

7-31-2019

Costs and Benefits of a Revised Foxconn Project

Timothy J. Bartik

W.E. Upjohn Institute for Employment Research, bartik@upjohn.org

Follow this and additional works at: <https://research.upjohn.org/reports>

Citation

Bartik, Timothy J. 2019. "Costs and Benefits of a Revised Foxconn Project." Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

<https://research.upjohn.org/reports/240>

This title is brought to you by the Upjohn Institute. For more information, please contact repository@upjohn.org.

Costs and Benefits of a Revised Foxconn Project¹

Timothy J. Bartik, Senior Economist
W.E. Upjohn Institute for Employment Research

August 2019

In 2017, the State of Wisconsin agreed to provide Foxconn with almost \$3 billion in state incentives, for a flatscreen manufacturing facility in Southeast Wisconsin. The originally-planned facility was to involve a \$10 billion investment, and 13,000 jobs at reported average salary of \$53,875. Since then, the project has been significantly revised. The currently-planned Foxconn facility is reported to involve a \$2 billion investment, and 1,500 to 1,800 jobs. Still to be determined is exactly what incentives Wisconsin will provide for the revised facility. One possible option is to continue the original incentive offer, but scaled back to reflect the lower amount of jobs and investment.

This memo analyzes the costs and benefits of a revised Foxconn deal that is some scaled back version of the original Foxconn deal. In other words, the analysis here is of a possible new state contract with Foxconn, but one that follows the credit rates of the original deal. Why analyze a possible new contract? Because given that the Foxconn project has been significantly revised, a new contract seems likely. Why not analyze what a scaled-back Foxconn project might receive in incentives under the original contract? Because under the original contract, there are many goals and timetables, and many scenarios for possible clawbacks; it is difficult to project what might happen, legally and economically, under all these scenarios. What can be readily

¹ This memo was written in response to a request from the Wisconsin Department of Administration, who asked for my assessment related to the costs and benefits of the evolving Foxconn project. However, neither I nor the Upjohn Institute was compensated for this project, and this memo was prepared independently and without review from the Department of Administration. The conclusions are my own, and do not necessarily reflect the views of the Upjohn Institute or the Wisconsin Department of Administration.

calculated are the implications of a new contract, that applies the current deal's investment credit rates and job creation credit rates to a scaled-back Foxconn project.

As described in this memo, either the original Foxconn incentive, or scaled back versions of the original offer, are far greater than typical U.S. incentives. Depending upon the incentive offer's details—and indeed the devil's in the details—the Foxconn incentives per job, compared to the average investment/job credit offer by U.S. states, is 7 to 12 times greater. The present value of the Foxconn incentive offer, in 2019 dollars, per job, ranges from \$172K per job to \$290K per job under various scenarios. Average U.S. incentives are \$24K per job. Wisconsin incentive in the past have averaged \$28K per job.

The Foxconn incentive offer is also greater per job than offers accepted by Amazon. The Amazon New York offer was, depending upon the ultimate job creation, between \$31K and \$46K per job. Virginia's offer to Amazon was, contingent upon the ultimate size of this facility, between \$10K and \$13K per job.

Part of the details that matter are not only how many jobs are ultimately created by Foxconn, but what limits are imposed on the annual incentive payments. The original Foxconn incentive offer, although very large, did impose some annual limits and total caps that stretched out the incentive offer. These limits and caps ended up reducing somewhat the real present value of the incentive offer. In any revised offer, the details of whether the offer keeps the original annual and lifetime caps, or lowers them to reflect the reduced project scale, make a large difference. Imposing lower annual limits and lower lifetime caps could lower Foxconn costs per job by almost one-quarter, or by over \$60K per job.

What do Wisconsin residents get in return for these incentives? What are the benefits, and what determines those benefits? In the original analysis of Foxconn done by the Legislative

Fiscal Bureau, the focus was on the state government's fiscal benefits. The Legislative Fiscal Bureau concluded that the Foxconn project would not fiscally break even until 2042-43.

Even as a fiscal impact analysis, the Legislative Fiscal Bureau's report is incomplete and overly optimistic. First, the Legislative Fiscal Bureau implicitly assumes a 100 percent probability that without the incentive, none of these 13,000 direct jobs would have been created by Foxconn, or by any substitute firm. Second, the Legislative Fiscal Bureau ignored the impact of job creation on population growth and the consequent needs for expanded public services.

As shown in this memo, under a realistic fiscal impact analysis, even if none of the Foxconn jobs would have been created without these incentives, fiscal benefits of Foxconn will never come close to offsetting the incentive costs. After accounting for population growth effects on public service needs, the present value of fiscal benefits is likely to offset no more than 20 percent of the incentive costs.

Of course, the purpose of government, and specifically of government economic development programs, is not to make money for the government. The government is not in business to make a profit, but rather to advance its constituents' well-being. If incentives such as Foxconn induce job growth, they can enhance residents' well-being by increasing employment to population ratios (employment rates) and real wages. Offsetting these costs are possible negative effects of paying for the incentives. Foxconn's incentives come out of the spending side of the state budget. Assuming that this results in cuts in various state spending programs, these spending cuts also have effects on the state economy. In particular, cuts in education spending can damage workers' skills and state residents' wages.

How do these various benefits and costs balance out? Using a model of how state economies operate, I analyze the benefits and costs of the revised Foxconn project under various

scenarios. I assume for this analysis that without the incentives, none of the 1,500 to 1,800 jobs at the revised project would have been created in the state. Under this assumption, the benefit-cost ratio—here calculated as all benefits and costs other than incentives, divided by the incentive costs—range from 0.71 to *minus* 0.02. That is, it seems likely that the revised project has benefits less than costs.

This benefit-cost analysis is overly-optimistic in several respects. First, without the incentives, even if the Foxconn project disappeared, it seems likely that there would be some substitute job-creation for the 1,500 to 1,800 Foxconn jobs. The infrastructure, land, and labor that would have been tied up in the Foxconn project can be used in alternative ways. The number of substitute jobs is probably less than the 1,500 to 1,800 Foxconn jobs, but on the other hand more than zero.

Second, this analysis assumes that the employment rate effects of the revised Foxconn project will be similar to average job creation in a local economy. Yet some reports suggest that the revised Foxconn project will mostly stress jobs with very high skill requirements. Higher skill requirements are likely to reduce the proportion of jobs that go to non-employed state residents, and increase the proportion that go to in-migrants to the state.

COST ANALYSIS

Analyzing the costs per job of the revised Foxconn project requires some assumptions about exactly how the original incentives will be scaled back. The original incentives were nominally a 17 percent wage credit for 15 years, and a 15 percent investment credit. However, the incentive agreement between the state of Wisconsin and Foxconn put various annual and lifetime limits on these incentives. In particular, the annual wage credit caps did not fully allow

for any inflation over time in wage rates. In addition, the investment credit had a lifetime cap that was 13.5 percent of the \$10 billion planned investment, and also spread out the investment credit over seven years. The lack of full inflation adjustments to the wage credit, and the spreading out and lifetime cap to the investment credit, reduced somewhat the real present value of the incentives.

To deal with this, I calculate possible revised Foxconn incentives under four different scenarios. All scenarios assume \$2 billion in investment. The scenarios differ along two dimensions. One dimension is whether the jobs created are 1,500, or 1,800. The other dimension is whether the limits in the original incentive offer are retained as written, or ratcheted down to reflect the reduced scale of the project. If the original limits are retained as is, then the wage credits would simply be awarded at 17 percent, and the investment credits at 15 percent, and the original limits would mostly not be binding on total incentives paid, which increases the amount of the incentive. If the original limits are ratcheted down to reflect the reduced project size, then these annual and lifetime caps would continue to reduce the value of the incentive.

I then calculate the present value of these incentives, in 2019 dollars. This present value assumes that the annual inflation rate between 2018 and 2034 will be 2 percent. In addition, I use a fairly standard social discount rate of 3 percent—that is, the same real dollar a year from now has a present value of 3 percent less this year. This real discount rate reflects that people place a somewhat higher value on dollar flows this year rather than many years from now.

For comparison, I also calculate the present value of incentives per job for other states' jobs tax credits and investment tax credits. I calculate the present value of incentives offered to Amazon by New York, and to Amazon by Virginia. Amazon recently agreed to accept these states' offers, although Amazon ultimately backed out of the New York deal, due perhaps in part

to political opposition. For both the New York and Virginia Amazon deals, I consider two scenarios, as both agreements have a phase one of 25,000 Amazon jobs, followed by a phase two that would involve up to 40,000 jobs in New York, and 37,850 jobs in Virginia.

I also calculate the average state jobs credits and investment tax credits per job from my 2017 Panel Database on Incentives and Taxes (Bartik, 2017). This database attempted to quantify the “usual deal” that state and local governments offer new facilities that they want to attract. That is, it includes deals commonly offered, and not one-of-a-kind deals such as Foxconn or Amazon. The particular data I use is the average incentive offered over all so-called “export-base” industries as of 2015, the most recent year in my database. This deal is averaged over the 32 states plus the District of Columbia included in the database. These geographic areas include over 90 percent of all U.S. economic output. In addition to reporting the output-weighted average over these 33 different areas of the present value of incentives per job, I also report the database’s estimate of Wisconsin’s “usual deal” as of 2015.

Table 1 reports these calculations’ results. (An appendix shows the year by year incentives in the Foxconn and Amazon scenarios.) As the Table shows, all the Foxconn deals are far greater than average U.S. deal, Wisconsin’s past practices, or the Amazon deals in New York or Virginia.

Table 1 Present value (2019 dollars) of costs of state job creation tax credits (JCTCs) and investment tax credits (ITCs) per job, various projects and state incentives, in thousands of dollars per job

Project or state	Description	Total ITC + JCTC per job	JCTC	ITC
Original Foxconn deal	13K jobs, \$10B investment	172	82	90
New Foxconn scenario, most optimistic	1,800 jobs, \$2B investment, ratcheted down limits	197	80	118
New Foxconn scenario, middle	1,500 jobs, \$2B investment, ratcheted down limits	221	80	141
New Foxconn scenario	1,800 jobs, \$2B investment, keep old limits and use formulas	260	112	148
New Foxconn scenario, most pessimistic	1,500 jobs, \$2B investment, keep old annual limits and use formulas	290	112	178
Amazon, NY, optimistic scenario	40K jobs	31	21	10
Amazon, NY, pessimistic scenario	25K jobs	46	34	12
Amazon, VA, optimistic scenario	37.85K jobs	10	10	0
Amazon, VA, pessimistic scenario	25K jobs	13	13	0
WI “usual deal,” 2015	Panel Data on Incentives and Taxes	28	15	12
U.S. average “usual deal,” 2015	Panel Data on Incentives and Taxes	24	18	6

Note: All present value calculations use annual discount rate of 3 percent. All figures are in thousands of present value 2018 dollars per job.

As shown, the “new” Foxconn deals tend to be greater in cost per job than the original deal. This is in part because the recent reports have a higher ratio of investment to jobs created, which raises the costs of the investment tax credits per job.

In addition, it makes a huge difference whether the new incentives for Foxconn keep the original annual and lifetime incentive limits—and then simply use the formulas for the 17 percent wages tax credit and 15 percent investment tax credit—or whether these credit percentages are also limited by ratcheting down the original annual and lifetime caps. Comparing the two 1,800 jobs scenarios, ratcheting down the old limits reduces costs per job by \$63K, from \$260K to \$197K. Comparing the two 1,500 jobs scenarios, ratcheting down the old limits reduces costs per job by \$69K, from \$290K to \$221K.

BENEFITS ANALYSIS

To calculate the possible benefits of the revised Foxconn facility, I enter these four different incentive scenarios into my model of the benefits and costs of incentives for state residents and calculate the present value of various benefits and costs.

This incentive model is described more fully in Bartik (2018). But briefly, this is a model in which the incentives are assumed to have some effect on the probability of inducing a particular job-creation decision, with that assumed probability based either on the size of the incentives relative to the firm's costs, or with that probability being assigned by the analyst. This job creation then has some assumed multiplier effects on other jobs, with the multiplier also being assigned by the analyst. The total job creation then has effects on local employment rates and wage rates, based on empirical studies of how job growth shocks affect these local labor market variables under various initial labor market conditions. The job creation also increases property values. The increased wages and property values have some negative effects on other job creation, and also reduce profits of some local business owners. The effects of local job creation on employment rates, employment to population ratios, immediately implies effects on local population growth. These job growth and population growth effects are used to calculate effects on state and local tax revenue, and state and local spending needs. The incentive costs, net of any fiscal benefits from revenue effects exceeding spending needs, must be paid for in some way, and this has economic costs. For example, any tax increase or spending cut has some negative demand side effects on a state's economy. And the model allows for cuts in spending on K-12 education to have some long-run negative effects on state wages. The model follows a state's economy for 80 years, to allow for the full impact of long-term effects due to education

cutbacks. All effects in later years are discounted back to the present, using a 3 percent real discount rate, so a dollar effect in year 80 is worth only less than ten cents in present dollars.

For this specific simulation, the baseline model is altered in the following ways:

- The Foxconn incentive is assumed to be “decisive,” in that none of these jobs or any substitute jobs would locate in Wisconsin without the incentive.
- The assumed input-output multiplier is 2.39, which is the more optimistic multiplier in the Baker and Tilly report on the Foxconn project.
- The baseline unemployment rate is 2.8 percent, Wisconsin’s current unemployment rate.
- The net cost of the incentives, minus any fiscal benefits, are assumed to come from reduced state and local public spending. Out of that reduced public spending, 21.7 percent comes from reduced K-12 spending, based on Census of Governments data that this is the average share of state and local public spending in Wisconsin that goes to K-12 schools.

Table 2 summarizes the overall benefits and costs of the Foxconn incentives and job creation for Wisconsin residents, with various types of effects identified. As shown, the model includes not only estimated incentive costs, but various other benefits and costs. The other benefits and costs include fiscal benefits, labor market benefits due to higher employment rates, wage losses due to the education spending cutbacks, and effects on property values and local business profits. The ratio of all these other benefits and costs to incentive costs is calculated as the benefit-cost ratio. A benefit-cost ratio of greater than one is required for a project or policy to have net benefits. The benefits and costs are all calculated in present value dollars as of 2019.

As the Table shows, net fiscal benefits are slight relative to incentive costs. Incentive costs range from \$341 million to \$482 million, and net fiscal benefits range from \$55 million to \$68 million. The Foxconn job creation, and the associated multiplier job creation, does generate considerable increases in state and local tax bases and hence tax revenue. However, over 90 percent of this is offset by increased needs for public expenditure due to an expanded population.

Table 2 Costs, Benefits, and Benefit-Cost Ratios for Revised Foxconn Project, Various Scenarios

Present value below in millions of 2019 dollars of	1,800 jobs, new limits	1,500 jobs, new limits	1,800 jobs, old limits	1,500 jobs, old limits
Incentive costs	(366)	(341)	(482)	(447)
Increased state/local tax revenue	1,672	1,362	1,573	1,272
Increased state/local public service needs	(1,603)	(1,306)	(1,506)	(1,217)
Fiscal benefits = revenue – needs	68	56	67	55
Labor market benefits (higher employment rate effects on earnings and wages)	433	354	414	337
Wage loss due to K-12 spending cutbacks	(346)	(338)	(501)	(479)
Net other benefits (property value gains plus losses to local businesses due to higher costs)	103	84	98	79
Gross benefits (all effects except incentive costs)	259	157	78	(8)
Benefit-cost ratio (ratio of gross benefits to incentive costs)	0.71	0.46	0.16	(0.02)

Note: All figures except benefit-cost ratio are in millions of present value 2019 dollars, using 3 percent annual social discount rate. Figures in parentheses are negative numbers or costs.

The job creation resulting from Foxconn does increase employment rates, and this puts some upward pressure on Wisconsin wage rates. Countering that is that the cutbacks in K-12 reduced wages. As it turns out, these two effects tend to be of similar size. The costs of the education cutbacks tend to dominate if the incentive costs are larger relative to job creation. The key point here is that net incentive costs are not just a dollar cost to the state government, but also potentially an economic cost to the state economy and state residents.

The net ratio of other benefits and costs, to incentive costs, ranges from 0.71 to –0.02. In other words, in all four scenarios, the Foxconn project on net costs more than its benefits. However, in the most optimistic scenario, the net losses due to the Foxconn incentives are only 29 percent (100% – 71%) of the incentive costs. The project does produce some significant benefits for state residents in this scenario, just not as much as it costs.

FACTORS AFFECTING BENEFITS VERSUS COSTS

Like any model, these benefit-cost results depend upon various assumptions made. Varying some assumptions will change benefits versus costs. On the whole, as I will now discuss, I suspect that the benefit-cost results in Table 2 are likely to be somewhat over-optimistic.

Among the assumptions that might be changed are: but-for percentage; multiplier; employment rate effects; public spending needs; economic effects of spending cuts.

But-For Percentage

Table 2 assumes that without the incentives, none of these 1,500 or 1,800 jobs, or any substitutes, would exist in the state. This is an extreme assumption. More realistically, the land and infrastructure developed for Foxconn in southeast Wisconsin would find some alternative use.

To fully ascertain plausible substitute effects would require a detailed economic study of plausible alternative uses for the Foxconn site, and possible direct jobs generated. In the absence of such a detailed, site-specific study, one could rely on statistical averages. If one enters the maximum cost per job incentives into the model, the 1,500 jobs scenario with the old limits used, the model says that such incentives would be expected to have a “but for” of 73 percent. That is, on average, if one compared one state that offered such incentives to all projects, with another state that did not offer such incentives, the job creation in the state that did not offer the incentives would be 27 percent as great as the state that did offer the incentives. If we applied this statistical average to the 1,500 jobs at the Foxconn project, this implies job creation in substitute jobs of about 400 jobs without the incentives. But a site-specific study would give a better estimate.

Multiplier

Various input-output job multipliers have been suggested for the Foxconn project: 2.71 by EY (2017); 2.39 and 1.93 in two different scenarios for Baker Tilly (2017). For the model used to generate Table 2, I somewhat arbitrarily picked the middle multiplier from these three choices, that is 2.39.

None of these estimated multipliers are fully satisfactory. None of these multipliers, for example, is based on a region specific study of the use of Wisconsin versus Illinois suppliers in southeast Wisconsin. None of these multipliers relies on empirical data on commuting patterns and purchase patterns of workers in southeast Wisconsin and the neighboring region of Illinois. I suspect that a more empirically-based multiplier would find more leakages into Illinois than in the current multiplier, but how big these extra leakages would be is hard to know without more data.

Employment Rate Effects

Both the labor market benefits and fiscal benefits are affected by employment rate effects, per job created. The larger the employment rate effects, the larger the labor market effects. In addition, the larger the employment rate effects, the lower the population growth effects of job growth, and hence a lower impact on spending needs, and thereby higher fiscal benefits.

The model behind Table 2 implicitly assumes that the Foxconn jobs and the multiplier jobs are like “average” jobs. Average jobs that are created in a state’s economy are immediately filled by some combination of three sources: hiring already-employed state residents; hiring non-employed state residents; hiring in-migrants. Jobs filled by hiring already-employed state residents results in a new job vacancy, that is filled in the same three ways. Ultimately this

vacancy chain is only terminated when all newly created jobs have resulted in some mix of non-employed state residents being hired, or new residents. Mathematically, an increase in employment must either ultimately increase the state's employment to population ratio, or increase its population—there is no ultimate alternative. The relative mix of employment rate effects versus population effects depends upon the relative proportions of local non-employed versus in-migrants hired along the job vacancy chain.

The issue is whether it is proper to treat the Foxconn jobs as “average jobs.” The new Foxconn project reportedly will include a high mix of very skilled and very highly-educated workers. This raises the odds that for at least the direct jobs created, the vacancy chain will be more abruptly terminated by significantly above-average hiring of non-state residents. If so, the results in Table 2 overstate the local employment rate benefits, and overstate the fiscal benefits.

Public Spending Needs

The results in Table 2 do not allow for any extraordinary costs for extra needed infrastructure from the additional jobs. Implicitly, they assume excess capacity in existing infrastructure in southeast Wisconsin. To the extent to which this is untrue, the results in Table 2 overstate the fiscal benefits of the Foxconn project. Overcoming this limitation of the model would require a specific case study of the Foxconn project and of infrastructure conditions and needs in southeast Wisconsin.

Some of these extra infrastructure costs have already been incurred by local governments in southeast Wisconsin. Hence, these are sunk costs and should not be counted in benefit-cost analyses moving forward from the present moment. However, there will also be extra infrastructure costs associated with expanded population, which are not included in the Table 2 fiscal analysis.

Economic Effects of Spending Cuts

The model behind Table 2 assumes that only lower spending on K-12 has any productivity effects on the economy. In addition, the model assumes relatively high economic benefits to K-12 spending, although benefits consistent with some recent economic studies of how K-12 spending affects earnings, specifically the study by Jackson, Johnson, and Persico (2015).

On the one hand, one could assume lower effects of K-12 spending on Wisconsin residents' earnings than is assumed in the model. On the other hand, other areas of state and local public spending might have economic effects on Wisconsin residents, for example funding for university and technical colleges, public health, childcare, police and fire, and infrastructure.

Bottom Line

The bottom line is that it seems likely that Table 2 is optimistic. A full evaluation of Foxconn with more precise estimates of various economic parameters would probably lower the benefit-cost ratio.

The most important conclusion of this analysis is that it is difficult to come up with plausible assumptions under which a revised Foxconn incentive contract, which offers similar credit rates to the original contract, has benefits exceeding costs. The incentives are so costly per job that it is hard to see how likely benefits will offset these costs.

The project does have a better benefit-cost ratio if the incentive costs are significantly cut back. If the state government decides to move ahead with the Foxconn incentives, the details of how the Foxconn incentives are limited or capped make a big difference in the project's net benefits.

APPENDIX

This appendix gives more detail on the incentive costs assumed to generate the different Foxconn and Amazon scenarios.

The original Foxconn plan incentive payments are directly taken from the November 2017 agreement between Wisconsin and Foxconn. As mentioned, although the incentives are technically paid as a 17 percent wage tax credit for 15 years, and a 15 percent investment tax credit, there are various limitations implied in the maximum incentive schedule. In particular, the wage payment maximums do not allow for full inflationary adjustment of the initial wages. Furthermore, the total investment tax credit is limited to \$1.35 billion, which is only 13.5 percent of the planned investment of \$10 billion. Furthermore, the investment tax credit is paid out over seven years.

In the reduced Foxconn scenarios, one possibility is that the wage credit will continue to be limited to not allowing for full inflation adjustments, and that the maximum investment tax credit will be limited to 13.5 percent of \$2 billion and allocated evenly across seven years. These are the scenarios described as new limits or ratcheted down limits.

A second possibility is that the reduced Foxconn scenarios will keep the old annual limits and lifetime caps of the original contract, but simply allow the reduced scale project to claim 17 percent wage credits for 15 years and a 15 percent capital investment tax credit. This scenario provides significantly higher incentives than the ratcheted down limits.

Table A1 reports all five scenarios from 2018 to 2034. The calculations assume that Foxconn's wages per employee increase with overall price inflation by 2 percent per year from 2017 until 2034.

Table A1 Possible Payments in Millions of Nominal Dollars Under Various Foxconn Deals

Year	Original Plan		1,800 jobs all years, new limits		1,500 jobs all years, new limits		1,800 jobs all years, old limits		1,500 jobs all years, old limits		
	Jobs	Investment	Jobs	Investment	Jobs	Investment	Jobs	Investment	Jobs	Investment	
	credit	credit	credit	credit	credit	credit	credit	credit	credit	credit	
2018	1,040	10									
2019	2,080	19	193								
2020	5,200	48	193	14		12		17		14	
2021	9,100	84	193	14	39	12	39	17	193	15	193
2022	13,000	120	193	14	39	12	39	18	107	15	107
2023	13,000	121	193	14	39	12	39	18		15	
2024	13,000	121	193	14	39	12	39	19		15	
2025	13,000	121	193	14	39	12	39	19		16	
2026	13,000	122		14	39	12	39	19		16	
2027	13,000	122		14	39	12	39	20		16	
2028	13,000	122		14		12		20		17	
2029	13,000	122		14		12		20		17	
2030	13,000	123		14		12		21		17	
2031	13,000	123		14		12		21		18	
2032	13,000	124		14		12		22		18	
2033	13,000			14		12		22		18	
2034	13,000			14		12		23		19	
Sum	—	1,500	1,350	208	270	173	270	297	300	247	300

Note: All costs are rounded to millions of dollars. Job numbers are actual figures in contract plans.

The Amazon scenarios for New York and Virginia are taken directly from the agreements between the states and the company. These have different annual scenarios for jobs created and payments made. For both state projects, the contracts distinguish between a phase 1, which encompasses creating 25,000 jobs, and a phase 2, which goes up to 40,000 jobs (New York) or 37,850 jobs (Virginia). Table A2 shows New York, and Table A3 shows Virginia.

Table A2 Amazon, New York

Year	Jobs	Jobs credits	Investment credits
2019	700	6	35
2020	2,900	25	30
2021	5,900	52	42
2022	7,900	69	28
2023	11,900	104	55
2024	15,900	139	55
2025	17,900	156	28
2026	20,789	182	40
2027	23,150	202	33
2028	25,000	218	26
2029	26,500		18
2030	27,750		15
2031	31,750		48
2032	35,000		39
2033	40,000		60
Total		1,154	551

NOTE: 2029 on is only if jobs created goes from 25K to 40K. Figures for credits are in millions of nominal dollars, unadjusted for inflation. Figures for jobs are actual jobs.

Table A3 Amazon, VA

Year	Total jobs	New jobs, phase 1	New jobs phase 2	Phase 1 credits	Phase 2 credits
2019	400	400			
2020	1,580	1,180			
2021	3,544	1,964			
2022	4,983	1,439			
2023	7,648	2,665			
2024	10,000	2,352		9	
2025	11,643	1,643		26	
2026	13,850	2,207		43	
2027	16,850	3,000		32	
2028	19,850	3,000		59	
2029	22,155	2,305		52	
2030	25,750	2,845	750	36	
2031	27,850		2,100	49	
2032	31,750		3,900	66	
2033	34,850		3,100	66	
2034	37,850		3,000	51	
2035	37,850			63	12
2036	37,850				33
2037	37,850				61
2038	37,850				48
2039	37,850				47
			Totals	550	200

NOTE: Credits are in millions of nominal dollars. Jobs are actual jobs numbers. Phase 1 are new jobs up to 25,000.

REFERENCES

- Baker Tilly Virchow Krause, LLP. 2017. “Project Flying Eagle Updated Limited Scope Report.” Report prepared for the Wisconsin Economic Development Corporation (WEDC). Chicago, IL: Baker Tilly Virchow Krause, LLP.
- Bartik, Timothy J. 2017. “A New Panel Database on Business Incentives for Economic Development Offered by State and Local Governments in the United States.” Prepared for the Pew Charitable Trusts. <https://research.upjohn.org/reports/225>
- Bartik, Timothy J. 2018. “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.” Upjohn Institute Technical Report No. 18-034. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research. <https://doi.org/10.17848/tr18-034>
- EY Quantitative Economics and Statistics (QUEST). 2017. “Quantifying Project Flying Eagle’s Potential Economic Impacts in Wisconsin.” Unpublished manuscript. July 2017.
- Jackson, C. Kirabo, Rucker C. Johnson, and Claudia Persico. 2015. “The Effects of School Spending on Educational and Economic Outcomes: Evidence from School Finance Reforms.” *The Quarterly Journal of Economics* 131(1): 157–218.
- New York State Urban Development Corporation. 2018. “Long Island City Development Project.” Unpublished manuscript, November 12, 2018.
- Virginia Economic Development Partnership Authority (VEDP). 2018. “Major Headquarters Program Memorandum of Understanding.” Unpublished manuscript, November 12, 2018.
- Wisconsin Economic Development Corporation. 2017. “Electronics and Information Technology Manufacturing Zone Tax Credit Agreement.” Unpublished manuscript, November 10, 2017.
- Wisconsin Legislative Fiscal Bureau. 2017. “August 2017 Special Session Assembly Bill 1: Foxconn/Fiserv Legislation.” Unpublished manuscript, August 8, 2017.