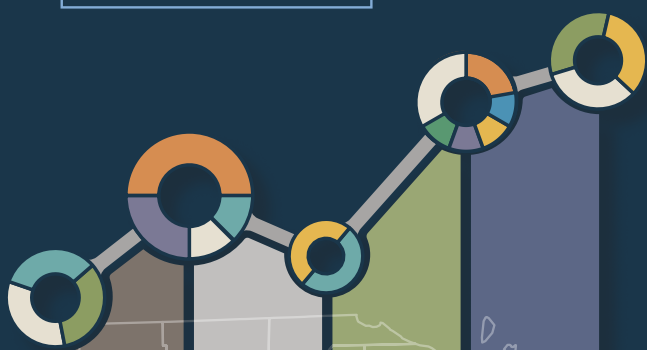


CLEVELAND FED

Regional
Policy
Report



FOURTH DISTRICT ALMANAC 2026

Stephan Whitaker
Mitchell Isler
Brett Huettner

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INTRODUCTION

The Federal Reserve Bank of Cleveland is responsible for monitoring economic conditions in the Federal Reserve System's Fourth District, which includes Ohio, western Pennsylvania, eastern Kentucky, and six counties in northern West Virginia. Our reports on economic conditions inform monetary policy decisions and are shared with the public and policy makers throughout the District. To provide context for the timely, high-frequency data we gather and share, we have created a collection of historical data in this publication, the Fourth District Almanac. The almanac includes measures of productivity, employment, and demographics to explore the structure and history of the District's economy. Our Beige Book publications focus on the very recent past and near future. Our District Data Brief (DDB)

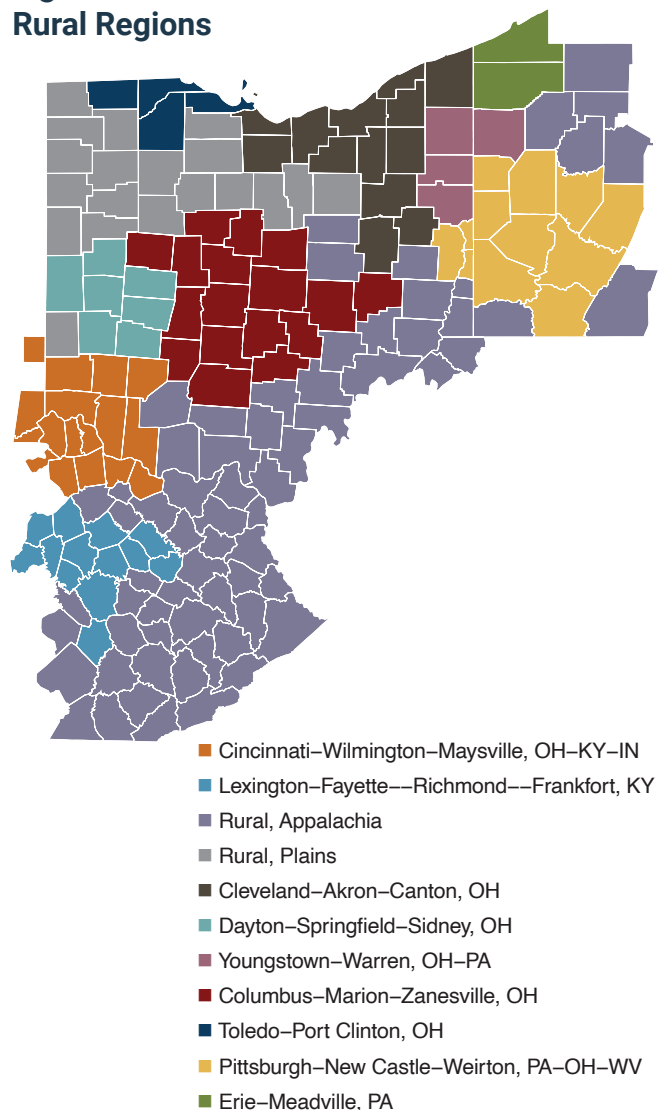
series sometimes covers long-term structural changes, focusing on a single topic. The almanac aims to complement those reports by being an extensive reference document where one can find long time series covering most economically important measures. For readers of the Beige Book and DDBs, or anyone interested in a region within the Fourth District, understanding the ways that areas of the District are similar to or distinct from other regions of the country is critical to making efficient use of current information. We intend to update the almanac annually and add additional measures in the early revisions. We welcome suggestions regarding the content or presentation, and hope readers find the current edition useful.

GEOGRAPHIES IN THE ALMANAC

In the almanac's figures and tables, we present measures for the District's nine combined statistical areas (CSAs) and two rural regions. The Fourth District is large and diverse enough that if we aggregate measures to the District level, they are often very similar to the US aggregates in their levels and trends. However, we recognize that when regions of the country differ from the national trends in terms of economic conditions, the metro area is usually the most relevant scale. Metro areas share a labor force and markets for local services. Our rural regions span multiple commuting zones, but they still share economic histories and current industrial structures. States or Federal Reserve Districts almost always contain some regions that are prospering and some that are struggling, which gives us a reason to report on them separately. Also, we recognize that the public, the press, and policy makers are most often interested in conditions in their metro area or rural region.

To keep the number of regions we present manageable, we use the largest definition of metro areas, the Combined Statistical Area (CSA). The CSA definition combines Cleveland with Akron and Canton, for example. We combine the rural counties in Appalachia into one group. The remaining rural counties, which are all in western Ohio, are combined into a group that we refer to as "Rural, Plains." To present series for our 11 geographies and US and District comparisons, we create one chart for the Fourth District's five most populous metro areas and another chart for its four less-populous metro areas and rural regions. Figure 1 displays a map of the Fourth District counties divided into the 11 geographies. A few counties that lie outside the District are included because they are part of one of the District's CSAs, and we want the almanac's estimates to be consistent with similar metro area estimates presented in other sources.

Figure 1. Fourth District Metro Areas and Rural Regions



HISTORICAL CONTEXT

To aid our understanding of the long-run evolution of the District's economy, we present many historical series that date back to just before the creation of the Federal Reserve System, 1910. Some series were not available until more recent decades, and in those cases, we show the entire available history.

The value of understanding a region's past is demonstrated by the extensive economic literature that documents persistence in regional advantages and disadvantages (Davis and Weinstein, 2002; Bleakley and Lin, 2012; Henderson et al., 2018; Hanlon and Heblich, 2022). Periods of prosperity or stagnation become embedded in a region's culture and institutions (Alesina and Giuliano, 2015) and usually persist until another positive or negative shock changes the region's trajectory (Acemoglu, Johnson, and Robinson, 2002; Hanlon, 2017). Likewise, personal life experiences shape the economic decision-making of

individuals (Malmendier and Nagel, 2011; Malmendier, Tate, and Yan, 2011), and parents and grandparents pass some of these preferences and attitudes on to their children (Dohmen et al., 2012).

In the demographics section, we see evidence that the Fourth District's population is very rooted. Approximately 75 percent of the people who live in the Fourth District were born in the District. No region of our District has received high levels of international or out-of-state migrants in recent decades. In the United States overall, only 58 percent of the population is native to the state in which they currently live. Because most of the people in our District experienced the history represented in the charts firsthand, the historic series can help readers understand what their region's residents have in mind as they are running their businesses and speaking about current economic conditions.

PLACING REGIONS IN THE NATIONAL DISTRIBUTION

A few of the almanac's figures present levels or counts as measures, where economies of scale or agglomeration are important. Some measures are presented as shares to highlight whether something is more or less important in the 11 regions relative to in other regions of the country. Each graph includes a national average line, a Fourth District average line, and shading to represent the 25th–75th and 10th–90th percentile ranges of the national distribution. The national distribution represents regions, not individuals. We first calculate a value for the 168 metro areas (CSAs) and 629 rural CZs in the United States. We then calculate the percentiles of a population-weighted distribution of those 797 regions. Population weighting is necessary because an unweighted distribution is dominated by the numerous but sparsely-populated rural CZs.

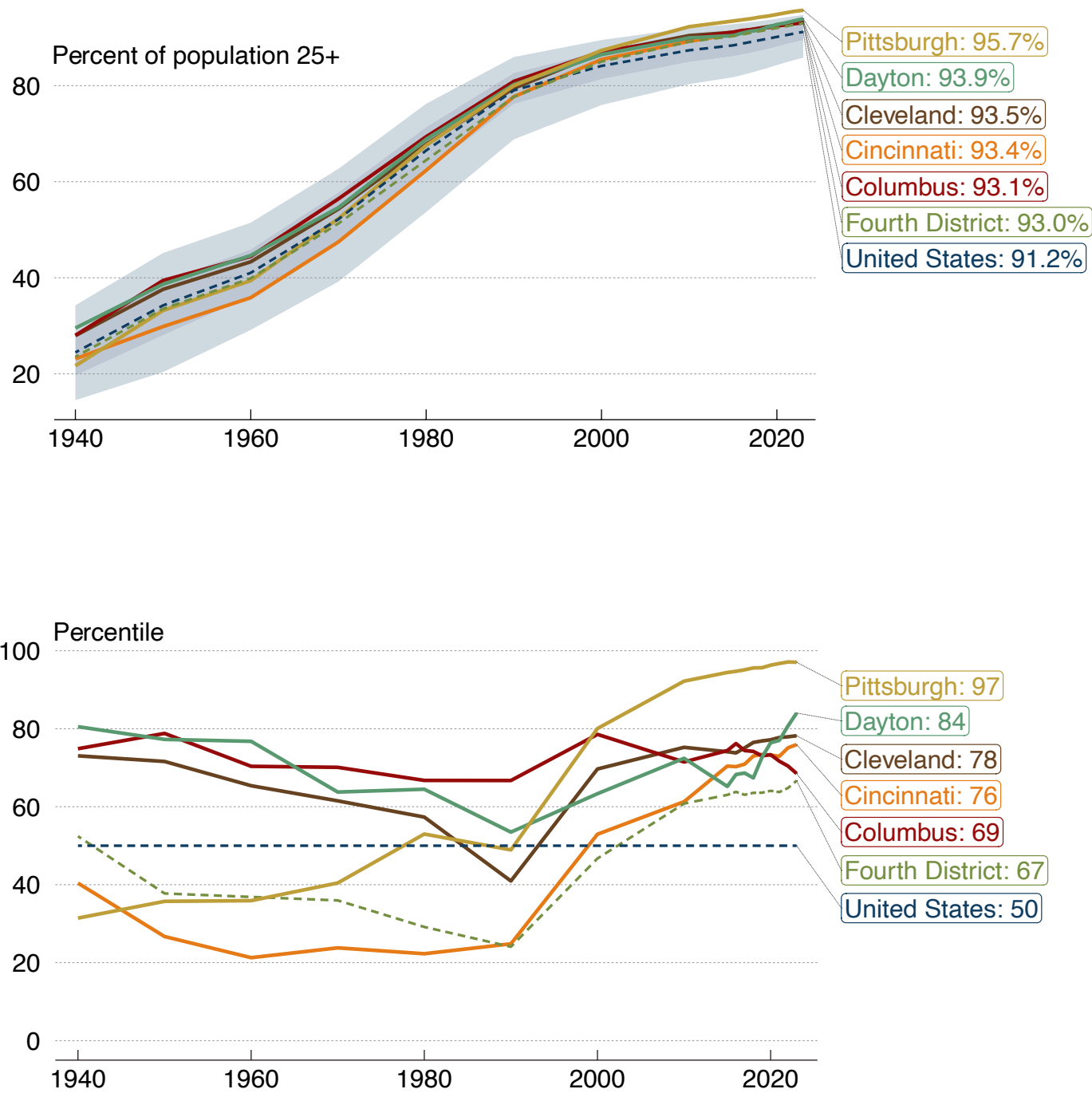
In many instances, we present series of percentiles instead of levels because the distribution of a measure is narrow relative to the long run changes. For example, the share of adults with a high school degree in most regions rose from around 20

percent in 1940 to around 80 percent in 2020. A plot of the percentages for each metro area appears to be a tight cluster of lines rising together (see Figure 2, top panel). To better highlight the consequential differences at specific points in time, we instead plot the 11 regions' places in the national distribution via percentiles (see Figure 2, bottom panel). For each percentile graph in the main text, there is a link to the corresponding level graph in the Appendix and vice versa.

The percentiles plotted for each region of the Fourth District represent whether the regional value of the measure being experienced by residents of that region is high or low relative to the regional values being experienced by other people throughout the country. While the Fourth District is not one of the units used when calculating the percentiles, we can still say what percentile it would fall in based on the District-wide value of the measure. That allows us to place a Fourth District line on each percentile graph.

PLACING REGIONS IN THE NATIONAL DISTRIBUTION

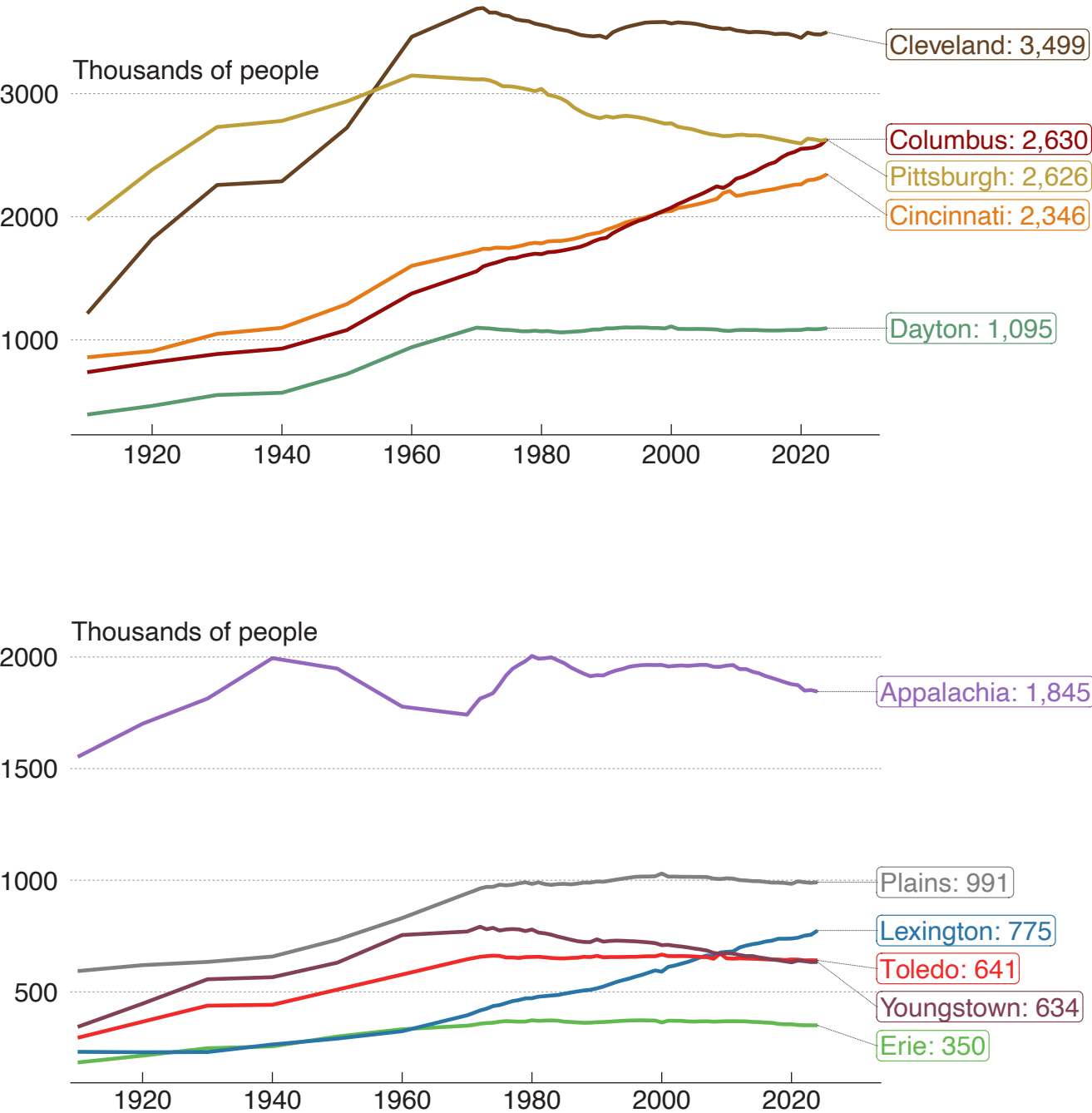
Figure 2. Example of a Percentile Graph: High School Attainment



Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations. Notes: Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

POPULATION, LABOR FORCE, AND UNEMPLOYMENT

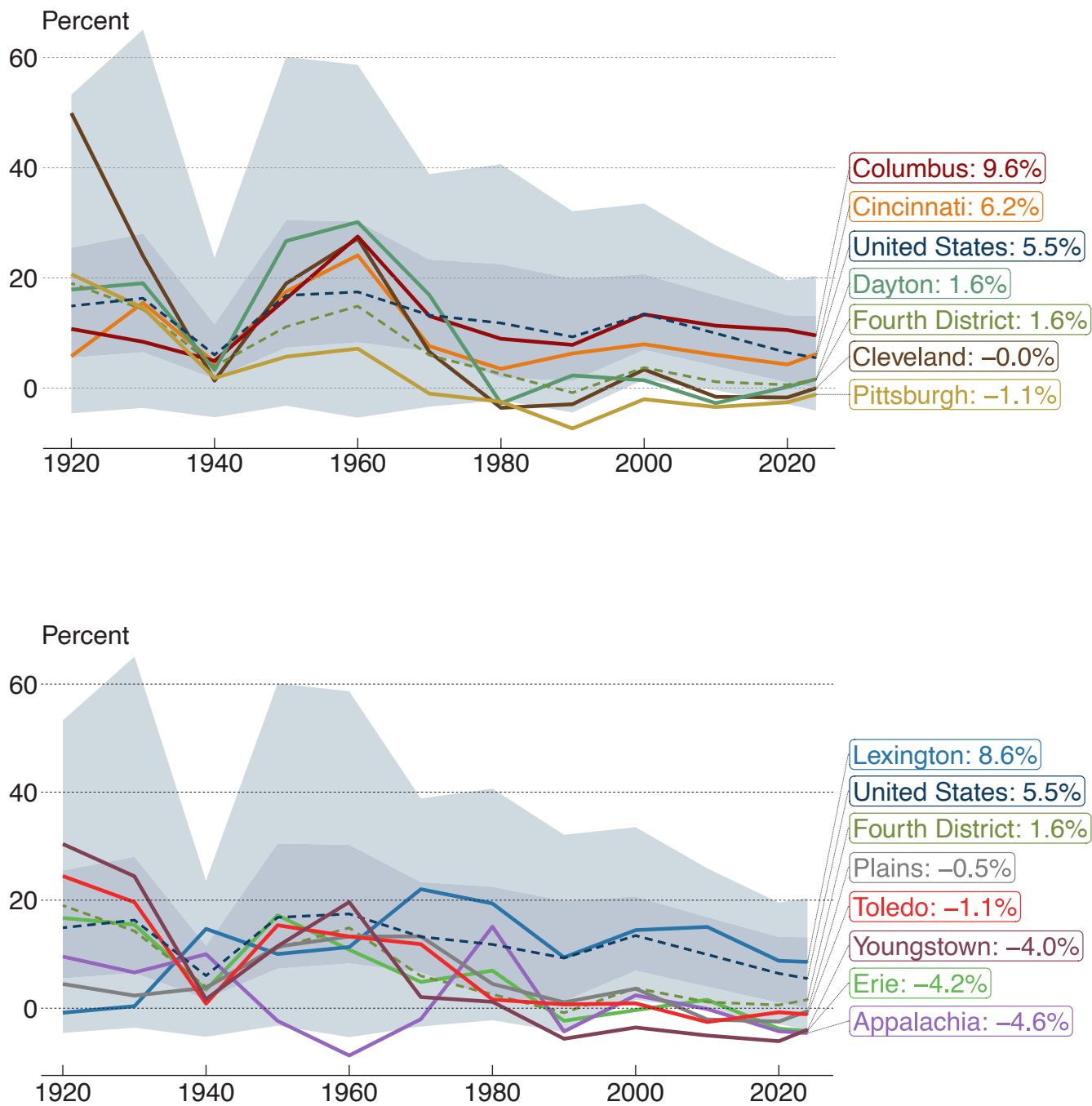
Figure 3. Total Population



Source: Census Bureau via NBER and Haver Analytics, and authors' calculations.
Last observation: 2024

POPULATION, LABOR FORCE, AND UNEMPLOYMENT

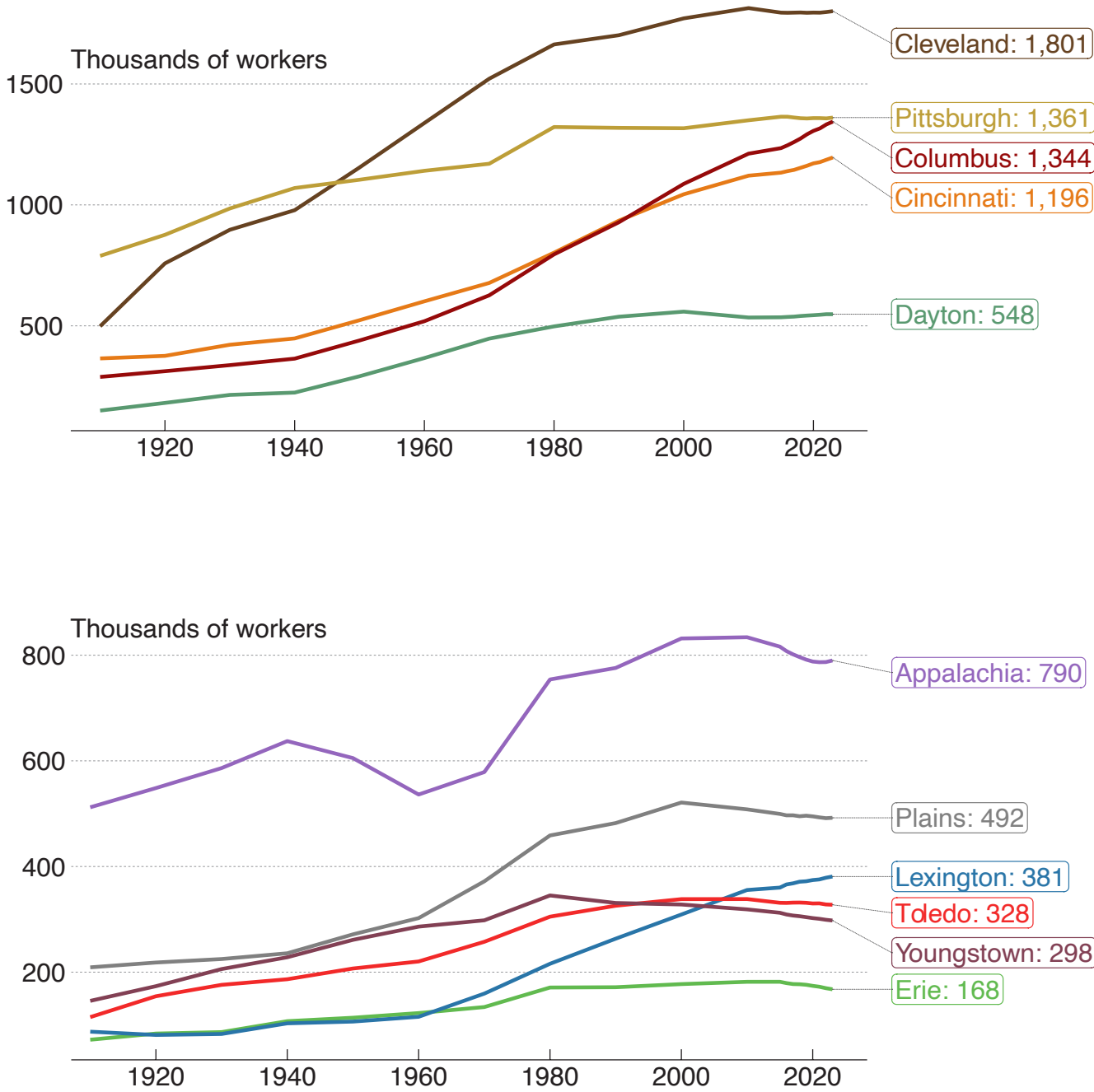
Figure 4. Population Growth (over the last 10 years)



Source: Census Bureau via NBER and Haver Analytics, and authors' calculations.
Last observation: 2024

POPULATION, LABOR FORCE, AND UNEMPLOYMENT

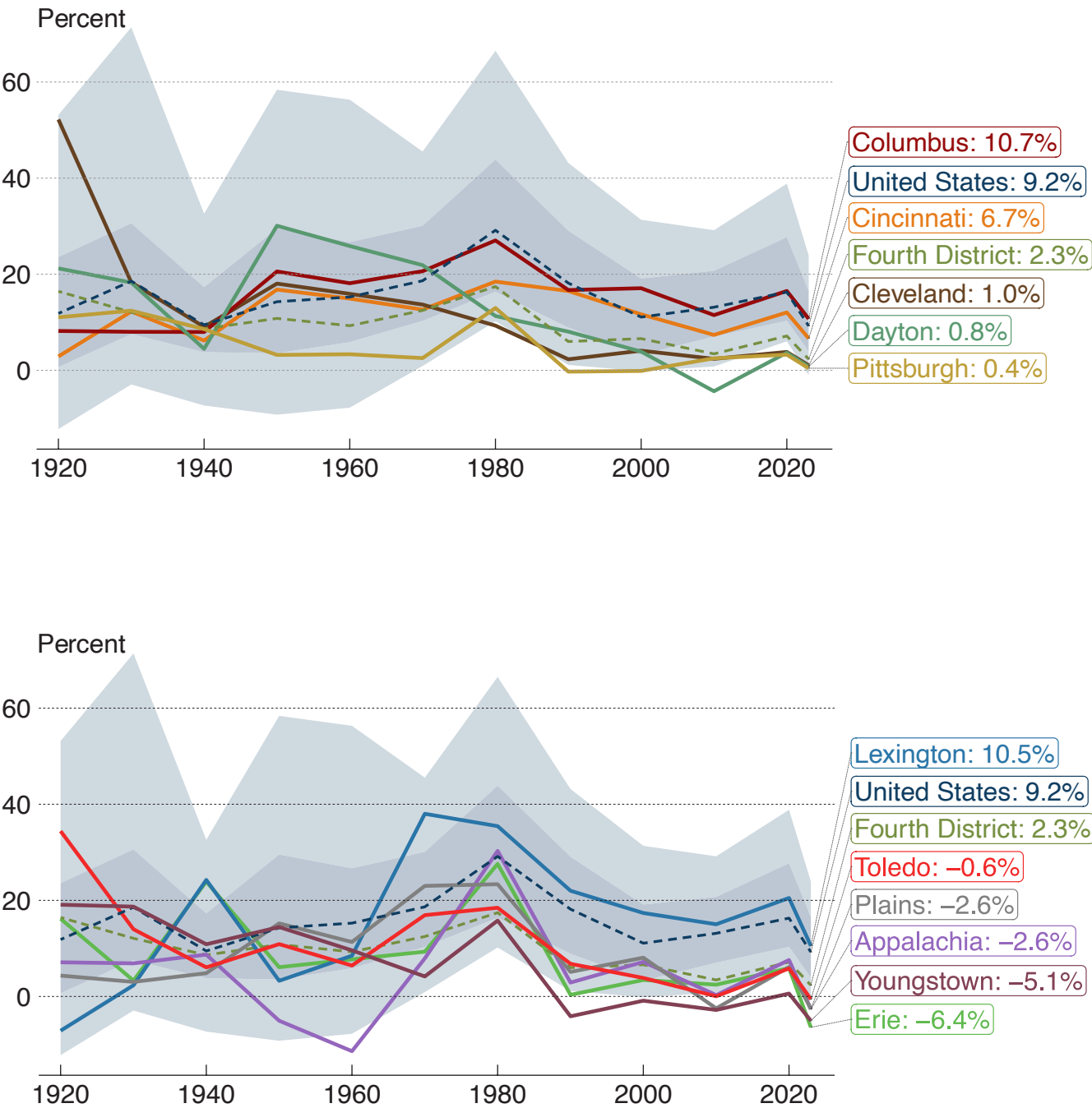
Figure 5. Labor Force Size



Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.
Last observation: 2023

POPULATION, LABOR FORCE, AND UNEMPLOYMENT

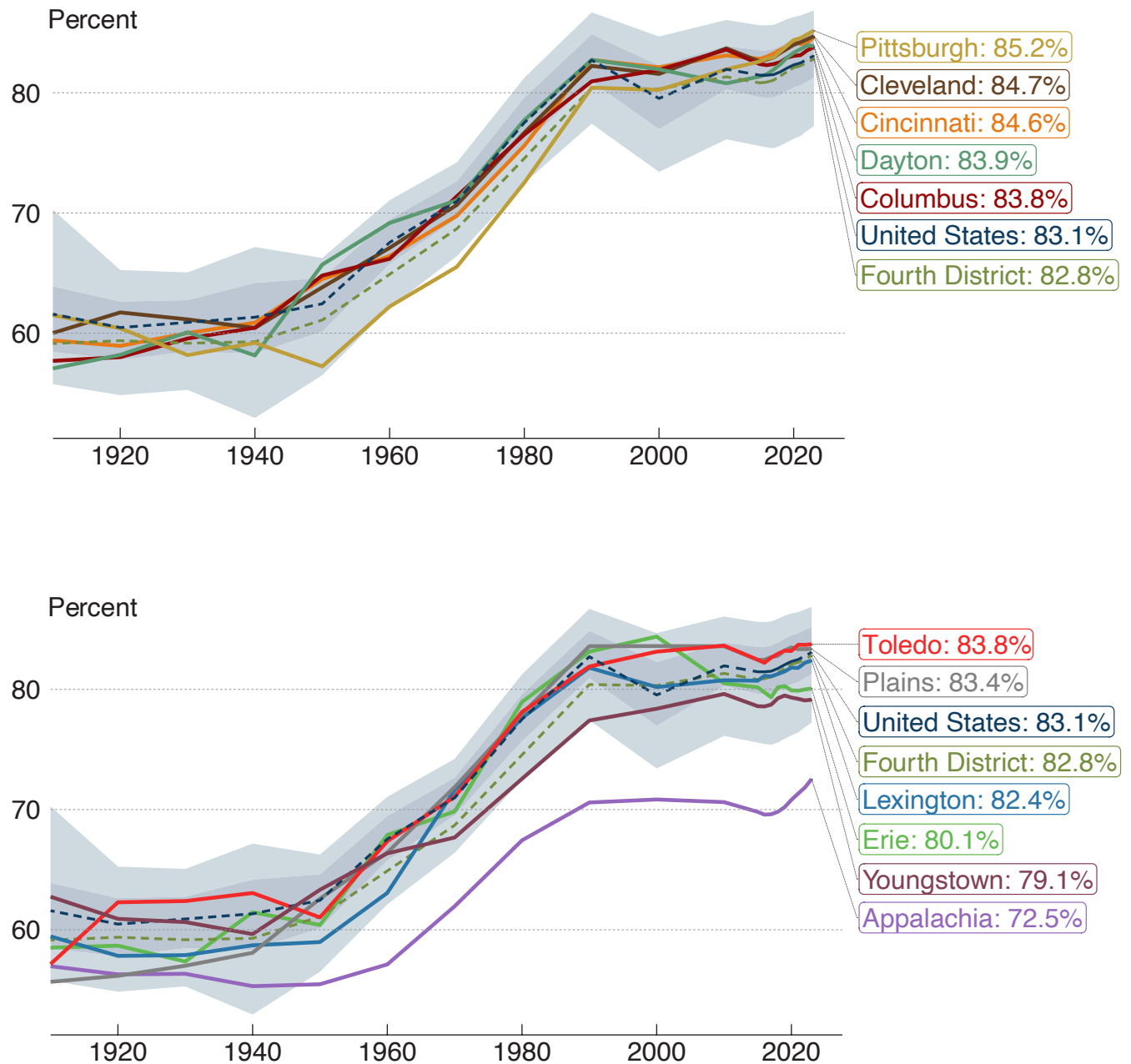
Figure 6. Labor Force Growth (over the last 10 years)



Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.
Last observation: 2023

POPULATION, LABOR FORCE, AND UNEMPLOYMENT

Figure 7. Prime-Age (25–54) Labor Force Participation



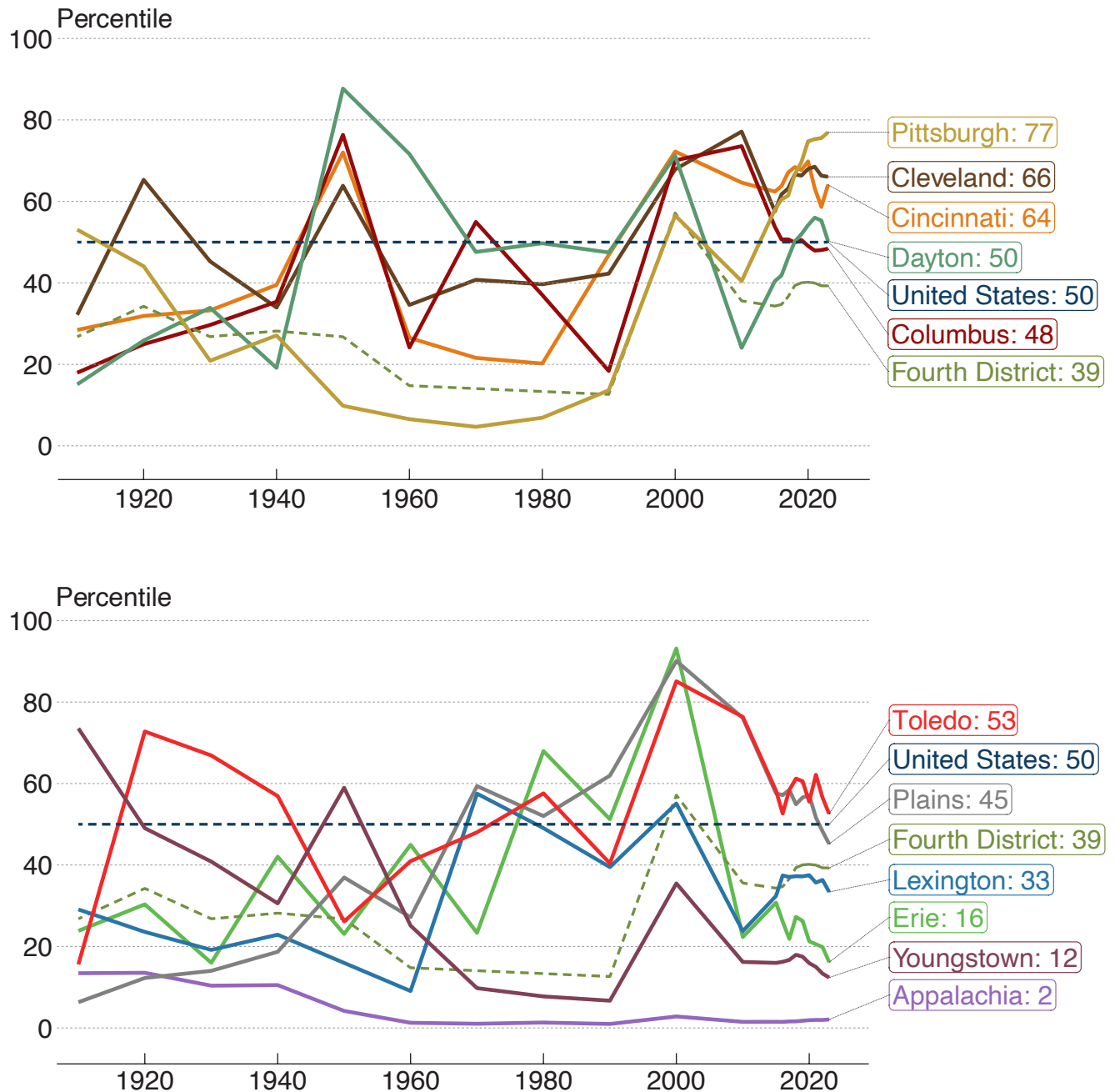
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Labor force participation rate (LFPR) for the 16+ population is presented in **Figure A5**. Dark gray shading indicates 25th–75th percentile range. Light gray shading indicates 10th–90th percentile range.

Last observation: 2023

POPULATION, LABOR FORCE, AND UNEMPLOYMENT

Figure 8. Percentile Prime-Age (25–54) Labor Force Participation



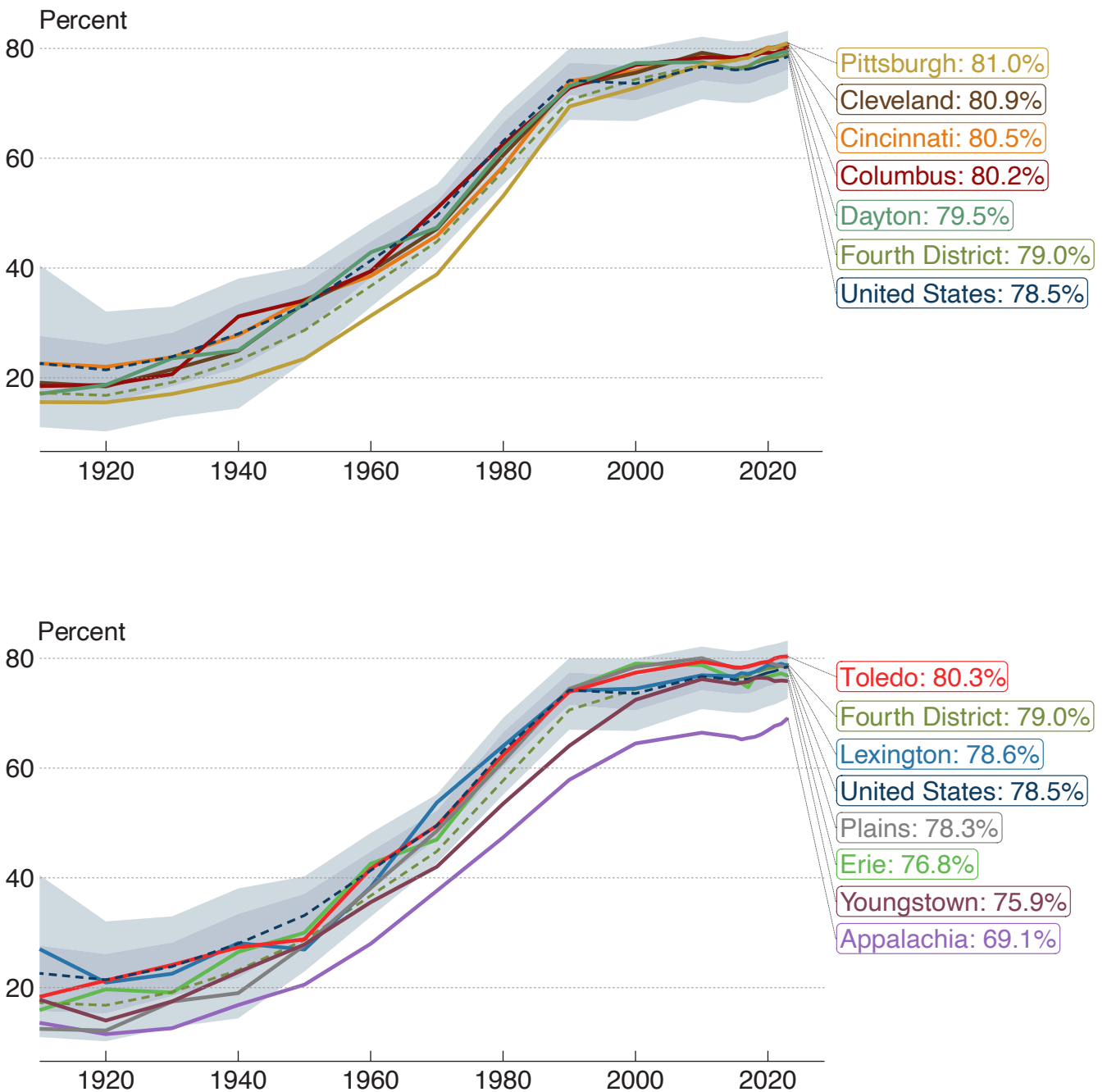
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: The LFPR percentiles for the 16+ population are presented in **Figure A6**.

Last observation: 2023

POPULATION, LABOR FORCE, AND UNEMPLOYMENT

Figure 9. Women's Prime-Age (25–54) Labor Force Participation



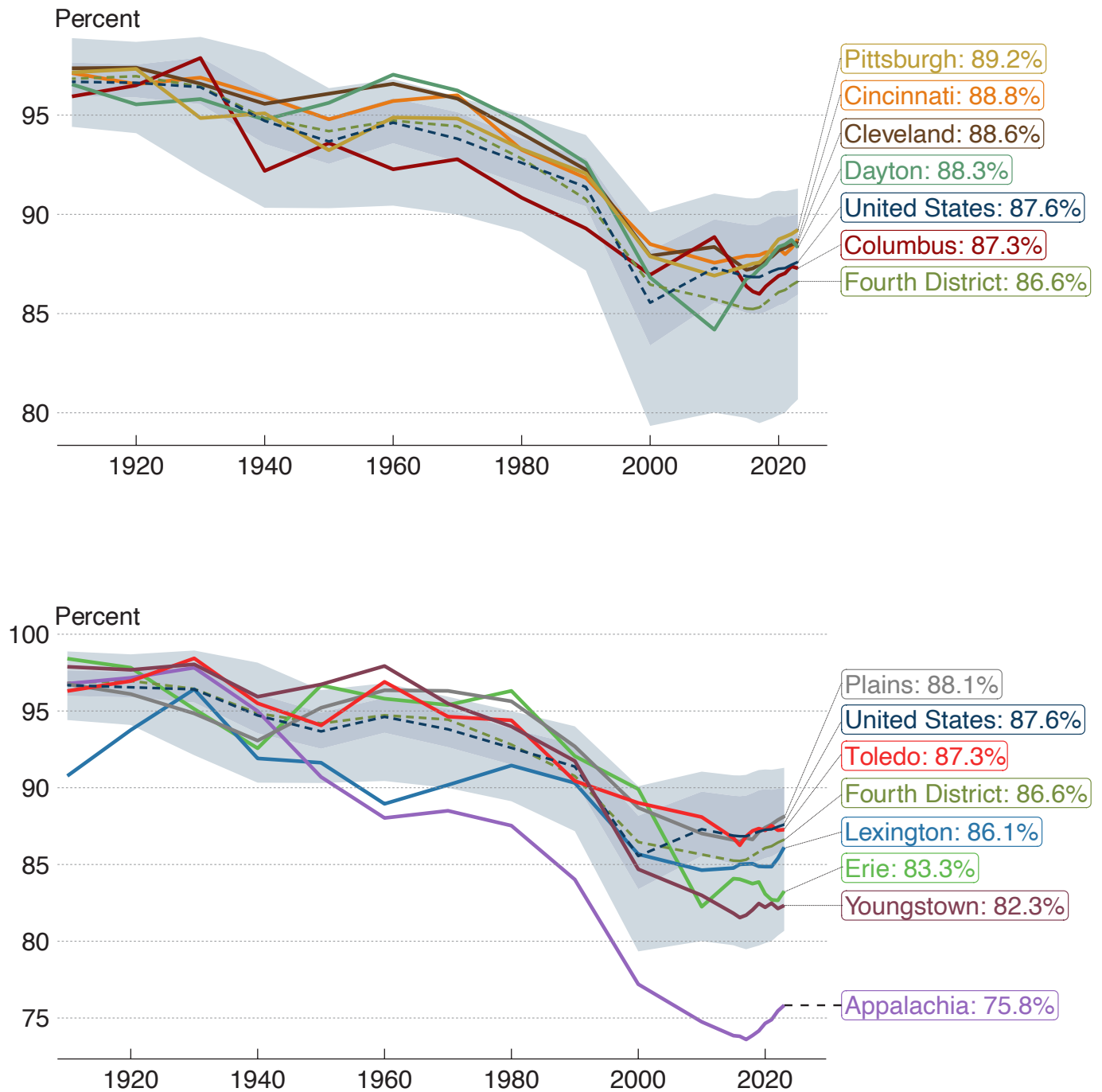
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

POPULATION, LABOR FORCE, AND UNEMPLOYMENT

Figure 10. Men's Prime-Age (25–54) Labor Force Participation



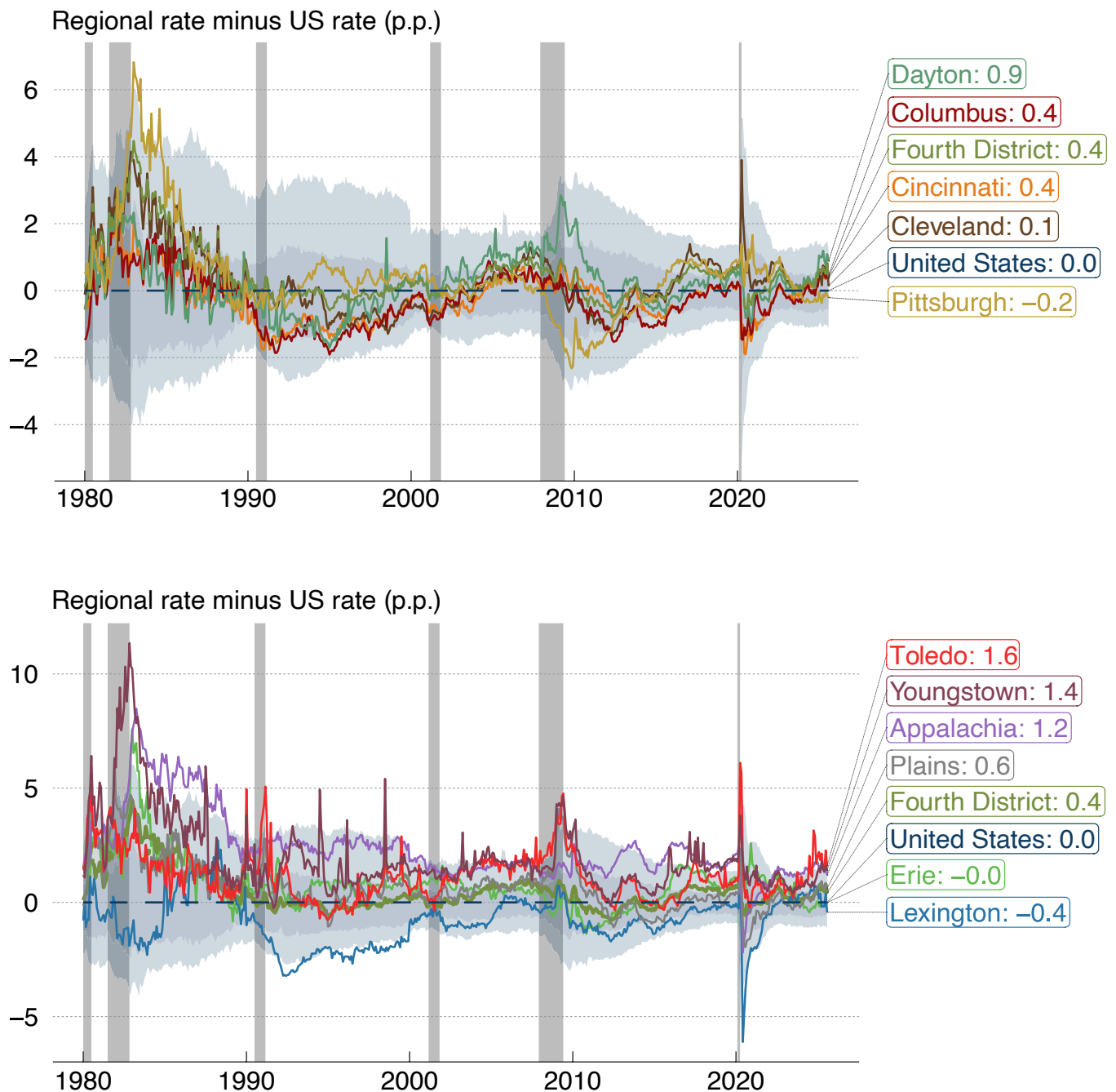
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

POPULATION, LABOR FORCE, AND UNEMPLOYMENT

Figure 11. Unemployment - Difference between Regional and National Rates



Sources: Bureau of Labor Statistics via Haver Analytics, and authors' calculations.

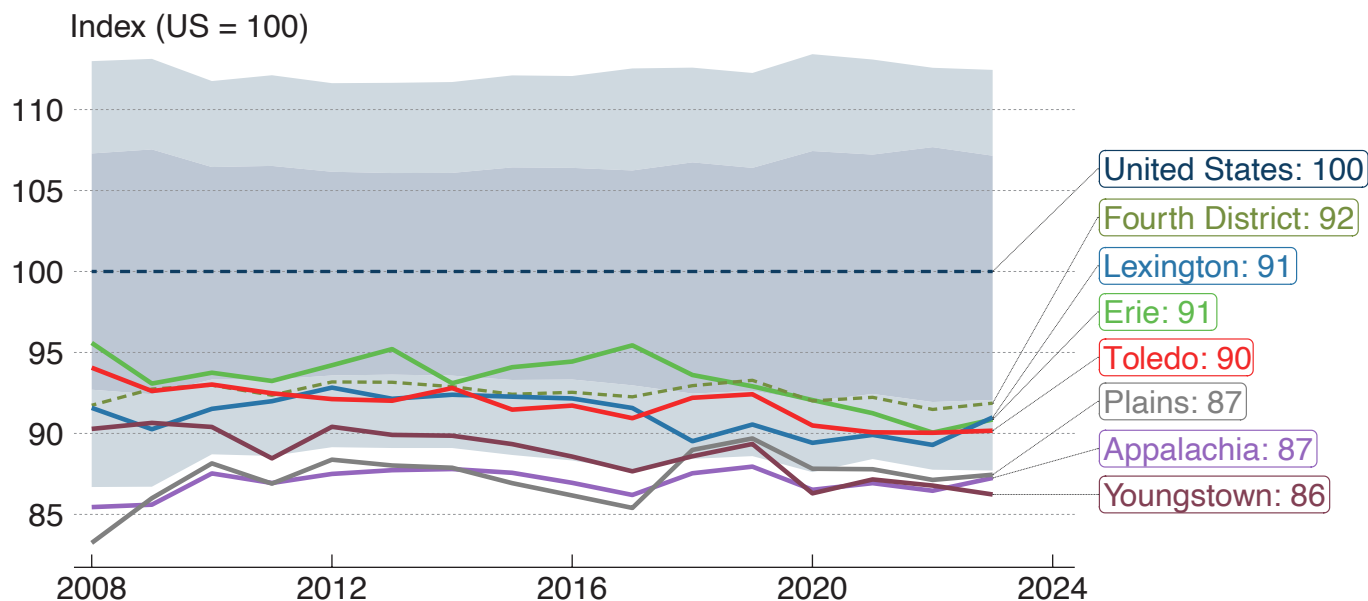
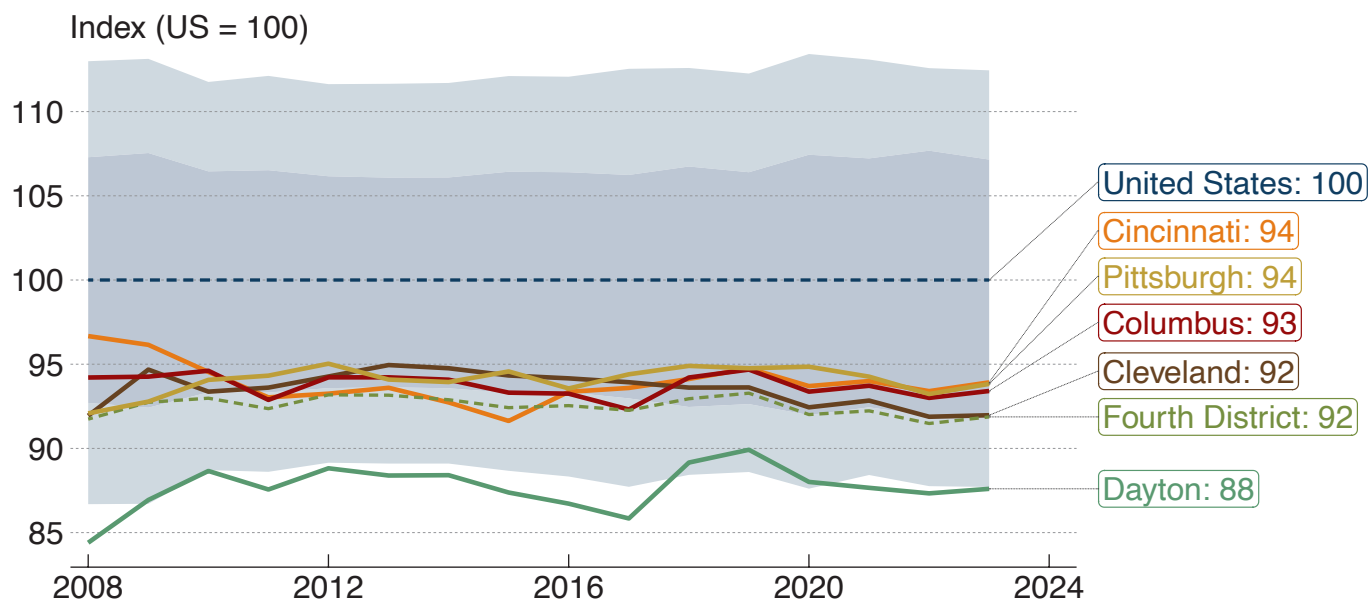
Notes: Unemployment levels are presented in **Figure A7**. Gray shading indicates recessions. Dark blue shading indicates 25th-75th percentile range. Light blue shading indicates 10th-90th percentile range.

Last observation: 2023

PRICES

In regional price parity (RPP) estimates, the national price levels are represented by the value 100 and the regional estimate quantifies how far above or below this level a region's prices are. A regional value of 95, for example, suggests prices in the region are 5 percent lower than the national average.

Figure 12. Regional Price Parities: All Items



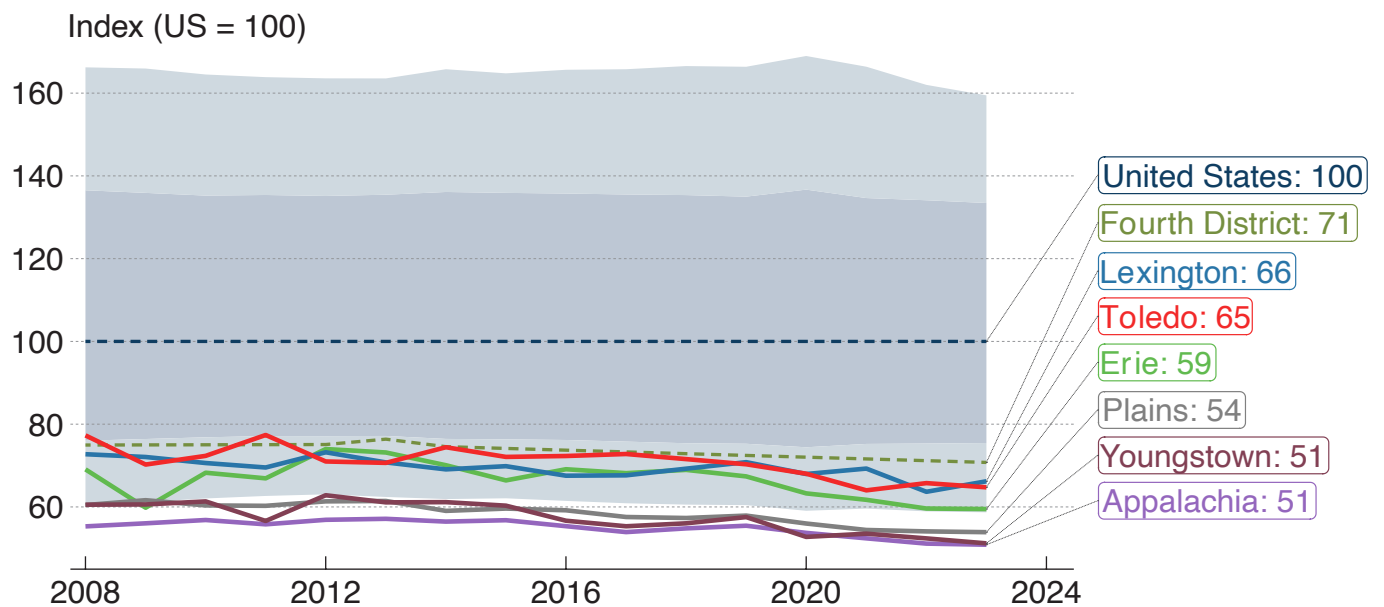
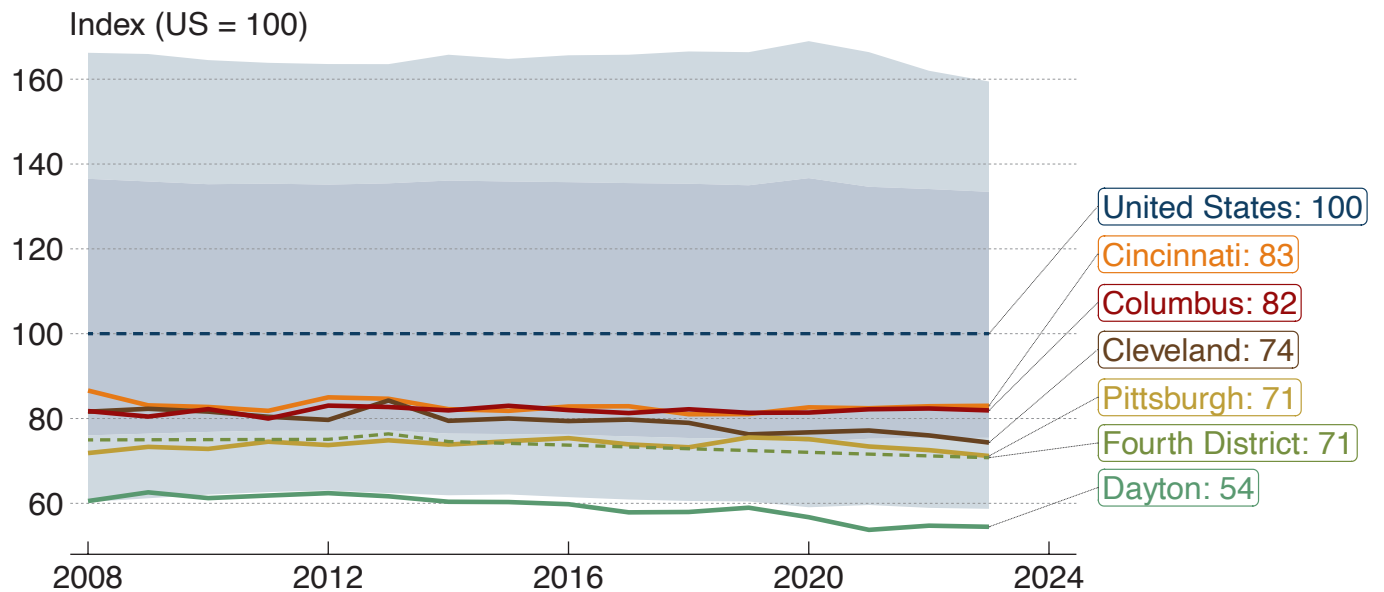
Sources: Bureau of Economic Analysis and authors' calculations.

Notes: Regional price deflators are presented in **Figure 14**. The price levels are determined by the average prices paid by consumers for the mix of goods and services consumed in each region. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

PRICES

Figure 13. Regional Price Parities: Housing



Sources: Bureau of Economic Analysis and authors' calculations.

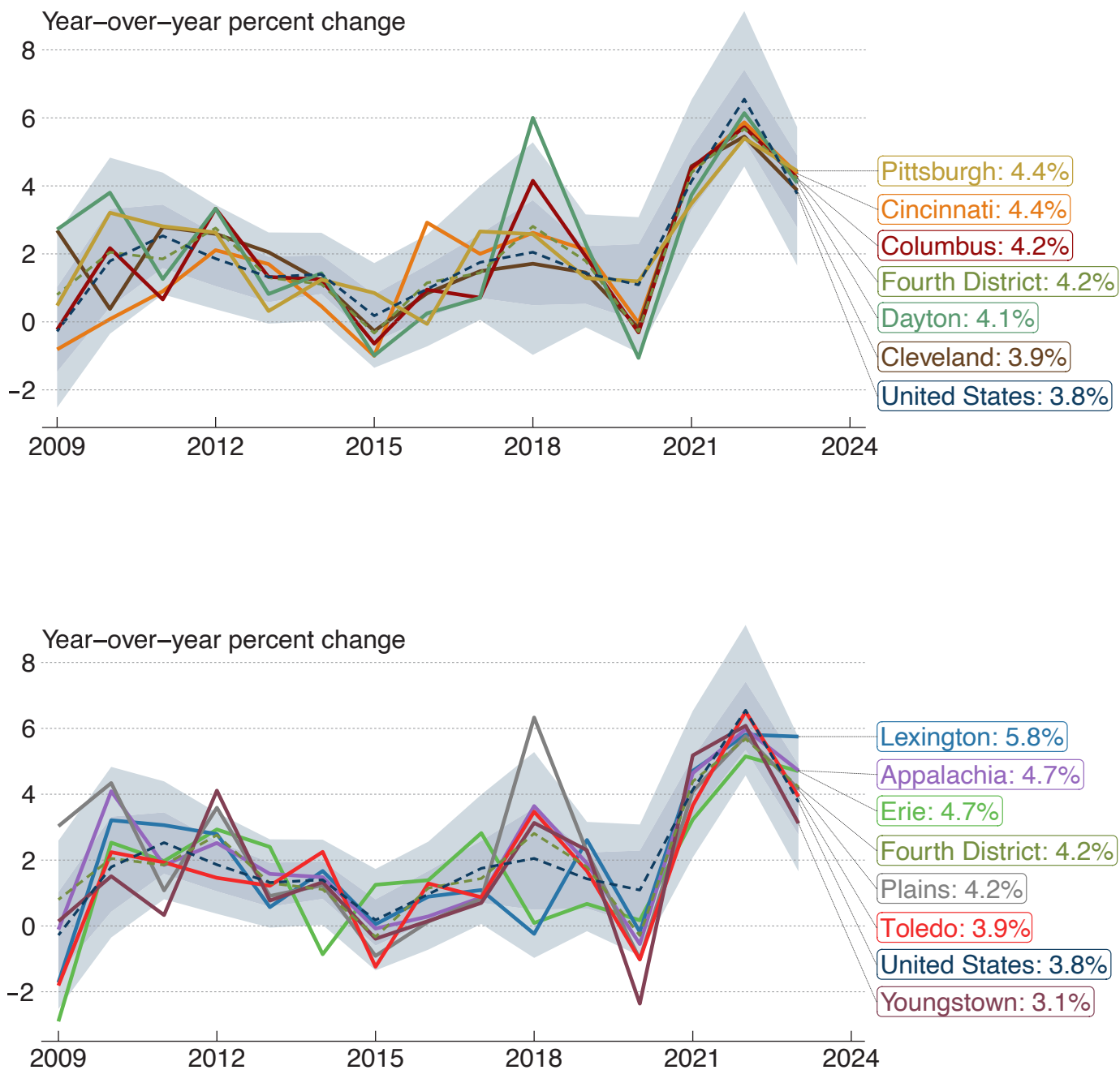
Notes: Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

PRICES

The BEA calculates an implicit regional price deflator, which is the product of the region's RPP and the US PCE price index.

Figure 14. Regional Price Growth



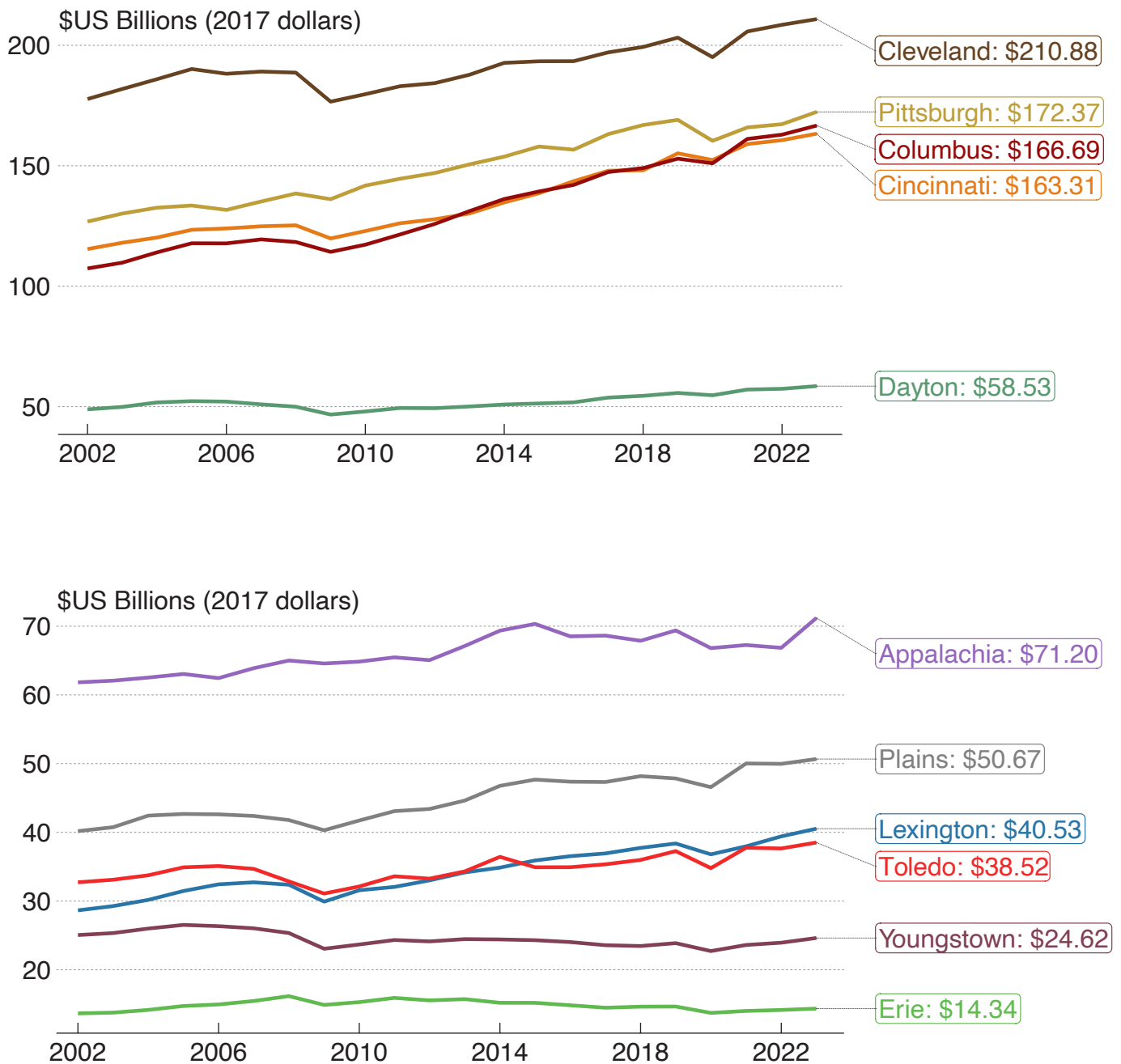
Source: Bureau of Economic Analysis and authors' calculations.

Notes: RPP measures are presented in **Figure 12**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

GROSS DOMESTIC PRODUCT

Figure 15. Total GDP



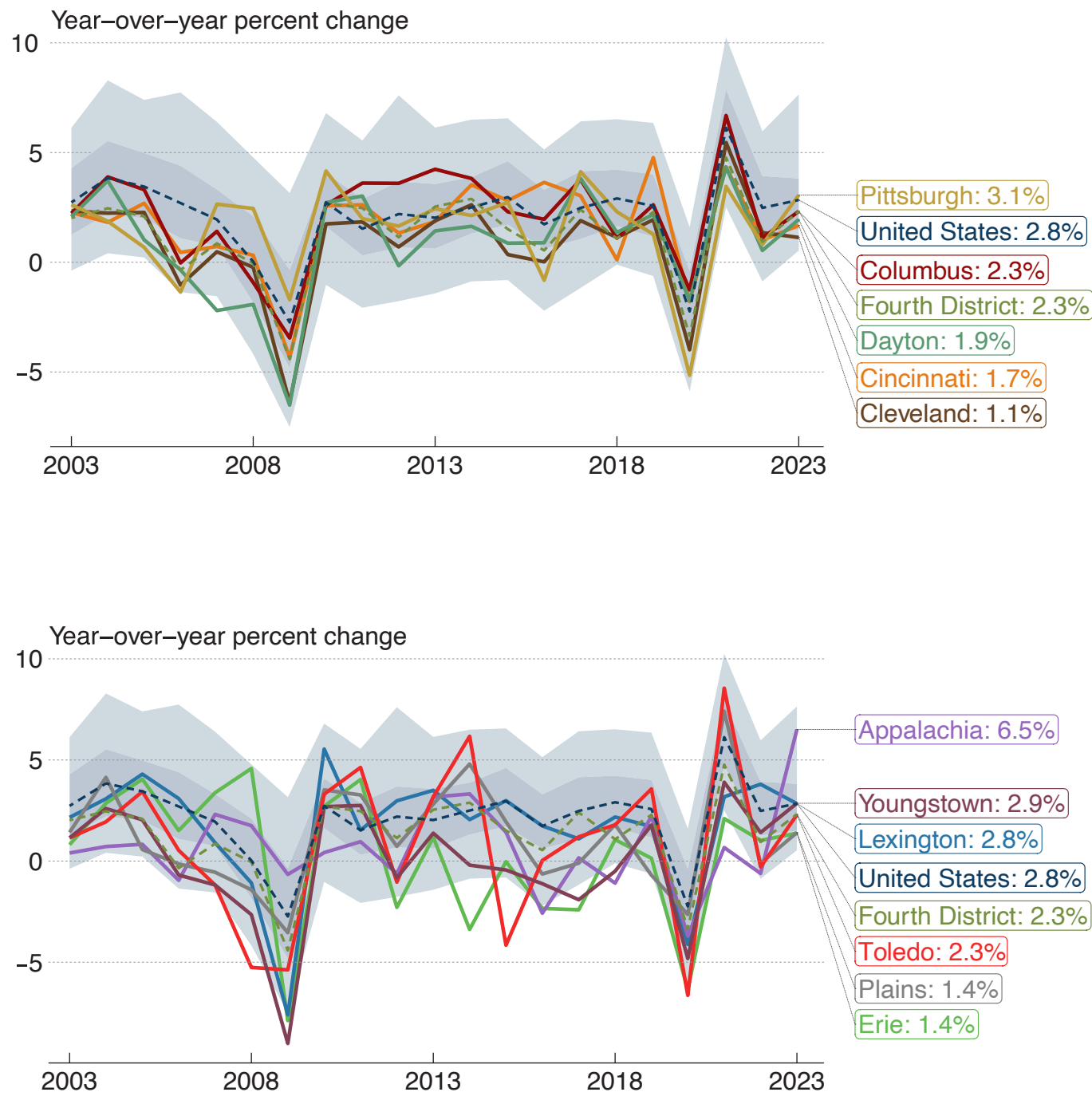
Sources: Bureau of Economic Analysis and authors' calculations.

Notes: GDP shares for service industries, good-producing industries, and government can be found in **Figures A10, A11, and A12**.

Last observation: 2023

GROSS DOMESTIC PRODUCT

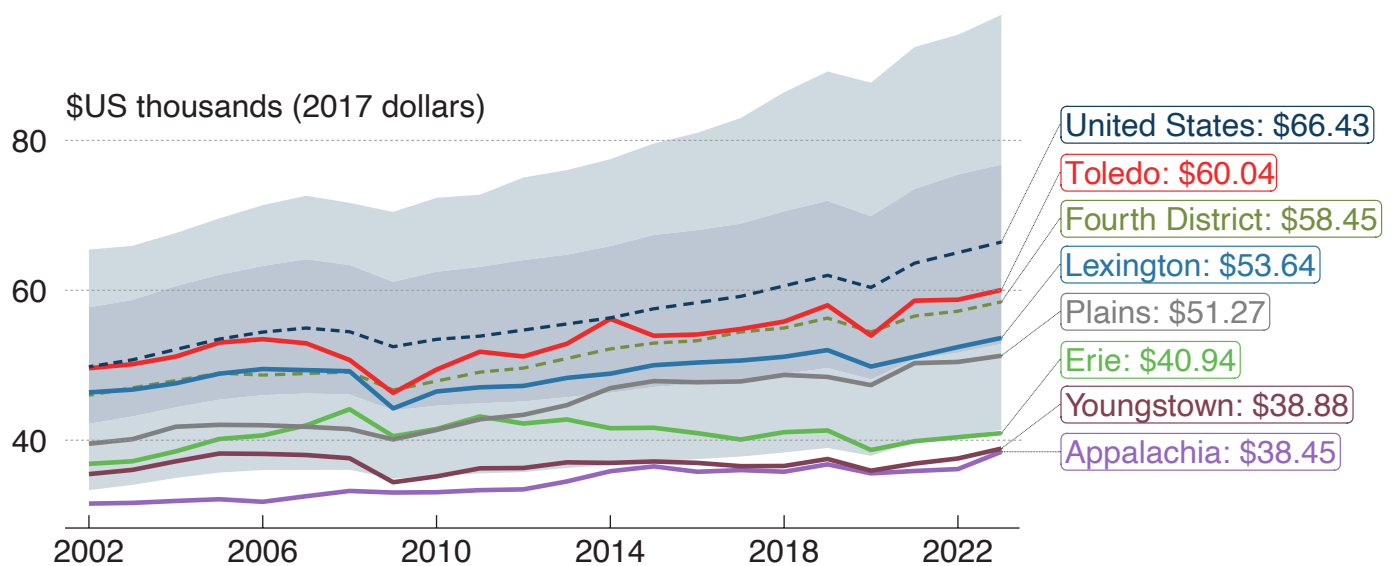
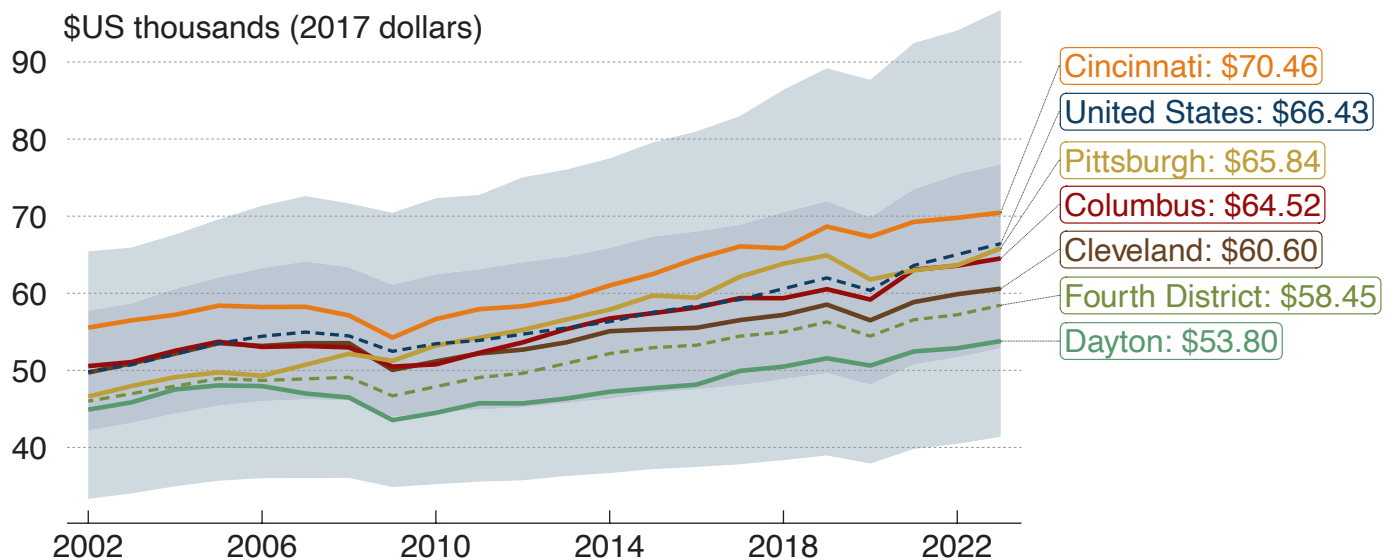
Figure 16. GDP Growth



Sources: Bureau of Economic Analysis and authors' calculations.
Note: Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.
Last observation: 2023

GROSS DOMESTIC PRODUCT

Figure 17. GDP Per Capita



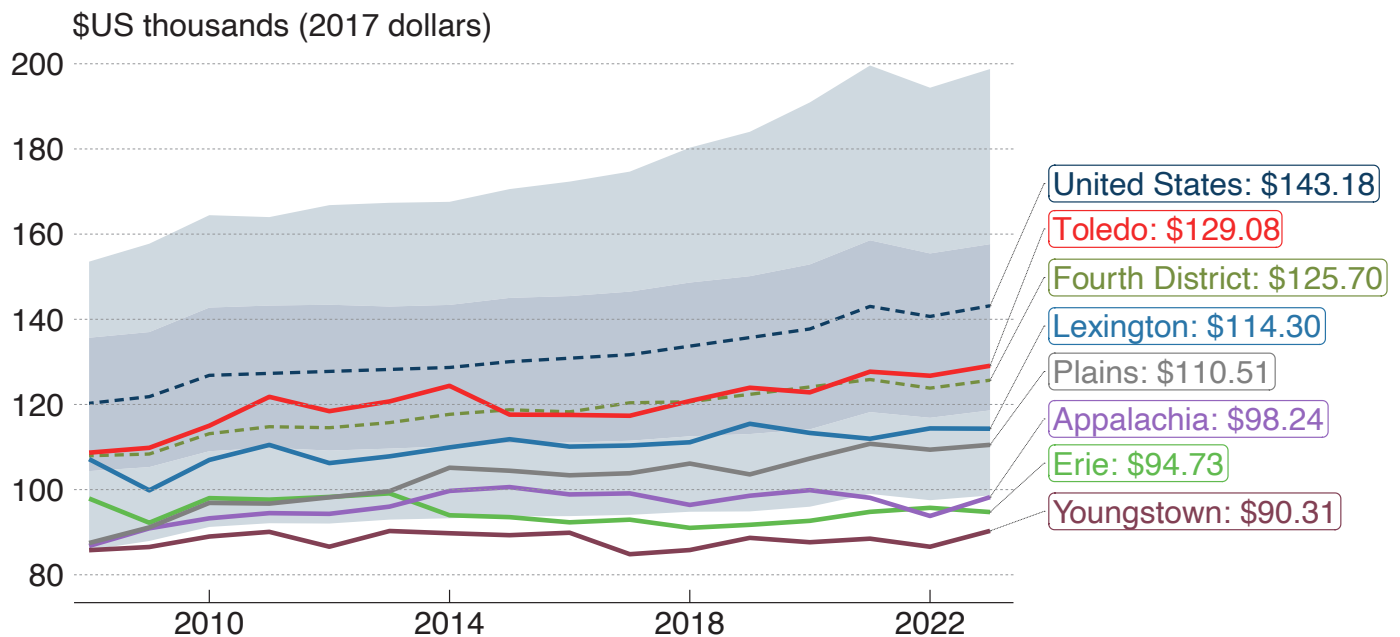
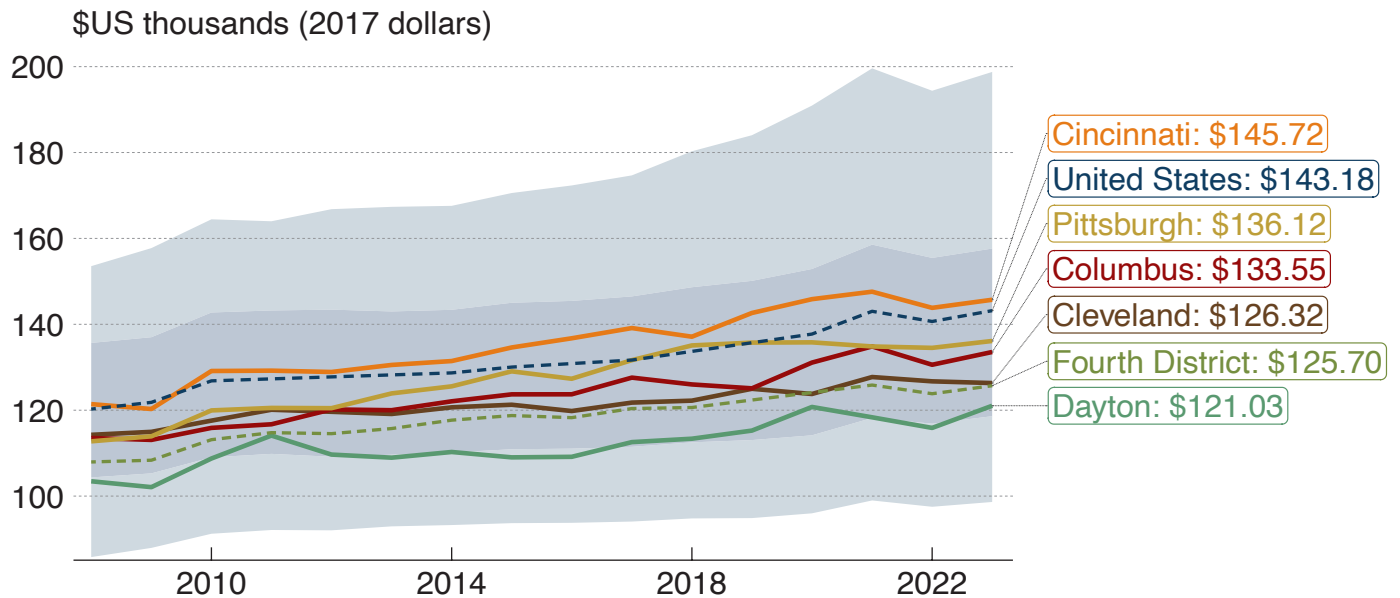
Sources: Bureau of Economic Analysis, US Census Bureau, and authors' calculations.

Note: Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

GROSS DOMESTIC PRODUCT

Figure 18. GDP Per Worker



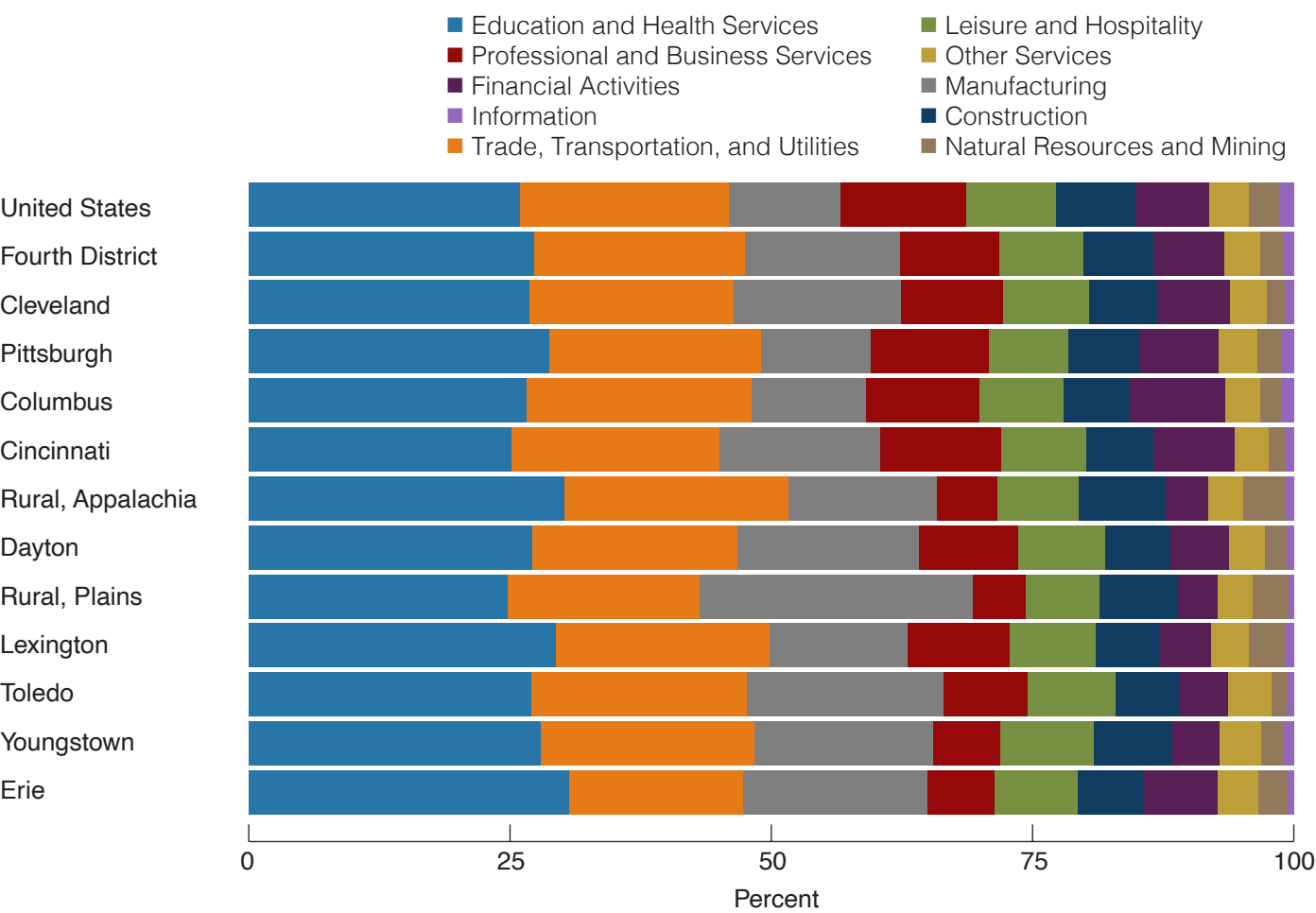
Sources: Bureau of Economic Analysis, US Census Bureau, and authors calculations.

Note: Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

EMPLOYMENT BY INDUSTRY

Figure 19. Industry Employment Shares



Sources: American Community Surveys 2019–2023, IPUMS USA Version 15.0, University of Minnesota, and authors’ calculations.

Notes: Shares are estimated with the average from 2019 through 2023 to ensure adequate sample sizes. The equivalent graph based on the Quarterly Census of Employment and Wages (QCEW) can be found in **Figure A18**.

EMPLOYMENT BY INDUSTRY

Location quotients (LQs) are often used to identify industry clusters. They are the ratio of the regional industry share of employment to the national industry share of employment.

Table 1. Industry Clusters in Fourth District Regions

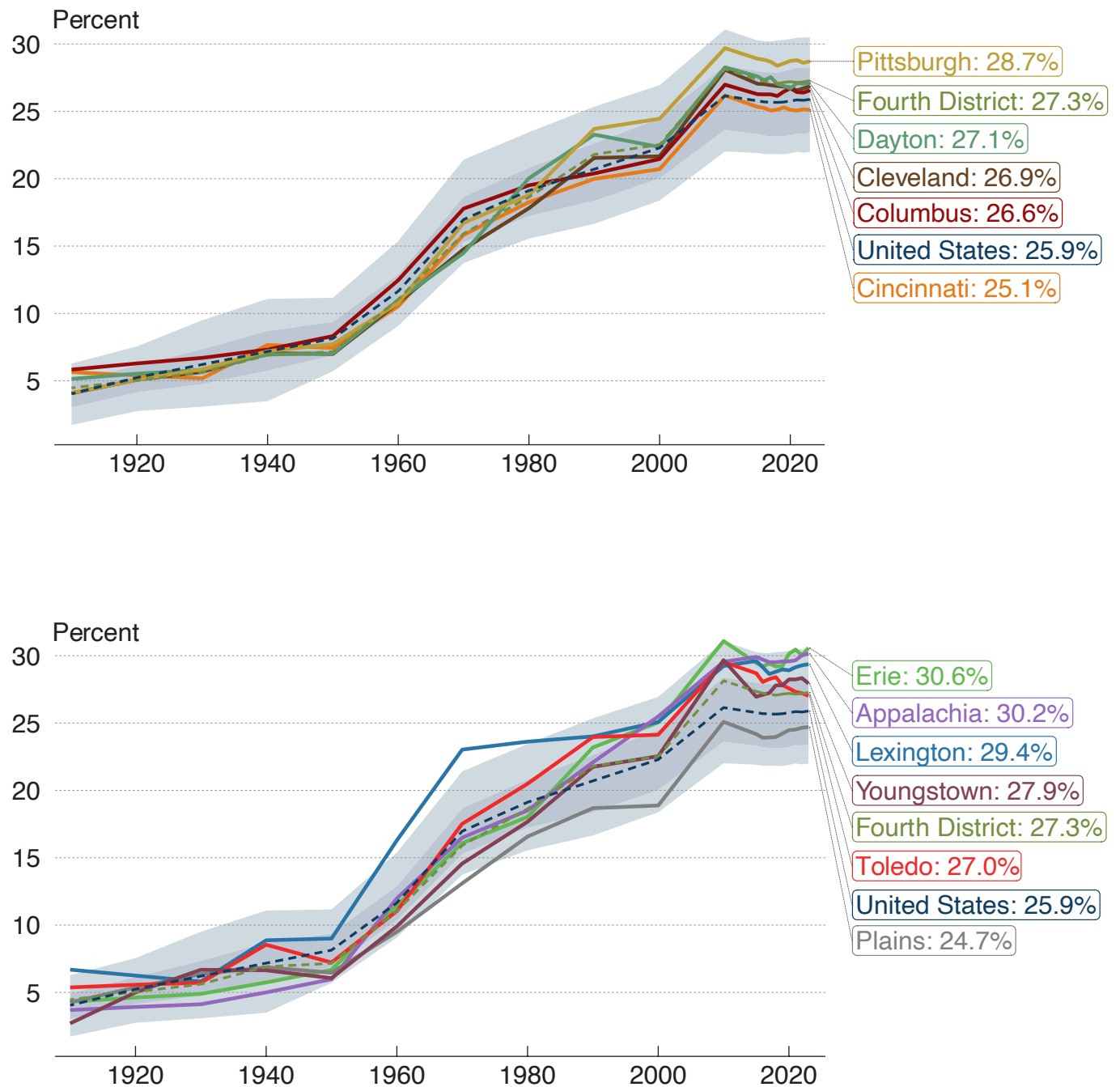
	Jobs	LQ		Jobs	LQ
Cleveland-Akron-Canton			Columbus		
Plastics and Rubber Products Manufacturing	16,710	3.09	Pipeline Transportation	1,084	2.93
Primary Metal Manufacturing	13,897	2.77	Warehousing and Storage	20,595	2.36
Fabricated Metal Product Manufacturing	34,995	2.74	Commercial Banking	34,109	2.35
Printing and Related Support Activities	8,289	1.79	Nonmetallic Mineral Product Manufacturing	6,322	1.95
Machinery Manufacturing	26,291	1.76	Primary Metal Manufacturing	5,709	1.5
Pittsburgh			Cincinnati		
Primary Metal Manufacturing	16,938	4.47	Primary Metal Manufacturing	7,517	2.22
Pipeline Transportation	913	2.47	Chemical Manufacturing	23,353	2.07
Mining (except Oil and Gas)	3,641	2.38	Paper Manufacturing	4,909	1.92
Rail Transportation	3,547	1.94	Machinery Manufacturing	18,740	1.87
Nonmetallic Mineral Product Manufacturing	5,804	1.79	Printing and Related Support Activities	5,415	1.73
Dayton			Lexington		
National Security and International Affairs	21,067	2.98	Support Activities for Agriculture and Forestry	1,528	4.17
Machinery Manufacturing	11,323	2.52	Oil and Gas Extraction	503	2.77
Transportation Equipment Manufacturing	20,449	2.35	Transportation Equipment Manufacturing	16,697	2.68
Warehousing and Storage	7,455	2.14	Beverage and Tobacco Product Manufacturing	1,890	2.37
Apparel Manufacturing	1,083	2.05	Fishing, Hunting and Trapping	243	2.36
Toledo			Youngstown		
Nonmetallic Mineral Product Manufacturing	5,003	6.55	Primary Metal Manufacturing	9,400	11.46
Petroleum and Coal Products Manufacturing	2,247	5.72	Scenic and Sightseeing Transportation	574	7.86
Electrical Equipment Manufacturing	2,868	3.32	Support Activities for Agriculture and Forestry	838	3.03
Furniture and Related Product Manufacturing	2,445	3.16	Mining (except Oil and Gas)	902	2.73
Wholesale Trade Agents and Brokers	396	3.12	Furniture and Related Product Manufacturing	1,758	2.48
Erie			Rural, Appalachia		
Plastics and Rubber Products Manufacturing	2,489	5.05	Mining (except Oil and Gas)	6,508	7.24
Textile Mills	412	3.52	Forestry and Logging	2,686	4.3
Fabricated Metal Product Manufacturing	3,982	3.43	Primary Metal Manufacturing	8,908	4
Machinery Manufacturing	3,564	2.63	Wood Product Manufacturing	5,673	2.9
Primary Metal Manufacturing	1,146	2.51	Gasoline Stations and Fuel Dealers	7,051	2.54
Rural, Plains			Fourth District		
Plastics and Rubber Products Manufacturing	7,736	5.19	Primary Metal Manufacturing	76,238	3.13
Paper Manufacturing	4,691	4.48	Fabricated Metal Product Manufacturing	120,505	1.95
Electrical Equipment Manufacturing	5,898	4.42	Nonmetallic Mineral Product Manufacturing	40,242	1.94
Nonmetallic Mineral Product Manufacturing	5,137	4.35	Plastics and Rubber Products Manufacturing	50,874	1.94
Primary Metal Manufacturing	5,796	4.19	Mining (except Oil and Gas)	16,581	1.69

Sources: American Community Surveys 2019–2023, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Note: 2023 figures are estimated with the average of 2019 to 2023 to ensure adequate sample sizes.

EMPLOYMENT BY INDUSTRY

Figure 20. Education and Health Services Share of Employment



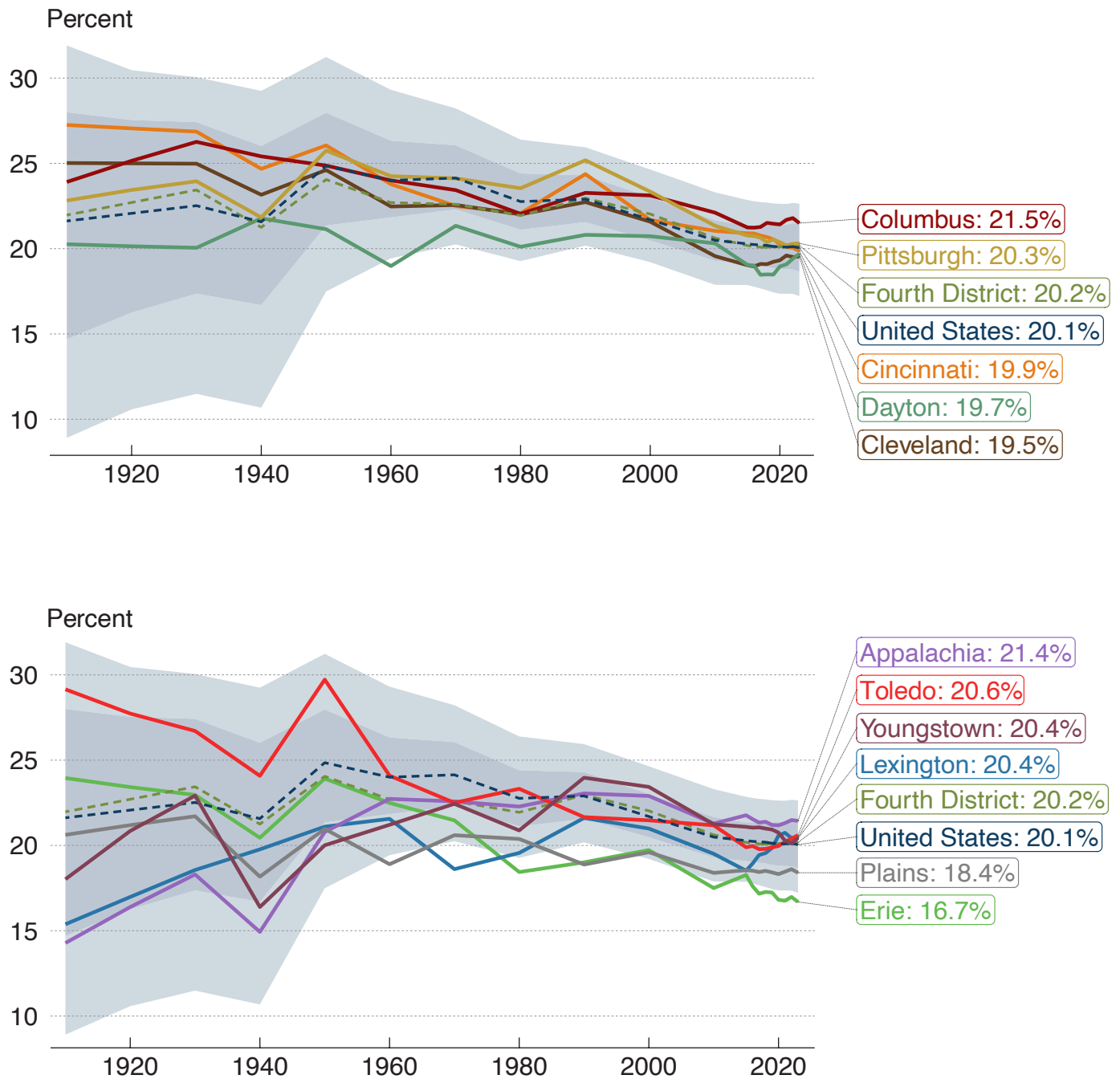
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: The corresponding percentile graph can be found in **Figure A13**. The equivalent graph based on the Quarterly Census of Employment and Wages can be found in **Figure A20**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

EMPLOYMENT BY INDUSTRY

Figure 21. Trade, Transportation and Utilities Share of Employment



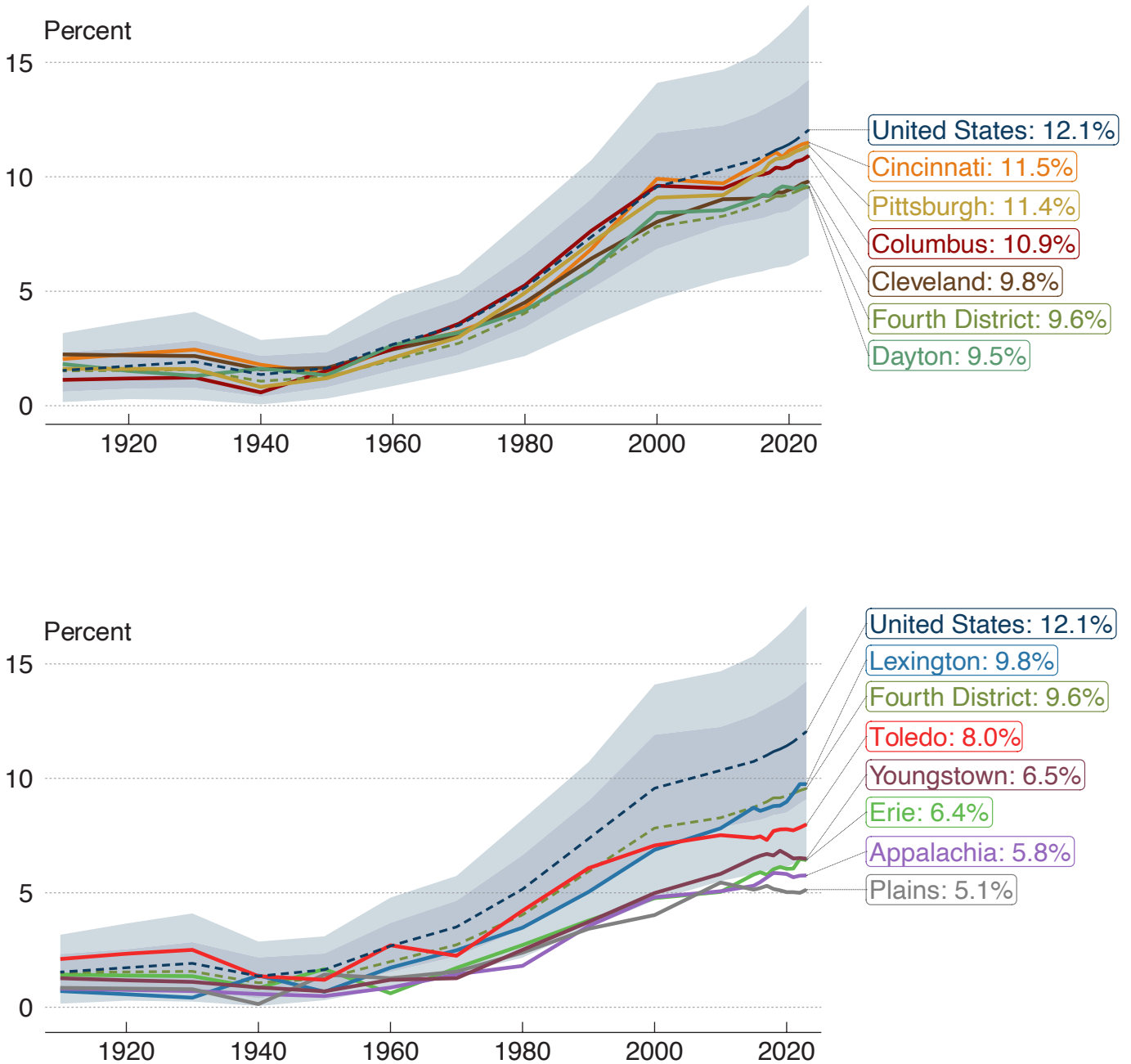
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: "Trade, transportation and utilities" includes people who work in merchandise retail, but not those employed in food service and hospitality. The corresponding percentile graph can be found in **Figure A14**. The equivalent graph based on the QCEW can be found in **Figure A19**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

EMPLOYMENT BY INDUSTRY

Figure 22. Professional and Business Services Share of Employment



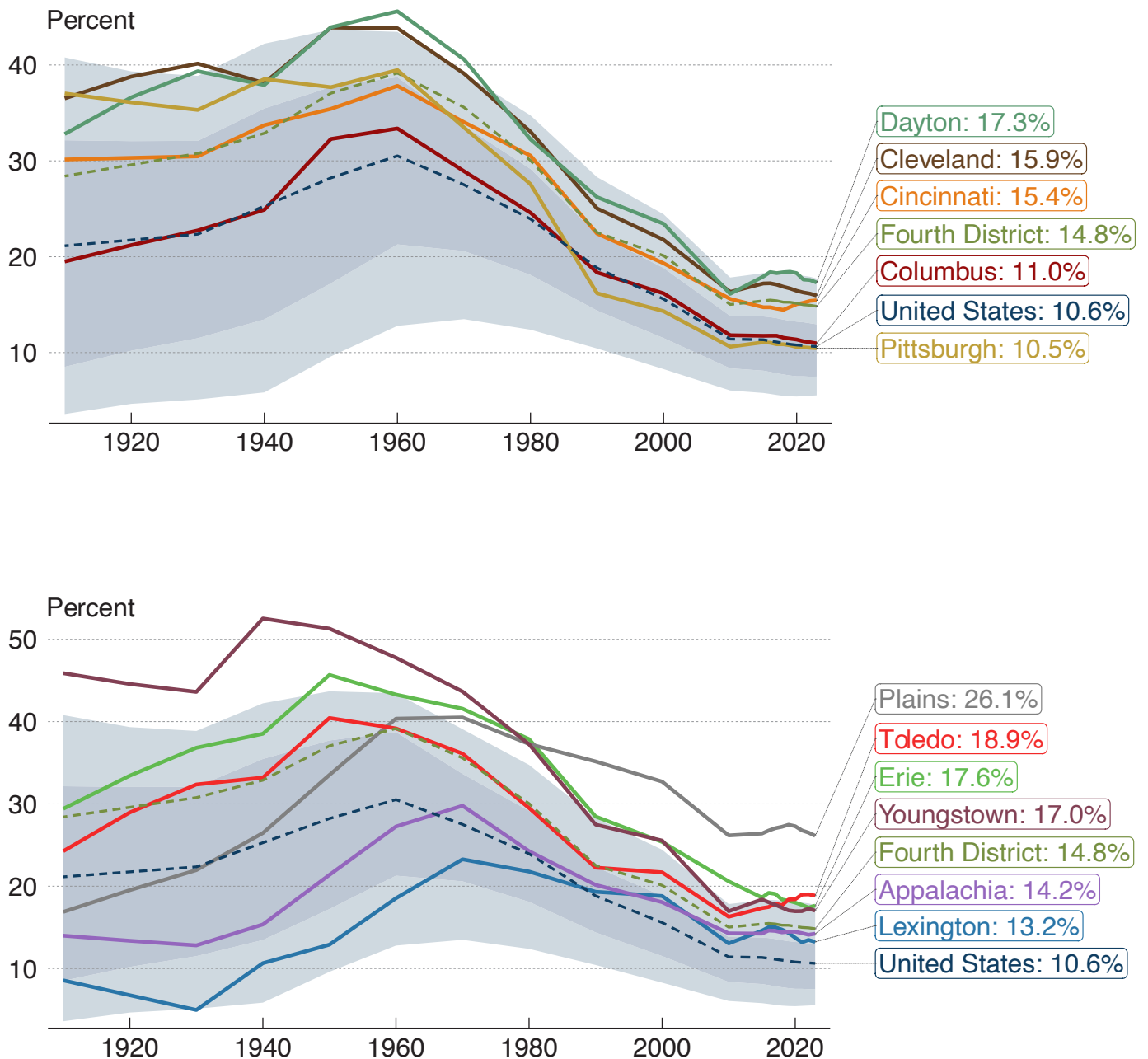
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: The corresponding percentile graph can be found in **Figure A15**. The equivalent graph based on the QCEW can be found in **Figure A21**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

EMPLOYMENT BY INDUSTRY

Figure 23. Manufacturing Share of Employment



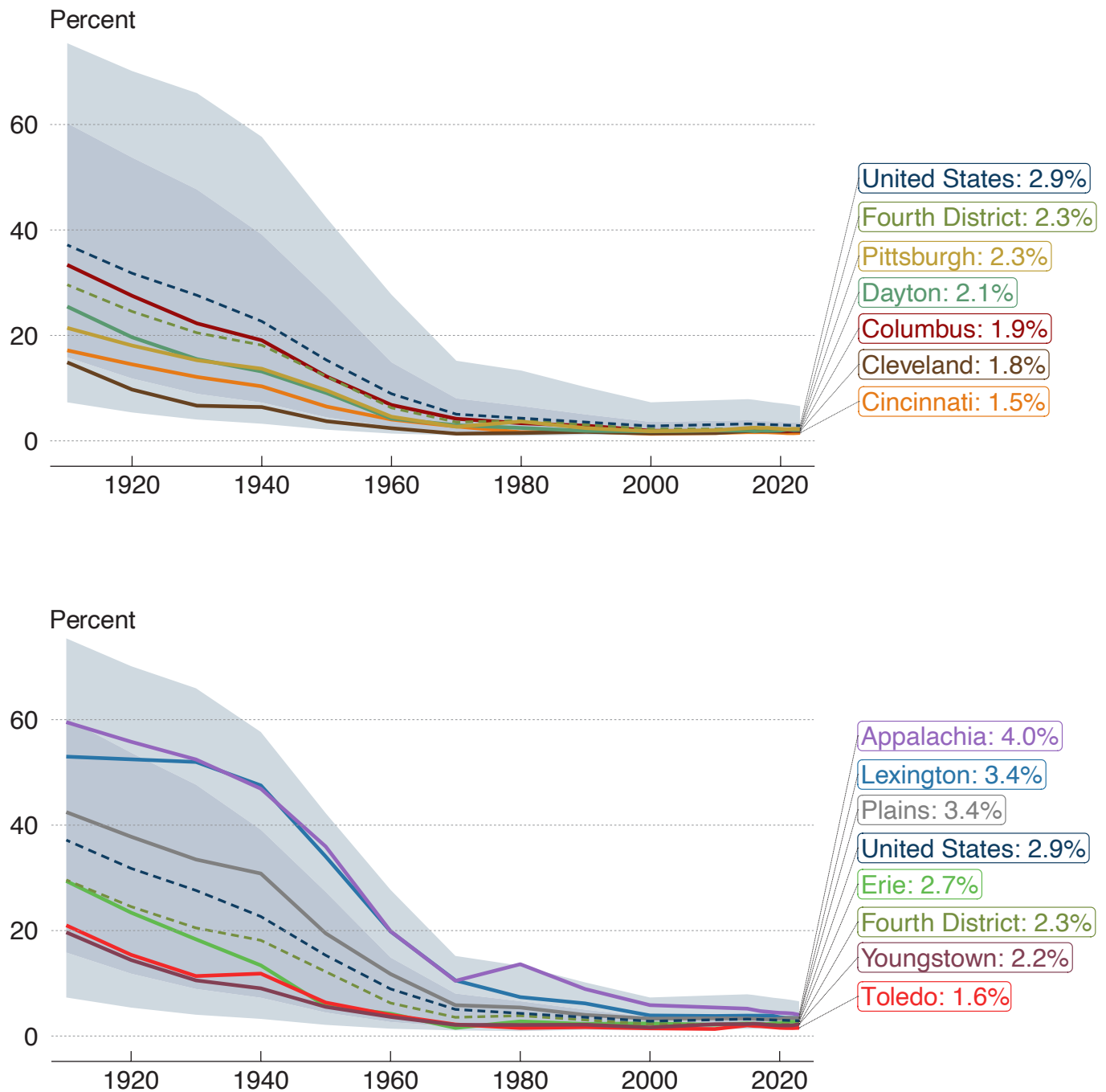
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: The corresponding percentile graph can be found in **Figure A16**. The equivalent graph based on the Quarterly Census of Employment and Wages can be found in **Figure A22**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

EMPLOYMENT BY INDUSTRY

Figure 24. Natural Resources and Mining Share of Employment



Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: The corresponding percentile graph can be found in **Figure A17**. The equivalent graph based on the Quarterly Census of Employment and Wages can be found in **Figure A23**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

MAJOR CORPORATIONS

The District is currently somewhat over-represented on the Fortune 500 list, as it is home to 36 of these companies' headquarters. This is 7.2 percent of these major corporations, which is above our population (5.3) or GDP (4.4) share.

Table 2. Fortune 500 Companies Headquartered in the Fourth District

	1960	1996	2024
Cleveland	Republic Steel	LTV	Cleveland-Cliffs
Akron	Sherwin-Williams	Sherwin-Williams	Sherwin-Williams
	TRW	TRW	
Canton	Eaton	Eaton	Eaton†
	White Motor		
		Parker-Hannifin	Parker-Hannifin
	Glidden		RPM
	Standard Oil		
			Avery Dennison
	Goodyear	Goodyear	Goodyear
	Firestone Tire and Rubber		
	B.F. Goodrich		
	General Tire and Rubber		
	Timken Roller Bearing		
	Cleveland Trust	KeyCorp	KeyCorp
	Central National Bank		
	National City Bank	National City Bank	
		Progressive	Progressive
	Roadway Express	Caliber Systems	
	Chesapeake and Ohio RR		
	Erie-Lackawanna RR	OfficeMax	
	New York, Chicago and St. Louis RR	Revco Drug Stores	
	Ohio Edison	Ohio Edison	FirstEnergy
	Cleveland Electric Illuminating	Centerior Energy	
Pittsburgh	Jones and Laughlin Steel	USX Corporation	United States Steel
	National Steel	Weirton Steel	
	Allegheny Ludlum Steel		
	Crucible Steel		
	Alcoa	Alcoa	Alcoa
	Pittsburgh Plate Glass	PPG Industries	PPG Industries
	Westinghouse Electric	Westinghouse Electric	WESCO International
			Westinghouse Air Brake
	H.J. Heinz	H.J. Heinz	
	Consolidated Coal	Consolidated Natural Gas	
	Gulf Oil		
	Koppers		Viatrix
	H. K. Porter		
	Blaw-Knox		
	Pittsburgh National Bank	PNC Financial Services	PNC Financial Services
	Mellon National Bank and Trust	Mellon Bank	
	Duquesne Light		Dick's Sporting Goods

Notes: From 1955 to 1995, *Fortune* ranked companies in six categories: industrial, banking, insurance, retail, transportation, and utilities. From 1996 onward, all companies were ranked in a single list of 500. To make these excerpts comparable, the 1960 industrial firms are only reported if they are among the top 250 in the rankings. The other five sectors each reported the 50 largest firms. The ordering in the table is not by rank; it is by sector and continuity across decades where applicable. †Eaton appears on the Fortune Europe list because they reincorporated in Ireland.

MAJOR CORPORATIONS

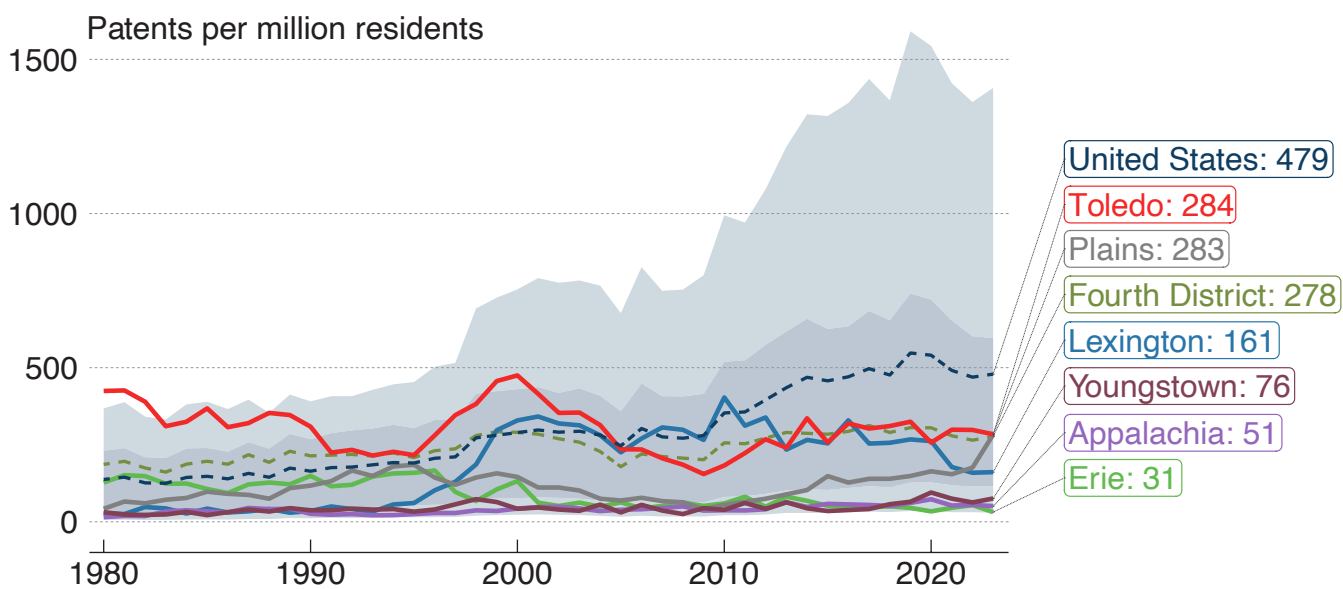
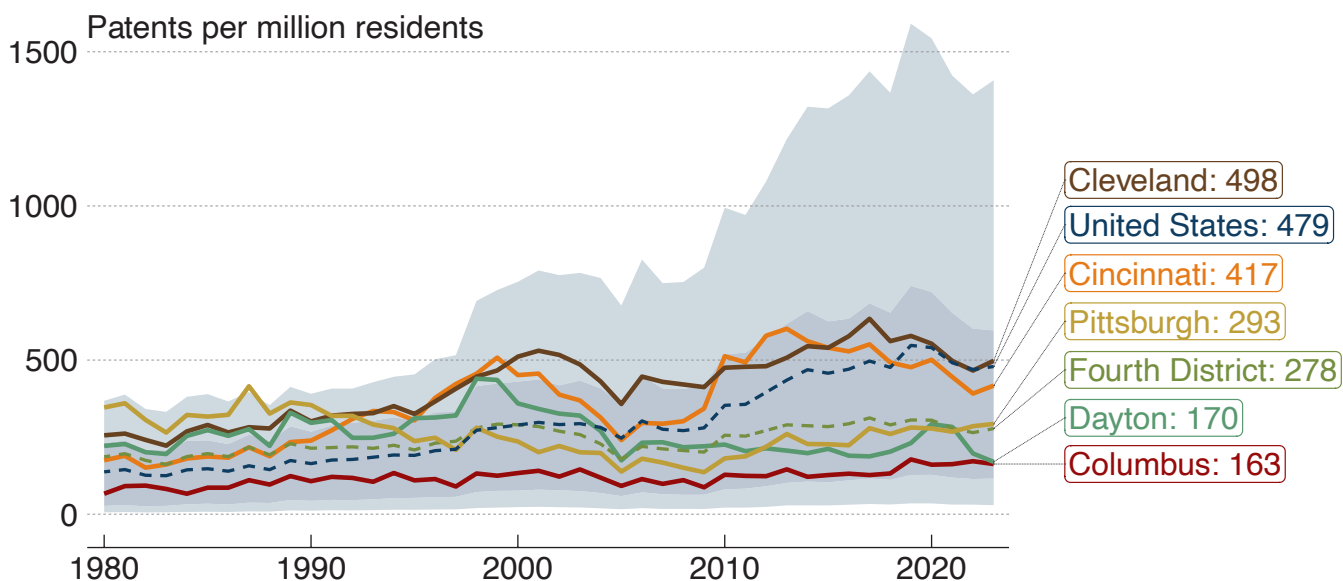
Table 3. Fortune 500 Companies Headquartered in the Fourth District *(Continued)*

	1960	1996	2024
Cincinnati	Procter and Gamble Champion Paper and Fiber Armco Steel Western and Southern Union Central Kroger Federated Department Stores Cincinnati Gas and Electric	Procter and Gamble Ashland American Financial Group Kroger Macy's Mercantile Stores Chiquita Brands CINergy Corp.	Procter and Gamble Fifth Third Bancorp Cincinnati Financial Western and Southern Financial American Financial Group Kroger Cintas
Columbus		Nationwide Banc One Cardinal Health The Limited American Electric Power	Nationwide Huntington Bancshares Cardinal Health Bath and Body Works American Electric Power
Toledo	Owens-Illinois Glass Owens-Corning Fiberglass Libbey-Owens-Ford Glass Dana Electric Autolite	O-I Glass Owens Corning Dana	O-I Glass Owens Corning Dana Andersons
Dayton	Mead National Cash Register	Mead	
Erie			Erie Insurance
Youngstown	Youngstown Sheet and Tube		
Rural, Plains	Ohio Oil		Marathon Petroleum J.M. Smucker
Rural, Appalachia	Ashland Oil and Refining Wheeling Steel		

Notes: From 1955 to 1995, *Fortune* magazine ranked companies in six categories: industrial, banking, insurance, retail, transportation, and utilities. From 1996 onward, all companies were ranked in a single list of 500. To make these excerpts comparable, the 1960 industrial firms are only reported if they are among the top 250 in the rankings. The other five sectors each reported the 50 largest firms. The ordering in the table is not by rank; it is by sector and continuity across decades where applicable.

PATENT AWARDS

Figure 25. Patents Awarded per Million Residents



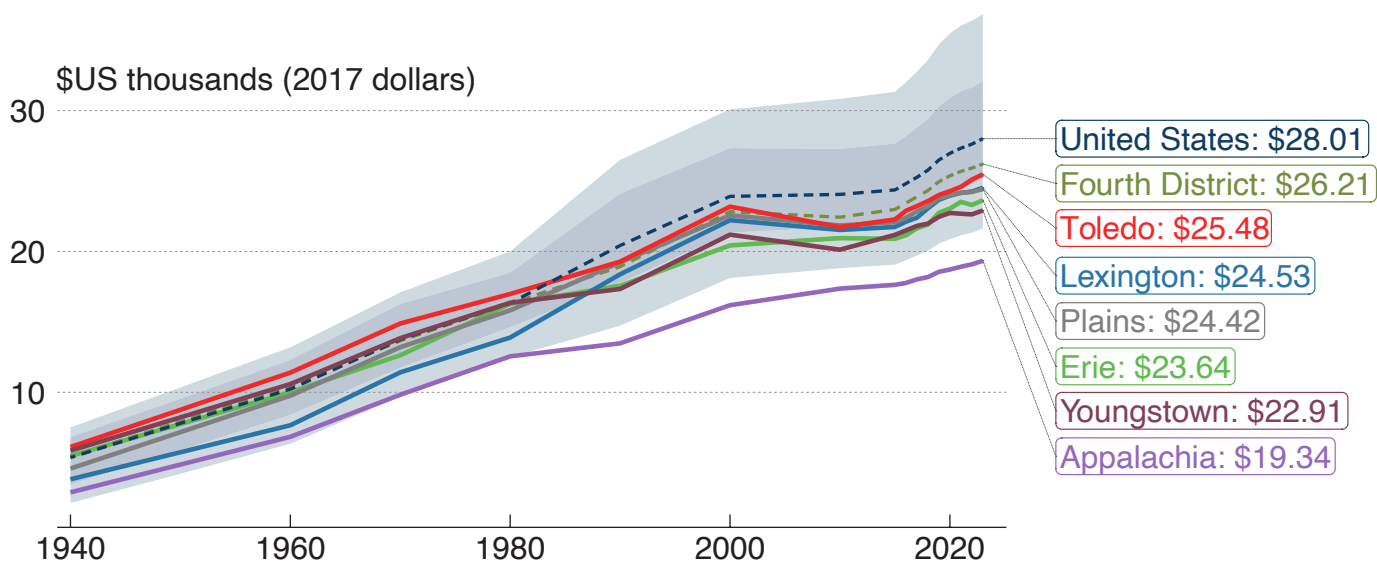
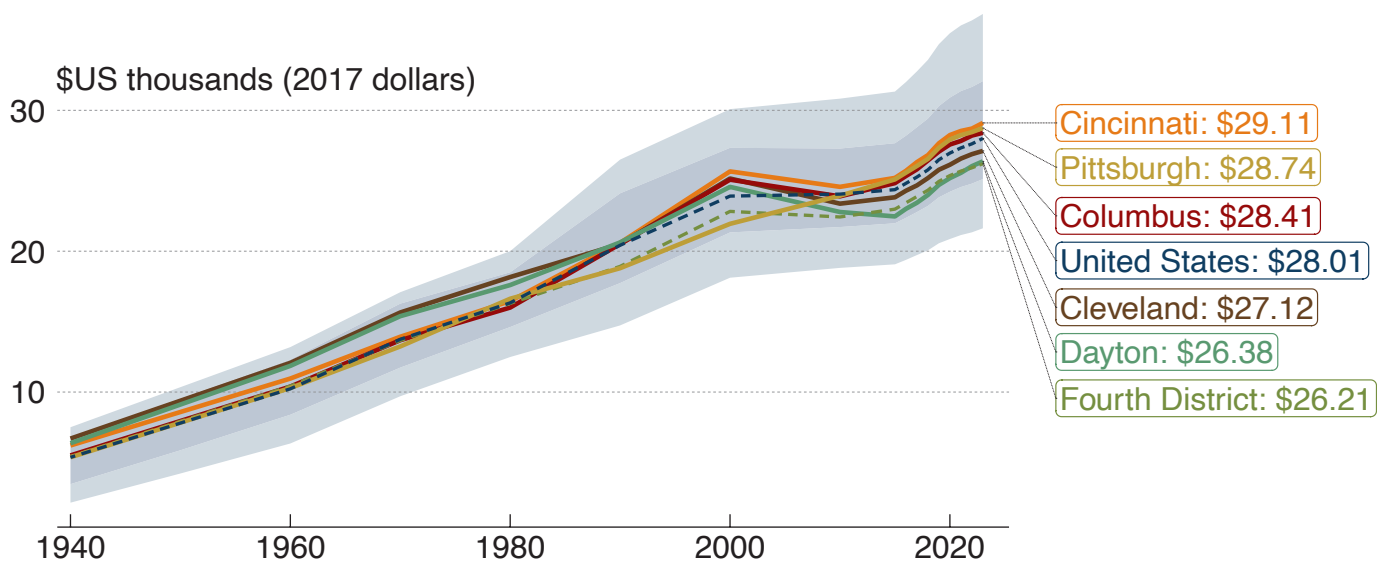
Sources: US Patent and Trademark Office via PatentsView, US Census Bureau, and authors' calculations.

Notes: Percentiles of patents awarded per million residents are presented in **Figure A24**.

Last observation: 2023

HOUSEHOLD INCOME

Figure 26. Median Real Household Income



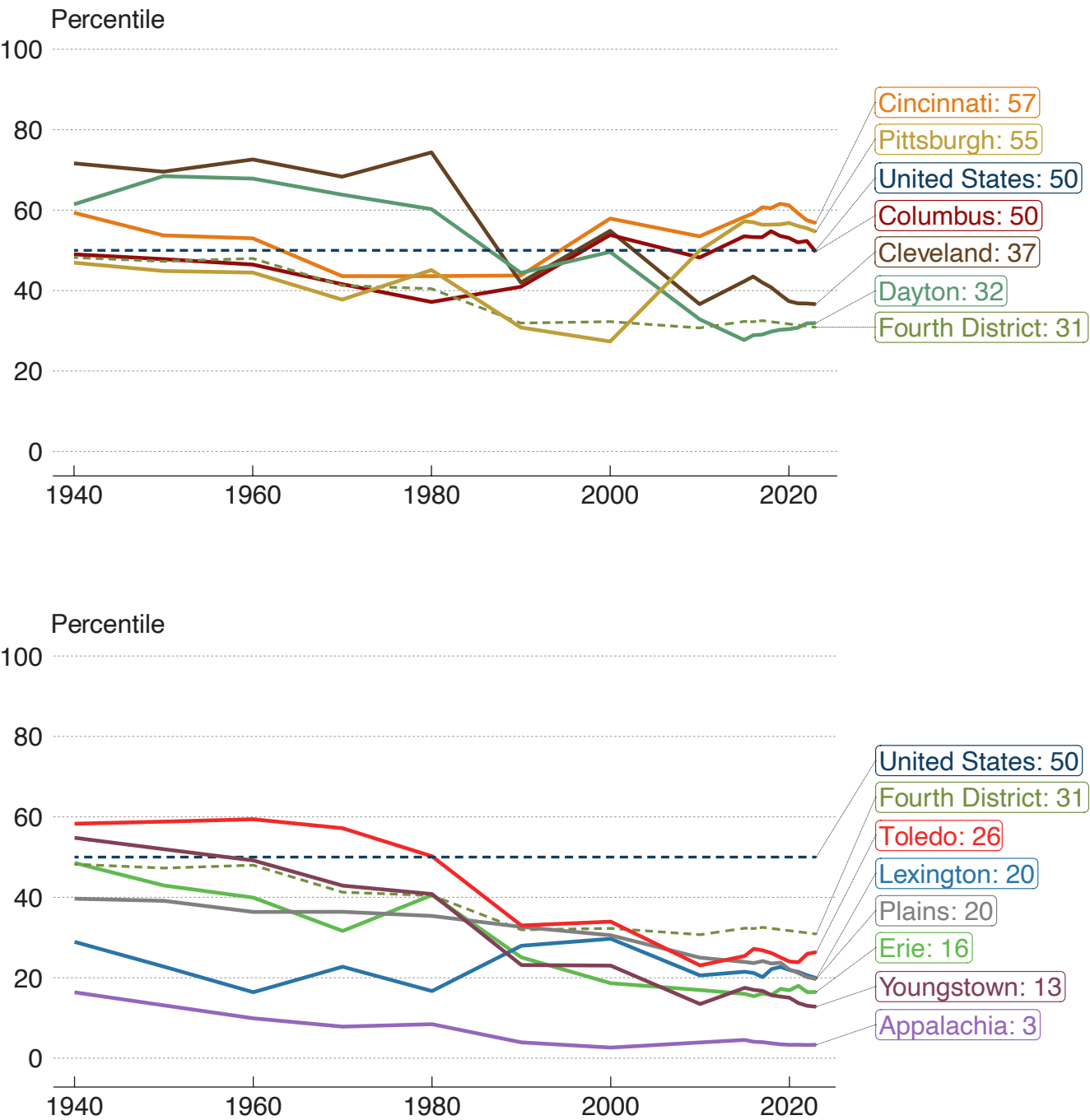
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Percentiles of real household income are presented in **Figure 27**. Household income is divided by the number of people in the household before selecting the regional median to account for the increase in single-person households. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

HOUSEHOLD INCOME

Figure 27. Percentile of Median Real Household Income



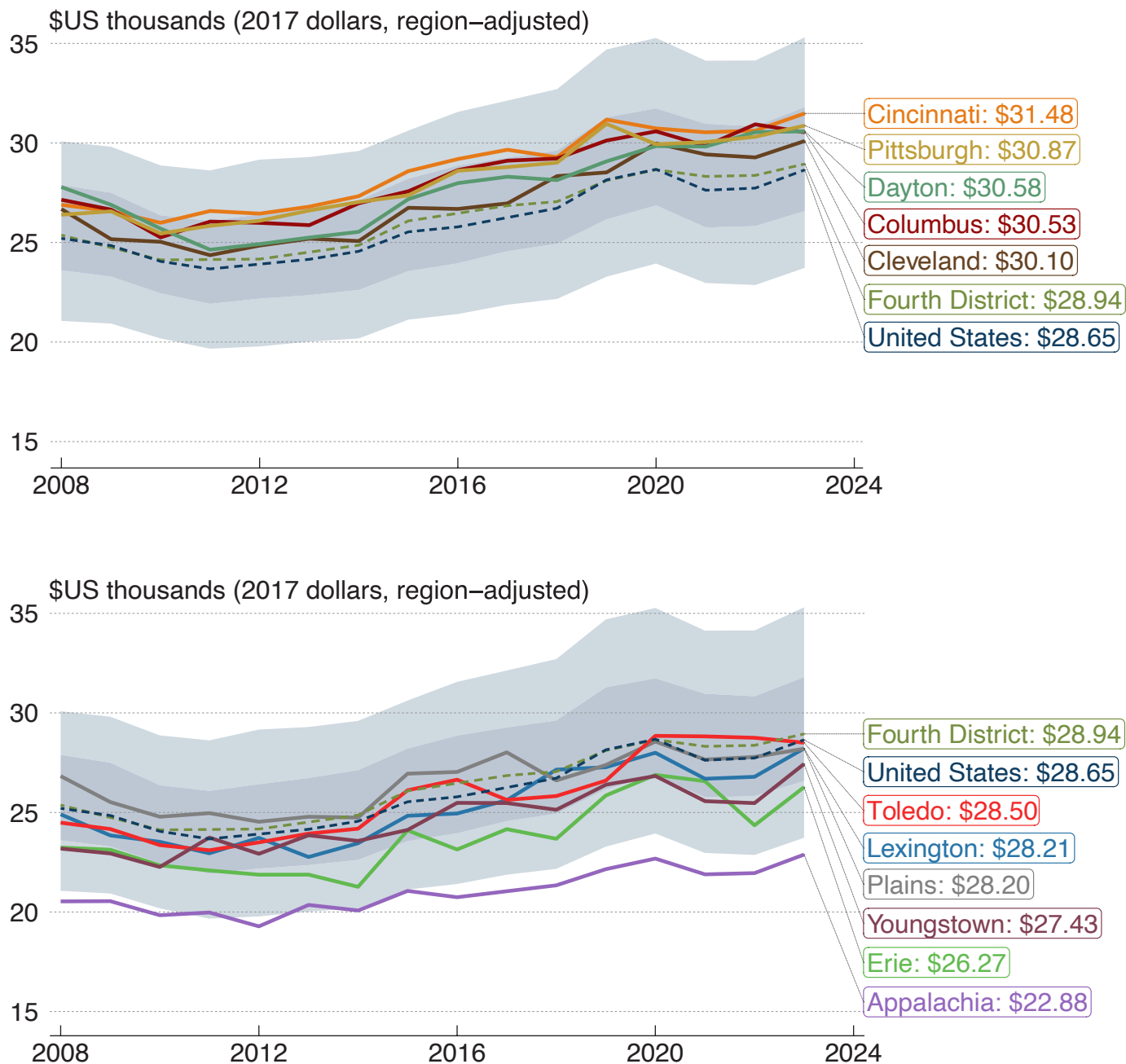
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Real household income levels are presented in **Figure 26**. Household income is divided by the number of people in the household before selecting the regional median to account for the increase in single-person households.

Last observation: 2023

HOUSEHOLD INCOME

Figure 28. Median Real Household Consumption (Income/RPP)



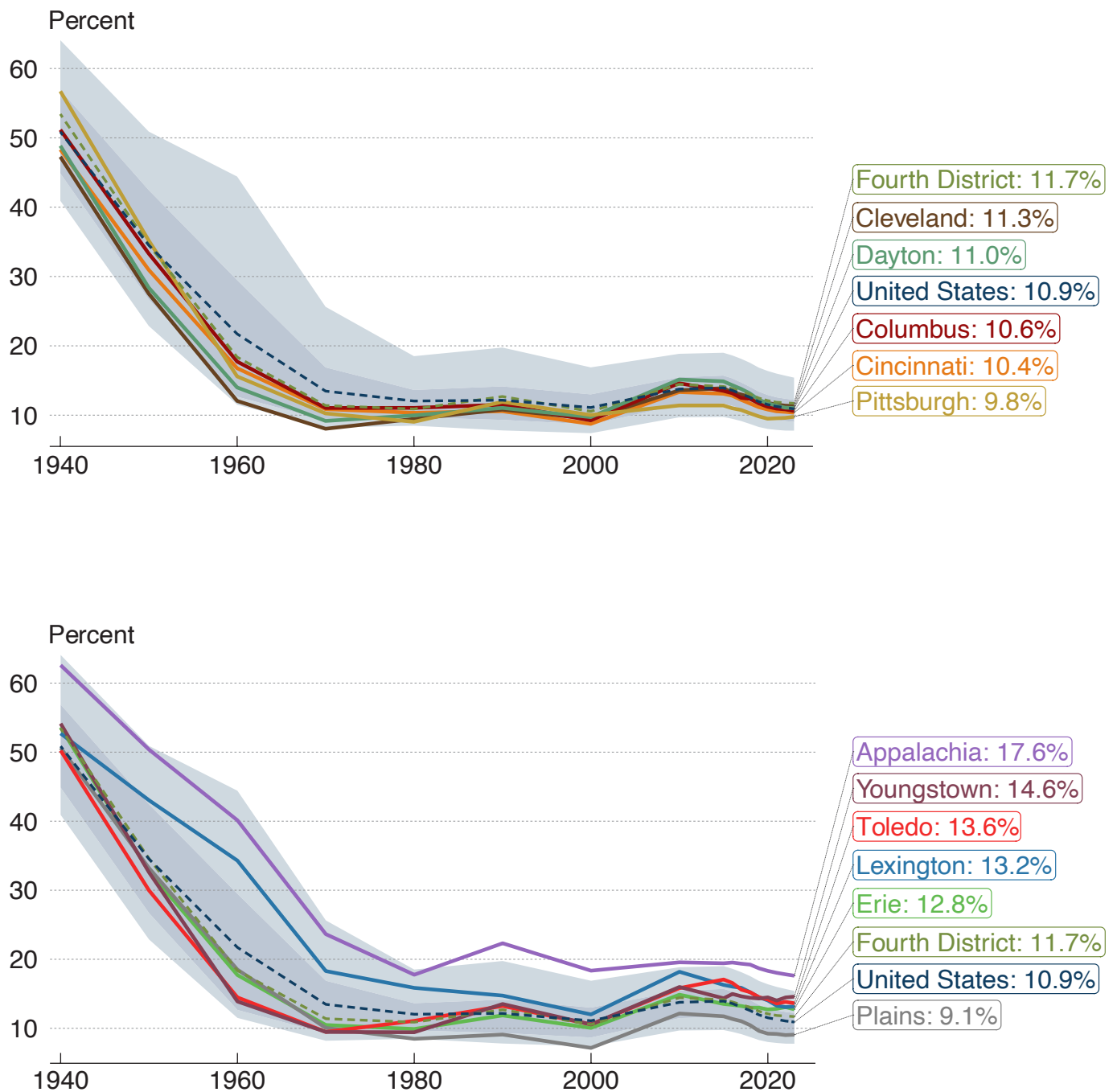
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, Bureau of Economic Analysis, and authors' calculations.

Notes: Household income is divided by the number of people in the household before selecting the regional median to account for the increase in single-person households. Regional price parities are used to adjust incomes for local prices. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

HOUSEHOLD INCOME

Figure 29. Poverty Rate



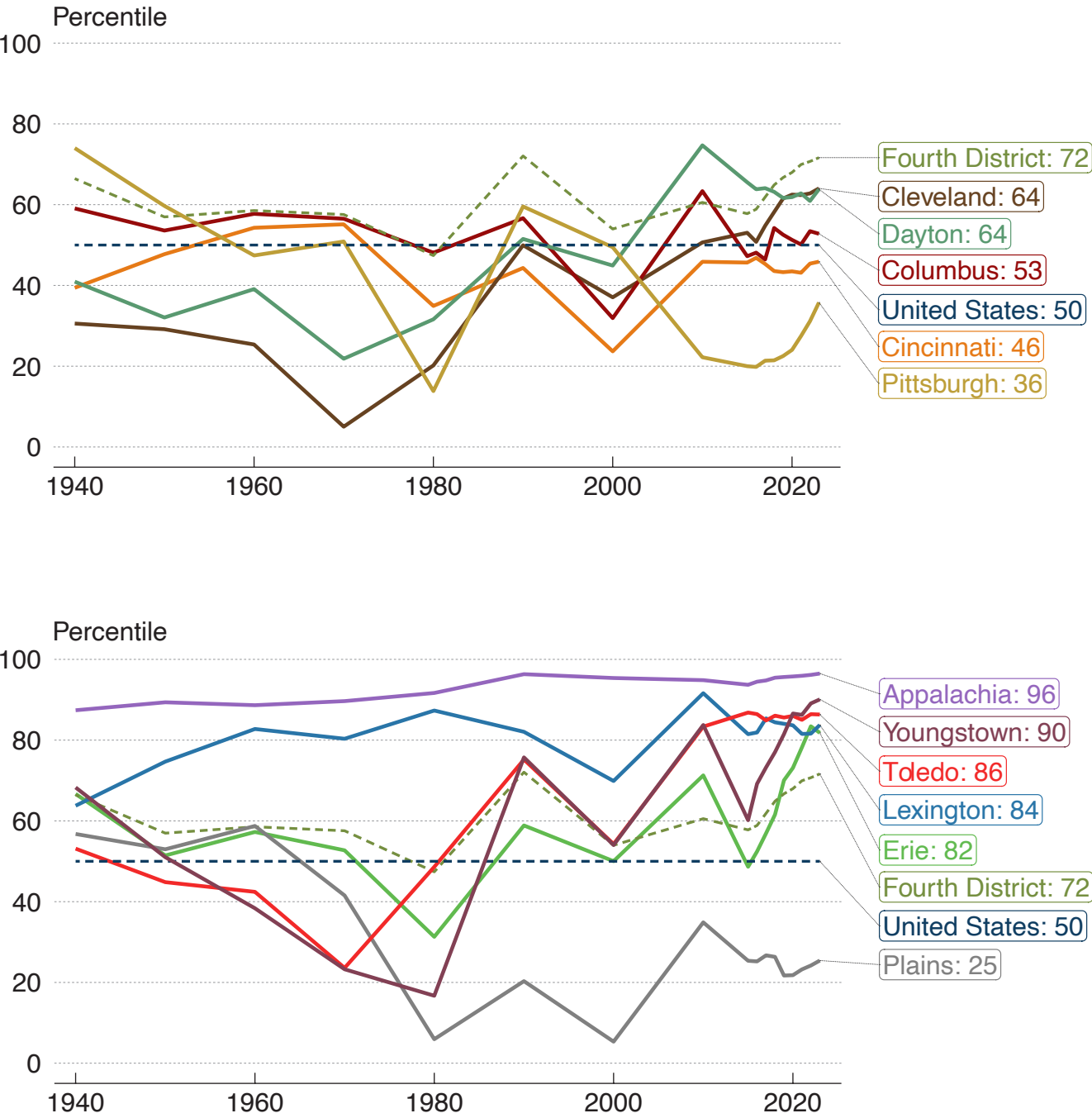
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Percentiles of the poverty rate are presented in **Figure 30**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

HOUSEHOLD INCOME

Figure 30. Percentile of Poverty Rate

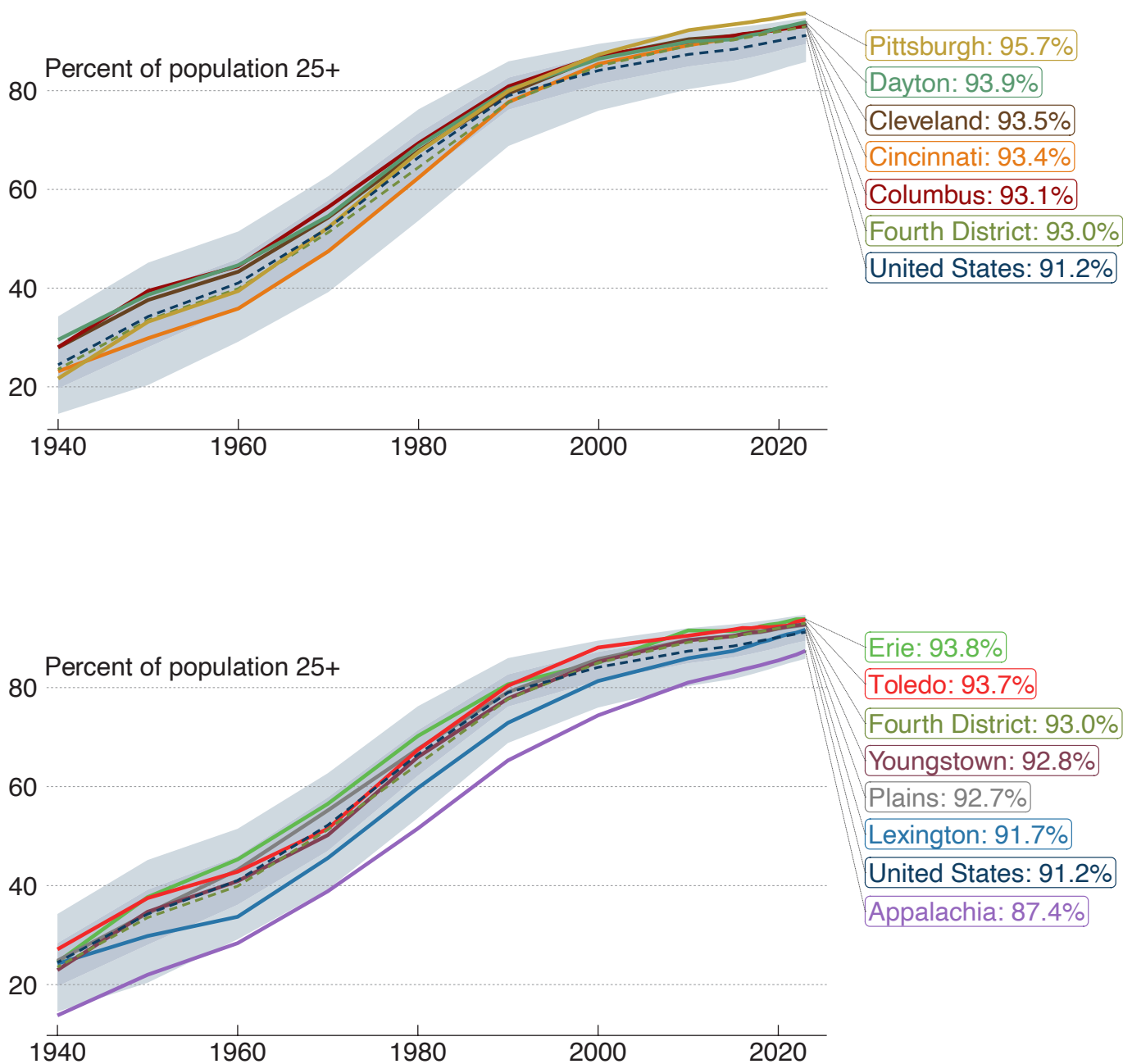


Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.
Notes: Poverty rates are presented in **Figure 29**.
Last observation: 2023

EDUCATION

In our education measures, we include higher degree holders so that it does not appear that a region has a falling share of high school graduates when college attainment is rising, for example.

Figure 31. High School Attainment (Including Higher Degree Holders)



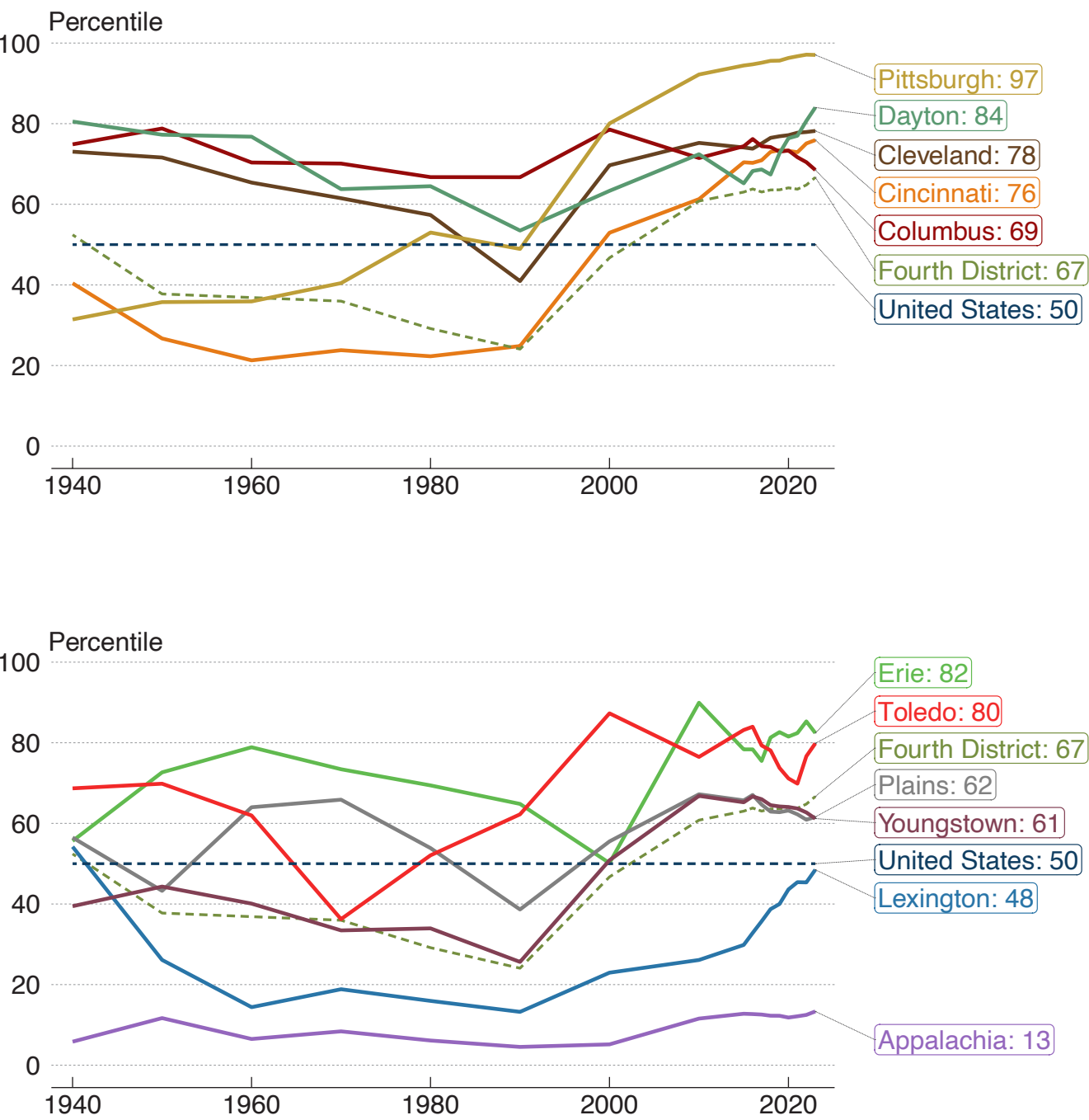
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Percentiles of the high school attainment rate are presented in **Figure 32**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

EDUCATION

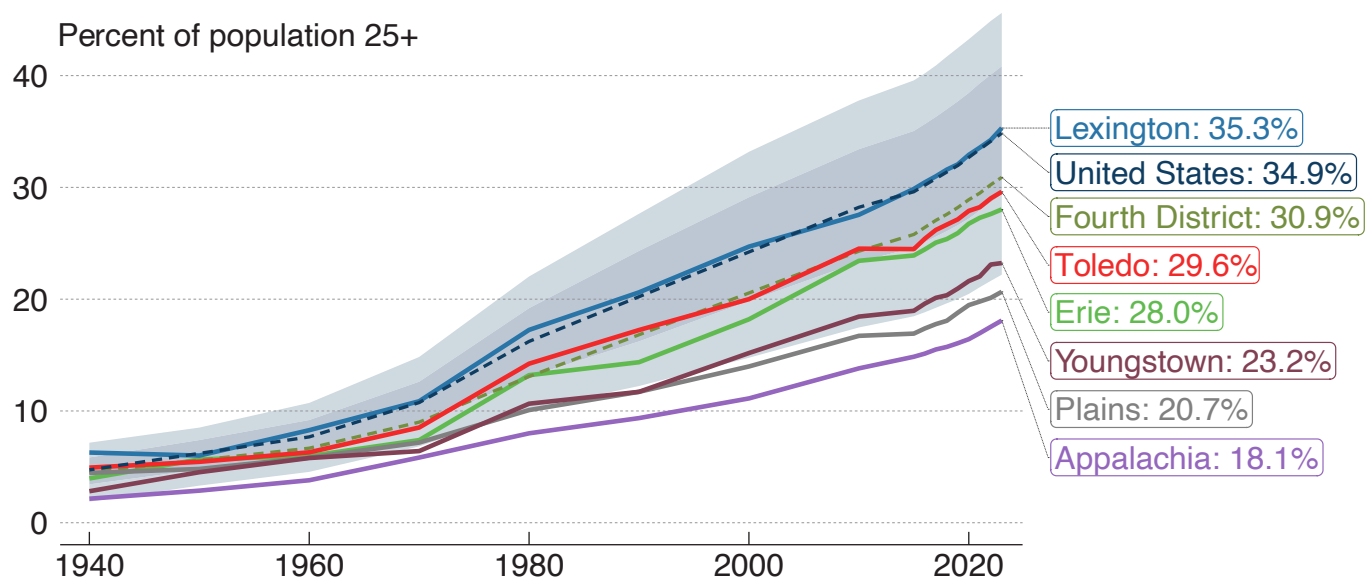
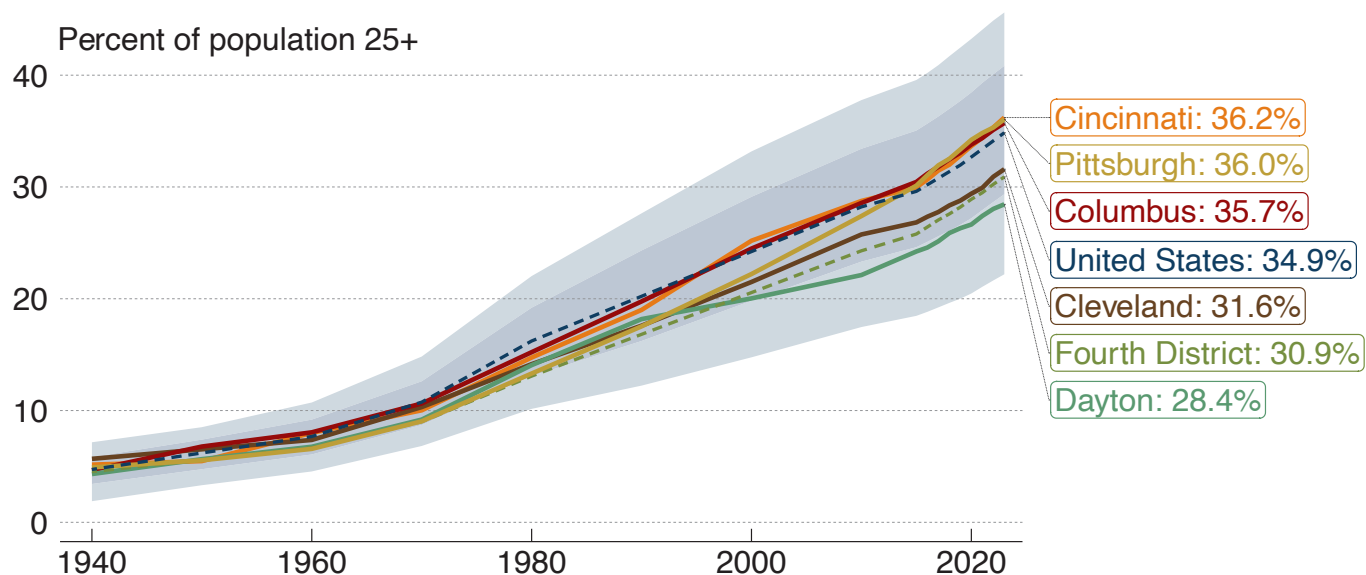
Figure 32. Percentile of High School Attainment (Including Higher Degree Holders)



Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.
Notes: High school attainment rates are presented in **Figure 31**. People who hold college or graduate degrees are also counted as high school degree holders.
Last observation: 2023

EDUCATION

Figure 33. College Attainment (Including Higher Degree Holders)



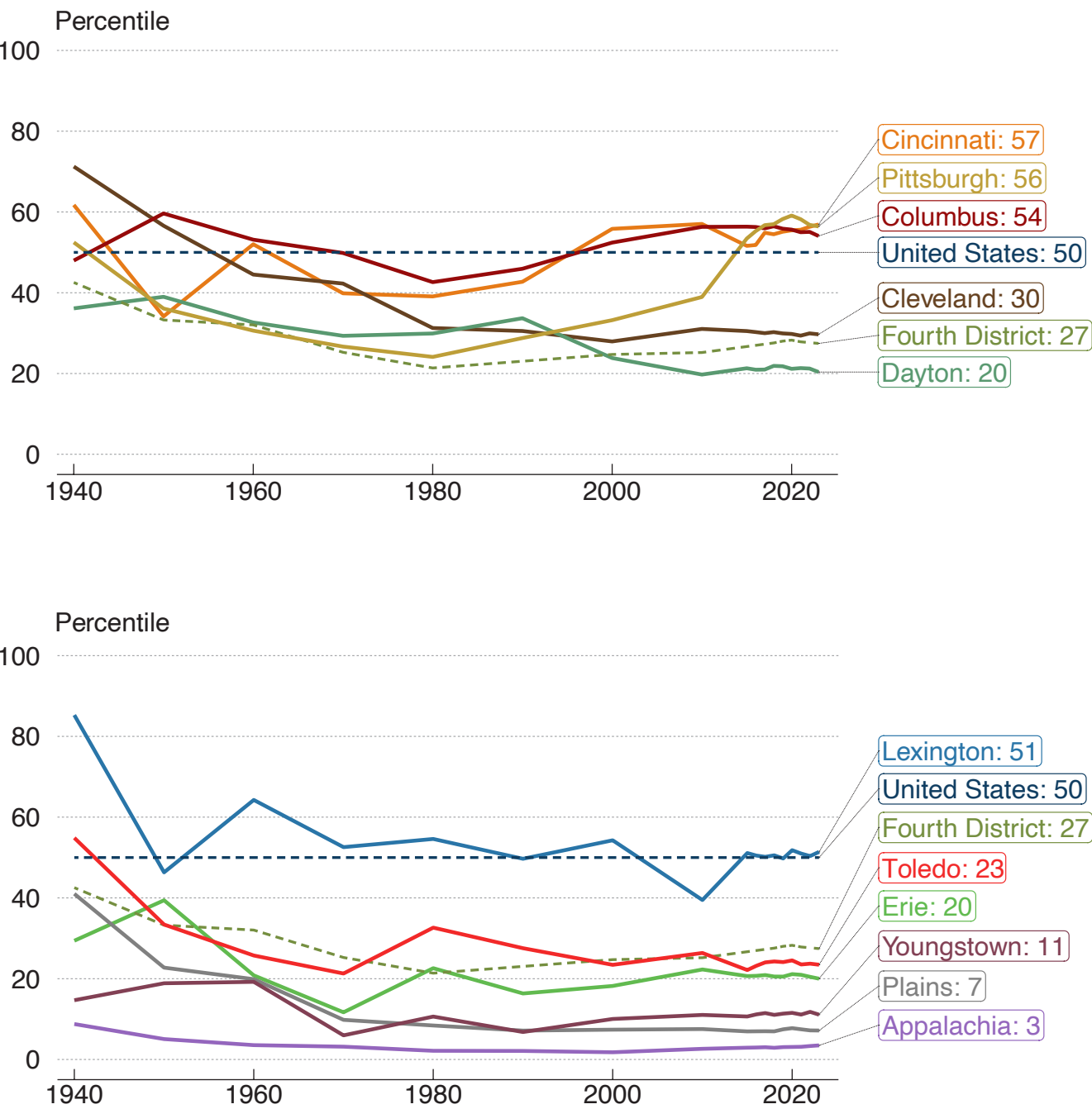
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Percentiles of the college attainment rate are presented in **Figure 32**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

EDUCATION

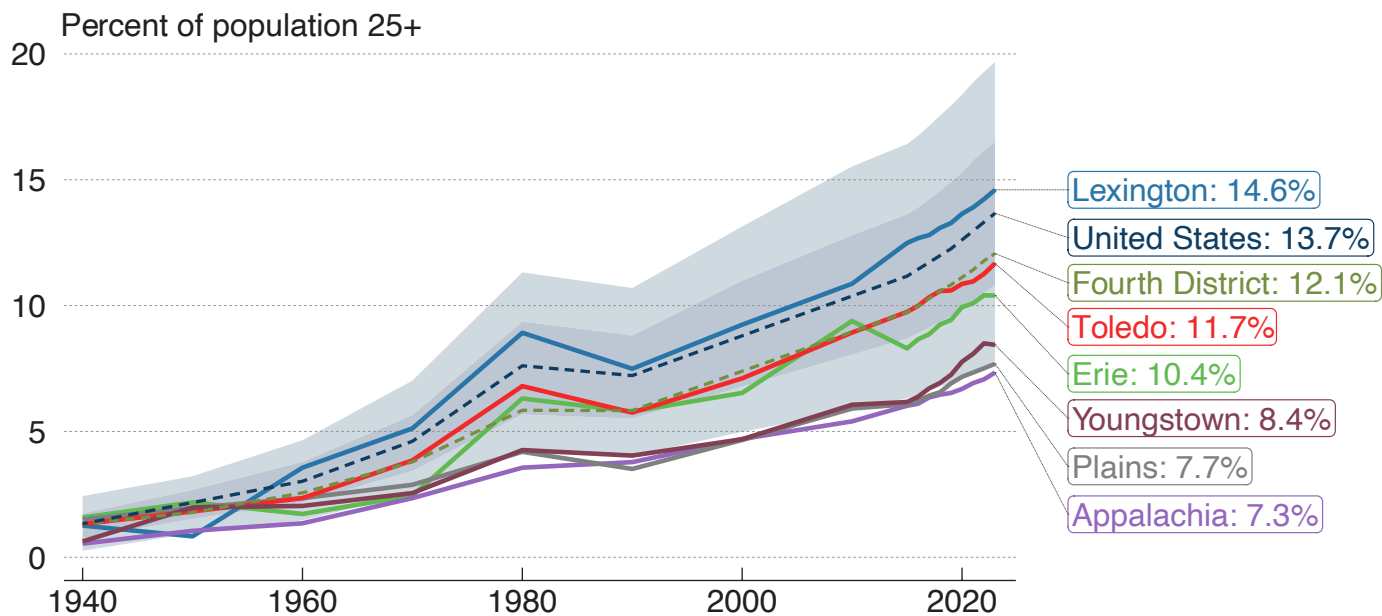
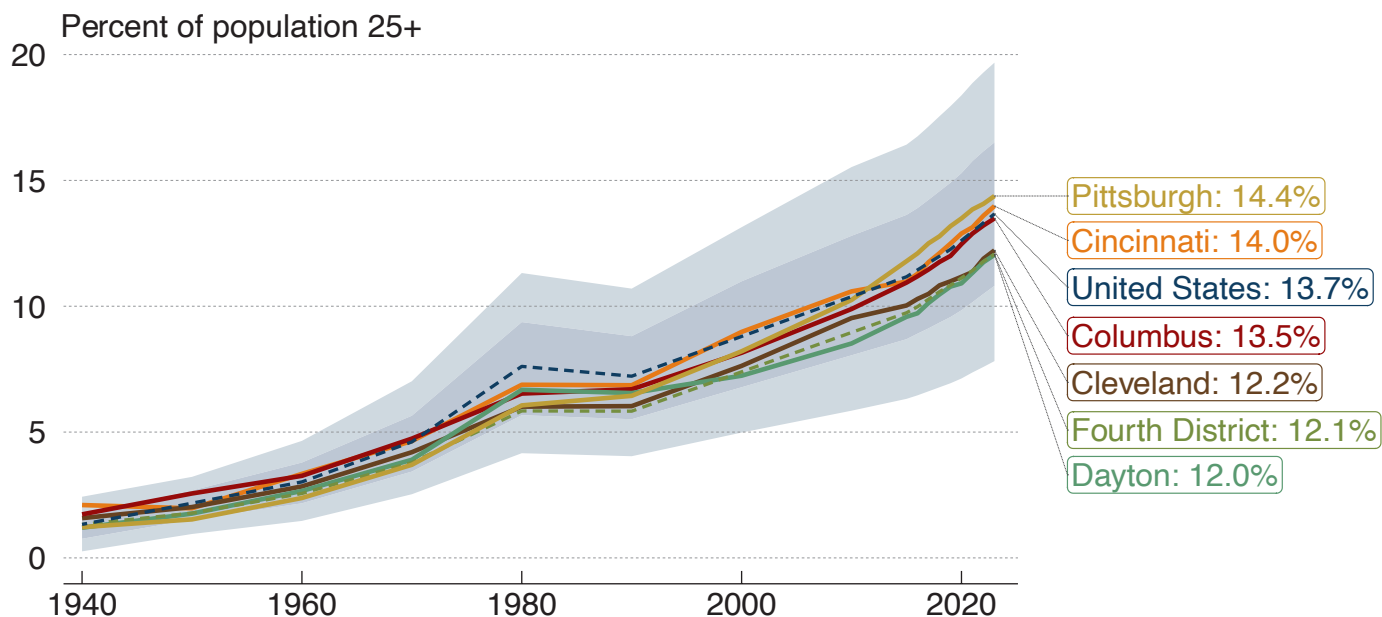
Figure 34. Percentile of College Attainment (Including Higher Degree Holders)



Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.
Notes: College attainment rates are presented in **Figure 33**. People who hold graduate degrees are also counted as college degree holders.
Last observation: 2023

EDUCATION

Figure 35. Graduate Degree Attainment



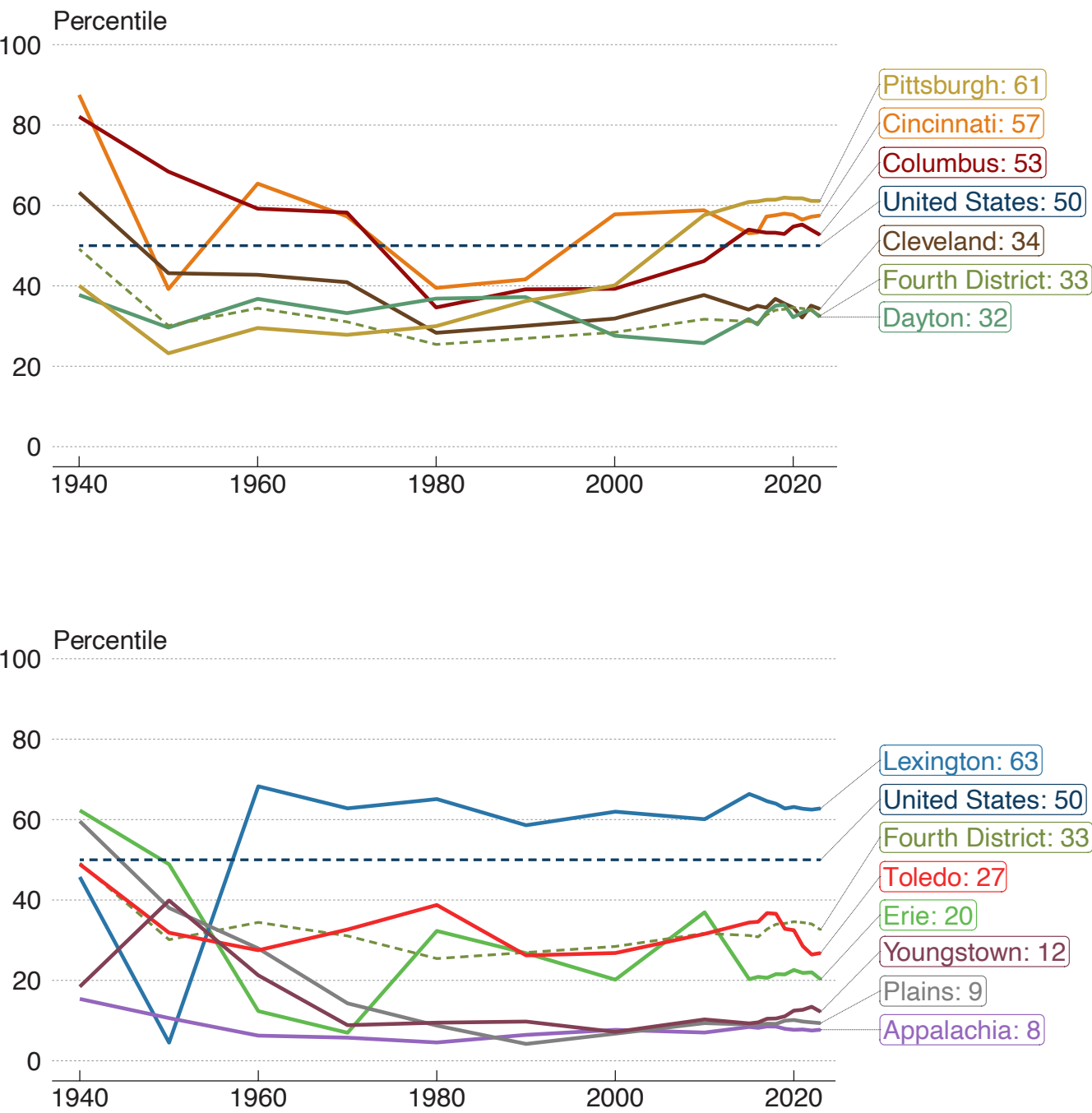
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Percentiles of the graduate degree share are presented in **Figure 36**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

EDUCATION

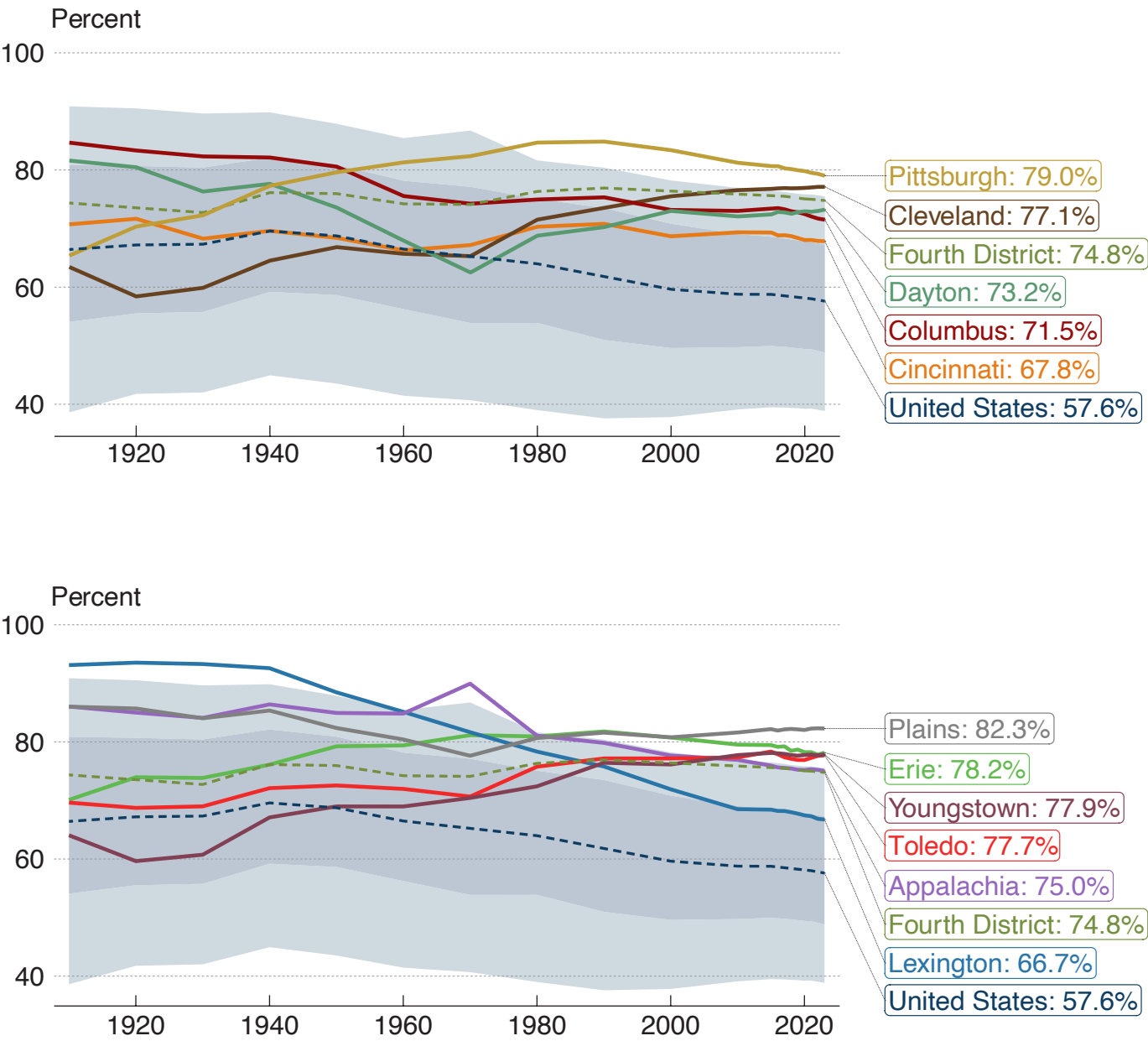
Figure 36. Percentile of Graduate Degree Attainment



Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.
Note: Graduate degree attainment rates are presented in **Figure 35**.
Last observation: 2023

DEMOGRAPHICS

Figure 37. Share of Population Living in State of Birth



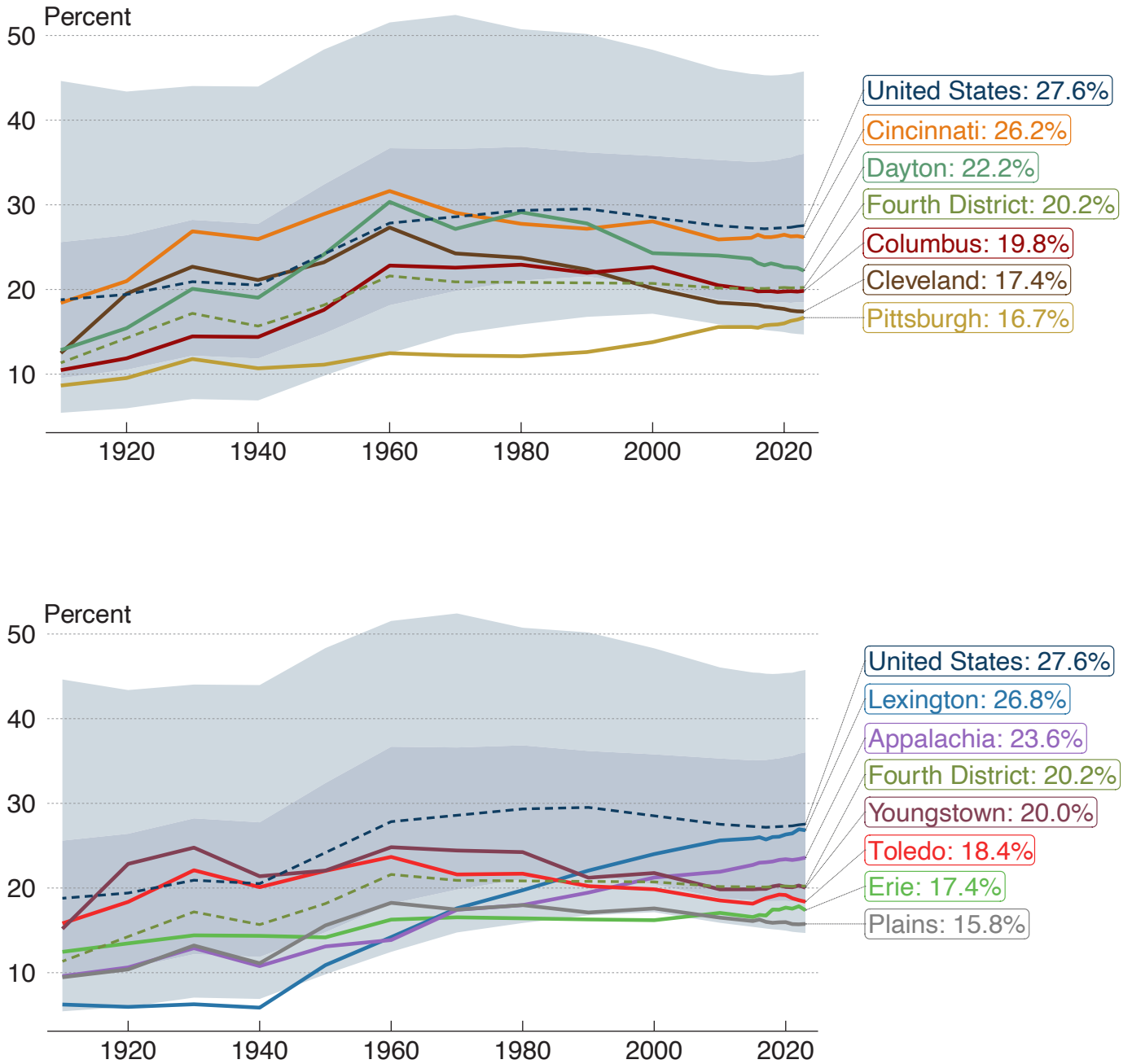
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Percentiles of the out-of-state migrant shares are presented in **Figure A25**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

DEMOGRAPHICS

Figure 38. Out-of-state Migrant Share of Population



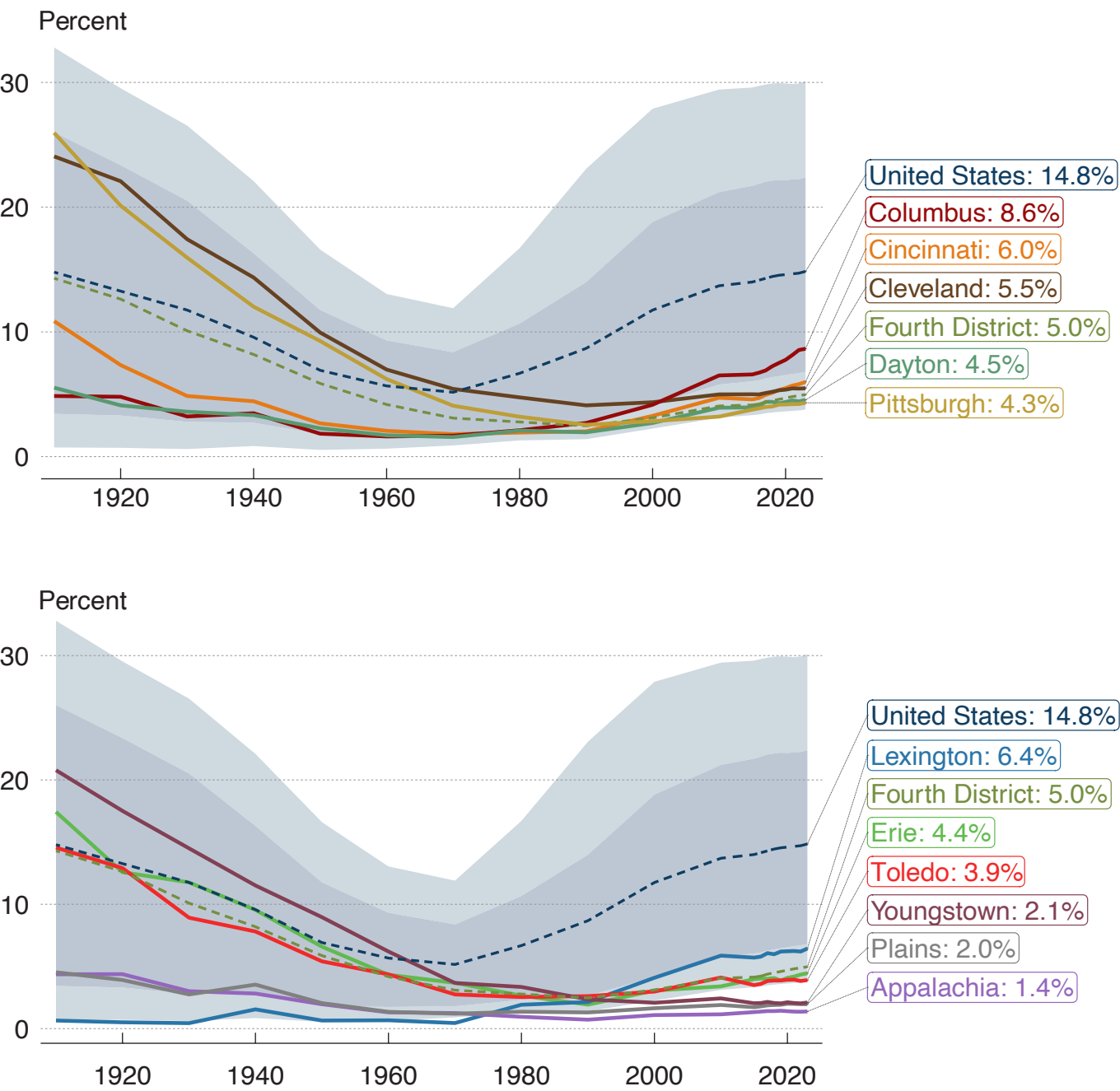
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Percentiles of the out-of-state migrant shares are presented in **Figure A26**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

DEMOGRAPHICS

Figure 39. Foreign-Born Share of Population



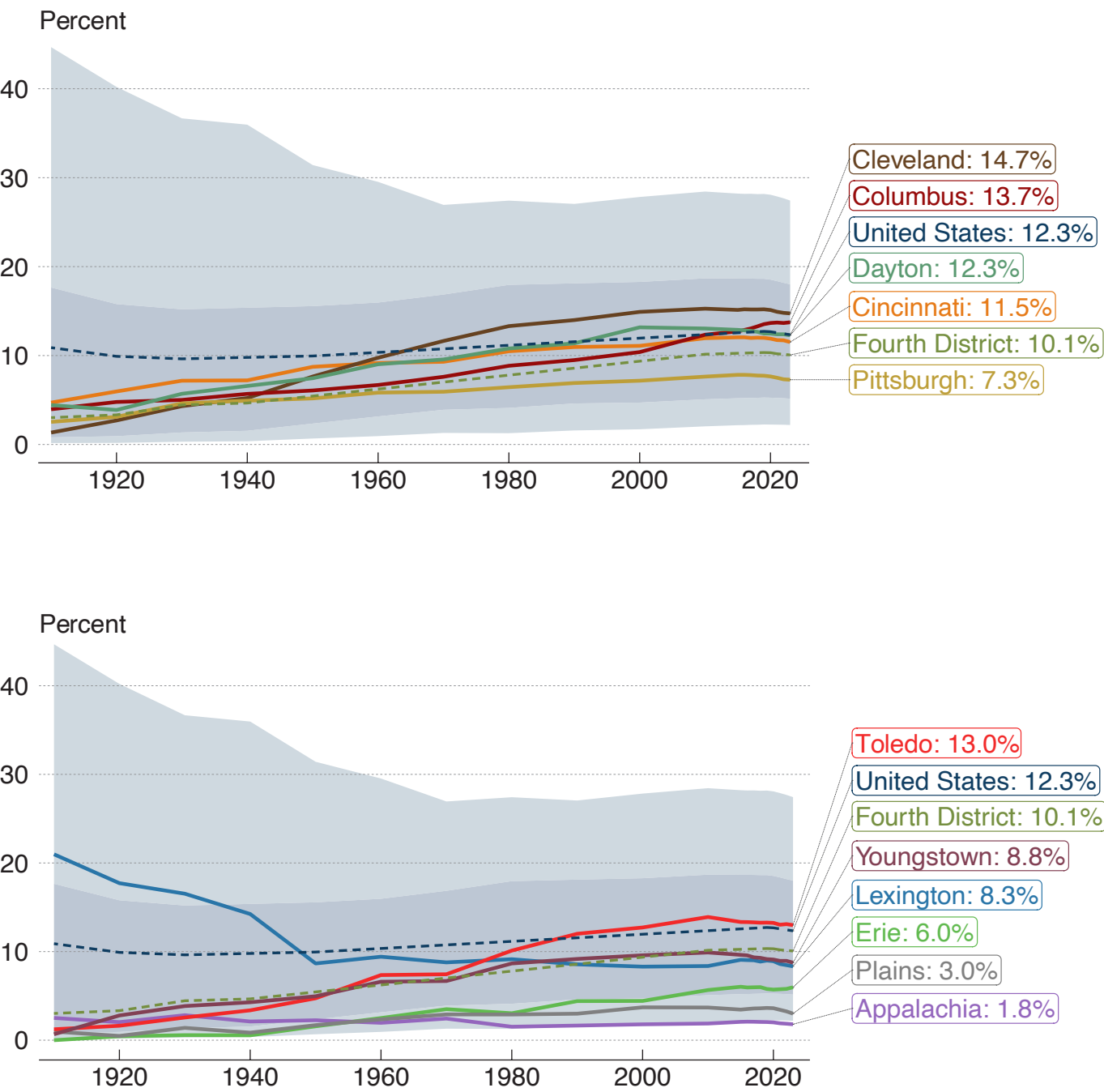
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Percentiles of foreign-born shares are presented in **Figure A27**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

DEMOGRAPHICS

Figure 40. African American Share of Population



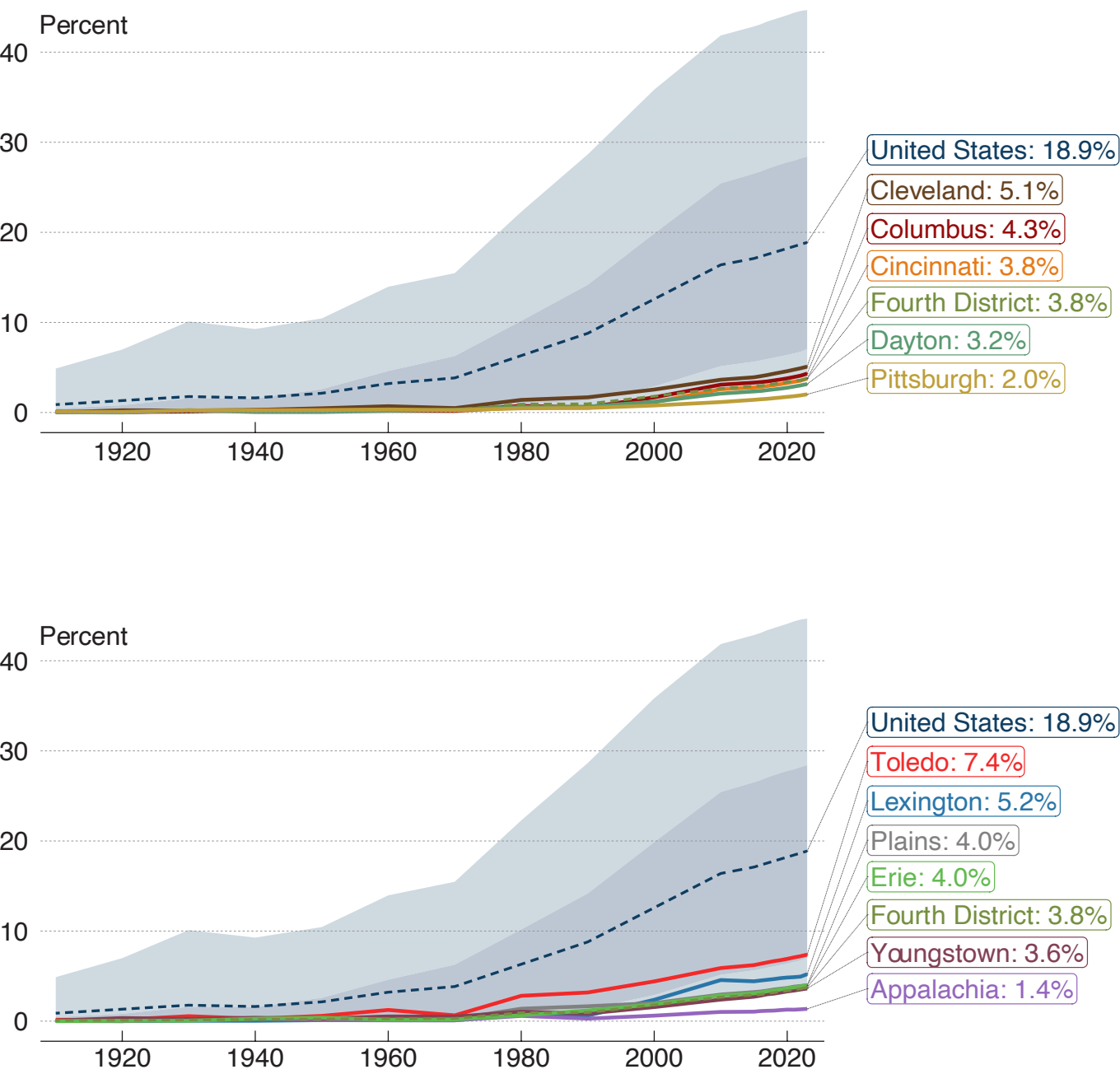
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Percentiles of African American shares are presented in **Figure A28**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

DEMOGRAPHICS

Figure 41. Hispanic Share of Population



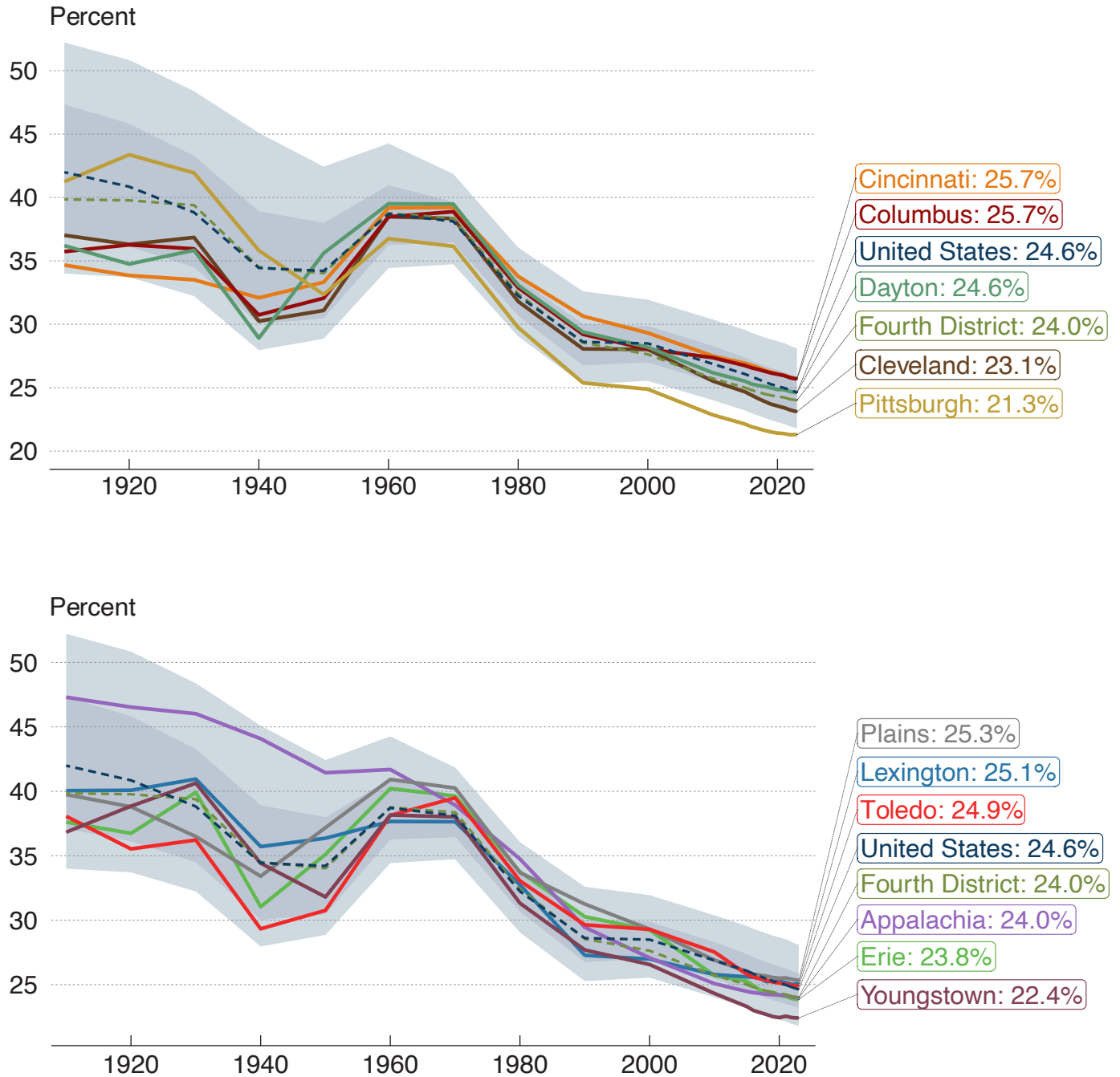
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Percentiles of Hispanic shares are presented in **Figure A29**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

DEMOGRAPHICS

Figure 42. Youth (< 20 years old) Share of Population



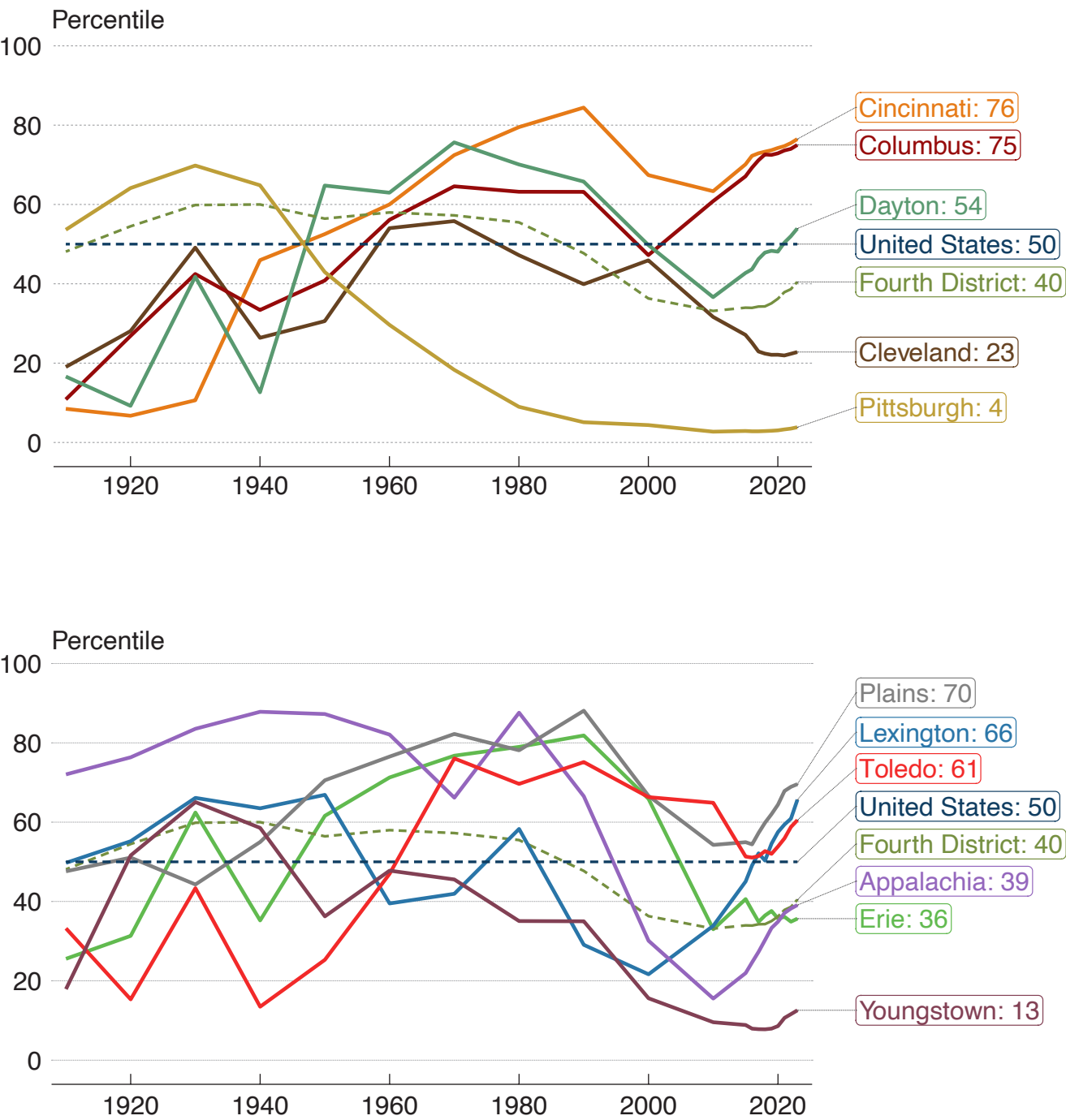
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Percentiles of the youth share are presented in **Figure 43**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

DEMOGRAPHICS

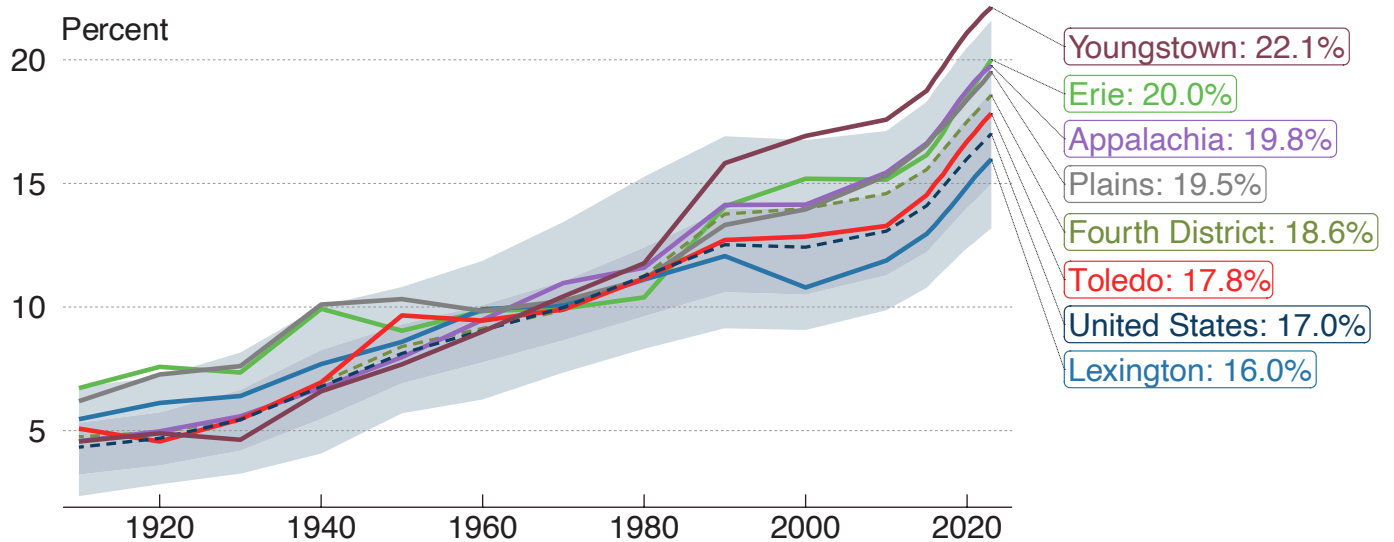
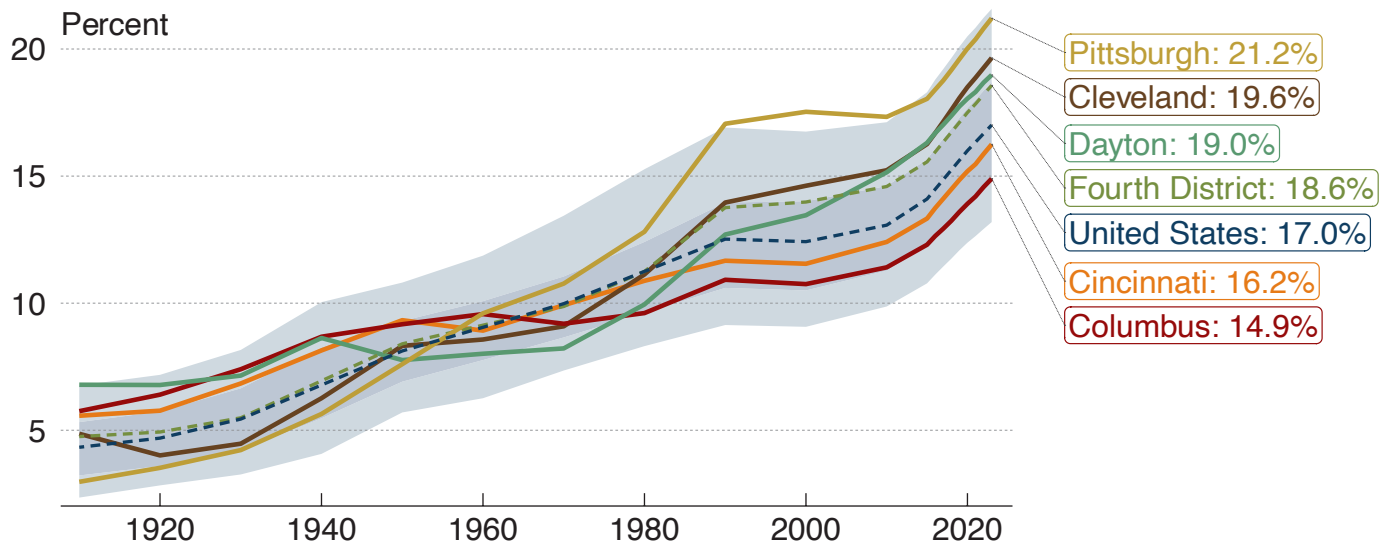
Figure 43. Percentile of Youth (< 20 years old) Share of Population



Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.
Notes: Youth shares are presented in **Figure 42**.
Last observation: 2023

DEMOGRAPHICS

Figure 44. Senior (≥ 65 years old) Share of Population



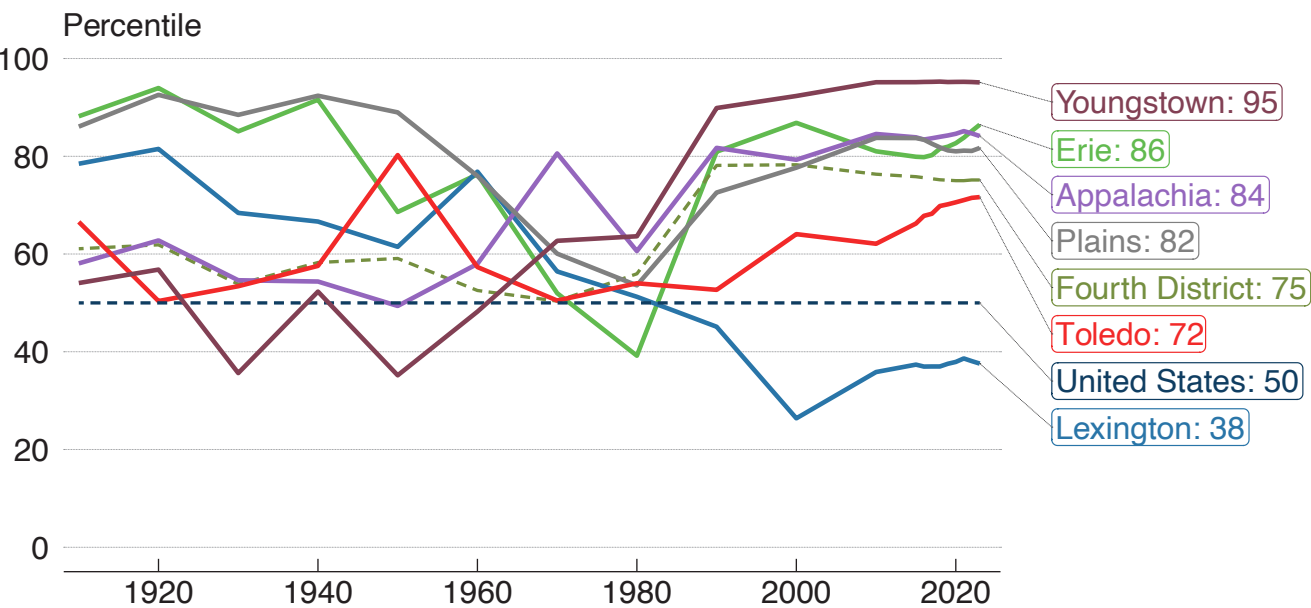
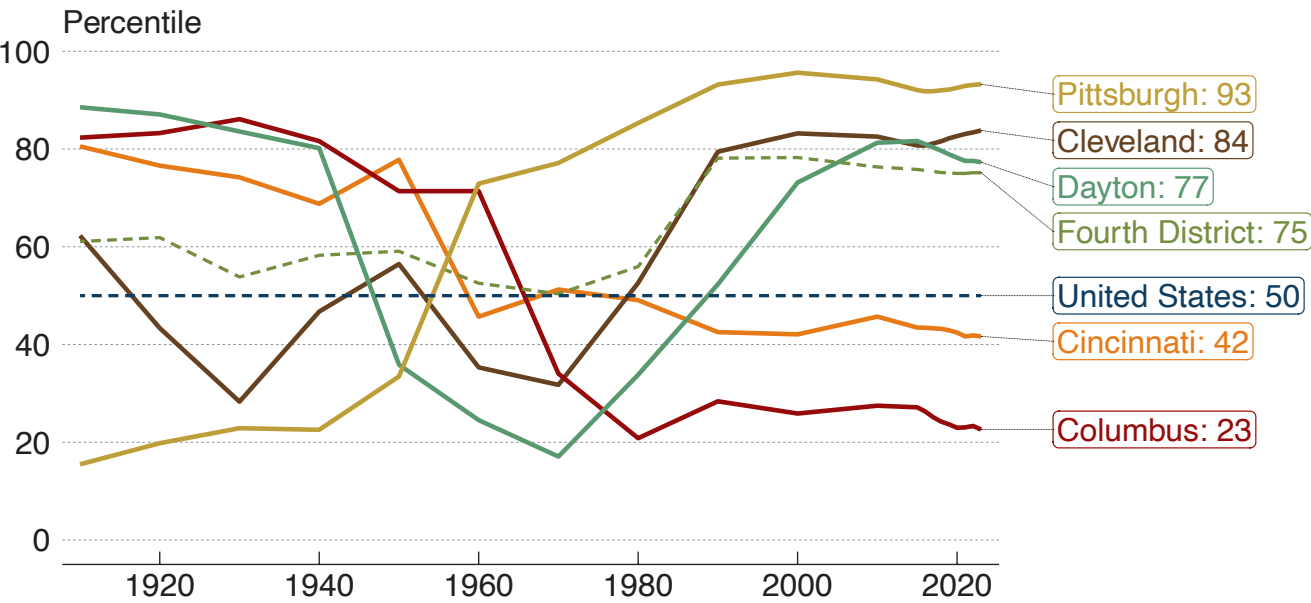
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Percentiles of the senior share are presented in **Figure 45**.

Last observation: 2023

DEMOGRAPHICS

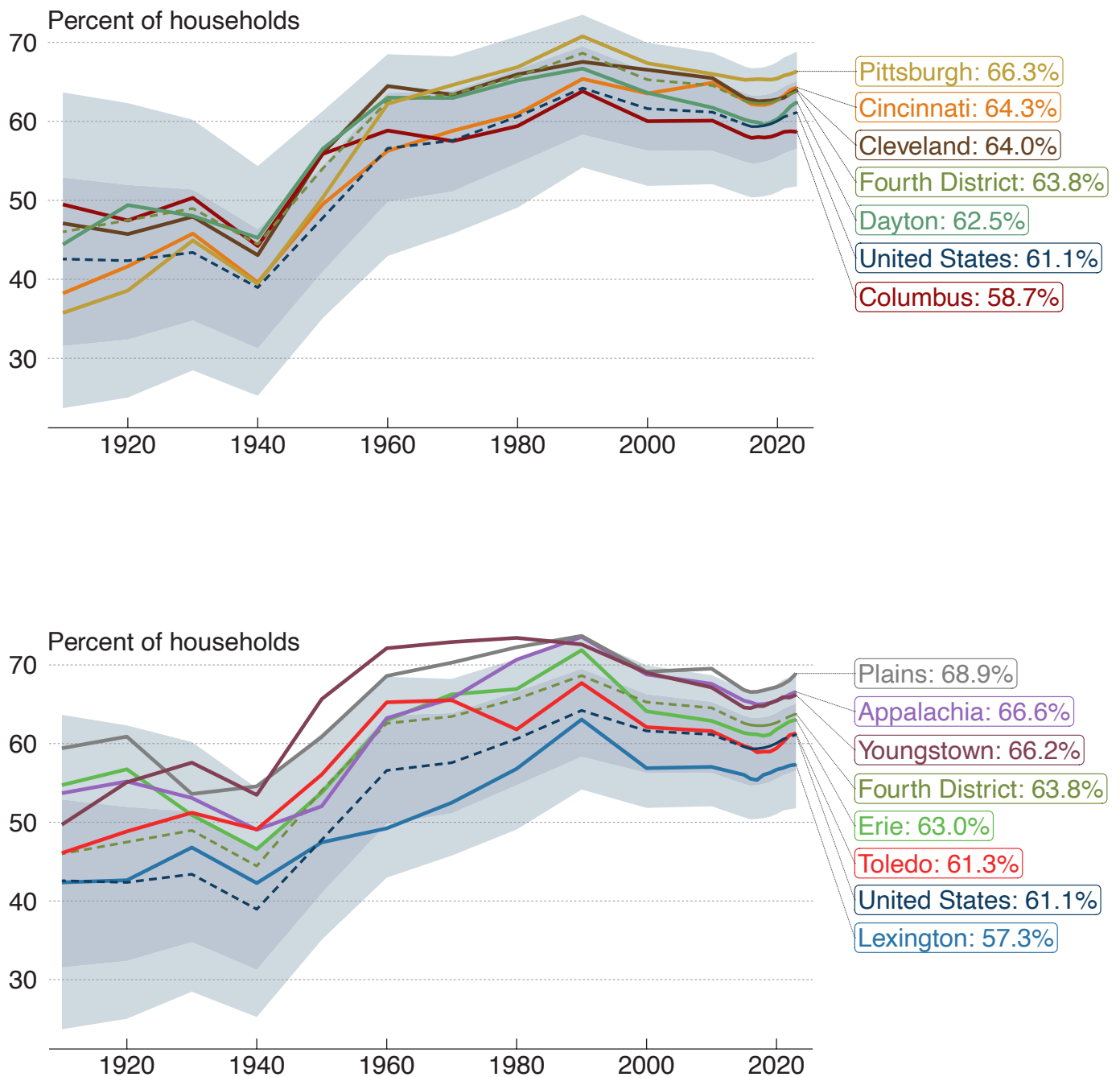
Figure 45. Percentile of Senior (≥ 65 years old) Share of Population



Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.
Notes: Senior shares are presented in **Figure 44**.
Last observation: 2023

HOUSING

Figure 46. Homeownership Rate



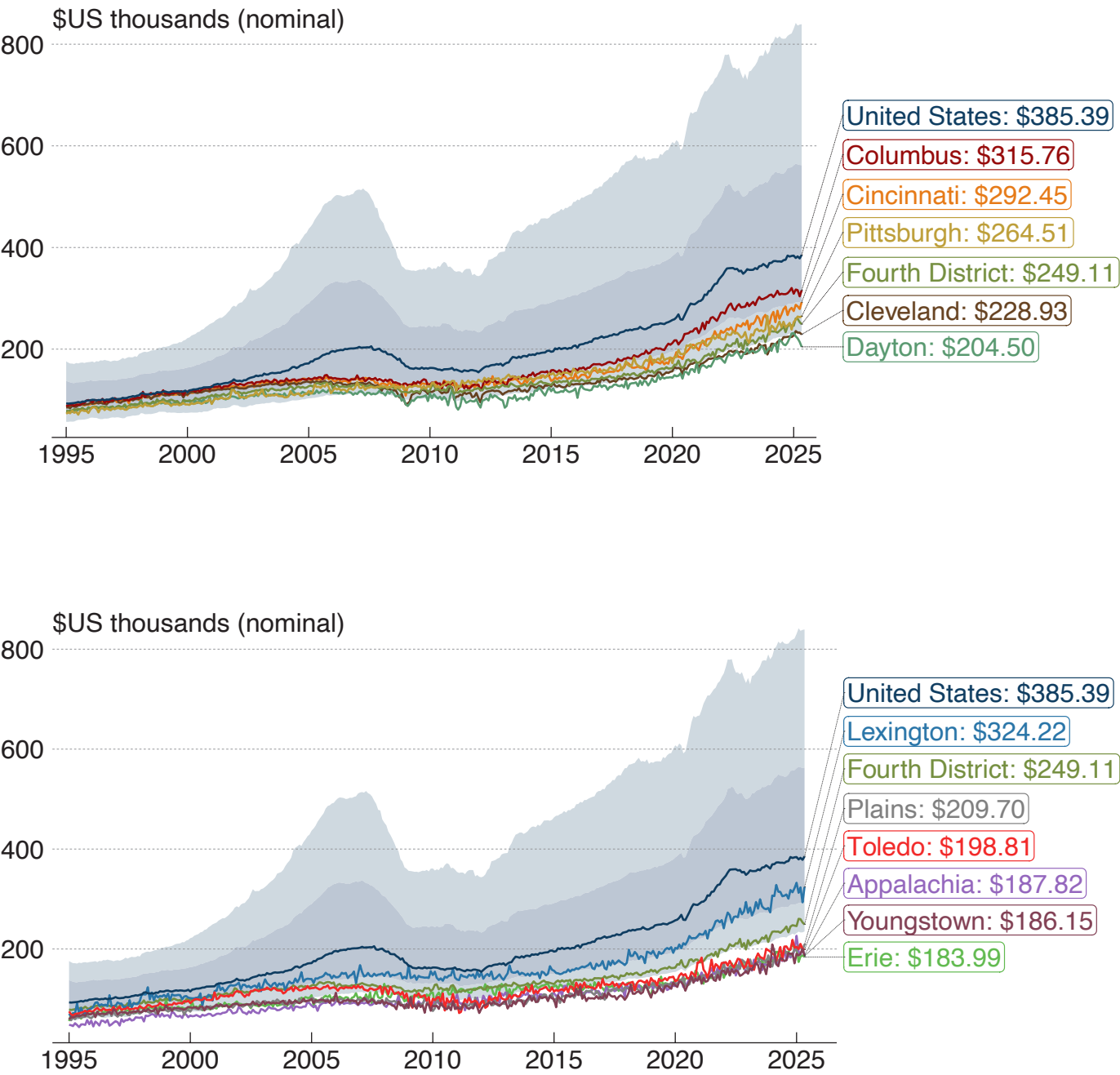
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Percentiles of homeownership rates are presented in **Figure A30**. The homeownership rate is defined as the percent of housing units owned by their occupant.

Last observation: 2023

HOUSING

Figure 47. House Prices



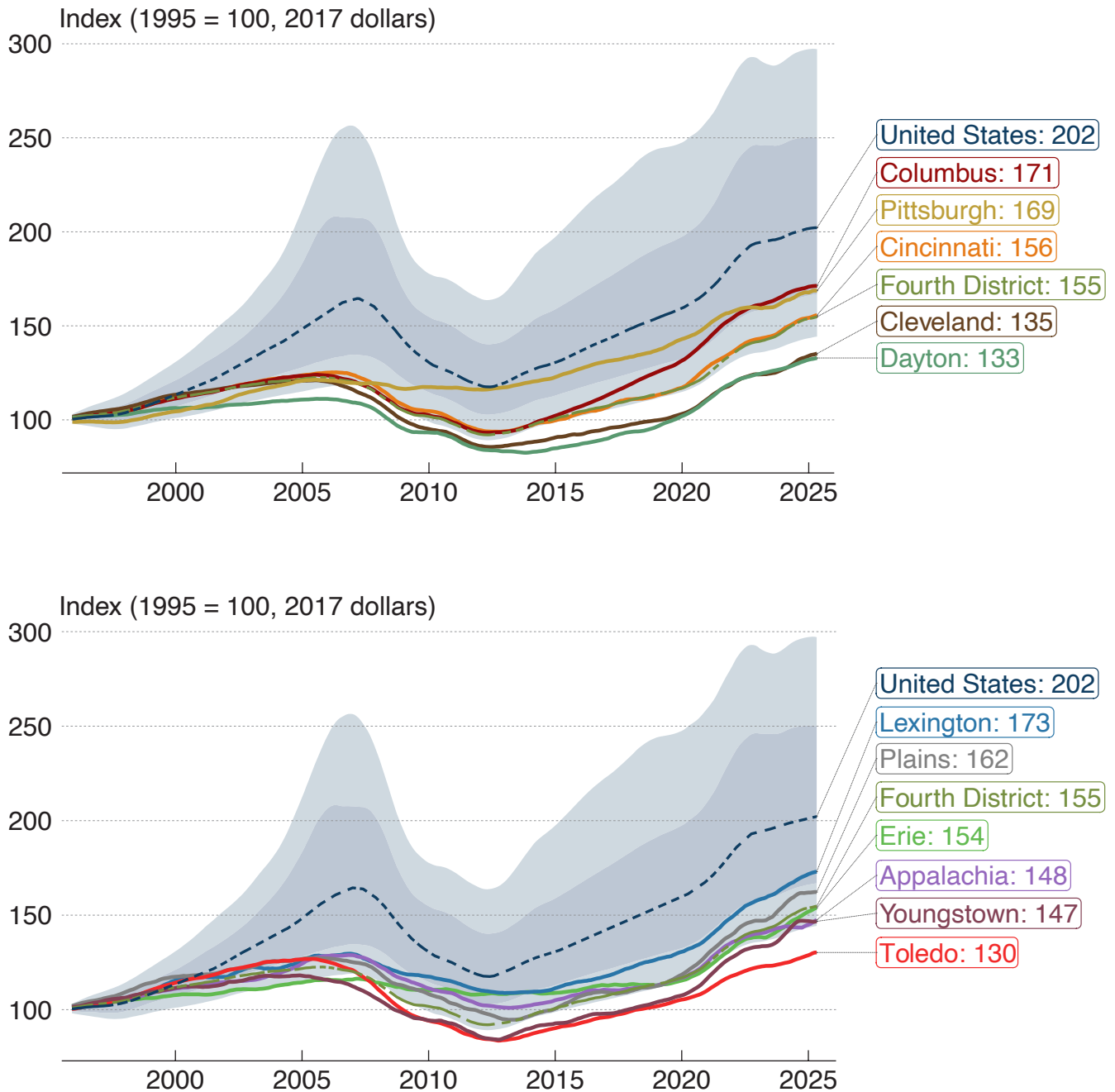
Sources: CoreLogic, and authors' calculations.

Notes: Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: May 2025

HOUSING

Figure 48. House Price Index



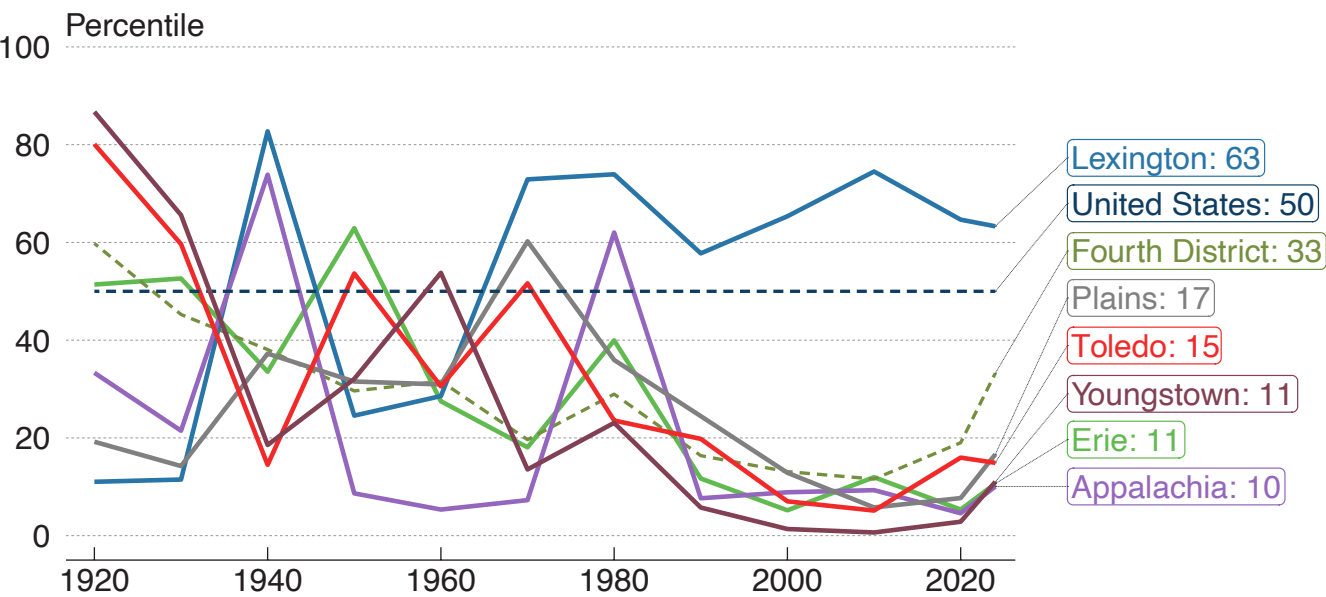
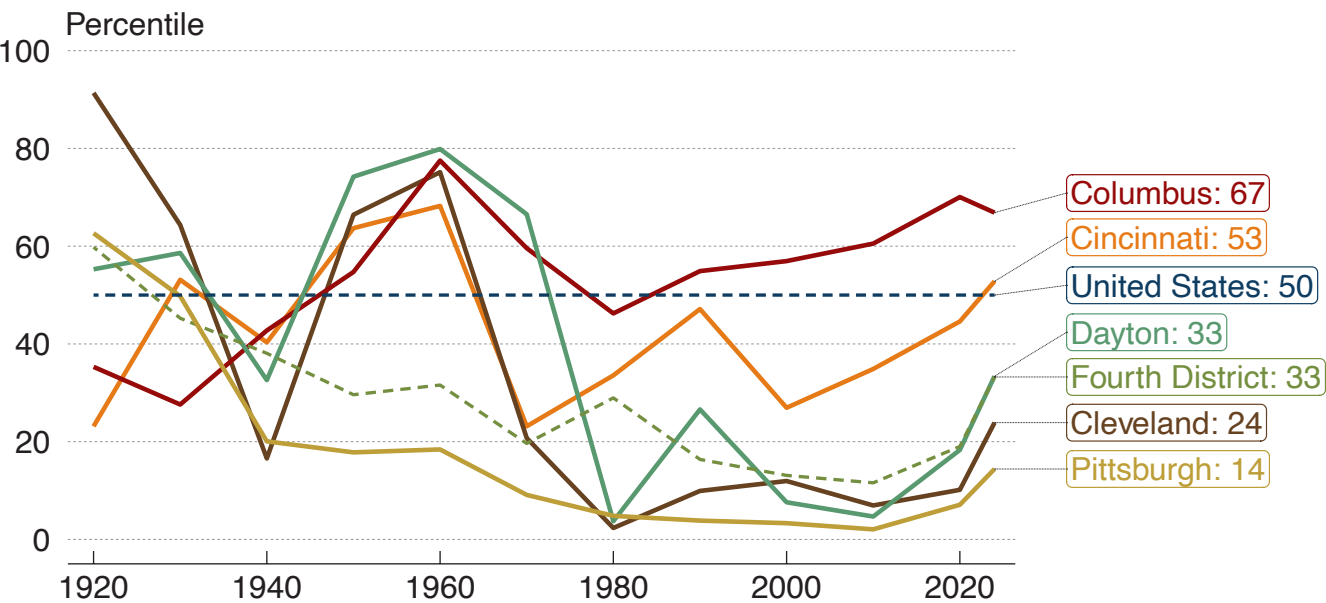
Sources: CoreLogic, Bureau of Economic Analysis, and authors' calculations.

Notes: The CoreLogic House Price Index is presented in Figure 48. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: May 2025

APPENDIX

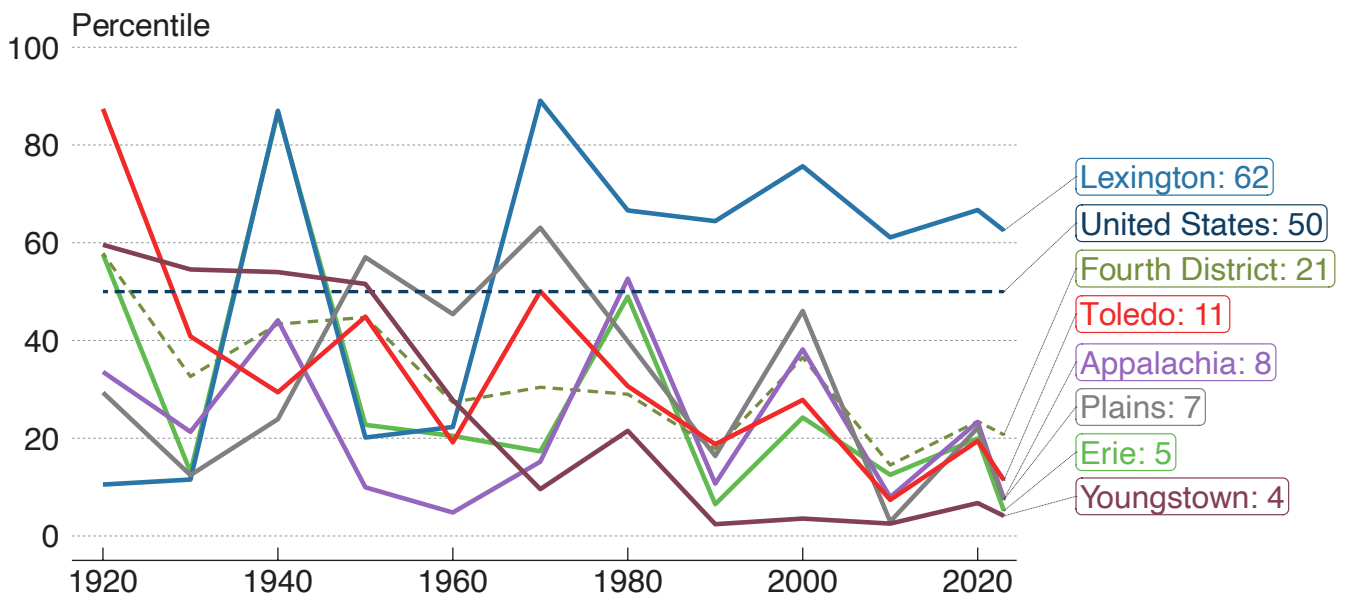
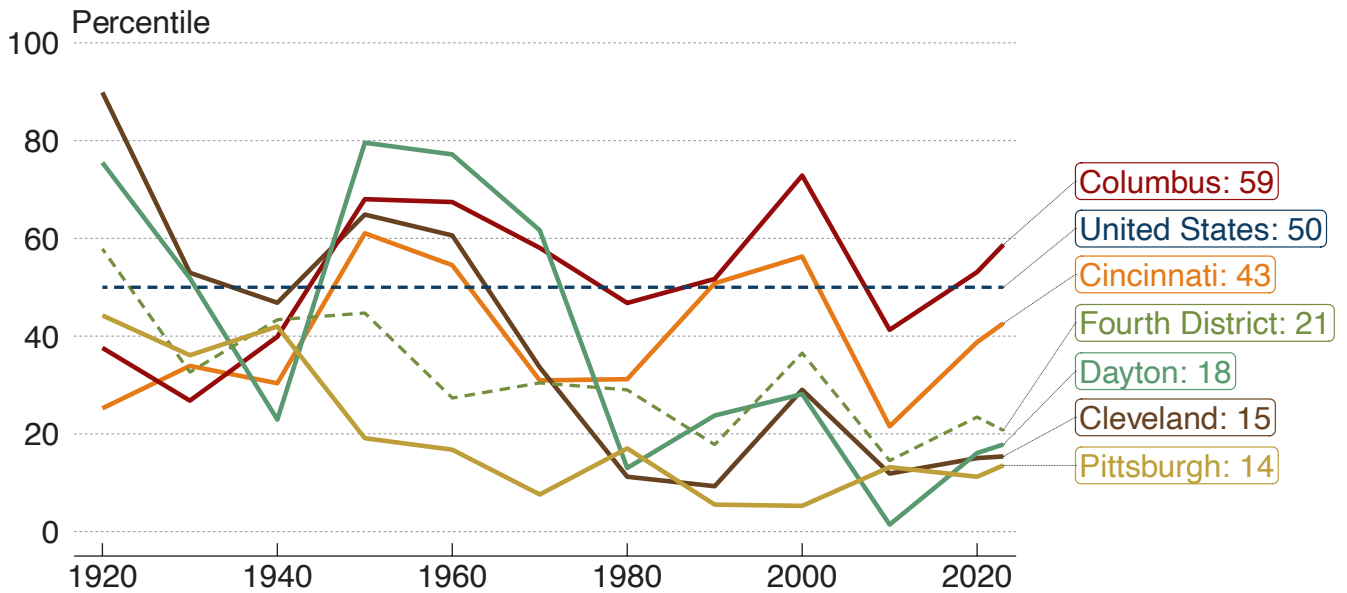
Figure A1. Percentile of Population Growth (over the last 10 years)



Sources: US Census Bureau via NBER and Haver Analytics, and authors' calculations.
Last observation: 2024

APPENDIX

Figure A2. Percentile of Labor Force Growth (over the last 10 years)

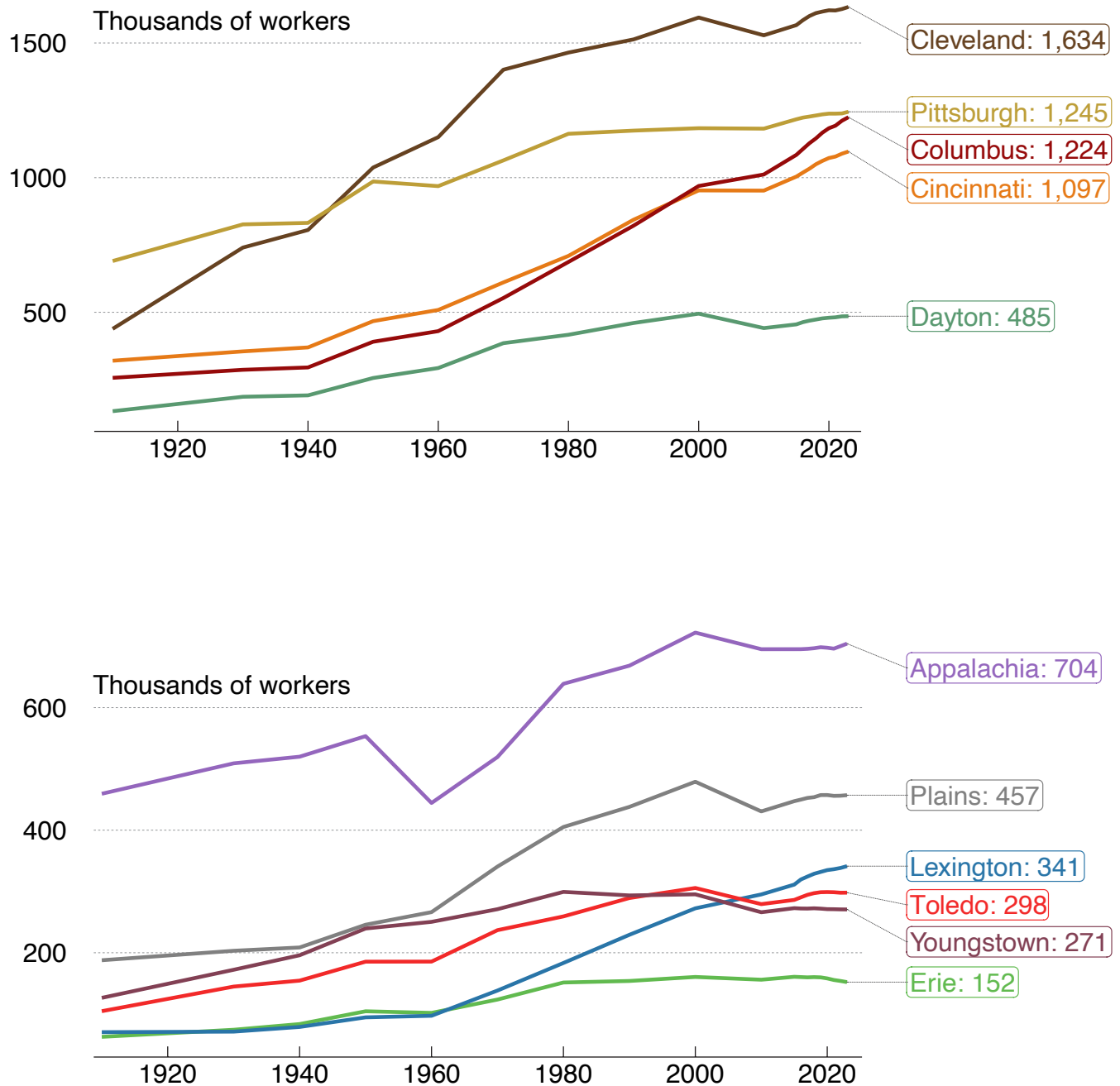


Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Last observation: 2023

APPENDIX

Figure A3. Employment

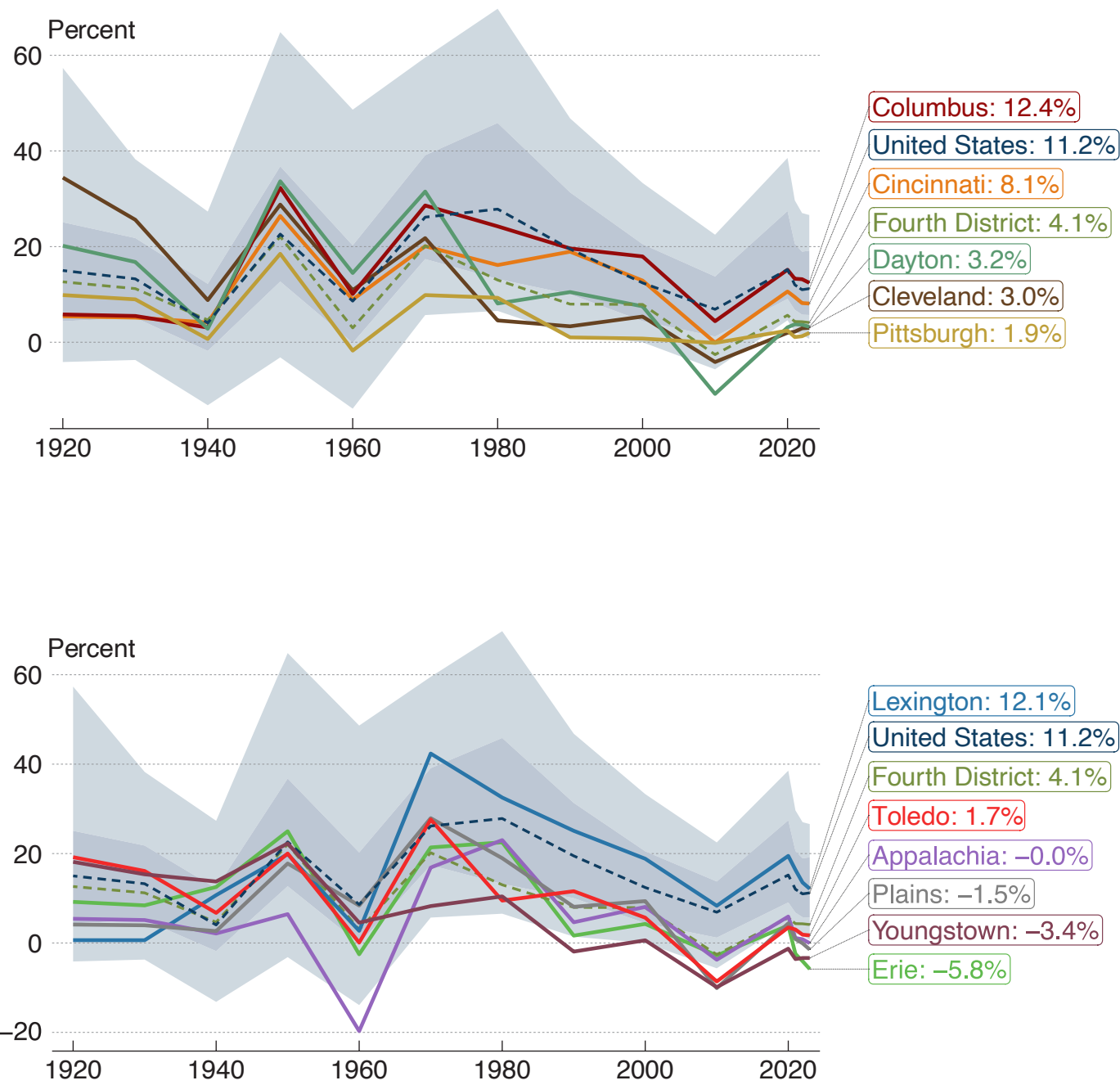


Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Last observation: 2023

APPENDIX

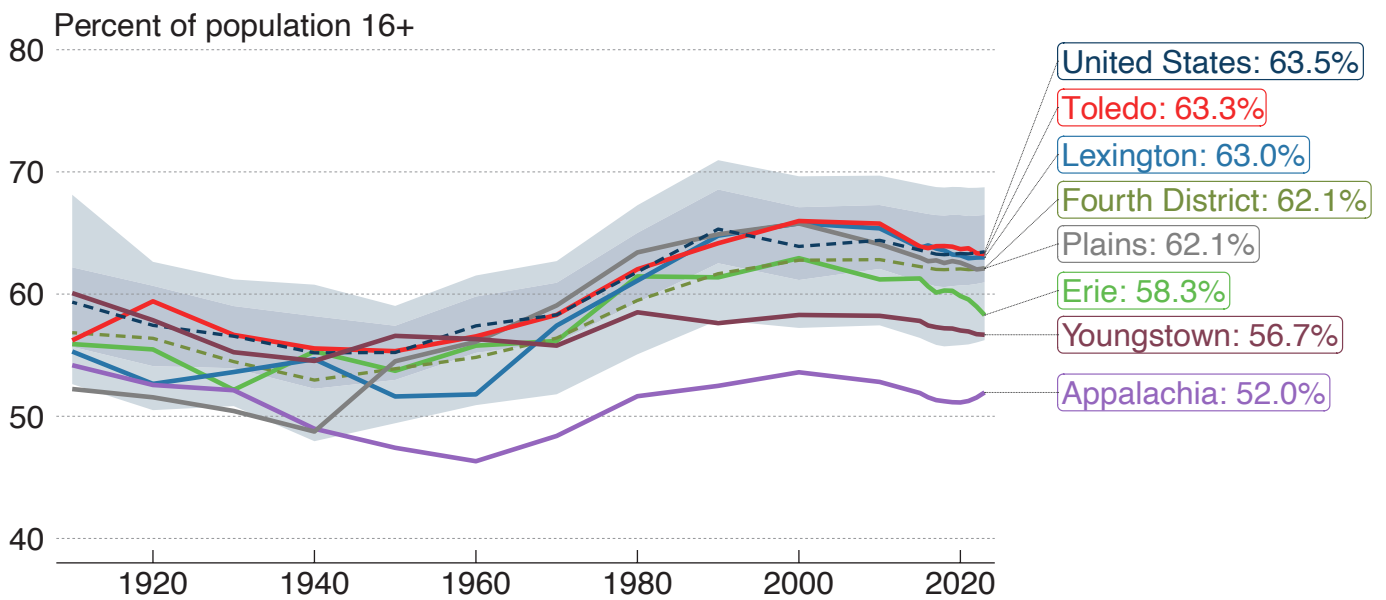
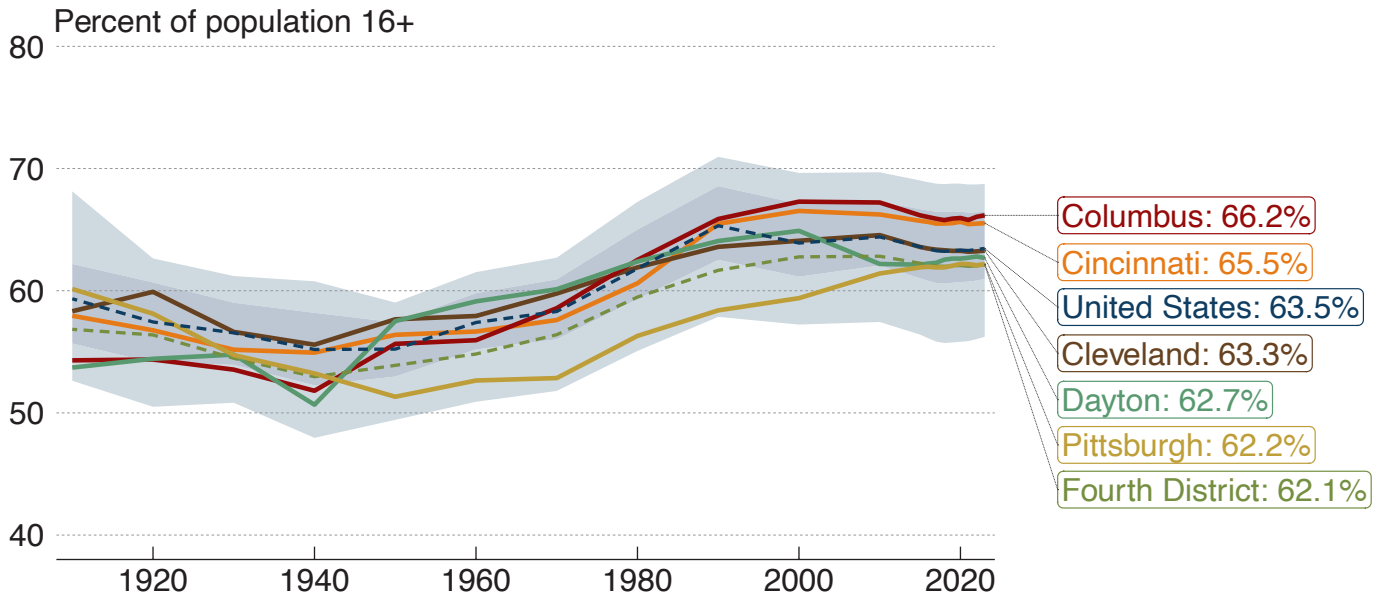
Figure A4. Employment Growth (over the last 10 years)



Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.
Last observation: 2023

APPENDIX

Figure A5. Labor Force Participation



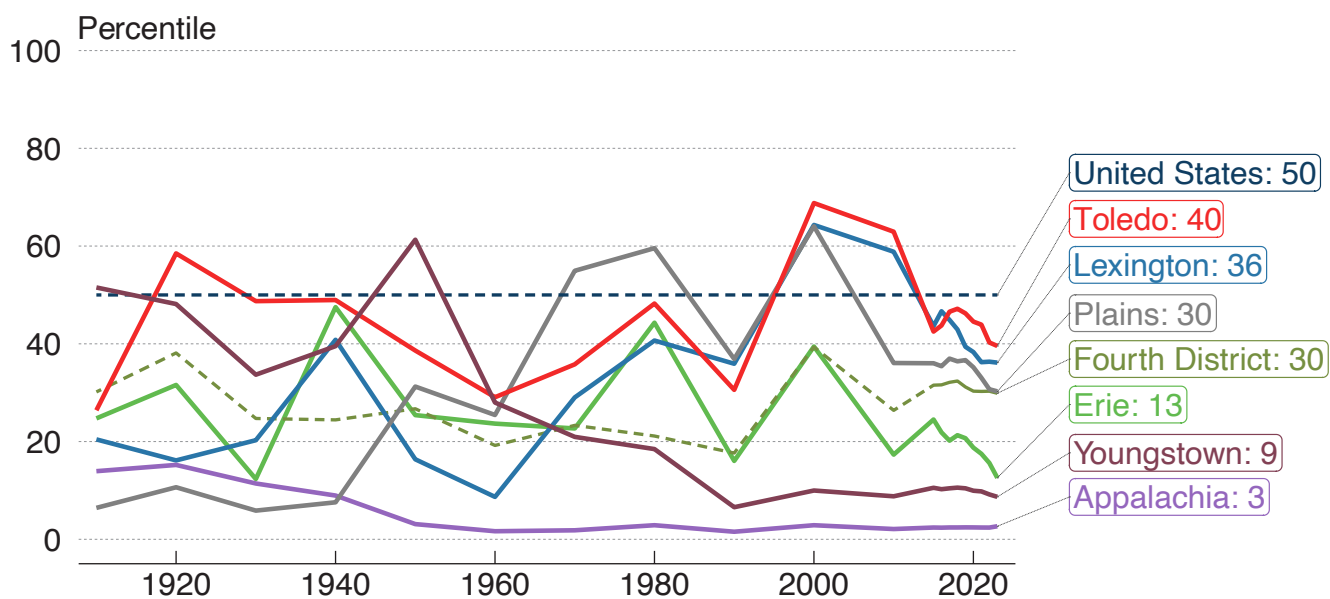
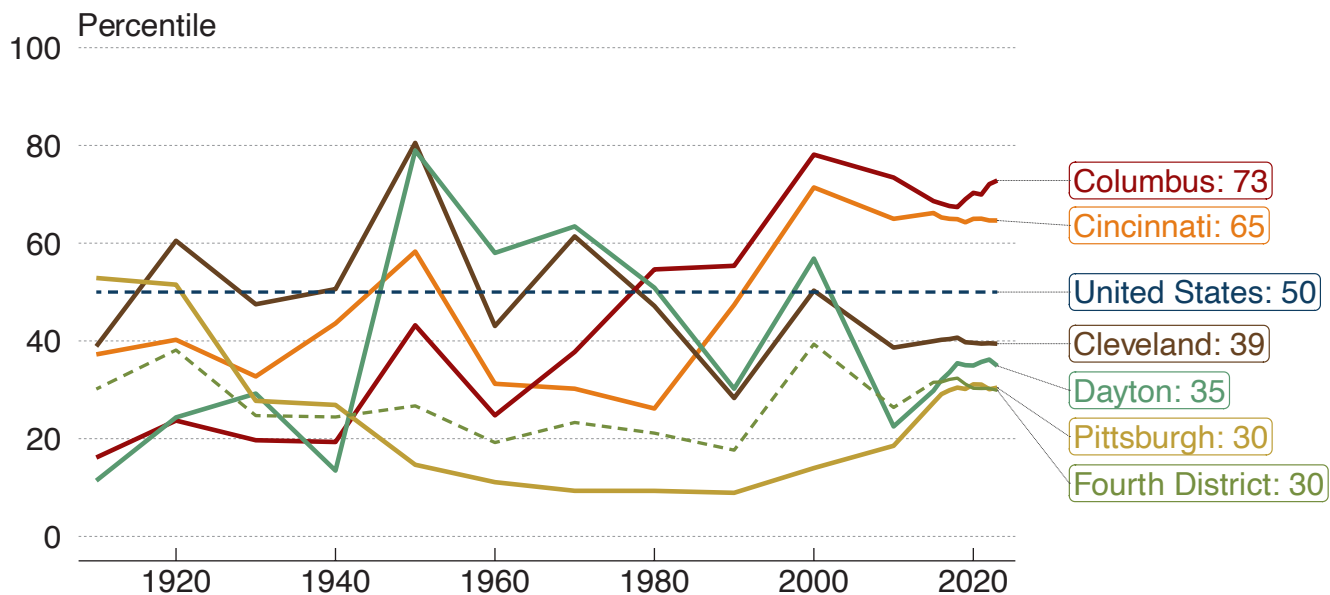
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

APPENDIX

Figure A6. Percentile of Labor Force Participation

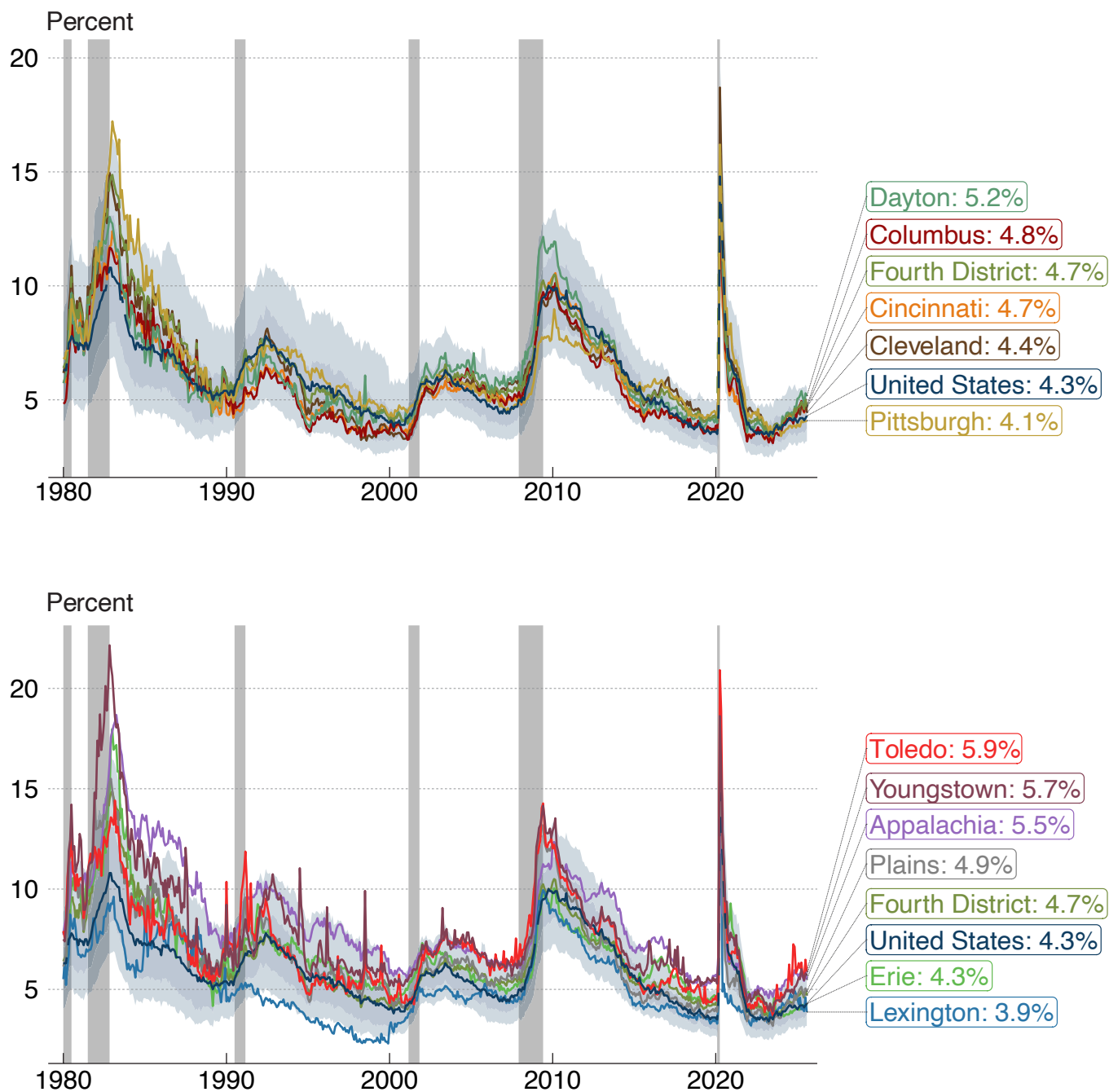


Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Last observation: 2023

APPENDIX

Figure A7. Unemployment Rate



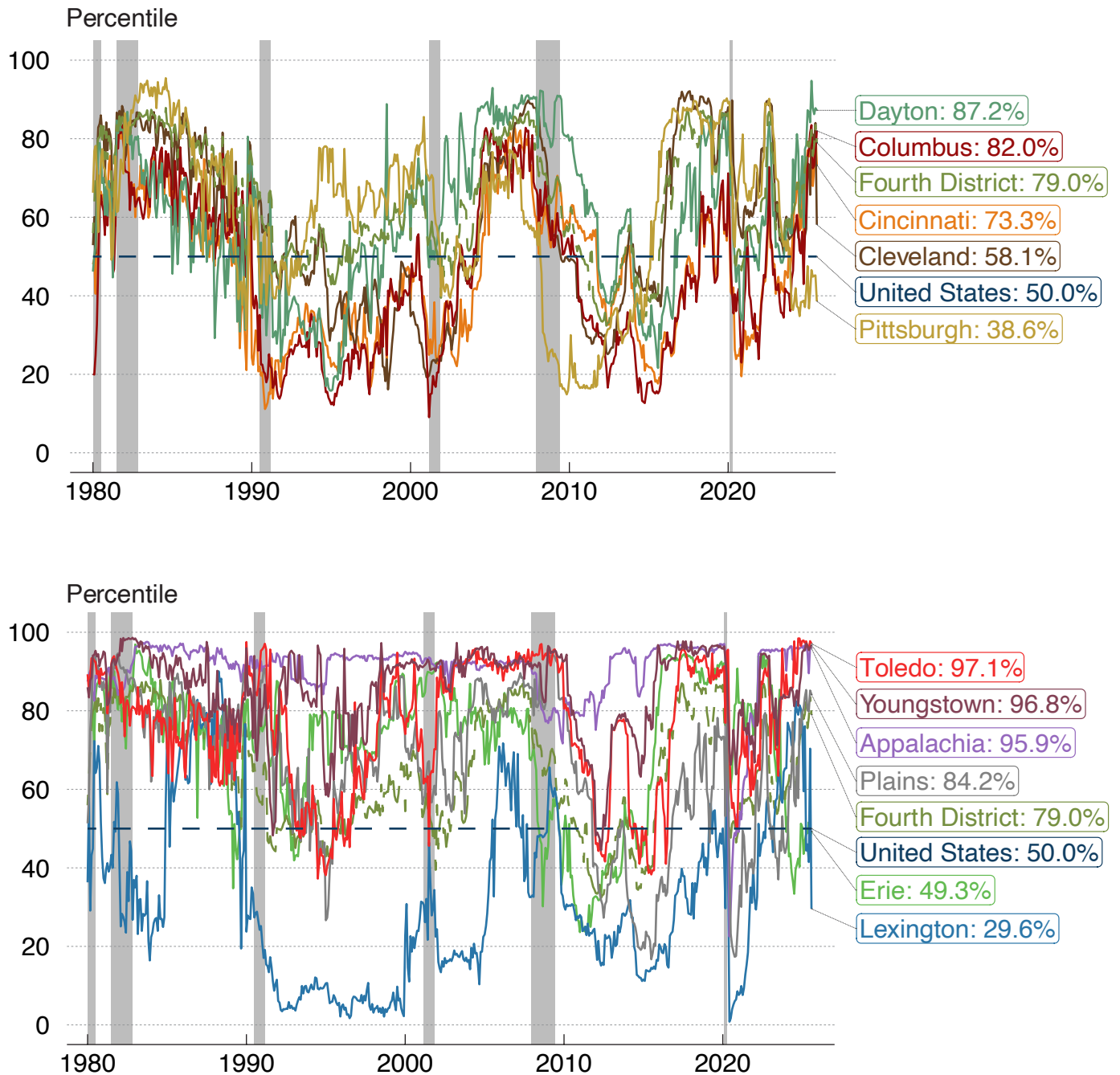
Sources: Bureau of Labor Statistics via Haver Analytics, and authors' calculations.

Notes: Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: July 2024

APPENDIX

Figure A8. Percentile of Unemployment Rate



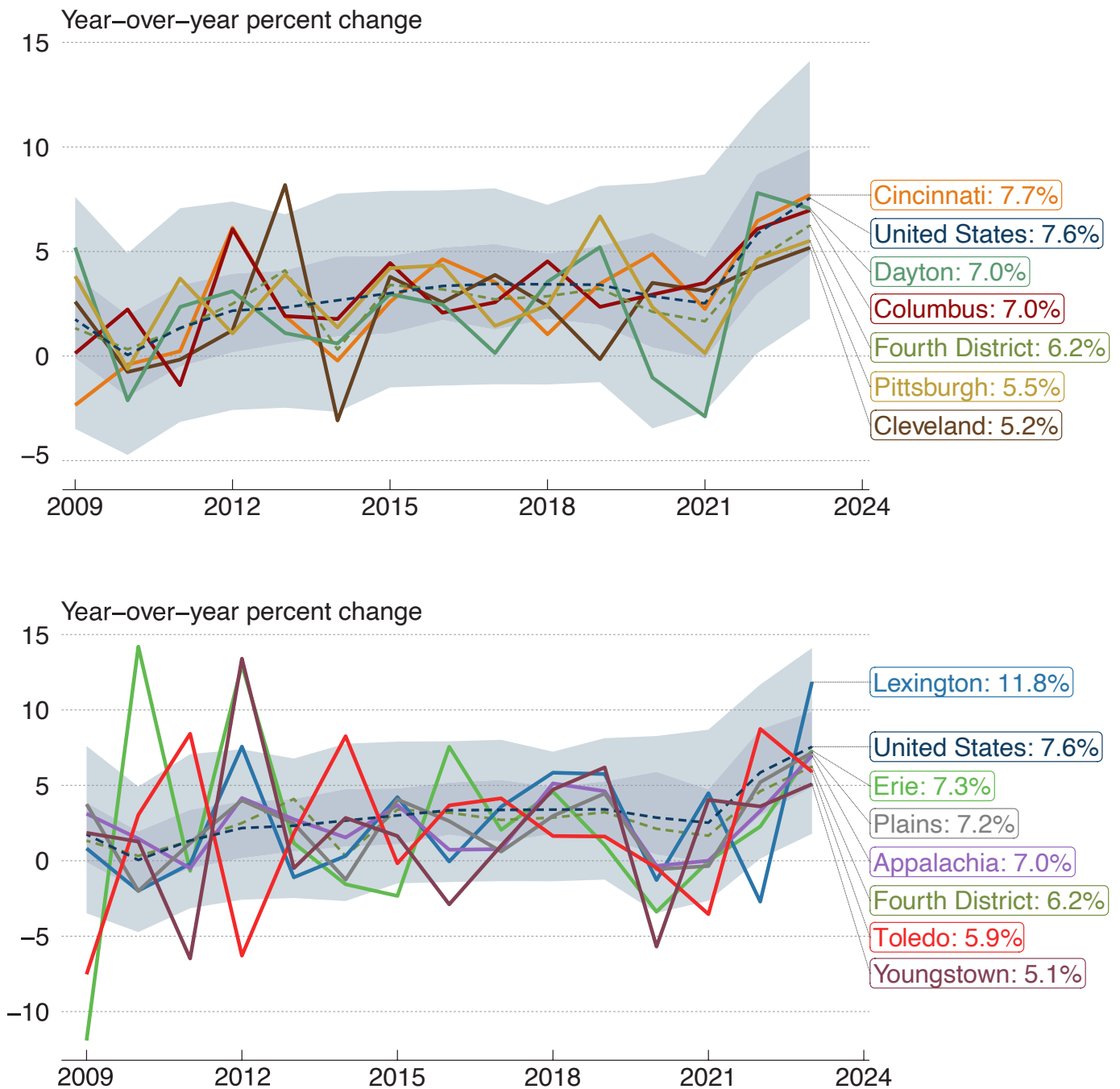
Sources: Bureau of Labor Statistics via Haver Analytics, and authors' calculations.

Note: Grey shaded bars indicate recessions.

Last observation: August 2025

APPENDIX

Figure A9. Regional Housing Price Growth



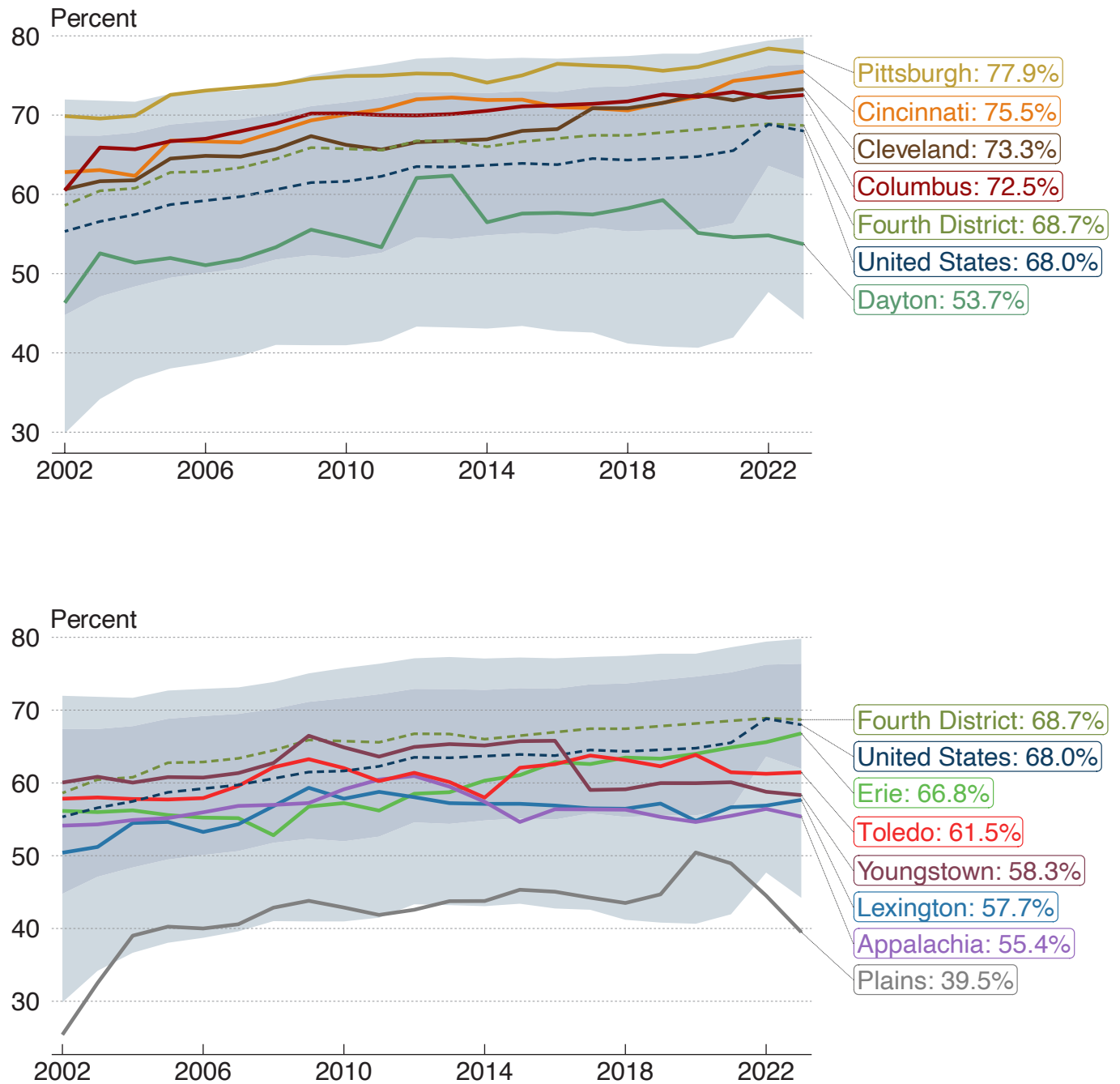
Sources: Bureau of Economic Analysis and authors' calculations.

Notes: Regional price parity measures are presented in **Figure 12**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

APPENDIX

Figure A10. Private Services-Providing Industries Share of GDP



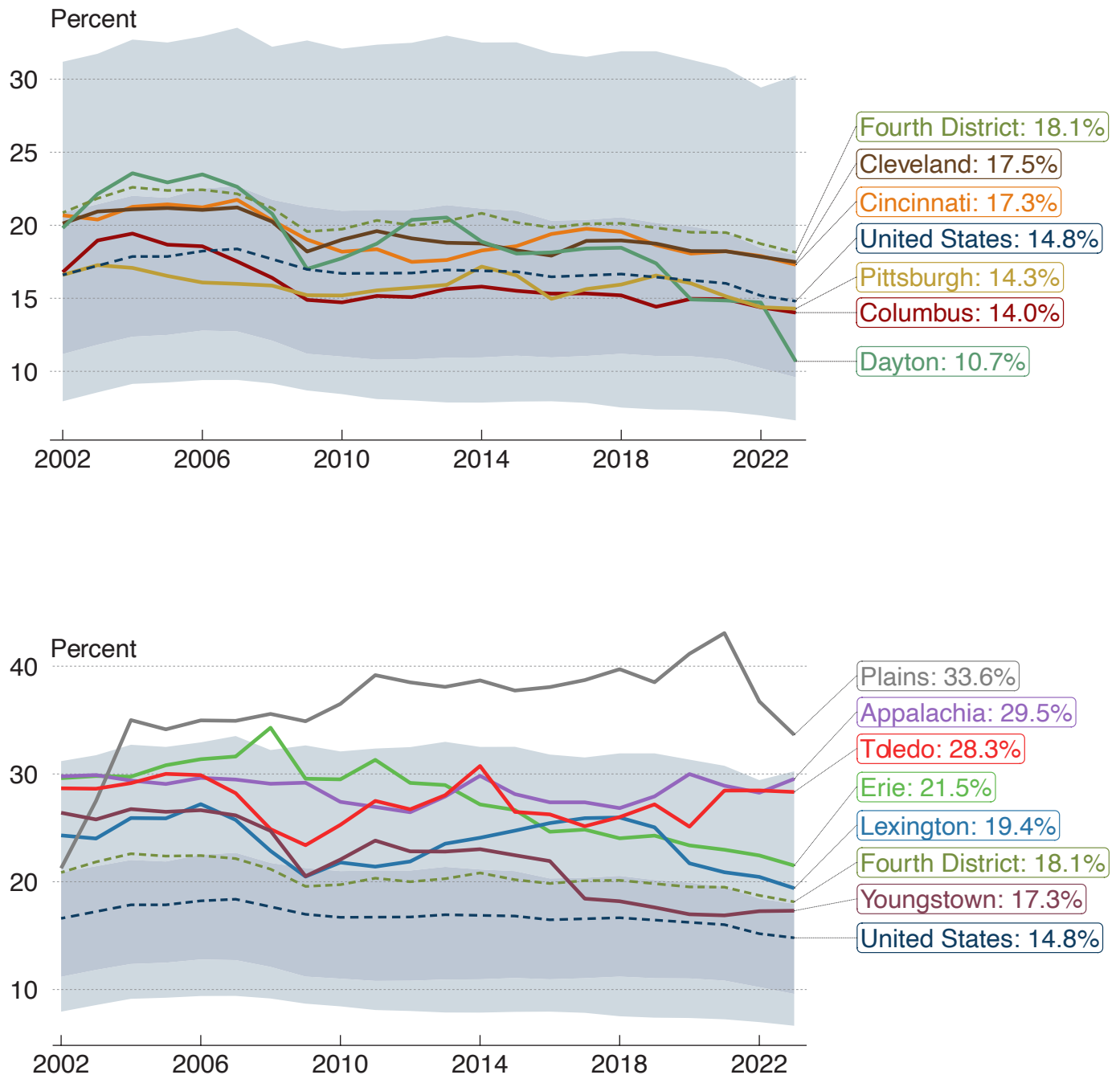
Sources: Bureau of Economic Analysis and authors' calculations.

Notes: Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

APPENDIX

Figure A11. Private Goods-Producing Industries Share of GDP



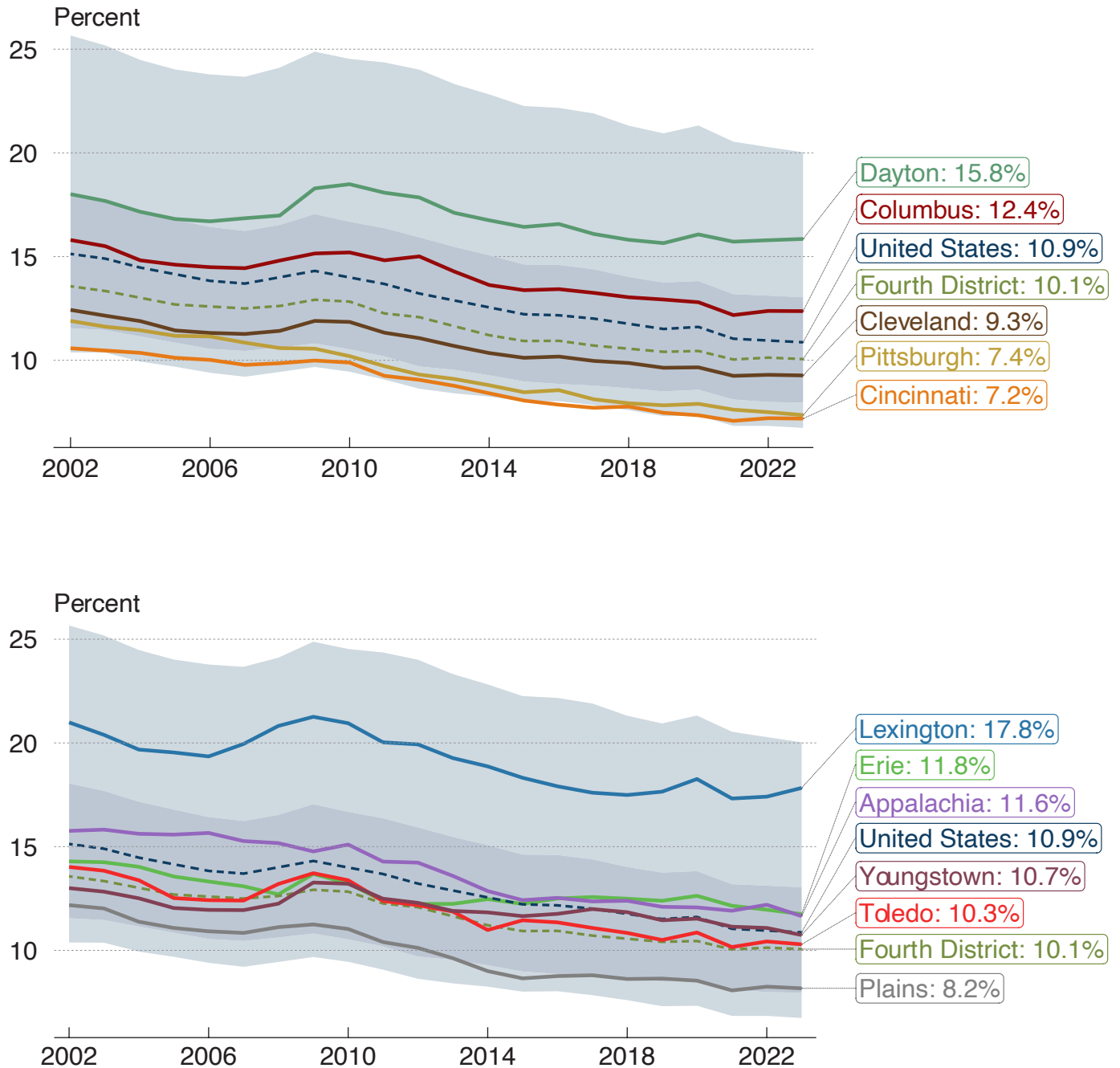
Sources: Bureau of Economic Analysis and authors' calculations.

Notes: Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

APPENDIX

Figure A12. Government and Government Enterprises Share of GDP



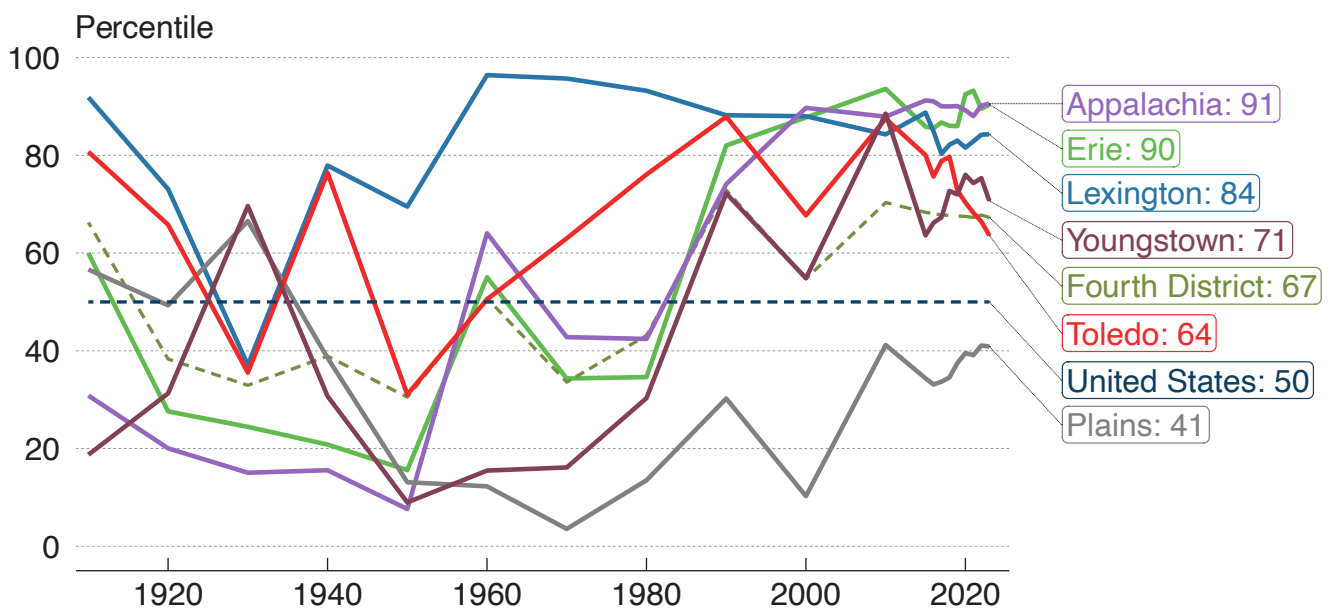
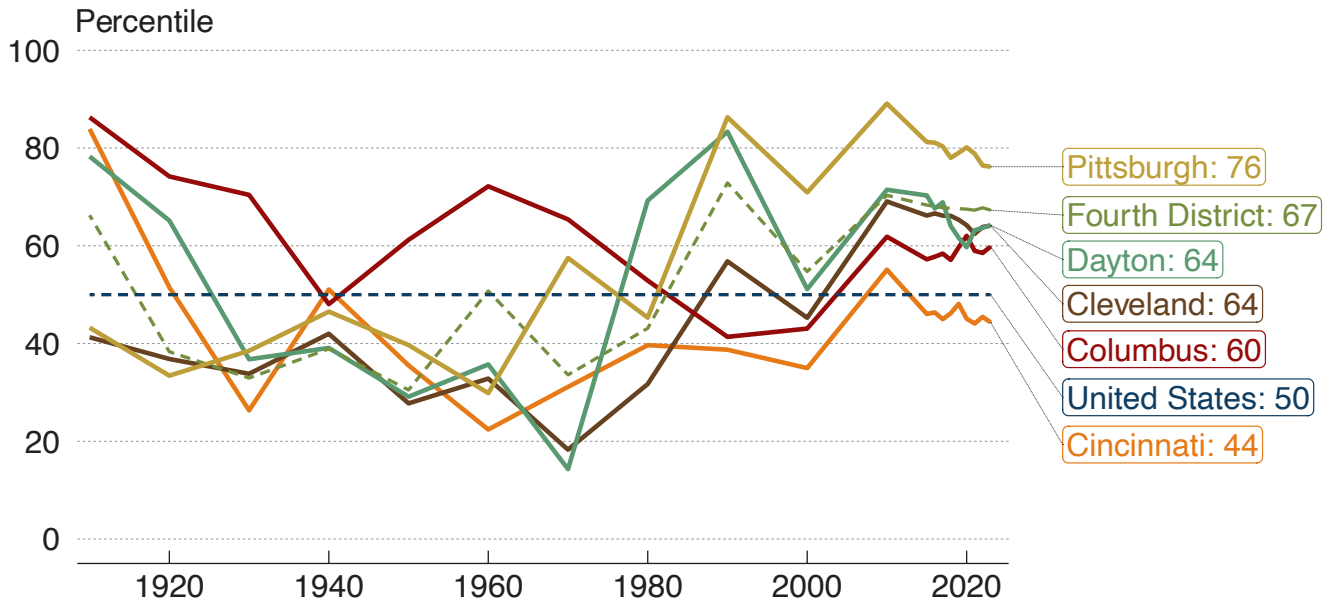
Sources: Bureau of Economic Analysis and authors' calculations.

Notes: Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

APPENDIX

Figure A13. Percentile of Education and Health Services Share of Employment



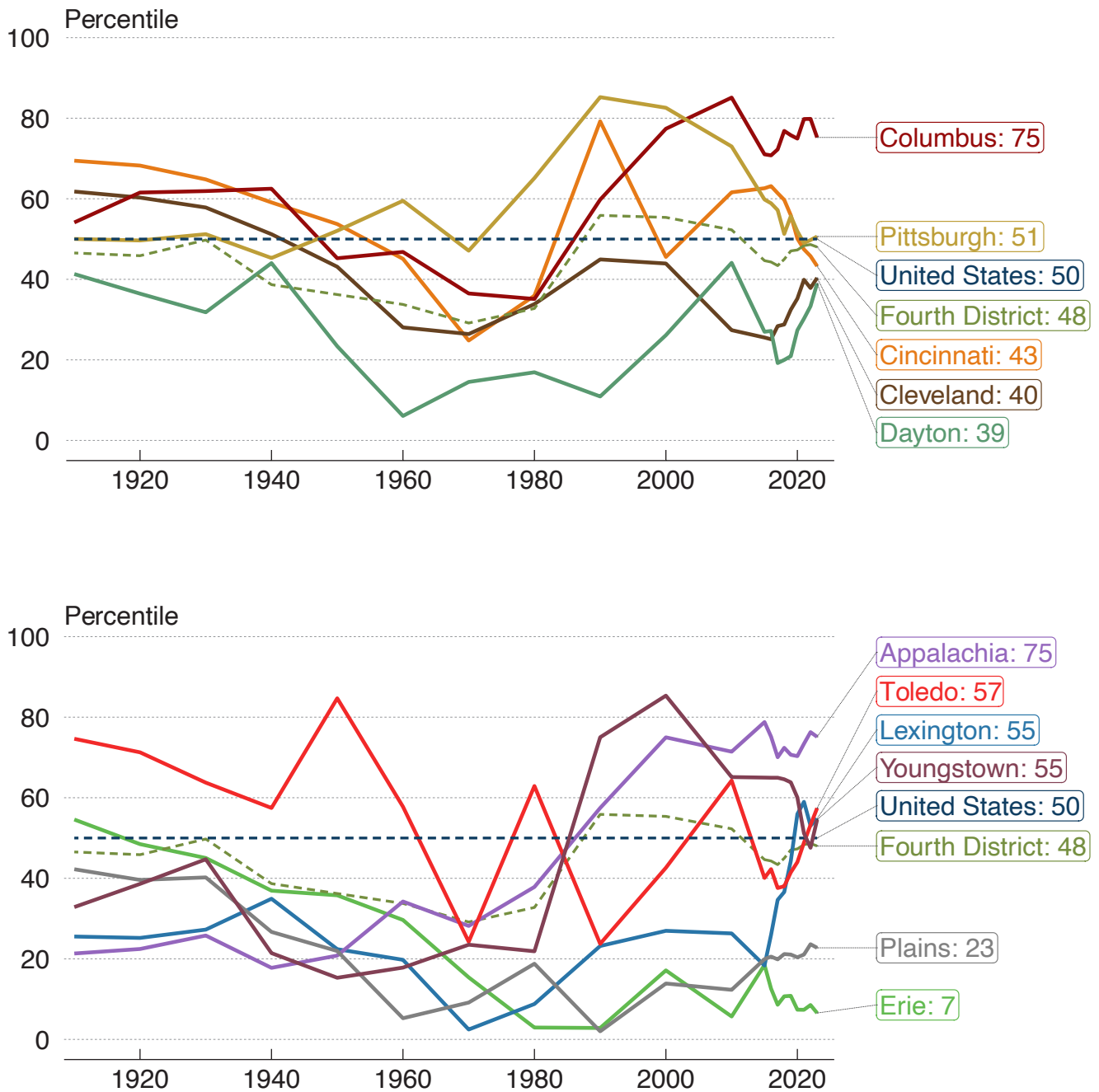
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Note: The corresponding share graph can be found in **Figure 20**.

Last observation: 2023

APPENDIX

Figure A14. Percentile of Trade, Transportation, and Utilities Share of Employment



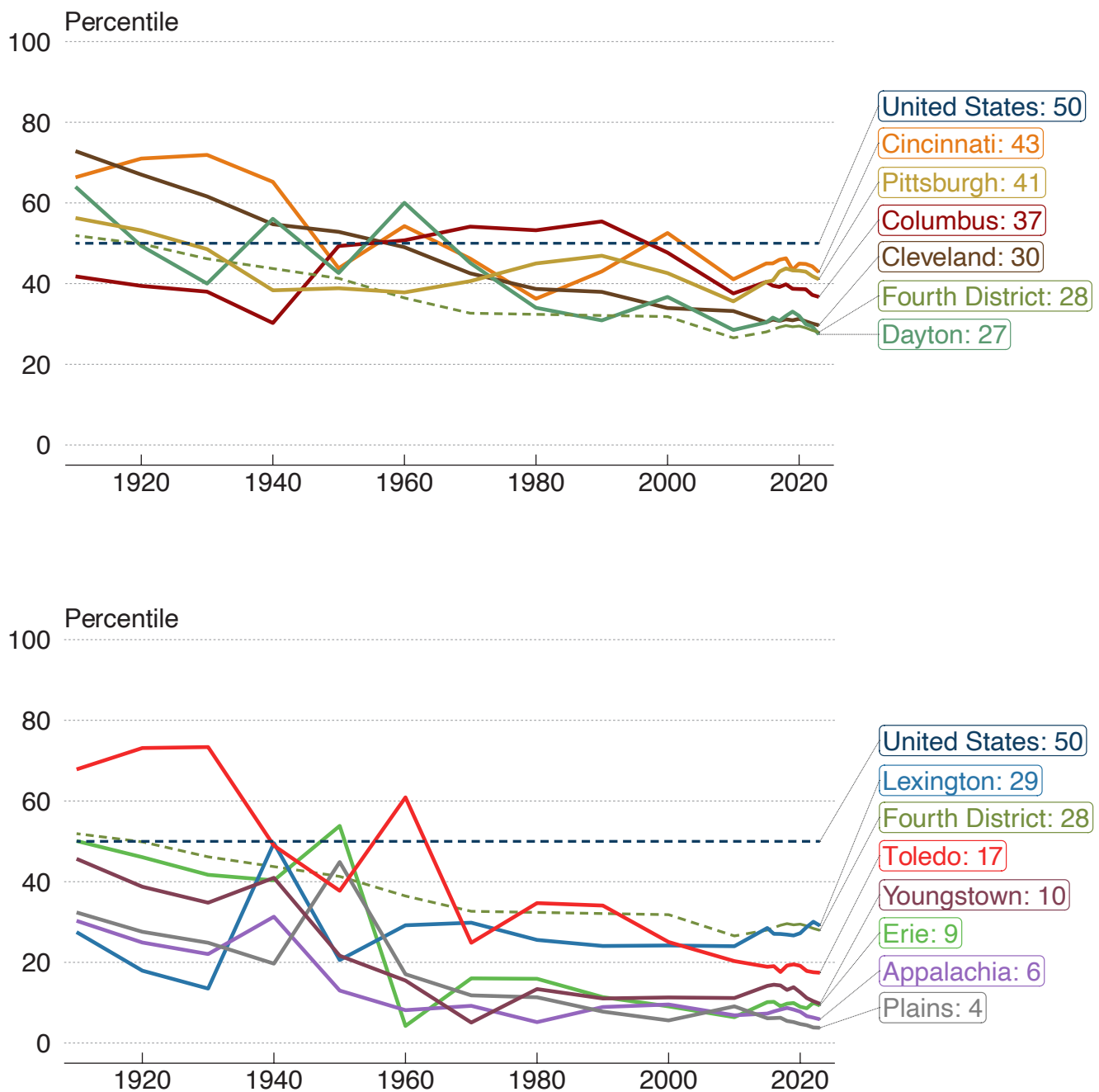
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Note: The corresponding share graph can be found in **Figure 21**.

Last observation: 2023

APPENDIX

Figure A15. Percentile of Professional and Business Services Share of Employment



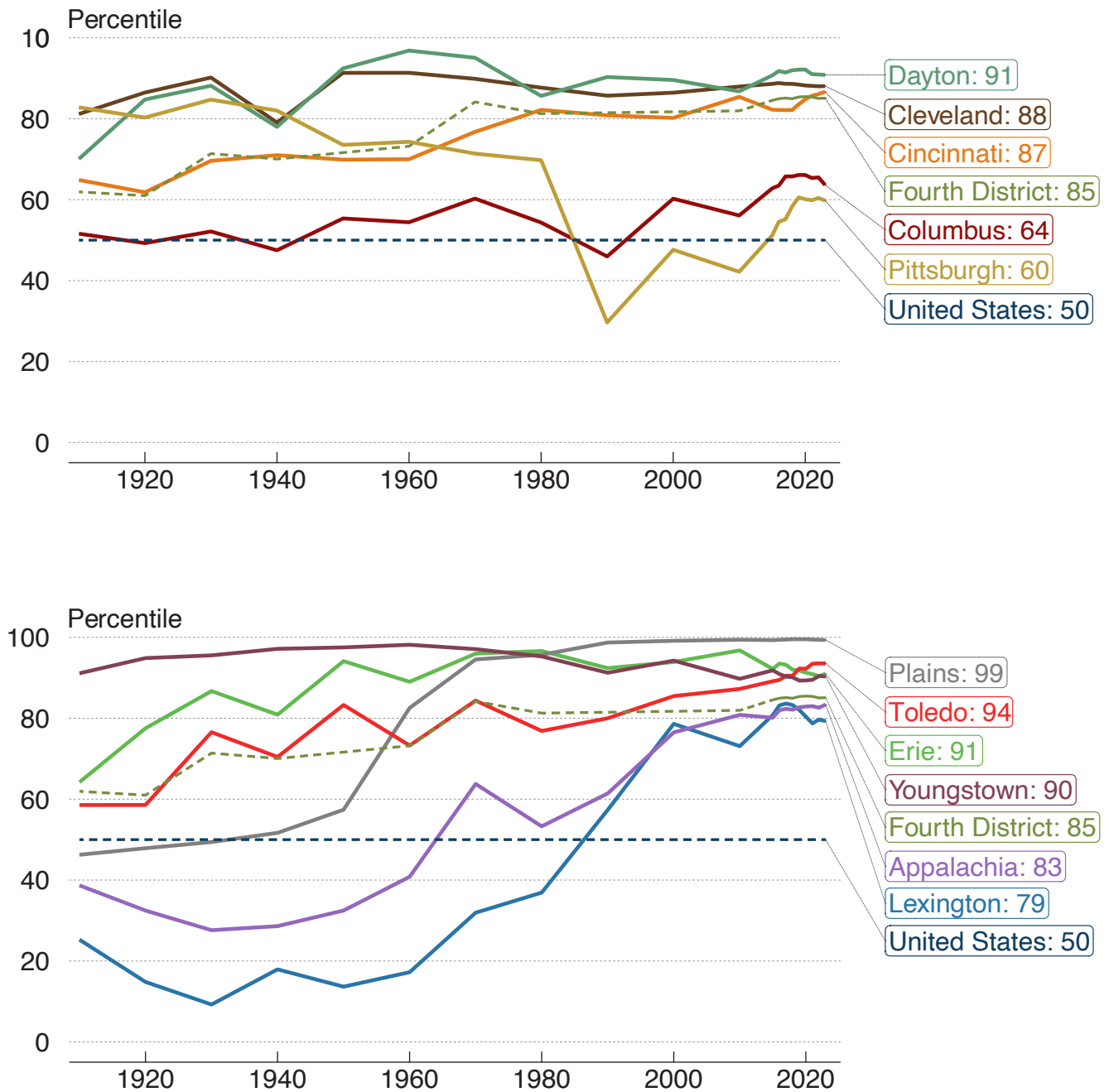
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Note: The corresponding share graph can be found in **Figure 22**.

Last observation: 2023

APPENDIX

Figure A16. Percentile of Manufacturing Share of Employment



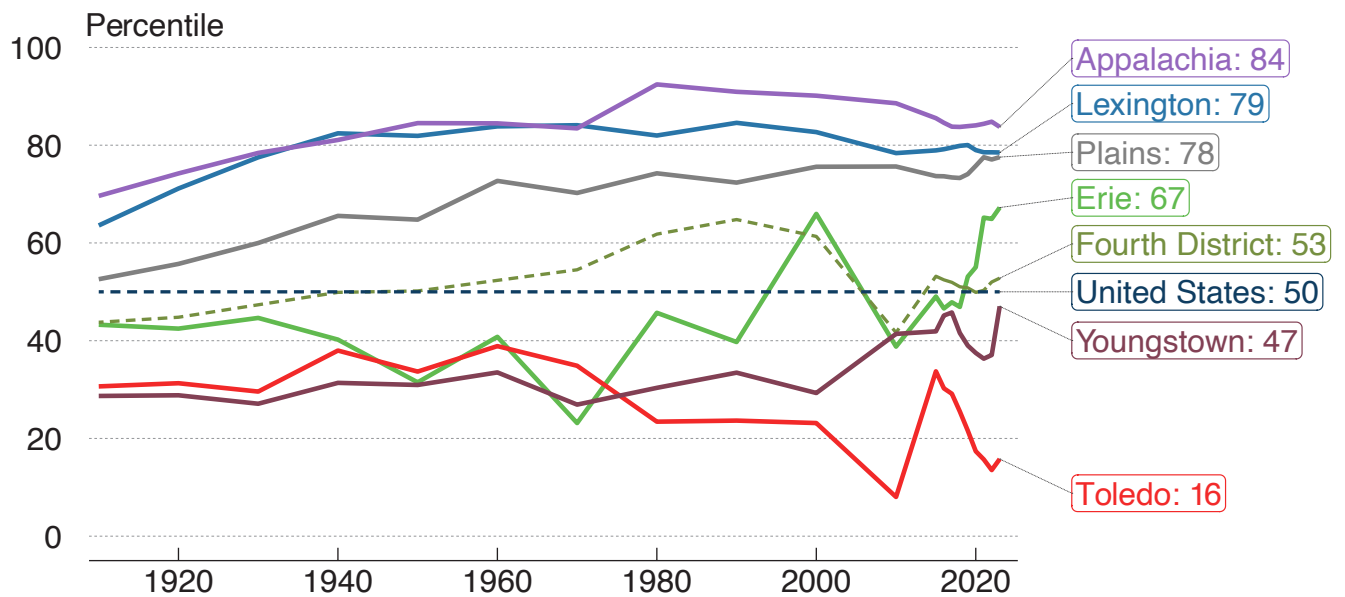
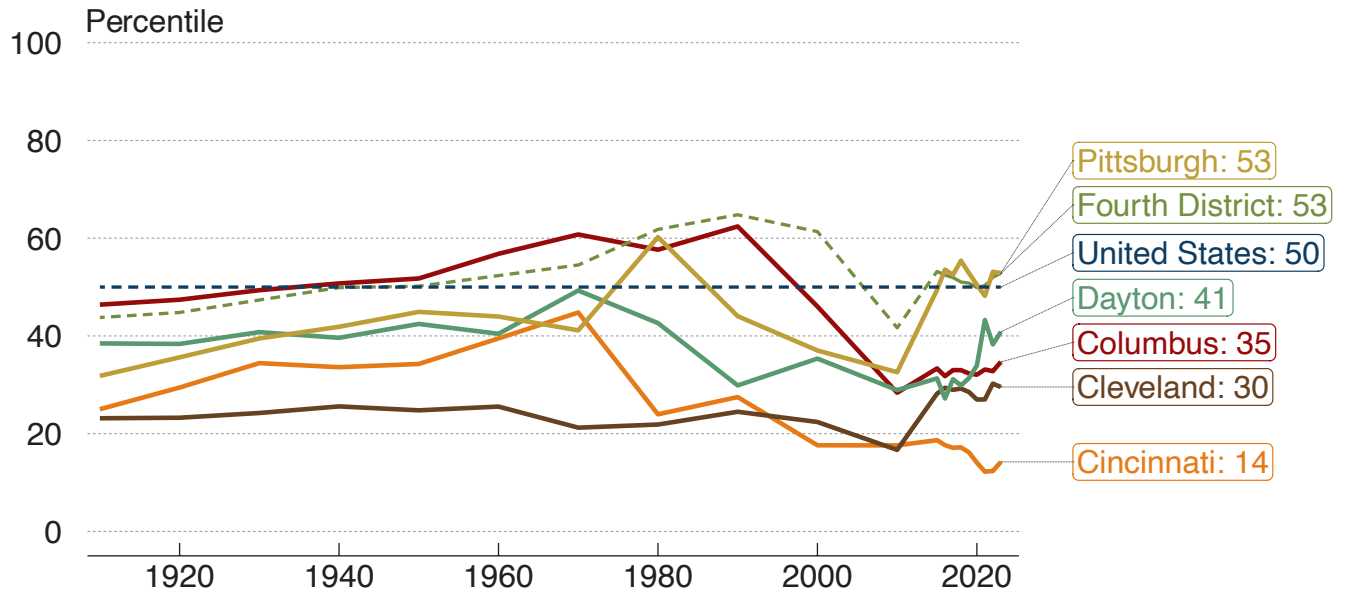
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Note: The corresponding percentile graph can be found in **Figure A16**.

Last observation: 2023

APPENDIX

Figure A17. Percentile of Natural Resources and Mining Share of Employment



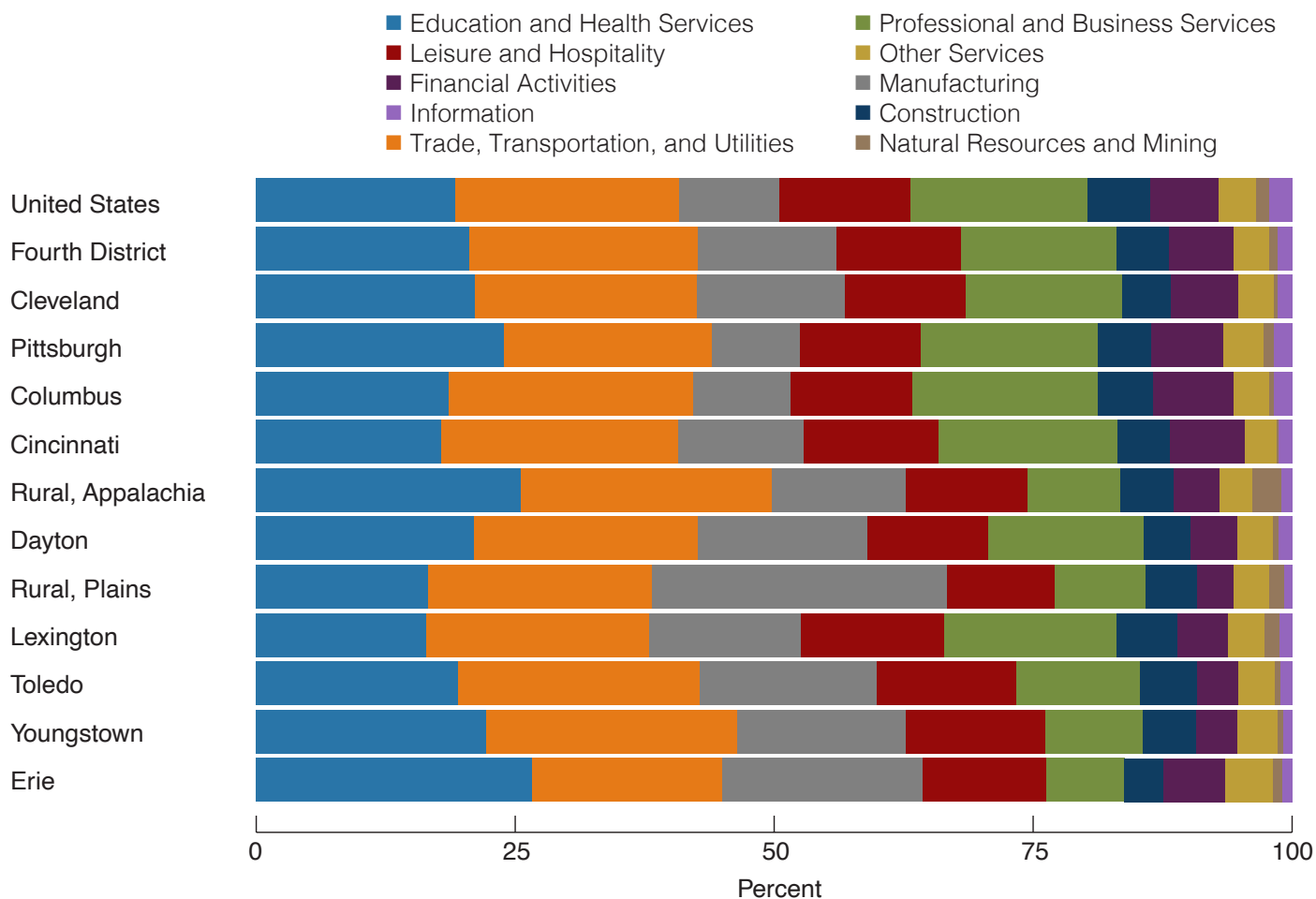
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Note: The corresponding share graph can be found in **Figure 24**.

Last observation: 2023

APPENDIX

Figure A18. QCEW Industry Employment Shares

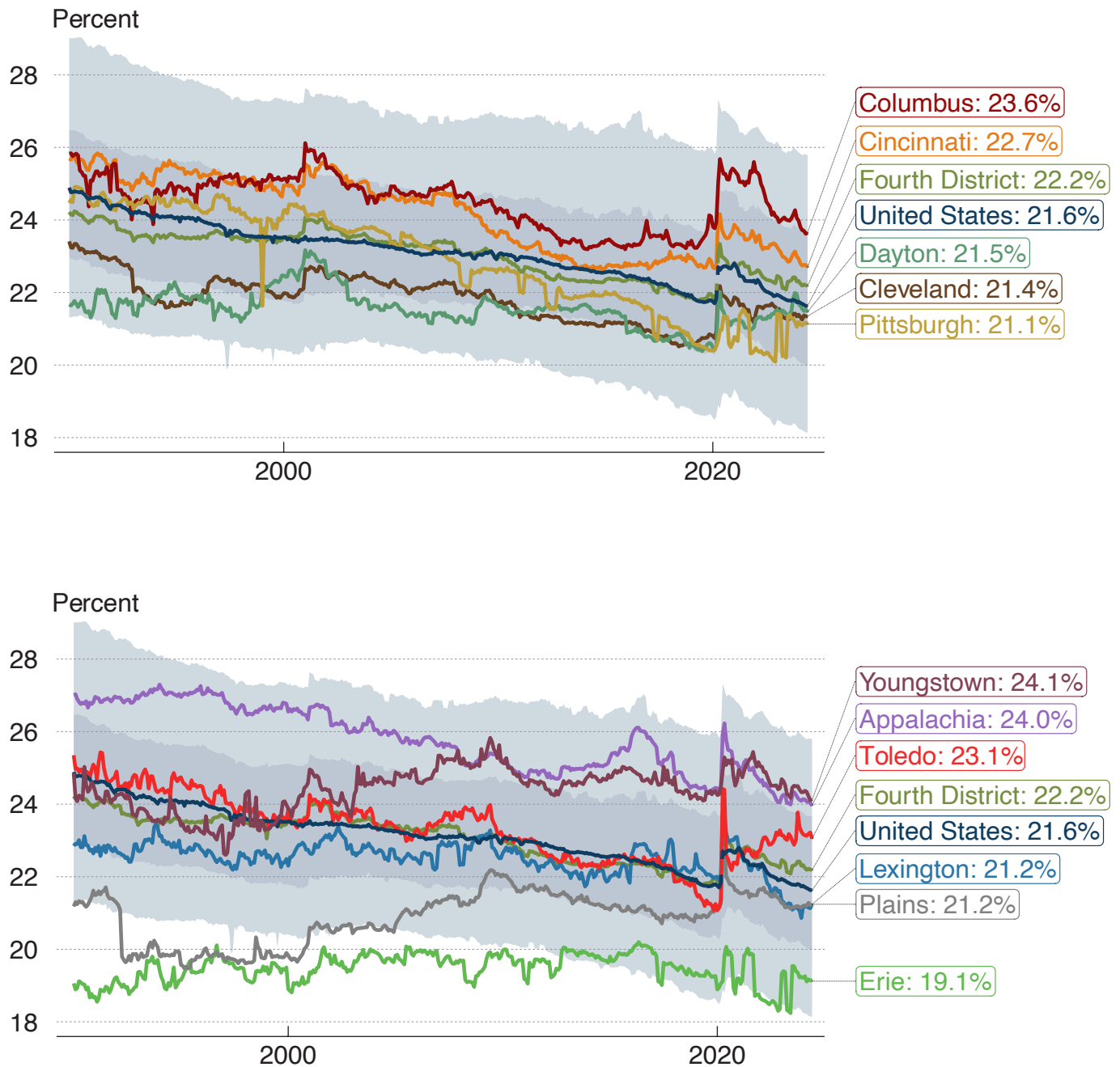


Sources: Quarterly Census of Employment and Wages and authors' calculations. Notes: The equivalent graph based on American Community Survey Data can be found in **Figure 19**.

Last observation: June 2024

APPENDIX

Figure A19. QCEW Trade, Transportation and Utilities Share of Employment



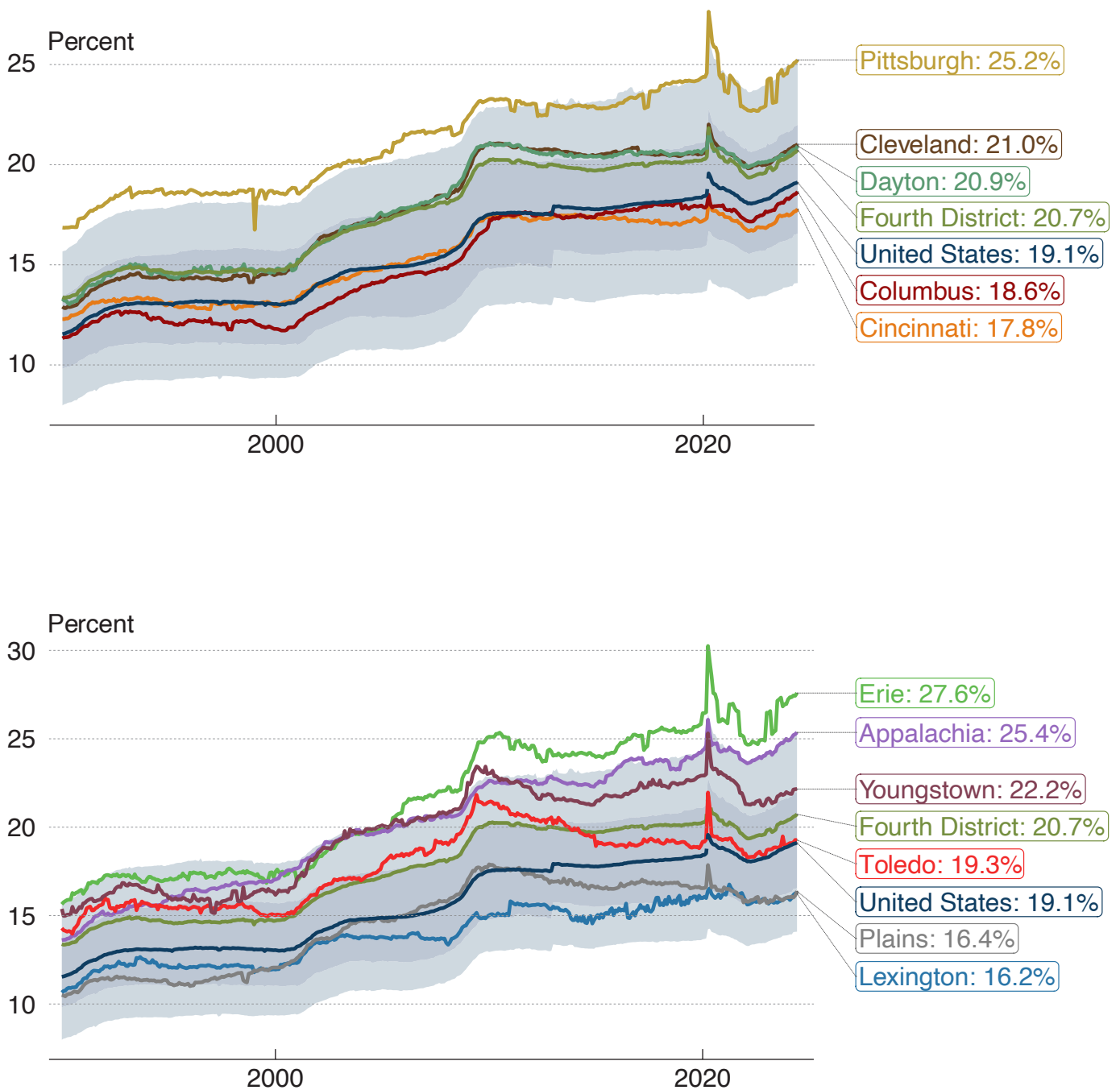
Sources: Quarterly Census of Employment and Wages and authors' calculations.

Notes: The equivalent graph based on decennial Census and American Community Survey Data can be found in **Figure 21**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: June 2024

APPENDIX

Figure A20. QCEW Education and Health Services Share of Employment



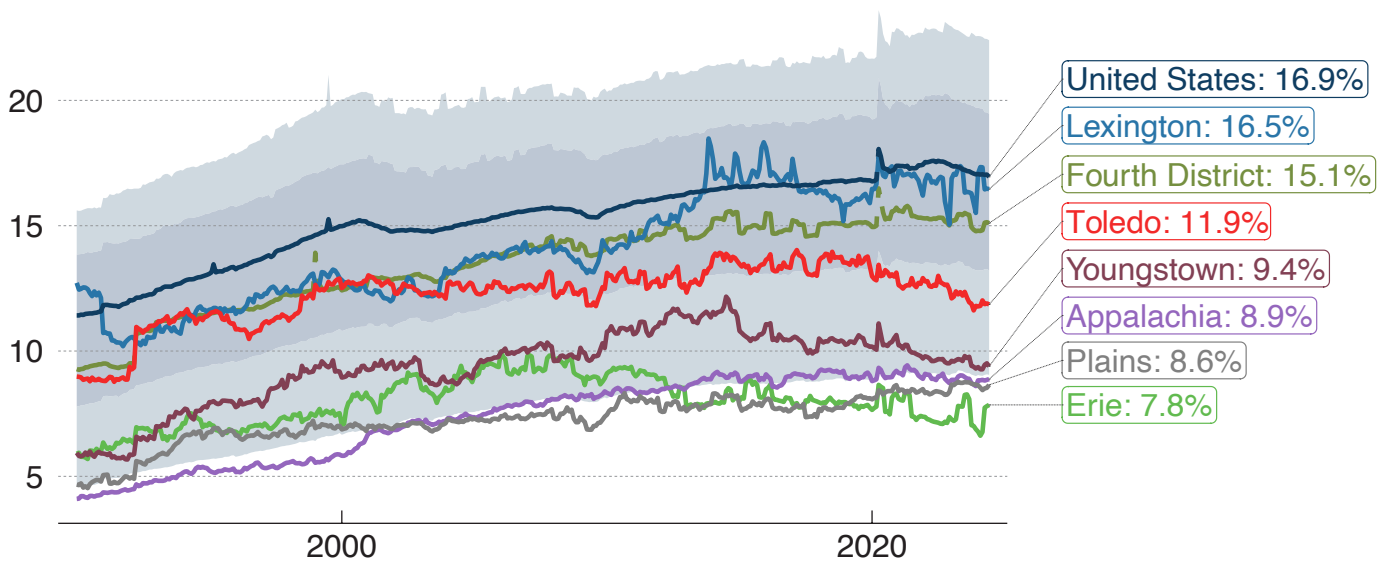
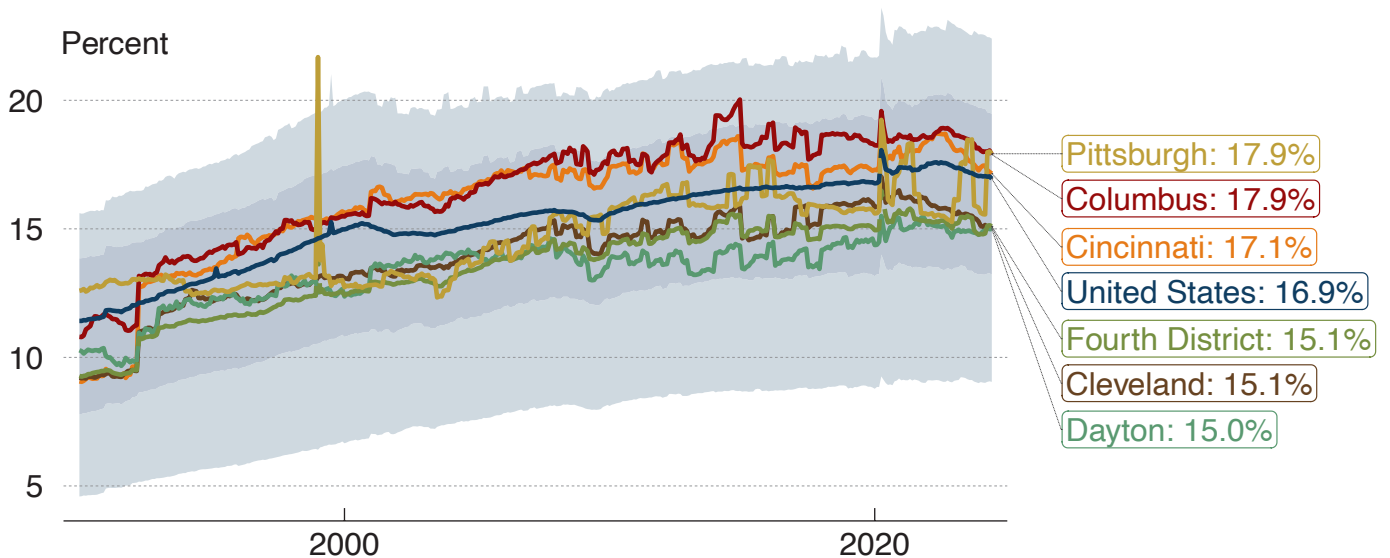
Sources: Quarterly Census of Employment and Wages, and authors' calculations.

Notes: The equivalent graph based on decennial Census and American Community Survey Data can be found in **Figure 20**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: June 2024

APPENDIX

Figure A21. QCEW Professional and Business Services Share of Employment



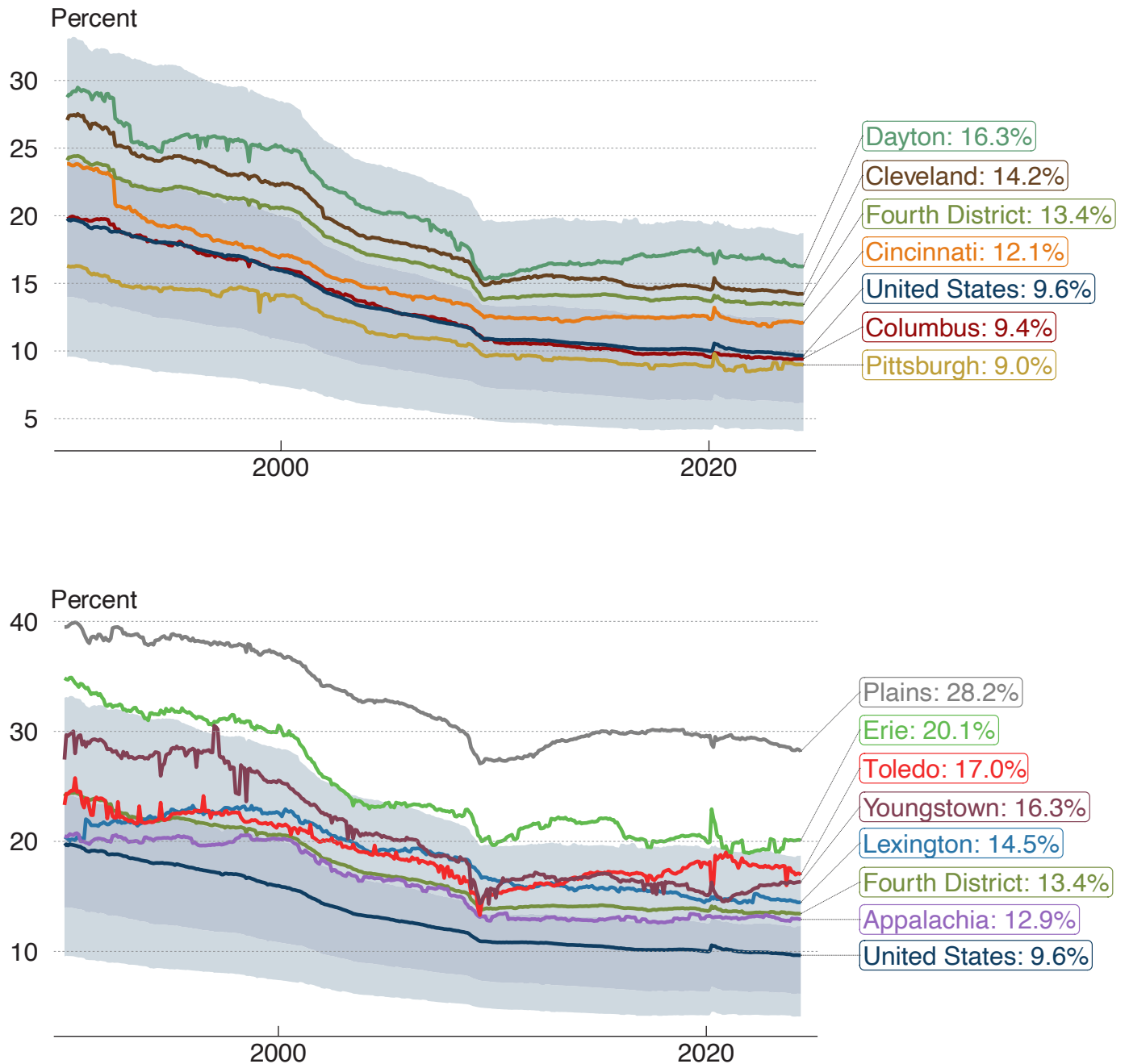
Sources: Quarterly Census of Employment and Wages, and authors' calculations.

Notes: The equivalent graph based on decennial Census and American Community Survey Data can be found in **Figure 23**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: June 2024

APPENDIX

Figure A22. QCEW Manufacturing Share of Employment



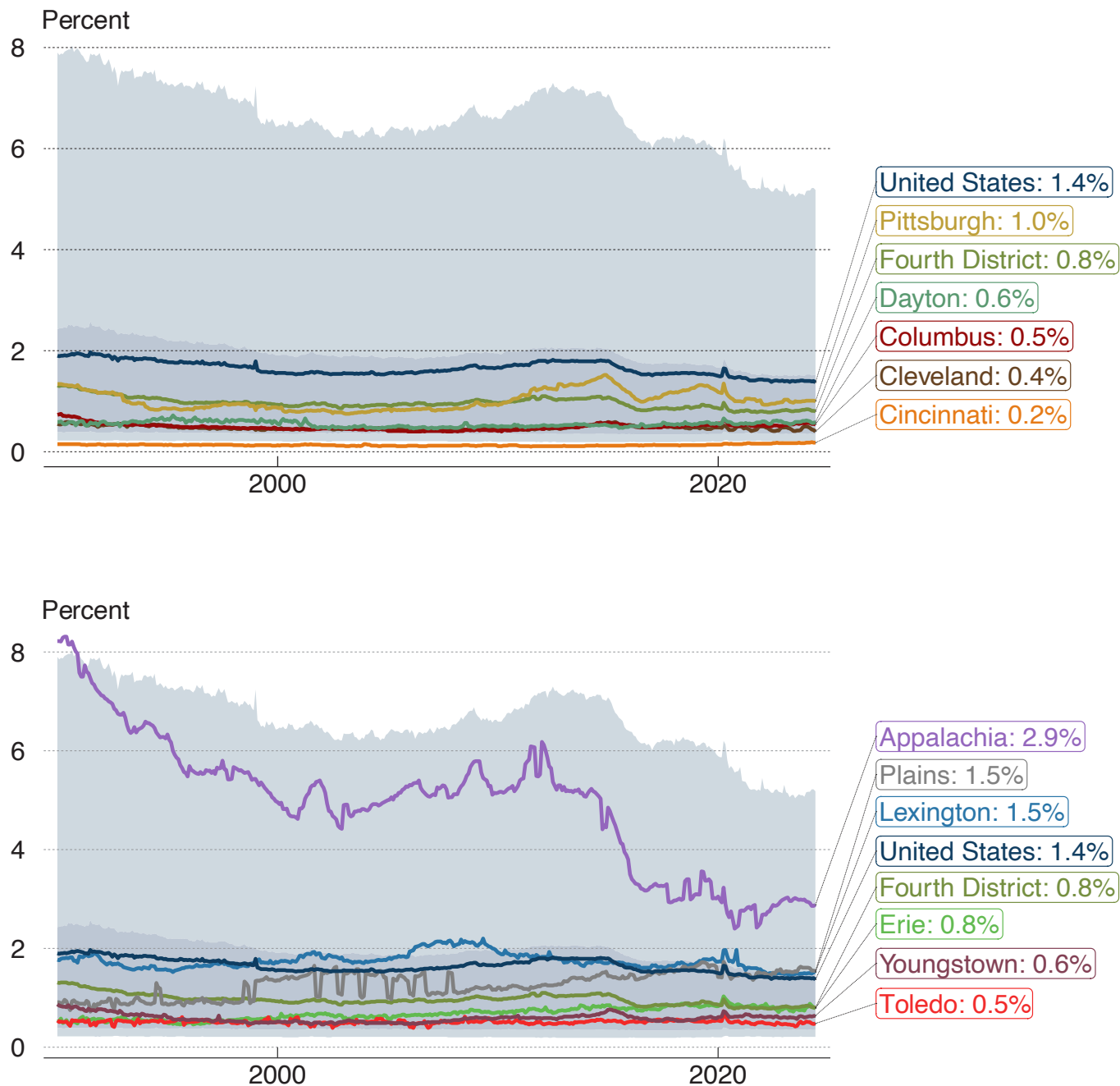
Sources: Quarterly Census of Employment and Wages, and authors' calculations.

Notes: The equivalent graph based on decennial Census and American Community Survey Data can be found in **Figure 23**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: June 2024

APPENDIX

Figure A23. QCEW Natural Resources and Mining Share of Employment



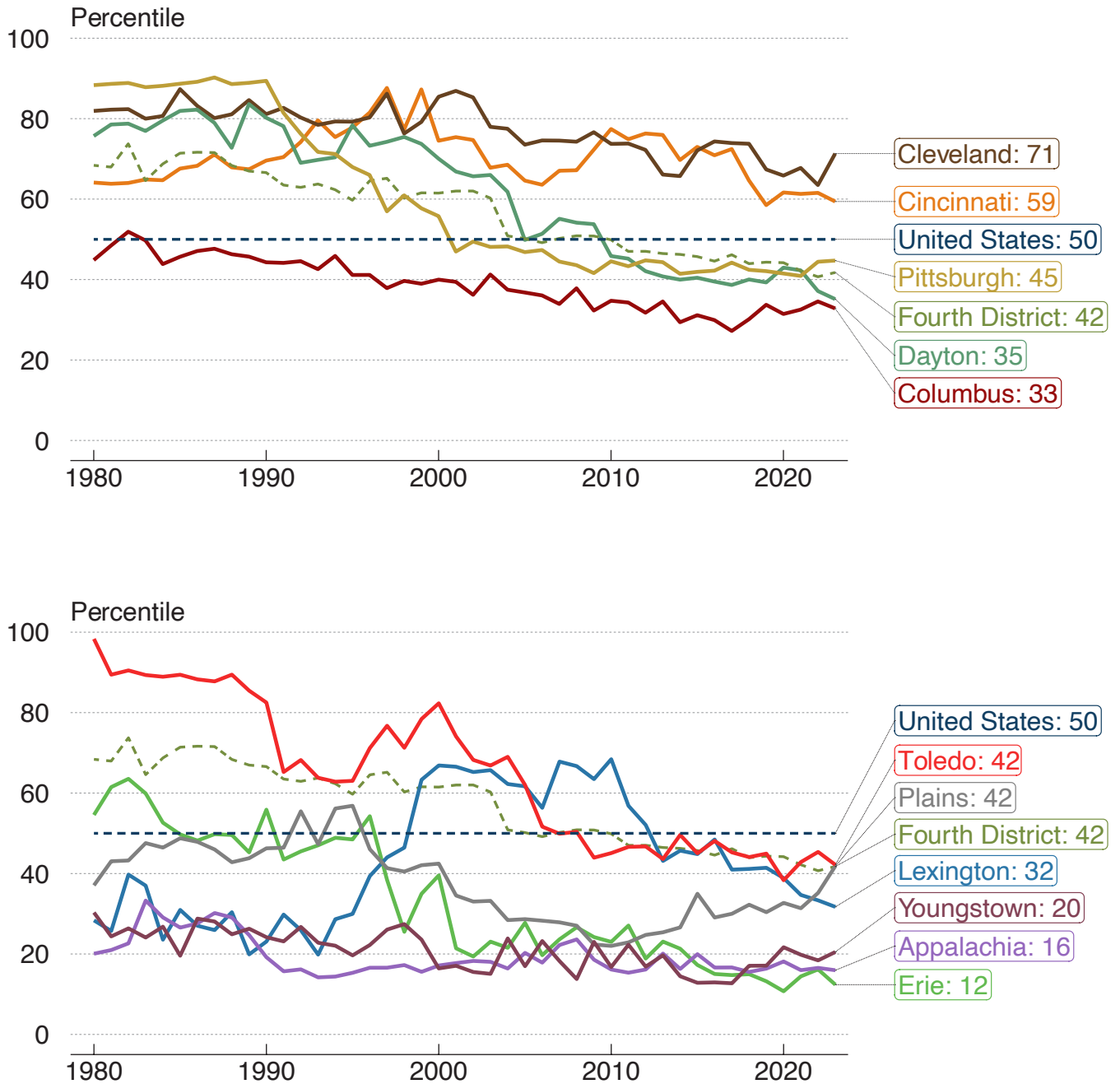
Sources: Quarterly Census of Employment and Wages, and authors' calculations.

Notes: The equivalent graph based on decennial Census and American Community Survey Data can be found in **Figure 24**. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: June 2024

APPENDIX

Figure A24. Percentile of Patents Awarded per Million Residents



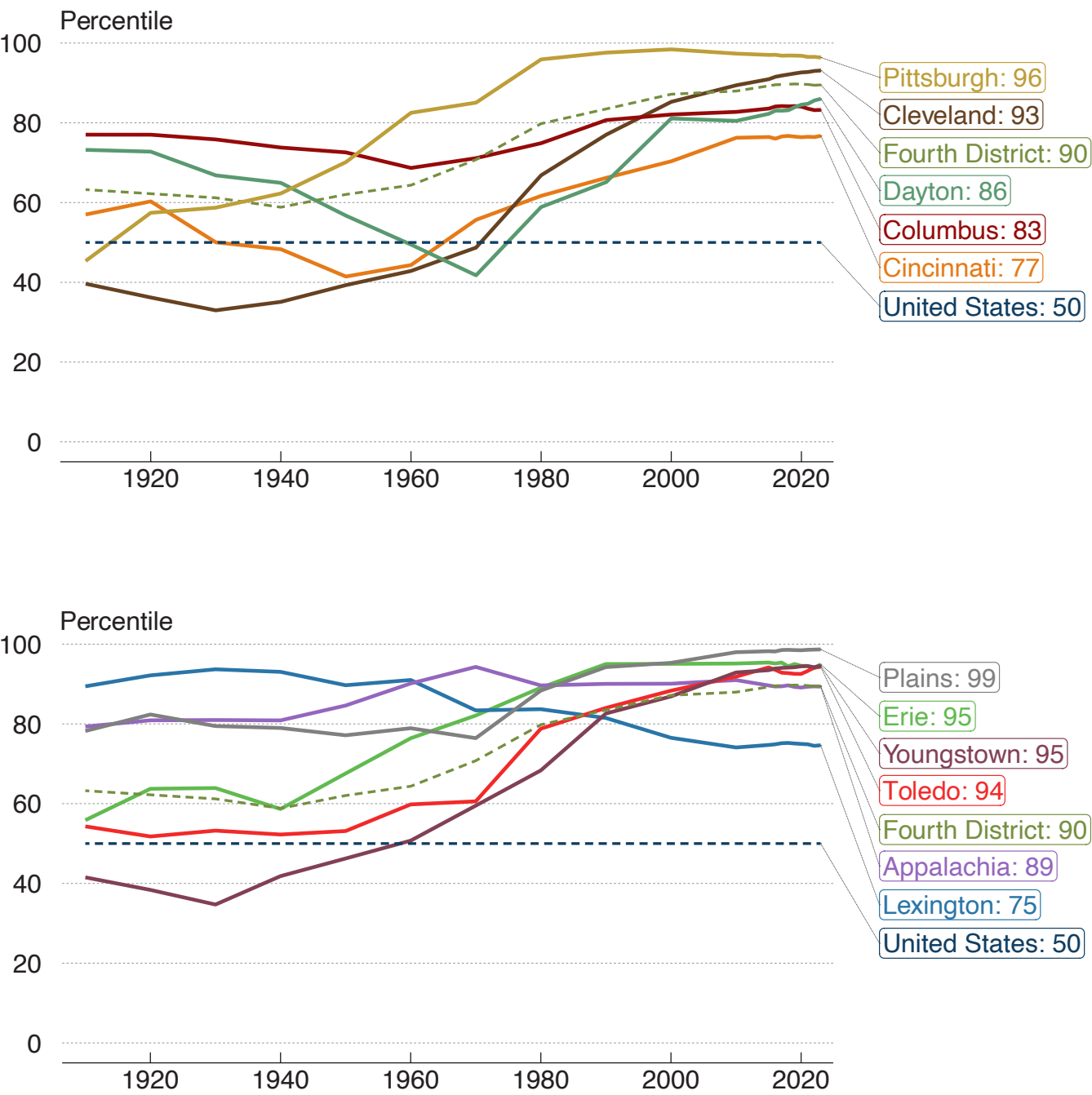
Sources: US Patent and Trademark Office via PatentsView, US Census Bureau, and authors' calculations.

Notes: Levels of patents awarded per million residents are presented in **Figure 25**.

Last observation: 2023

APPENDIX

Figure A25. Percentile of State Native Share of Population



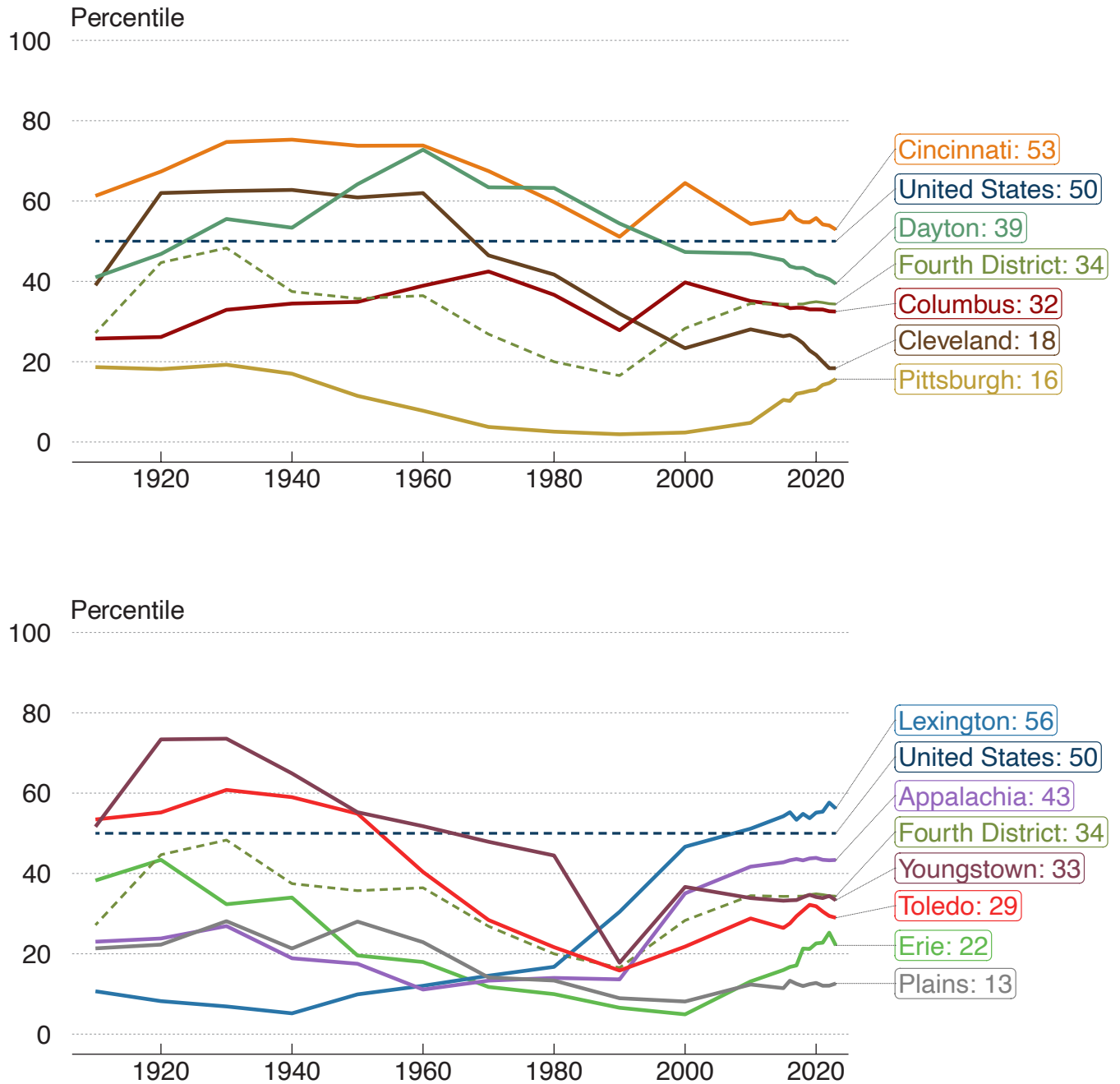
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: State native shares are presented in **Figure 37**.

Last observation: 2023

APPENDIX

Figure A26. Percentile of Out-of-state Migrant Share of Population



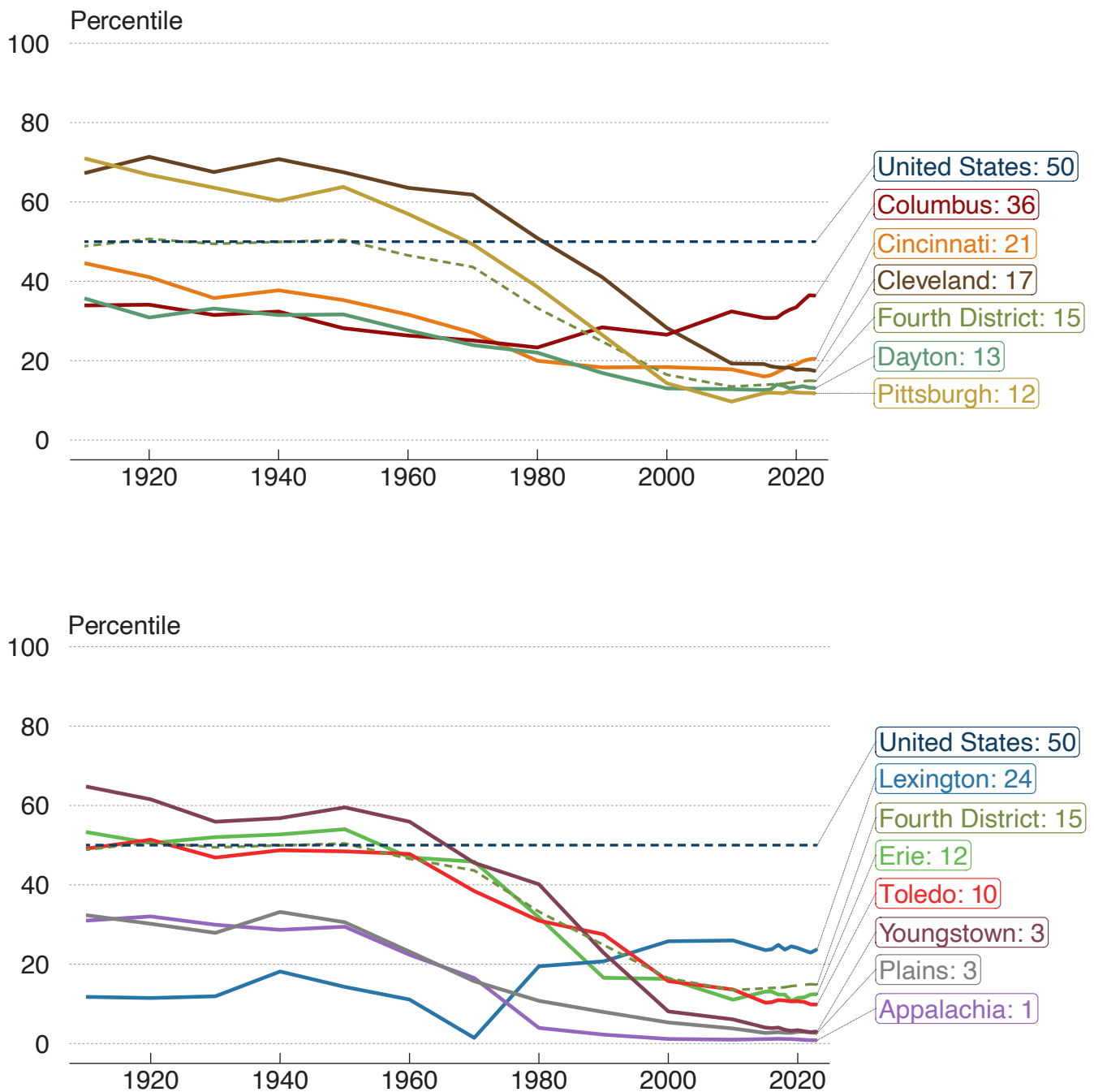
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Out-of-state migrant shares are presented in **Figure 38**.

Last observation: 2023

APPENDIX

Figure A27. Percentile of Foreign-Born Share of Population



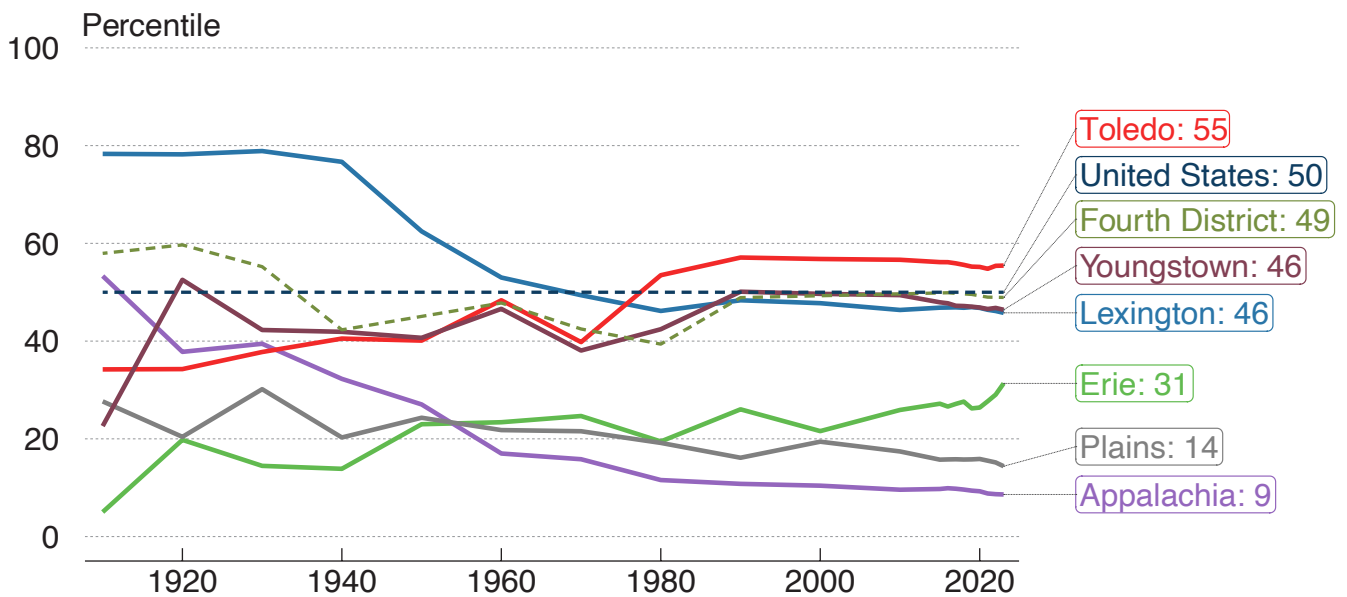
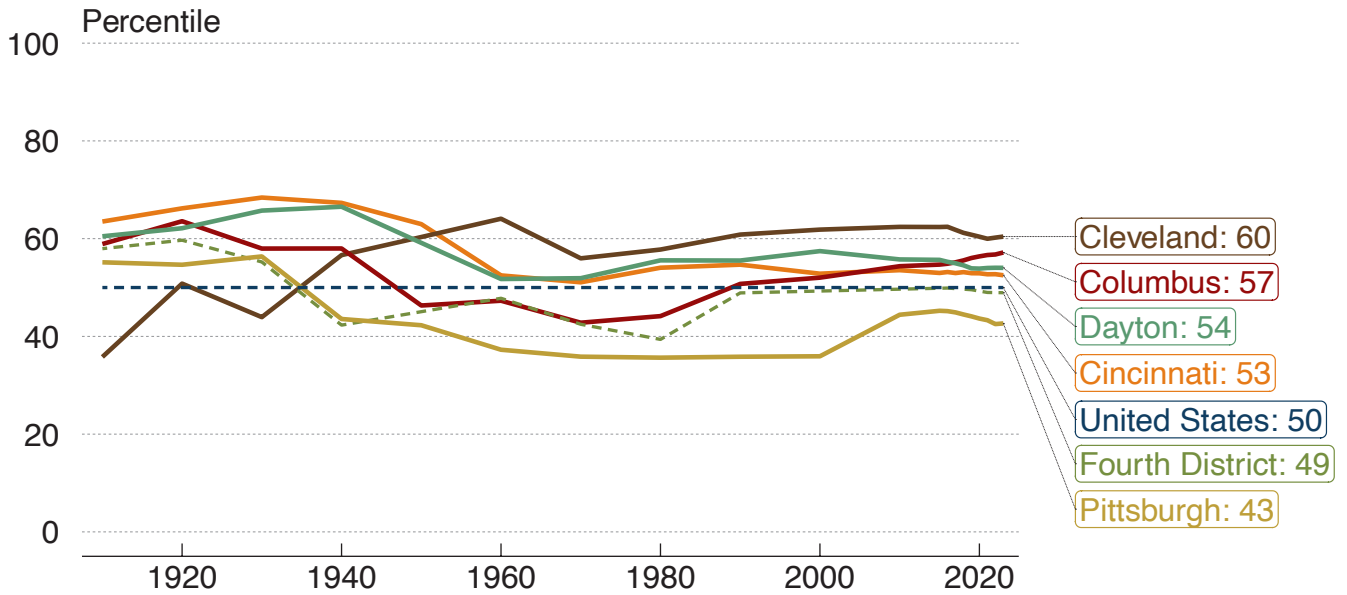
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Foreign born shares are presented in **Figure 39**.

Last observation: 2023

APPENDIX

Figure A28. Percentile of African American Share of Population



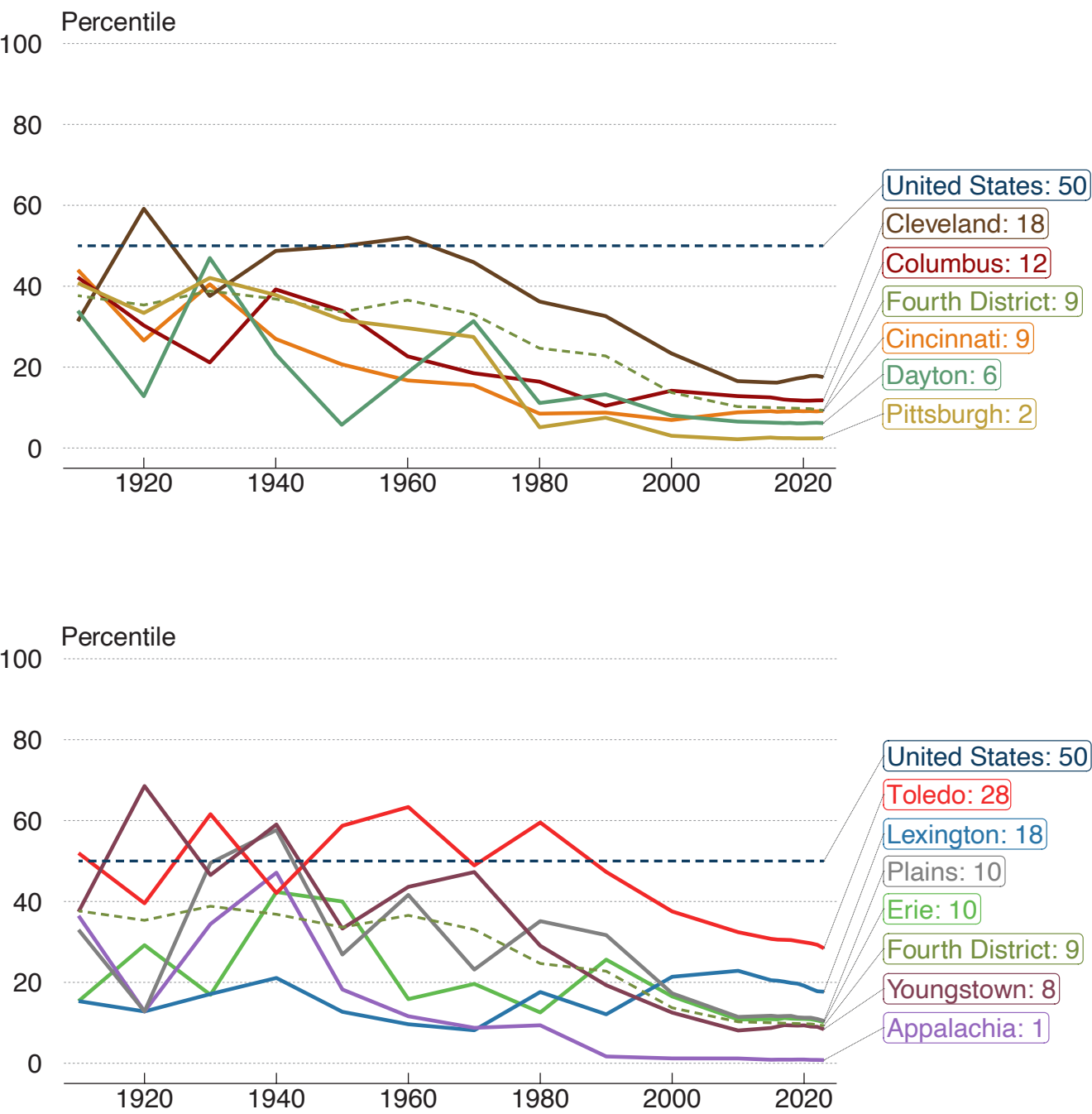
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: African American shares are presented in **Figure 40**.

Last observation: 2023

APPENDIX

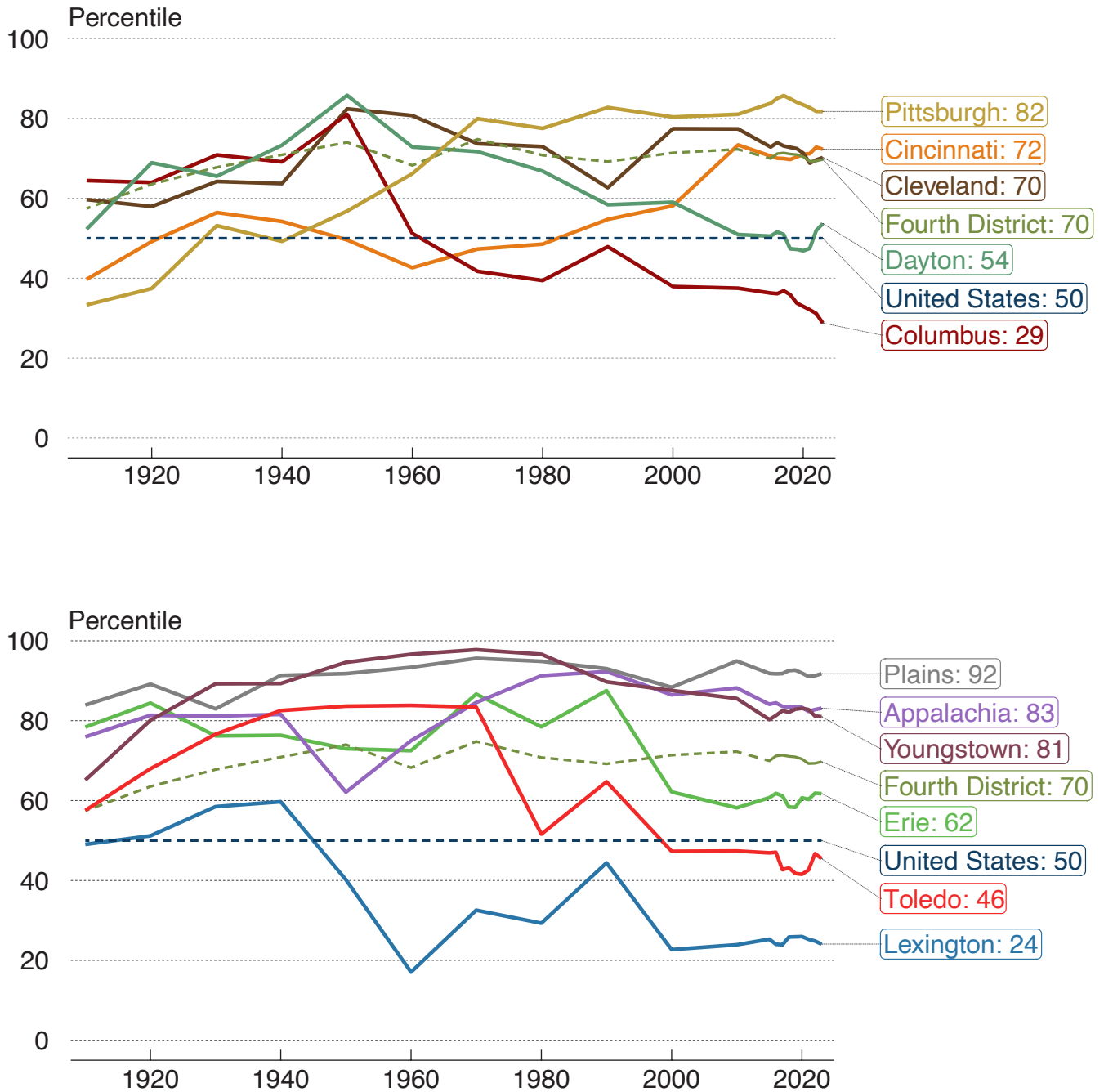
Figure A29. Percentile of Hispanic Share of Population



Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.
Notes: Hispanic shares are presented in **Figure 41**.
Last observation: 2023

APPENDIX

Figure A30. Percentile of Homeownership Rate



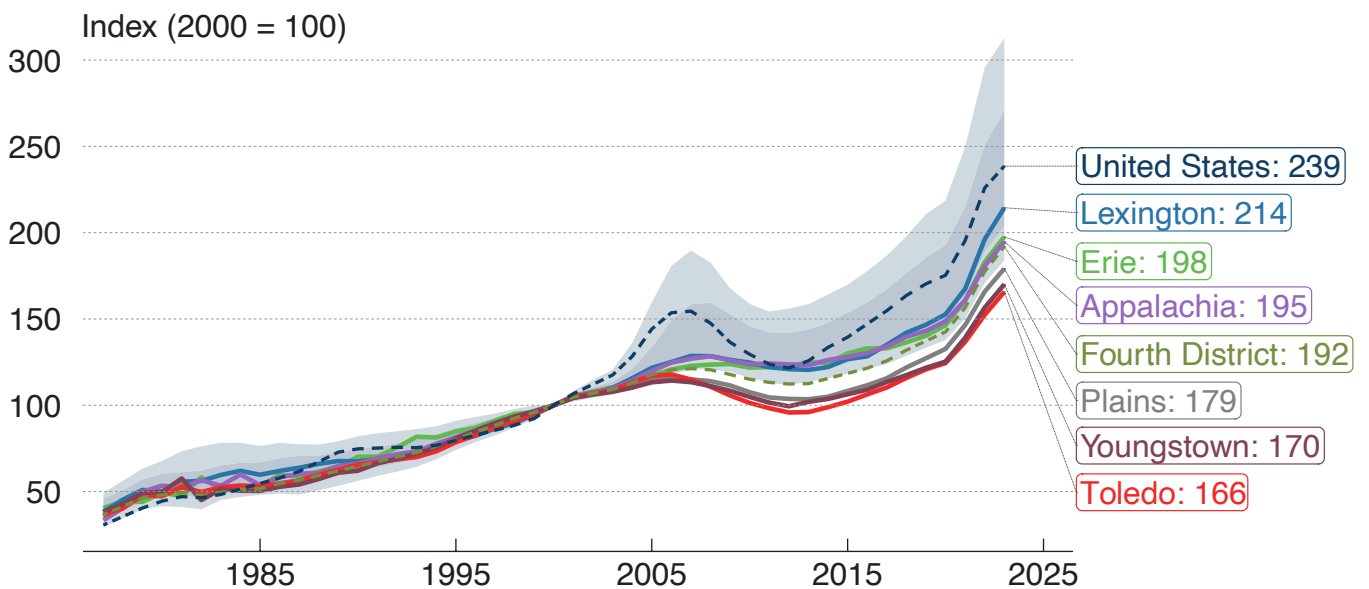
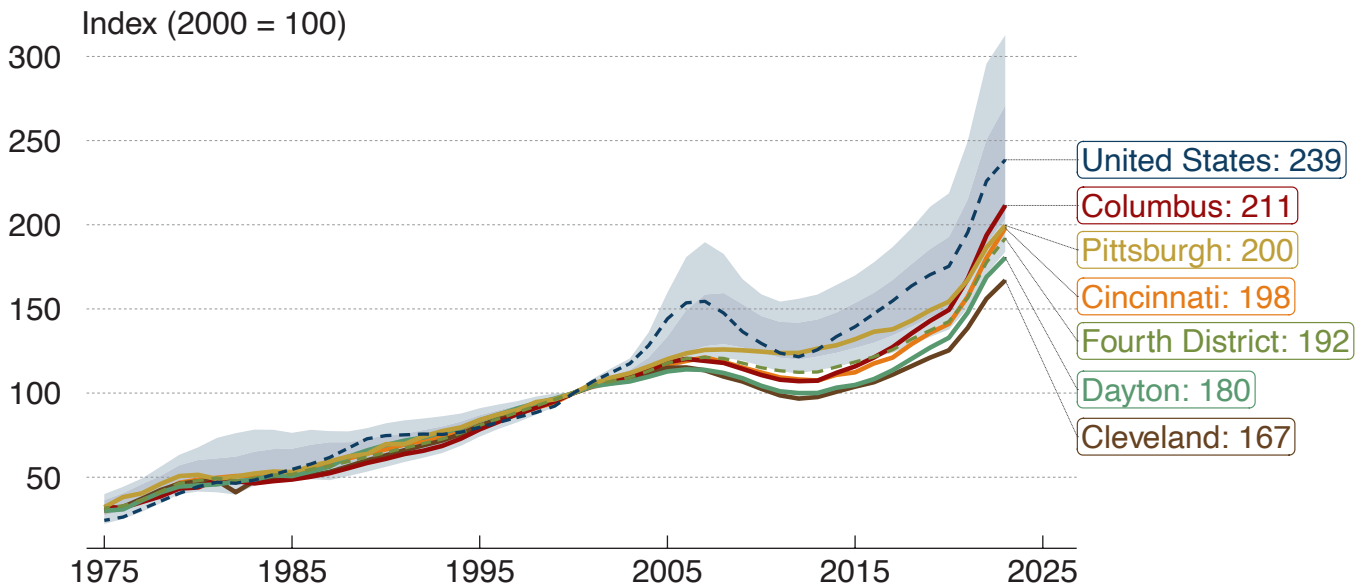
Sources: Decennial Censuses, American Community Surveys, IPUMS USA Version 15.0, University of Minnesota, and authors' calculations.

Notes: Homeownership rates are presented in **Figure 46**. The homeownership rate is defined as the percent of housing units owned by their occupant.

Last observation: 2023

APPENDIX

Figure A31. Federal Housing Finance Authority (FHFA) House Price Index



Sources: Federal Housing Finance Authority and authors' calculations.

Notes: The Federal Housing Finance Authority (FHFA) House Price Index is presented in Figure A31. Dark gray shading indicates 25th-75th percentile range. Light gray shading indicates 10th-90th percentile range.

Last observation: 2023

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