BRTB
Baltimore Regional Transportation Board

# Updated Employment Ratio for Forecasts

## Calculating Employment via Available Data Sources

*June 25, 2025*

BMC

# Quarterly Census of Employment & Wages

- QCEW monthly employment data represent the number of covered workers who worked during, or received pay for, the pay period that included the 12th day of the month.
- Covered employees in the private-sector and in the state and local government include most corporate officials, all executives, all supervisory personnel, all professionals, all clerical workers, many farmworkers, all wage earners, all piece workers, and all part-time workers. Workers on paid sick leave, paid holiday, paid vacation, and the like are also covered.
- Federal employment data are based on reports of monthly employment and reports of quarterly wages, both submitted quarterly to state agencies. Reports are submitted for all federal installations with employees covered by the act, except for certain national security agencies, which are excluded for security reasons.

# Quarterly Census of Employment & Wages

## *Who is missing?*

- The QCEW data account for ~94 percent of BEA's wages and salaries.
- The QCEW primarily excludes workers not covered by State Unemployment Insurance (UI) laws. This includes self-employed individuals, unpaid family workers, and certain agricultural and domestic workers.
- Additionally, it excludes federal workers in specific roles, such as elected officials, members of the armed forces, and those employed in emergency relief programs.
- Some agricultural workers (those earning less than a certain amount or with fewer than a specified number of employees) and domestic workers (those not meeting specific wage thresholds) are not covered by UI and thus excluded.
- Rail workers are covered by a separate unemployment insurance system and are not included in QCEW

# Bureau of Economic Analysis (BEA)

- BEA produces job counts for local areas, with breakdowns by industry.
- The employment estimates include data for: counties, micro/metropolitan statistical areas, combined statistical areas, and metropolitan divisions. Data is also presented for each state's metropolitan portion (the counties that belong to MSAs) and nonmetropolitan portion (the remaining counties).
- BEA includes federal, military, railroad, certain non profits and much of the agricultural sector (QCEW does not).
- These statistics are based primarily on data from the U.S. Bureau of Labor Statistics and the Internal Revenue Service; BEA uses additional source data and adjustments to produce employment statistics that align with other BEA' statistics.
- However, this product ceased updates in November, 2024; the most recent data release covers through November, 2023. All ratio calculations through 2023 utilized BEA-CAEMP25 - Total full-time and part-time employment by industry.

# Data Substitutions

- **In all recent models, data from BEA was used to estimate the gap in employment inherent to the way data is reported in the QCEW (i.e. self employed, unpaid care workers, etc…)**
- **In light of BEA shuttering its reporting of employment at the county, metro, and local levels it is necessary to implement a new method of calculating our Employment Ratio.**
- **Options:**
  - **Proprietary Data (S&P Global)**
    - Costly, lack of transparency in methodology, estimates based.
  - **LAUS**
    - Calculated using a "handbook' method via combined ACS, CES, and/or QCEW data; dependent on additional data.
  - **Current Employment Statistics (CES)**
    - Only available at the state and metro level.
  - **American Community Survey (ACS)***
    - Release schedule
      - 1 YR file released in September, 2025 (w/o Queen Anne's County < 65,000 population.
      - 5 YR file released in December, 2025 (includes all geographies)

# Employment Change 2020-2024

| Total Employment (QCEW) by Year and Jurisdiction: 2020-2024 | | | | | |
|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024 |
| Anne Arundel | 255,908 | 262,580 | 258,896 | 277,682 | 287,528 |
| Baltimore City | 328,182 | 331,470 | 338,166 | 343,749 | 348,261 |
| Baltimore County | 350,800 | 359,100 | 366,485 | 366,963 | 374,049 |
| Carroll | 54,237 | 55,272 | 56,631 | 57,799 | 59,132 |
| Harford | 89,316 | 91,249 | 91,815 | 94,361 | 94,982 |
| Howard | 161,299 | 163,088 | 165,143 | 169,720 | 173,293 |
| Queen Anne's | 14,321 | 14,895 | 15,124 | 15,635 | 16,269 |
| Baltimore Region | 1,254,063 | 1,277,654 | 1,292,260 | 1,325,909 | 1,353,514 |
| *Data Source: U.S. Bureau of Labor Statistics (Quarterly Census of Employment and Wages)* | | | | | |

| Employment Trends (QCEW) by Year and Jurisdiction: 2020-2024 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2020-2021 | | 2021-2022 | | 2022-2023 | | 2023-2024 | |
| | (#) | (%) | (#) | (%) | (#) | (%) | (#) | (%) |
| Anne Arundel | 6,672 | 2.61% | (3,684) | -1.40% | 18,786 | 7.26% | 9,846 | 3.55% |
| Baltimore City | 3,288 | 1.00% | 6,696 | 2.02% | 5,583 | 1.65% | 4,512 | 1.31% |
| Baltimore County | 8,300 | 2.37% | 7,385 | 2.06% | 478 | 0.13% | 7,086 | 1.93% |
| Carroll | 1,035 | 1.91% | 1,359 | 2.46% | 1,168 | 2.06% | 1,333 | 2.31% |
| Harford | 1,933 | 2.16% | 566 | 0.62% | 2,546 | 2.77% | 621 | 0.66% |
| Howard | 1,789 | 1.11% | 2,055 | 1.26% | 4,577 | 2.77% | 3,573 | 2.11% |
| Queen Anne's | 574 | 4.01% | 229 | 1.54% | 511 | 3.38% | 634 | 4.06% |
| Baltimore Region | 23,591 | 1.88% | 14,606 | 1.14% | 33,649 | 2.60% | 27,605 | 2.08% |
| *Data Source: U.S. Bureau of Labor Statistics (Quarterly Census of Employment and Wages)* | | | | | | | | |

# Population Change 2020-2024

| Jurisdiction | April 1 2020 (Base) | 2020 | 2021 | 2022 | 2023 | 2024 | 2020 - 2024 Chg | 2020 - 2024 % Chg | 2023 - 2024 Chg | 2023 - 2024 % Chg |
|---|---|---|---|---|---|---|---|---|---|---|
| Anne Arundel | 592,643 | 593,412 | 596,354 | 598,751 | 599,965 | 602,350 | 8,938 | 1.51% | 2,385 | 0.40% |
| Baltimore City | 585,720 | 583,189 | 576,575 | 570,663 | 567,517 | 568,271 | (14,918) | -2.56% | 754 | 0.13% |
| Baltimore County | 854,524 | 853,338 | 850,670 | 848,873 | 848,676 | 852,425 | (913) | -0.11% | 3,749 | 0.44% |
| Carroll | 172,887 | 172,910 | 174,282 | 175,569 | 176,735 | 177,108 | 4,198 | 2.43% | 373 | 0.21% |
| Harford | 260,932 | 261,245 | 263,348 | 263,908 | 264,771 | 265,514 | 4,269 | 1.63% | 743 | 0.28% |
| Howard | 332,313 | 332,821 | 335,370 | 336,439 | 337,341 | 339,668 | 6,847 | 2.06% | 2,327 | 0.69% |
| Queen Anne's | 49,880 | 50,033 | 50,921 | 51,803 | 52,682 | 53,688 | 3,655 | 7.31% | 1,006 | 1.91% |
| **Baltimore Region** | **2,848,899** | **2,846,948** | **2,847,520** | **2,846,006** | **2,847,687** | **2,859,024** | **12,076** | **0.42%** | **11,337** | **0.40%** |
| | | | | | | | | | - | |
| **Maryland** | **6,181,629** | **6,177,935** | **6,179,403** | **6,192,440** | **6,217,062** | **6,263,220** | **85,285** | **1.38%** | **46,158** | **0.74%** |
| | | | | | | | | | - | |
| **United States** | **331,515,736** | **331,577,720** | **332,099,760** | **334,017,321** | **336,806,231** | **340,110,988** | **8,533,268** | **2.57%** | **3,304,757** | **0.98%** |

Source: U.S. Census Bureau, Population Estimates Program - Vintage 2024.

- The Baltimore region's economic landscape continues to evolve, with employment trends closely tracking shifts in population change.
- The updated employment ratios capture the relationship between shifting population patterns and economic specialization across the Baltimore region.

# Updated Ratios

| Jurisdiction | 2020 | 2021 | 2022 | 2023 | Employment Ratio 2024-A* | % Change 23/24 | Employment Ratio 2024-B** | % Change 23/24 | Population Change 2020-24 | % Change 2020-24 |
|---|---|---|---|---|---|---|---|---|---|---|
| Anne Arundel | 1.238 | 1.229 | 1.296 | 1.131 | 1.109 | -0.022 | 1.116 | -0.016 | 8,938 | 1.51% |
| Baltimore City | 1.073 | 1.085 | 1.084 | 1.060 | 1.052 | -0.008 | 1.060 | 0.000 | (14,918) | -2.56% |
| Baltimore County | 1.079 | 1.083 | 1.087 | 1.006 | 1.041 | 0.036 | 0.993 | -0.013 | (913) | -0.11% |
| Carroll | 1.073 | 1.084 | 1.082 | 1.116 | 1.087 | -0.030 | 1.126 | 0.009 | 4,198 | 2.43% |
| Harford | 1.081 | 1.086 | 1.095 | 1.169 | 1.094 | -0.075 | 1.188 | 0.019 | 4,269 | 1.63% |
| Howard | 1.089 | 1.100 | 1.103 | 1.071 | 1.062 | -0.009 | 1.069 | -0.002 | 6,847 | 2.06% |
| Queen Anne's | 1.071 | 1.081 | 1.080 | 1.255 | 1.144 | -0.111 | 1.298 | 0.043 | 3,655 | 7.31% |
| Baltimore Region | 1.111 | 1.116 | 1.131 | 1.074 | 1.067 | -0.006 | 1.068 | -0.006 | 12,076 | 0.42% |

*Calculated using 10 YR Annual Average Growth Rate (AAGR) in reported employment (BEA & QCEW) along with 10 year average rate of change reported in coinciding 5YR American Community Survey (ACS)

**Calculated using 5 YR Annual Average Growth Rate (AAGR) in reported employment (BEA & QCEW)

- **Option A: More closely representative of long term trends in employment Captures long-term trends in both employment and population using observed data (BEA/QCEW and ACS). This method smooths out short-term trends(like COVID), making it ideal for long-term planning and for estimating the size of the workforce not covered by unemployment insurance (UI) reporting.**
- **Option B: Based on more recent (post-pandemic) job growth alone, possibly without fully accounting for concurrent population change and may slightly under- or overestimate employment.**

# Justification for Updated Ratios

- Based on historical trends observed in QCEW data and the availability of relevant data sources, Ratio 2024A (10 YR  is the best fit followed by Ratio 2024B.
- These ratios closely reflect the actual year-by-year employment ratio changes that have been recorded in the QCEW from 2020 through 2024.
- ACS 2023 estimates represent the most recent, consistent, and standardized source of residential population data.
- The use of 5 & 10-year growth average strikes the right balance between capturing recent employment dynamics (especially post-COVID recovery) and smoothing short-term volatility.
- It avoids reliance on external employment forecasts (e.g., S&P), which may change year to year and are outside the control of our region’s planning process.

# Key Takeaways

- Recommend using the employment ratios calculated from QCEW jobs and ACS 2023 population estimates (5 & 10-Year AAGR) because they align most closely with actual trends observed in the 2020–2024 data.
- This method uses reliable, publicly available sources and reflects real employment growth without relying on speculative forecasts. It captures both short-term recovery and longer-term structural changes across jurisdictions.
- The 5 & 10 -year smoothing balances annual shifts and ensures consistency region-wide.
- Overall, it's the most defensible and data-driven option for setting a consistent estimation of total employment.
- This method gives us a clear, defensible baseline tied to current population estimates, which can be updated as new ACS data becomes available.

# For More Information


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