

Health Consequences of Insurance Coverage

Health Economics
Bill Evans

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Research question

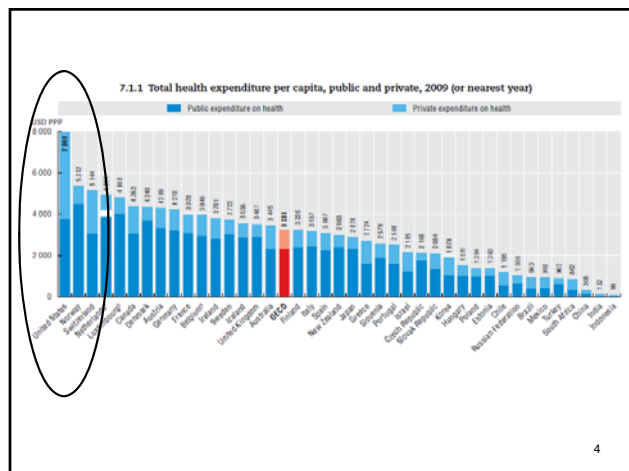
- Research question: what does insurance status do for health?
- Why might help?
- Why not?
- What evidence have we seen to date?
- Problems for identification
 - insurance rates vary systematically across groups
 - People with poor health have higher demand for HI

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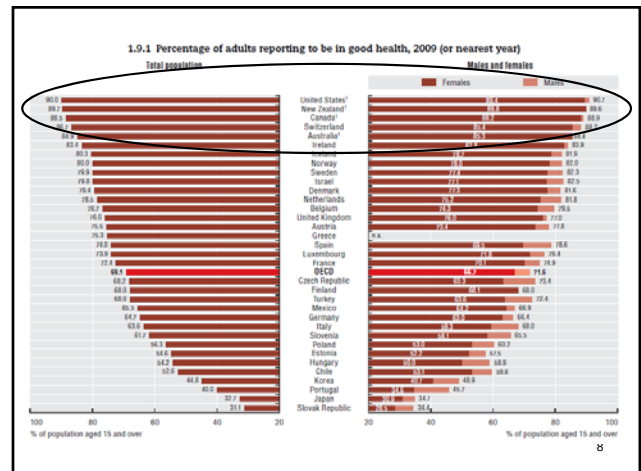
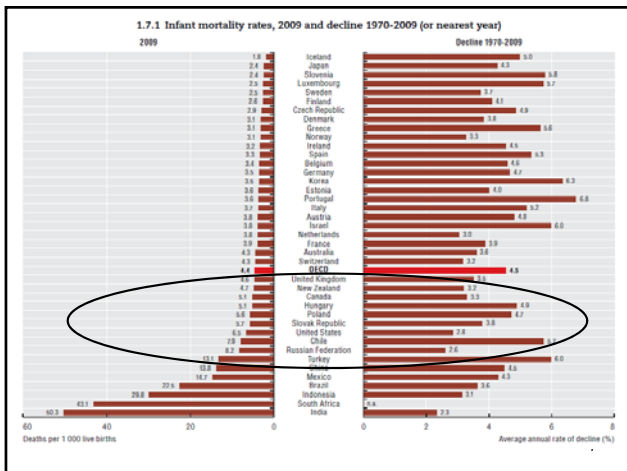
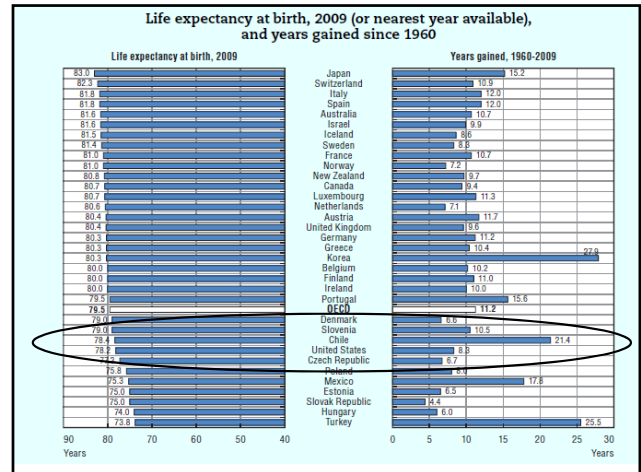
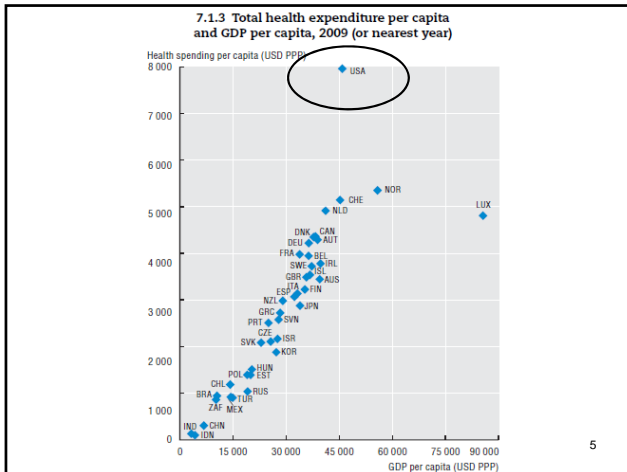
MEPS, 18-64 Years of Age

Variable	Insured	Uninsured	Variable	Insured	Uninsured
Age	42.1	38.4	% Smoke	21.3%	28.4%
% Male	44.6%	50.4%	% w/ Phys. Limit.	11.9%	8.2%
% < HS	17.6%	43.0%	% diabetes	7.6%	5.2%
% College	27.0%	8.9%	% high chol	24.0%	11.4%
% Black	14.9%	14.0%	% high BP	24.3%	15.3%
% Hispanic	18.2%	47.7%	Dr. Visits	6.0	2.1
Fair poor health	15.3%	17.0%	Hosp. Vis.	0.12	0.05
Fair poor mental	7.7%	7.6%	Total \$ HC	\$3959	\$1041

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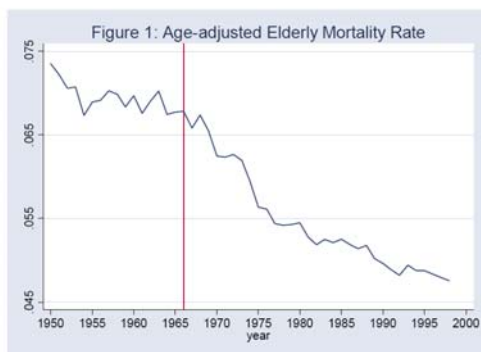
Finkelstein and McKnight

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Un-insurance rates

Age Group	1963	1970	1977
45-54	28%	18%	13%
55-64	28%	25%	13%
65-74	34%	2%	1%
75+	60%	4.6%	0.2%

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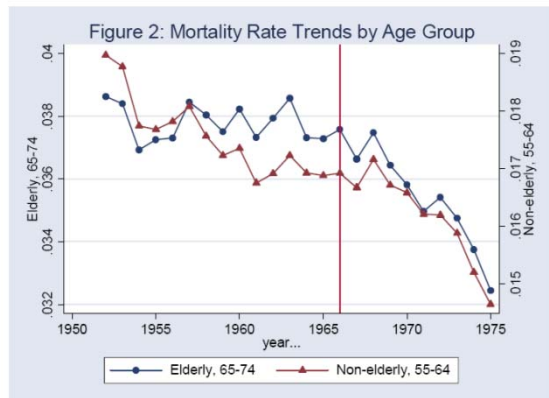


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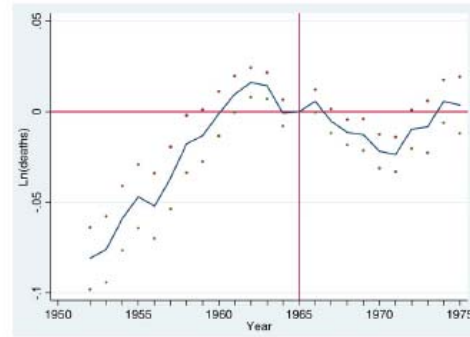
Econometric model

$$\ln(deaths)_{ast} = \ln(pop)_{ast} \beta_1 + elderly_a \beta_2 + \sum_{t=1952}^{1975} elderly_a Y_t \lambda_t + \mu_s + \theta_t + \varepsilon_{ast}$$

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Y axis: Annual difference in ln(mortality) for over 65 relative to <65

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What might be wrong with this DnD model?

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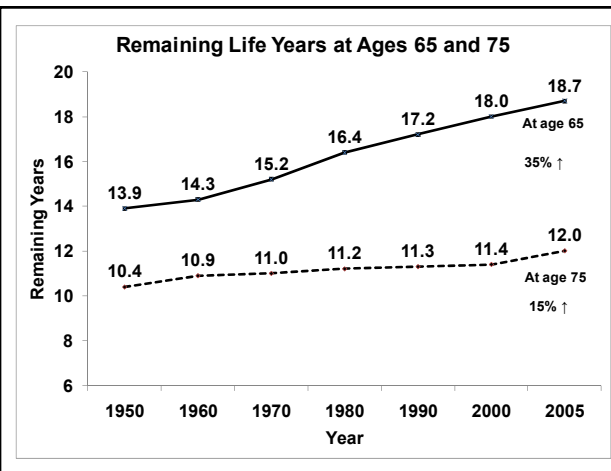
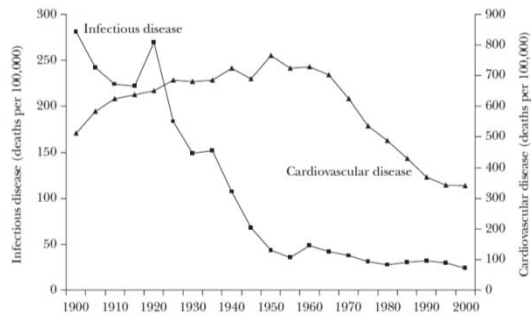


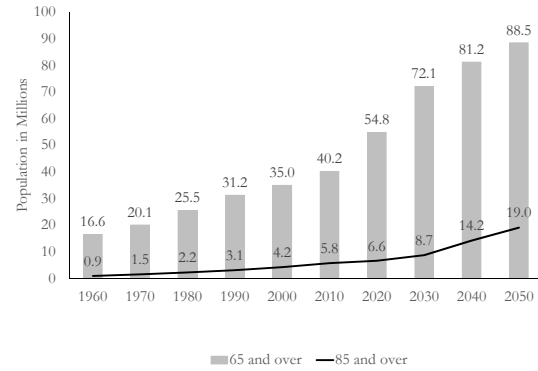
Figure 3

Mortality From Infectious Disease and Cardiovascular Disease, United States, 1900–2000



Source: Data are from the Centers for Disease Control and Prevention, National Center for Health Statistics, and are age adjusted.

Population by Age Group (in millions)



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Doyle, RESTAT

- Examine outcomes of people involved in serious car crash
 - Taken away by ambulance
 - All receive some care
 - Question: what does insurance status do for quality of care?
- What are the advantages/disadvantages over Hadley?

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CODES Data

- Crash Outcome Data Evaluation System
 - Links police accident reports to hospital discharge data
 - Only 23 states link (all payer states)
- Paper used data from WI, 1992-1997
 - 80% of all crash-related hospitalizations were linked

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- Police report data
 - Driver characteristics (sex, seat location, belt use, insurance status)
 - Accident scene
 - Killed, incapacitating injury, non-incap injury
- Hospital data
 - Per discharge
 - Minimal demographics
 - Total charges and payer
 - Procedure use
 - Diagnostic characteristics

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TABLE 1.—INSURED VERSUS UNINSURED: SELECTED VARIABLES

Variable		Privately Insured		Uninsured		t
		Mean	Sd. Dev.	Mean	Sd. Dev.	
Treatment	Length of stay	9.17	13.93	6.44	8.30	7.56
	Facility charges (\$1,000)	20.68	37.34	13.10	19.75	7.88
Outcome	Mortality	0.027	0.10	0.045	0.21	1.60
Personal characteristics	Female	0.38	0.49	0.28	0.45	7.24
	Restraint seat belt or child seat	0.30	0.46	0.19	0.39	9.39
Vehicle types	Car	0.61	0.49	0.60	0.49	0.53
	Motorcycle	0.14	0.35	0.15	0.36	1.20
	Vehicle weight: <2,420 lb	0.25	0.43	0.30	0.46	3.06
	Vehicle age: ≤4 years	0.28	0.45	0.19	0.39	5.71
Crash characteristics	Severe vehicle damage	0.49	0.50	0.48	0.50	0.98
	Trapped	0.17	0.38	0.15	0.36	2.34
	Head-on collision	0.13	0.33	0.12	0.32	1.12
	Angle collision	0.29	0.45	0.22	0.42	5.76
Road types	Urban street	0.20	0.40	0.22	0.42	2.12
	Rural street	0.36	0.48	0.39	0.49	1.75
	Rural highway	0.30	0.46	0.27	0.44	2.36
Day and hour	Weekend	0.53	0.50	0.56	0.50	2.53
	Between 11 p.m. and 7 a.m.	0.24	0.43	0.32	0.47	6.56
Major diagnostic categories	Nervous system	0.20	0.40	0.22	0.41	0.98
	Musculoskeletal and tissue	0.35	0.48	0.35	0.48	0.03
	Multiple significant trauma	0.20	0.40	0.16	0.37	3.16
Neighborhood characteristics	White	0.94	0.13	0.92	0.17	3.52
	Median household income	30,726	8,188	27,955	7,752	8.76
	Observations	9,261		1,581		

Missing observations result in 6,602 observations for vehicle age, 6,113 for vehicle weight. The t tests for neighborhood comparisons use standard errors clustered by ZIP code and 10,503 observations.

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TABLE 2.—NO AUTO INSURANCE VERSUS NO HEALTH INSURANCE: SELECTED VARIABLES

Variable		Privately Insured with No Auto Ins.		No Health Insurance		t
		Mean	Sd. Dev.	Mean	Sd. Dev.	
Treatment	Length of stay	9.06	10.91	6.66	7.90	4.77
	Facility charges (\$1,000)	21.03	32.85	14.60	22.65	4.29
Outcome	Mortality	0.019	0.14	0.036	0.19	2.05
Personal characteristics	Female	0.24	0.43	0.27	0.44	1.28
	Restraint (seat belt or child seat)	0.14	0.35	0.23	0.42	4.62
Vehicle types	Car	0.49	0.50	0.63	0.48	5.22
	Motorcycle	0.42	0.49	0.24	0.43	7.29
Road types	Urban street	0.23	0.42	0.17	0.38	2.80
	Rural highway	0.25	0.43	0.29	0.45	1.73
Day and hour	Weekend	0.60	0.49	0.57	0.50	1.09
	Between 11 p.m. and 7 a.m.	0.31	0.46	0.31	0.46	0.13
Major diagnostic categories	Nervous system	0.19	0.39	0.18	0.39	0.37
	Musculoskeletal and tissue	0.39	0.49	0.38	0.49	0.13
	Multiple significant trauma	0.17	0.38	0.16	0.37	0.66
Neighborhood characteristics	White	0.93	0.14	0.93	0.14	0.03
	Median household income	29,432	7,162	28,890	7,657	1.27
Driver indicators	At fault	0.71	0.45	0.77	0.42	2.36
	DUI alcohol	0.38	0.49	0.42	0.49	1.34
	Observations	807		671		

Data are for drivers only.
The t tests for neighborhood comparisons use standard errors clustered by ZIP code and 1,447 observations.

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TABLE 3.—THE UNINSURED RECEIVE LESS TREATMENT THAN THE PRIVATELY INSURED

	ln(Facility Charges)				ln(Length of Stay)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A. Privately Insured versus Uninsured								
No health insurance	-0.273 (0.026)	-0.149 (0.026)	-0.137 (0.025)	-0.145 (0.026)	-0.238 (0.022)	-0.203 (0.023)	-0.170 (0.022)	-0.182 (0.024)
HMO				-0.044 (0.026)				-0.028 (0.022)
Full controls	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Hospital fixed effects	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Observations	10,840	10,840	10,840	9,861	10,842	10,842	10,842	9,863
R ²	0.24	0.25	0.30	0.15	0.12	0.12	0.23	0.23
B. Privately Insured with No Auto Insurance versus No Health Insurance								
No health insurance	-0.262 (0.053)	-0.178 (0.055)	-0.148 (0.053)	-0.155 (0.061)	-0.229 (0.045)	-0.218 (0.046)	-0.190 (0.046)	-0.191 (0.052)
HMO				-0.051 (0.088)				-0.032 (0.076)
Full controls	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Hospital fixed effects	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Observations	1,478	1,478	1,478	1,380	1,478	1,478	1,478	1,380
R ²	0.29	0.26	0.43	0.43	0.19	0.14	0.29	0.29

Full controls include all personal, vehicle, crash, road, and neighborhood characteristics, as well as hour-of-day, day-of-the-week, and year indicators. Robust standard errors in parentheses.

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TABLE 4.—THE UNINSURED HAVE HIGHER MORTALITY				
Mortality				
	(1)	(2)	(3)	(4)
A. Privately Insured versus Uninsured				
No health insurance	0.012	0.013	0.015	0.016
	(0.006)	(0.006)	(0.006)	(0.006)
HMO				-0.002
				(0.005)
Full controls	Yes	No	Yes	Yes
Hospital fixed effects	No	Yes	Yes	Yes
Observations	10842	10842	10842	9863
R ²	0.06	0.03	0.07	0.07
B. Privately Insured with No Auto Insurance versus No Health Insurance				
No health insurance	0.016	0.022	0.017	0.020
	(0.009)	(0.009)	(0.009)	(0.010)
HMO				0.001
				(0.012)
Full controls	Yes	No	Yes	Yes
Hospital fixed effects	No	Yes	Yes	Yes
Observations	1478	1478	1478	1380
R ²	0.12	0.05	0.15	0.16

Full controls include all personal, vehicle, crash, road, and neighborhood characteristics, as well as hour-of-the-day, day-of-the-week, and year indicators. Robust standard errors in parentheses.

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Card et al, *QJE*

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Sample

- CA hospital admissions 1992-2002
- Restrict sample to those admitted through emergency department
 - e.g., Chronic bronchitis, heart attack, stroke
 - Why?

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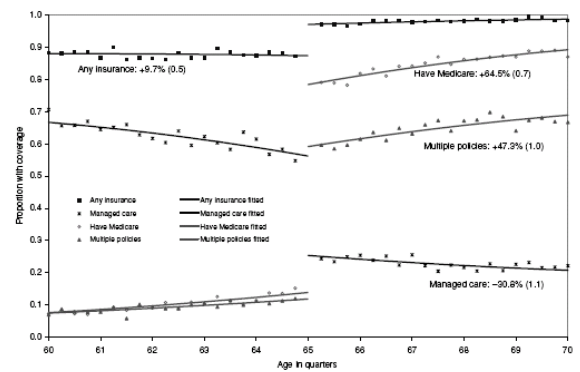


FIGURE I

