

# Municipal Income Tax: Revenue Projections and Comparative Analysis

Final Report 2025



## OUR TEAM

### **Dr. Sarah Larson**

Associate Professor of Political Science and  
CPMRA Research Fellow

### **Ella Pieper**

CPMRA Research Associate

### **Lindsay Fraley**

CPMRA Research Associate

### **Nuria Jurjo Jimenez**

CPMRA Research Associate

### **Vera Anderson**

CPMRA Research Associate

### **Brooke Smith**

CPMRA Research Associate

### **Gracie Cribbs**

CPMRA Research Associate

### **Ngoc Nguyen**

CPMRA Research Associate

### **Rebecca Smith**

CPMRA Research Associate

## ❑ 1. Revenue Diversification

- ❑ Revenue Diversification
- ❑ Healthy Fiscal Systems
- ❑ Business Cycle Fluctuations
- ❑ Recent State Action

## ❑ 2. Pros and Cons

- ❑ Income Tax- Pros and Cons
- ❑ Property Tax- Pros and Cons
- ❑ Value of Revenue Diversification

## ❑ 3. Synthetic Modeling

- ❑ Modeling Assumptions
- ❑ Goodness of Fit
- ❑ Comparison of Revenues

# Population and Square Miles of Ohio Municipalities Operating Without an Income Tax

	Population	Square Miles
Beavercreek City	48,012	27.3
Cortland City	7,069	4.33
Bellbrook City	7,532	3.14

Source: US Census Bureau Fact Finder; Beavercreek Engineering Department



## Revenue Diversification

### What is it?

- ❑ The expansion of one's sourcing for revenue in which they rely on multiple sources avoiding an overreliance on a specific source
- ❑ A key factor in maintaining fiscal health
- ❑ Recommended for all revenue structures
- ❑ Beavercreek could increase revenue diversification
  - ❑ Property Tax: 56.3% of its funding for city operations + helps to qualify for grants making up 14.8% of additional funding



# Revenue Diversification

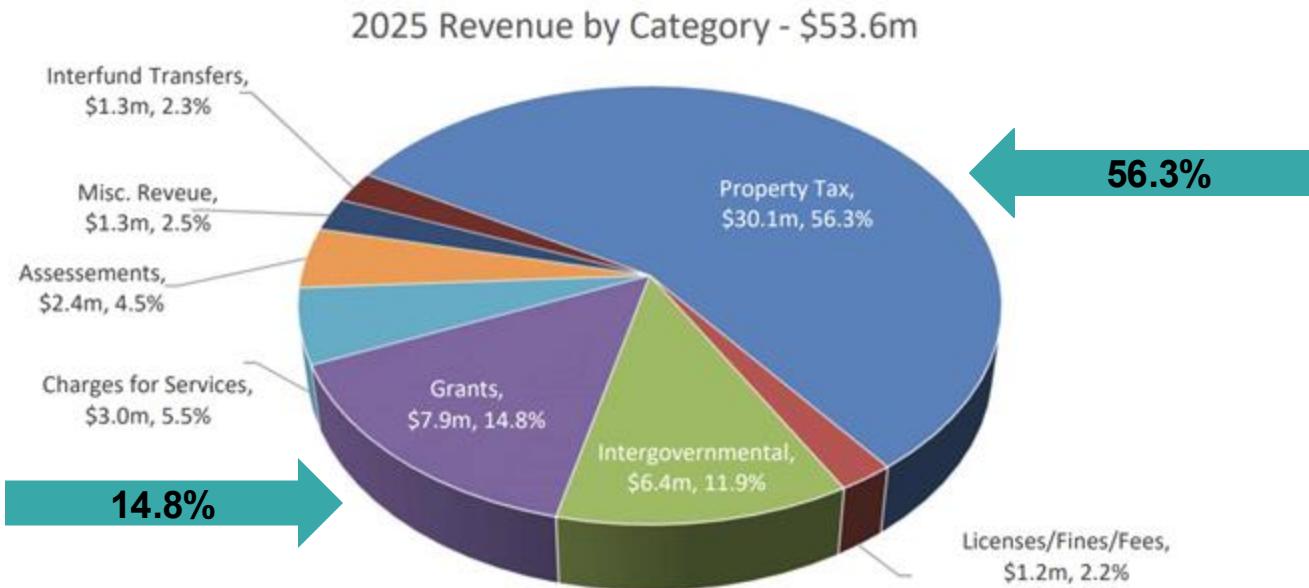


Chart retrieved from: Beavercreekoh.gov

**M**

**71.1% Overall**

Property Tax accounts for 56.3% of Beavercreek's funding for city operations & helps qualify for grants making up 14.8% of funding

# Healthy Fiscal Systems

- ❑ The overreliance on a specific revenue source is unhealthy and potentially challenging
- ❑ All revenue sources can be unstable at times
- ❑ Based on the research, revenue diversification is recommended for all municipalities, not just Beavercreek.
  - ❑ For example:
    - ❑ 1) Income Tax
    - ❑ 2) Property Tax
    - ❑ 3) Sales Tax
    - ❑ 4) Fines and Fees



# Healthy Fiscal Systems

- ❑ Expansion of revenue sources provides:
  - ❑ Reliability of a steady flow of revenue
  - ❑ Lessens the potential for tax revenue volatility
  - ❑ Boosts economic growth
  - ❑ Provides municipalities with greater autonomy during business cycle fluctuations
  - ❑ Helps municipalities to be more self sufficient and to rely less on grants and/or frequent ballot measures



# Business Cycle Fluctuations

Unemployment Rate and Recessions since 1948



Graph retrieved from: [nber.org](https://nber.org)

Source: Unemployment data is from the Federal Reserve Bank of St. Louis

**The Business Cycle:** the expansion and contraction of an economy that occurs naturally over a long period of time



# Municipal Revenue Diversification

- ❑ Hendrick (2002) & Carroll, Eger, & Marlowe (2003) looked at revenue diversification at the municipal level
- ❑ Focused on suburbs of Chicago, IL
- ❑ Both studies highlighted trends in diversifying away from simply the property tax as a way to increase revenues and foster municipal fiscal health



## Threat to the Property Tax

- ❑ A grassroots group, “Citizens for Property Tax Reform” is collecting signatures to place a citizen led initiative on the ballot
  - ❑ Could make it to the ballot next May to be voted upon
- ❑ Would be a trying financial time for municipalities without another source of revenue



## State Action- Revenue Diversification

- ❑ In the recent House Bill 96 (FY 26 and FY 27 Operating Budget), legislators made many threats to property taxes
  - ❑ Ultimately line-itemed vetoed by Governor DeWine
  - ❑ Schools with any unspent taxpayer money over 40% of their overall budget would now be required to credit this directly back to the taxpayers
  - ❑ Voted to allow the Board of County Commissioners to award anywhere up to a 2.5% owner occupancy tax credit, therefore reducing voter-approved levies
  - ❑ County Commissioners also given the authority to grant double homestead to individuals- exempting a portion of their home value from taxation- without a reimbursement to local governments



# Application

- ❑ Beavercreek currently has very little revenue diversification
  - ❑ Adding an additional revenue source(s) would significantly benefit overall fiscal health
  - ❑ Will prepare Beavercreek for the natural changes in the business cycle and allow them to be proactive when changes occur

**Main Idea:** Revenue Diversification plays a vital role in maintaining the health of fiscal systems.



## Income Tax Pros

- ❑ Broadens the tax base by value capturing services used by non-residents
- ❑ Businesses may not be discouraged by income tax addition
- ❑ The progressive nature of an income tax can reduce income inequality among residents
  - ❑ Higher wage earners pay more in taxes



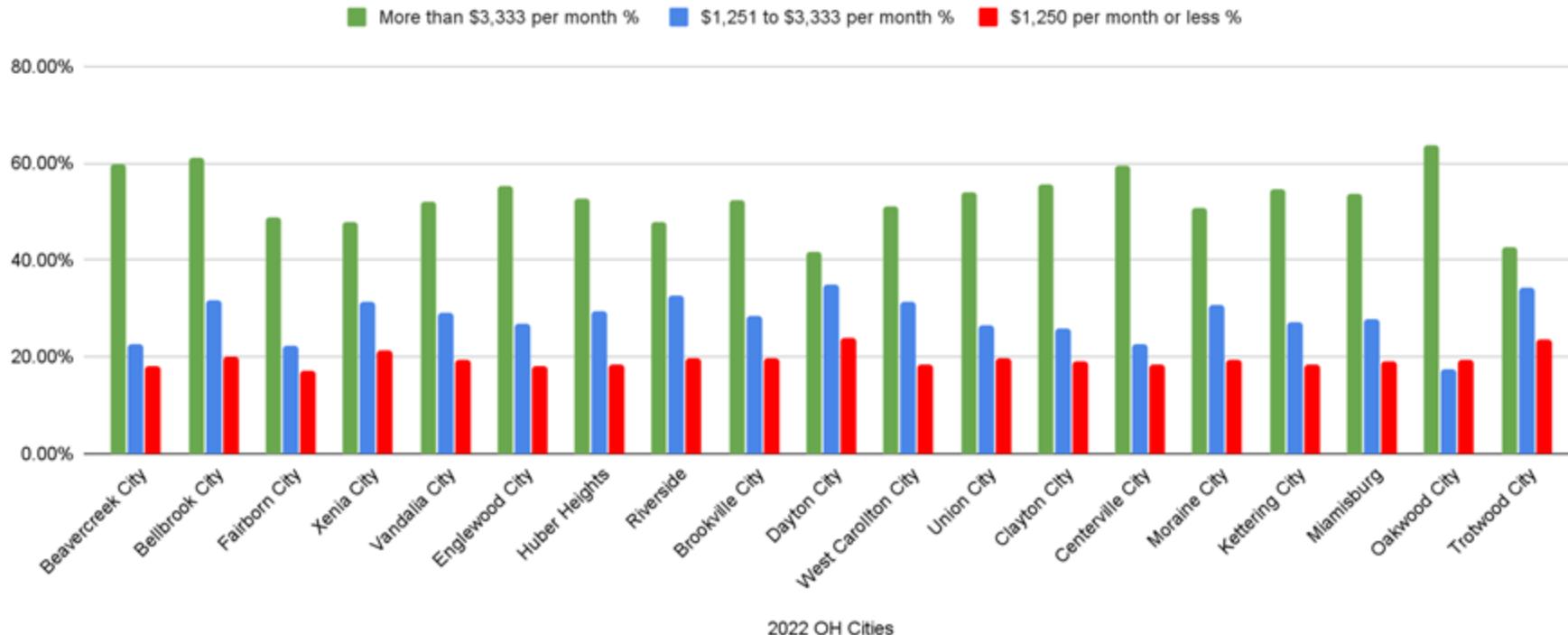
## Income Tax Cons

- ❑ Dependent upon employee income
  - ❑ Minimum wage employees
  - ❑ 2022: more than 59%\* of Beavercreek employees make significantly over minimum wage
- ❑ Income tax is much more volatile
- ❑ Tax code intricacies can disadvantage those who may not be aware of their local income tax obligations



## Percentage of Workers Earning Above, Equal, and Below Minimum Wage in Beavercreek and Select OH Cities

Note: In 2022, the monthly income that was considered minimum wage in Ohio was roughly equal to \$1,488/ month.



## Income Tax Cons

- ❑ Dependent upon employee income
  - ❑ Minimum wage employees
  - ❑ 2022: more than 59%\* of Beavercreek employees make significantly over minimum wage
- ❑ Income tax is much more volatile
- ❑ Tax code intricacies can disadvantage those who may not be aware of their local income tax obligations



## Property Tax Pros

- ❑ Less volatile and more stable than other revenue sources for local governments
- ❑ Funds essential services
  - ❑ Public schools, fire departments, etc.
- ❑ Provides a funding source for infrastructure to increase attractiveness of the area



## Property Tax Cons

- ❑ Does not increase with inflation
- ❑ Can price residents out, especially retirees/those on a fixed income
- ❑ Remains with the house, not with the owner
  - ❑ Gary, Indiana and Detroit, Michigan



## Value of Two Taxes and Revenue Diversification

- Recommended for any municipality
- Provides additional funding streams to accomplish city goals
  - Mitigates effects of hard financial times
  - Provides more stability through reliance on multiple revenue streams
- Similar to other cities in the nearby area
- Allows for an expanded tax base
- Income tax could appeal to residents who pay income tax to another locality



# Synthetic Modeling

- Synthetic control methods allows for the mathematical modeling of a characteristic of interest that is absent
  - Used to model the GDP of East Germany not been controlled by German Democratic Republic
- Synthetic control method takes a series of municipalities and uses characteristics of interests that can be observed in those municipalities over time
- Compares those trends to the same characteristics of interest over the same time period to the municipality
- This comparison and modeling allows the crafting of a best estimate of what the municipality that is attempting to be modeling would experience



# Synthetic Beavercreek

- Goal: creation of an estimate of net revenue collections had Beavercreek levied a municipal income taxation over the time period of the study (2013-2023)
- Characteristics of interest: unemployment rate, median income, average home price, education level, municipal net profits, and major employers.
- Revenue collected through municipal income taxation in synthetic Beavercreek would be sensitive to the set of municipalities that were used in the creation of the synthetic municipality



# Sources for Synthetic Modeling

- Data for Synthetic Modeling was sourced from:
  - Ohio tax reports
  - Beavercreek local budgets and annual financial reports
  - The US Census Bureau database
  - The local financial documents of neighboring Ohio municipalities, including cities and villages.
  
- The majority of the data examined in this white paper comes from the 10 years from 2014 to 2023. The one exception to this collection was the municipal net profits; municipal net profits data were collected from fiscal years 2016 to 2024, due to data availability.



# Groups Used in Creation of Synthetic Beavercreek

- Group A—Geographical Proximity to Beavercreek and Wright-Patterson
  - Fairborn, Huber Heights, Kettering, and Riverside
- Group B—Proximity to Glenn Research Center & Cleveland, OH
  - Brunswick, Cleveland Heights, Euclid, Lakewood, Lorain, Maple Heights, Mentor, Middleburg Heights, North Ridgeville, Parma, and Strongsville
- Group C—Proximity to John W. Bricker Federal Building & Columbus, OH
  - Dublin, Gahanna, Newark, Reynoldsburg, and Worthington



# Modeling Assumptions

- A pre- and post period were included in the modeling due to the presence of a change in municipal income tax withholdings enacted by the state of Ohio
  - Changed the timing of withholdings by employers
  - Pre-period 2013-2017, Post-period 2018-2023
- Municipal income tax rate for Beavercreek would be 1% over the entire time frame of the creation of the synthetic Beavercreeks
- Beavercreek, similar to many other municipalities would allow for a full credit of 100% of the 1% for municipal income taxation charged to residents who worked in other municipalities but resided in Beavercreek.
  - revenue capture from those individuals who travel to Beavercreek for purposes of employment but do not reside in the municipality.



# Goodness of Fit

- Methods of goodness of fit: visual inspection of the pre-period, root mean square predicted error (RMSPE)
- RMSPE also focuses on the prior period of the model
- RMSPE preferred as it provides a numeric value of the error of the prediction versus simply relying on visual inspection
  - Group A: 11.45%
  - Group B: 2.94%
  - Group C: 22.17%



# Revenue Estimate

- Based on the goodness of fit, the grouping with the smallest error is Group B
- Group B—Proximity to Glenn Research Center & Cleveland, OH
  - Brunswick, Cleveland Heights, Euclid, Lakewood, Lorain, Maple Heights, Mentor, Middleburg Heights, North Ridgeville, Parma, and Strongsville
- 2024 Estimate for Beavercreek levying at 1% rate: \$19,654,286.65
- Margin of Error (\$19,076,450.62, \$20,232,122.68)



# Comparison 2023 Revenue Collections

Municipality	Net Collections	Rate
Beavercreek	\$ 19,092,842.58	1%
Centerville	\$ 25,718,549.00	2.25%
Huber Heights	\$ 24,571,674.00	2%
Kettering	\$ 55,020,826.00	2.25%



# Conclusion

## 1. Revenue Diversification

- ❑ Revenue Diversification helps foster stability and a healthier economy

## 2. Pros and Cons

- ❑ Although income tax and property tax both have many pros and cons, having multiple revenue streams is more beneficial

## 3. Synthetic Modeling

- ❑ Beavercreek through the passage of a 1% municipal income tax could collect between \$19,076.450.62 and \$20,232,122.68 in revenue in 2024.



## Conclusion/Questions



**Dr. Sarah Larson**

Associate Professor of Political Science  
and CPMRA Research Fellow

Email: [larsonse@miamioh.edu](mailto:larsonse@miamioh.edu)

Phone: 513-529-0163

**M**

Please feel free to ask any questions!

# Thank You!



# References:

City of Beavercreek, Ohio. (2014). *Annual comprehensive financial report: For the years ended 2014*. <https://ohioauditor.gov/auditsearch/ReportsReleased.aspx>

City of Beavercreek, Ohio. (2015). *Annual comprehensive financial report: For the years ended 2015*. <https://ohioauditor.gov/auditsearch/ReportsReleased.aspx>

City of Beavercreek, Ohio. (2016). *Annual comprehensive financial report: For the years ended 2016*. <https://ohioauditor.gov/auditsearch/ReportsReleased.aspx>

City of Beavercreek, Ohio. (2017). *Annual comprehensive financial report: For the years ended 2017*. <https://ohioauditor.gov/auditsearch/ReportsReleased.aspx>

City of Beavercreek, Ohio. (2018). *Annual comprehensive financial report: For the years ended 2018*. <https://ohioauditor.gov/auditsearch/ReportsReleased.aspx>

City of Beavercreek, Ohio. (2019). *Annual comprehensive financial report: For the years ended 2019*. <https://ohioauditor.gov/auditsearch/ReportsReleased.aspx>

City of Beavercreek, Ohio. (2020). *Annual comprehensive financial report: For the years ended 2020*. <https://ohioauditor.gov/auditsearch/ReportsReleased.aspx>

City of Beavercreek, Ohio. (2021). *Annual comprehensive financial report: For the years ended 2021*. <https://ohioauditor.gov/auditsearch/ReportsReleased.aspx>

City of Beavercreek, Ohio. (2022). *Annual comprehensive financial report: For the years ended 2022*. <https://ohioauditor.gov/auditsearch/ReportsReleased.aspx>



# References:

City of Beavercreek, Ohio. (2023). *Annual comprehensive financial report: For the years ended 2023*. <https://ohioauditor.gov/auditsearch/ReportsReleased.aspx>

Dayton REALTORS. (n.d.). *Miami Valley housing data*. <https://daytonrealtors.org/housing-data/>

Greene County Treasurer. (2019). *Tax sheet: County and local tax levies and rates of taxation for 2019*. <https://www.greenecountyohio.gov/385/Tax-Rates>

Greene County Treasurer. (2020). *Tax sheet: County and local tax levies and rates of taxation for 2020*. <https://www.greenecountyohio.gov/385/Tax-Rates>

Greene County Treasurer. (2021). *Tax sheet: County and local tax levies and rates of taxation for 2021*. <https://www.greenecountyohio.gov/385/Tax-Rates>

Greene County Treasurer. (2022). *Tax sheet: County and local tax levies and rates of taxation for 2022*. <https://www.greenecountyohio.gov/385/Tax-Rates>

Greene County Treasurer. (2023). *Tax sheet: County and local tax levies and rates of taxation for 2023*. <https://www.greenecountyohio.gov/385/Tax-Rates>

Ohio Department of Taxation. (2017). *Tax data series: LG-1: State and county local government funds* (Calendar Year 2017). <https://tax.ohio.gov/researcher/tax-analysis/tax-data-series/tds1>



# References:

Ohio Department of Taxation. (2018). *Tax data series: LG-1: State and county local government funds* (Calendar Year 2018). <https://tax.ohio.gov/researcher/tax-analysis/tax-data-series/tds1>

Ohio Department of Taxation. (2019). *Tax data series: LG-1: State and county local government funds* (Calendar Year 2019). <https://tax.ohio.gov/researcher/tax-analysis/tax-data-series/tds1>

Ohio Department of Taxation. (2020). *Tax data series: LG-1: State and county local government funds* (Calendar Year 2020). <https://tax.ohio.gov/researcher/tax-analysis/tax-data-series/tds1>

Ohio Department of Taxation. (2020). *Tax data series: LG-1: Municipal net profit tax* (Calendar Year 2020). <https://tax.ohio.gov/researcher/tax-analysis/tax-data-series/tds1>

Ohio Department of Taxation. (2021). *Tax data series: LG-1: State and county local government funds* (Calendar Year 2021). <https://tax.ohio.gov/researcher/tax-analysis/tax-data-series/tds1>

Ohio Department of Taxation. (2021). *Tax data series: LG-1: Municipal net profit tax* (Calendar Year 2025). <https://tax.ohio.gov/researcher/tax-analysis/tax-data-series/tds1>



# References:

Ohio Department of Taxation. (2022). *Tax data series: LG-1: State and county local government funds* (Calendar Year 2022). <https://tax.ohio.gov/researcher/tax-analysis/tax-data-series/tds1>

Ohio Department of Taxation. (2022). *Tax data series: LG-1: Municipal net profit tax* (Calendar Year 2025). <https://tax.ohio.gov/researcher/tax-analysis/tax-data-series/tds1>

Ohio Department of Taxation. (2023). *Tax data series: LG-11: Municipal income tax – Tax rates and amounts collected, by municipality* (Calendar Year 2023).  
<https://tax.ohio.gov/researcher/tax-analysis/tax-data-series/tds1>

Ohio Department of Taxation. (2023). *Tax data series: LG-1: Municipal net profit tax* (Calendar Year 2025). <https://tax.ohio.gov/researcher/tax-analysis/tax-data-series/tds1>

Ohio Department of Taxation. (2024). *Tax data series: LG-1: Municipal net profit tax* (Calendar Year 2025). <https://tax.ohio.gov/researcher/tax-analysis/tax-data-series/tds1>

Ohio Department of Taxation. (2025). *Tax data series: LG-1: Municipal net profit tax* (Calendar Year 2025). <https://tax.ohio.gov/researcher/tax-analysis/tax-data-series/tds1>

OnTheMap Application and LEHD Origin-Destination Employment Statistics. (2024, October 22). (Code Revision: d7e653d6dda5dbfeaebf0121d6547c7bdf6e3686). [Data set]. US

Census Bureau. <https://onthemap.ces.census.gov/>.



# References:

The City of Columbus. (n.d.). *Ohio municipalities income tax rate table*. <https://www.columbus.gov/Government/City-Auditor/Income-Tax-Division/Tax-Municipalities>

U.S. Bureau of Labor Statistics. (n.d.). *CPI inflation calculator*. U.S. Bureau of Labor

Statistics. [https://www.bls.gov/data/inflation\\_calculator.htm](https://www.bls.gov/data/inflation_calculator.htm)

U.S. Census Bureau. (n.d.). *Median income in the past 12 months (in 2016 inflation-adjusted dollars)* [Table S1903]. American Community Survey, ACS 5-Year Estimates Subject Tables. <https://data.census.gov/table/ACSST5Y2016.S1903>

U.S. Census Bureau. (n.d.). *OnTheMap application and LEHD origin-destination employment statistics (Beginning of quarter employment, 2nd quarter of 2002–2022)*.  
<https://onthemap.ces.census.gov/>

U.S. Census Bureau. (n.d.). *Selected characteristics of the total and native populations in the United States* [Table S0601]. American Community Survey, ACS 5-Year Estimates Subject Tables. <https://data.census.gov/table/ACSST5Y2021.S0601>



# References:

U.S. Census Bureau, U.S. Department of Commerce. (n.d.). *Selected economic characteristics* [Table DP03]. American Community Survey, ACS 5-Year Estimates Data Profiles.

<https://data.census.gov/table/ACSDP5Y2023.DP03>

U.S. Census Bureau, U.S. Department of Commerce. (n.d.). *Selected housing characteristics* [Table DP04]. American Community Survey, ACS 5-Year Estimates Data Profiles.

<https://data.census.gov/table/ACSDP5Y2023.DP04>

US Inflation Calculator. (2025, August 12). *Inflation Calculator | Find the US dollar's value from 1913-2025*. US Inflation Calculator | Easily Calculate How the Buying Power of the

U.S. Dollar Has Changed From 1913 to 2023. Get Inflation Rates and U.S. Inflation News. <https://www.usinflationcalculator.com/>

