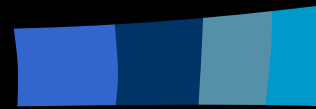
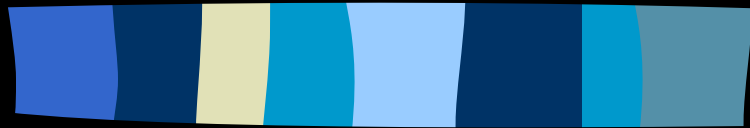


Effects of Industry Agglomeration on Indicators of Growth and Development in Maine



Todd Gabe

University of Maine



Outline

- Introduction
- Overview of firm location, establishment growth and wages models
- Empirical results by 2-digit SIC
- Conclusions



Benefits of industry agglomeration

(Barkley and Henry, 1997)

- Availability of specialized inputs and services
- Pooled workforce
- Local investments and financial markets meet needs of industrial sector
- Sharing of information on markets, R&D, and production technologies



Static v. Dynamic Externalities

Static – immediate benefits received from operating in close proximity to other businesses in the same industry

Due to: industry specific inputs and resources

Likely to impact location decisions



Static v. Dynamic Externalities

Dynamic – benefits accrued over time from repeated dealings with other local businesses in same industry

Due to: sharing of information

Likely to impact productivity and growth of incumbent establishments



Overview of empirical analysis

- Examine effects of industry agglomeration on firm location, establishment growth and wages
- Identify types of industries where static and dynamic externalities are present in Maine



Overview of firm location model

Dep. Var. – number of businesses that began operations per town-industry

Indep. Vars. – **town-industry LQ**, dist. to interstate, population size, local wages, government spending on education, government spending on non-education

Estimator – Poisson

Choice Set – 128 Maine municipalities



Overview of establishment growth model

Dep. Var. – growth rate of establishment-level employment

Indep. Vars. – **town-industry LQ**, population size, town-industry competition, local economic diversity, U.S. industry growth, local wages, business size, business age

Estimator and sample– Tobit; incumbent establishments in 128 Maine municipalities



Overview of establishment wages model

Dep. Var. – quarterly wages paid per establishment employee divided by average quarterly wages earned per worker in U.S. industry

Indep. Vars. – **town-industry LQ**, population size, town-industry competition, local economic diversity, U.S. industry growth, local wages, business size, business age

Estimator and sample– OLS; incumbent establishments in 128 Maine municipalities



Empirical results by 2-digit SIC, I (effect of industry agglomeration)

INDUSTRY	LOCATION	GROWTH	EARNINGS
1500			+
1600			
1700		+	
2000			
2200	+		
2300			
2400	+		
2500		+	-
2600	NA		



Empirical results by 2-digit SIC, II (effect of industry agglomeration)

INDUSTRY	LOCATION	GROWTH	EARNINGS
2700		+	+
2800	+		
3000			
3100		-	
3200			+
3400			
3500	+		
3600			
3700	+		



Empirical results by 2-digit SIC, III (effect of industry agglomeration)

INDUSTRY	LOCATION	GROWTH	EARNINGS
3800	NA	+	
3900	+		
4100			
4200	+	+	
4400			
4500	NA		
4700			
4800	+	+	
4900		+	



Empirical results by 2-digit SIC, IV (effect of industry agglomeration)

INDUSTRY	LOCATION	GROWTH	EARNINGS
5000			
5100	+		+
5200			
5300		+	
5400		+	
5500		+	
5600	+	+	
5700	+		
5800		+	



Empirical results by 2-digit SIC, V (effect of industry agglomeration)

INDUSTRY	LOCATION	GROWTH	EARNINGS
5900	+		
6000			
6100			+
6200			
6300			-
6400		+	
6500	+	+	+
6700			



Empirical results by 2-digit SIC, VI (effect of industry agglomeration)

INDUSTRY	LOCATION	GROWTH	EARNINGS
7000	+		+
7200	+	+	
7300		+	+
7500			
7600			
7800			
7900			



Empirical results by 2-digit SIC, VII (effect of industry agglomeration)

INDUSTRY	LOCATION	GROWTH	EARNINGS
8000	+		
8100			
8200			
8300		+	
8400	NA		
8600			+
8700	+		



Summary of empirical results

- Industry agglomeration has a positive effect on location in 17 of 54 industries
- Industry agglomeration has a positive effect on business growth in 17 of 58 industries (and a negative effect in 1 industry)
- Industry agglomeration has a positive effect on location and growth in 5 of 54 industries



Industries in which agglomeration affects location

Positive effect

- $LQ_{ME} = 1.29$
- $Size_{US} = 31.1$ workers
- # w/LQ >2 = 16.5
- # w/LQ = 0 = 65.2

No effect

- $LQ_{ME} = 1.10$
- $Size_{US} = 23.7$ workers
- # w/LQ >2 = 21.1
- # w/LQ = 0 = 66.9



Industries in which agglomeration affects growth

Positive effect

- $LQ_{ME} = 1.04$
- $Size_{US} = 23.5$ workers
- # w/LQ >2 = 21.6
- # w/LQ = 0 = 50.6

No effect

- $LQ_{ME} = 1.14$
- $Size_{US} = 30.4$ workers
- # w/LQ >2 = 18.4
- # w/LQ = 0 = 76.6



Conclusions

- Industry agglomeration has a positive effect on all three indicators in just one industry (real estate)
- Agglomeration affects location in industries that are more concentrated in Maine, and that have a larger average employment size
- Agglomeration affects business growth in industries that are less concentrated in Maine, and that have a smaller average employment size