METHODOLOGY & DATA FOUNDATION

How the model gets its numbers

Most impact tools are a closed box. This one is built entirely on public federal data and a published, peer-reviewed regionalization method — and every difference from other models has a clear, one-sentence reason. This page explains how, in plain terms.

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01 / Purpose

Why this document exists

Transparency is the point. Every figure the model reports can be traced back to a published, authoritative data source and a documented method.

This page is written for the people who rely on the estimates — economic developers, public officials, site selectors, and business leaders — rather than for specialists. Where our results differ from other widely used models, we can tell you exactly why in a single sentence. That openness lets you defend the numbers to a skeptical audience, because you

can see how they were made. Nothing here requires a background in economics; technical terms are defined as they appear.

02 / What it does

What the model does, in plain terms

When a new employer opens, an existing one expands, an event draws visitors, or households earn and spend money, the effect does not stop at that first transaction. Suppliers receive new orders, those suppliers buy from their own suppliers, and the workers involved spend their wages at local businesses. The model traces these ripples through the regional economy and reports the total effect, broken into three layers:

- **Direct effects** — the activity you start with: the jobs, wages, and sales at the business or event itself.
- **Indirect effects** — the supply chain: additional activity at the firms that supply the direct activity, and their suppliers in turn.
- **Induced effects** — the spending of wages: activity generated when workers in both layers spend their household income at local businesses.

For each layer, the model reports four standard measures: **employment** (jobs), **labor income** (wages, salaries, and benefits), **value added** (the region's contribution to GDP), and **output** (total sales or production) — for the state as a whole or for any individual Georgia county.

03 / Data foundation

The data foundation

The model rests on the official statistical accounts of the United States — the same primary sources that other professional impact models draw upon, but used directly and visibly rather than repackaged.

Source	What it provides
BEA Benchmark Input-Output Accounts (2017)	The most detailed available map of how U.S. industries buy from and sell to one another — the backbone of the model. Released by the Bureau of Economic Analysis in 2023 as part of the comprehensive update of the national accounts, built on the 2017 Economic Census.
BLS Quarterly Census of Employment & Wages	Employment and wages by industry for Georgia and each county — the evidence used to scale national patterns down to local ones.
BEA Personal Consumption Expenditures	How households divide spending across categories, and the price indexes used to express results in a consistent dollar year.
BLS Consumer Expenditure Survey	Spending patterns by income level, which let the model handle household scenarios across nine income tiers rather than one average household.
U.S. Census Bureau	Industry classification crosswalks and regional economic structure that tie the other sources together.

Because the foundation is public, any analyst — including one checking our work for a client — can locate the underlying numbers and verify that we started from the official record.

04 / Regionalization

From national patterns to Georgia

The national accounts describe the United States as a whole. A dollar spent in Georgia behaves differently from a dollar spent across the entire country, because no single region makes everything it needs. When a Georgia business buys a specialized input not produced in the state, that purchase — and its ripple — leaves the local economy. Capturing this “leakage” correctly is the central task of regionalization.

To do this, the model uses a published, peer-reviewed technique known as the **Flegg Location Quotient (FLQ)** method. In plain terms, it compares how concentrated each industry is in a region against its concentration nationally, adjusts for the size of the region, and estimates what share of each input a local economy can realistically supply from within. Inputs the region cannot supply locally are treated as imports and correctly excluded from the local ripple.

The FLQ method was introduced by Flegg, Webber, and Elliott (1995) and refined by Flegg and Webber (1997, 2000). It is one of the most thoroughly tested non-survey regionalization methods in the regional-science literature and consistently outperforms simpler location-quotient approaches. We apply it to every county using that county's own employment and wage structure, producing a distinct profile for each of the 159 counties. Before release, the county-level results were tuned and then locked against an independent professional benchmark so the estimates land in a defensible range rather than drifting on untested assumptions.

Analyzing an industry the region doesn't have yet

This construction has a consequence that matters enormously for economic development: **the model can analyze an industry even where it does not currently exist.** Models built from observed local accounts cannot — if an industry has no local presence, there is nothing in their tables to shock. But the central act of economic development is evaluating a prospect that *isn't there yet*.

Because this model carries the complete national technology recipe for all 402 industries, a hypothetical new entrant's input requirements are always known. The county's actual industrial mix then determines what share of those purchases can be supplied locally versus imported — the machine shops that are present capture their share of the ripple; the specialty inputs that aren't are correctly treated as imports. For the entrant's own local-purchasing behavior, the model assumes it sources the way the state-average version of that industry does, scaled to the county's size — a conservative, documented stand-in.

Three cautions apply when using this for prospecting: the entrant is modeled as behaving like an established state-average operation (a brand-new plant may import more in its first years); the model is static, so it does not capture suppliers relocating *because* the plant

arrived; and the direct jobs-to-output relationship uses national productivity, per the standing methodological choice.

05 / Calculation

How an impact is calculated

Once the model has a regional picture of how industries are linked, it converts a starting event into total impact using economic **multipliers**. A multiplier answers a simple question: for each dollar (or job) of direct activity, how much total activity results once the supply-chain and wage-spending ripples are counted? The model reports two standard types:

- **Type I** multipliers count the direct effect plus the supply-chain (indirect) effect.
- **Type II** multipliers add the induced effect of household spending on top, giving the fuller picture of total regional impact.

The induced effect is **geographic**: how much of each wage dollar returns to a county's economy depends on how much of the household shopping basket the county can actually supply, and on where its workers live — measured worker by worker from the Census Bureau's LODES commuting data. A self-contained mountain county keeps a larger share of its payroll ripple than a bedroom community whose workers take their paychecks home elsewhere, while a metro core is credited for the near-work spending of its large in-commuting workforce. Both influences are calibrated against county-level benchmark runs of a leading commercial model, and a region built from many counties smoothly recovers the state's own validated behavior as commuting is internalized.

Results can be expressed in the dollar year you need. The model includes a price-index adjustment so impacts can be stated in current-year dollars and compared cleanly against other estimates, which are often reported in a different dollar year.

06 / Scenarios

The kinds of analysis the model supports

- **Industry events** — a new or expanding business, a construction project, or an operating facility, entered as jobs, output, or income, at a broad sector or a specific detailed industry.
- **Household consumer spending** — the impact of household purchases, useful for retail, tourism, and population-driven analyses.
- **Household income** — income that households receive and then spend, with the realistic share spent locally rather than saved applied automatically.
- **Household income by tier** — the same analysis across nine income brackets, because a dollar of income to a lower-income household is spent very differently from a dollar to a higher-income one — producing more accurate results for programs that affect specific income groups.

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07 / Result layers

Beyond the multipliers: the added result layers

Around the core impact engine, the model adds several result layers that traditional input-output tools do not provide. Each is built from public federal data, and each carries its assumptions on its face — the relevant caveat is printed on the result card itself and in every export.

- **Tax impacts** — the federal, state, and local tax revenue supported by the total impact. Every rate is an *effective* rate: actual government collections divided by the actual tax base (BEA national accounts, IRS Statistics of Income, Census state tax collections, Census of Governments local finance). Statutory rates, exemptions, and compliance are therefore baked in rather than assumed. Personal income tax varies by household income bracket — including the negative net federal rates for lower-income households created by refundable credits. Local figures are a Georgia statewide average. *Tax revenue is one side of the ledger; for a true net fiscal impact — revenues and service costs on a community's actual digest, millage, and budgets — the appropriate tool is LOCI®.*
- **Jobs by occupation** — the job impact translated into occupations with Georgia median wages and the size of the existing statewide workforce, using the U.S. Bureau of Labor

Statistics' industry staffing patterns (OEWS). National staffing patterns are applied to Georgia industries — state-level staffing matrices are not published — while all wages and employment bases are Georgia's own.

- **Who gets the income** — the labor-income impact distributed across nine household income brackets, from each industry's actual wage distribution (OEWS percentiles, fitted industry by industry). Worker wages are mapped to household brackets directly — a single-earner approximation, noted on the card.
- **Where workers live** — for county and regional analyses, the share of the payroll impact earned by residents of the selected area versus commuters, from the Census Bureau's LODES origin–destination commuting data. Payroll that leaves with commuters is spent, taxed, and saved where workers live.
- **Uncertainty ranges** — 90% intervals on every headline figure, produced by re-solving the entire model 120 times with its two governing behavioral parameters drawn from their calibration uncertainty. The direct effect a user enters is exact; the modeled ripple carries the uncertainty. To our knowledge no commercial impact model publishes error bars.
- **Solve for a target** — the analysis run in reverse: enter the total outcome needed (jobs, output, income, value added, or state-and-local tax revenue) and the model back-solves the required direct investment. Because the model is linear, the solution is exact.
- **LOCI® multipliers** — the scenario's employment and labor-income multipliers (Type I and Type II), formatted for entry into a LOCI® project profile, where they convert a direct fiscal impact into a total fiscal impact on genuine community data.

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08 / Comparison

How our estimates differ from a leading commercial model — and why

Many clients will, reasonably, compare our results against a widely used commercial impact model. The estimates are close, but not identical, and the differences are deliberate

and explainable. Each reflects a transparent methodological choice, not an error — and in every case the reasoning is one sentence long.

Where you may see a difference	Why — in one sentence
Labor and productivity in some industries	We use national productivity ratios because Georgia's greater labor-intensity is highly sector-specific, which keeps job estimates honest rather than uniformly inflated.
The size of household (induced) ripple effects	Our induced effect is calibrated county by county to actual commuting patterns and local retail supply — validated against the commercial model's own county benchmarks — so a bedroom community, a metro core, and an isolated county each keep a realistically different share of the wage ripple.
The size of supply-chain (indirect) effects	We calibrate the local supply chain so it neither over- nor under-counts the share of inputs a region can genuinely provide for itself.
The dollar year of the results	Our figures and a comparison model's figures may be expressed in different price years, which accounts for a few percent of any gap before any method even enters.
Small, single-industry county estimates	In very small or highly specialized counties we deliberately widen our uncertainty and lean toward conservative estimates, because the underlying local data is thin.

Taken together, these choices make our estimates somewhat more conservative than a commercial alternative in specific, identifiable situations — and we would rather a client be able to explain a number than be surprised by it.

09 / Uncertainty

Uncertainty, limits, and good practice

No economic impact estimate is a precise measurement; every one is a modeled approximation, and honesty about that is part of the method. A few principles guide responsible use:

- Estimates are most reliable for larger regions and broader industries, where the underlying data is richest.
- Estimates for a single small county combined with a single narrow industry carry the widest uncertainty, and should be read as an indicative range rather than a point figure.
- The model reflects the economy as captured in the most recent benchmark data; genuinely novel activities with no historical analog are inherently harder to model.
- Impact results describe gross activity generated and do not, by themselves, net out activity that might have occurred anyway — interpreting that is a matter of analytical judgment.

Where one of these limits applies most sharply — a small, specialized county — the tool surfaces a short caveat at the point of analysis, so the reader is reminded to treat the result as a band.

As of the 2026 update, the tool no longer merely advises this humility — it quantifies it. Every headline figure carries a 90% range, computed by re-running the full model over the calibration uncertainty of its two governing parameters (the regionalization exponent and the household spending rate). Typical industry scenarios carry roughly a ±5–6% band on output; household-spending scenarios, which lean harder on consumer behavior, run wider at roughly ±14%.

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10 / Summary

In summary

Built on the official statistical accounts of the United States, regionalized to Georgia and its counties with a published, peer-reviewed method, and calibrated against an independent professional benchmark.

The results are transparent by design: the data is public, the method is documented, and every difference from other models has a clear, one-sentence explanation. That is what allows the numbers to stand up to scrutiny — not the authority of a black box, but the visibility of the reasoning behind them.

References

Key sources and references

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