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Incentive Benefits and Costs

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Incentive Benefits and Costs

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Presentation at Roundtable on Evaluating Economic Development Tax Incentives, sponsored by National Conference of State Legislatures

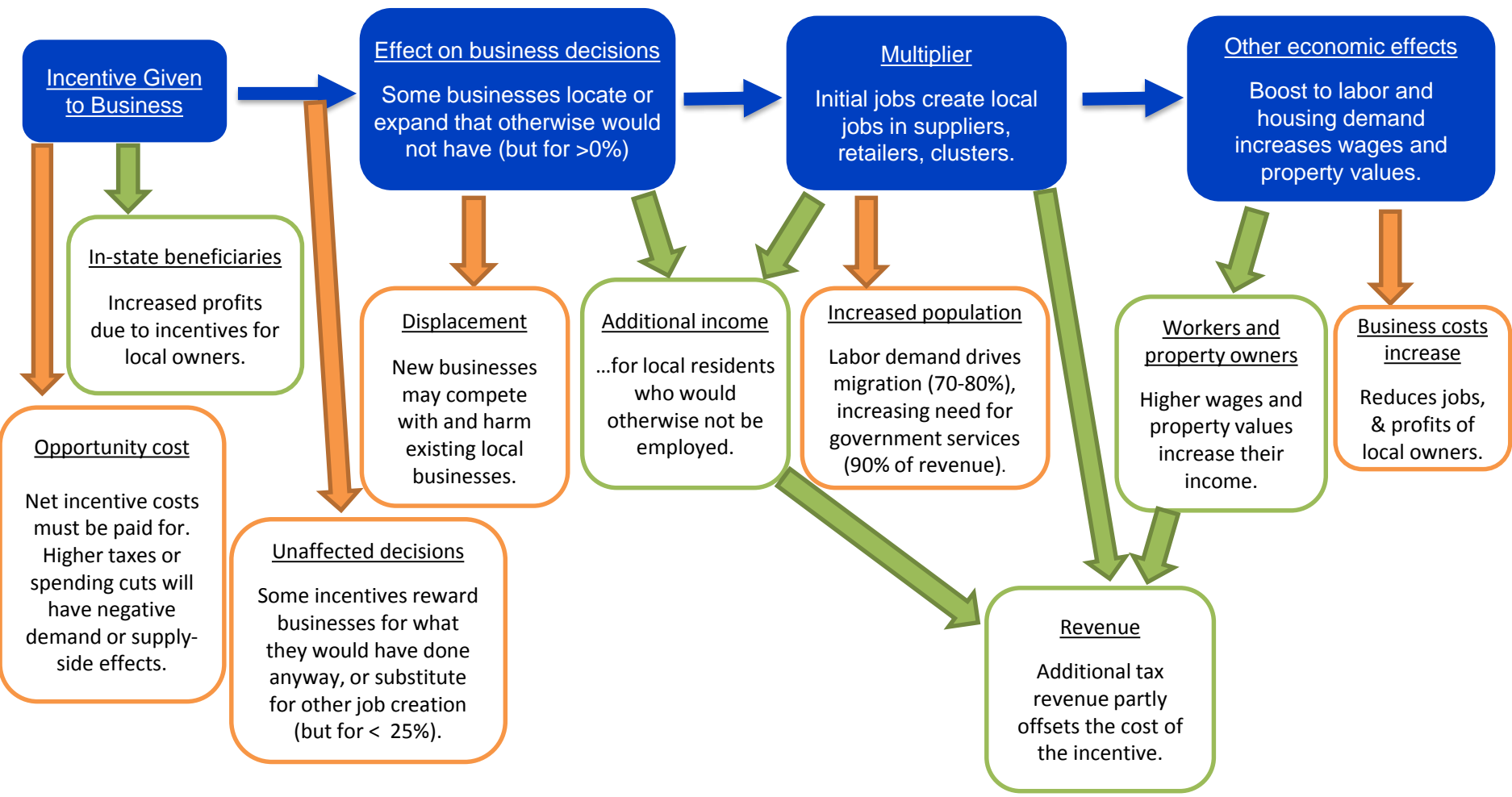# Presentation based on 3 of my recent papers, particularly 2nd

1. *"But For" Percentages for Economic Development Incentives: What percentage estimates are plausible based on the research literature?* (June 2018; Upjohn Working Paper 18-289)

2. *Who Benefits from Economic Development Incentives? How Incentive Effects on Local Incomes and the Income Distribution Vary with Different Assumptions about Incentive Policy and the Local Economy* (March 2018; Upjohn Institute Technical Report No. 18-034)

3. *What Works to Help Manufacturing-Intensive Local Economies?* (May 2018; Upjohn Institute Technical Report 18-035)

Main questions addressed in this presentation

- What should we count as benefits and costs of economic development tax incentives?

- What are main factors affecting these benefits and costs? ("Factors" = features of how local economy behaves and/or policy parameters)

- What are reasonable assumptions for analysts to make about these factors, based on the empirical research literature?

- How do different policy choices affect these benefits and costs?

Incentive benefits and costs should be measured as increases in real after-tax income per capita of local residents

- Ideal: local residents' change in "well-being", adjusted for amenities, but income per capita is practical proxy

- Narrower than increase in gross state product/state personal income, which reflects incomes of in-migrants. In-migrants gain little, as could have moved elsewhere with similar outcomes.

- In other words, welfare analysis of STATE policy is quite different from welfare analysis of NATIONAL policy because of internal migration.

- Much broader than increase in state tax revenues, in 4 respects: (1) should include locals; (2) should subtract out increased needs for public services, due to in-migration, which is considerable, and usually offsets 90% plus of increased tax revenue; (3) should add in increased earnings per capita of state residents due to higher employment rates & wages, which will usually be at least 4 times fiscal benefits; (4) should also add in increased property values, and effects on locally-owned businesses.

- Focusing on fiscal benefits alone is weird because it assumes state and local governments are trying to maximize state/local fisc, which is weird goal.

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Incentive Given to Business

In-state beneficiaries
Increased profits due to incentives for local owners.

Opportunity cost
Net incentive costs must be paid for. Higher taxes or spending cuts will have negative demand or supply-side effects.

Unaffected decisions
Some incentives reward businesses for what they would have done anyway, or substitute for other job creation (but for < 25%).

Effect on business decisions
Some businesses locate or expand that otherwise would not have (but for >0%)

Displacement
New businesses may compete with and harm existing local businesses.

Additional income
...for local residents who would otherwise not be employed.

Multiplier
Initial jobs create local jobs in suppliers, retailers, clusters.

Increased population
Labor demand drives migration (70-80%), increasing need for government services (90% of revenue).

Other economic effects
Boost to labor and housing demand increases wages and property values.

Workers and property owners
Higher wages and property values increase their income.

Business costs increase
Reduces jobs, & profits of local owners.

Revenue
Additional tax revenue partly offsets the cost of the incentive.

# Key determinant of incentive benefits and costs: "but for" percentage

- "But for" percentage: percentage of incented jobs that actually increased jobs in state, compared to counterfactual of this incentive not being provided.

- 3 reasons this percentage should always be assumed to be less than 100%: (1) always some probability that project would have gone on at same scale anyway; (2) even if incentive made difference, project might have occurred at reduced scale; (3) even if this firm would not have done project without incentive, the land and labor utilized might have attracted other firms.

- Review of research literature: "but for" is likely less than 25% for "average" incentives.

But-for research literature review

- None of 34 estimates reviewed is based on randomized control trial (RCT).

- 23 of 34 are likely positively biased: survey of firms or economic developers; comparison of incented firms or areas with non-incented, which is biased because incentives by design go to growing firms or areas.

- 4 of 34 are likely negatively biased: incented firms or areas seem likely to be negatively chosen, for example comparison is of future growth of more or less incented areas in past.

- 7 estimates have no obvious bias: mostly comparisons of different states' incentive structures.

But-for research literature review

Figure 1: Median "But For" Percentage
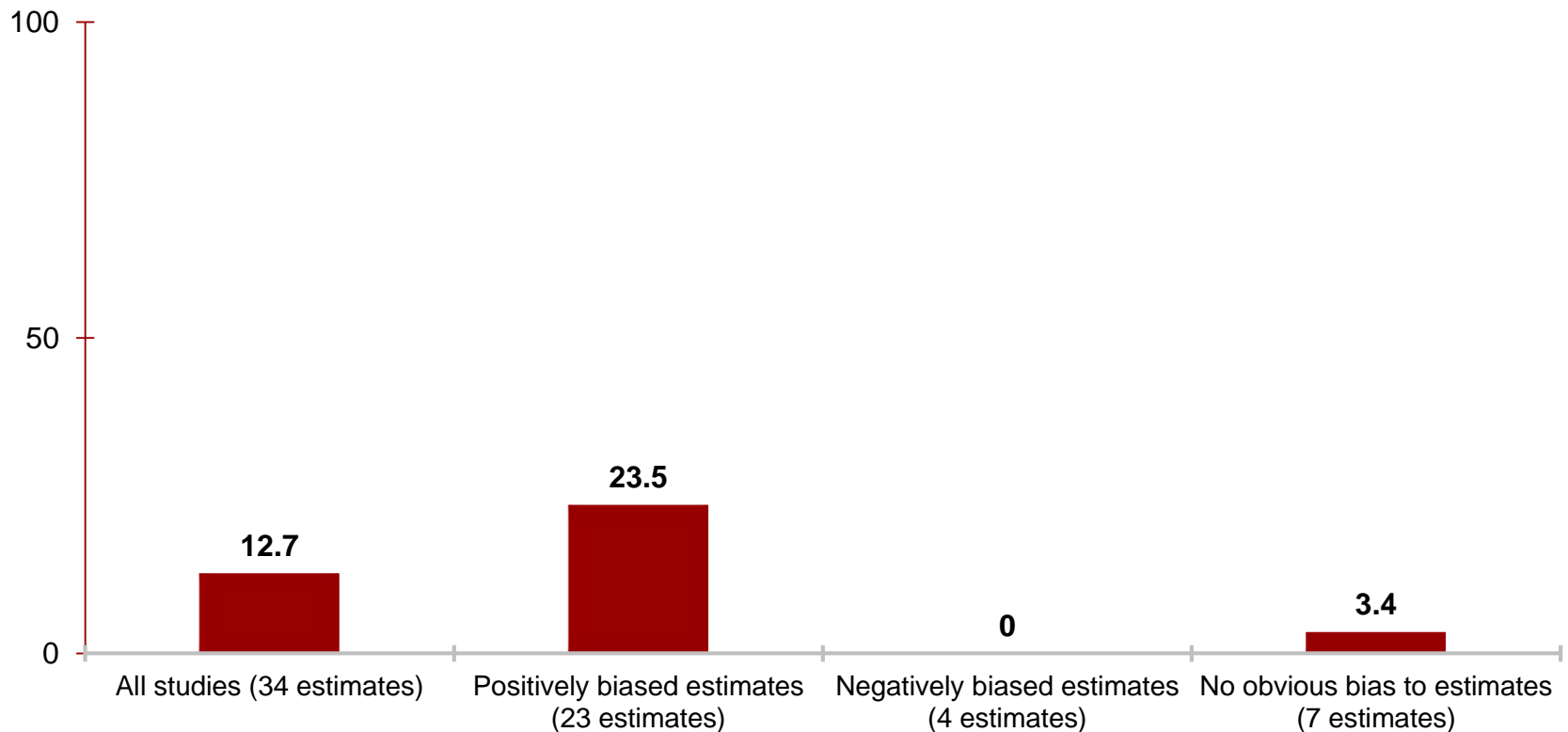
NOTE: State and local business tax literature: range of 4–21% for average incentive. Model assumes average incentive yields 12%. Foxconn (10.7 x average) is 76%.

Multiplier research literature review

- Typical manufacturing input-output multipliers at state level are between 2 and 3. Model baseline assumes 2.5.

- Cost feedbacks reduce by 1/4th to 1/3rd. In model, baseline of 2.5 yields effective multiplier of 1.74. 2 to 3 range yields 1.43 to 2.05.

- High-tech multipliers may be as high as 6 (Moretti research), which exceeds plausible I/O values (effective multiplier after cost feedbacks is 3.91). Probably due to "agglomeration economies": productivity spillovers due to size of city or industry cluster, which allows for more specialized suppliers, better matching, and knowledge spillovers.

- Locally-owned smaller firms may have multipliers greater by 0.25, due to greater local purchases.

- IMPLAN and other input-output models don't include cost feedbacks. REMI does, but also adds in extra agglomeration multiplier effects.

Effects of Emp on Emp/Pop vs. Pop

- Logically, boost to local jobs must either boost local employment rate or local population, as $E = (E/P) \times P$.

- Created jobs are directly filled by: (1) Employed locals; (2) Non-employed locals; (3) Non-locals.

- But category (1) yields local vacancies, that are filled in same 3 ways. Vacancy chain only ends when the new job leads to: (2) job for non-employed local; (3) job for non-local.

- Proportion that goes to non-employed local vs. non-local depends in part on how incented firm hires. But also depends on how multiplier jobs are filled, and how subsequent vacancies are filled. So depends on factors such as: (1) local unemployment (higher = more effect on E/P), or (2) better local workforce system (more effect on E/P).

LR Effects of Emp on Pop: surprisingly high or low? (SR effect is 0.40 on pop, 0.60 on Emp/Pop). Model: assumes 0.85 avg Pop effect over 80 years, 0.15 Emp/Pop effect
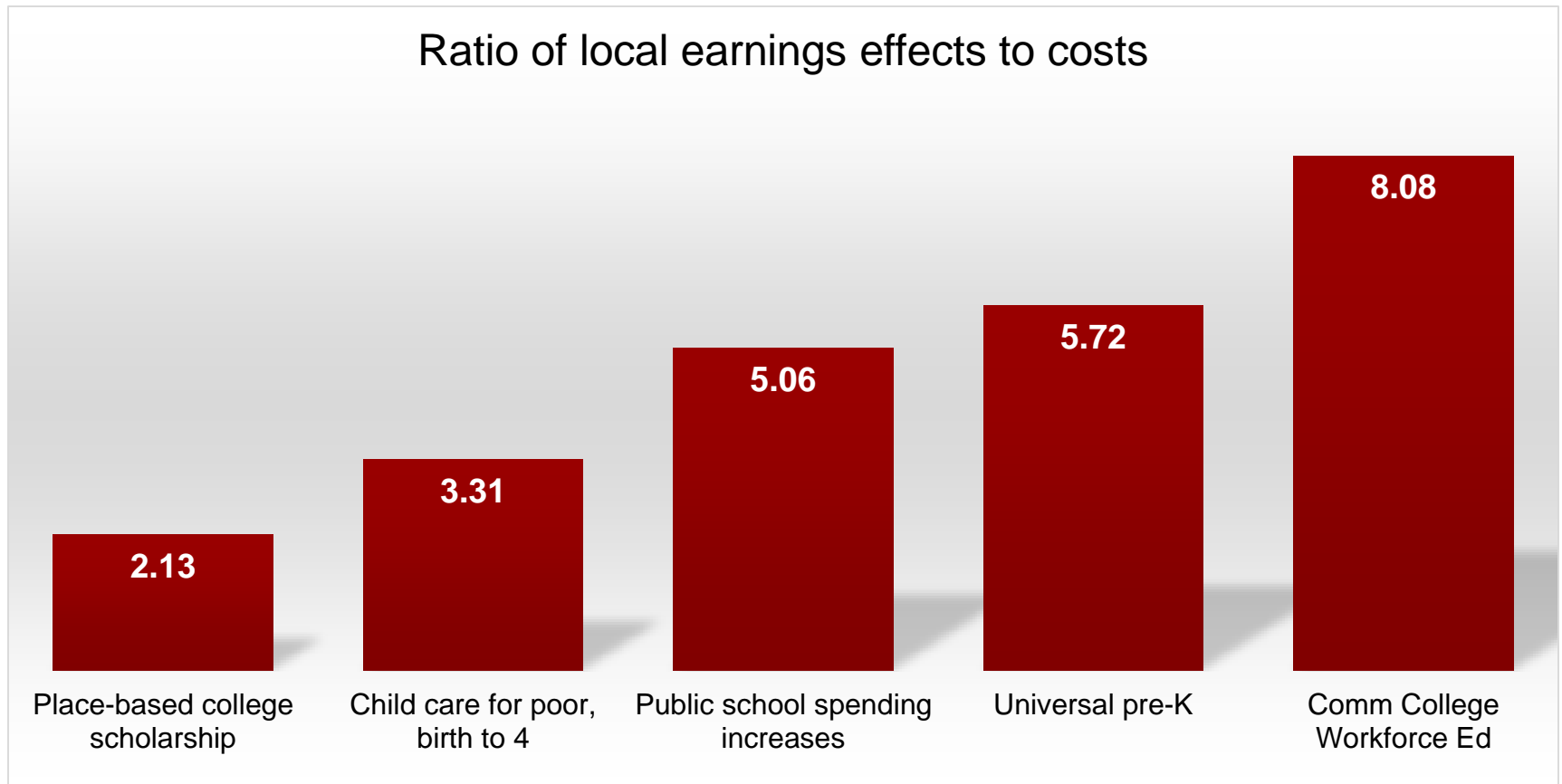
Long-run elasticities of local employment to population ratio with respect to once and for all local employment shock, U.S. studies

Study	Long-run	Qualifications	Emp/Pop effect	Pop effect
Bartik (2015)	10-years	At 4.0% unemployment rate (UR)	0.20	0.80
	10-years	At 7.1% UR	0.34	0.66
	10-years	At 10% UR	0.47	0.53
Bartik (1991)	8 years	OLS	0.23	0.77
	8 years	2SLS using demand shock instruments	0.37	0.63
Blanchard and Katz (1992)	8 years		0.07	0.93
	17 years		0	1.00
Bartik (1993)	8 years		0.28	0.72
	17 years		0.25	0.75
Bound and Holzer (2000)	10 years	High-school or less	0.24	0.76
		College or more	0.12	0.88
Partridge and Rickman (2006)	10 years	Preferred estimates	0.21	0.79
		Alternative estimates	0.42	0.58
Notowidigdo (2013)	10 years	Mean effect	0.14	0.86
Beaudry, Green and Sand (2014)	10 years		0.24	0.76
Amior and Manning (2018)	10 years		0.30	0.70

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Key consequence of persistent modest Emp/Pop effect and significant Pop effect is low fiscal benefits relative to earnings benefits

- Revenue will tend to go up a little slower than employment, due to inelastic state and local taxes such as sales taxes and property taxes, and relatively flat income taxes.

- Spending may go up a bit faster than population, due to infrastructure costs. Model: assumes proportionate.

- Model: spending needs increase 92% as much as revenue.

- Consequence: persistent earnings effects end up being over 4 times net fiscal benefits.

Opportunity costs: some demand-side effects, some supply-side effects of higher business taxes, but major possible effects of reducing "productive" education spending

Ratio of local earnings effects to costs

Category	Ratio
Place-based college scholarship	2.13
Child care for poor, birth to 4	3.31
Public school spending increases	5.06
Universal pre-K	5.72
Comm College Workforce Ed	8.08

Baseline model (2.5 multiplier; non-local businesses; 15% avg E/P effect; net incentive costs financed 50% tax increases, 50% spending cuts, with 44% of tax increases from business taxes, 22% of spending cuts from K-12): relatively modest effects on jobs for local residents.

Job effects of incentives as percentage of incented jobs

	Net effects	Sub-categories
But-for direct jobs	11.70	
Plus multiplier jobs	28.71	
Lost jobs due to higher local costs (e.g., wages, land)		(8.34)
Net jobs including multiplier and cost offsets	20.37	
Lost jobs due to D-side impact of paying for incentives		(1.84)
Lost jobs due to business tax increases		(1.08)
Lost jobs due to K-12 spending cuts		(1.00)
Net jobs including all effects	16.45	
Net jobs going to local residents	2.49	

Baseline model: modest overall benefit-cost ratio of about 1.2

| Benefits and costs as % of incentive costs		
Revenue increases	276.2	
Spending need increases	(253.1)	
Net fiscal benefits		23.2
Exported business taxes		12.5
Higher earnings due to higher Emp/Pop	82.9	
Higher earnings due to higher wages	19.7	
Total higher earnings		102.6
Higher property values		28.8
Lost wages from K-12 cuts		(38.1)
Profit effects on local businesses		(6.7)
Net total		122.3
Benefit cost ratio (as proportion)		1.223

Multiplier makes big difference ("holding all else constant": if higher multiplier just due to higher value-added per job, given dollar incentive will be lower % of costs, lowering "but for". So really should focus on higher cluster multipliers)

How the Multiplier Affects the Benefit-Cost Ratio

Baseline (multiplier = 2.5)	Multiplier of 6	Multiplier of 1.5
1.22	3.98	0.44
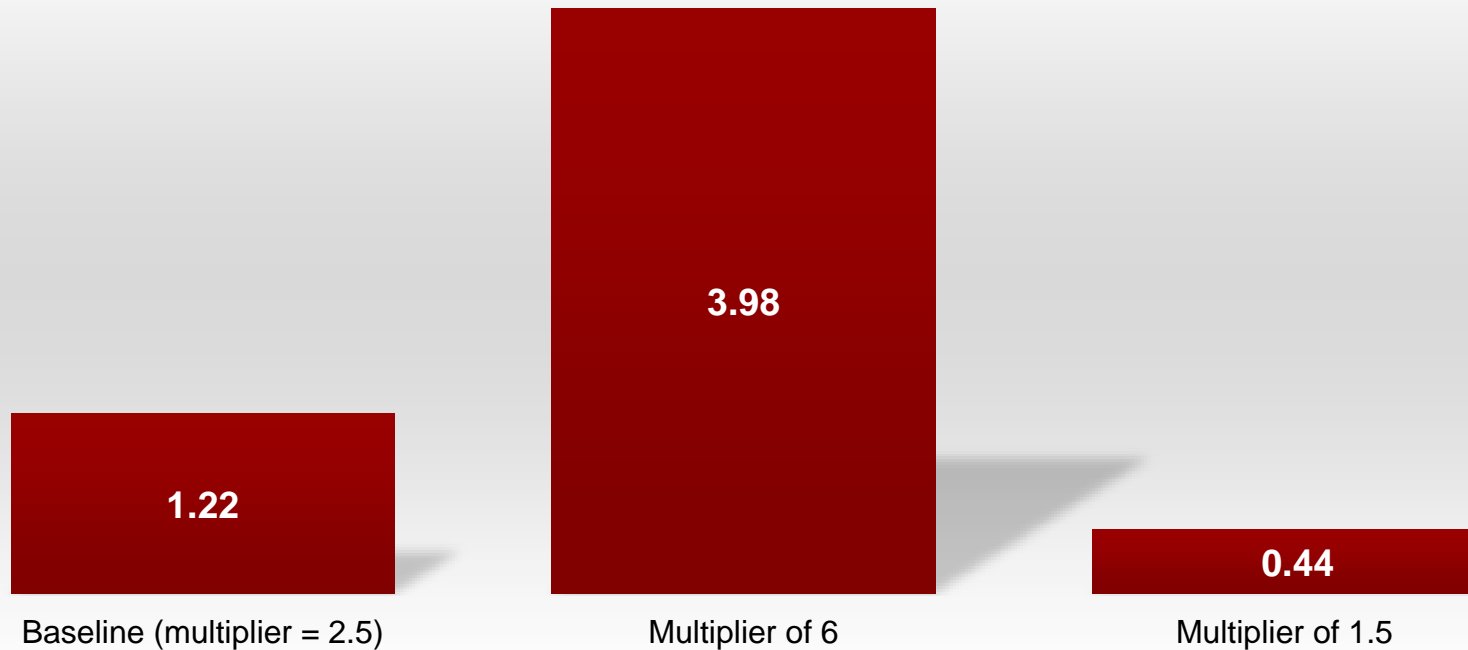
Increased local hiring of non-employed increases incentive benefit-cost ratio

How Local Hiring Affects Incentive Benefits

1.22 — Baseline local hiring (15%)

1.62 — Higher local hiring (28%)
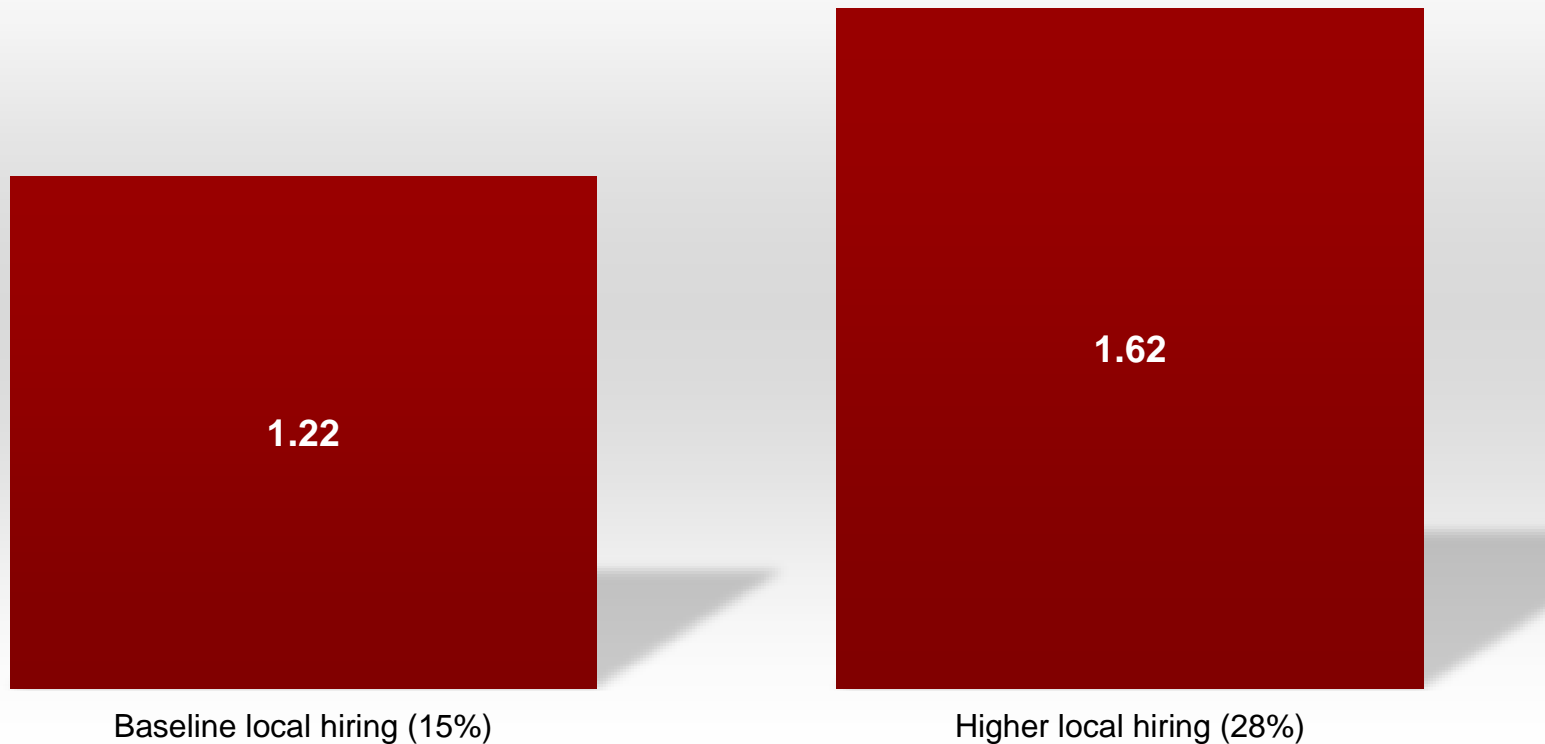
Financing incentives by cutting productive services has negative net effects – B/C ratio turns negative

Effects of Financing Incentives Via Reduced Education Spending

BASELINE(11% FROM ED SPENDING)

100% FROM ED SPENDING

1.22

(3.43)

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Can focus on locally-owned, non-export-base firms work? Yes if use cost-effective services AND distributional effects are acceptable

Effects as Percent of Incentive Costs

	Baseline (non-local businesses)	Local businesses, non-export base	Local businesses with assumed service effectiveness of 5-to-1
Fiscal benefits plus exported business costs	35.7	15.8	28.8
Labor market benefits	102.6	(3.4)	61.4
Property value benefits	28.8	(1.1)	16.2
Education cutbacks	(38.1)	(54.5)	(43.9)
Local business effects	(6.7)	80.7	322.5
Benefits as % of costs	122.3	37.5	385.1
Benefit-cost ratio	1.223	0.375	3.851

Conclusion

- Incentive benefits largely earnings, not fiscal.

- "But for" for average incentives probably less than 25%, maybe much less.

- Pop growth 70% plus of job growth, meaning that need for public services increases by sizable % of revenue growth.

- Higher cluster multiplier greatly increases B/C ratio.

- Hiring local non-employed is what matters, not just hiring local.

- Financing incentives via cuts in productive spending makes big difference.

- Local business focus: details matter to whether this works.

- This model can be adapted to different states, or its concepts can be incorporated into other models.