

SMITHFIELD & WAINWRIGHT
THE STANDARD IN VALUATION®

SPECIAL STUDY:

“Identifying overvaluation in the U.S. housing market: The relationship between the sales comparison approach and the income and cost approaches from 1991-2014”

About Smithfield & Wainwright

Smithfield & Wainwright is a leading innovator in real estate valuation and is transforming the way the market values real estate through independent and unbiased measures. We provide vital information about residential properties through our secure website enabling regulators, government entities and financial institutions to better value, understand, and monitor residential property portfolios. We are presenting this study to highlight the risks that still exist in the housing market, and break it down to a state-by-state level.

Working to find a better way for the market to value residential real estate, we developed RAM™ - a risk management solution that enables financial institutions to understand the true value of their real estate portfolios and better identify systemic risk. RAM™ electronically provides, online and in real time, accurate collateral values underlying mortgages by uniquely incorporating all three approaches to value — sales, cost and income. Through our strategic partnerships with leading data providers, we are able to provide detailed characteristics and valuations for more than 110 million homes in the United States.

This study has two main objectives: First, demonstrate the dramatic change that took place in the relationship between the sales comparison approach and the income and cost approaches in the decade leading up to the housing crash in 2008. Second, show the need for the U.S. housing market to develop proper checks and balances in an effort to reduce the reliance on, and the consequences of, the unilateral use of the sales comparable approach to value residential properties.

During the boom in the U.S. real estate market from 2001 to 2006, sound valuation practices became the exception rather than the rule. Financial institutions and investors were caught up in a classic bubble frenzy. By focusing exclusively on rising real estate prices, they largely failed to question the intrinsic value of the real estate-linked assets in which they had a massive investment. Perpetually increasing and non-sustainable real estate prices ultimately imploded, contributing to the near-collapse of the nation's financial system in 2008.

Leading up to the financial crisis in 2008, the housing environment was characterized by:

- Strong economic growth
- Low interest rates
- Abundance of credit
- Lowered credit standards
- Highly liquid Mortgage Backed Security activity
- Historic refinance activity

These factors were major contributors in creating an over-heated housing market where home prices rose at a rate far greater than historical levels and thus led to a dramatic overvaluation of home prices. We have termed this overvaluation “False Equity.” False Equity occurs when the difference between the sales comparison approach value, and the income and cost approach values, exceeds their long run average. In the attached analysis, we present data using three approaches to home valuation - the sales index (sales approach), the rent index (income approach) and the cost index (cost approach). All three indexes are benchmarked to a value of 100 in 1991:Q1. It is easy to calculate the real percentage change in the housing valuation with these indexes. For example, a rise of in an index of 10 from 100 to 110 indicates that the real price of the index rose by 10%.

On the national level, the housing bubble becomes clearly visible when we examine the sales comparison index to the cost and income indexes. The sales index rose from 113.66 in 2000:Q4 to 154.77 in 2006:Q4, showing a real price increase of 36%. Over the same period, the rent index and cost index rose by 5% and 16%, respectively. Our data also affirms that this effect was evident at the state level, which can be found on the attached charts. There are lingering effects of the financial crisis on today’s home prices where the build-up of false equity is on the rise again. In addition, certain states hit hard by the crisis have seen home values deteriorate significantly - where the cost approach value now exceeds the sales approach value. This unresolved market dichotomy creates complex challenges that will make finding solutions for the market as a whole, difficult for Congressional leaders, regulators, the GSE’s and lenders alike.

Study Highlights:

Overall, there are 14 states and the District of Columbia where the sales index exceeds both the cost and income indexes by more than 10% and 8 states where the sales index is at least 10% lower than the cost index.

States (and District of Columbia) with the largest positive spread between the sales index and the cost and income indexes:	States with the largest negative spread between the sales index and the cost index:
District of Columbia: +116%	Ohio: -20.5%
Montana: +60%	Indiana: -19%
Wyoming: +53%	Nevada: -15%
Oregon: +52%	Illinois: -13.5%
Utah: +40%	Michigan: -14.7%

The most significant cause of continued instability of the real estate market is the industry's ongoing struggle to solve its valuation challenge. The true value of the real estate that fueled the bubble remains largely unknown, because the financial system and the U.S. government have lacked the tools to satisfactorily provide creditable valuation estimates. Without this fundamental capability, policy makers and business leaders have been severely handicapped in their ability to apply effective, sustainable remedies.

Before we undertook this study, we asked ourselves a simple question - “If we could identify overvaluation as it was occurring, could we stop it?” Our answer is to this question a resounding “Yes.” To do so however, will require fundamental changes in perspective, tools, and processes by all market participants and we must start by creating the tools necessary to provide cost and income approach values as a check and balance to the sales approach value.

Data Sources

The analysis uses three alternative inflation-adjusted measures to the valuation of single family homes for the period of 1991 to 2014.¹ First, the house price index shows the Federal Housing Finance Agency Purchase Only house price index.² The house price index is a repeat-sales index which measures average price changes in repeat sales on the same properties. Second, the rent index is the Housing and Urban Development Fair Market Rent for a three bedroom housing unit.³ This rent represents the 40th/50th percentile of rents in an area.⁴ The annual index values were converted into quarterly values using interpolation. Third, the housing cost index is the Marshall and Swift replacement cost index for a frame home.⁵ The annual index values were also converted into quarterly values using interpolation.

¹ All three measures are deflated using the Consumer Price Index for all items less shelter (series ID CUUR0000SA0L2). This series is available on the BLS website: <http://data.bls.gov/cgi-bin/srgate>

² The house price index is available at <http://www.fhfa.gov/DataTools/Downloads/Pages/House-Price-Index.aspx>.

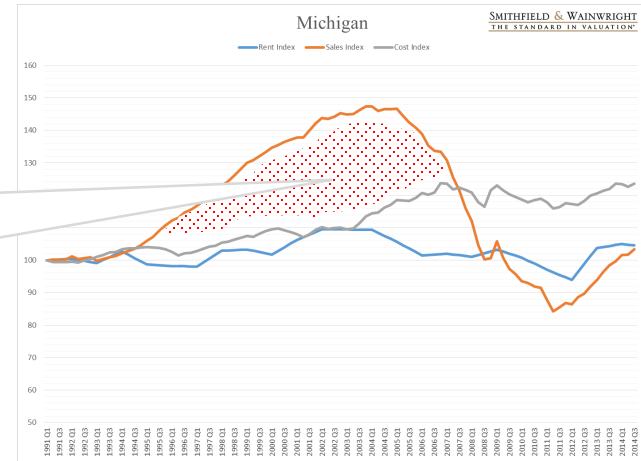
³ The Fair Market Rent data is available at: <http://www.huduser.org/portal/datasets/fmr.html>. The state indexes were calculated by taking a population weighted average of the substate areas.

⁴ Starting in 2001 some metropolitan areas rent were measured at the 50th rather than 40th percentile. The number of areas varied over time at the 50th percentile: 2001-2005 (39); 2006 (24); 2007-2008 (28); 2009 (14); 2010 (17); and 2011-2015 (18).

⁵ The U.S. cost index is a population-weighted average of the Eastern, Central, and West districts.

How to interpret the graphs contained in the analysis

False Equity occurs when the difference between the sales comparison approach value and income and cost approach values exceeds its long run average



Deteriorated market conditions occur when the cost approach value exceeds the sales approach value

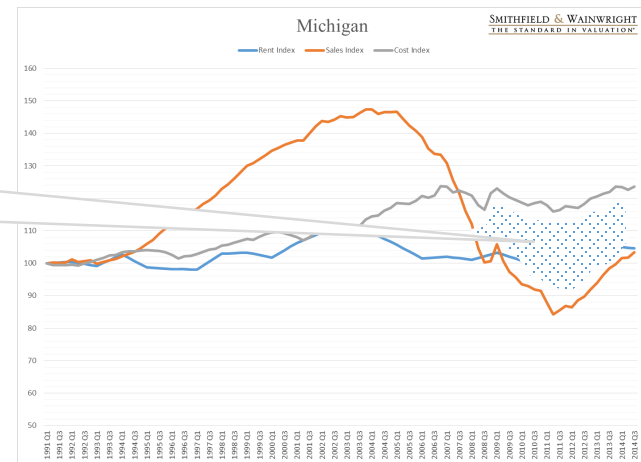


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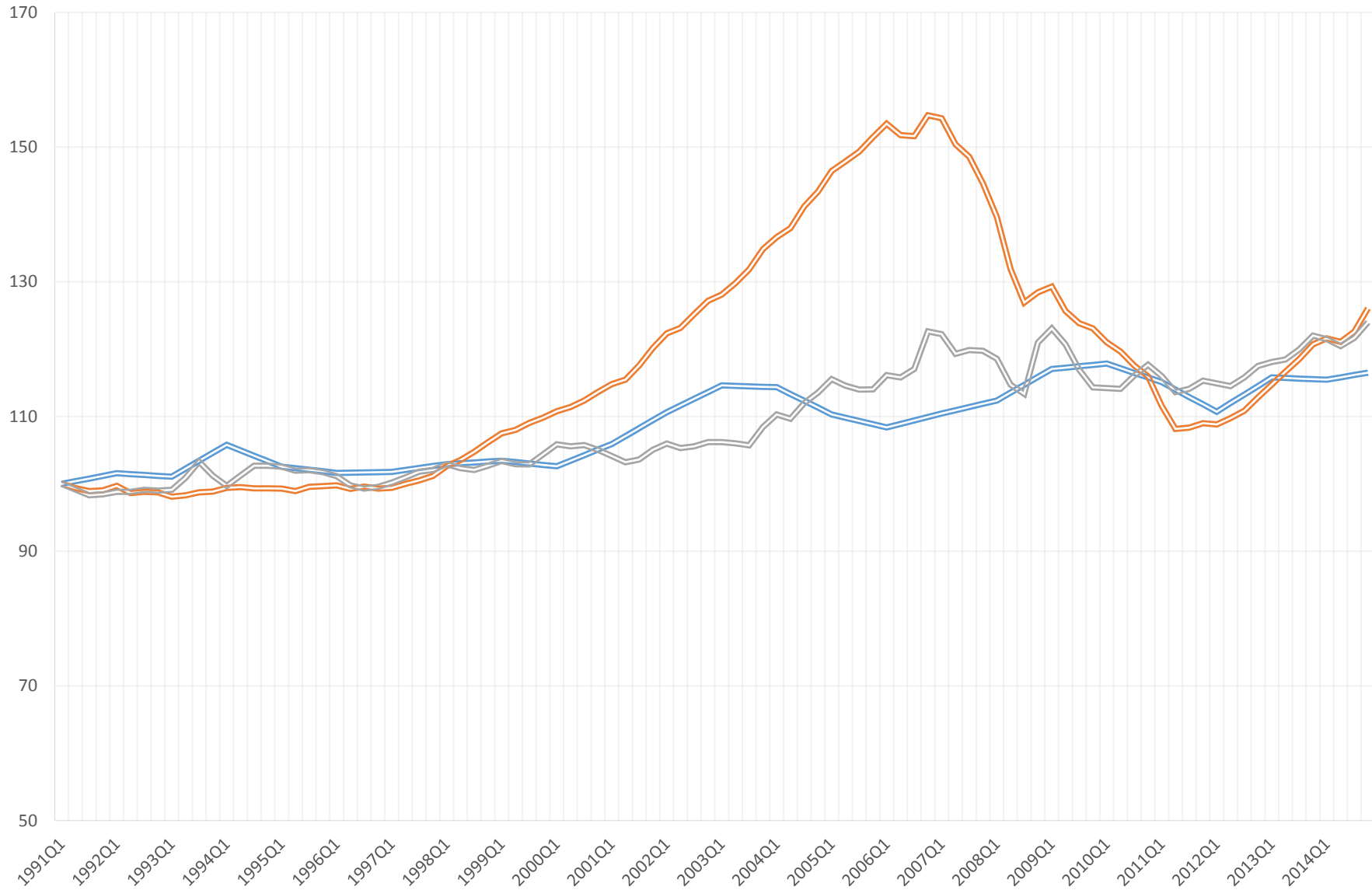
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NATIONAL

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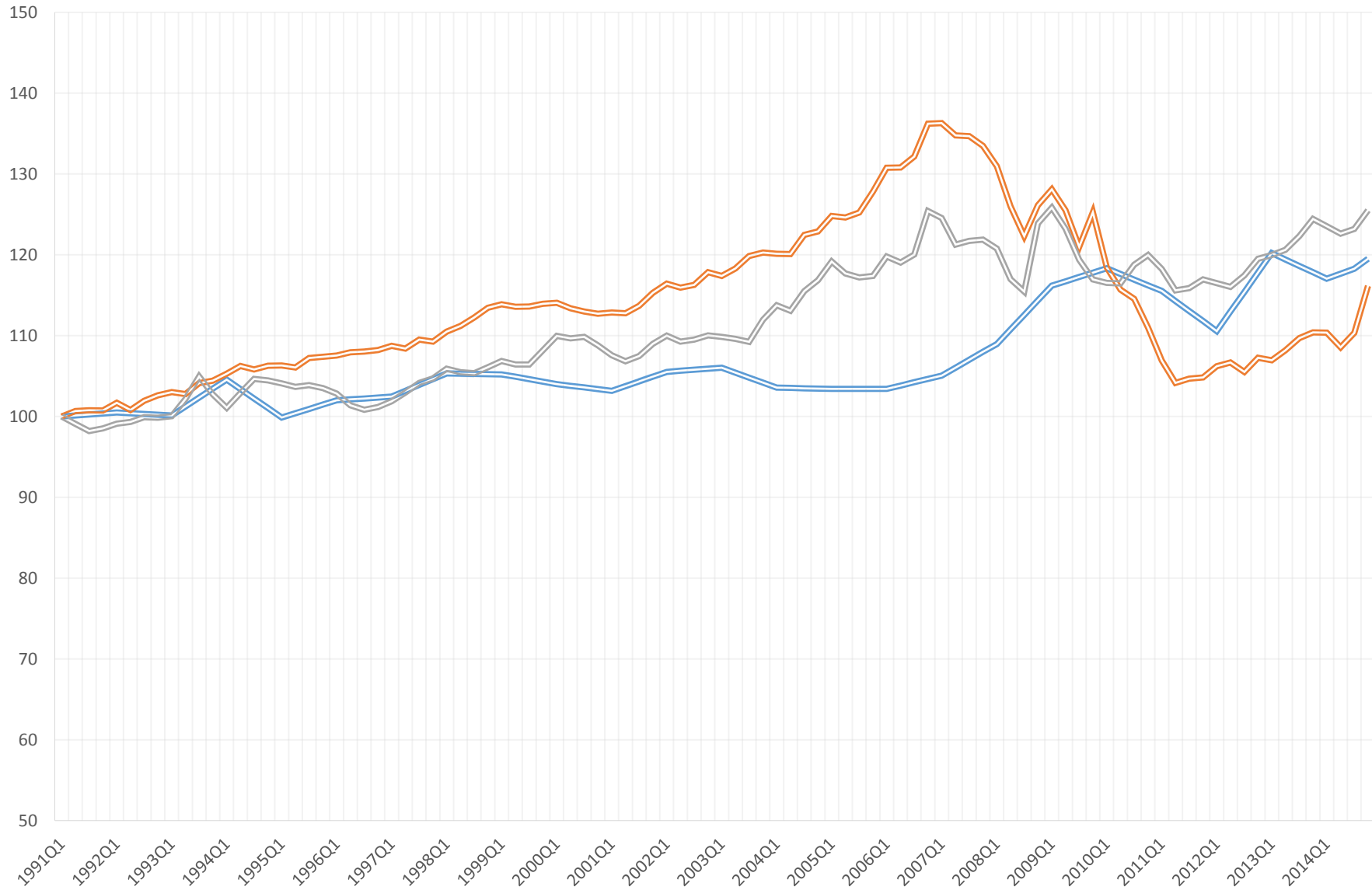
Rent Index Sales index Cost Index



ALABAMA

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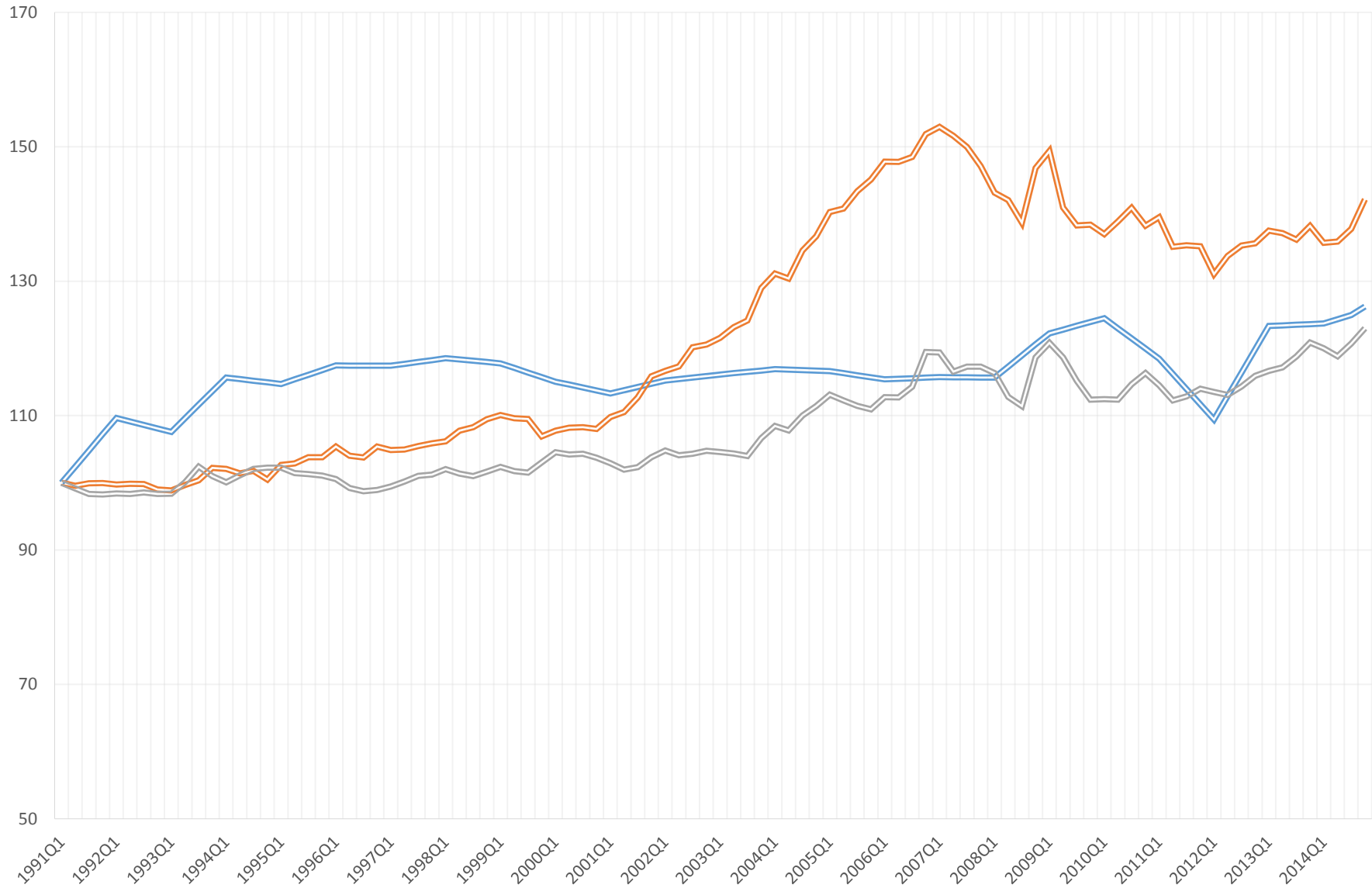
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ALASKA

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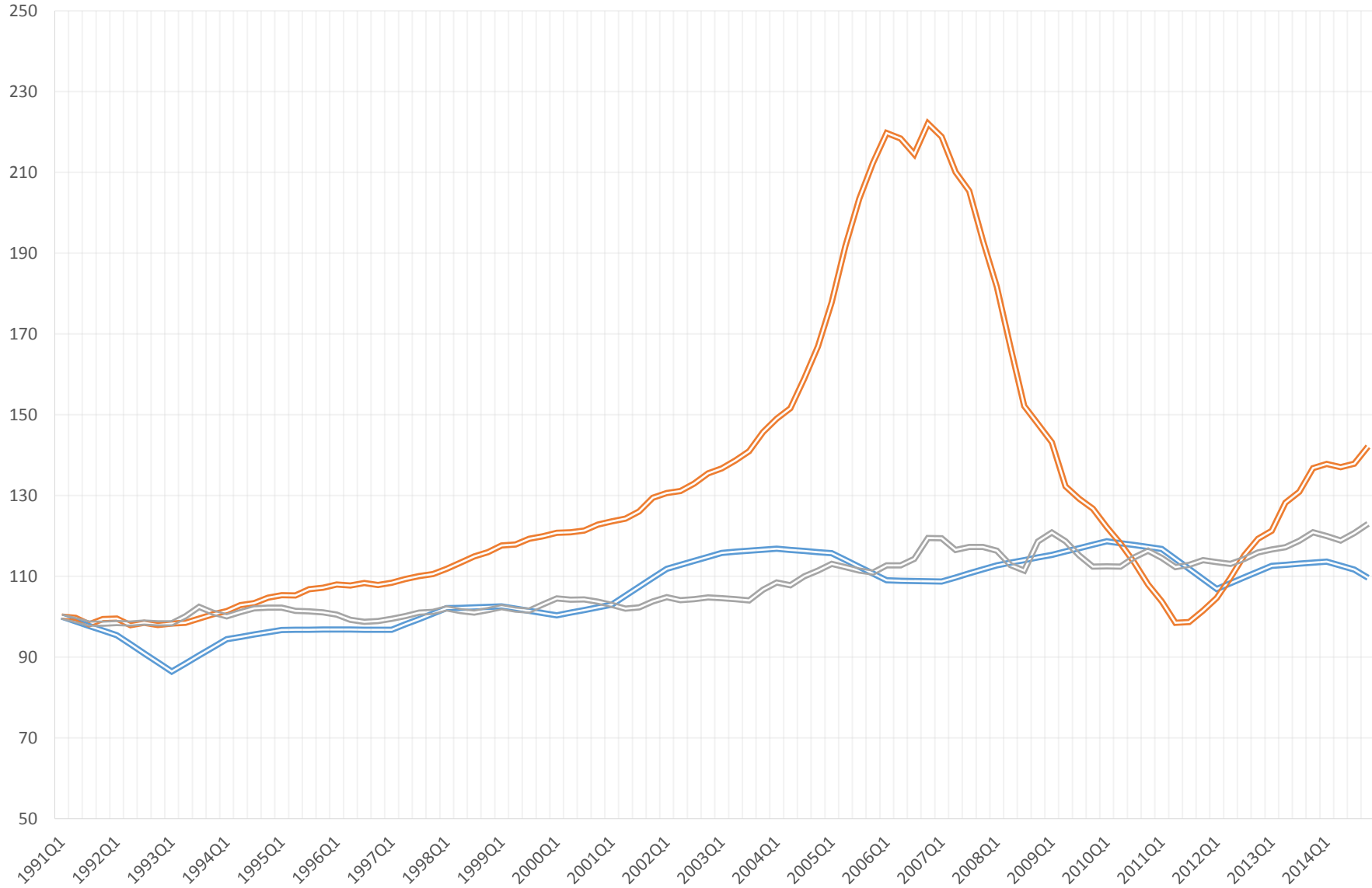
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ARIZONA

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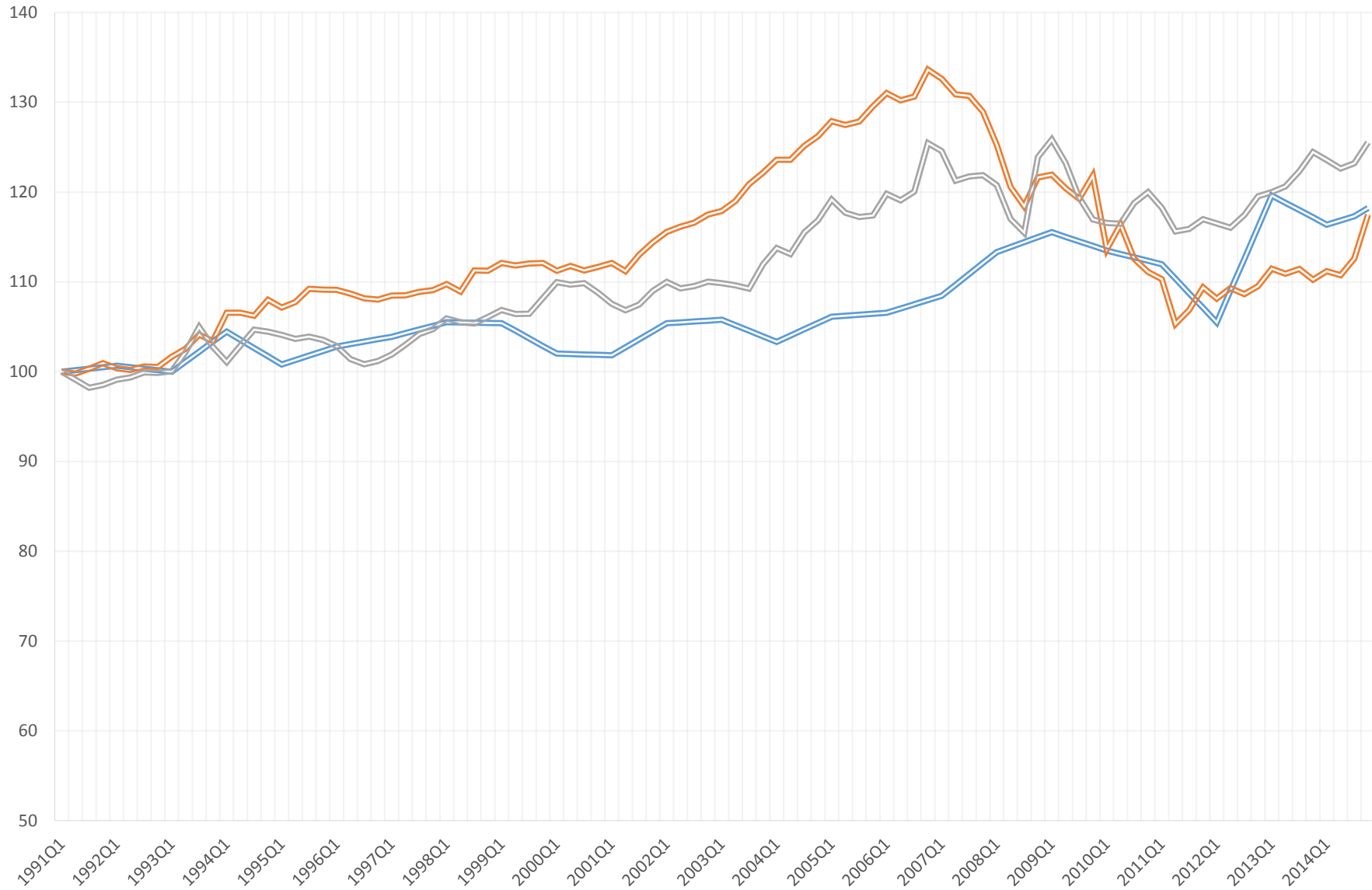
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ARKANSAS

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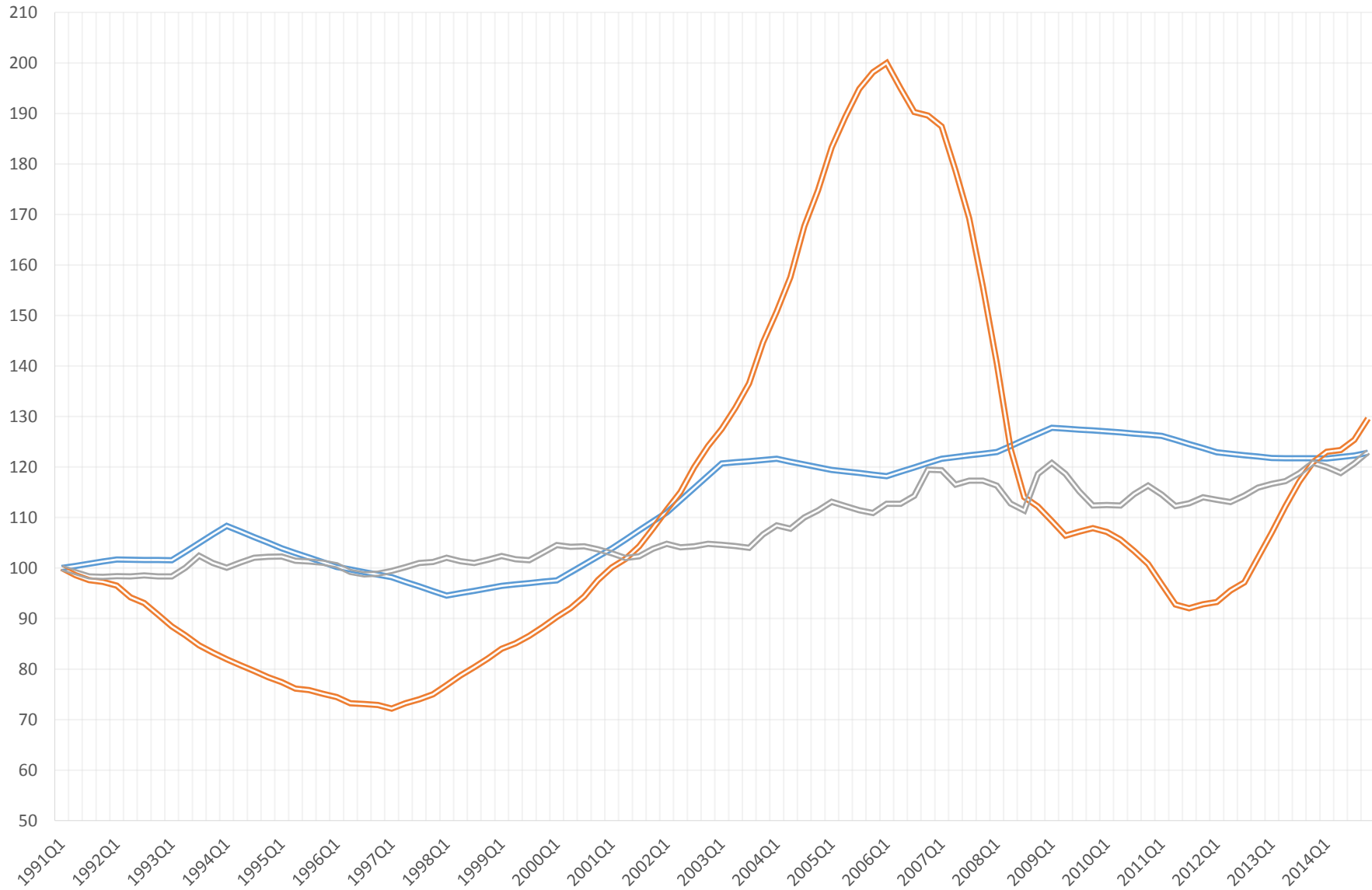
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CALIFORNIA

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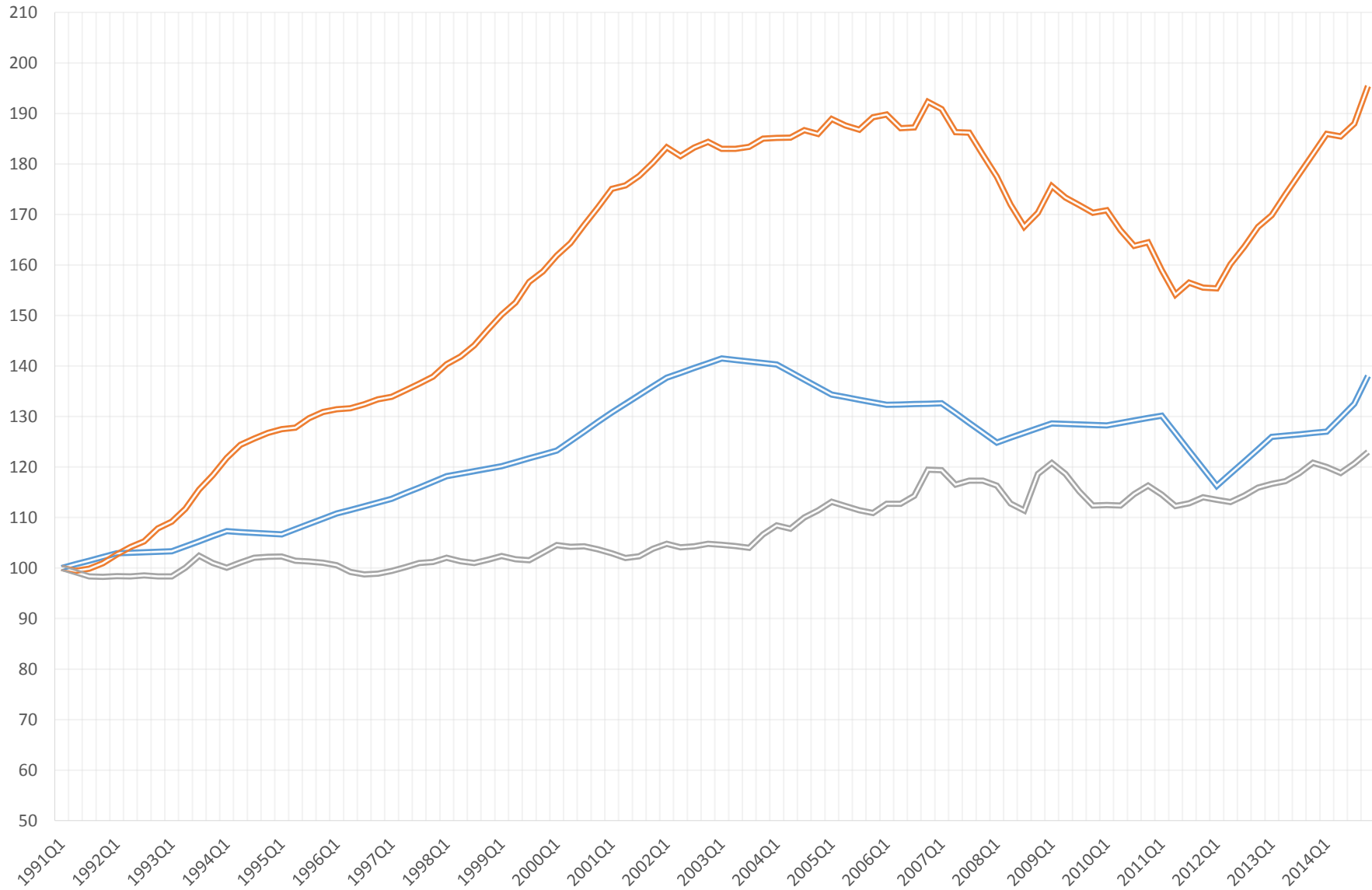
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COLORADO

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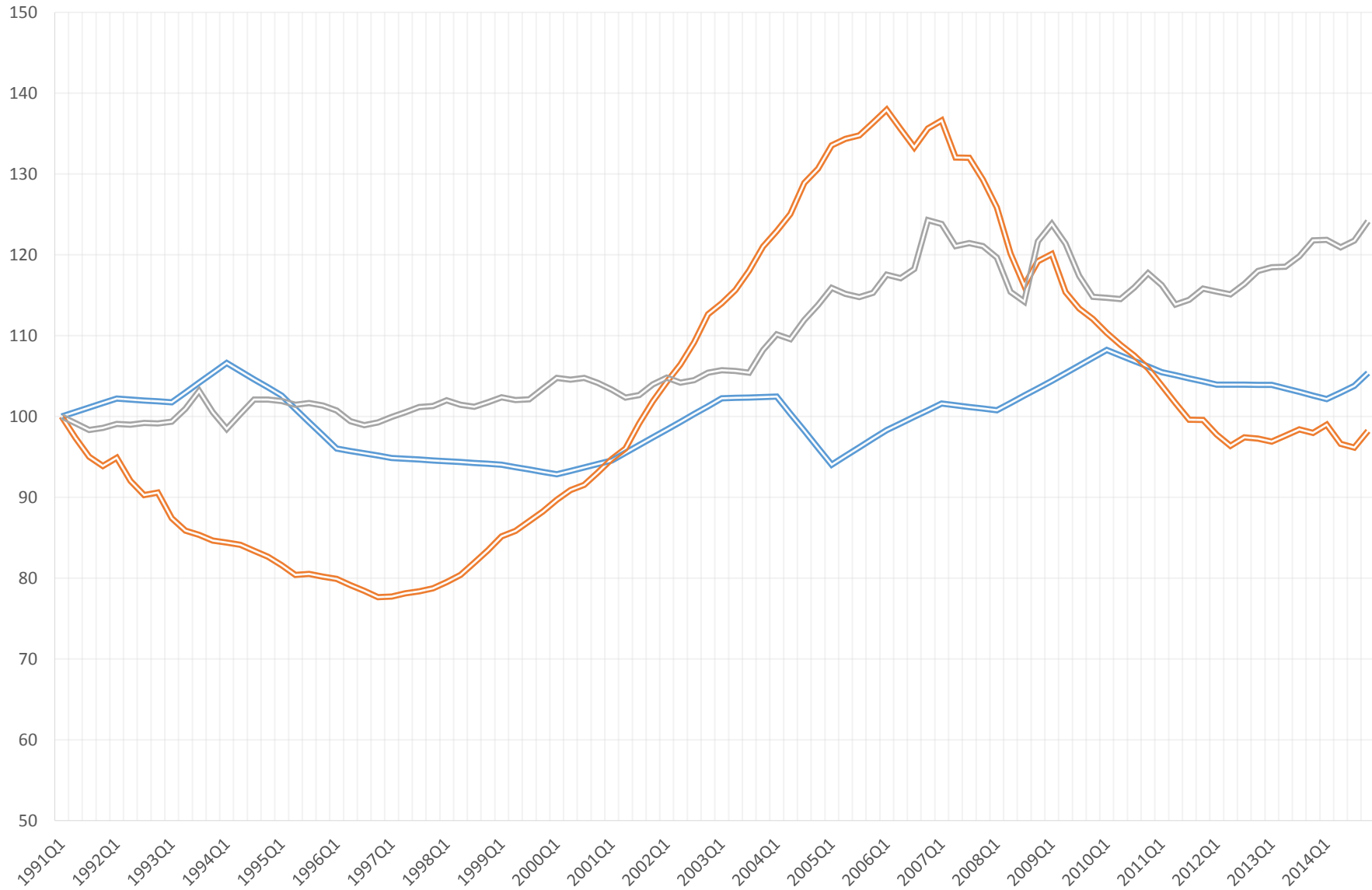
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CONNECTICUT

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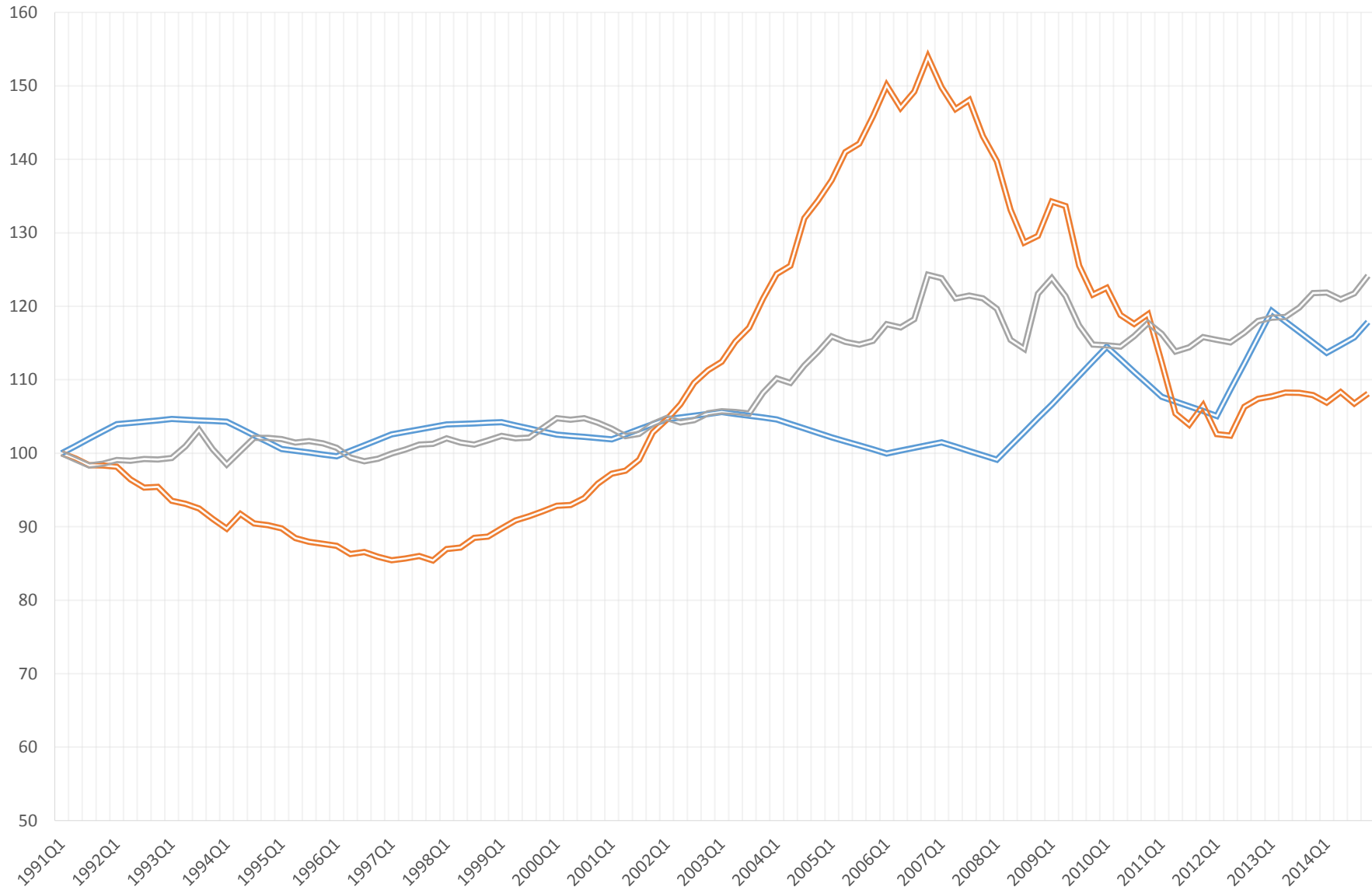
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DELAWARE

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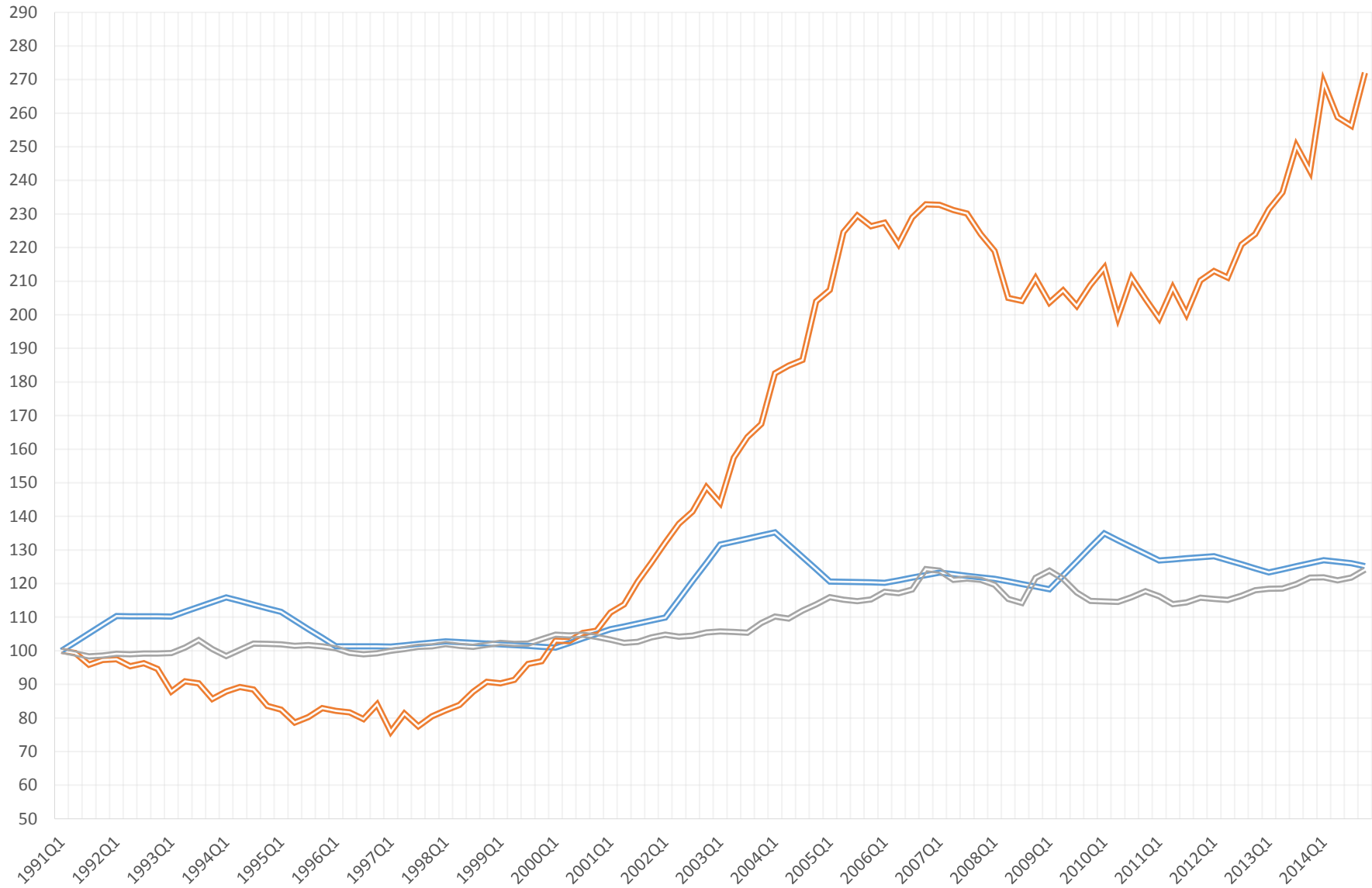
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D.C.

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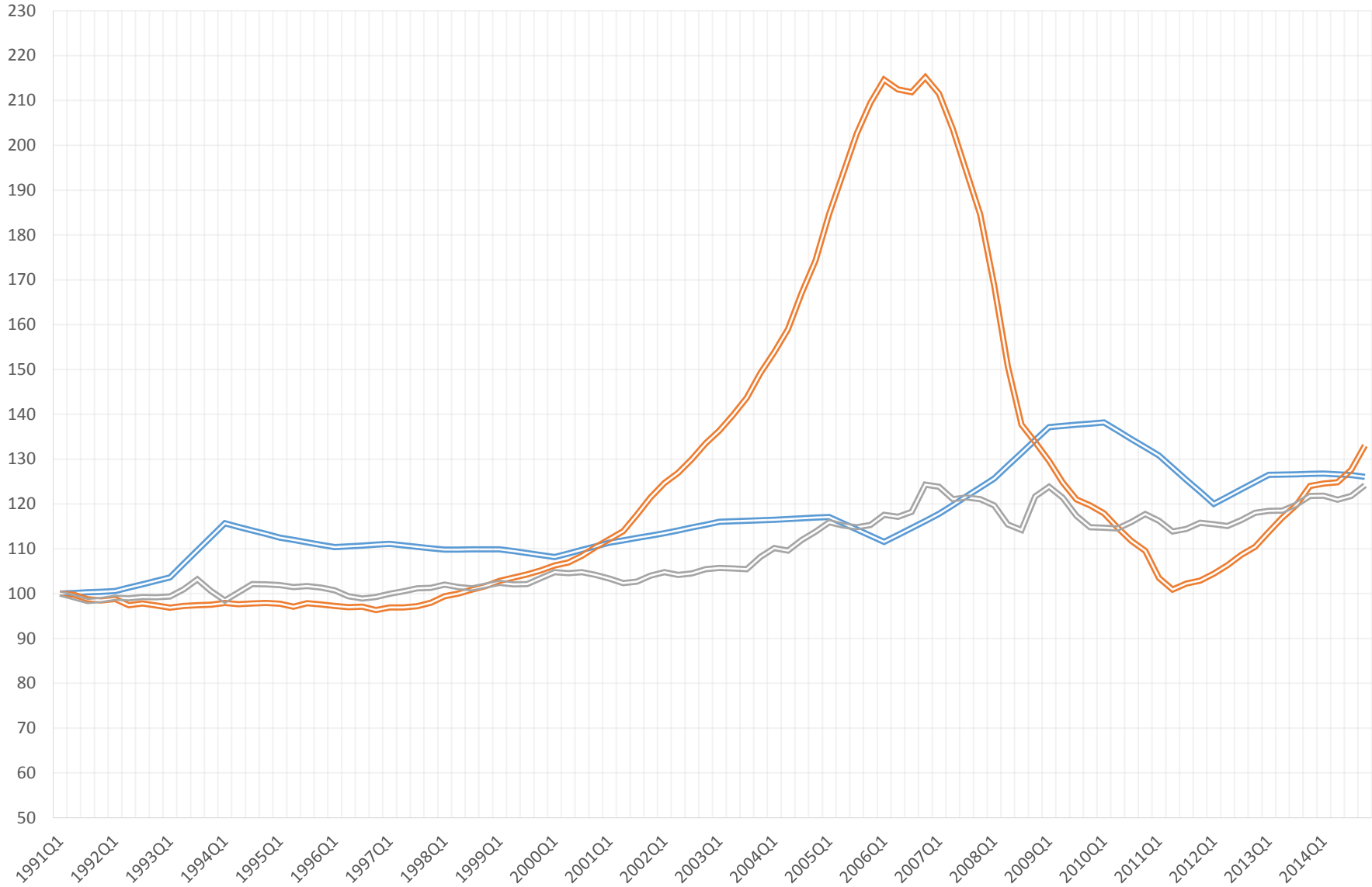
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FLORIDA

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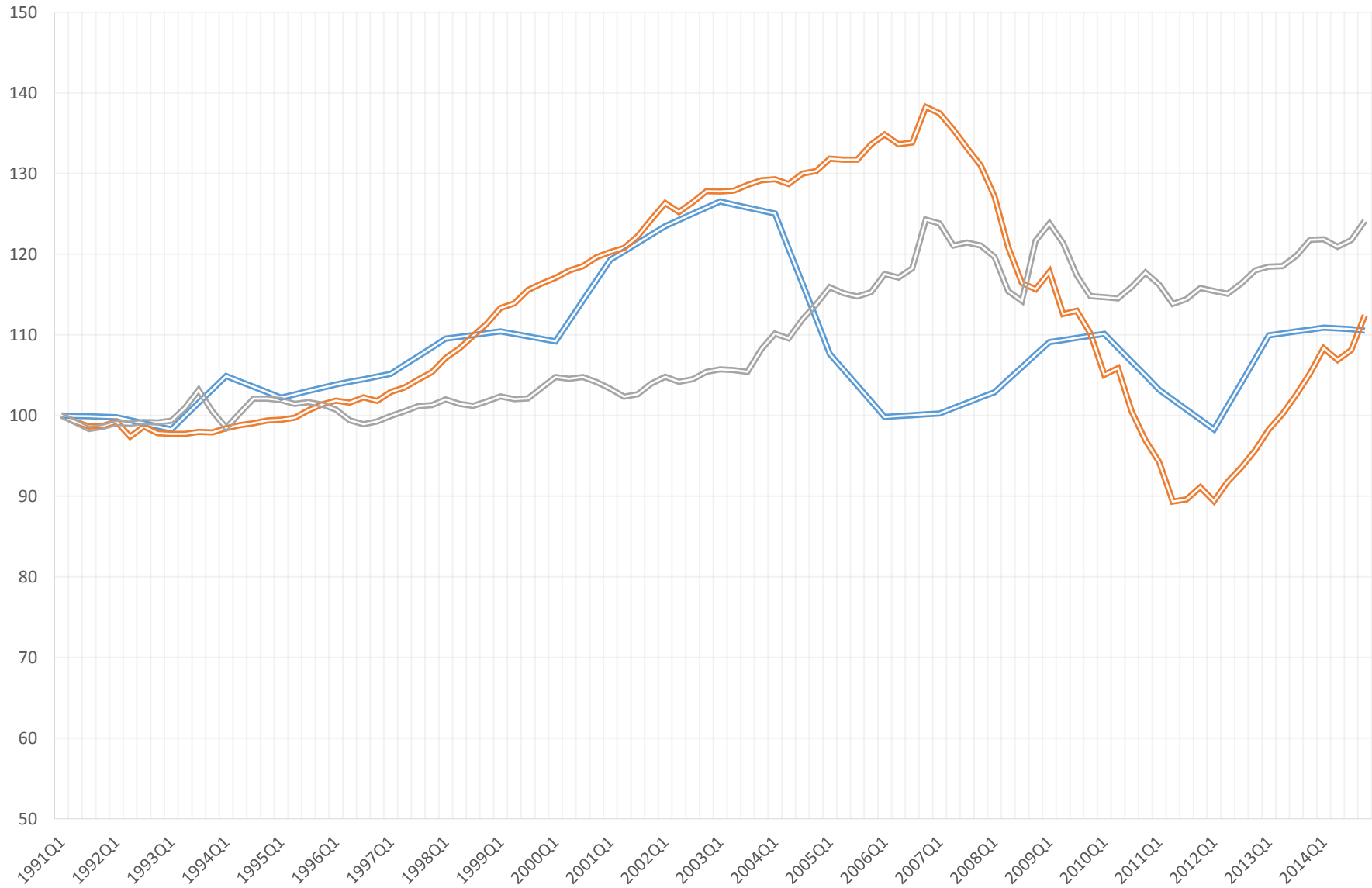
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GEORGIA

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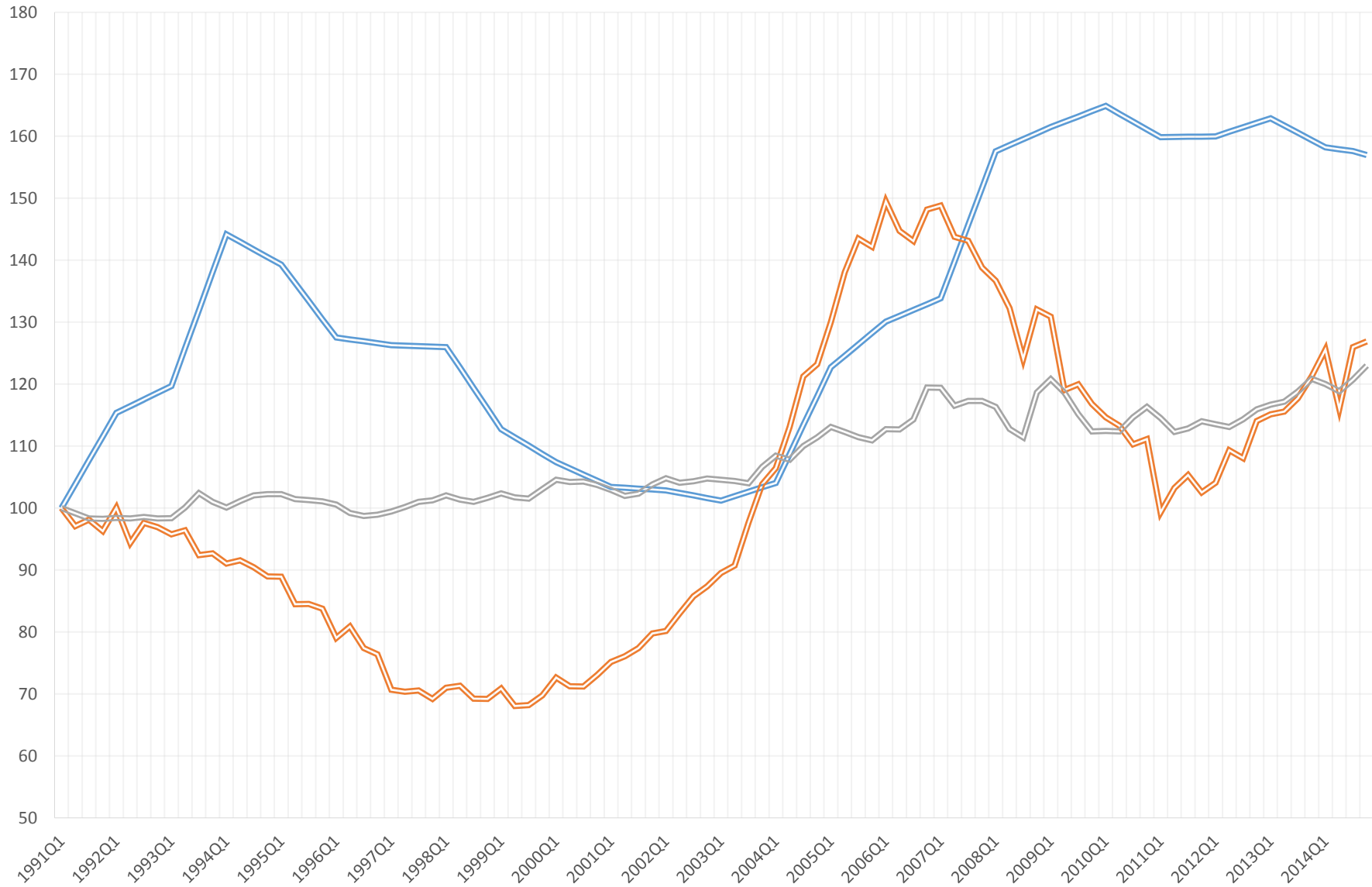
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HAWAII

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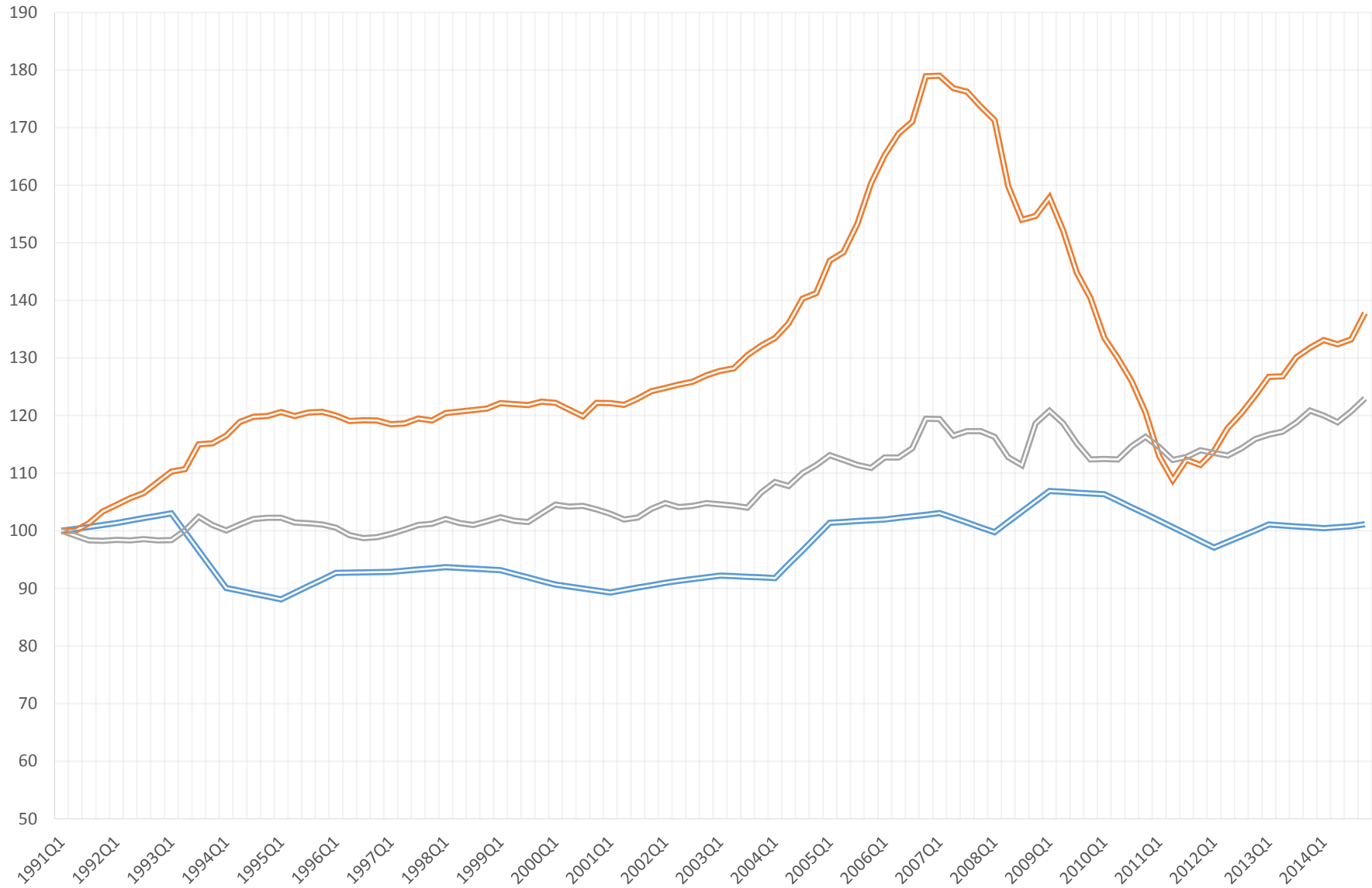
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IDAHO

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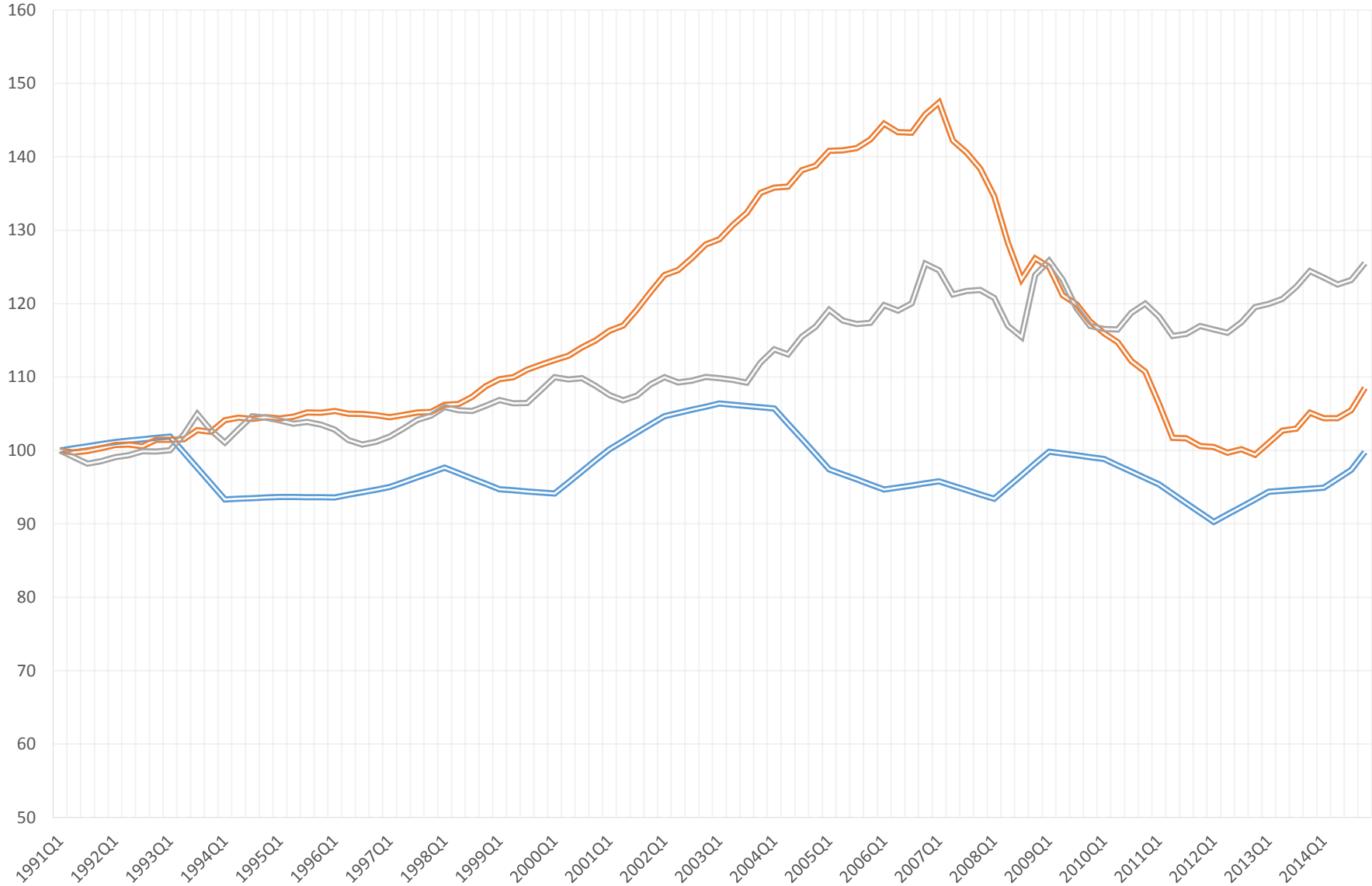
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ILLINOIS

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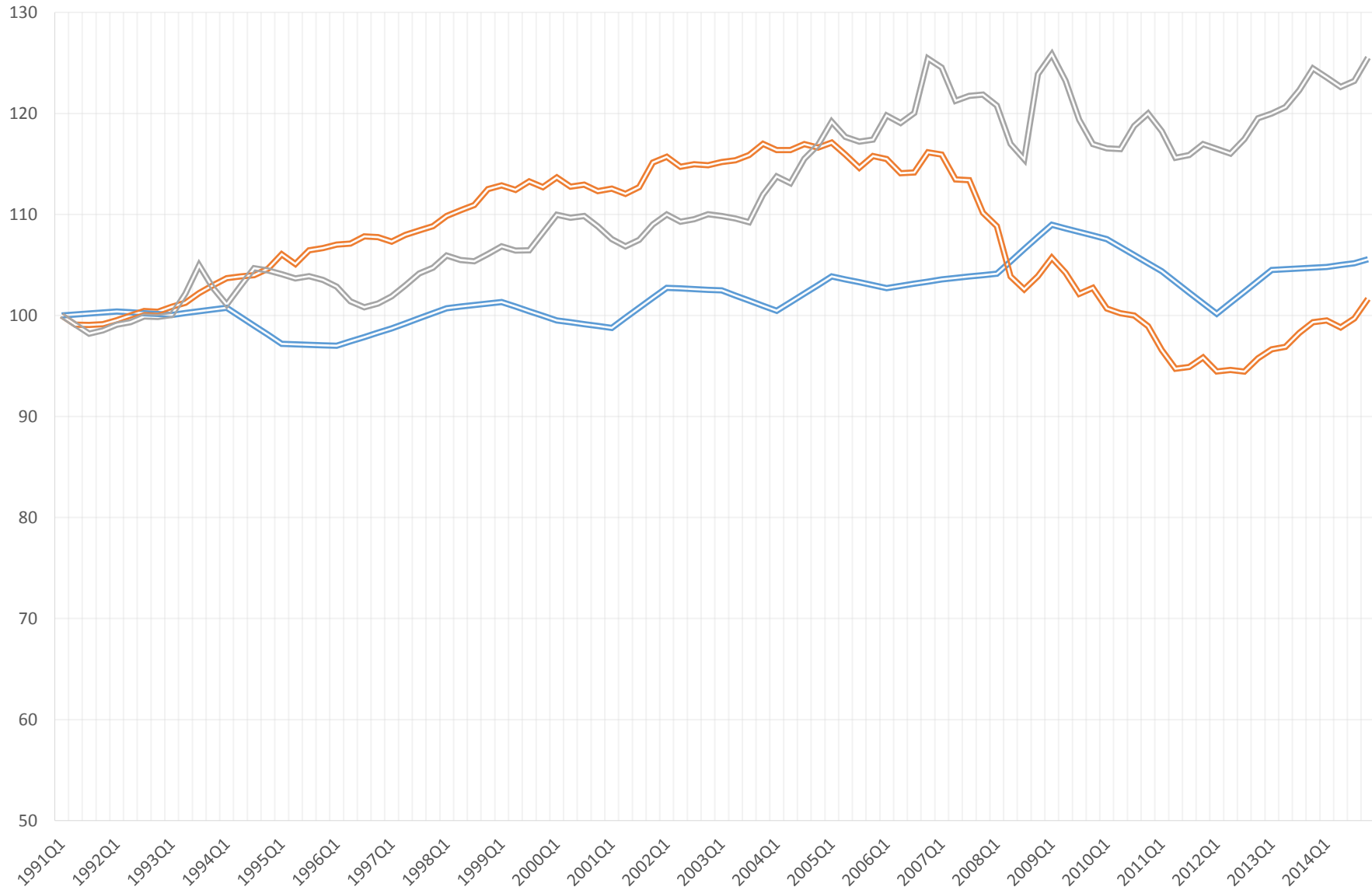
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INDIANA

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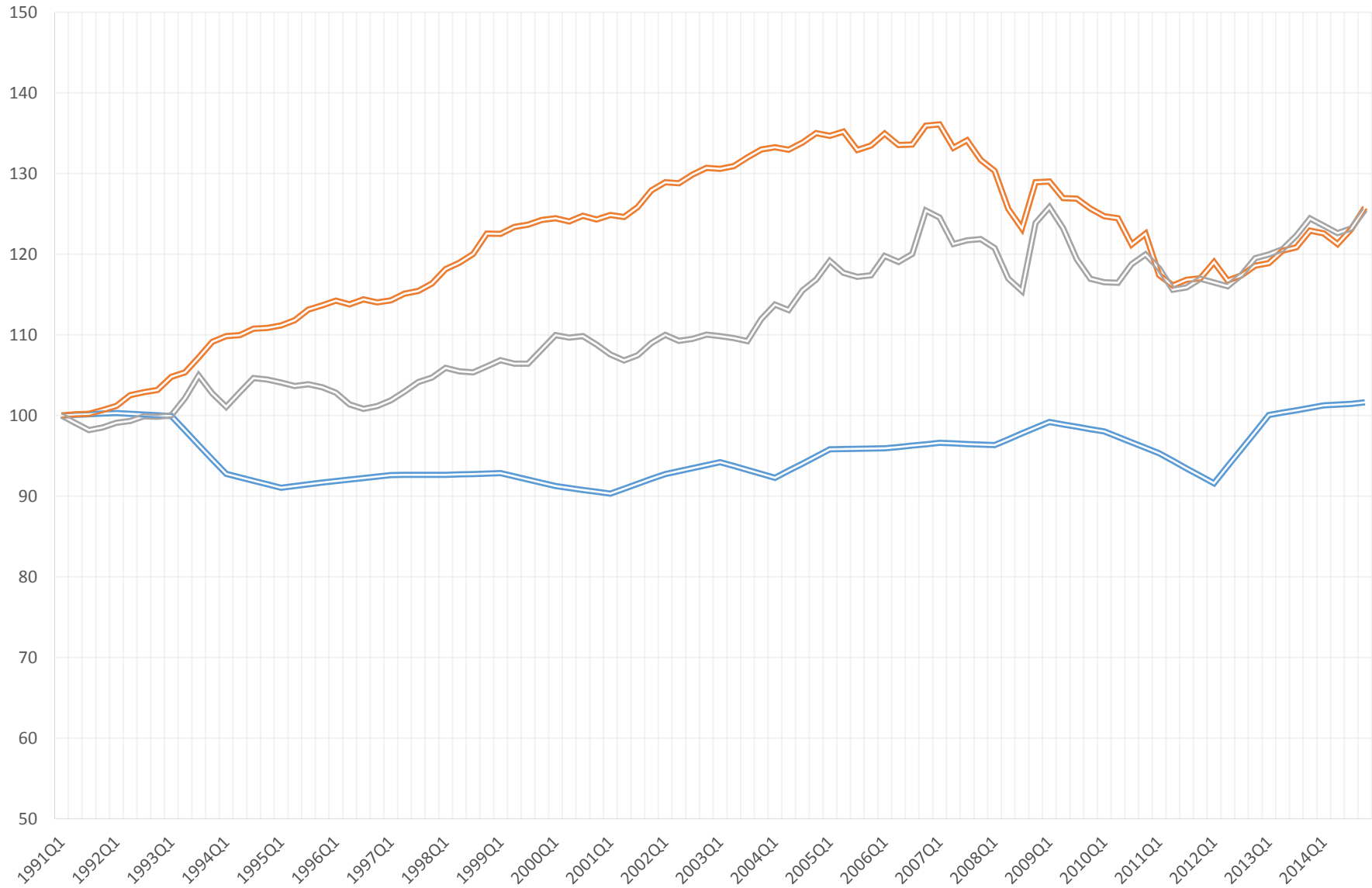
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IOWA

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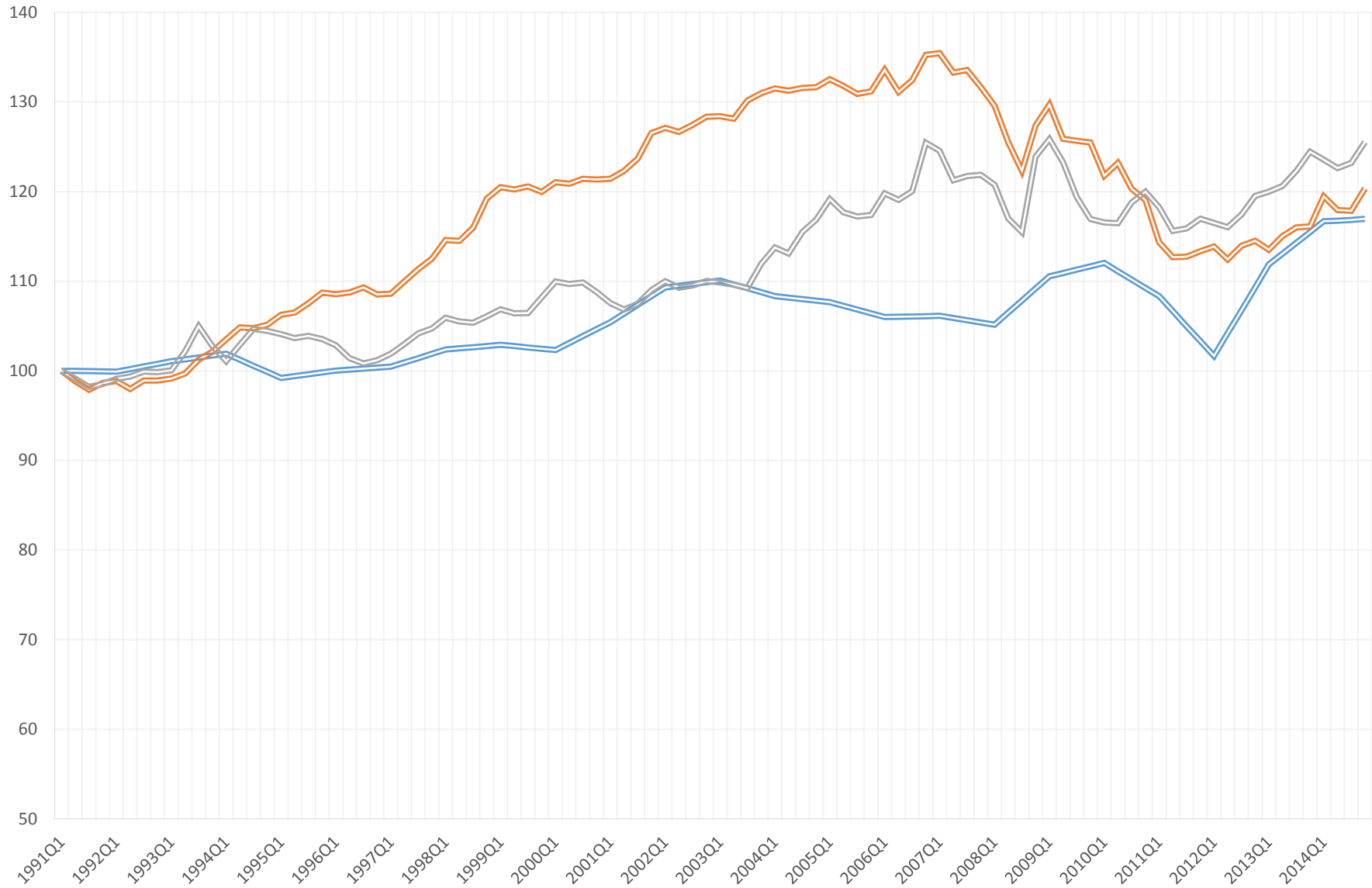
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KANSAS

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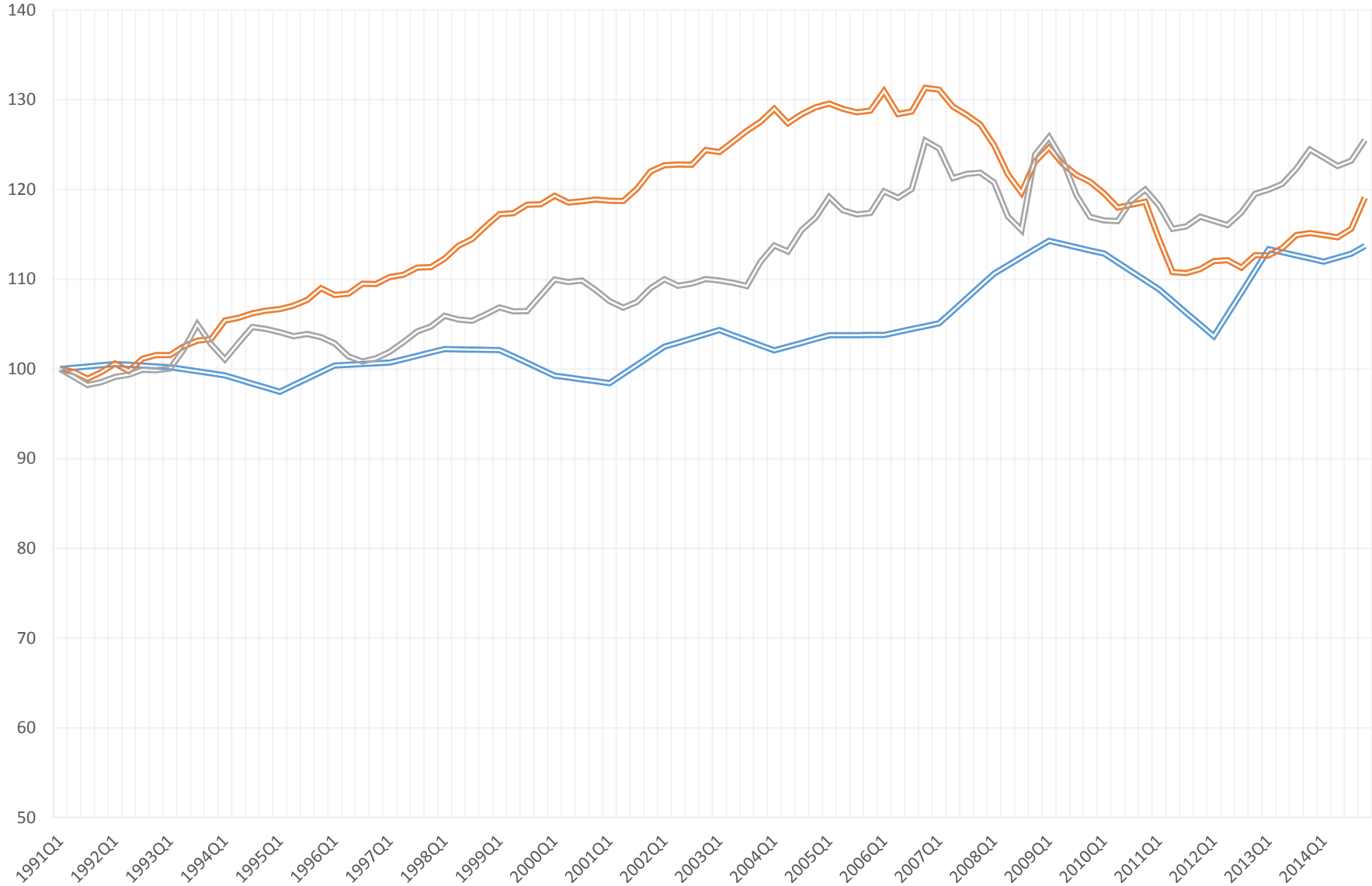
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KENTUCKY

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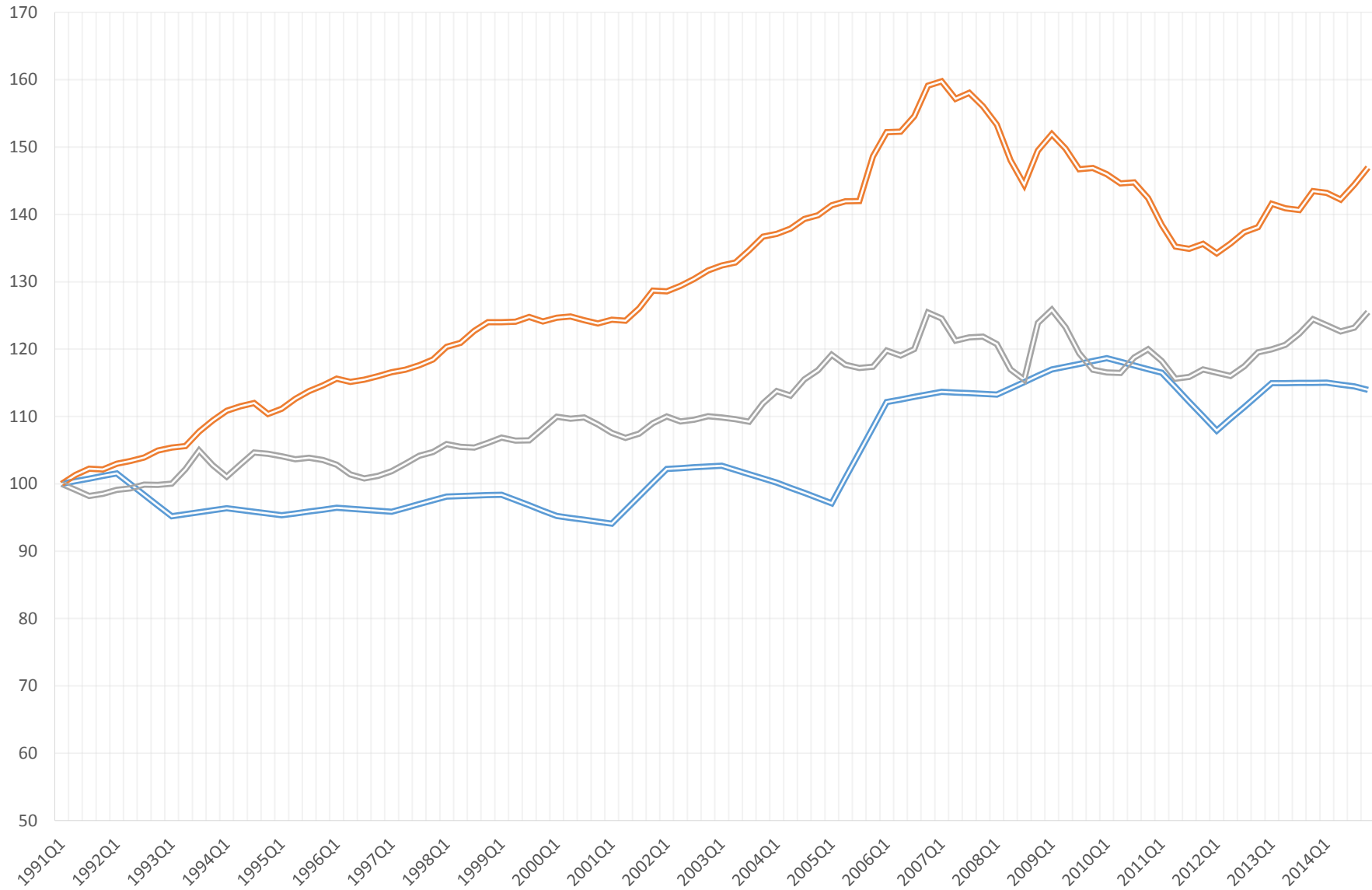
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LOUISIANA

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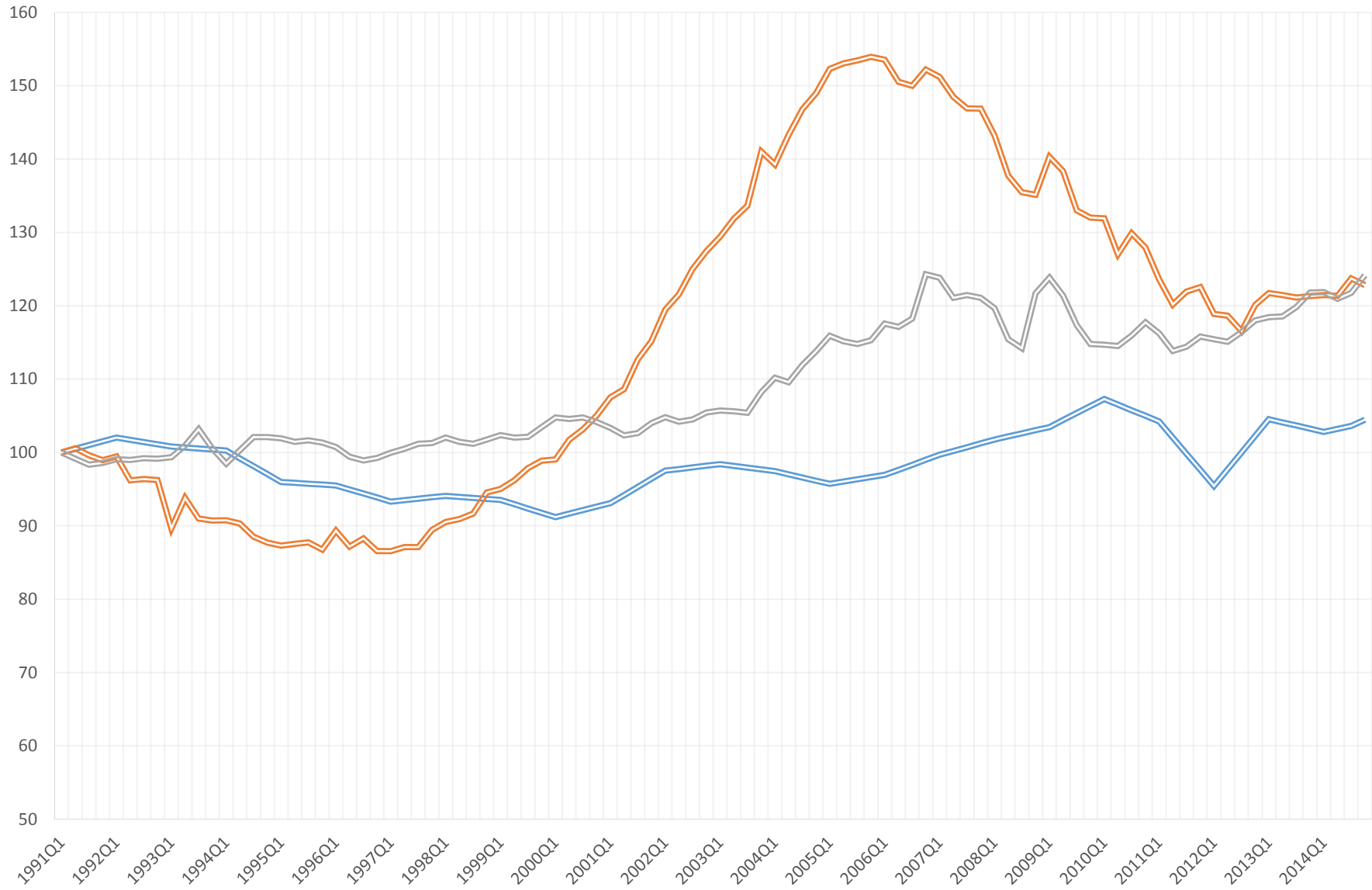
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MAINE

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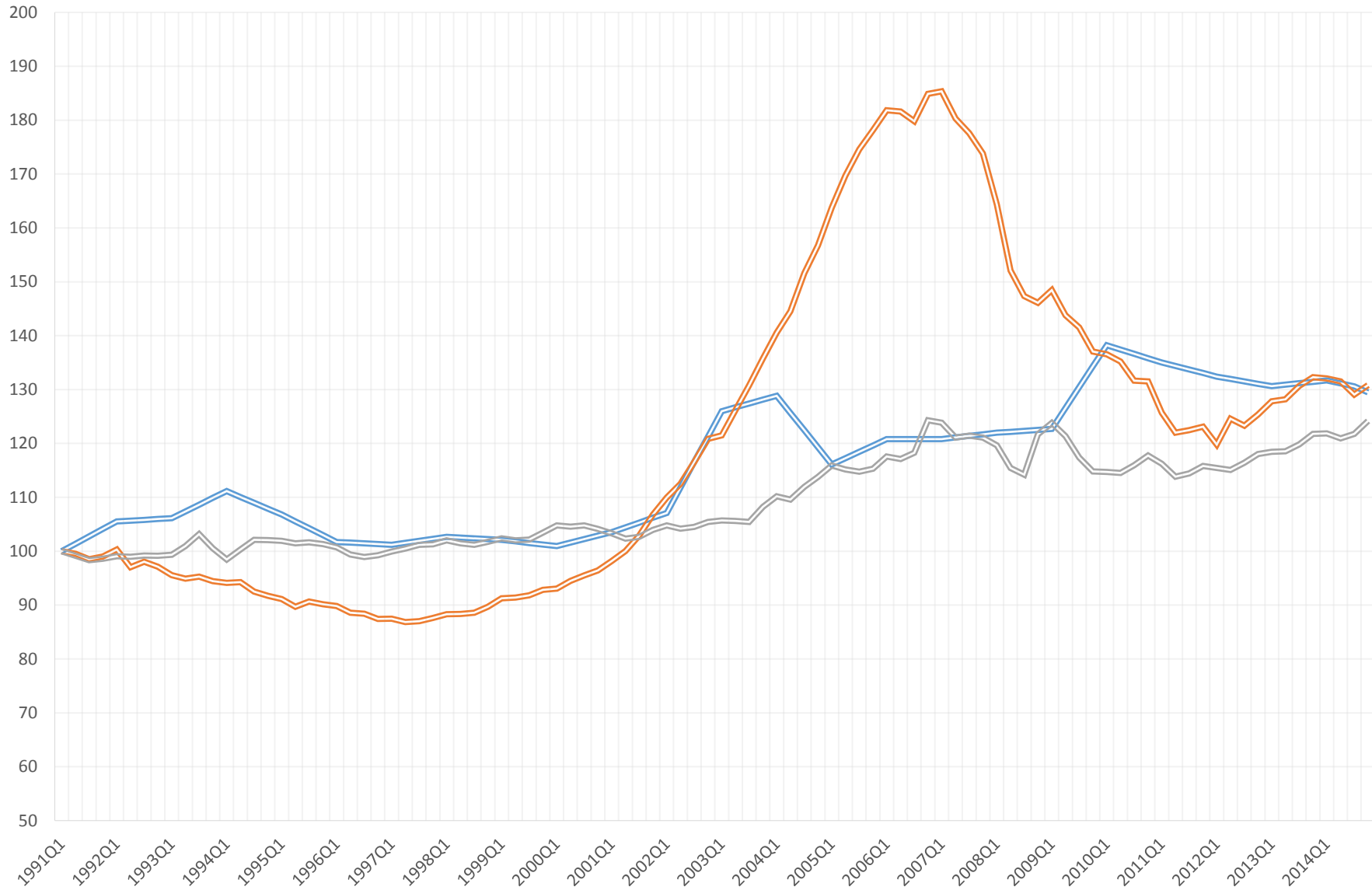
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MARYLAND

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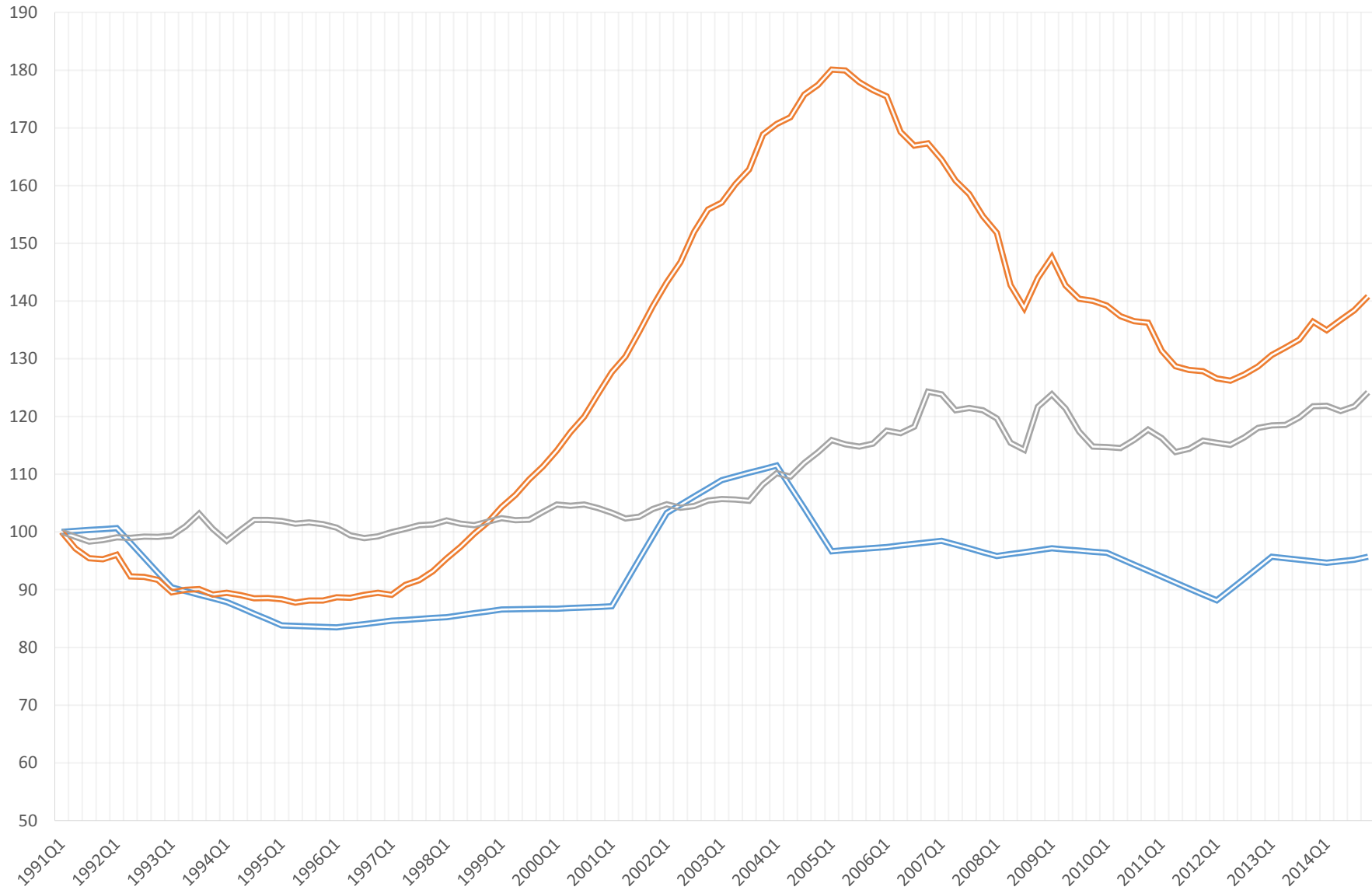
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MASSACHUSETTS

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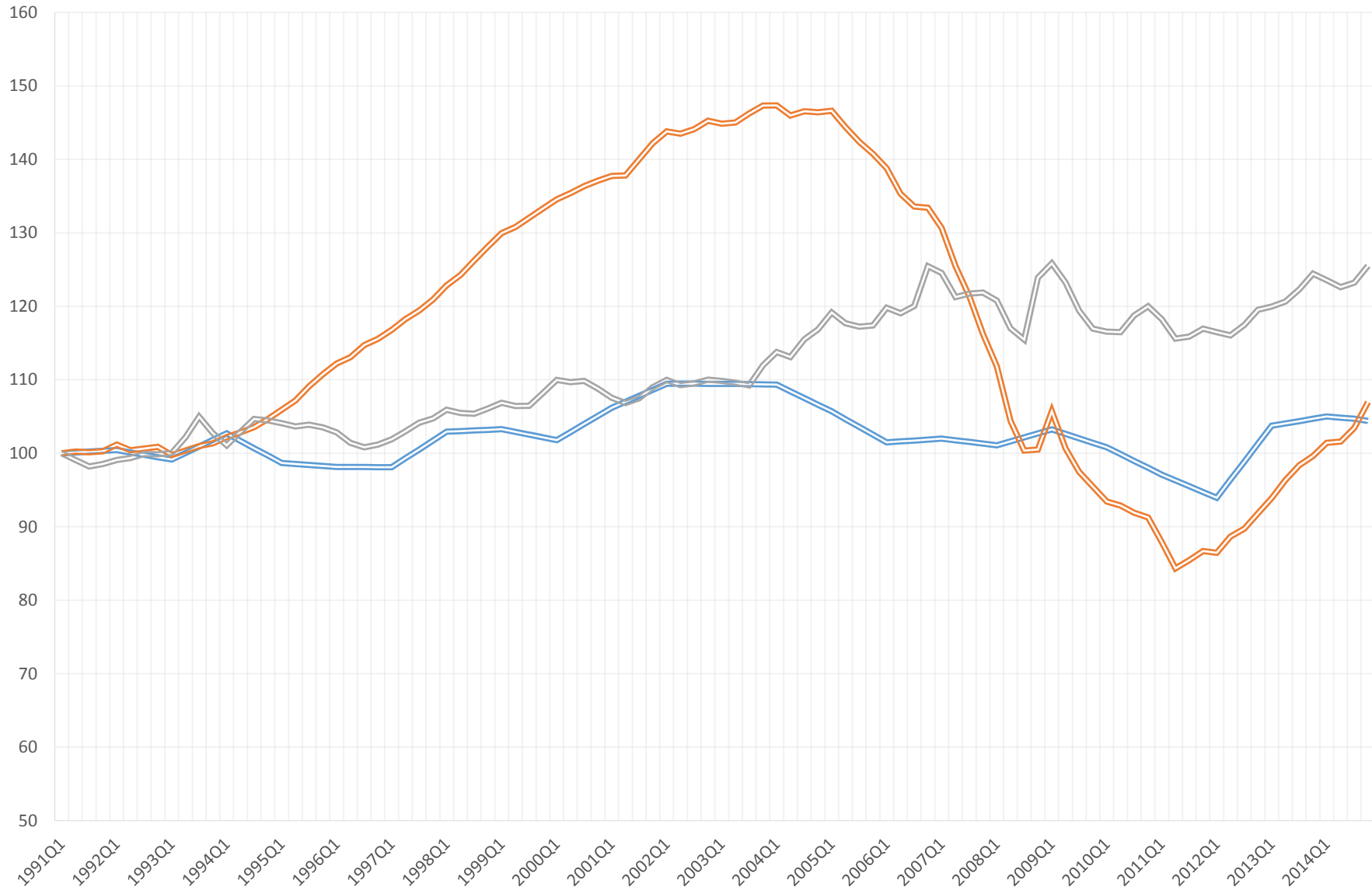
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MICHIGAN

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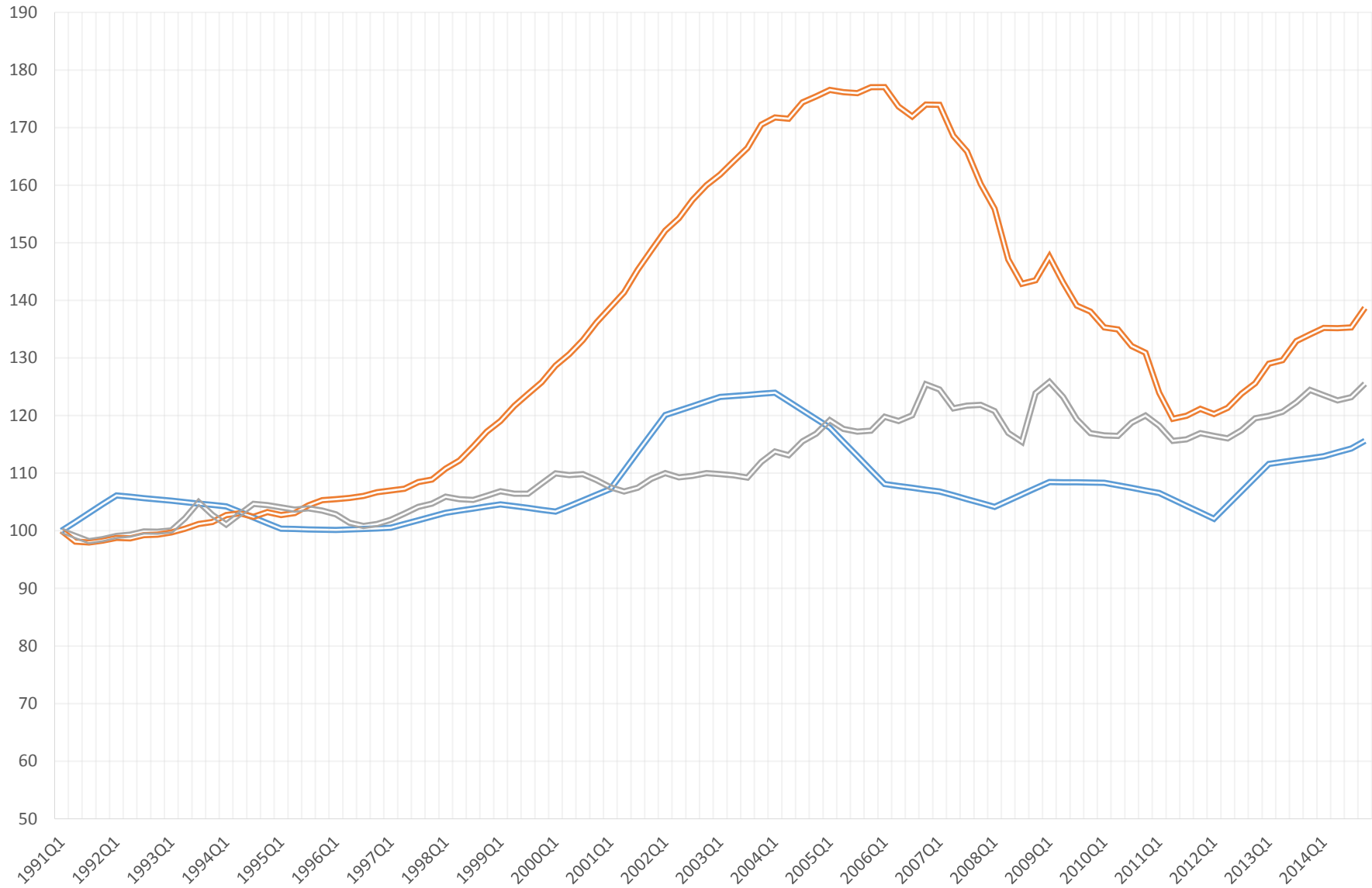
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MINNESOTA

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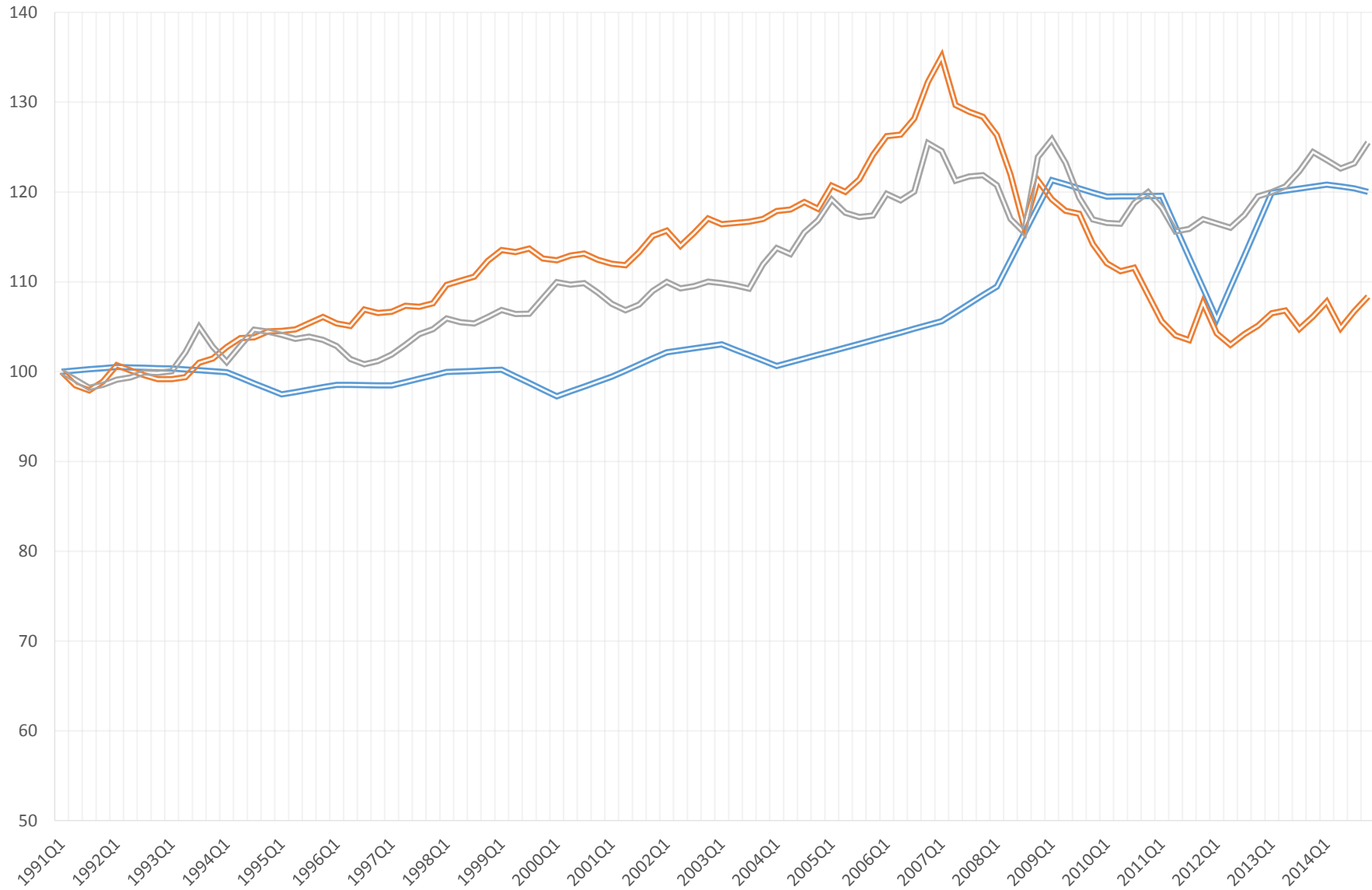
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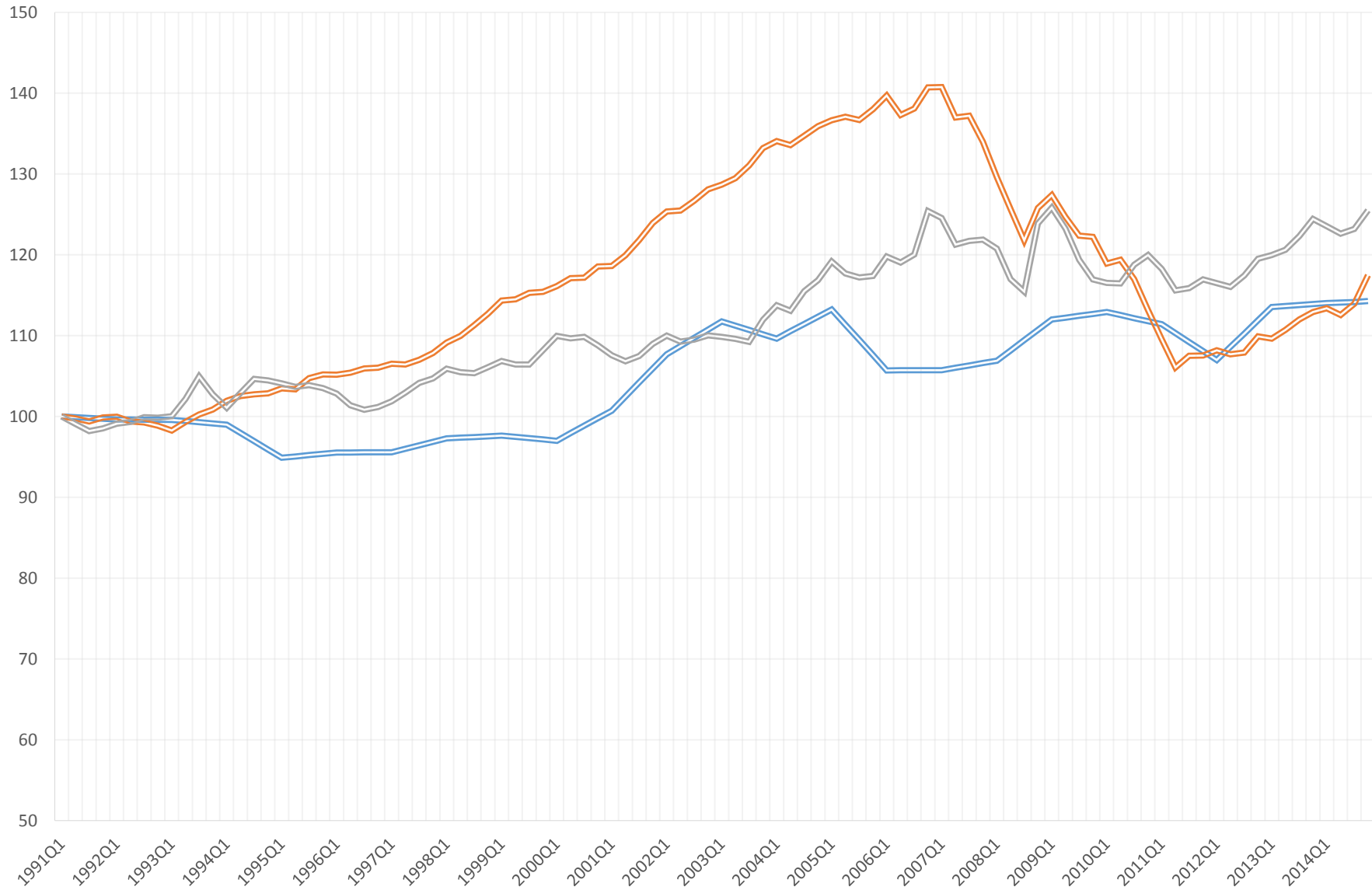
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MISSOURI

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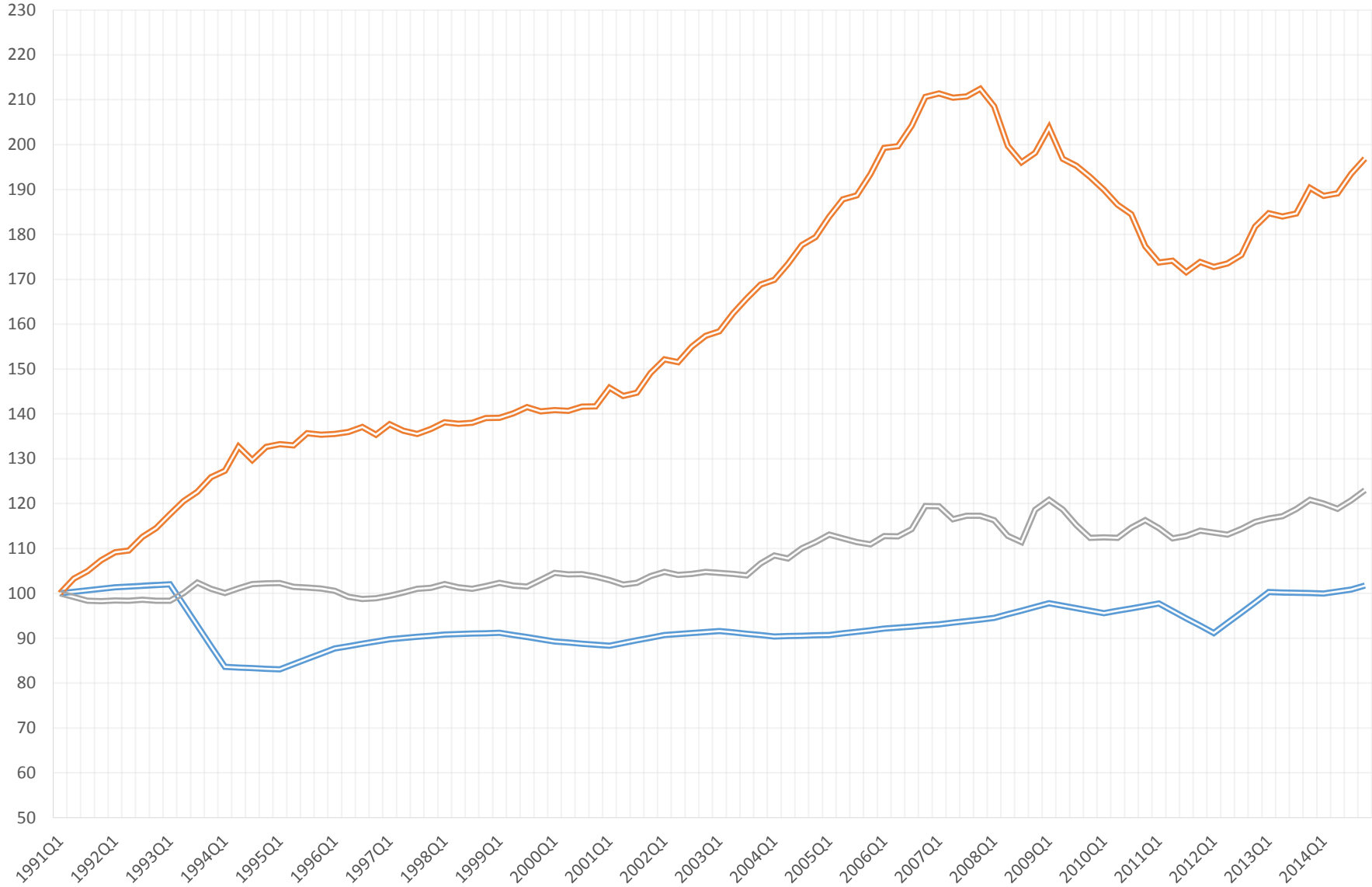
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MONTANA

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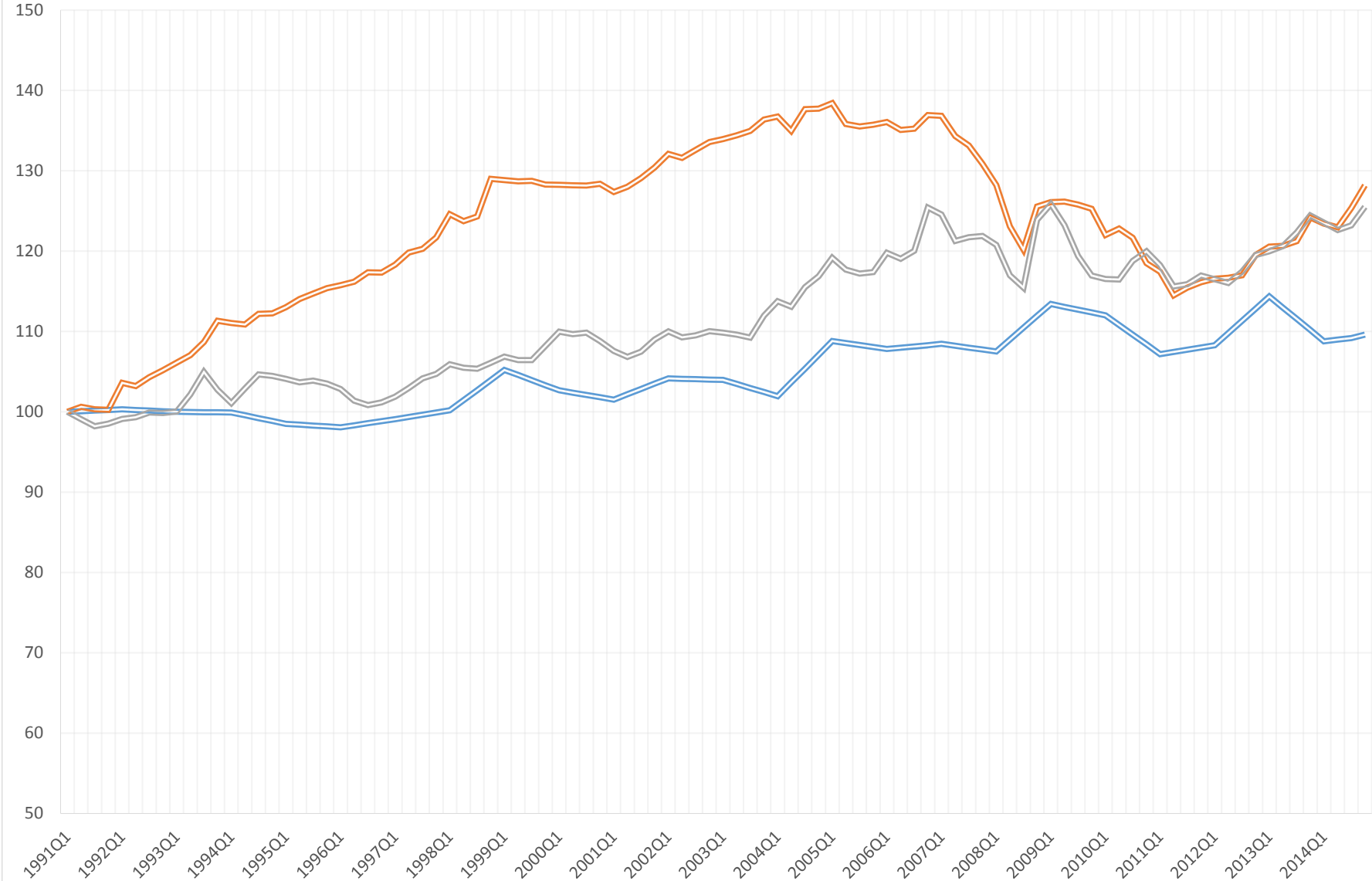
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NEBRASKA

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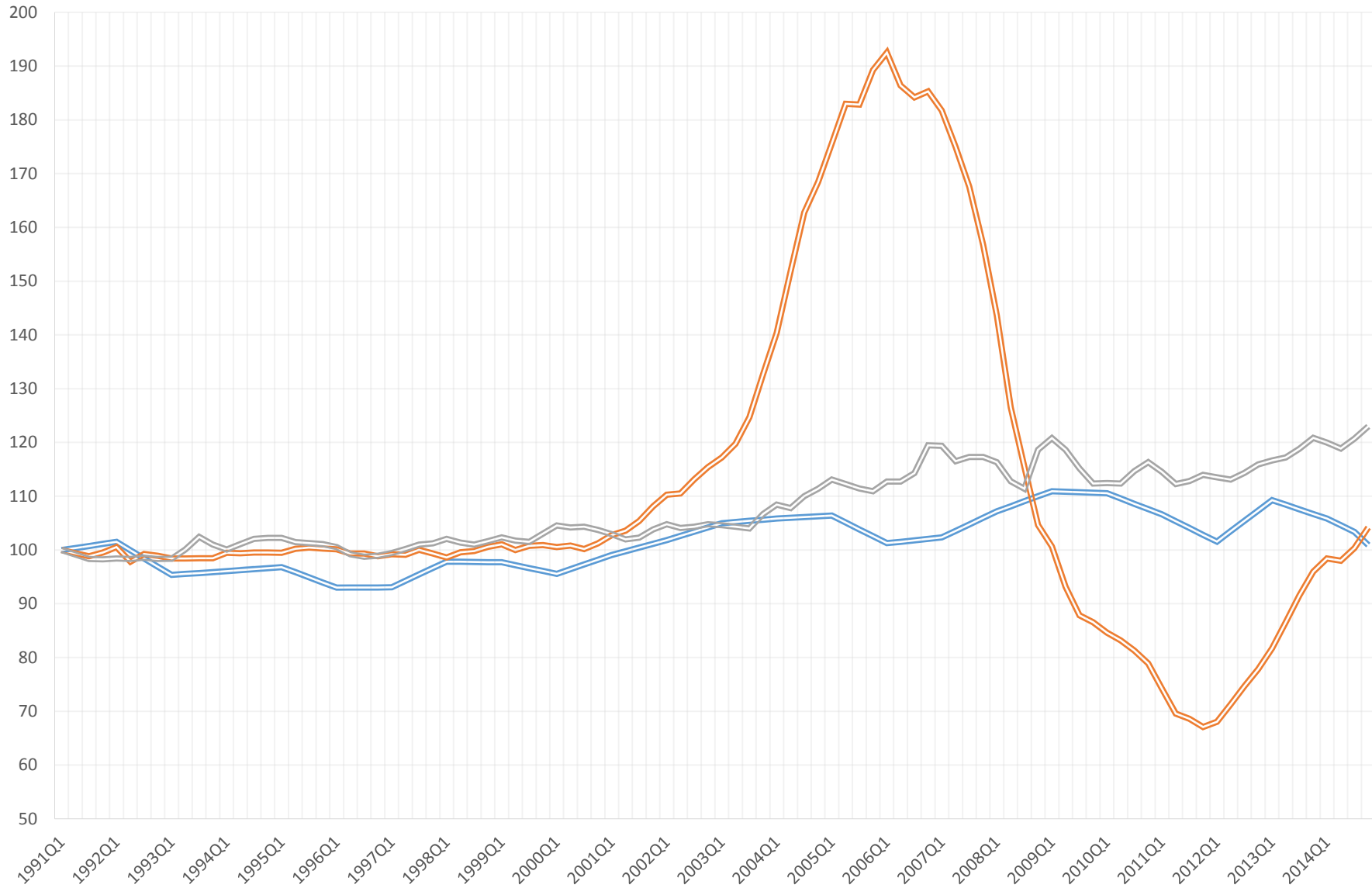
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NEVADA

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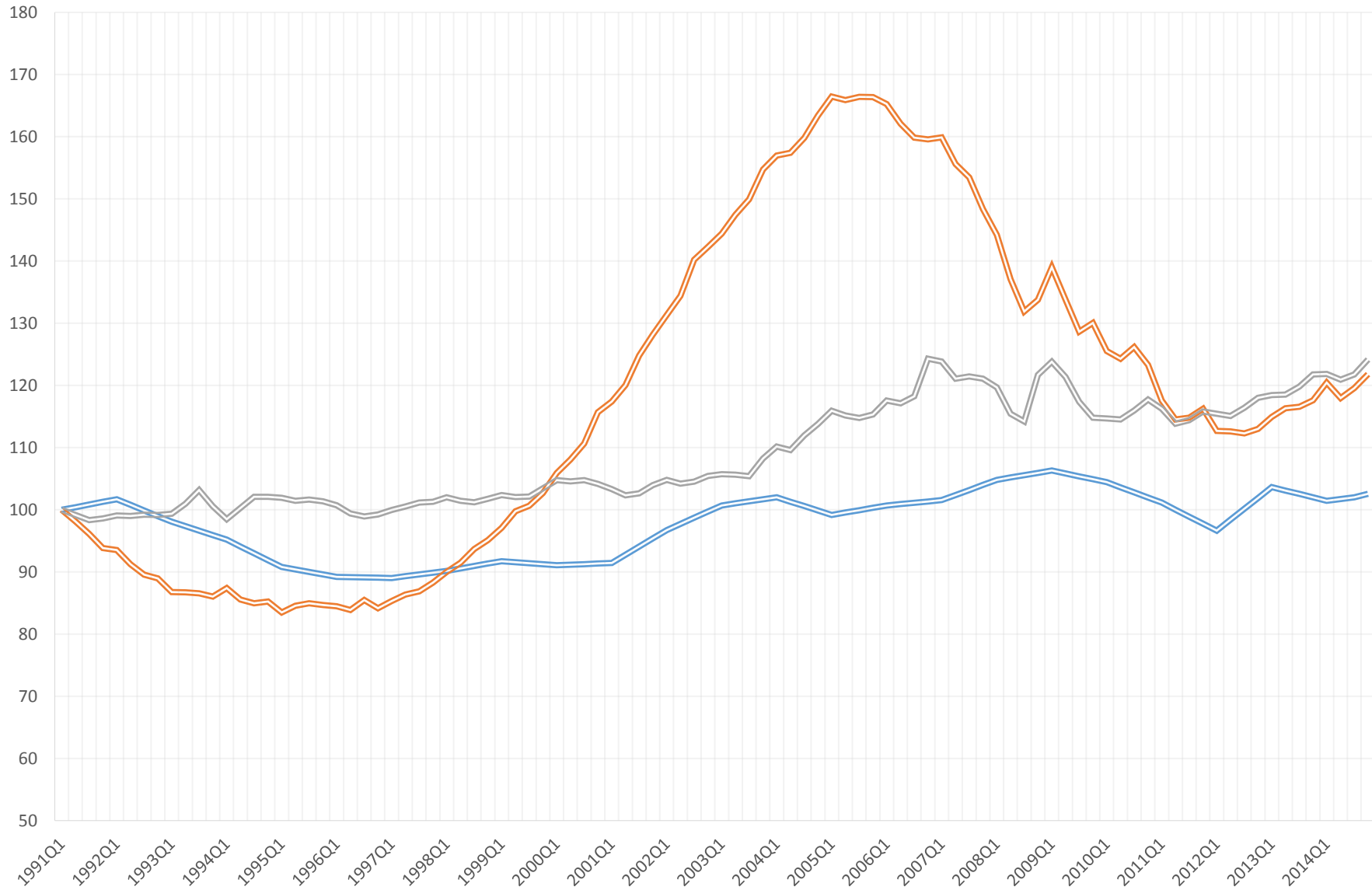
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NEW HAMPSHIRE

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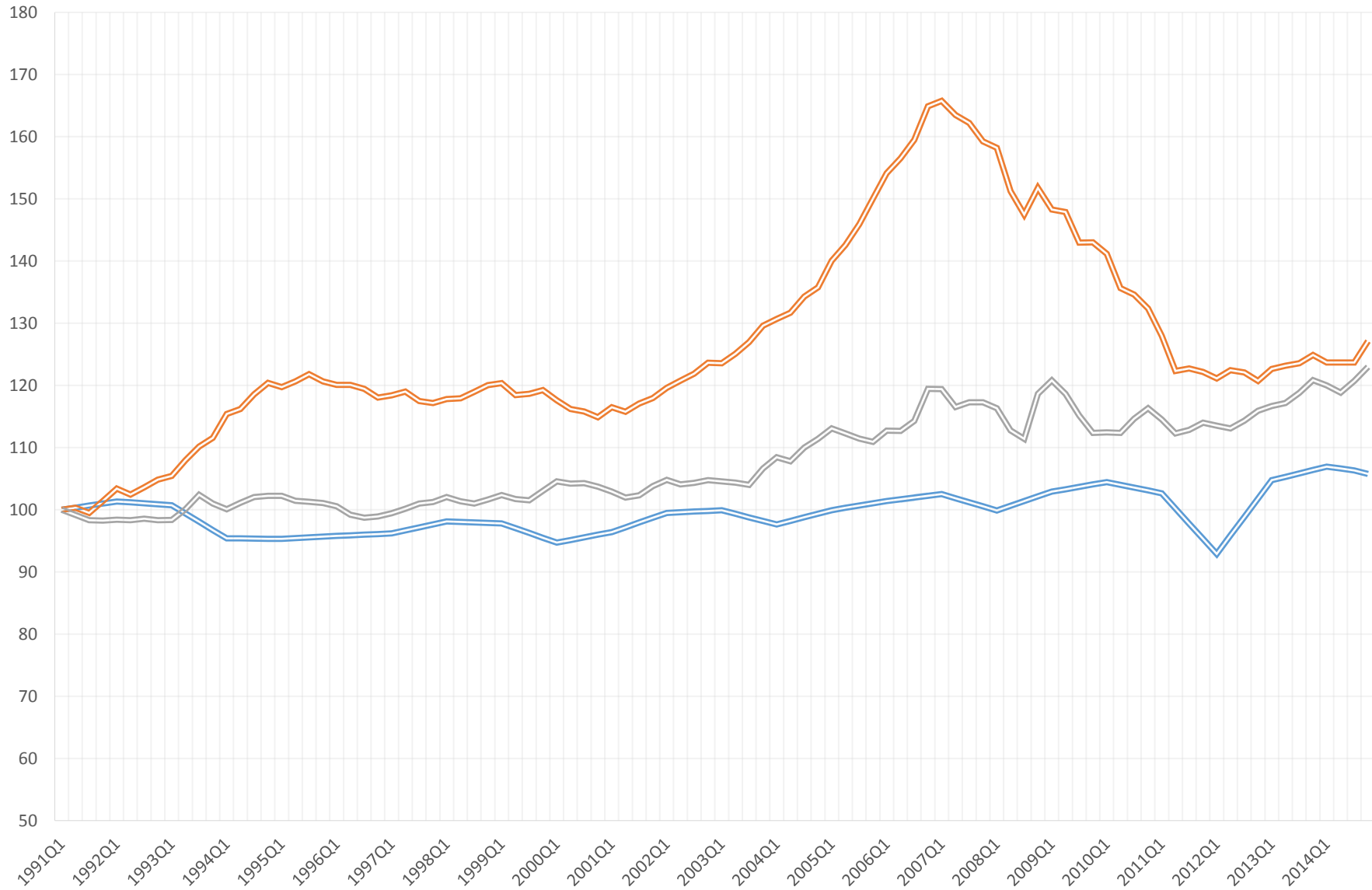
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NEW MEXICO

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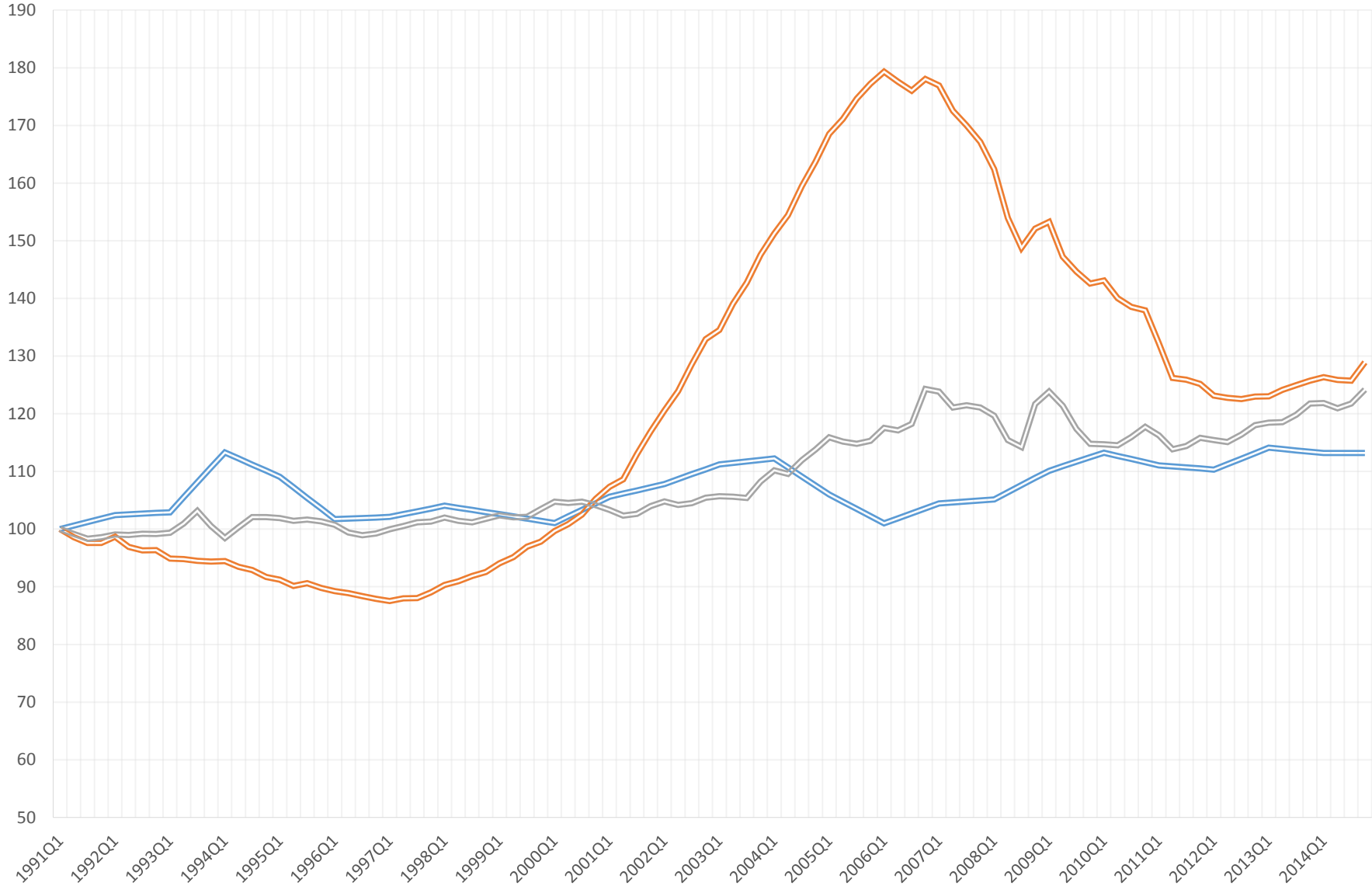
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NEW JERSEY

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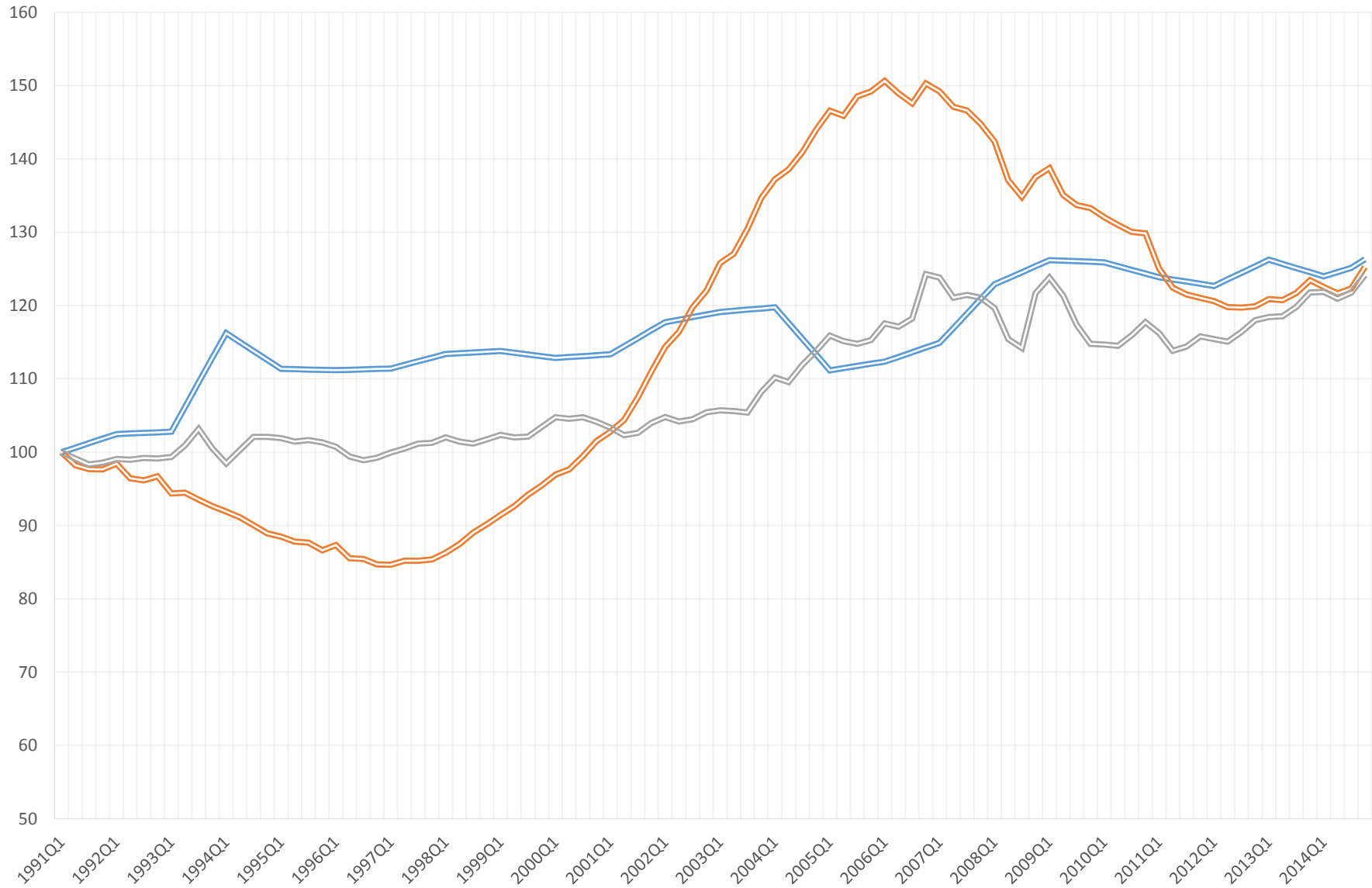
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NEW YORK

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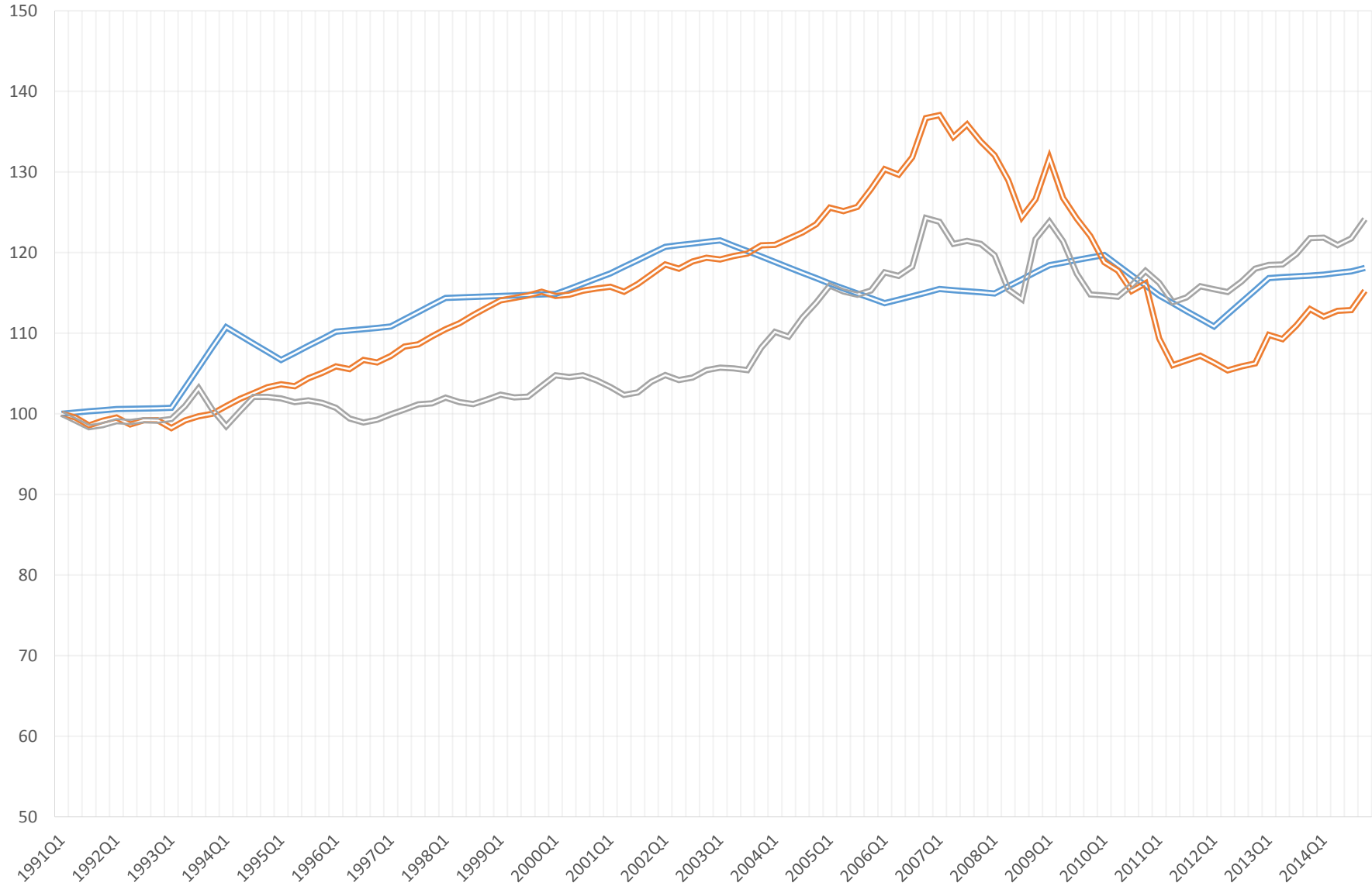
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NORTH CAROLINA

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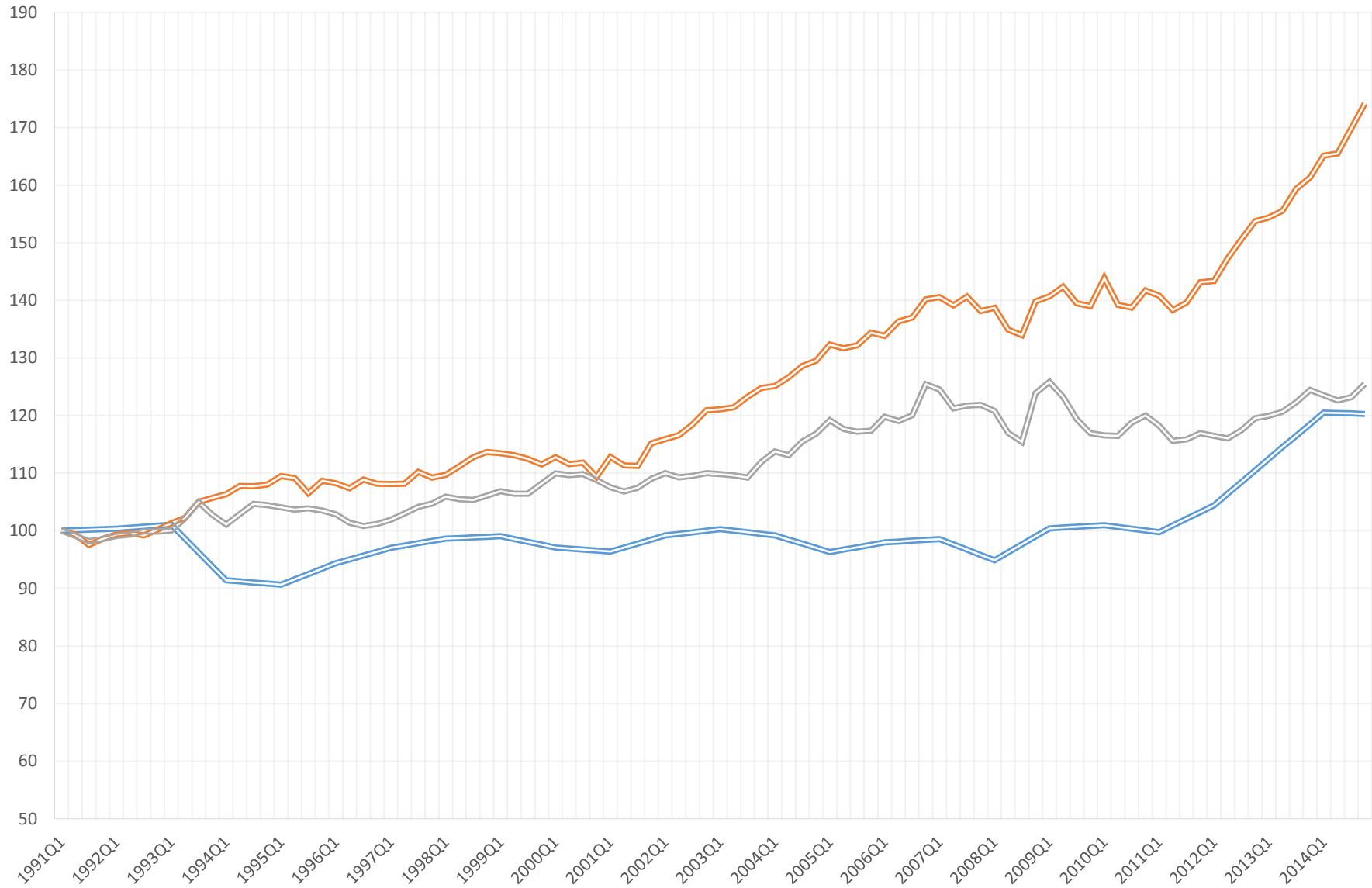
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NORTH DAKOTA

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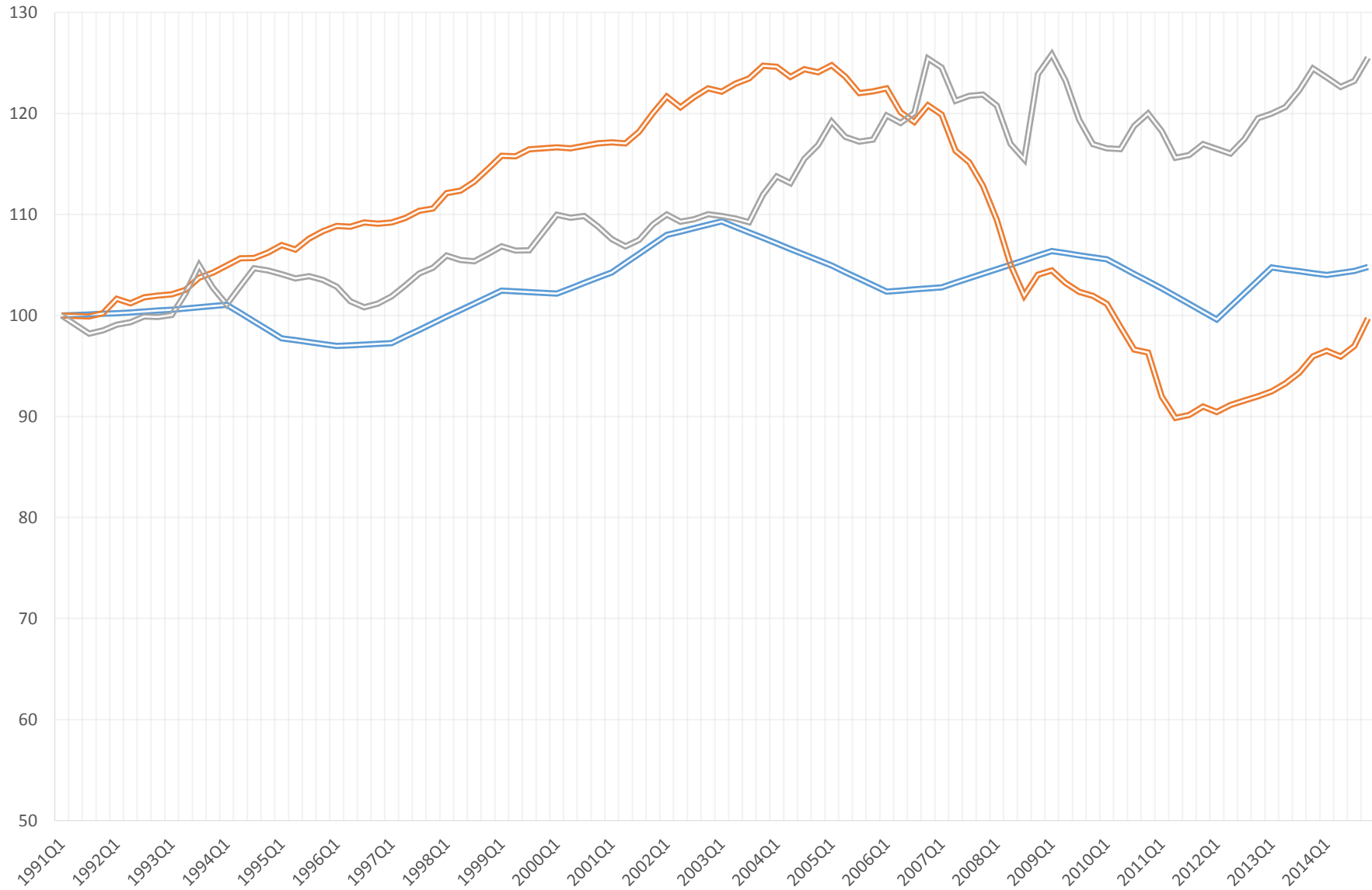
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OHIO

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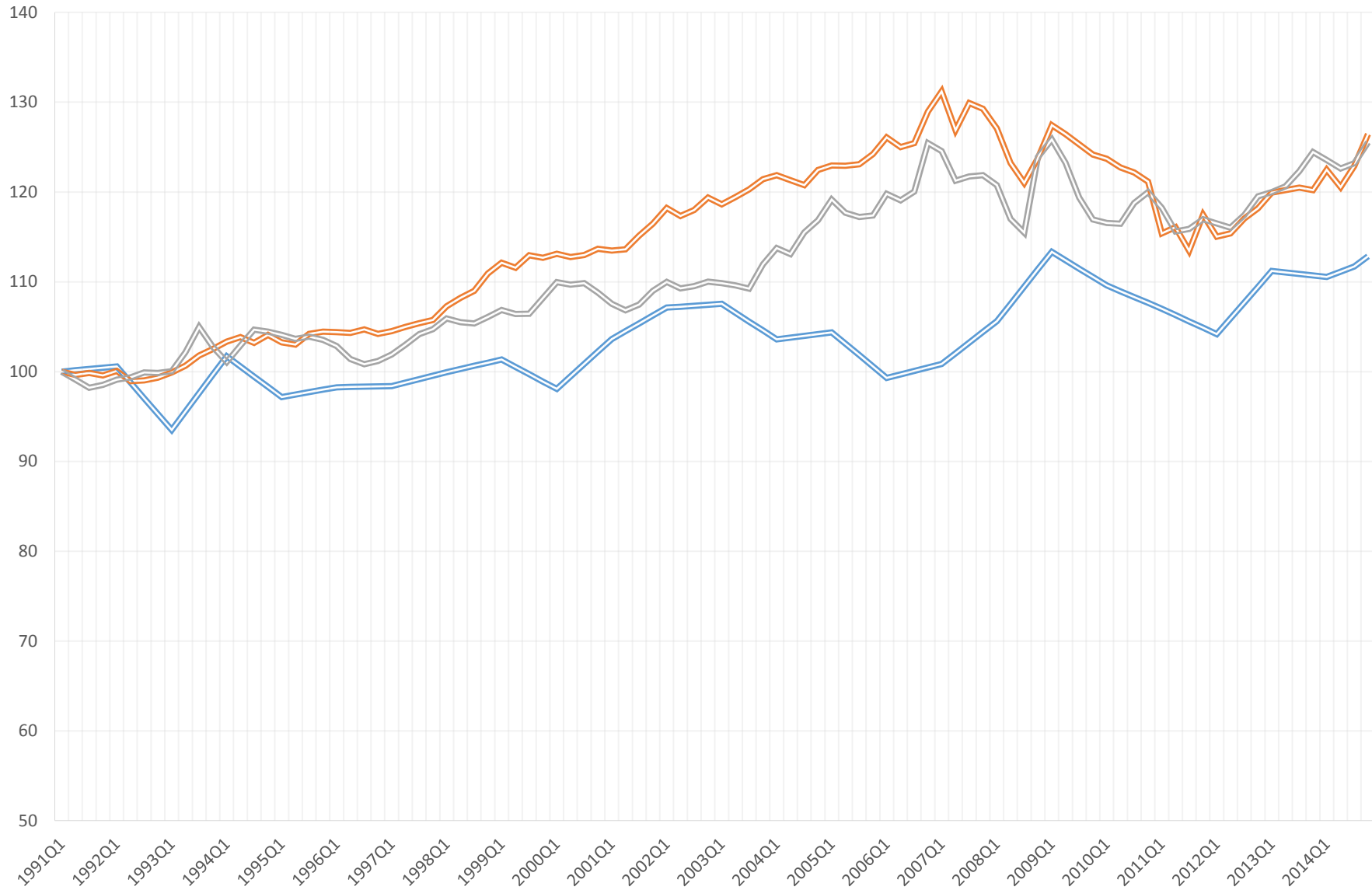
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OKLAHOMA

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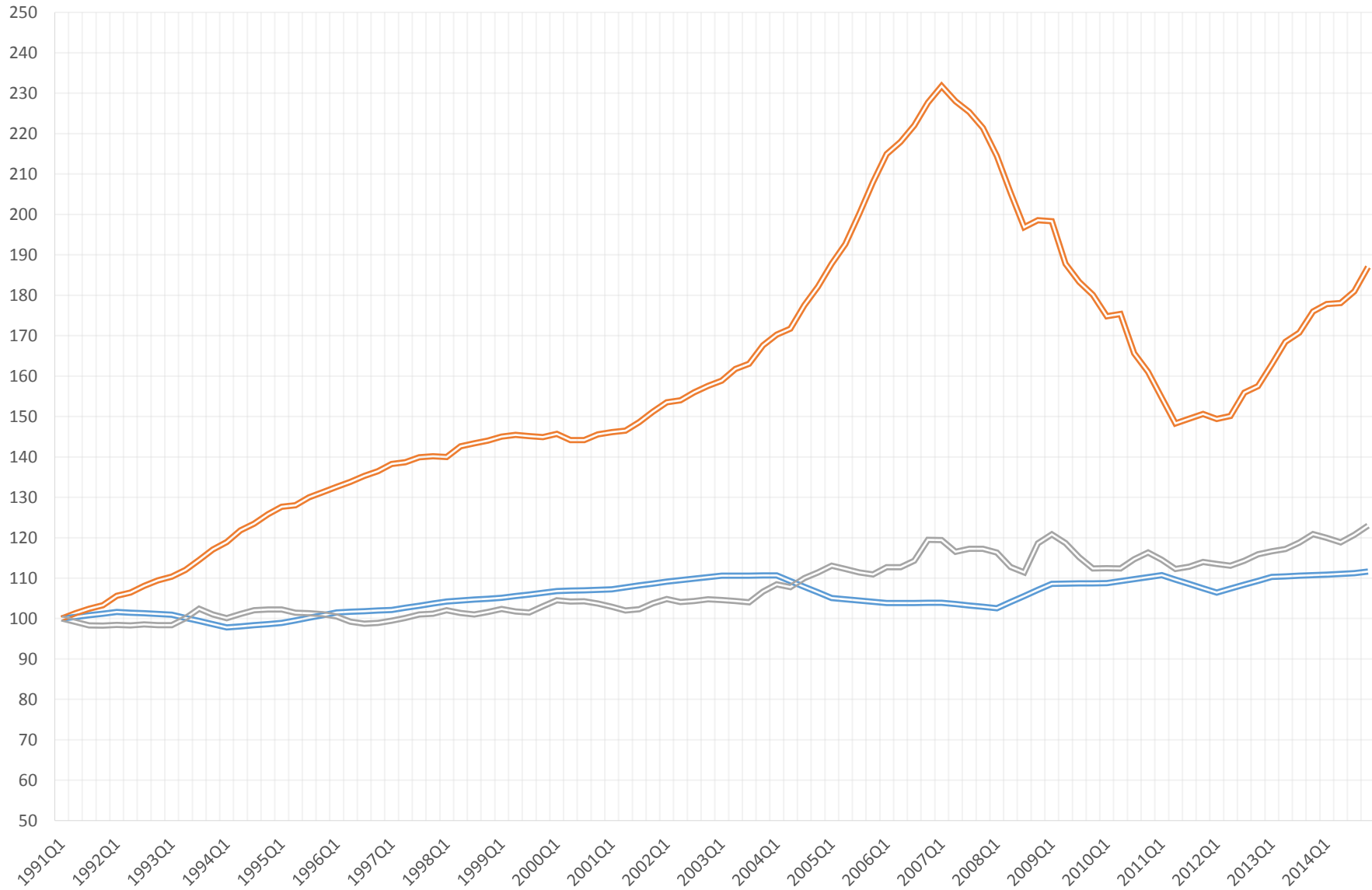
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OREGON

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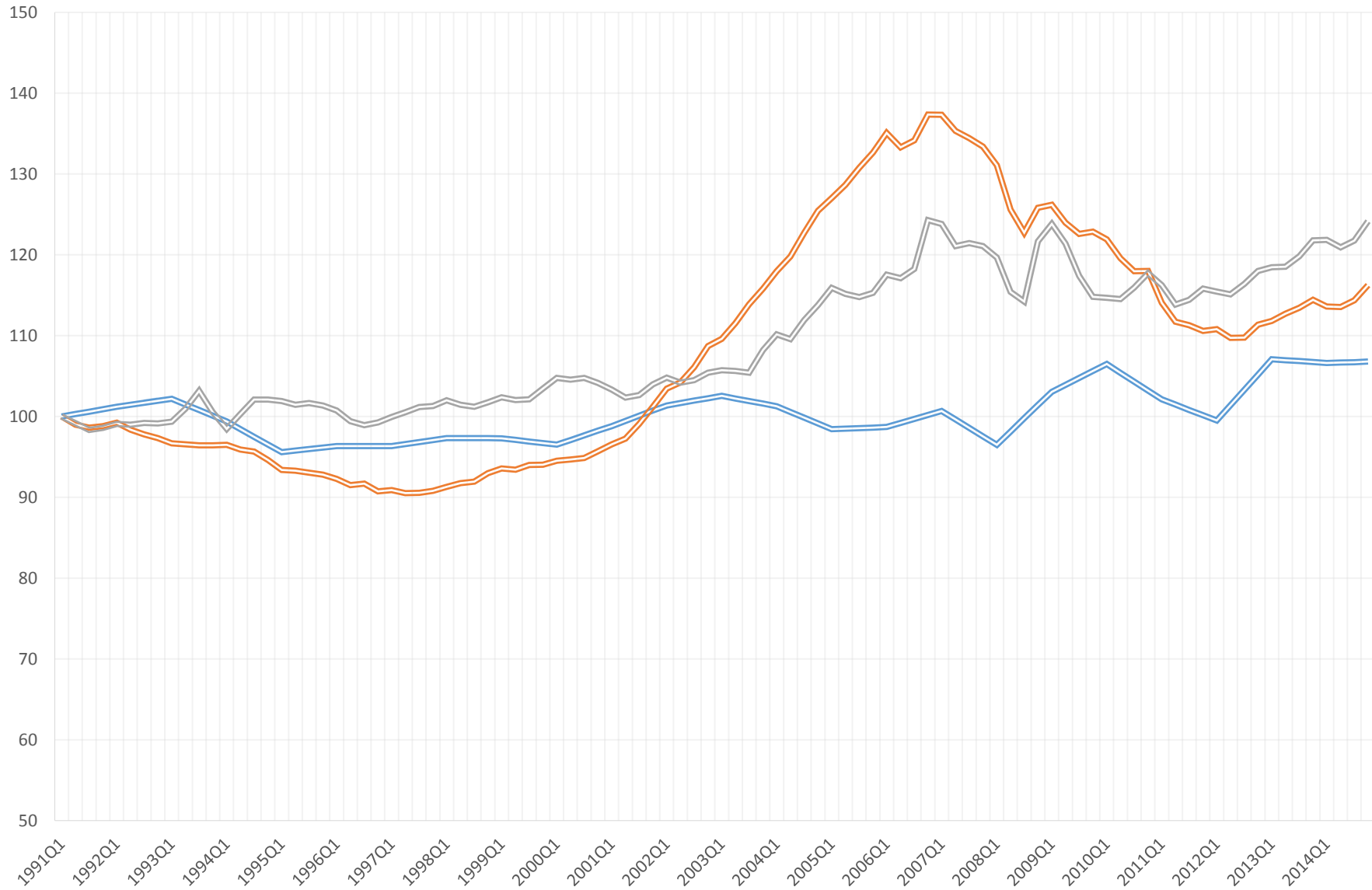
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PENNSYLVANIA

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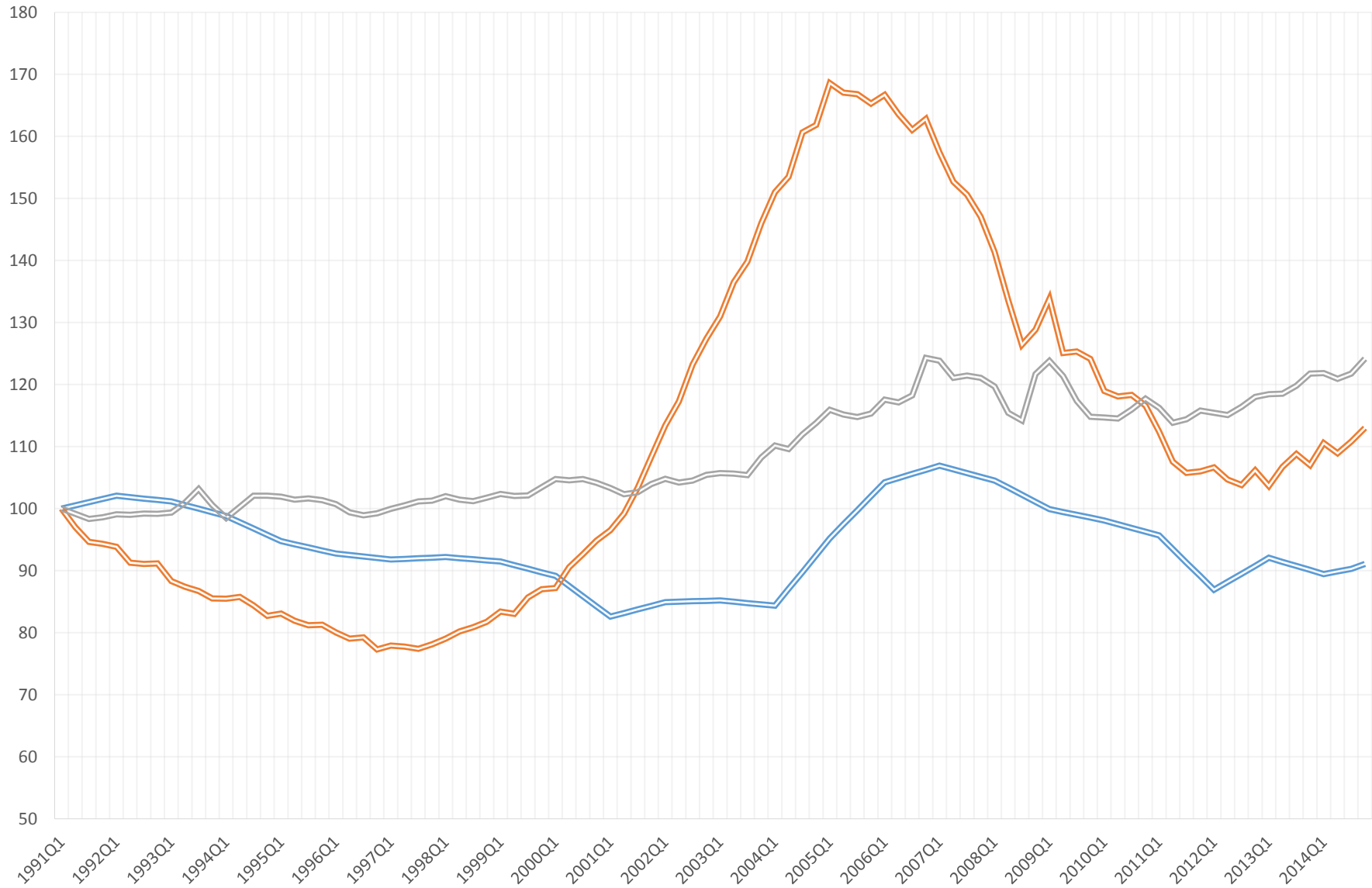
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RHODE ISLAND

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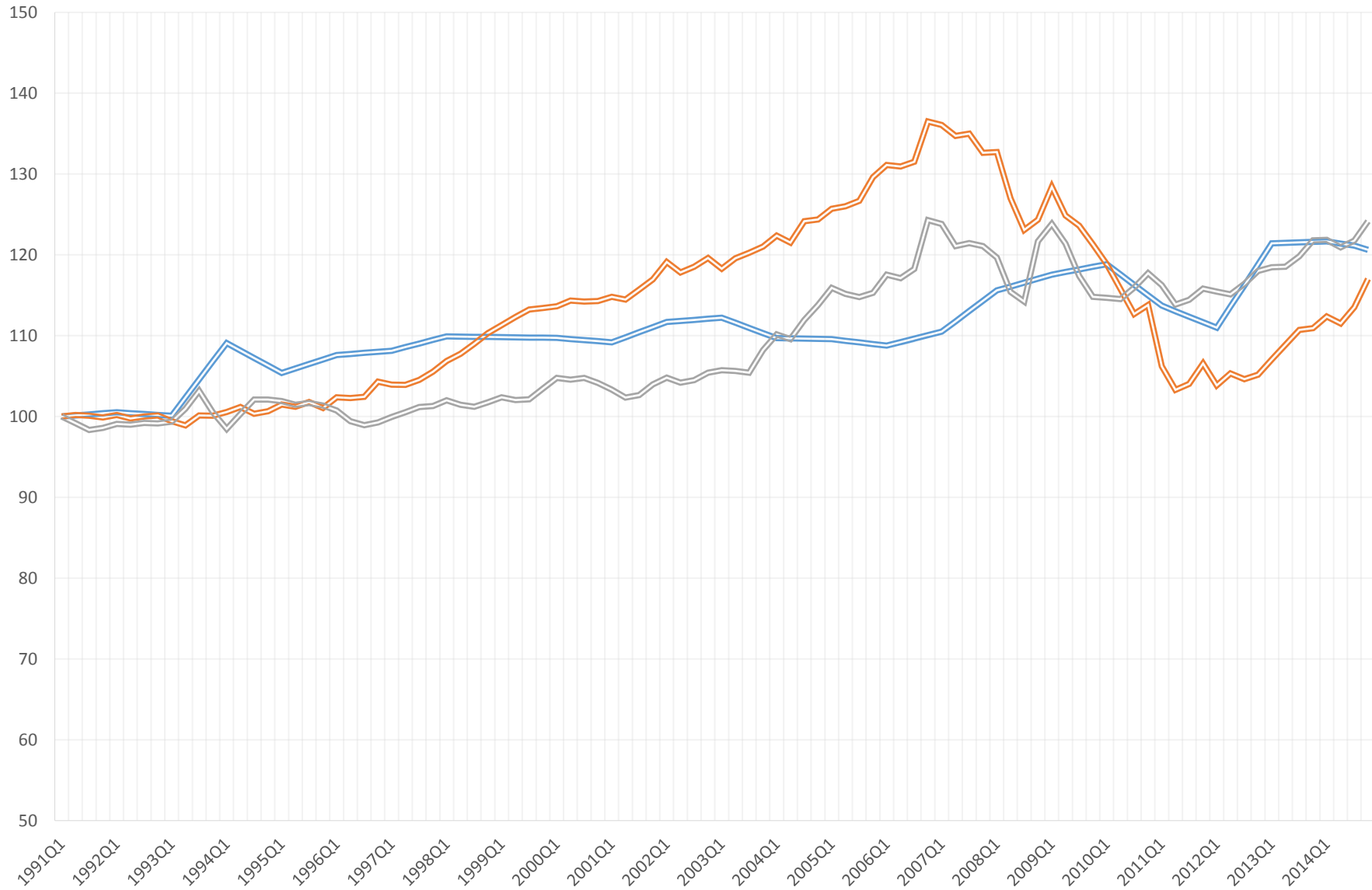
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SOUTH CAROLINA

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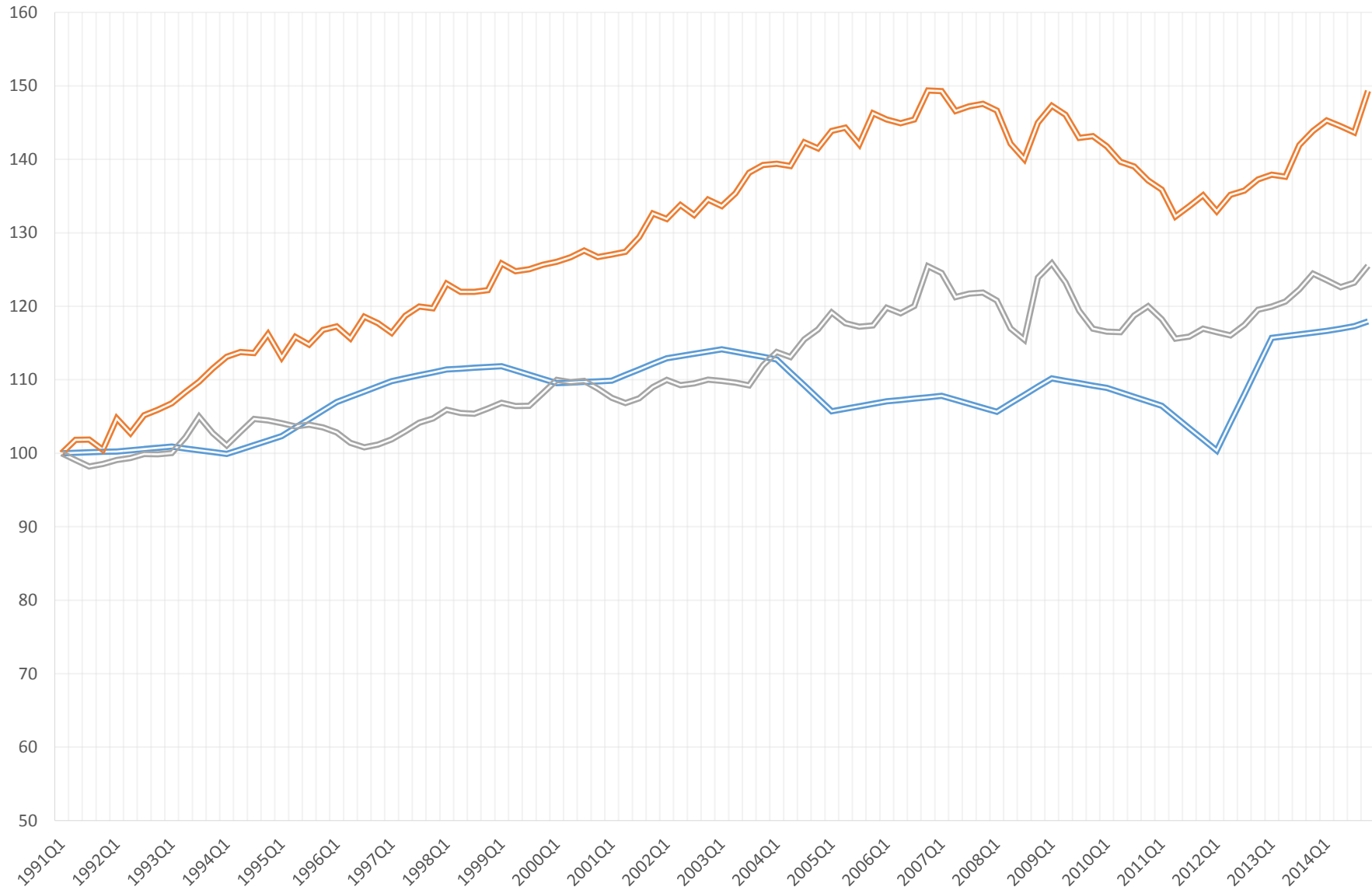
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SOUTH DAKOTA

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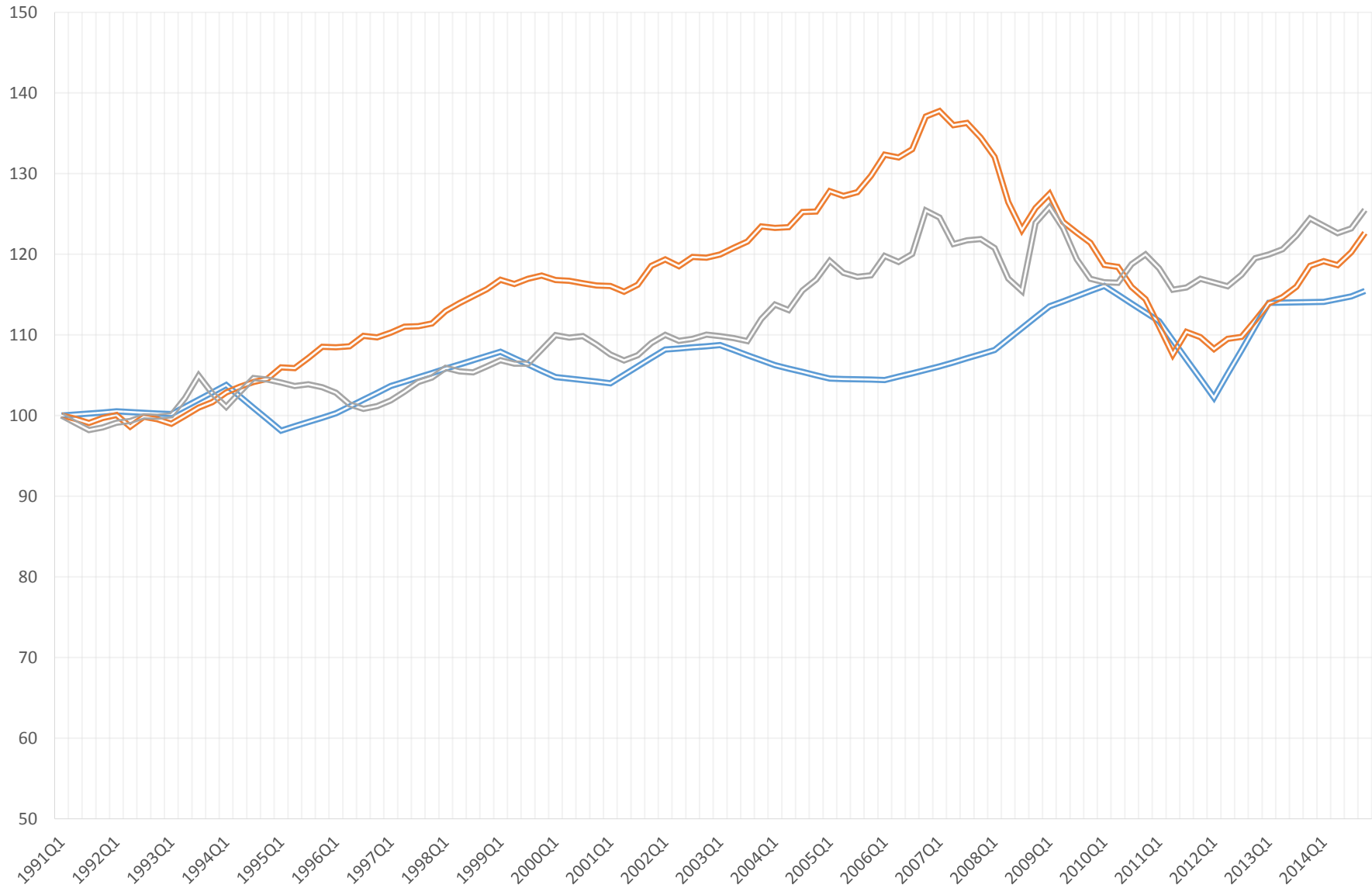
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TENNESSEE

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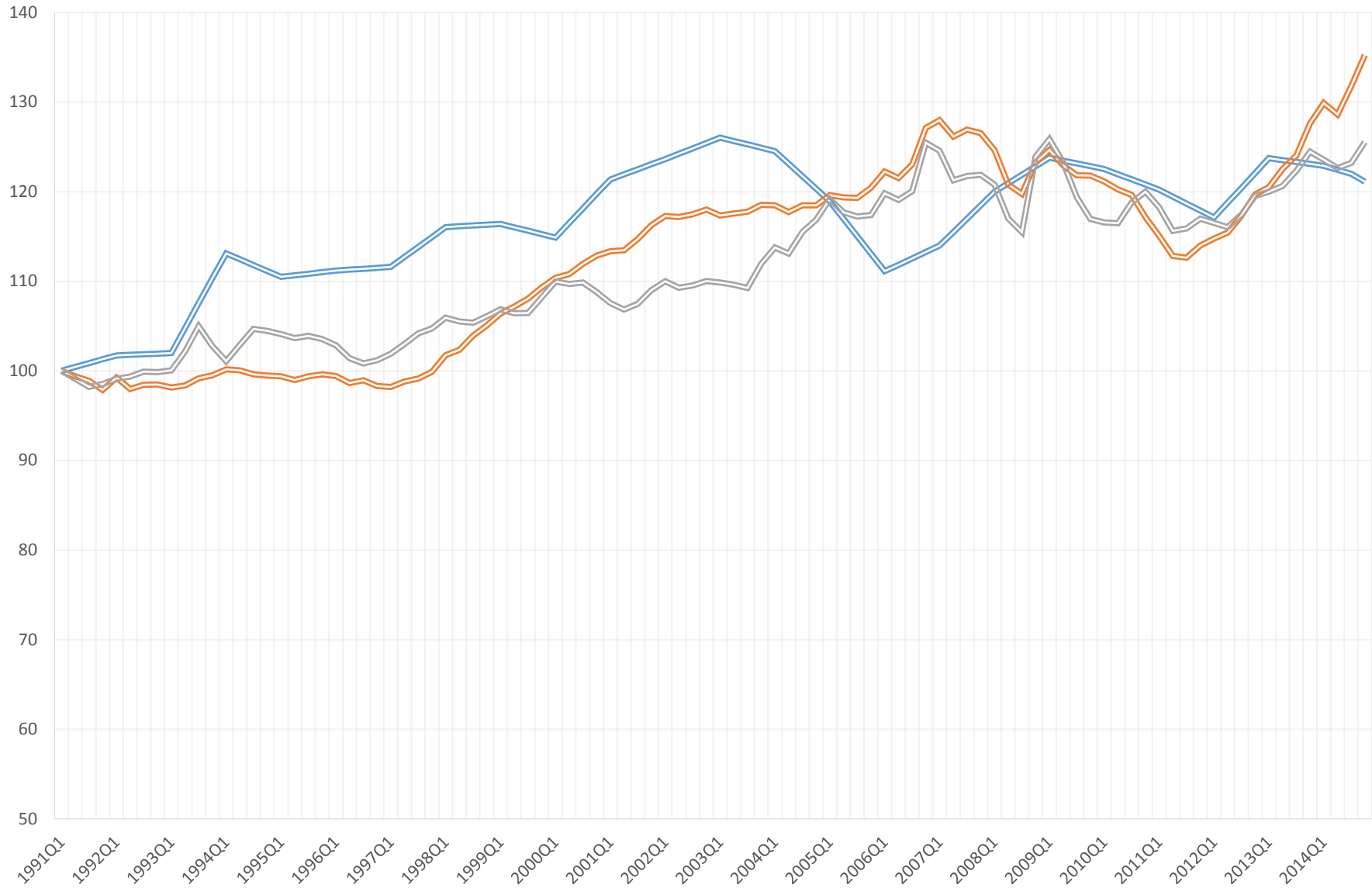
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TEXAS

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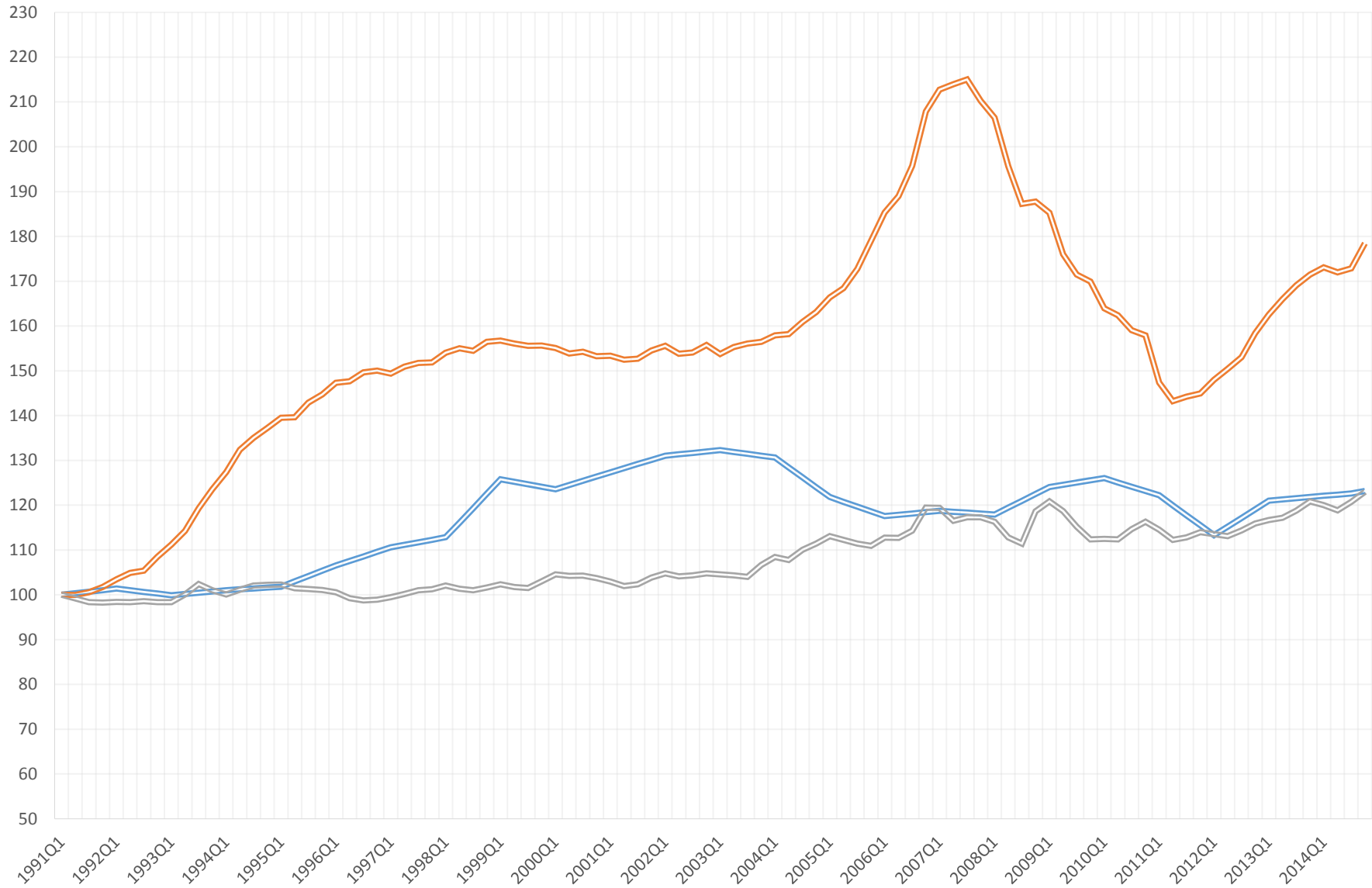
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UTAH

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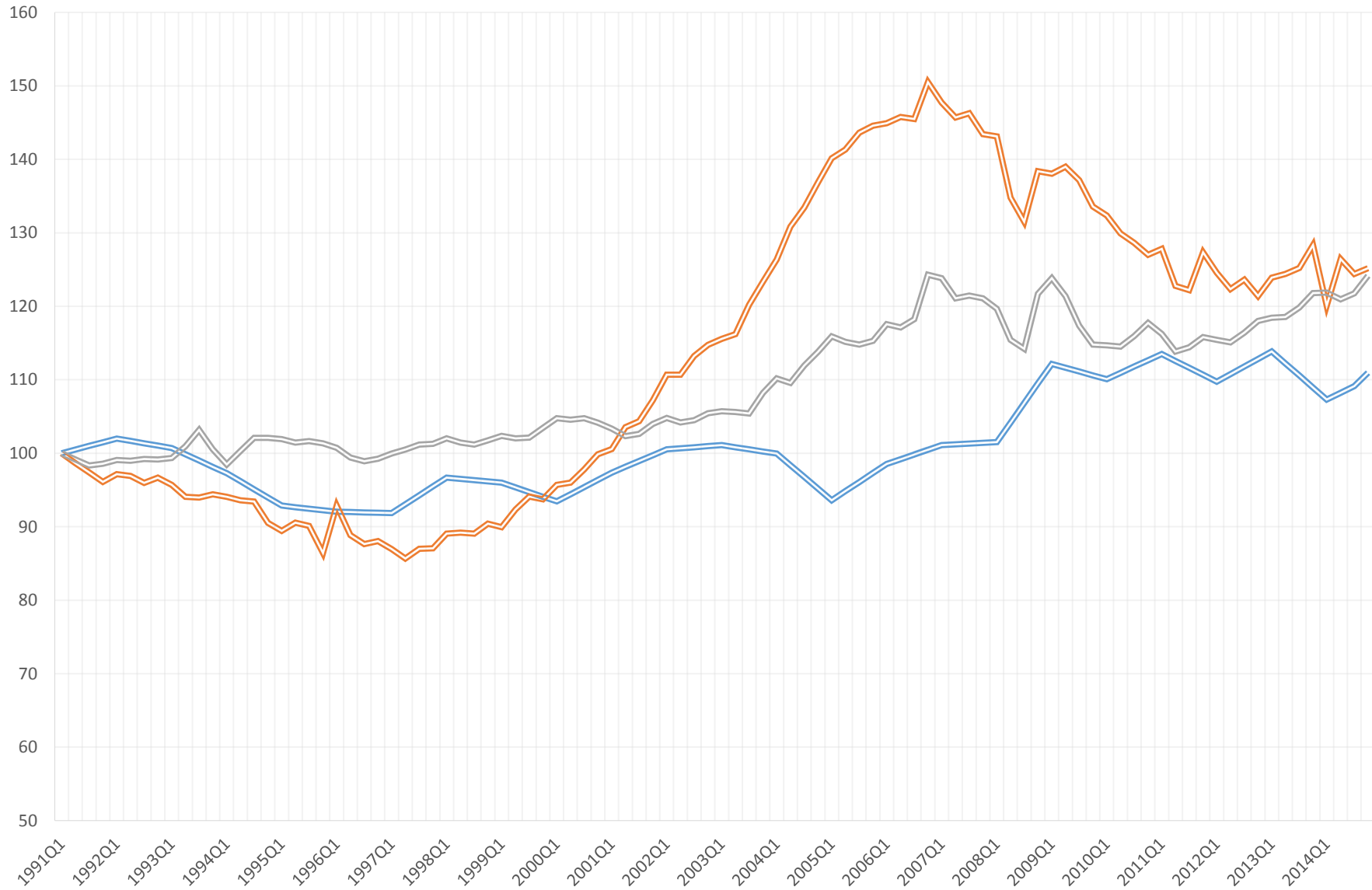
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VERMONT

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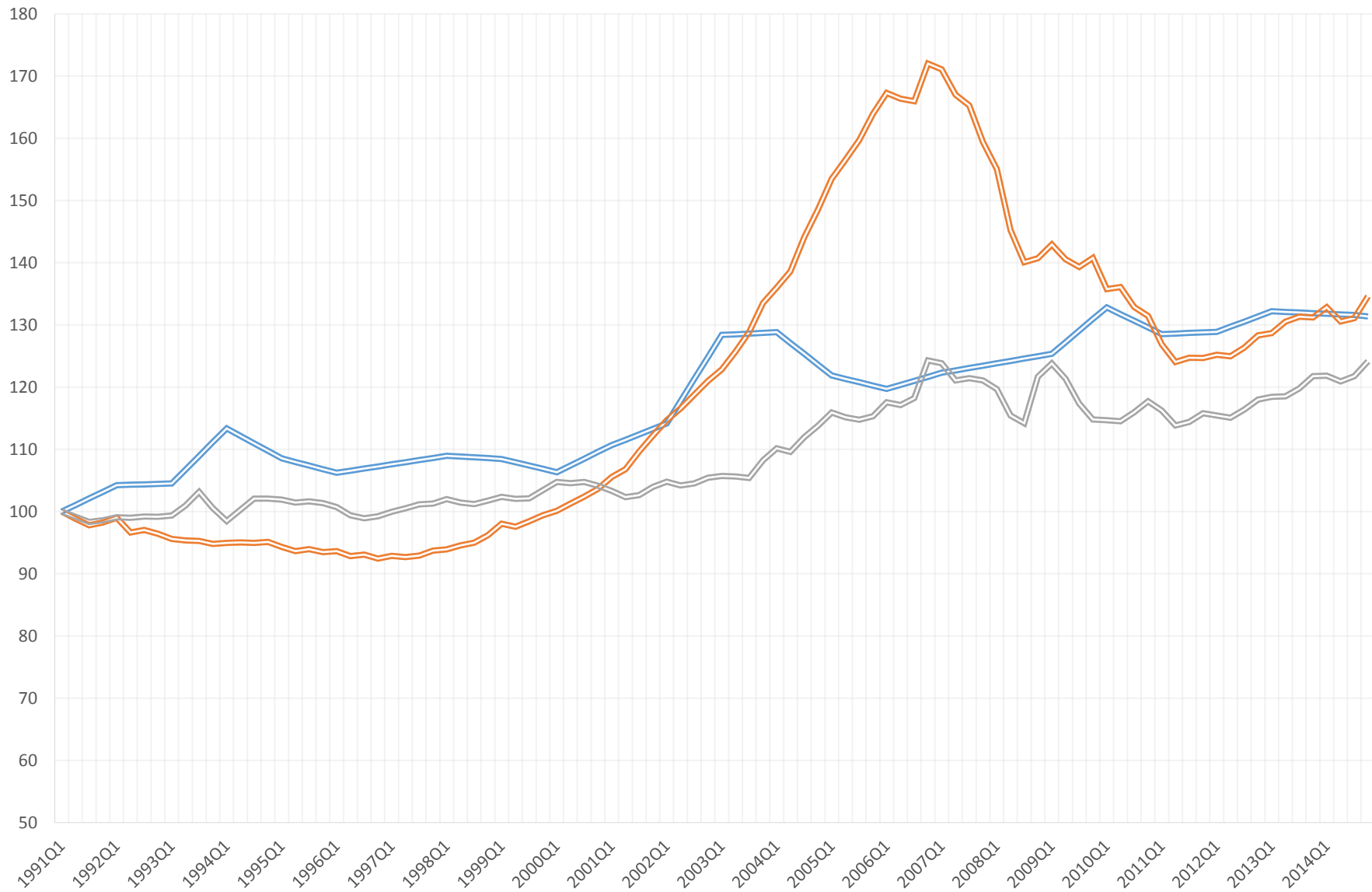
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VIRGINIA

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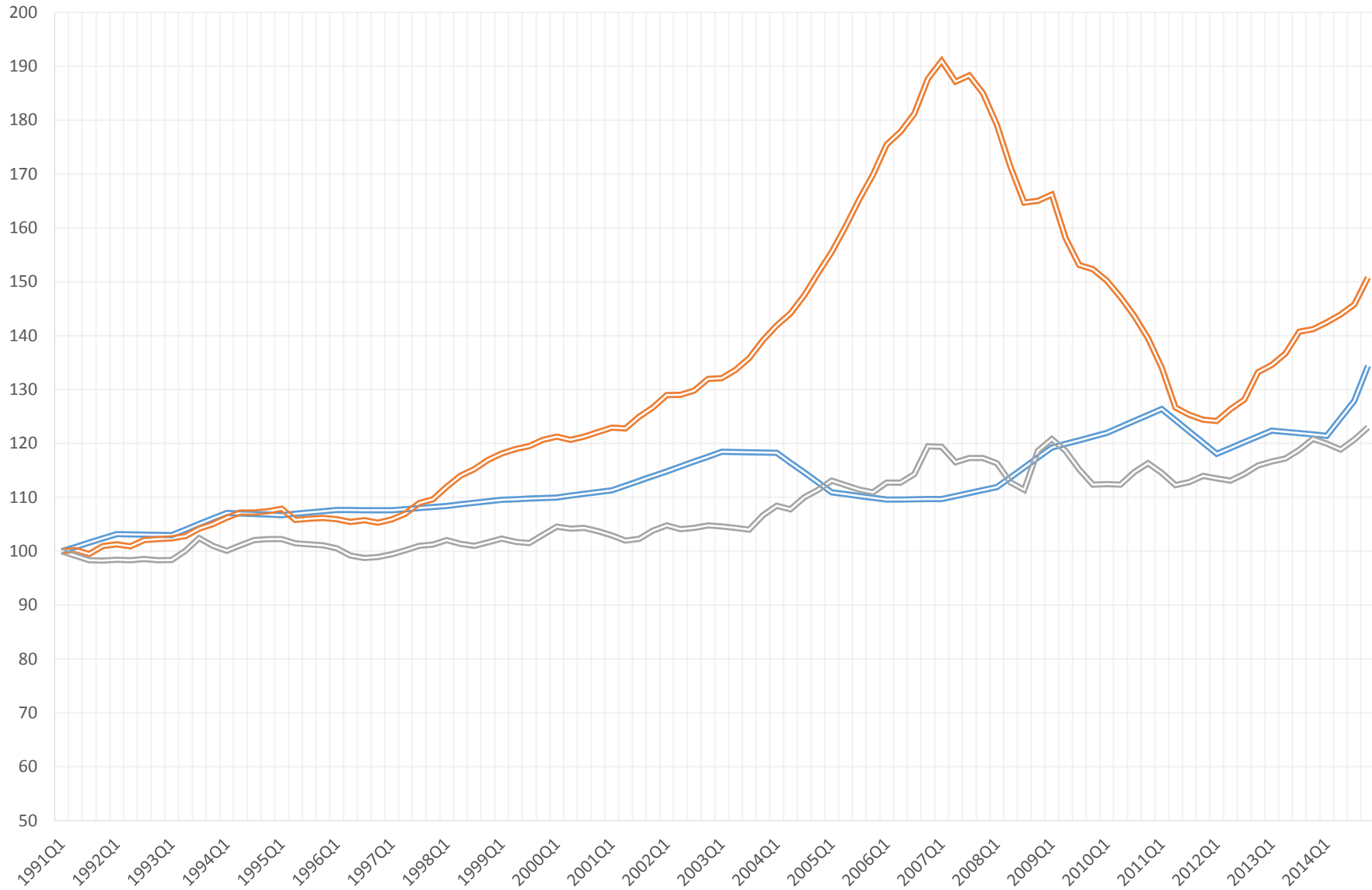
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WASHINGTON

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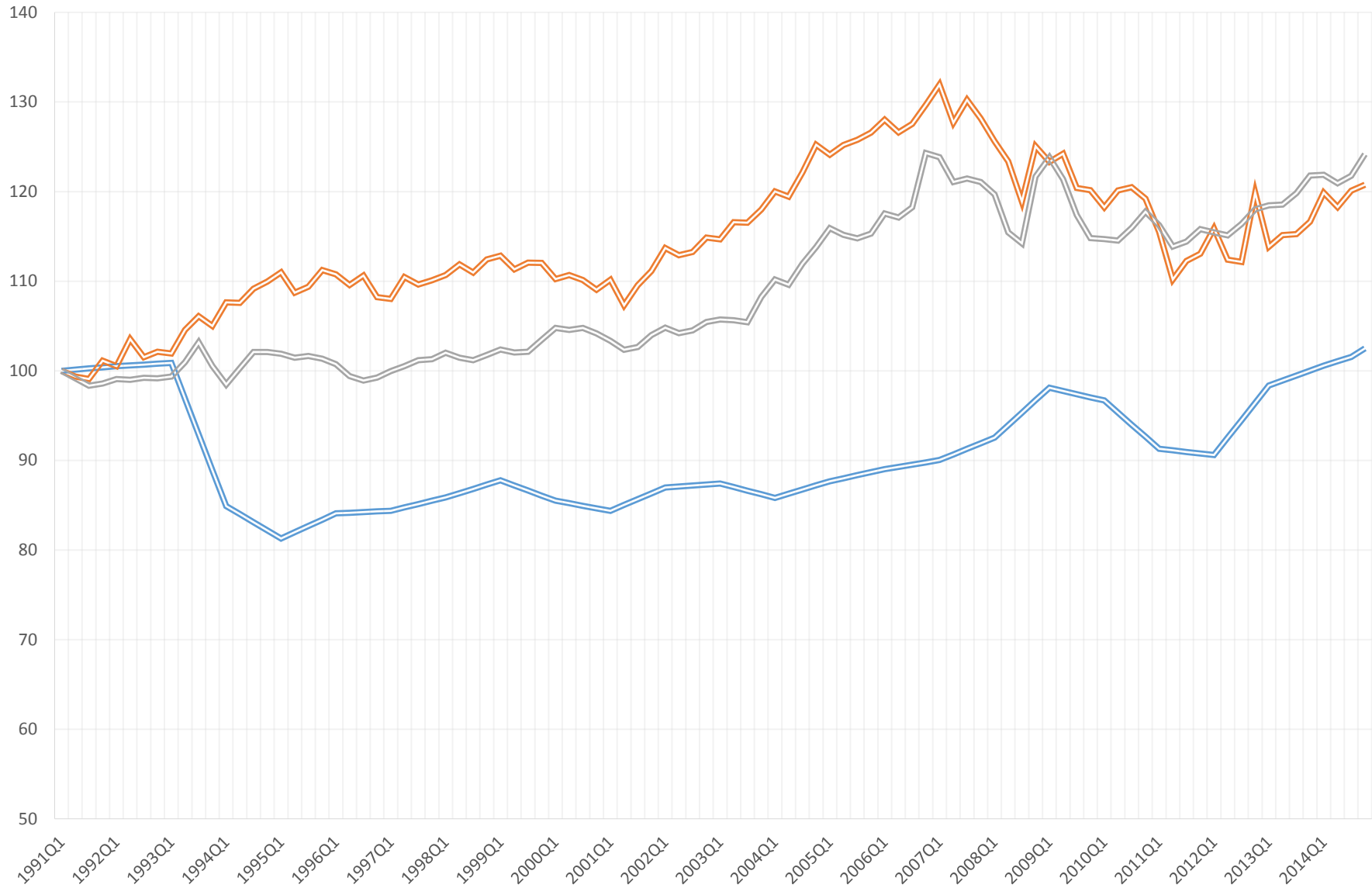
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WEST VIRGINIA

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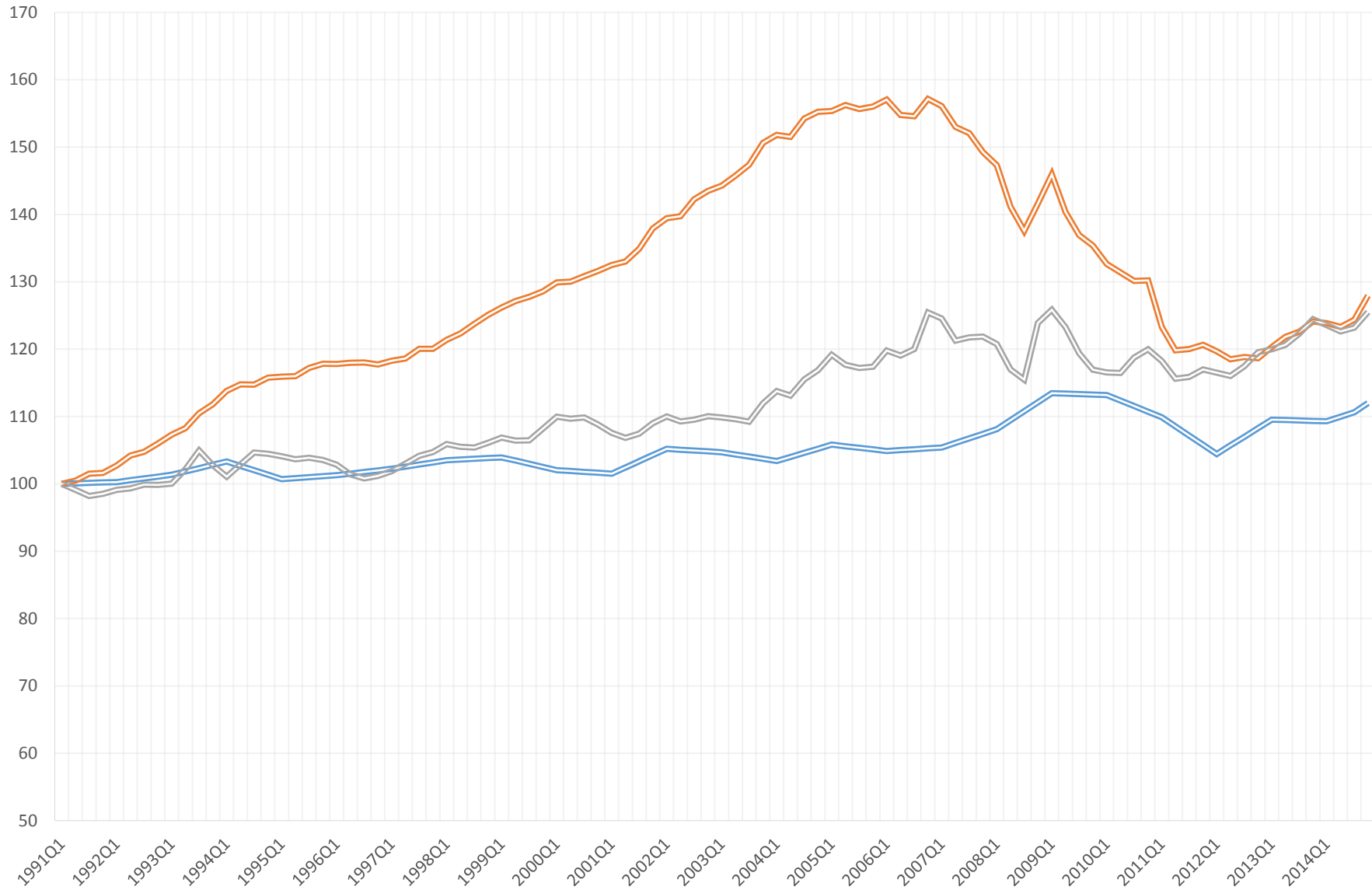
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