

# Is There an Health Establishment-Size Premium?

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- Is there also an employer's size *health* premium?
- The employer's size wage premium remains unexplained (Troske 1999).
- Maybe workers at larger firms are healthier and hence are more productive.
- Or maybe but they trade higher wages for *lower* health.

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- Injury rate is higher at medium sized firms (Leigh 1989).
- Do unhealthy workers tend to work at medium size firms?
- Larger employers more likely to offer health insurance benefits.
- Do they have healthier workers and, therefore, lower insurance premia?

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- The source of the premium relevant for gains from trade.



## Trade and Health

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- Productivity is assumed to be increasing in firm's size.
- Trade liberalization reallocates market shares from smaller, less productive firms, to larger and more productive firms.
- New variants of Melitz's model also allow for firm size-wage premium.
- The source of the premium relevant for gains from trade.
- Trade and health: Trade liberalization increases injury rate at smaller firms (McManus and Schaur 2015).

# Empirical Model

- Linear probability model:

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- where  $h$  is a dummy which measures good health,  $size$  are establishment size dummies.
- $X_i$  is a vector of individual controls.

# Data

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- Pooled cross-sections for 1997-2014.
- Extensive health information.
- Adult Sample also contains work-related questions such as establishment-size.



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- Good mental health, i.e. low psychological distress (Kessler score lower than 10).

## Measures of Health

- I use four dummy variables.
- Excellent or very good self-rated health status.
- No functional limitation, e.g. difficulty pushing or pulling large objects.
- Good mental health, i.e. low psychological distress (Kessler score lower than 10).
- No previous health condition equals 1 if never diagnosed with at least one of the following: asthma, cancer, coronary heart, disease, diabetes, heart attack, heart condition/disease, hypertension, stroke, ulcer.

Table: Good Health Status

	b/se	b/se	b/se	b/se	b/se
1 to 9 employees	-0.02***	-0.02***	0.00	0.00	0.02***
10 to 24 employees	-0.02***	-0.02***	-0.00	0.00	0.01**
25 to 49 employees	-0.01**	-0.02***	0.00	0.00	0.01**
50 to 99 employees	-0.02***	-0.02***	0.00	0.00	0.01*
100 to 249 employees	-0.02***	-0.02***	-0.01	-0.00	0.00
250 to 499 employees	-0.01**	-0.01**	-0.00	0.00	0.01
500 to 999 employees	-0.02**	-0.02**	-0.01	-0.01	-0.00
1000+ employees	Omitted	Omitted	Omitted	Omitted	Omitted
Age		-0.01***	-0.01***	-0.01***	-0.01***
Black		-0.08***	-0.06***	-0.05***	-0.05***
Other		-0.04***	-0.05***	-0.05***	-0.05***
White		Omitted	Omitted	Omitted	Omitted
Hispanic		-0.09***	-0.04***	-0.03***	-0.03***
Male		0.04***	0.03***	0.03***	0.02***
Born Outside U.S.		0.01	0.01	0.01***	0.02***
Married		0.05***	0.04***	0.03***	0.03***
Number of persons in family		-0.01***	-0.00***	-0.00**	-0.00***
High-School Dropout			Omitted	Omitted	Omitted
High-School			0.10***	0.09***	0.08***
Some College			0.15***	0.14***	0.12***
College			0.24***	0.21***	0.19***
More than College			0.28***	0.25***	0.21***
Years on Current Job				0.00***	0.00***
Weekly Hours				-0.00	-0.00***
Yearly earnings (2014k)					0.00***
Observations (subsample)	168534	168534	168534	168534	168534
R-squared	0.01	0.04	0.06	0.07	0.07

Industry, year and region dummies always included.

# Health Status Results

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- No robust evidence of a positive size-health premium.

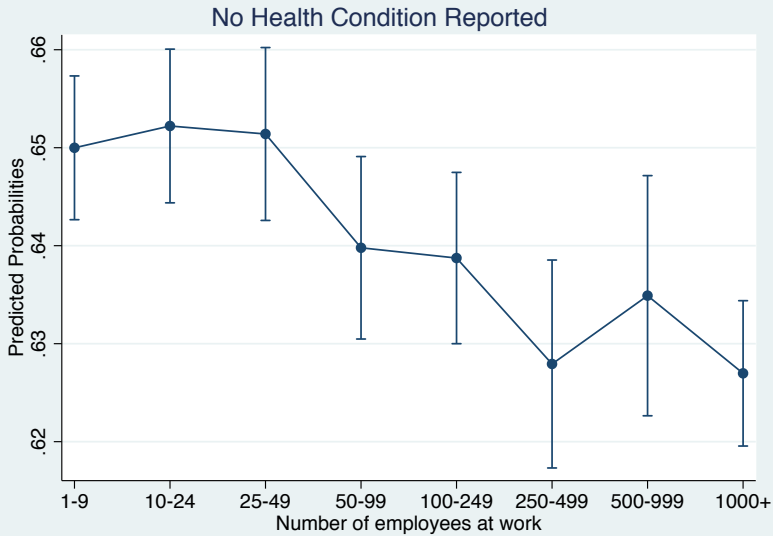
## Health Status Results

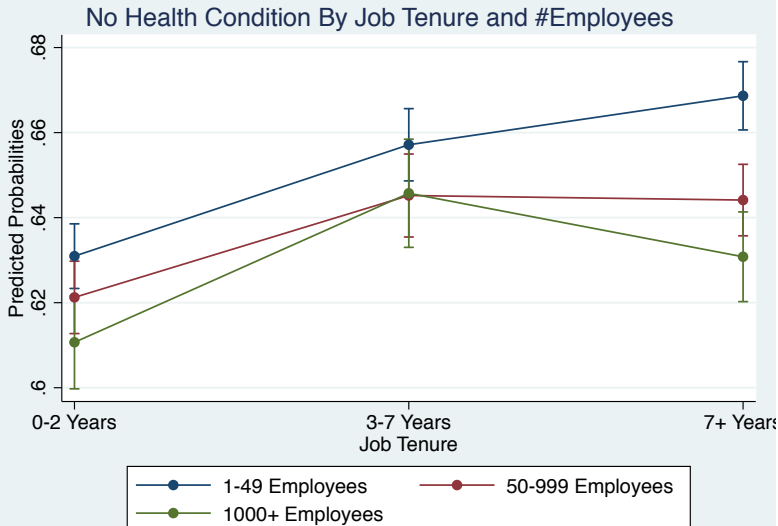
- Positive size-health premium disappears after controlling for education.
- Premium turns negative when controlling for previous year's earnings.
- No robust evidence of a positive size-health premium.
- Same result for no functional limitation and good mental health dummies.

Table: No Previous Health Condition

	b/se	b/se	b/se	b/se	b/se
1 to 9 employees	0.02*** (0.01)	0.01** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.01)
10 to 24 employees	0.03*** (0.01)	0.01*** (0.01)	0.02*** (0.01)	0.02*** (0.01)	0.03*** (0.01)
25 to 49 employees	0.02*** (0.01)	0.01** (0.01)	0.02*** (0.01)	0.02*** (0.01)	0.02*** (0.01)
50 to 99 employees	0.01 (0.01)	0.00 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01** (0.01)
100 to 249 employees	0.00 (0.01)	0.00 (0.01)	0.01 (0.01)	0.01* (0.01)	0.01** (0.01)
250 to 499 employees	-0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)	0.00 (0.01)
500 to 999 employees	0.00 (0.01)	0.00 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
1000+ employees	Omitted	Omitted	Omitted	Omitted	Omitted
Demographics		Y	Y	Y	Y
High-School Dropout			Omitted	Omitted	Omitted
High-School			0.02*** (0.01)	0.02*** (0.01)	0.01** (0.01)
Some College			-0.00 (0.01)	0.00 (0.01)	-0.01 (0.01)
College			0.05*** (0.01)	0.06*** (0.01)	0.04*** (0.01)
More than College			0.07*** (0.01)	0.08*** (0.01)	0.06*** (0.01)
Years on Current Job				0.00*** (0.00)	0.00 (0.00)
Weekly Hours				-0.00*** (0.00)	-0.00*** (0.00)
Yearly earnings (2014k)					0.00*** (0.00)
Observations (subsample)	168534	168534	168534	168534	168534
R-squared	0.01	0.08	0.08	0.08	0.08

Industry, year and region dummies always included.





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- Smaller establishment have healthier new hires.
- Size-health premium is especially negative for longer tenure workers.



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# Conclusion

- No evidence of a positive establishment size-health premium.
- The premium is actually negative for no previous health conditions.
- Next steps:
  - Study the relationship between establishment size and work-related injury while controlling for controlling for worker's health.
  - Study the establishment size-health insurance benefits premium while controlling for worker's health.

Table: Summary Statistics

Variable	Mean	Std. Dev.
Good Self-Reported Health	0.71	0.45
Has No Condition	0.66	0.47
No Functional Limitations	0.81	0.39
Good Mental Health	0.96	0.2
1 to 9 employees	0.17	0.38
10 to 24 employees	0.15	0.35
25 to 49 employees	0.11	0.32
50 to 99 employees	0.1	0.3
100 to 249 employees	0.13	0.33
250 to 499 employees	0.08	0.26
500 to 999 employees	0.06	0.23
1000+ employees	0.21	0.4
Age	39.52	11.44
White	0.79	0.41
Black	0.14	0.34
Non-white and non-black	0.08	0.26
Hispanic	0.19	0.39
Male	0.55	0.5
Born Outside U.S.	0.2	0.4
Married	0.48	0.5
Number of persons in family	2.57	1.49
High-School Dropout	0.11	0.31
High-School	0.3	0.46
Some College	0.31	0.46
College	0.2	0.4
More than College	0.08	0.27
Years on Current Job	6.94	7.83
Weekly Hours	44.66	8.88
Yearly earnings (2014k)	34.12	30.34
N	168534	

## Table: Good Health Status

	b/se	b/se	b/se	b/se	b/se
1 to 9 employees	-0.02*** (0.01)	-0.02*** (0.01)	0.00 (0.00)	0.00 (0.00)	0.02*** (0.01)
10 to 24 employees	-0.02*** (0.01)	-0.02*** (0.01)	-0.00 (0.01)	0.00 (0.01)	0.01** (0.01)
25 to 49 employees	-0.01** (0.01)	-0.02*** (0.01)	0.00 (0.01)	0.00 (0.01)	0.01** (0.01)
50 to 99 employees	-0.02*** (0.01)	-0.02*** (0.01)	0.00 (0.01)	0.00 (0.01)	0.01* (0.01)
100 to 249 employees	-0.02*** (0.01)	-0.02*** (0.01)	-0.01 (0.00)	-0.00 (0.00)	0.00 (0.00)
250 to 499 employees	-0.01** (0.01)	-0.01** (0.01)	-0.00 (0.01)	0.00 (0.01)	0.01 (0.01)
500 to 999 employees	-0.02** (0.01)	-0.02** (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.00 (0.01)
1000+ employees	Omitted	Omitted	Omitted	Omitted	Omitted
Age	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)
Black	-0.08*** (0.00)	-0.06*** (0.00)	-0.05*** (0.00)	-0.05*** (0.00)	-0.05*** (0.00)
Other	-0.04*** (0.01)	-0.05*** (0.01)	-0.05*** (0.01)	-0.05*** (0.01)	-0.05*** (0.01)
White	Omitted	Omitted	Omitted	Omitted	Omitted
Hispanic	-0.09*** (0.00)	-0.04*** (0.00)	-0.03*** (0.00)	-0.03*** (0.00)	-0.03*** (0.00)
Male	0.04*** (0.00)	0.03*** (0.00)	0.03*** (0.00)	0.02*** (0.00)	0.02*** (0.00)
Born Outside U.S.	0.01 (0.00)	0.01 (0.00)	0.01*** (0.00)	0.02*** (0.00)	0.02*** (0.00)
Married	0.05*** (0.00)	0.04*** (0.00)	0.03*** (0.00)	0.03*** (0.00)	0.03*** (0.00)
Number of persons in family	-0.01*** (0.00)	-0.00*** (0.00)	-0.00** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)
High-School		0.19*** (0.01)	0.09*** (0.01)	0.08*** (0.01)	0.08*** (0.01)
Some College		0.15*** (0.01)	0.14*** (0.01)	0.12*** (0.01)	0.12*** (0.01)
College		0.24*** (0.01)	0.21*** (0.01)	0.19*** (0.01)	0.19*** (0.01)
More than College		0.28*** (0.01)	0.25*** (0.01)	0.21*** (0.01)	0.21*** (0.01)
High-School Dropout		Omitted	Omitted	Omitted	Omitted
Years on Current Job			0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)
Weekly Hours			-0.00 (0.00)	-0.00*** (0.00)	-0.00*** (0.00)
Yearly earnings (2014k)				0.00*** (0.00)	0.00*** (0.00)
Observations (subsample)	168534	168534	168534	168534	168534
Observations (pop.n)	1710059	1710059	1710059	1710059	1710059
R-squared	0.01	0.04	0.06	0.07	0.07

Industry, year and region dummies always included.

## Table: No Previous Health Condition

	b/se	b/se	b/se	b/se	b/se
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100 to 249 employees	0.00 (0.01)	0.00 (0.01)	0.01 (0.01)	0.01* (0.01)	0.01** (0.01)
250 to 499 employees	-0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)	0.00 (0.01)
500 to 999 employees	0.00 (0.01)	0.00 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
1000+ employees	Omitted	Omitted	Omitted	Omitted	Omitted
Age	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)
Black	-0.03*** (0.00)	-0.02*** (0.00)	-0.02*** (0.00)	-0.02*** (0.00)	-0.02*** (0.00)
Other	0.01** (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
White	Omitted	Omitted	Omitted	Omitted	Omitted
Hispanic	0.02*** (0.00)	0.03*** (0.00)	0.03*** (0.00)	0.03*** (0.00)	0.03*** (0.00)
Male	0.01** (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)
Born Outside U.S.	0.11*** (0.00)	0.11*** (0.00)	0.11*** (0.00)	0.11*** (0.00)	0.11*** (0.00)
Married	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.01*** (0.00)
Number of persons in family	0.00* (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00** (0.00)
High-School		0.02*** (0.01)	0.02*** (0.01)	0.02*** (0.01)	0.01** (0.01)
Some College		-0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	-0.01 (0.01)
College		0.05*** (0.01)	0.06*** (0.01)	0.06*** (0.01)	0.04*** (0.01)
More than College		0.07*** (0.01)	0.08*** (0.01)	0.08*** (0.01)	0.06*** (0.01)
High-School Dropout		Omitted	Omitted	Omitted	Omitted
Years on Current Job			0.00*** (0.00)	0.00 (0.00)	0.00 (0.00)
Weekly Hours			-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)
Yearly earnings (2014k)					0.00*** (0.00)
Observations (subsample)	168534	168534	168534	168534	168534
Observations (pop.n)	1710059	1710059	1710059	1710059	1710059
R-squared	0.01	0.08	0.08	0.08	0.08

Industry, year and region dummies always included.