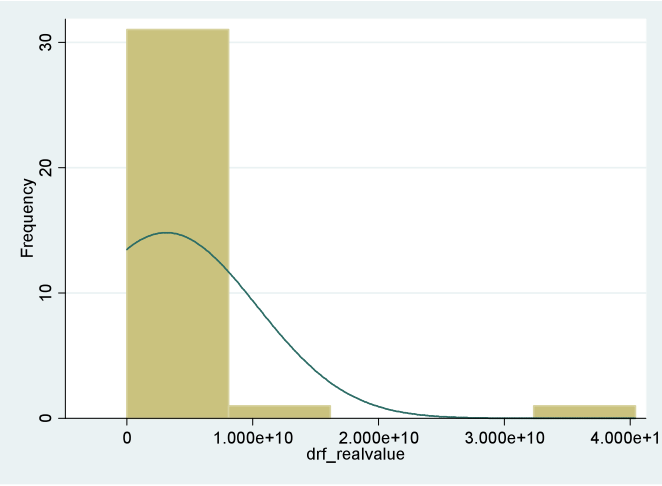

Figure 9: *drf* histogram

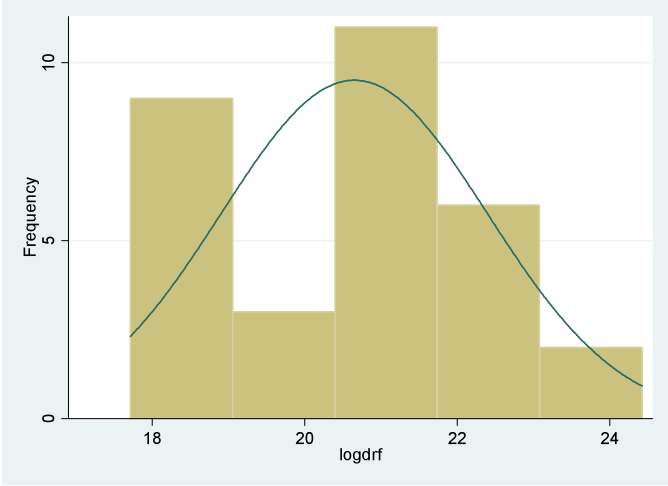

Figure 10: ln*drf* histogram

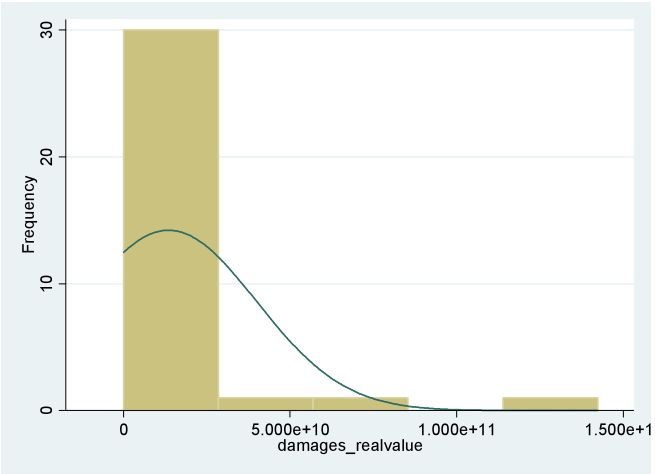

Figure 11: *damages* histogram

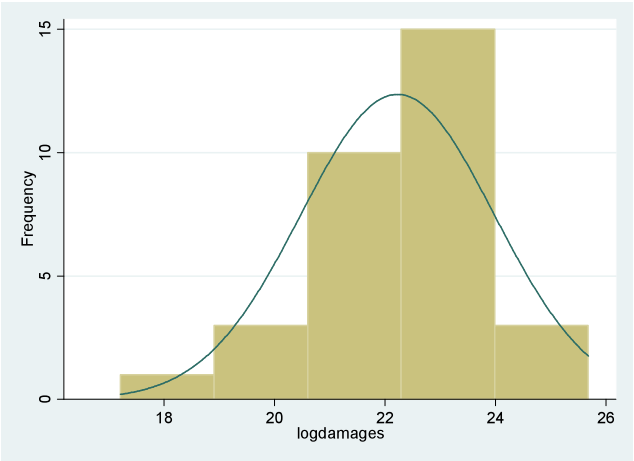

Figure 12: ln*damages* histogram

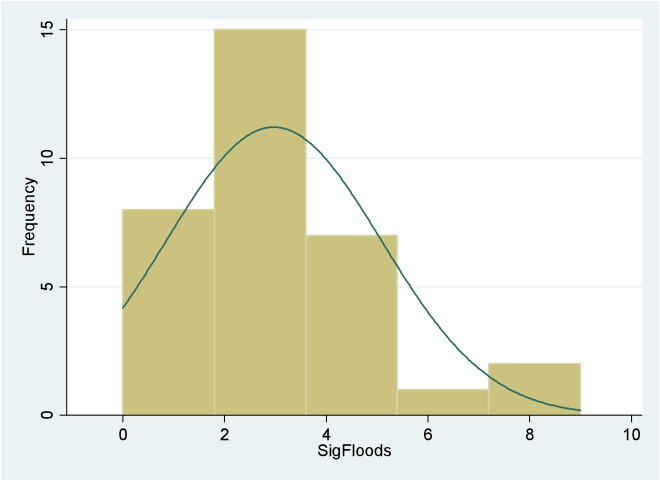

Figure 13: *floods* histogram

Table 3: Dickey-Fuller Test Results (using trend option)

Variable	Test Statistic	P-Value
nfip_policies	-1.574	0.8023
Δnfip_policies	-3.508	0.0386
nfip_claims	-5.553	0.0000
nfip_claimvalue	-5.629	0.0000
sba	-5.297	0.0001
drf	-5.459	0.0000
damages	-5.057	0.0002
floods	-6.170	0.0000

Notes:
N=32
1% critical value = -4.316
5% critical value = -3.572
10% critical value = -3.223

Table 4: Breusch-Godfrey Test Results

Dependent Variable	Chi-squared	Degrees of Freedom (lags)	P-Value
Δnfip_policies	0.397	1	0.5287
--	2.045	5	0.8430
--	4.690	10	0.9109
nfip_claims	4.768	1	0.0290
--	11.465	5	0.0429
--	15.082	10	0.1291
nfip_claimvalue	0.555	1	0.4563
--	6.395	5	0.2697
--	25.579	10	0.0043