

DISCUSSION:
EMPLOYMENT IMPACTS OF THE CHIPS ACT
BY: ERTEN, STIGLITZ, VERHOOGEN

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BPEA
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SUMMARY OF PAPER

- ① One objective of CHIPS Act was to create jobs.
- ② CHIPS coincided with increase in national employment in semi-conductor production.
- ③ Semiconductor employment in counties with production facilities grew faster than other high-tech. employment in counties with concentration of other high tech: $\approx 15,000$ direct jobs.
- ④ Job growth in related industries: $\approx 30,000$ indirect jobs.

COMMENTS

① Empirical estimates of jobs using county variation.

② Aggregate employment.

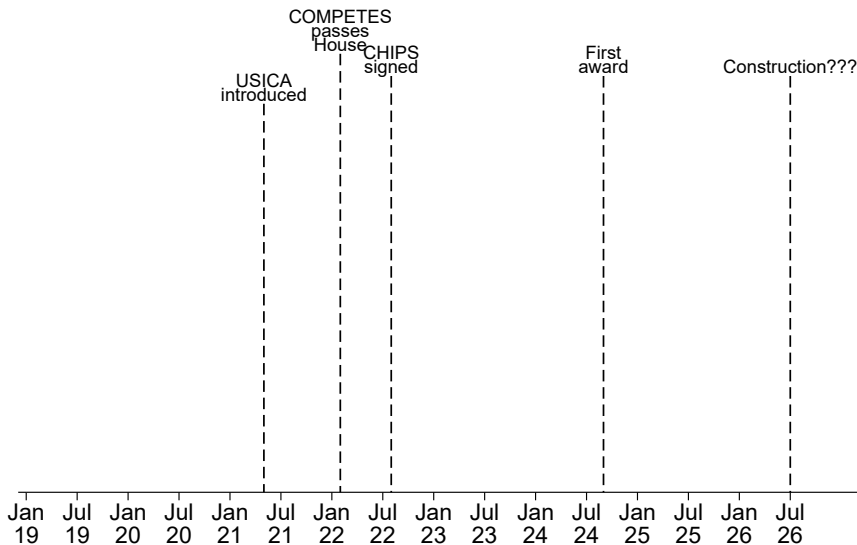
Empirical estimates of jobs using
county variation

EMPIRICAL STRATEGY

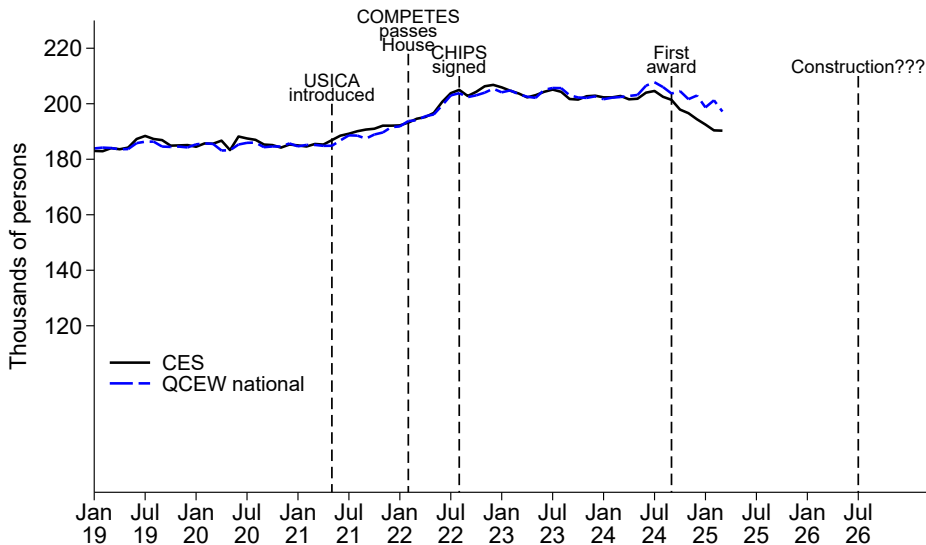
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- County DiD essentially unweighted change.
- Different from estimating effects on industries not directly treated (e.g. Keynesian multiplier). Akin to first stage of multiplier estimate.
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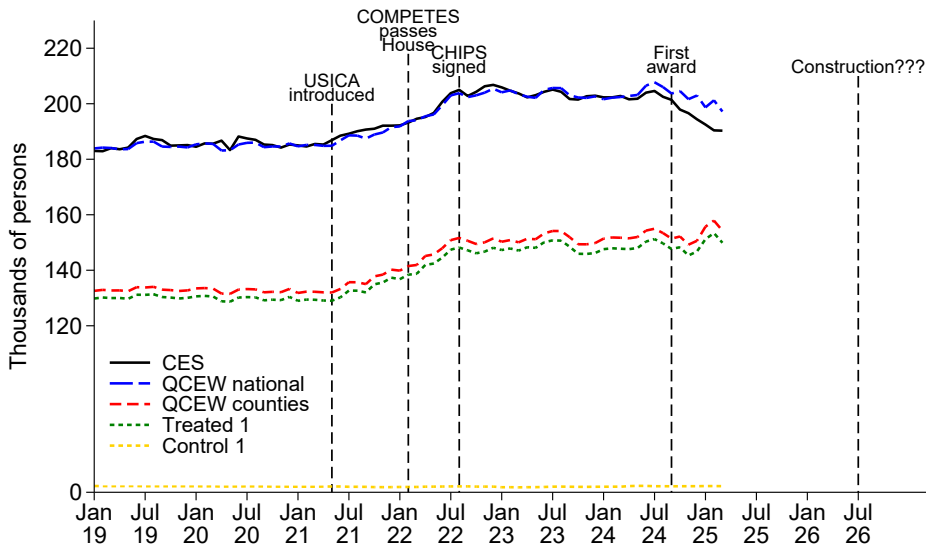
TIMELINE



EMPLOYMENT IN SEMICONDUCTOR PRODUCTION

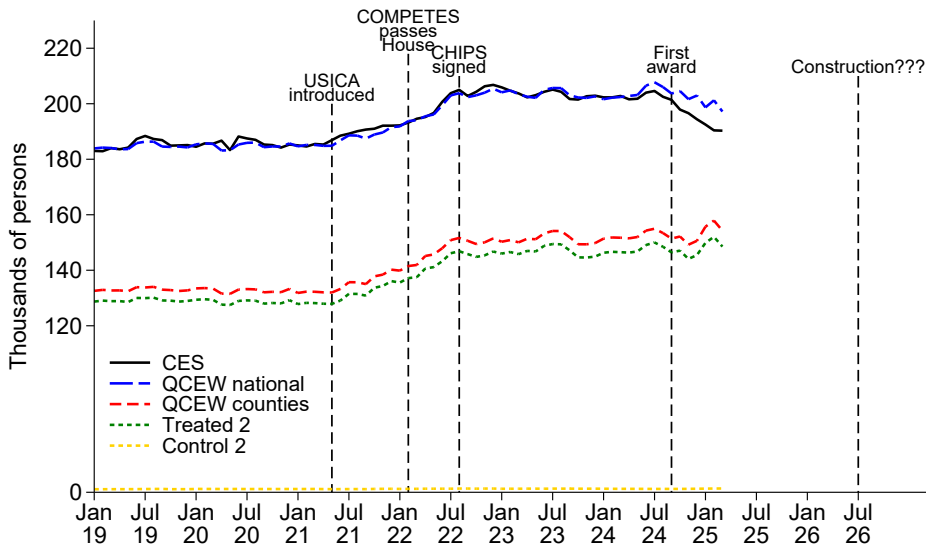


EMPLOYMENT IN SEMICONDUCTOR PRODUCTION



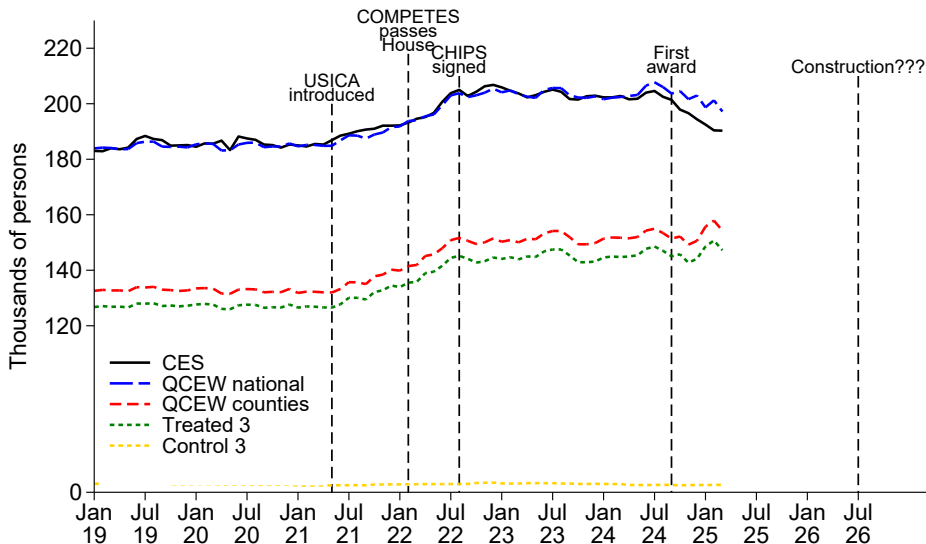
Note: y-axis for control counties shifted up by 60 thousand (actual < 3500).

EMPLOYMENT IN SEMICONDUCTOR PRODUCTION



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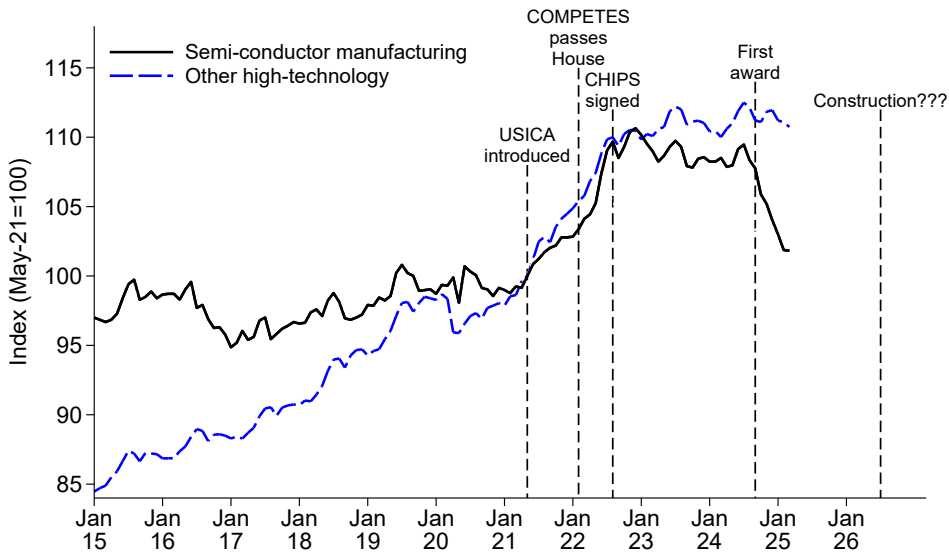


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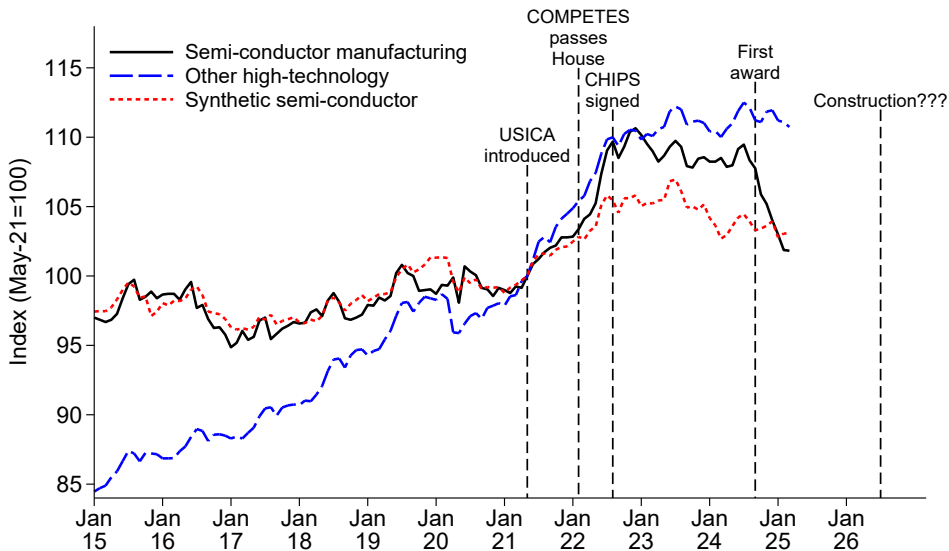
CHIPS AWARDS

County	Company	Award	2021Q4 County	
			Estabs.	Employ.
Maricopa, AZ	TSMC Arizona	6,600,000,000	72	19,962
Maricopa, AZ	Intel Corporation	3,940,000,000	72	19,962
Maricopa, AZ	Amkor Technology, Inc.	407,000,000	72	19,962
Maricopa, AZ	Arizona State University	100,000,000	72	19,962
Travis, TX	Samsung Electronics	4,745,000,000	54	11,135
Williamson, TX	Samsung Electronics	4,745,000,000	3	48
Washington, OR	Intel Corporation	1,860,000,000	44	23,578
Licking, OH	Intel Corporation	1,500,000,000	1	
Saratoga, NY	GlobalFoundries	1,450,000,000	5	
Grayson, TX	Texas Instruments	900,000,000	3	
Grayson, TX	GlobalWafers	380,000,000	3	
UT, Utah	Texas Instruments	700,000,000	7	
Sandoval, NM	Intel Corporation	500,000,000	5	
Tippecanoe, IN	SK hynix	458,000,000	2	
Saginaw, MI	Hemlock Semiconductor	325,000,000		
Durham, NC	Semiconductor Research C	285,000,000	10	
Santa Clara, CA	Applied Materials	100,000,000	272	27,693
Santa Clara, CA	Infinera	93,000,000	272	27,693
Santa Clara, CA	PrimeNano Inc.	259,848	272	27,693 ^{5/10}

EMPLOY. IN SEMICONDUCTOR AND OTHER HIGH-TECH.



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ATE=0.029 $\Rightarrow$ 6,000 jobs, max=0.059 $\Rightarrow$ 12,000 jobs. But might understate: half of synth. weight in NAICS 3341 (computer and peripheral equip.) and NAICS 3342 (communications equip.).

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Question 2: Was abnormal growth due to CHIPS?

- Reduced form: no data on actual awards used.
- Purely anticipation: what else happening at the same time?
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- Did CHIPS cause employment, or did COVID semi-conductor shortages cause employment and (somewhat) CHIPS?

Chip Shortages Are Starting to Hit Consumers. Higher Prices Are Likely.

Semiconductor companies say they face higher costs that they are passing on to customers in some cases

By [Asa Fitch](#) [Follow](#)

June 21, 2021 8:00 am ET

Numerous factors are driving the surging appetite for chips that has led to shortages that have only been compounded by strained supply lines that are still disrupted from the pandemic. People bought record numbers of laptops to work and study from home during the pandemic. Demand for medical devices rose and the spread of superfast 5G mobile networks pushed people to buy new smartphones that could take advantage of the speed boost.

Global Chip Crisis Hits Auto Makers Hard

Car production collapses in third quarter, but some manufacturers see signs of easing

By [William Boston](#) [Follow](#) in Berlin and [Nick Kostov](#) [Follow](#) in Paris

Chip Shortage Leaves U.S. Companies Dangerously Low on Semiconductors, Report Says

Commerce Department survey shows companies typically had 40-day supply in 2019

By [Josh Zumbrun](#) [Follow](#) and [Alex Leary](#) [Follow](#)

Updated Jan. 25, 2022 7:38 pm ET

U.S. manufacturers and other companies that use semiconductors are down to less than five days of inventory for key chips, the Commerce Department said Tuesday, citing the results of a new survey.

Commerce Secretary Gina Raimondo said the survey results show the urgency for Congress to approve the U.S. Innovation and Competition Act, which includes \$52 billion to boost domestic chip production.

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Did CHIPS cause employment, or did COVID semi-conductor shortages cause employment and CHIPS? ...Or were both necessary conditions?

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Question 3: upstream spillovers?

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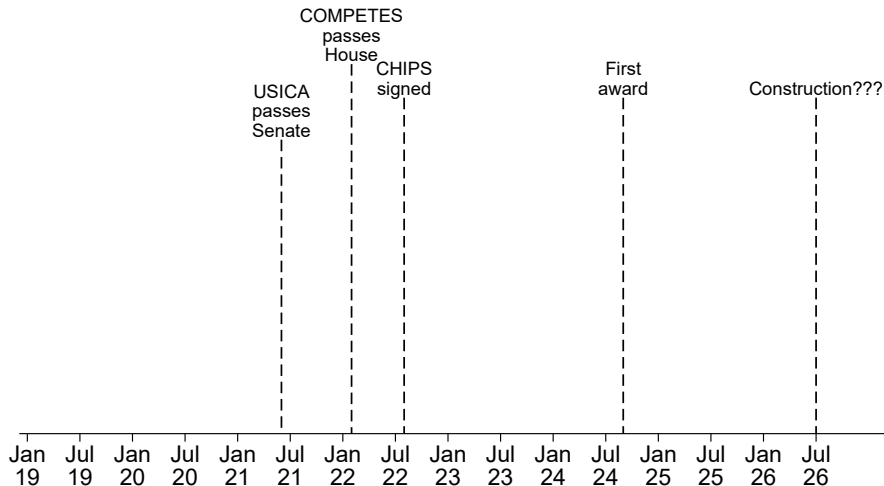
Question 3: upstream spillovers? **Similar answers.**

Aggregate employment

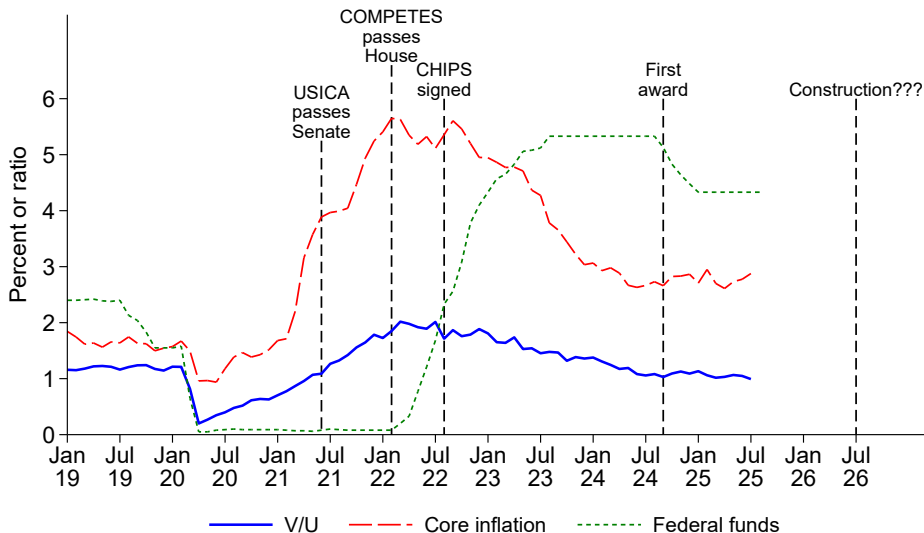
LOCAL-TO-NATIONAL MULTIPLIER (CHODOROW-REICH, 2019)

- ① Local multiplier outside-financed.
 - ▶ Not first-order for transitory spending and *deficit-financed* national multiplier.
- ② Monetary policy reacts nationally.
 - ▶ Compare to *fixed interest rate* (e.g. ZLB) national multiplier.
- ③ Local prices rise and local residents spend income on outside goods.
 - ▶ Makes local multiplier *smaller* (leakage).
- ④ Local region can import labor, capital, materials from outside.
 - ▶ Makes local multiplier *bigger* (flatter supply curve).

MACROECONOMIC CONTEXT



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DESIGN ISSUES AND GOALS

- Key argument for aggregating local responses: total response too small to affect monetary policy.
- Corollary: no “jobs bill” taking effect in 2022 could create jobs.
- If it did, Fed would have reacted more aggressively.
- Doesn't mean no beneficial macroeconomic side-effects! More K good for workers (higher real wages=better jobs) even if L doesn't change.
- Although also K crowd-out when Fed is raising rates.
- Lots of requirements that may have slowed down awarding (e.g. water usage, day care, targeted demographic hiring...).