

County Business Patterns 1946–2016: A User Manual *

Fabian Eckert, UC San Diego

Ka-leung Lam, Princeton

Atif R. Mian, Princeton

Karsten Müller, NUS Business School

Rafael Schwalb, Princeton

Amir Sufi, Chicago Booth

First Version: December 27, 2021

This Version: October 29, 2023

Abstract

County Business Patterns (CBP) dataset was first published in 1946 by the Bureau of the Census and has been an annual issuance since 1946. It contains statistics on employment, payroll, and count/size of business units by county and by industry. This user manual provides a detailed description of the structure of a database containing all CBP datasets published during the first 70 years since its inception. We digitized historical data from print publications, standardized all data format, and imputed undisclosed employment counts. We also document changes in the data structure, industry classifications and county boundaries.

*Contacts: Fabian Eckert, fpe@fpeckert.me; Ka-leung Lam, jl88@princeton.edu; Atif R. Mian, atif@princeton.edu; Karsten Müller, kmueeller@nus.edu.sg; Rafael Schwalb, schwalb@princeton.edu; Amir Sufi, amir.sufi@chicagobooth.edu. This project commenced in May 2019 and received financial support from Washington Center for Equitable Growth and National Science Foundation (NSF Award 1949504) to Macro Finance Lab at Princeton University. Pallavi Nuka at JRCPPF provided tremendous administrative support.

Contents

1	Introduction	3
2	Data Files and Variable Definition	4
2.1	County/State files	4
2.2	County/Industry reference files	5
2.3	Classification files	7
3	County and Industry Classifications	9
3.1	County classification	10
3.1.1	State coverage	10
3.1.2	County grouping	10
3.1.3	County boundary changes	11
3.2	Industry classification	12
3.2.1	Industry classification standards	13
3.2.2	Special industry codes	13
3.2.3	Level of industry details	15
	Appendix A County Boundary Changes	28
	Appendix B Imputation	116
	Appendix C Missing Data	118

1 Introduction

County Business Patterns (CBP) dataset was first published in 1946 by the Bureau of the Census and has been an annual issuance since 1964. It contains statistics on first-quarter employment, annual/first-quarter payroll, and count/size of business units by county and by industry. Summary data are also provided at the national and State level for most years.

We constructed and made publicly available a database containing all CBP datasets published during the first 70 years since its inception, together with a collection of county/industry classification files and concordance tables to facilitate users' applications. Sources of raw data include print publications (1946–1969) as well as digital datasets from National Archives (1970–1985) and U.S. Census Bureau website (1986–2016). We digitized historical data from print publications, standardized all data format, and imputed undisclosed employment counts.

This user manual provides a detailed description of the structure of this database. Each yearly CBP county file is accompanied by county/industry reference files showing concordance between CBP county/industry codes and the official classification standards. Any discrepancies between the two are recorded in these reference files. For example, statistics were not always displayed for each county individually, sometimes they were for a group of small counties instead, especially during the earliest years. Thus, in the county reference file, these county groups would be matched to multiple counties. Besides, CBP may define new industry codes that do not correspond exactly to the classification standards. In addition to these reference files, and due to the evolution of industry classification standards, the database also includes complete editions of all official industry classification standards referenced by CBP as well as most of the concordance tables between editions. Changes of county boundaries, names and FIPS codes are also tabulated in a separate dataset. CBP typically incorporates these changes with one or two years of delay. In this manual, we document these changes and their impact on CBP county observations. Each record in these concordance tables are typed to reflect the qualitative nature of the concordance.

The rest of this manual is structured in the following way: Section 2 intro-

duces the file system of the database and the definitions of main variables in the datasets. Section 3 introduces county and industry classification systems employed by CBP and their evolution over time.

2 Data Files and Variable Definition

In this section, we introduce all available data files in the current database, including their structure and relationship to each other, as well as the definitions of main variables in each dataset. Table 3.1 presents the file system of the database which comprises two parts—a collection of CBP archive files (one for each year) and a collection of county/industry classification files.

Section 2.1 describes county/State files in the CBP archives and their main variables. Section 2.2 describes county/industry reference files accompanying each county dataset, and how concordances are recorded in these files. Section 2.3 introduces the classification files including various editions of official industry classification standards and their concordance tables, as well as the records of historical changes of county boundaries.

2.1 County/State files

The main body of the database consists of 63 archive files, one for each CBP-year. Each of these ZIP files in turn contains at least three data files in CSV format: a county file, a county reference file and an industry reference file. In most years, there is also a State/national summary file.

The county files and State/national summary files tabulate statistics of employment, payroll and establishment by county/State and by industry. We explain some of the main variables in these datasets:

- The **primary identifier** in these datasets is a combination of county classification code and industry classification code (see details in Section 3). The former is represented by variables `fipstate` and `fipscty`, which are a 2-digit FIPS code designating the State and a 3-digit one designating the county. The latter is represented by variable `sic` or `naics`, depending on the industry classification standard used by CBP.

- **Employment count** (variable emp) is the count of employees during the pay period that includes March 12 of the year. For those employment counts suppressed to avoid information disclosure of individual business units, an imputed number is provided by variable emp_imp. See Appendix B for imputation algorithm.
- **Total annual payroll** (variable ap) is the combined amount of wages paid, tips reported, and other compensation paid to employees over the year, before deductions for social security, income tax, insurance, union dues, etc. **First-quarter payroll** (variable qp1) consists of payroll, as defined above, paid to employees at any time during the January-to-March quarter.
- **Establishment count** (variable est) is the number of establishments active in the fourth quarter of the year (data prior to 1983) or anytime during the year (data since 1983). An establishment is a single physical location where business is conducted or where services or industrial operations are performed. However, prior to 1974, CBP was tabulated in terms of **reporting units** (variable rpunit). In manufacturing industries, each manufacturing location of a company is counted as a separate unit, and hence "reporting units" are conceptually the same as "establishments". In non-manufacturing industries, however, employers (separate legal entities) are counted once in each county for each industry in which they operate, regardless of the number of establishments operated.
- There is also a series of variables indicating the **establishment size** distribution. For example, variable n0_4 represents the number of establishments/reporting units with 0–4 employees during the mid-March pay period.

2.2 County/Industry reference files

The county reference files contain a list of county FIPS codes and their names for each CBP-year. The industry reference files contain a list of industry codes and their names for each CBP-year. However, county observations or industry codes in CBP may not correspond perfectly with the official county FIPS code or

industry classification standards. Hence, these reference files also document the concordance between CBP county/industry observation and the official codes using the "FPN" system: Each line of record in the reference files is assigned a type variable, which is an ordered pair of letters from "F", "P" and "N", to indicate the qualitative nature of each concordance record. "F" stands for "full", "P" for "partial", and "N" for "none". The first letter of the type variable represents the proportion of one county/industry, while the second represents that of the other county/industry. For example, a type "FP" concordance between county/industry X and county/industry Y means the entire county/industry X is equivalent to part of county/industry Y. And "FN" means there is no correspondence for county/industry X, etc.

Examples. Some examples from the county reference files are given by Table 3.2. Variables `fipscty` and `ctyname` are the county code and county name used by CBP. Variables `fipscty_ref` and `ctyname_ref` are the official 3-digit county FIPS code and county name. Variable `type` indicates the nature of each concordance record, i.e., what fraction of CBP county observation corresponds to what fraction of the official county entity. The example records in Table 3.2 can be interpreted as follows:

- In 1946, CBP county observation Banks, Georgia (FIPS13011) corresponds exactly to official code for Banks County, Georgia (FIPS13011).
- In 1946, CBP county observation Atkinson & Clinch, Georgia (FIPS13003,065) corresponds to two counties: Atkinson County (FIPS13003) and Clinch County (FIPS13065). See details in Section 3.1.
- In 1947, CBP defines a county equivalent entity Statewide, Georgia (FIPS13999) that does not correspond to any official FIPS code. See details in Section 3.1.

Other examples from industry reference files are given by Table 3.3. Variables `code_cbp` and `name` are the industry code and name used by CBP. Variable `code_ref` is the official industry classification code. Variable `type` indicates the nature of each concordance record. The example records in Table 3.3 can be interpreted as follows:

- In 1946, CBP industry 21 Tobacco Manufactures corresponds exactly to official SIC industry 21.
- In 1946, CBP defines industry 099 for Other Agriculture, Forestry and Fisheries. More on this in Section 3.2.
- In 1951, CBP defines industry 337 Primary Metal Industries (Nonferrous) to combine four official SIC industries 333, 334, 335, and 336. More on this in Section 3.2.

2.3 Classification files

In addition to the CBP datasets per se, we also collect the official industry classification codes used by CBP and the concordance tables between every two consecutive editions whenever they exist. We also tabulate historical changes of county boundaries, FIPS codes and names. These files are archived in Classification.zip and are listed in Table 3.1.

Official editions. CBP has used thirteen editions of industry classification standards, including one ICC code, seven SIC codes and five NAICS codes. These data files share the same structure and contain two variables, one for the numerical code (`icc`, `sic`, or `naics`) and the other for industry name (`title`).

Concordances & supplements. The concordance tables are constructed from the information given in the publication of each new edition of the industry classification standard or from U.S. Census Bureau website¹. We were able to provide the following nine concordance tables:

SIC1957_vs_SIC1967,
 SIC1967_vs_SIC1972,
 SIC1972_vs_SIC1977,
 SIC1977_vs_SIC1987,
 SIC1987_vs_NAICS1997,
 NAICS1997_vs_NAICS2002,
 NAICS2002_vs_NAICS2007,
 NAICS2007_vs_NAICS2012 and

¹<https://www.census.gov/naics/>

NAICS2012_vs_NAICS2017.

Each record in the concordance table is assigned a type variable to indicate the nature of the change, similar to the county/industry reference files (See Section 2.2). Besides the major revisions, SIC has experienced minor amendments through two supplement editions: SIC1963_Supplement (to amend SIC1957) and SIC1977_Supplement (to amend SIC1972). These supplement data files thus take a similar structure to those concordance tables. Note that these concordance tables and supplement files record only industries with at least one change in its code, name or content. Those industries that did not experience any change were omitted.

Examples. Some examples from the industry concordance or supplement files are presented in Table 3.3. Variables `old` and `new` are the old and new editions of the industry classification codes respectively. Variable `new_name` exists only in supplement files to show industry name after amendments. Variable `note` contains some descriptions of the change. For example, the new edition of SIC1967 contain the following changes compared to SIC1957:

- An old industry code 3619 was deleted.
- A new industry code 4619 was created.
- Part of industry 0119 split apart to form a new industry code 0114, while the remaining part maintains the original code.
- Industry 1982 was combined into 1081.

Amendments made by SIC1963_Supplement on SIC1957 contain the following:

- Deletion of industry code 3619.
- Creation of new industry code 4619.
- Part of industry 3651 changed to 3679 while the remaining kept the original code.
- Part of industry 3679 split apart to form a new industry code 3674, while the remaining part extended to incorporate part of 3651.

The FIPS change file tabulates changes of county boundaries, names and FIPS codes. Each record is also typed under the "FPN" system. Some examples from this data file are presented in Table 3.5. Variable `date` is the date on which the change became effective. Variables `old`, `old_name`, `new` and `new_name` are the old/new county FIPS code and name. Variable `cbp_year` is the year when CBP dataset incorporated the change. See more discussions in Section 3.1 and Appendix A. The example records in Table 3.5 can be interpreted as follows:

- On Dec 15, 1979, Ste. Genevieve County, Missouri changed FIPS code from 29193 to 29186. CBP incorporated this change in 1983.
- On Jun 6, 1981, Cibola County, New Mexico (FIPS35006) was created from Valencia County (FIPS35061). CBP incorporated this change in 1989.
- On Feb 9, 1988, Charlottesville City, Virginia (FIPS51540) annexed part of Albemarle County (FIPS51003). CBP incorporated this change in 1989.

3 County and Industry Classifications

The primary identifier for each CBP-year data file is a combination of county classification code and industry classification code. Counties are assigned their FIPS code while industries are classified according to ICC, SIC or NAICS. However, the correspondence between CBP counties/industries and the official classifications is not always one-to-one. Sometimes CBP groups small counties for publication purpose, or defines its own industry by combining several closely related standard industries. There are also special codes assigned to designate unknown counties/industries or county/industry aggregates. In this section, we document these discrepancies and the evolution of classification standards over time. Figure 3.3 plots the total number of observations in CBP datasets. The variations largely reflect the changes of county/industry classification systems and the reporting details.

3.1 County classification

Counties are assigned their 5-digit FIPS (The Federal Information Processing Standards) codes. The first 2 digits designate the State while the last 3 designate the county.

Business units with unidentified county location in each State are classified under "Statewide" by CBP, and are assigned the county code "999". The official FIPS code for the extinct municipality Rio Piedras, Puerto Rico cannot be found. It is thus assigned "72998".

In 1950, counties with no manufacturing establishments were omitted from the print publication. We manually add these counties with entries of zero employment and establishments to the datasets to maintain continuity of county observations.

3.1.1 State coverage

50 States are covered in all years. District of Columbia (FIPS11) is covered in all years except being missing in 1946. Puerto Rico (FIPS72) started to appear in 1959, was missing during 1969–2002², and reappeared for 2003–2016. Virgin Islands (FIPS78) started in 1964, missing during 1969–2007, and reappeared for 2008–2016. American Samoa (FIPS60), Guam (FIPS66) and Northern Mariana Islands (FIPS69) have been displayed since 2008.

3.1.2 County grouping

During 1946–1962, counties are grouped for publication purpose. Significant groupings happen in States with more than 100 counties: Georgia (FIPS13), Illinois (FIPS17), Kansas (FIPS20), Kentucky (FIPS21), Missouri (FIPS29), North Carolina (FIPS37), Texas (FIPS48) and Virginia (FIPS51), so that the total number of county observations in each of these States is no more than 101. Grouping also happens in the State of New York (FIPS36) but only for counties comprising New York City: Bronx (FIPS005), Kings (FIPS047), New York (FIPS061),

²In some years, data may have been collected and published, but were not digitized or included in the current database.

Queens(FIPS081) and Richmond (FIPS085). In addition, Hawaii (FIPS15), Montana (FIPS30), New Mexico (FIPS35) and South Dakota (FIPS46) also have one or two incidences of county grouping starting in 1950s. For these county groups, county FIPS codes are created by combining all FIPS codes of the component counties, separated by commas. For example, New York City is assigned the county FIPS code "005,047,061,081,085".

Figure 3.1 plots the number of unique county observations in CBP datasets together with the actual number of counties covered in each year. The upper panel shows the total number of counties for all available States in the datasets. The lower panel shows the number for States on the US Mainland (48 States and District of Columbia) excluding Alaska, Hawaii and overseas territories. Unidentified counties (i.e., those assigned FIPS999) are excluded from this calculation. A few counties are still missing from the current database (see Appendix C for a list), and we expect to digitize those data as soon as possible.

Virginia. Independent cities in Virginia (FIPS51) are usually combined with adjacent counties in earlier years but are largely missing in 1947 publication. For example, "Alleghany County and Clifton Forge City" (FIPS005,560) in years 1946 and 1948 only appear as "Alleghany County" in 1947. We believe that the statistics recorded for these counties also include the independent cities as in other years, so we deliberately modify the county names in 1947 to be compatible with those in 1948 before assigning FIPS codes, so that the actual number of counties remains comparable to adjacent years. We also deliberately standardize a handful of county names of Virginia in 1946 for the same reason.

3.1.3 County boundary changes

County boundaries change over time through creation, deletion or adjustment of territories. New counties are usually created from parts of the existing ones. Counties become extinct by merging into others. Sometimes counties exchange territories. Finally, there could simply be a change in county names or FIPS codes without boundary adjustment.

CBP datasets tend to incorporate these changes with 1–2 years of delay. Moreover, due to potentially different county classification employed by CBP,

especially during the earliest years, these changes may not materialize in the same manner for CBP county equivalent entities. For example, Virginia Beach City, VA (FIPS51810) was created from Princess Anne County, VA (FIPS51151) on Feb 14, 1952. The latter then merged into the former on Jan 1, 1963. CBP incorporated these changes in 1953 and 1964. However, during 1953–1962, these two counties are displayed as a county group (Figure A.9). Hence, although the actual historical events include creation and deletion of counties, the change in CBP datasets appears as if these county equivalent entities are recoded or renamed. So we classify these changes as "Recode/Rename" to better reflect their impacts on CBP data structure.

In Appendix A, we document the events of county changes in chronological order according to when CBP incorporated these changes, and classify them based on their impact on CBP data structure. For each event, we describe the actual historical incidence and its impact on CBP county equivalent entities, and provide graphical illustration on the change of employment and establishment for relevant counties around the event time. There are events whose impacts are not clear graphically and hence the determination of the exact time when CBP incorporated these changes may require administrative information or more sophisticated statistical analysis.

Alaska. County classification in Alaska (FIPS02) is the most unconventional and has experienced substantial changes over time. During 1946–1967, the State is divided into four Judicial Divisions. During 1968–1970, geographical divisions are hardly conform to any standard classification, and thus we created artificial FIPS codes. The period 1971–1981 used 29 census divisions, after which the system changes substantially again to boroughs and census areas, and remains until today with occasional minor adjustments.

3.2 Industry classification

CBP industry classification evolves with the official industry classification standards, and may contain various levels of reporting details in different years. Moreover, CBP sometimes defines its own industry codes for county/sector aggregates and other industries that are not classified by the standard system. In

this section, we introduce the industry classification system employed by CBP and its evolution over time. We have also gathered all official industry classification codes that have been referenced by CBP as well as the concordance tables between consecutive editions whenever they exist. These would be helpful in building a consistent time series at the industry level.

Section 3.2.1 lays out the official industry classification standards referenced by each CBP dataset; Section 3.2.2 discusses special industry codes defined by CBP.

3.2.1 Industry classification standards

Table 3.6 lists the official industry classification codes employed by CBP in each year and the most detailed industry level.

During 1946–1948, manufacturing industries are classified according to Standard Industrial Classification (SIC) 1945 while non-manufacturing industries are classified according to the Social Security Industrial Classification Code (ICC) 1942 developed by the Federal Security Agency.

CBP1949 and 1950 display only manufacturing industries, classified by SIC1945.

During 1951–1956, manufacturing industries are still classified according to SIC1945 while non-manufacturing industries are classified according to SIC1949.

During 1959–1997, all industries are classified according to SIC. Four editions of SIC were developed (1957, 1967, 1972 & 1987) with major changes in each new edition. Two supplements (1963 & 1977) were also published, making minor changes to the last edition.

Starting in 1998, CBP adopted a new 6-digit system—The North American Industry Classification System (NAICS)—to replace the 4-digit SIC. NAICS has been revised every five years since its inception (1997, 2002, 2007 & 2012).

3.2.2 Special industry codes

Some industry codes in CBP do not conform to the official classification standards (e.g., SIC or NAICS). We describe each of these situations below.

County totals. Observations for county total are assigned industry codes "----" during 1946–1997 and "-----" since 1998.

Top level industries. Before NAICS was adopted in 1998, SIC/ICC does not have proper codes for the top level industry divisions (e.g., Agriculture, Manufacturing, etc). These are then assigned according to Table 3.7. In earlier years when these top level industries were omitted in the print publications because of zero employment, we manually inserted these observations in our datasets for purpose of completeness. Since 1998, there are two additional top level industries that do not have corresponding codes in NAICS, namely Auxiliaries (exc corporate, subsidiary & regional mgt) and Unclassified establishments. They are assigned industry codes 95 and 99 respectively. The former only appeared during 1998–2002.

Administrative and auxiliary industries. The administrative and auxiliary industries represent central administrative office and auxiliary activities, such as warehouses, research laboratories, and maintenance. They appear for top level industry divisions and are assigned industry codes according to Table 3.8. Statistics for these observations were presented only for the manufacturing division during 1949–1956. During 1959–1997, they were displayed for each industry division.

Other non-standard industries. CBP defines several industries to represent those not classified to other industries or a group of closely related industries. These industry codes are listed in Table 3.9. We provide details for these cases below:

- In 1946, although only 2-digit industries were displayed, there were a few CBP-defined 3-digit industries representing those could not be classified into other 2-digit industries under each top industry division. For example, industry 099 represents business units that are not classified into any sub-industries under industry division Agriculture, Forestry and Fisheries.
- In 1947–1950, CBP defines 3-digit industry codes for those unclassified under some 2-digit industries. For example, industry 330 represents business units that are not classified into any sub-industry under SIC 33 Primary Metal Industries.
- In 1951–1953, CBP defines industry 337 Primary metal industries (nonferrous) to include four SIC industries (333, 334, 335 & 336).

- In 1959–1973, CBP defines industries 3717 Motor Vehicles and Parts to include three SIC industries (3711, 3712 & 3714), 4211 Trucking without Storage to include two SIC industries (4212 & 4213), 453 Air Transportation to include two SIC industries (451 & 452), 4781 Transportation Services, Not Elsewhere Classified to include three SIC industries (4783, 4784 & 4789), 6791 Oil Royalty And Commodity Traders to include two SIC industries (6791 & 6792).
- In 1974, CBP defines industry 8242 Vocational Schools to include two SIC codes (8244 & 8249).
- In 1974–1987, CBP defines industries 151 Building Construction, General Building Contractors to include two SIC industries (152 & 154), and 831 Social Services, Not Elsewhere Classified to include four SIC industries (832, 833, 835 & 839).

3.2.3 Level of industry details

Figure 3.2 plots the number of unique industries in each CBP dataset together with the timing of major classification changes. We explain some of the apparent structural breaks shown by the figure:

- In 1946, only 2-digit level industries were displayed. During 1947–1953, 3-digit level industries were displayed. Starting from 1956 (more so from 1959), most detailed industries (4 digits for SIC and 6 digits for NAICS) were displayed.
- CBP 1949 and 1950 only contain manufacturing industries.
- Until 1953, CBP explicitly distinguished between large counties and small ones based on total number of reporting units. Only top level industry divisions were displayed for small counties, while more detailed level statistics were displayed for large counties.
- The jump of industry number in 1998 reflects the classification system change from 4-digit SIC to 6-digit NAICS.

- Other apparent structural breaks, such as 1974 and 2012, likely reflect substantial revision of the official industry classification standards.

Table 3.1: CBP database file system

Archive	Dataset	Num	Description
CBP[year].zip	CBP[year].csv	63	County file.
	CBP[year]_Agg.csv	60	State/National file.
	CBP[year]_CountyList.csv	63	County reference file.
	CBP[year]_IndustryList.csv	63	Industry reference file.
Classification.zip	FIPS2018.csv	1	Official FIPS codes 2018.
	FIPS_Changes.csv	1	Historical changes of county boundaries, names and FIPS codes.
	ICC1942.csv	1	Industrial Classification Codes 1942.
	SIC[year].csv	7	Standard Industrial Classification codes.
	SIC[year]_Supplement.csv	2	Standard Industrial Classification supplement files.
	NAICS[year].csv	5	The North American Industrial Classification System.
	Concordance_[IC1]_vs_[IC2].csv	9	Concordance table between Industrial Classification 1 and 2.

Table 3.2: Excerpts of CBP county reference files

CBP	type	fipstate	fipscty	ctyname	fipscty_ref	ctyname_ref	stname
1946	FF	13	011	BANKS	011	BANKS COUNTY	GEORGIA
	PF	13	003,065	ATKINSON & CLINCH	003	ATKINSON COUNTY	GEORGIA
	PF	13	003,065	ATKINSON & CLINCH	065	CLINCH COUNTY	GEORGIA
1947	FN	13	999	STATEWIDE			GEORGIA

Notes: This table presents example records from CBP county reference files. Each record represents a concordance between CBP county observation and the official county classification. Variables fipscty and ctyname are the county code and county name used by CBP. Variables fipscty_ref and ctyname_ref are the official 3-digit county FIPS code and county name. Variable type indicates the nature of each concordance record.

Table 3.3: Excerpts of CBP industry reference files

CBP	type	code_cbp	new_name	code_ref
1946	FF	21	TOBACCO MANUFACTURES	21
	FN	099	OTHER AGRICULTURE, FORESTRY AND FISHERIES	
1951	PF	337	PRIMARY METAL INDUSTRIES (NONFERROUS)	333
	PF	337	PRIMARY METAL INDUSTRIES (NONFERROUS)	334
	PF	337	PRIMARY METAL INDUSTRIES (NONFERROUS)	335
	PF	337	PRIMARY METAL INDUSTRIES (NONFERROUS)	336

Notes: This table presents example records from CBP industry reference files. Each record represents a concordance between CBP industry and the official industry classification standard. Variables code_cbp and name are the industry code and name used by CBP. Variable code_ref is the official industry classification code. Variable type indicates the nature of each concordance record.

Table 3.4: Excerpts of industry classification concordance or supplement files

File	type	old	new	new_name	note
SIC1957_vs_SIC1967	FN	3619			
	NF		4619		
	PF	0119	0114		
	PF	0119	0119		
	FP	1081	1081		Change effective from January 1, 1963.
	FP	1082	1081		Change effective from January 1, 1963.
SIC1963_Supplement	FN	3619			Deleted
	NF		4619	Pipe lines, not elsewhere classified	New industry
	PP	3651	3679	Electronic components and accessories, not elsewhere classified	Change Magnetic recording tape to 3679
	PF	3651	3651	Radio and television receiving sets, except communication types	Change Magnetic recording tape to 3679
	PF	3679	3674	Semiconductor (solid state) and related devices	Change part to 3674
	PP	3679	3679	Electronic components and accessories, not elsewhere classified	Change part to 3674, incorporate Magnetic recording tape from 3651

Notes: This table presents example records from CBP industry classification concordance or supplement files. Variables old and new are old and new editions of the industry classification codes respectively. Variable new_name exists only in supplement files to show industry name after amendments. Variable note contains some descriptions about the change.

Table 3.5: Excerpts of FIPS change file

date	type	old	old_name	new	new_name	cbp_year
1979-12-15	FF	29193	STE. GENEVIEVE COUNTY	29186	STE. GENEVIEVE COUNTY	1982
1981-06-19	PF	35061	VALENCIA COUNTY	35006	CIBOLA COUNTY	1983
1981-06-19	PF	35061	VALENCIA COUNTY	35061	VALENCIA COUNTY	1983
1988-02-09	PP	51003	ALBEMARLE COUNTY	51540	CHARLOTTESVILLE CITY	1989
1988-02-09	PF	51003	ALBEMARLE COUNTY	51003	ALBEMARLE COUNTY	1989
1988-02-09	FP	51540	CHARLOTTESVILLE CITY	51540	CHARLOTTESVILLE CITY	1989

Notes: This table presents example records from the FIPS change file. Variable date is the date of change. Variables old, old_name, new and new_name are the old/new county FIPS code and name. Variable cbp_year is the year when CBP dataset incorporated the change.

Table 3.6: CBP industry classifications

CBP Year	Classification	Digits
1946	SIC1945 & ICC1942	2
1947–1948	SIC1945 & ICC1942	3
1949–1950	SIC1945	3
1951–1953	SIC1945 & SIC1949	3
1956	SIC1945 & SIC1949	4
1959–1962	SIC1957	4
1964–1967	SIC1957 & SIC1963	4
1968–1973	SIC1967	4
1974–1977	SIC1972	4
1978–1987	SIC1972 & SIC1977	4
1988–1997	SIC1987	4
1998–2002	NAICS1997	6
2003–2007	NAICS2002	6
2008–2011	NAICS2007	6
2012–2016	NAICS2012	6

Notes: Industry Classification Code (ICC) 1942 contains only non-manufacturing industries while Standard Industry Classification (SIC) 1945 contains only manufacturing industries. CBP1949 & 1950 contain only manufacturing industries. SIC1963 & 1977 are supplement editions instead of fully new ones, making amendments to SIC1957 & 1972 respectively. The North American Industry Classification System (NAICS) is a 6-digit classification system developed in 1997 to replace the 4-digit SIC.

Table 3.7: CBP top level industry codes

Year	Code	Industry Name
1946–1997	07--	Agricultural Services, Forestry and Fisheries
	10--	Mining
	15--	Contract Construction
	20--	Manufacturing
	40--	Transportation and Public Utilities
	50--	Wholesale Trade
	52--	Retail Trade
	60--	Finance, Insurance and Real Estate
	70--	Services
	99--	Nonclassifiable Establishments
	00--	Unclassified Establishments
1998–2002	95	Auxiliaries (exc corporate, subsidiary & regional mgt)
1998–2016	99	Unclassified establishments

Notes: These codes are assigned to top level industry divisions during 1946–1997 or 1998–2016.

Table 3.8: CBP administrative and auxiliary industries

Code	Industry Name
098/	Auxiliary to agricultural services
149/	Auxiliary to mining
179/	Auxiliary to construction
399/	Auxiliary to manufacturing
499/	Auxiliary to transportation and utilities
519/	Auxiliary to wholesale trade
599/	Auxiliary to retail trade
679/	Auxiliary to finance and banking
899/	Auxiliary to services

Notes: These codes are assigned to administrative and auxiliary industries during 1949–1997.

Table 3.9: Other non-standard industry codes

CBP	Code	Industry Name
1946	099	Other Agriculture, Forestry and Fisheries
	149	Other Mining
	189	Other Contract Construction
	399	Other Manufacturing
	499	Other Transportation, Communication and Public Utilities
	529	Other Wholesale Trade
	599	Other Retail Trade
	699	Other Finance, Insurance, and Real Estate
	939	Other Service Industries
1947–1950	330	Primary Metal Industries, Unclassified
	340	Fabricated Metal Products, Unclassified
	370	Transportation Equipment, Unclassified
	430	Miscellaneous Transportation, Unclassified
	510	Miscellaneous Distributors, Unclassified
	520	Wholesale and Retail Trade Combined, Unclassified
	530	Retail General Merchandise, Unclassified
	540	Retail Food and Liquor Stores, Unclassified
	550	Retail Automotive, Unclassified
	560	Retail Apparel and Accessories, Unclassified
	570	Miscellaneous Retail Trade, Unclassified
	620	Miscellaneous Finance Agencies, Unclassified
	700	Lodging Places, Unclassified
	720	Personal Services, Unclassified
1951–1953	337	Primary Metal Industries (Nonferrous)
1959–1973	3717	Motor Vehicles and Parts
	4211	Trucking without Storage
	453	Air Transportation
	4781	Transportation Services, Not Elsewhere Classified
	6791	Oil Royalty And Commodity Traders
1974	8242	Vacational Schools
1974–1987	151	Building Construction, General Building Contractors
	831	Social Services, Not Elsewhere Classified

Notes: These codes are defined by CBP and may not have correspondence to the standard industry classification codes.

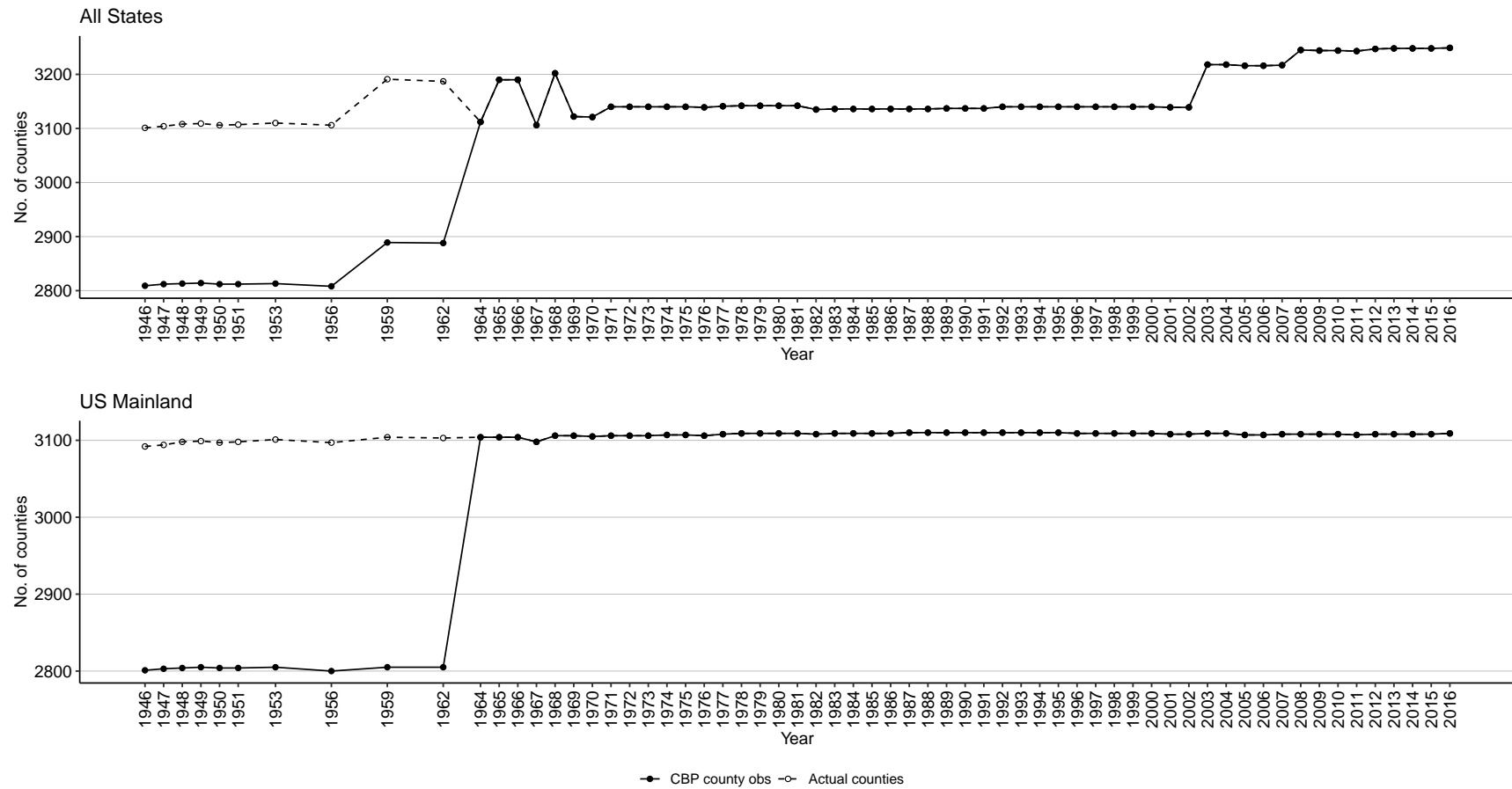


Figure 3.1: Number of county observations

Notes: This figure plots the number of CBP county observations and the actual number of counties covered for each year. The upper panel shows the total number of counties for all available States in the datasets. The lower panel shows the number for States on the US Mainland (48 States and District of Columbia) excluding Alaska, Hawaii and overseas territories. Unidentified counties (i.e., those assigned FIPS999) are excluded from this calculation.

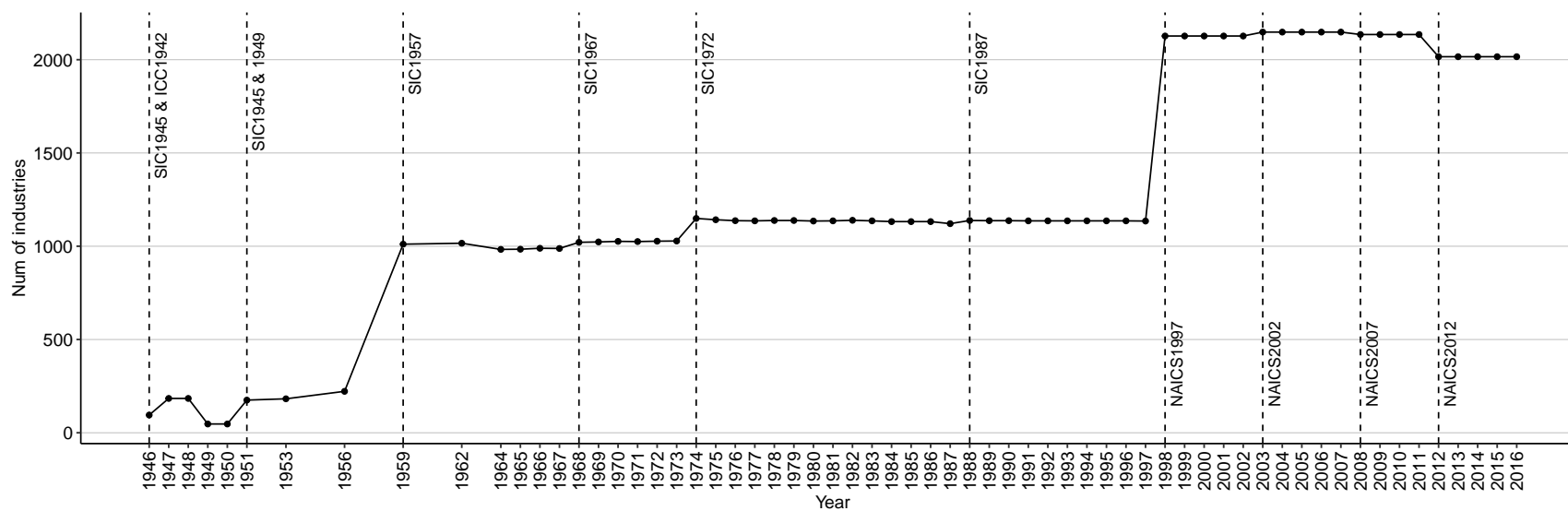


Figure 3.2: Number of industries

Notes: This figure plots the number of unique industries in CBP datasets. Vertical dashed lines indicate the timing of major industry classification changes.

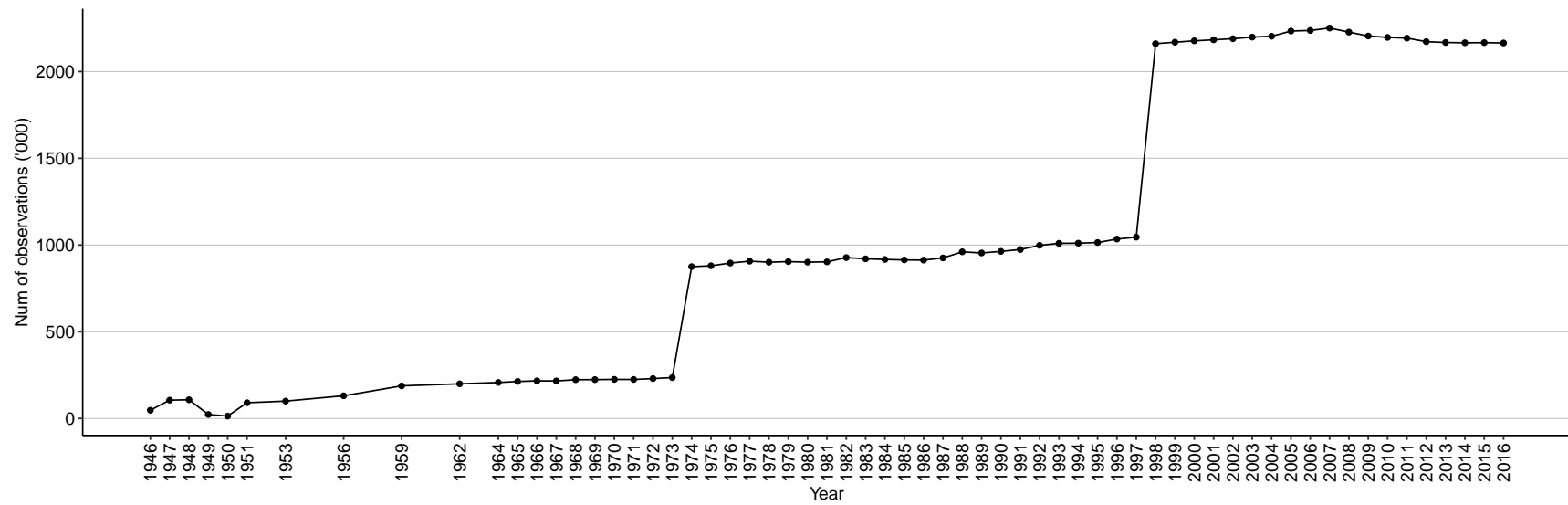


Figure 3.3: Number of observations

Notes: This figure plots the total number of observations in CBP county datasets.

References

- Autor, D. H., Dorn, D., and Hanson, G. H. (2013). The china syndrome: Local labor market effects of import competition in the united states. *American Economic Review*, 103(6):2121–68.
- Eckert, F., Fort, T. C., Schott, P. K., and Yang, N. J. (2020). Imputing missing values in the us census bureau’s county business patterns. Technical report, National Bureau of Economic Research.
- Eckert, F., Lam, K.-l., Mian, A. R., Müller, K., Schwalb, R., and Sufi, A. (2022). The early county business pattern files: 1946-1974. Technical report, National Bureau of Economic Research.

Appendix A County Boundary Changes

This appendix section documents historical changes in county boundaries, names or FIPS codes. Information comes from The Atlas of Historical County Boundaries Project³ and the U.S. Census Bureau⁴. The events are listed in chronological order based on when CBP incorporated the change, and are classified based on their impact on CBP county observation. For each event, we describe the actual historical incidence and its impact on CBP county equivalent entities, and provide graphical illustration on the change of employment and establishment for relevant counties around the event time⁵. There are events whose impacts are not discernible graphically and hence the determination of the exact time when CBP incorporated these changes may require administrative information or more sophisticated statistical analysis.

1. 1947 Deletion: Washington County, South Dakota (FIPS46133) merged into Shannon County (FIPS46113) on Jan 1, 1945. CBP incorporated this change in 1947. See Figure A.2.
2. Adjustment: Waynesboro City, Virginia (FIPS51820) was created from Augusta County (FIPS51015) on Jan 1, 1948. CBP incorporated this change in 1948. Prior to 1964, Augusta County and Waynesboro City were combined with Staunton City (FIPS51790). See Figure A.5.
3. 1951 Recode/Rename: Colonial Heights City, Virginia (FIPS51570) was created from Chesterfield County (FIPS51041) on Mar 19, 1948. CBP incorporated this change in 1948. Prior to 1964, Chesterfield County and Colonial Heights City were combined. See Figure A.3.
4. 1951 Recode/Rename: Falls Church City, Virginia (FIPS51610) was created from Fairfax County (FIPS51059) on Aug 16, 1948. CBP incorporated this change in 1948. Prior to 1964, Fairfax County and Falls Church City were combined. See Figure A.4.
5. 1940s Adjustment: Denver County, Colorado (FIPS08031) gained territories from Adams County (FIPS08001), Arapahoe County (FIPS08005) and Jefferson County (FIPS08059) throughout the 1940s. It is not clear when CBP incorporated these changes. See Figure A.1.

³<https://digital.newberry.org/ahcb/>

⁴<https://www.census.gov/programs-surveys/geography/technical-documentation/county-changes.html>

⁵If data involve both SIC and NAICS classification, we shift employment/establishment counts in SIC07 Agricultural Services from Agriculture/Mining and to Services so that SIC and NAICS are more compatible.

6. 1950 Deletion: Armstrong County, South Dakota (FIPS46001) merged into Dewey County (FIPS46041) on Jan 1, 1953. Armstrong County was displayed independently from Dewey County from 1946 to 1949. Both disappeared in 1950. The latter reappeared since 1951. The former reappeared only in 1959 with combined record with the latter. See Figure [A.10](#).
7. 1953 Recode/Rename: Los Alamos County, New Mexico (FIPS35028) was created from parts of Sandoval County (FIPS35043) and Santa Fe County (FIPS35049) on Mar 16, 1949. CBP incorporated this change in 1953. During 1953–1962, Los Alamos County and Sandoval County were displayed as a county group. See Figure [A.6](#).
8. 1953 Recode/Rename: Virginia Beach City, Virginia (FIPS51810) was created from Princess Anne County (FIPS51151) on Feb 14, 1952. CBP incorporated this change in 1953. During 1953–1962, these two counties were combined. See Figure [A.9](#).
9. 1956 Recode/Rename: Elizabeth City County, Virginia (FIPS51005) merged into Hampton City (FIPS51650) on Jul 1, 1952. CBP incorporated this change in 1956. Elizabeth City County and Hampton City were combined during 1946–1953. See Figure [A.8](#).
10. 1956 Recode/Rename: Norton City, Virginia (FIPS51720) was created from Wise County (FIPS51195) on Jan 1, 1954. CBP incorporated this change in 1956. These two counties were then displayed as a county group before splitting up in 1964. See Figure [A.12](#).
11. 1956 Recode/Rename: Covington City, Virginia (FIPS51580) was created from Alleghany County (FIPS51005) on Dec 20, 1952. CBP incorporated this change in 1956. Prior to 1964, Alleghany County (and Covington City) was combined with Clifton Forge City (FIPS51560). See Figure [A.7](#).
12. 1959 Recode/Rename/Adjustment: Galax City (FIPS51640) was created from Carroll County (FIPS51035) and Grayson County (FIPS51077) on Nov 30, 1953. CBP incorporated this change in 1959. It is likely that, in 1959, Galax City remained combined with Carroll and Grayson Counties respectively. And in 1962, Galax City was combined completely with Carroll County. See Figure [A.11](#).
13. 1962 Recode/Rename: Warwick City, Virginia (FIPS51189) merged into Newport News City (FIPS51700) on Jul 1, 1958. CBP incorporated this change in 1962. The two counties were combined until 1959. See Figure [A.13](#).

14. 1950s Adjustment: Denver County, Colorado (FIPS08031) gained territories from Adams County (FIPS08001) and Arapahoe County (FIPS08005) throughout the 1950s. It is not clear when CBP incorporated these changes. See Figure [A.1](#).
15. 1960s Adjustment: Denver County, Colorado (FIPS08031) gained territories from Adams County (FIPS08001), Arapahoe County (FIPS08005) and Jefferson County (FIPS08059) throughout the 1960s. It is not clear when CBP incorporated these changes. See Figure [A.15](#).
16. 1964 Creation: South Boston City, Virginia (FIPS51780) was created from Halifax County (FIPS51083) on Jan 1, 1960. CBP incorporated this change in 1964. See Figure [A.14](#).
17. 1964 Creation: Menominee County, Wisconsin (FIPS55078) was created from parts of Oconto County (FIPS55083) and Shawano County (FIPS55115) on May 1, 1961. CBP incorporated this change in 1964. See Figure [A.17](#).
18. 1964 Creation: Fairfax City, Virginia (FIPS51600) was created from Fairfax County (FIPS51059) on Jul 1, 1961. CBP incorporated this change in 1964. Prior to 1964, Fairfax County was combined with Falls Church City (FIPS51610). See Figure [A.16](#).
19. 1964 Creation: Franklin City, Virginia (FIPS51620) was created from Southampton County (FIPS51175) on Dec 22, 1961. CBP incorporated this change in 1964. See Figure [A.18](#).
20. 1964 Recode/Rename: Princess Anne County, Virginia (FIPS51151) merged into Virginia Beach City (FIPS51810) on Jan 1, 1963. CBP incorporated this change in 1964. During 1953–1962, these two counties were combined. See Figure [A.9](#).
21. 1964 Creation/Deletion: Norfolk County (FIPS51129) and South Norfolk City (FIPS51785) of Virginia merged to form Chesapeake City (FIPS51550) on Jan 1, 1963. CBP incorporated this change in 1964. Prior to 1964, Norfolk County and South Norfolk City were combined with Norfolk City (FIPS51510) and Portsmouth City (FIPS51740). See Figure [A.19](#).
22. 1968 Creation: Lexington City, Virginia (FIPS51678) was created from Rockbridge County (FIPS51163) on Jan 1, 1966. CBP incorporated this change in 1968. See Figure [A.20](#).
23. 1968 Creation: Salem City, Virginia (FIPS51775) was created from Roanoke County (FIPS51161) on Jan 1, 1968. CBP incorporated this change in 1968. See Figure [A.23](#).

24. 1968 Creation: Emporia City, Virginia (FIPS51595) was created from Greensville County (FIPS51081) on Feb 28, 1968. CBP incorporated this change in 1968. See Figure [A.22](#).
25. 1971 Creation: Bedford City, Virginia (FIPS51515) was created from Bedford County (FIPS51019) on Sep 1, 1968. CBP incorporated this change in 1971. See Figure [A.21](#).
26. 1974 Creation/Deletion: The independent city of Carson City, Nevada (FIPS32510) was created by the consolidation of Ormsby County (FIPS32025) and Carson City on Jul 1, 1969. CBP incorporated this change in 1974. See Figure [A.24](#).
27. 1969 Deletion: Yellowstone National Park, Wyoming (FIPS56047) merged into Park County (FIPS56029) on Feb 7, 1929, and into Teton County (FIPS56039) on Feb 14, 1929. CBP incorporated this change in 1969. See Figure [A.26](#).
28. 1974 Adjustment: Winchester City, Virginia (FIPS51840) gained from Frederick County (FIPS51069) on Dec 31, 1970. CBP likely incorporated this change in 1974. See Figure [A.25](#).
29. 1974 Recode/Rename: Columbus City, Georgia (FIPS13510) merged into Muscogee County (FIPS13215) in 1970 and became a consolidated city-county since the beginning of 1971. Columbus City was displayed during 1974–1979 while Muscogee County disappeared during the exact same period. It is conjectured that these two FIPS codes correspond to the same county observation in CBP. See Figure [A.28](#).
30. 1974 Adjustment: Petersburg City, Virginia (FIPS51730) gained from Dinwiddie County (FIPS51053) and Prince George County (FIPS51149) on Dec 12, 1971. CBP likely incorporated this change in 1974. See Figure [A.29](#).
31. 1974 Adjustment: Franklin County, Florida (FIPS12037) gained Forbes Island from Gulf County (FIPS12045) on Mar 30, 1972. CBP likely incorporated this change in 1974. See Figure [A.30](#).
32. 1974 Adjustment: Bristol City, Virginia (FIPS51520) gained from Washington County (FIPS51191) on Dec 31, 1973. CBP likely incorporated this change in 1974. See Figure [A.31](#).
33. 1974 Recode/Rename: Nansemond City, Virginia (FIPS51123) became an independent city from Nansemond County (FIPS51123) and the towns of Holland and Whaleyville on Jul 1, 1972. CBP incorporated this changes in 1974. See Figure [A.32](#).

34. 1977 Deletion: Nansemond City, Virginia (FIPS51123) merged into Suffolk City (FIPS51800) on Jan 1, 1974. CBP incorporated this change in 1977. See Figure [A.32](#).
35. 1977 Creation: Manassas City (FIPS51683) was created from Prince William County (FIPS51153) on May 1, 1975. CBP incorporated this change in 1977. See Figure [A.35](#).
36. 1977 Creation: Poquoson City, Virginia (FIPS51735) was created from York County (FIPS51199) on May 1, 1975. CBP incorporated this change in 1977. See Figure [A.34](#).
37. 1977 Creation: Manassas Park City, Virginia (FIPS51685) was created from Prince William County (FIPS51153) on Jun 1, 1975. CBP incorporated this change in 1977. See Figure [A.35](#).
38. 1977 Adjustment: Lynchburg City, Virginia (FIPS51680) gained from Bedford County (FIPS51019) and Campbell County (FIPS51031) on Dec 31, 1975. CBP likely incorporated this change in 1977. See Figure [A.33](#).
39. 1977 Adjustment: Roanoke City, Virginia (FIPS51770) gained from Roanoke County (FIPS51161) on Dec 31, 1975. It is likely that CBP incorporated this change in 1977. See Figure [A.36](#).
40. 1977 Adjustment: Radford City, Virginia (FIPS51750) annexed part of Montgomery County (FIPS51121) on Dec 31, 1976. It is likely that CBP incorporated this change in 1977. See Figure [A.37](#).
41. 1962: Recode/Rename: Yellowstone National Park, Montana (FIPS30113) merged into Gallatin County (FIPS30031) and Park County (FIPS30067) on Nov 7, 1978.⁶ Yellowstone National Park was displayed only in two years: in 1962 it was combined with Park County and in 1964 it was listed individually. See Figure [A.38](#).
42. 1970s Adjustment: Denver County, Colorado (FIPS08031) gained territories from Adams County (FIPS08001), Arapahoe County (FIPS08005) and Jefferson County (FIPS08059) throughout the 1970s. It is not clear when CBP incorporated these changes. See Figure [A.27](#).
43. 1982 Deletion: Washabaugh County, South Dakota (FIPS46131) merged into Jackson County (FIPS46071) on Jan 1, 1979. CBP incorporated this change in 1982. See Figure [A.40](#).

⁶Census Bureau website says this happened on Nov 7, 1997.

44. 1982 Recode: Ste. Genevieve County, Missouri changed FIPS code from 29193 to 29186 on Dec 15, 1979. CBP incorporated this change in 1982. See Figure [A.39](#).
45. 1980s Adjustment: Part of Fairfax County, Virginia (FIPS51059) was annexed to Fairfax City (FIPS51600) on Dec 31, 1980. It is not clear when CBP incorporated this change. See Figure [A.41](#).
46. 1983 Creation: Cibola County, New Mexico (FIPS35006) was created from part of Valencia County (FIPS35061) on Mar 17, 1981. CBP incorporated this change in 1983. See Figure [A.42](#).
47. 1980s Adjustment: Harrisonburg City, Virginia (FIPS51660) gained from Rockingham County (FIPS51165) on Dec 31, 1982. It is not clear when CBP incorporated this change. See Figure [A.43](#).
48. 1987 Creation: La Paz County, Arizona (FIPS04012) was created from Yuma County (FIPS04027) on Jan 1, 1983. CBP incorporated this change in 1987. See Figure [A.48](#).
49. 1980s Adjustment: Part of Prince William County, Virginia (FIPS51153) was annexed to Manassas City (FIPS51683) on Dec 31, 1983. It is not clear when CBP incorporated this change. See Figure [A.45](#).
50. 1980s Adjustment: Buena Vista City, Virginia (FIPS51530) gained from Rockbridge County (FIPS51163) on Dec 31, 1983. It is not clear when CBP incorporated this change. See Figure [A.46](#).
51. 1980s Adjustment: Fredericksburg City, Virginia (FIPS51630) gained from Spotsylvania County (FIPS51177) on Dec 31, 1983. It is not clear when CBP incorporated this change. See Figure [A.47](#).
52. Adjustment: Waynesboro City, Virginia (FIPS51820) gained from Augusta County (FIPS51015) on Dec 31, 1985. See Figure [A.49](#).
53. 1985 Adjustment: Williamsburg City, Virginia (FIPS51830) gained from James City County (FIPS51095) on Dec 31, 1983. CBP likely incorporated this change in 1985. See Figure [A.44](#).
54. Adjustment: Salem City, Virginia (FIPS51161) gained from Roanoke County (FIPS51161) on Jan 1, 1986. See Figure [A.52](#).

55. 1987 Adjustment: Franklin City, Virginia (FIPS51620) gained from Southampton County (FIPS51175) on Jan 1, 1986. CBP likely incorporated this change in 1987. See Figure [A.53](#).
56. 1987 Deletion/Adjustment: Kobuk Census Area, Alaska (FIPS02140) and part of North Slope Borough (FIPS02185) merged to form Northwest Arctic Borough (FIPS02188) on Jun 2, 1986. CBP record of Kobuk Census Area ended in 1986, and those of Northwest Arctic Borough started in 1989. See Figure [A.51](#).
57. 1987 Adjustment: Staunton City, Virginia (FIPS51790) gained small area from Augusta County (FIPS51015) on Dec 31, 1986. CBP likely incorporated this change in 1987. See Figure [A.50](#).
58. 1989 Adjustment: Danville City, Virginia (FIPS51590) gained from Pittsylvania County (FIPS51143) on Jan 1, 1988. CBP likely incorporated this change in 1989. See Figure [A.59](#).
59. 1980s Adjustment: Salem City, Virginia (FIPS51161) gained from Roanoke County (FIPS51161) on Dec 31, 1987. It is not clear when CBP incorporated this change. See Figure [A.55](#).
60. 1980s Adjustment: Emporia City, Virginia (FIPS51595) gained from Greensville County (FIPS51081) on Jan 1, 1988. It is not clear when CBP incorporated this change. See Figure [A.58](#).
61. 1989 Adjustment: Charlottesville City, Virginia (FIPS51540) gained small area from Albemarle County (FIPS51003) on Feb 9, 1988. CBP likely incorporated this change in 1989. See Figure [A.57](#).
62. 1980s Adjustment: Denver County, Colorado (FIPS08031) annexed part of Adams County (FIPS08001) on May 17, 1988. It is not clear when CBP incorporated this change. See Figure [A.56](#).
63. 1980s Adjustment: Salem City, Virginia (FIPS51161) gained from Roanoke County (FIPS51161) on Jul 1, 1989. It is not clear when CBP incorporated this change. See Figure [A.61](#).
64. 1992 Creation/Deletion: Aleutian Islands Census Area, Alaska (FIPS02010) split to create Aleutians East Borough (FIPS02013) and Aleutians West Census Area (FIPS02016) on Oct 23, 1987. CBP incorporated this change in 1992. See Figure [A.54](#).

65. 1992 Creation: Lake and Peninsula Borough, Alaska (FIPS02164) was created from part of Dillingham Census Area (FIPS02070) on Apr 24, 1989. CBP incorporated this change in 1992. See Figure [A.60](#).
66. 1992 Creation: Denali Borough, Alaska (FIPS02068) was created from parts of Yukon-Koyukuk Census Area (FIPS02290) and Southeast Fairbanks Census Area (FIPS02240) on Dec 7, 1990. CBP incorporated this change in 1992. See Figure [A.62](#).
67. 1995 Adjustment: Part of Augusta County, Virginia (FIPS51015) was annexed to Waynesboro City (FIPS51820) on Jul 1, 1994. CBP likely incorporated this change in 1995. See Figure [A.67](#).
68. 1996 Creation/Deletion: Skagway-Yakutat-Angoon Census Area, Alaska (FIPS02231) split to create Skagway-Hoonah-Angoon Census Area (FIPS02232) and Yakutat City and Borough (FIPS02282) on Sep 22, 1992. CBP incorporated this change in 1996. See Figure [A.65](#).
69. 1996 Deletion: South Boston City, Virginia (FIPS51780) merged into Halifax County (FIPS51083) on Jun 30, 1995. CBP incorporated this change in 1996. See Figure [A.69](#).
70. 1990s Adjustment: Manassas Park City, Virginia (FIPS51685) gained from Prince William County (FIPS51153) on Dec 31, 1990. It is not clear when CBP incorporated this change. See Figure [A.63](#).
71. 1990s Adjustment: Galax City (FIPS51640) gained from Carroll County (FIPS51035) on Jul 1, 1992. It is not clear when CBP incorporated this change. See Figure [A.64](#).
72. 1990s Adjustment: Bedford City, Virginia (FIPS51515) gained from Bedford County (51019) on Jul 1, 1993. It is not clear when CBP incorporated this change. See Figure [A.66](#).
73. 1990s Adjustment: Fairfax County, Virginia (FIPS51059) exchanged territories with Fairfax City (FIPS51600) on Jan 1, 1994. It is not clear when CBP incorporated this change. See Figure [A.68](#).
74. 1990s Adjustment: Franklin City, Virginia (FIPS51620) gained territory from Southampton County (FIPS51175) on Jan 1, 1996. It is not clear when CBP incorporated this change. See Figure [A.70](#).
75. 1990s Adjustment: Montgomery County, Maryland (FIPS24031) gained from Prince George's County (FIPS24033) on Jul 1, 1997. It is not clear when CBP incorporated this change. See Figure [A.72](#)

76. 2002 Recode/Rename: Dade County, Florida (FIPS12025) changed name and FIPS code to Miami-Dade County (FIPS12086) on Nov 13, 1997. CBP incorporated this change in 2002. See Figure [A.71](#).
77. 2002 Deletion: Clifton Forge City, Virginia (FIPS51560) merged into Alleghany County (FIPS51005) on Jul 1, 2001. CBP incorporated this change in 2002. See Figure [A.74](#).
78. 2002 Creation: Broomfield County, Colorado (FIPS08014) was created from Adams County (FIPS08001), Boulder County (FIPS08013), Jefferson County (FIPS08059) and Weld County (FIPS08123) on Nov 15, 2001. CBP incorporated this change in 2002. See Figure [A.73](#).
79. 2000s Adjustment: York County, Virginia (FIPS51199) and Newport News City (FIPS51700) exchanged territories on Jul 1, 2007. It is not clear when CBP incorporated this change. See Figure [A.76](#).
80. 2012 Creation/Deletion: Skagway-Hoonah-Angoon Census Area, Alaska (FIPS02232) split to create Hoonah-Angoon Census Area (FIPS02105) and Skagway Municipality (FIPS02230) on Jun 20, 2007. CBP incorporated this change in 2012. See Figure [A.75](#).
81. 2012 Creation/Deletion/Adjustment: On Jun 1, 2008, Petersburg Census Area, Alaska (FIPS02195) was created from part of Wrangell-Petersburg Census Area (FIPS02280). The remaining part of Wrangell-Petersburg Census Area annexed part of Prince of Wales-Outer Ketchikan Census Area (FIPS02201) to create Wrangell City and Borough (FIPS02275). Part of Prince of Wales-Outer Ketchikan Census Area was annexed to Ketchikan Gateway Borough (FIPS02130). The last remaining part of Prince of Wales-Outer Ketchikan Census Area formed the new Prince of Wales-Hyder Census Area (FIPS02198). CBP incorporated these changes in 2012. See Figure [A.77](#).
82. 2015 Adjustment: Petersburg Census Area, Alaska (FIPS02195) gained territories from Hoonah-Angoon Census Area (FIPS02105) and lost territories to Prince of Wales-Hyder Census Area (FIPS02198) on Jan 3, 2013. CBP likely incorporated this change in 2015. See Figure [A.78](#).
83. Deletion: Bedford City, Virginia (FIPS51515) merged into Bedford County (FIPS51019) on Jul 1, 2013. CBP has not incorporated this change as of 2016.
84. Recode/Rename: Shannon County, South Dakota (FIPS46113) changed its name and FIPS code to Oglala Lakota County (FIPS46102) on May 1, 2015. CBP has not incorporated this change as of 2016.

85. Recode/Rename: Wade Hampton Census Area, Alaska (FIPS02270) changed its name and FIPS code to Kusilvak Census Area (FIPS02158) on Jul 1, 2015. CBP has not incorporated this change as of 2016.

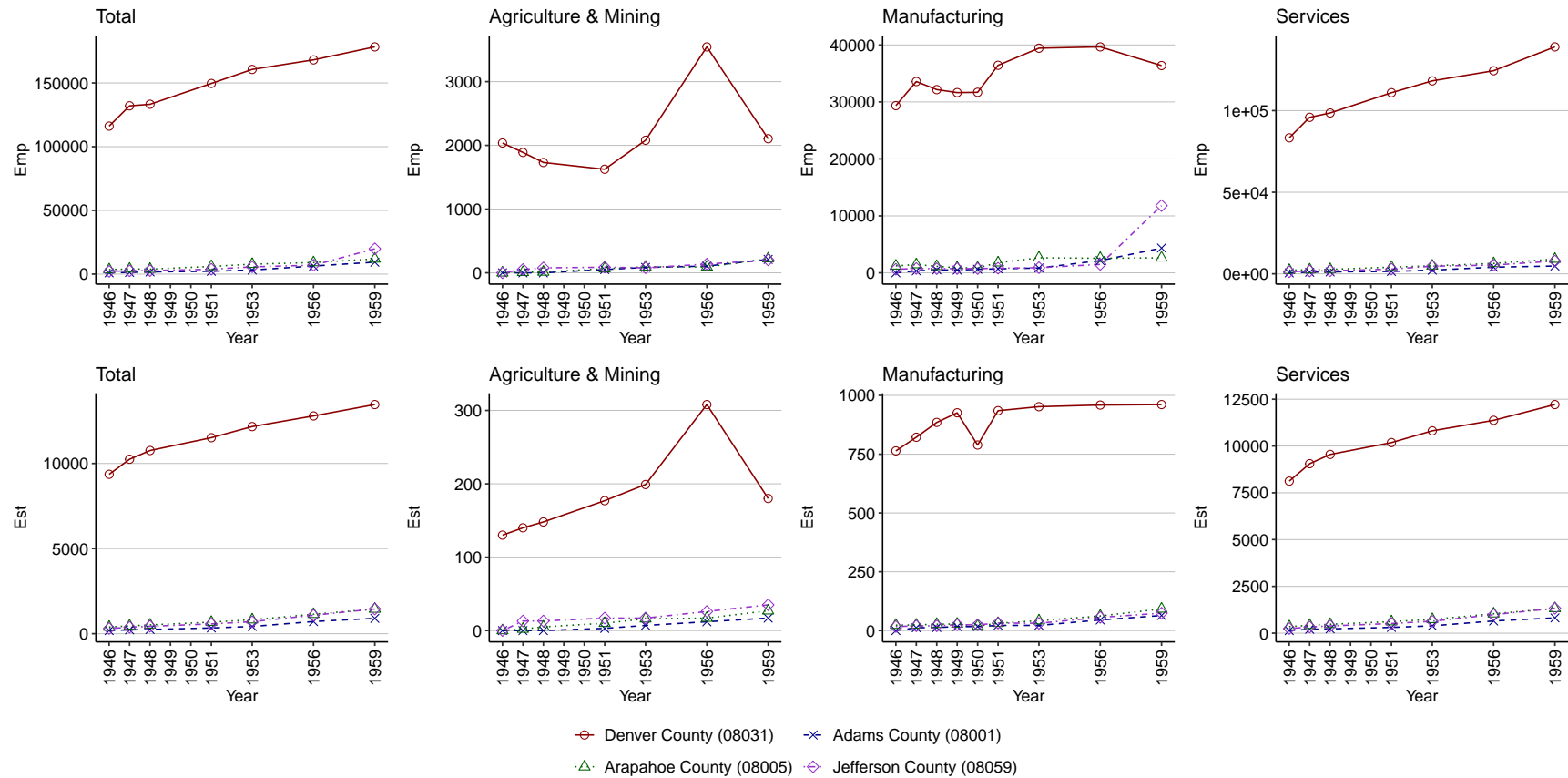


Figure A.1: County boundary change—Denver, Adams, Arapahoe & Jefferson, CO

Notes: This figure plots the number of employment and establishments in Adams (FIPS08001), Arapahoe (FIPS08005), Denver (FIPS08031), and Jefferson (FIPS08059) Counties of Colorado. Denver gained territories from the other counties throughout the 1940s. It is not clear when the Census Bureau incorporated these changes.

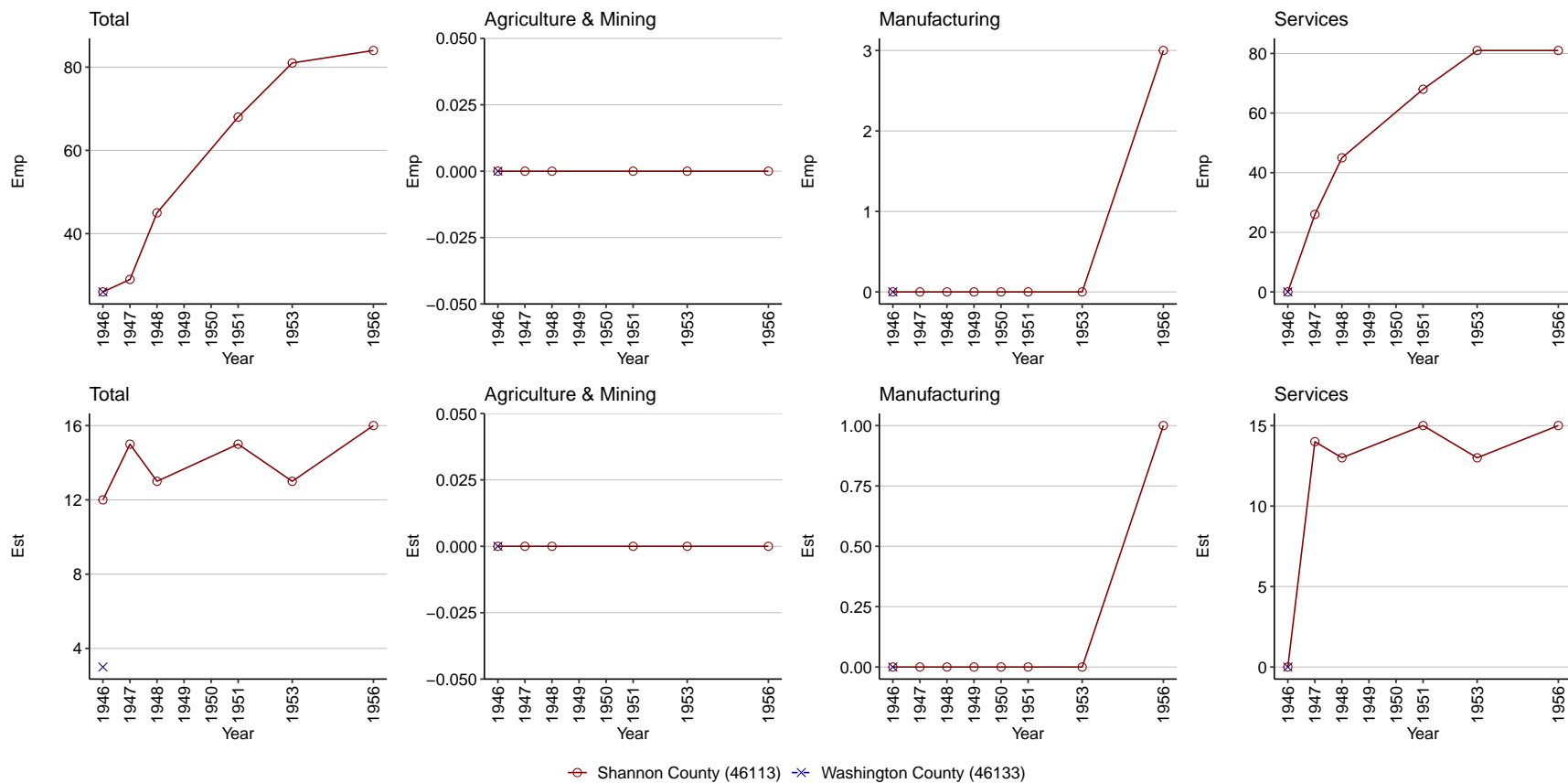


Figure A.2: County boundary change—Shannon & Washington, SD

Notes: This figure plots the number of employment and establishments in Shannon County (FIPS46113) and Washington County (FIPS46133) of South Dakota. Washington County merged into Shannon County on Jan 1, 1945. CBP incorporated this change in 1947.

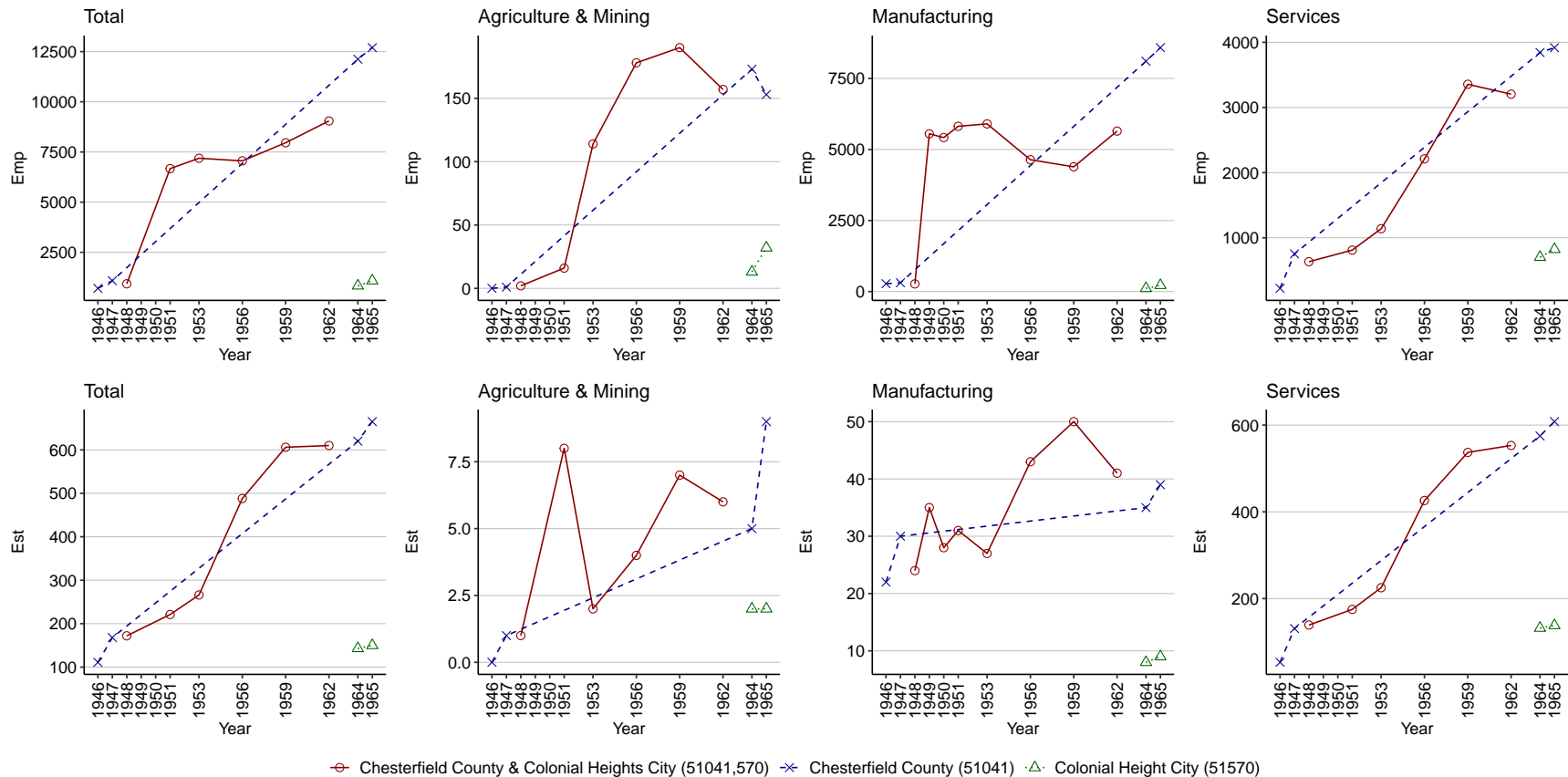


Figure A.3: County boundary change—Chesterfield County & Colonial Heights City, VA

Notes: This figure plots the number of employment and establishments in Chesterfield County (FIPS51041) and Colonial Heights City (FIPS51570) of Virginia. Colonial Heights City was created from Chesterfield County on Mar 19, 1948. CBP incorporated this change in 1948. Prior to 1964, Chesterfield County and Colonial Heights City were combined.

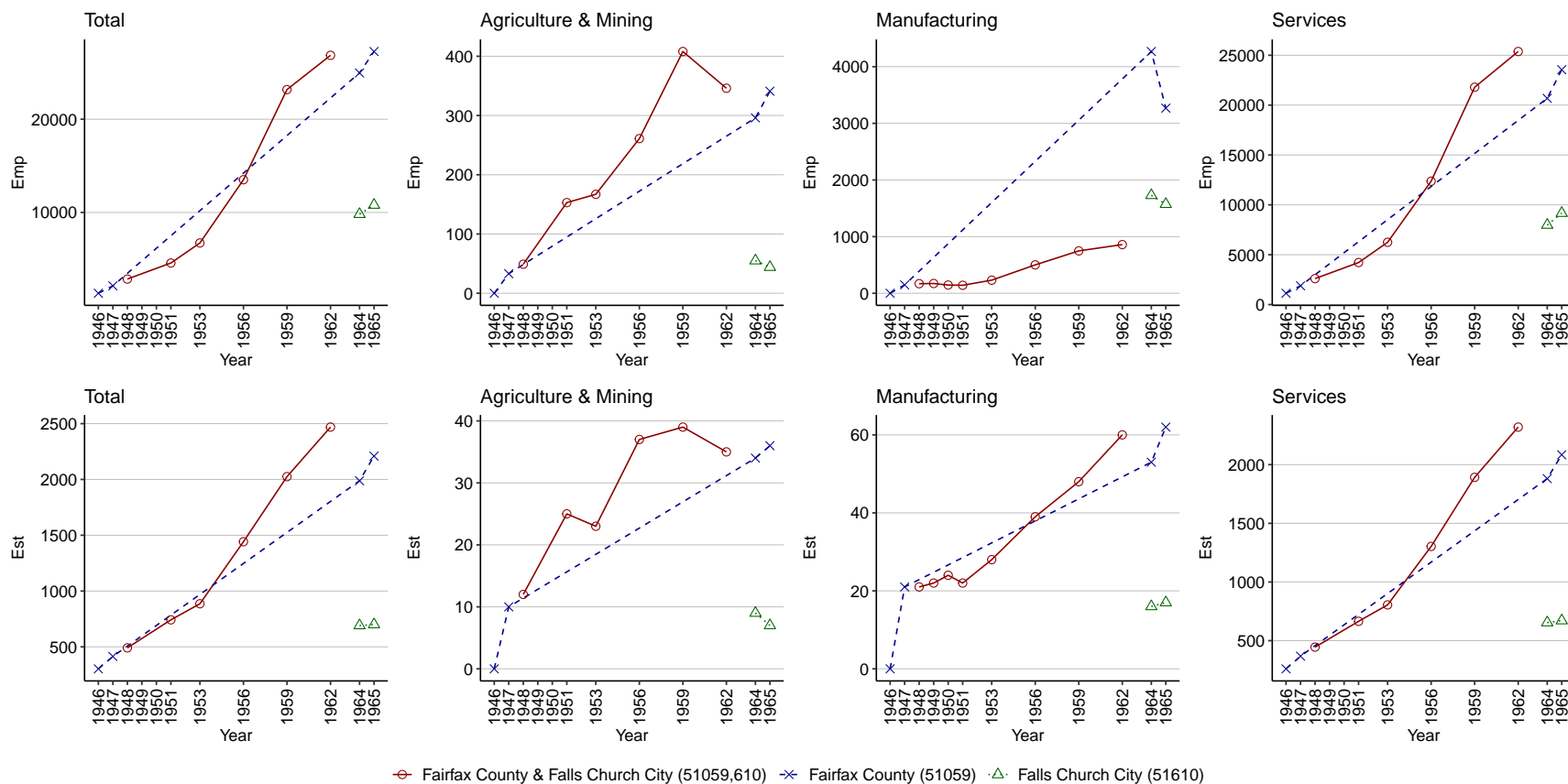


Figure A.4: County boundary change—Fairfax County & Falls Church City, VA

Notes: This figure plots the number of employment and establishments in Fairfax County (FIPS51059) and Falls Church City (FIPS51610) of Virginia. Falls Church City was created from Fairfax County on Aug 16, 1948. CBP incorporated this change in 1948. Prior to 1964, Fairfax County and Falls Church City were combined.

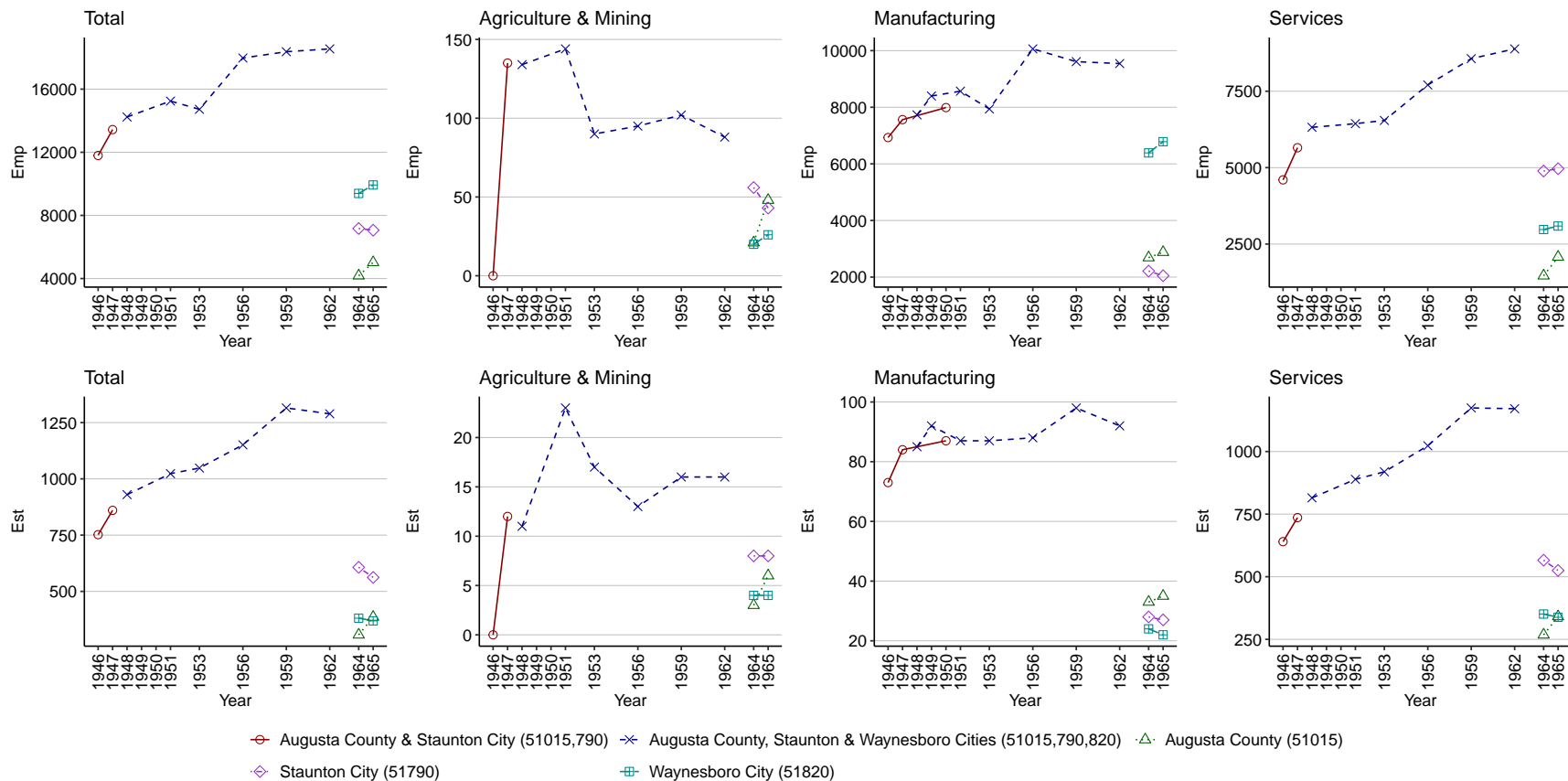


Figure A.5: County boundary change—Augusta County & Waynesboro City, VA

Notes: This figure plots the number of employment and establishments in Augusta County (FIPS51015) and Waynesboro City (FIPS51820) of Virginia. Waynesboro City was created from Augusta County on Jan 1, 1948. CBP incorporated this change in 1948. Prior to 1964, Augusta County and Waynesboro City were combined with Staunton City (FIPS51790).

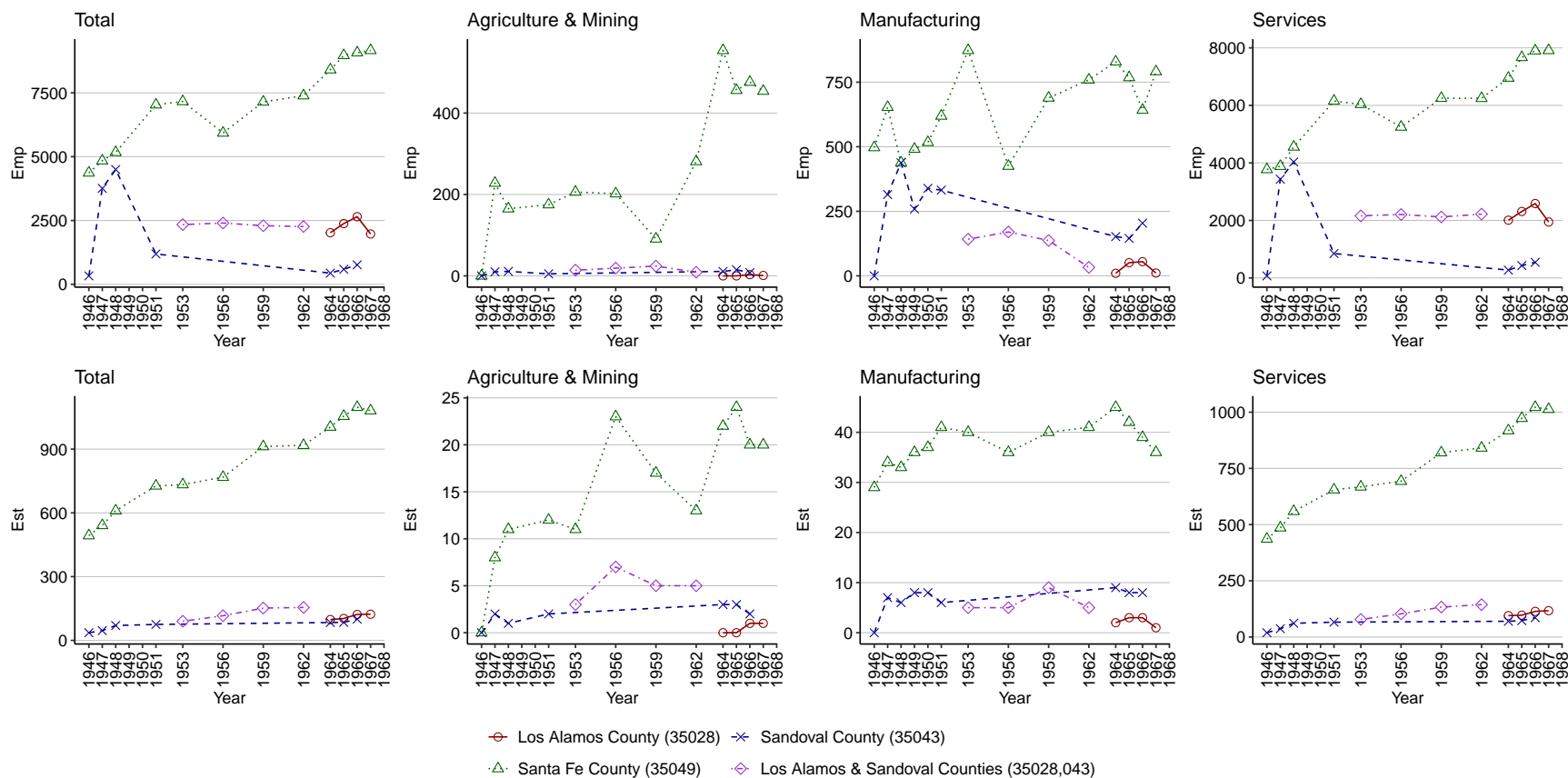


Figure A.6: County boundary change—Los Alamos, Sandoval & Santa Fe Counties, NM

Notes: This figure plots the number of employment and establishments in Los Alamos (FIPS35028), Sandoval (FIPS35043) and Santa Fe (FIPS35049) Counties of New Mexico. Los Alamos County was created from parts of Sandoval County and Santa Fe County on Mar 16, 1949. CBP incorporated this change in 1953. During 1953–1962, Los Alamos County and Sandoval County were displayed as a county group.

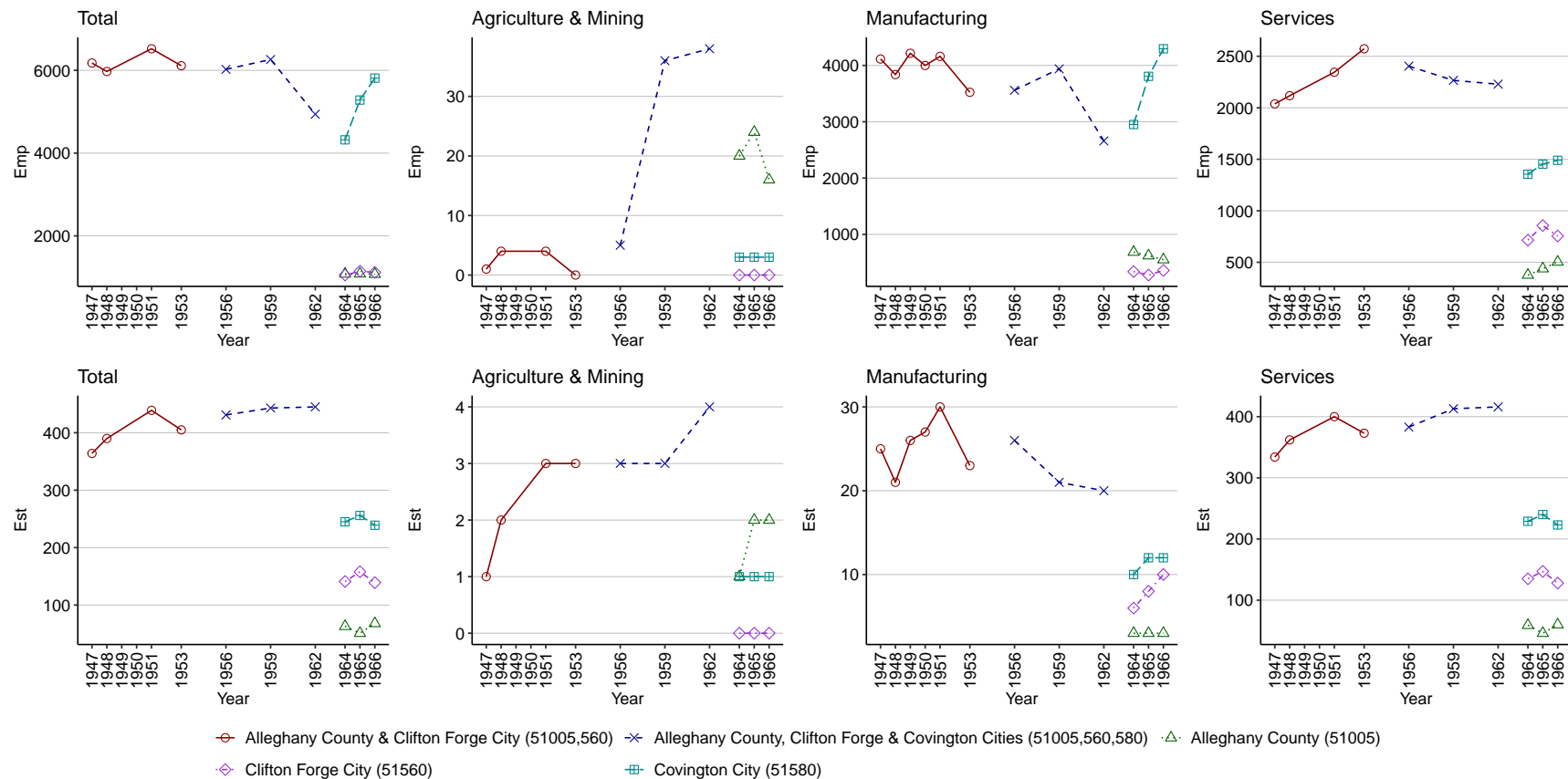


Figure A.7: County boundary change—Alleghany County, Clifton Forge & Covington Cities, VA

Notes: This figure plots the number of employment and establishments in Alleghany County (FIPS51005), Clifton Forge City (FIPS51560) and Covington City (FIPS51580) of Virginia. Covington City was created from Alleghany County on Dec 20, 1952. CBP incorporated this change in 1956. Prior to 1964, Alleghany County (and Covington City) were combined with Clifton Forge City (FIPS51560).

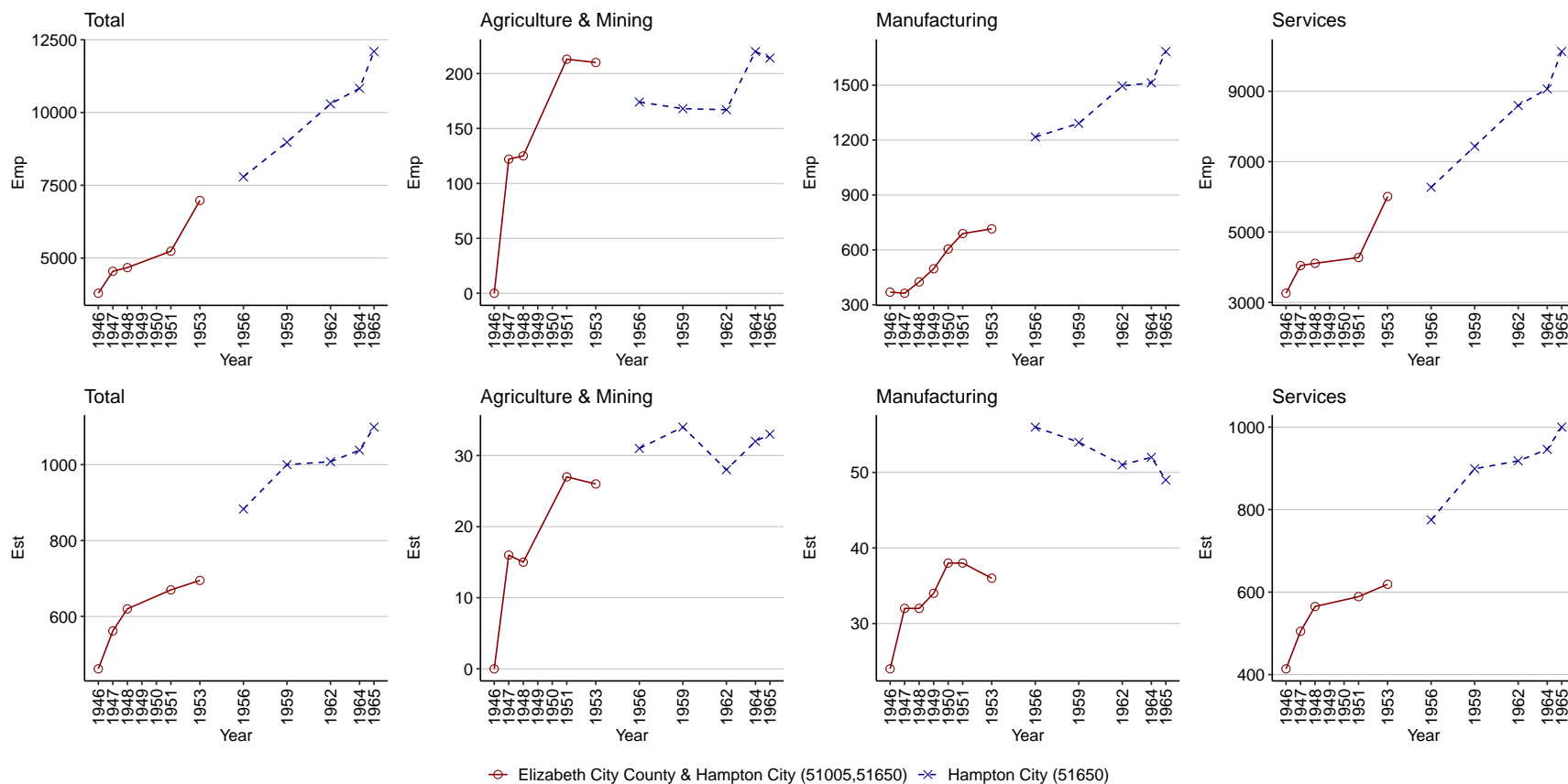


Figure A.8: County boundary change—Elizabeth City County & Hampton City, VA

Notes: This figure plots the number of employment and establishments in Elizabeth City County (FIPS51005) and Hampton City (FIPS51650) of Virginia. Elizabeth City County merged into Hampton City on Jul 1, 1952. CBP incorporated this change in 1956. Elizabeth City County and Hampton City were combined during 1946–1953.

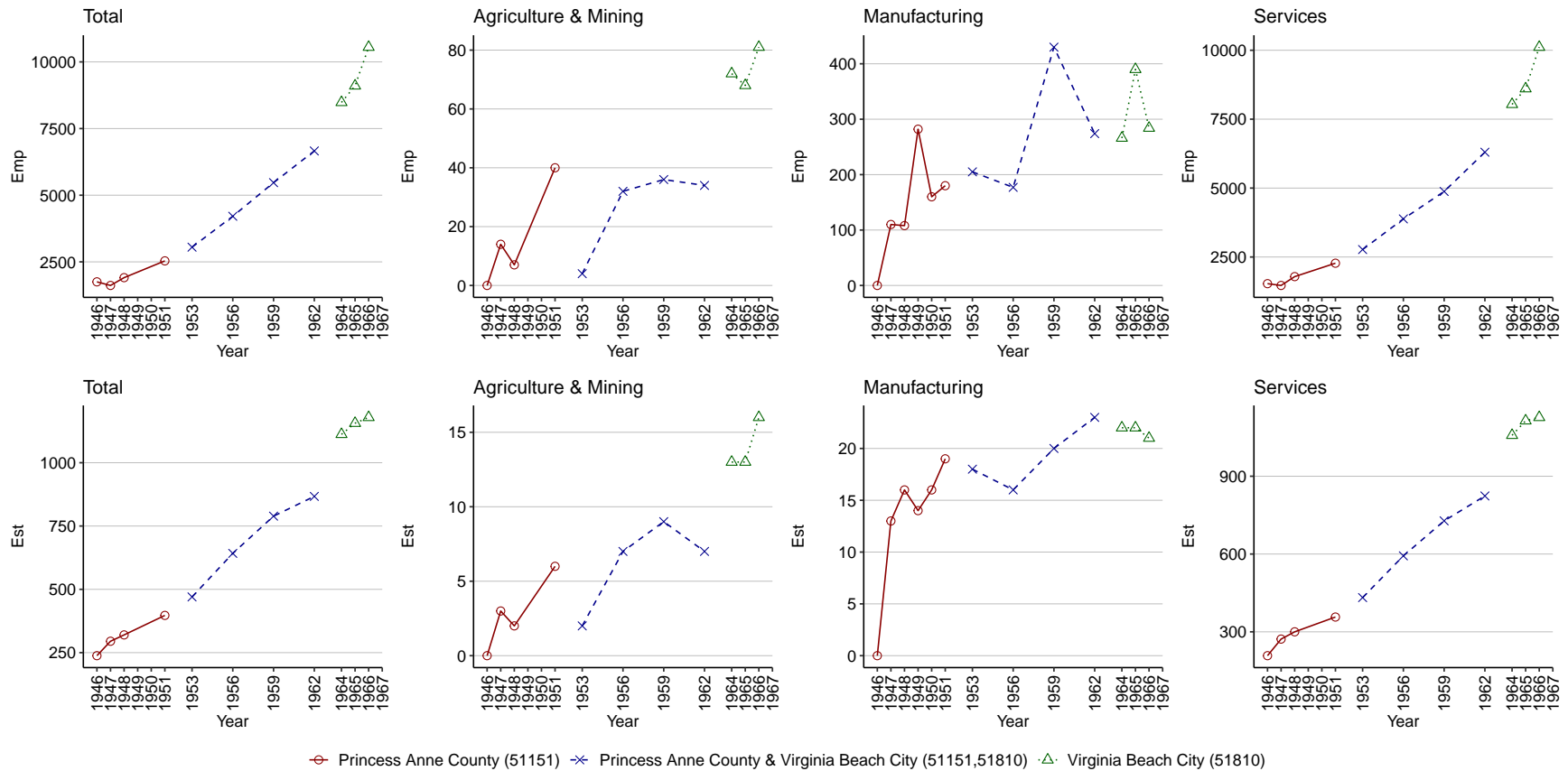


Figure A.9: County boundary change—Princess Anne County & Virginia Beach City, VA

Notes: This figure plots the number of employment and establishments in Princess Anne County (FIPS51151) and Virginia Beach City (FIPS51810) of Virginia. Virginia Beach City was created from Princess Anne County on Feb 14, 1952. They were consolidated again to form the new Virginia Beach City on Jan 1, 1963. CBP incorporated these changes in 1953 and 1964 respectively. During 1953–1962, these two counties were combined.

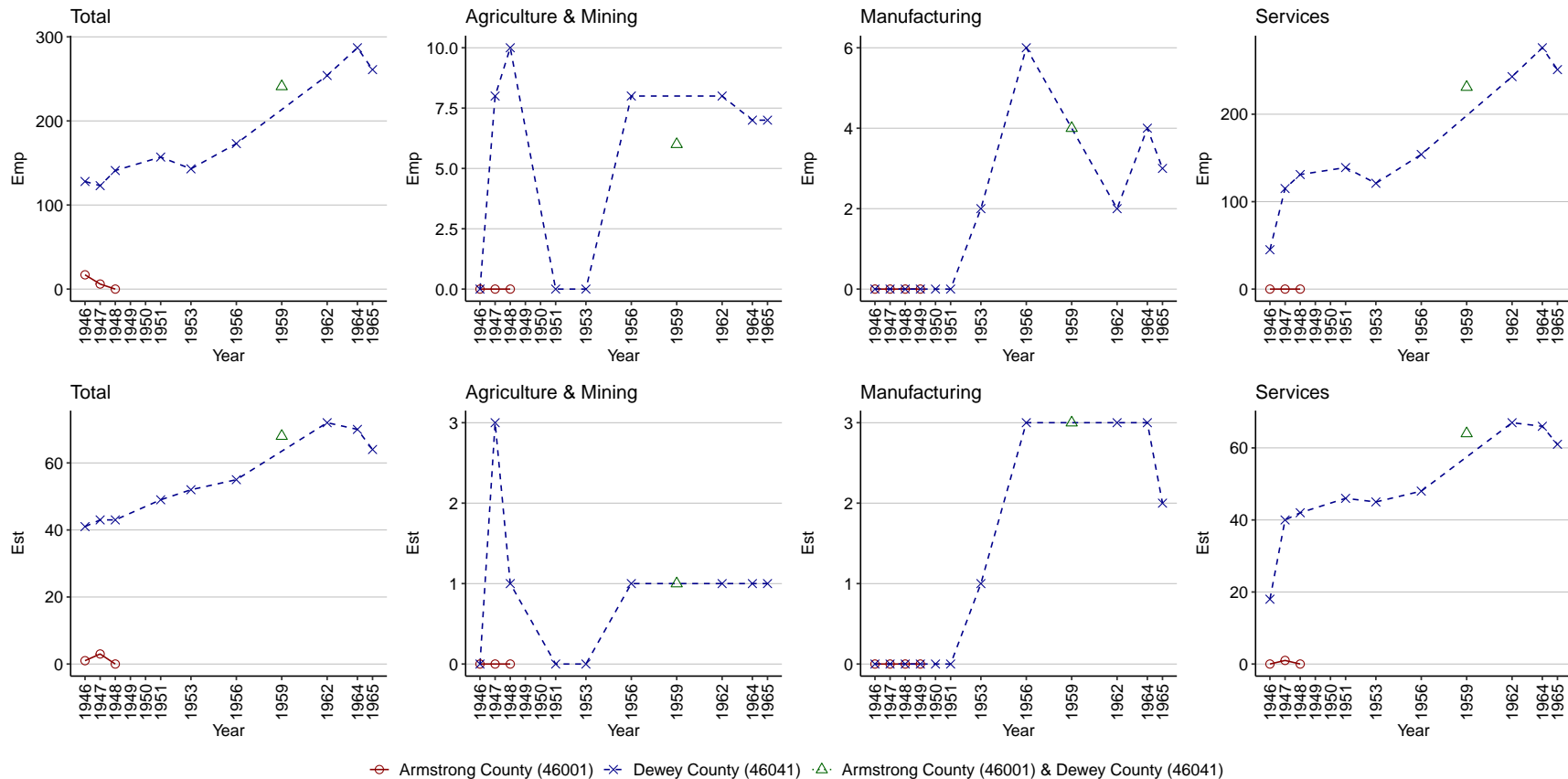


Figure A.10: County boundary change—Armstrong & Dewey, SD

Notes: This figure plots the number of employment and establishments in Armstrone County (FIPS46001) and Dewey County (FIPS46041) of South Dakota. Armstrong County merged into Dewey County on Jan 1, 1953. Armstrong County was displayed independently from Dewey County from 1946 to 1949. Both disappeared in 1950. The latter reappeared since 1951. The former reappeared only in 1959 with combined record with the latter.

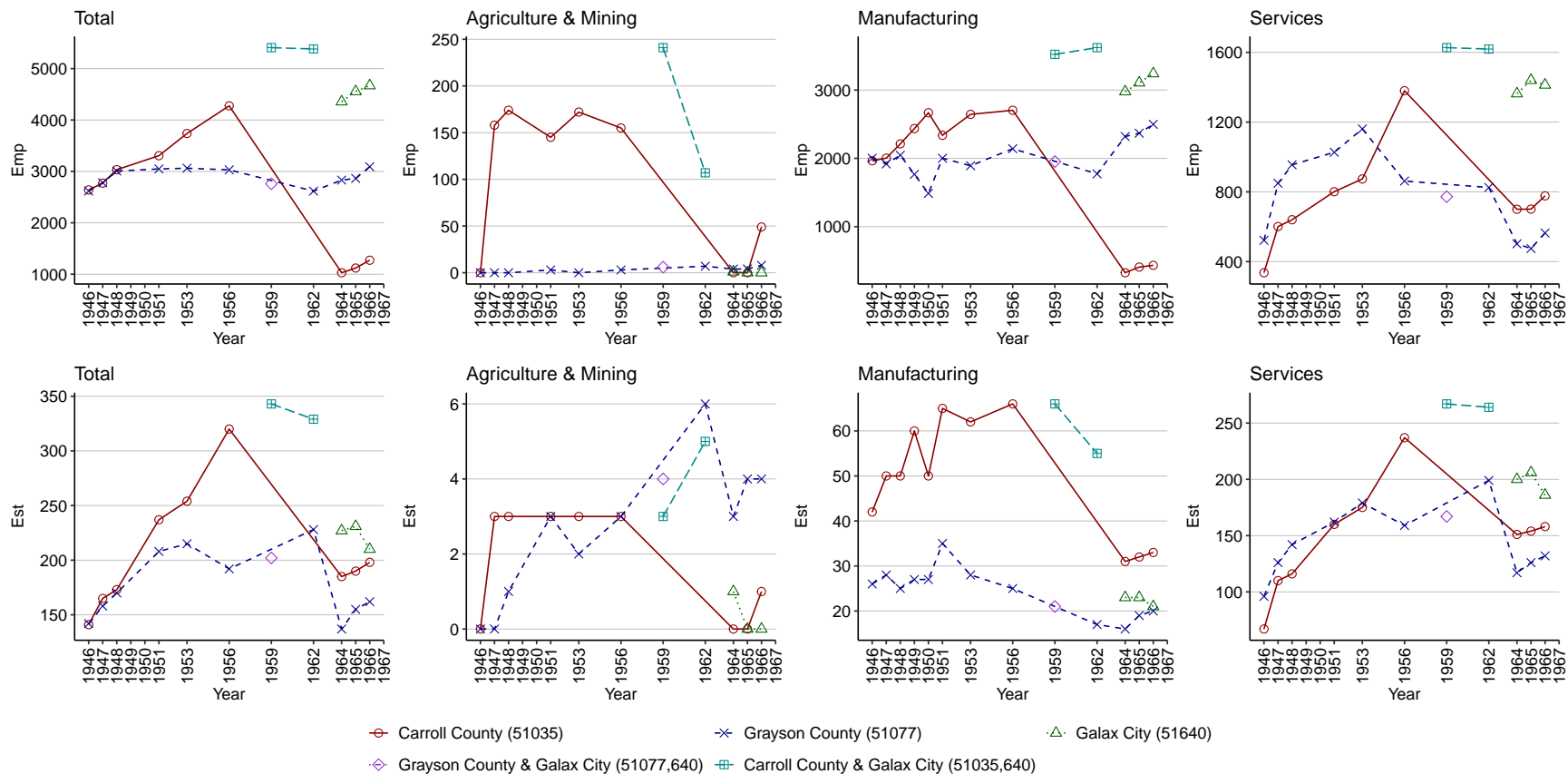


Figure A.11: County boundary change—Carroll County, Grayson County & Galax City, VA

Notes: This figure plots the number of employment and establishments in Carroll County (FIPS51035), Grayson County (FIPS51077) and Galax City (FIPS51640) of Virginia. Galax City was created from Carroll County and Grayson County on Nov 30, 1953. CBP incorporated this change in 1959. It is likely that, in 1959, Galax City remained combined with Carroll and Grayson Counties respectively. And in 1962, Galax City was combined completely with Carroll County.

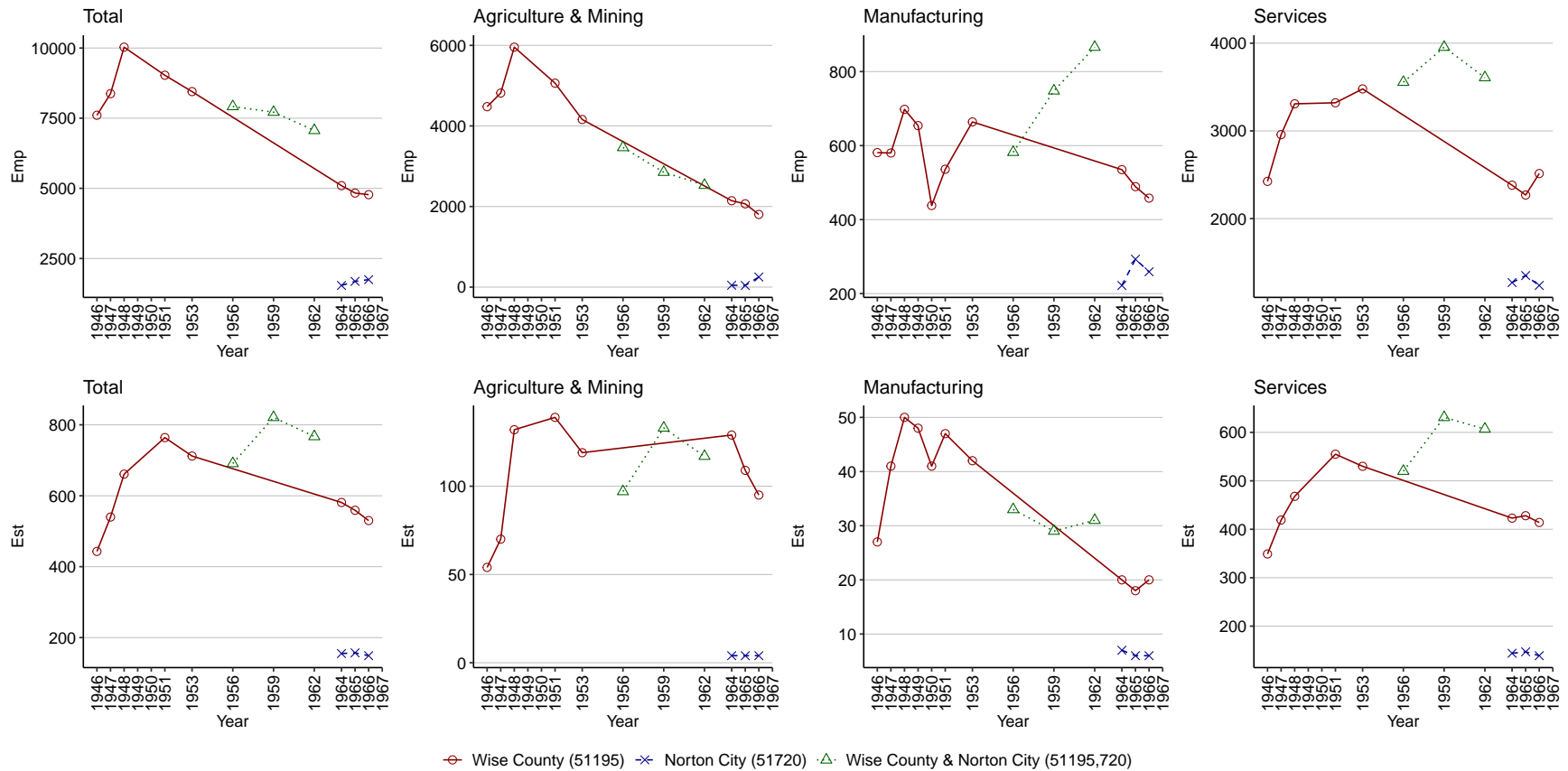


Figure A.12: County boundary change—Wise County & Norton City, VA

Notes: This figure plots the number of employment and establishments in Wise County (FIPS51195) and Norton City (FIPS51720) of Virginia. Norton City was created from Wise County on Jan 1, 1954. CBP incorporated this change in 1956. These two counties were then displayed as a county group before splitting up in 1964.

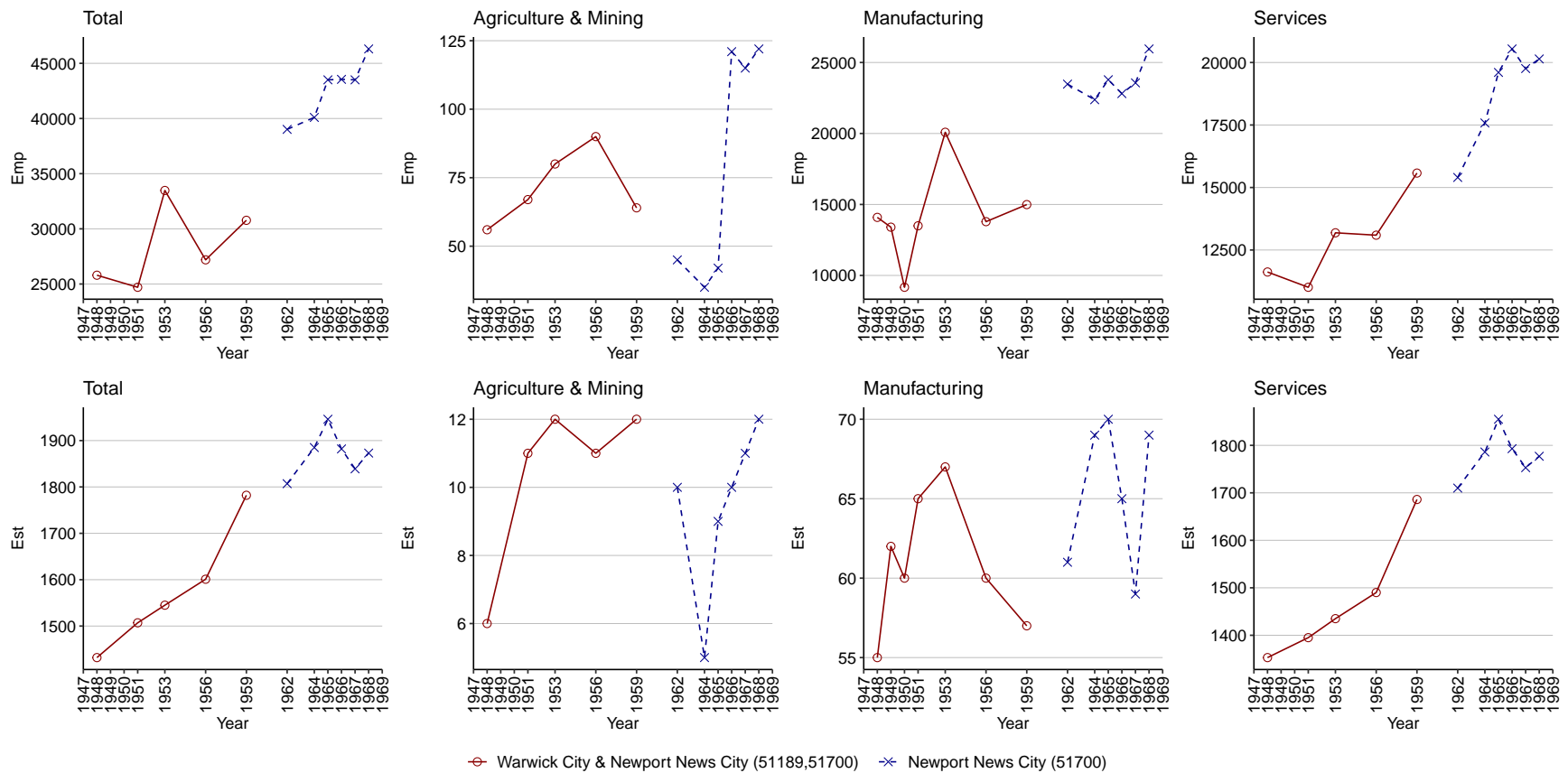


Figure A.13: County boundary change—Warwick City & Newport News City, VA

Notes: This figure plots the number of employment and establishments in Warwick City (FIPS51189) and Newport News City (FIPS51700) of Virginia. Warwick City merged into Newport News City on Jul 1, 1958. CBP incorporated this change in 1962. The two counties were combined until 1959.

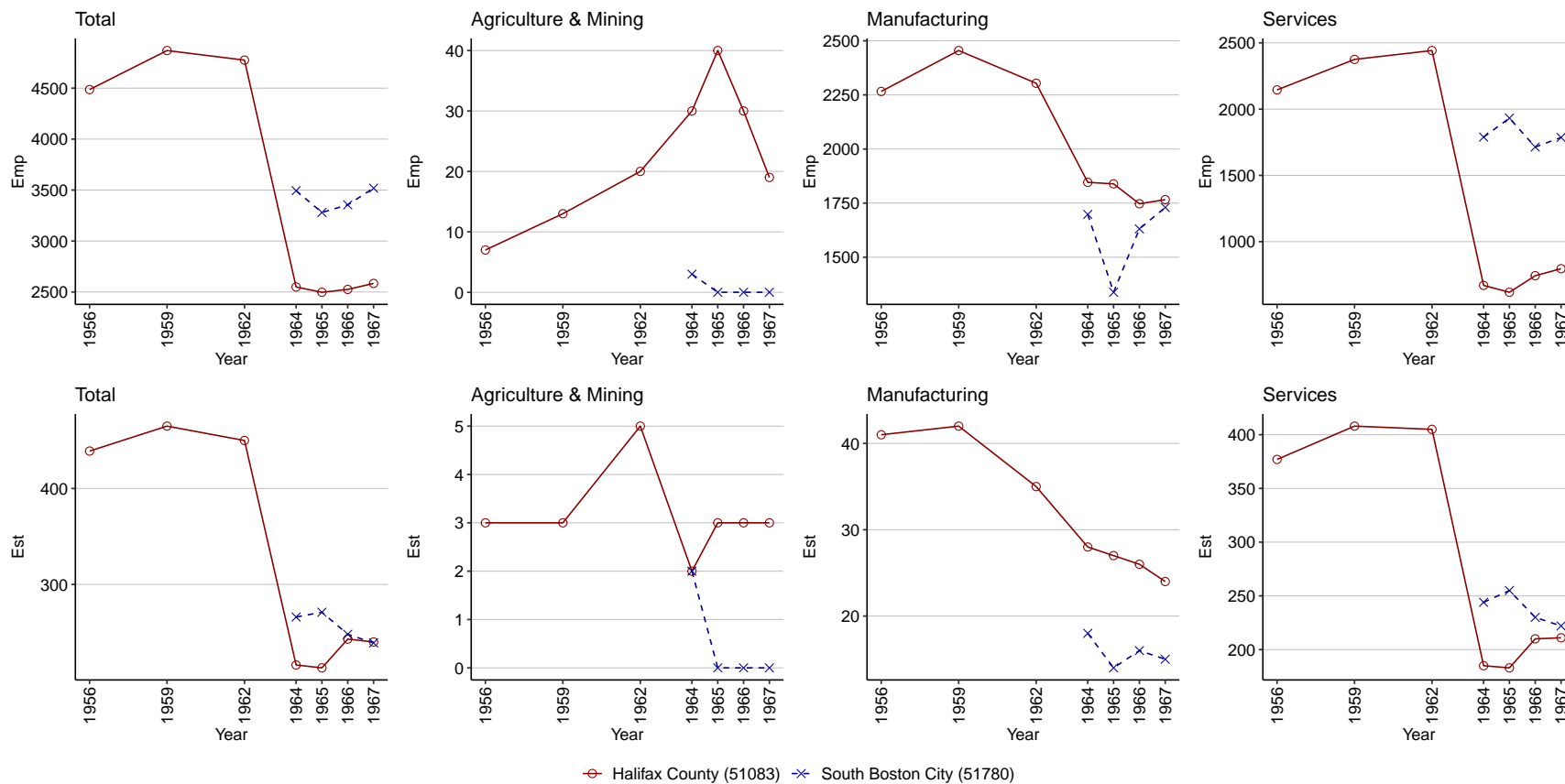


Figure A.14: County boundary change—Halifax County & South Boston City, VA

Notes: This figure plots the number of employment and establishments in Halifax County (FIPS51083) and South Boston City (FIPS51780) of Virginia. South Boston City was created from Halifax County on Jan 1, 1960. CBP incorporated this change in 1964.

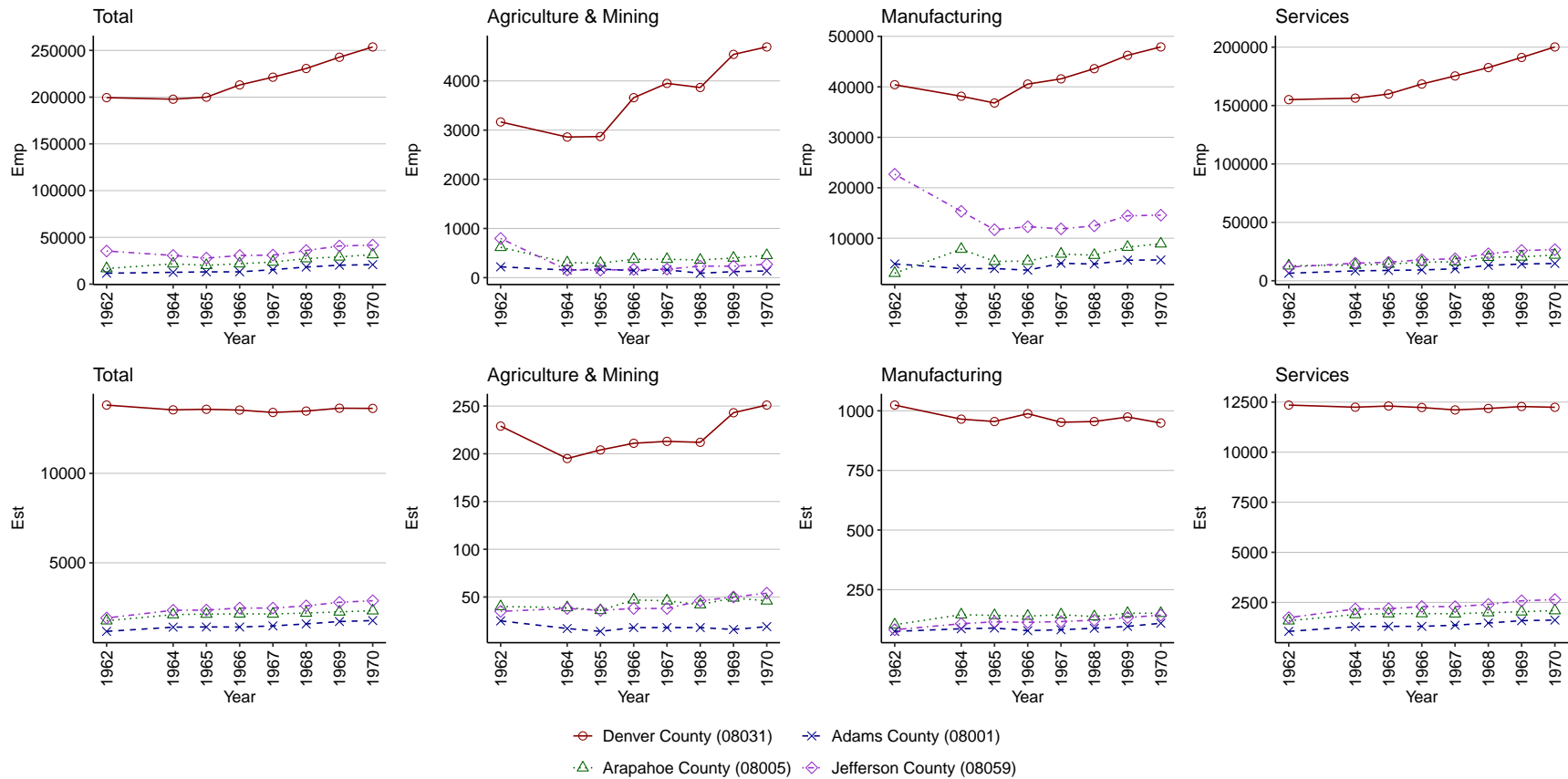


Figure A.15: County boundary change—Denver, Adams, Arapahoe & Jefferson, CO

Notes: This figure plots the number of employment and establishments in Adams (FIPS08001), Arapahoe (FIPS08005), Denver (FIPS08031), and Jefferson (FIPS08059) Counties of Colorado. Denver gained territories from the other counties throughout the 1960s. It is not clear when CBP incorporated these changes.

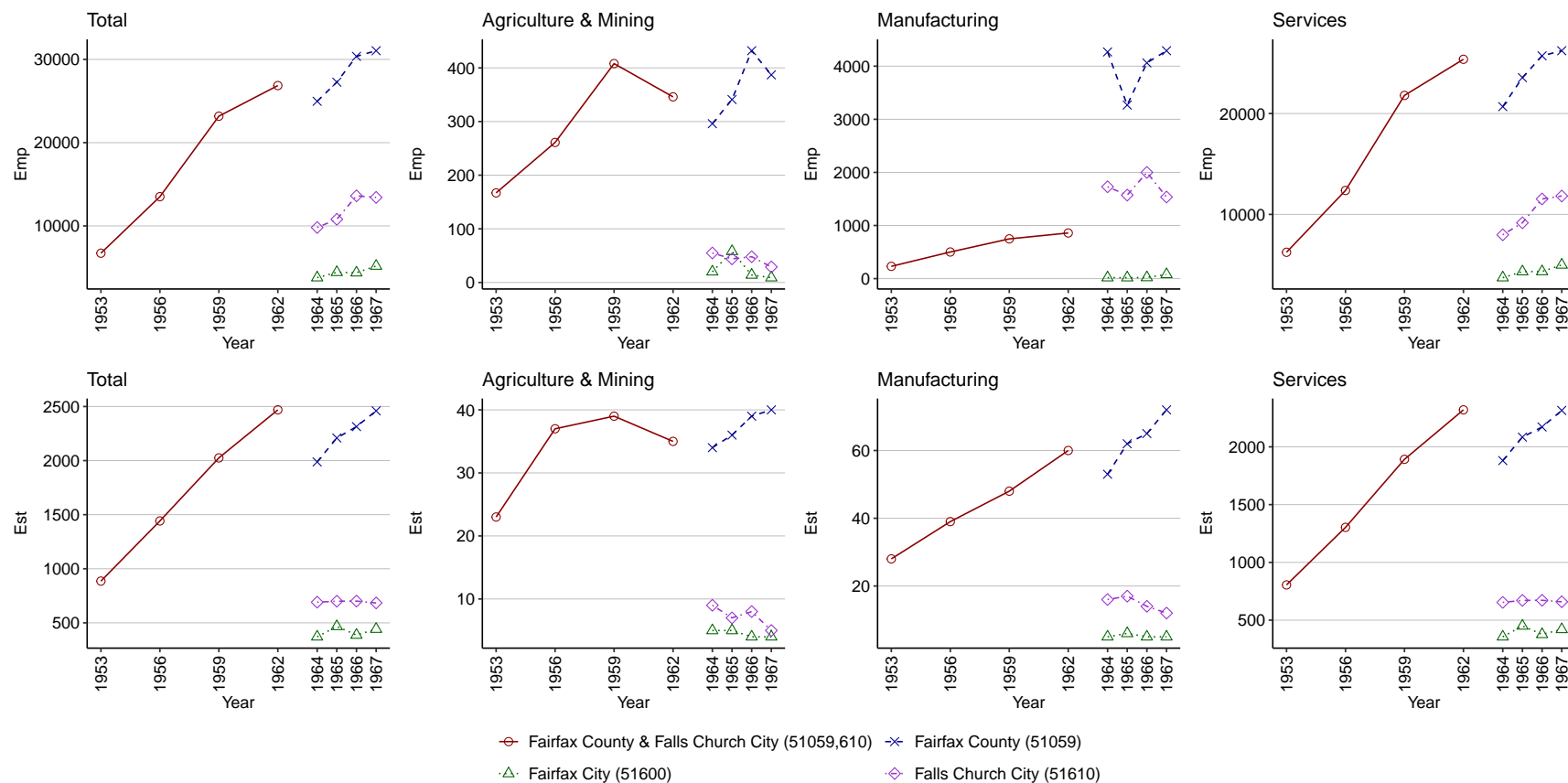


Figure A.16: County boundary change—Fairfax County & Fairfax City, VA

Notes: This figure plots the number of employment and establishments in Fairfax County (FIPS51059) and Fairfax City (FIPS51600) of Virginia. Fairfax City was created from Fairfax County on Jul 1, 1961. CBP incorporated this change in 1964. Prior to 1964, Fairfax County was combined with Falls Church City (FIPS51610).

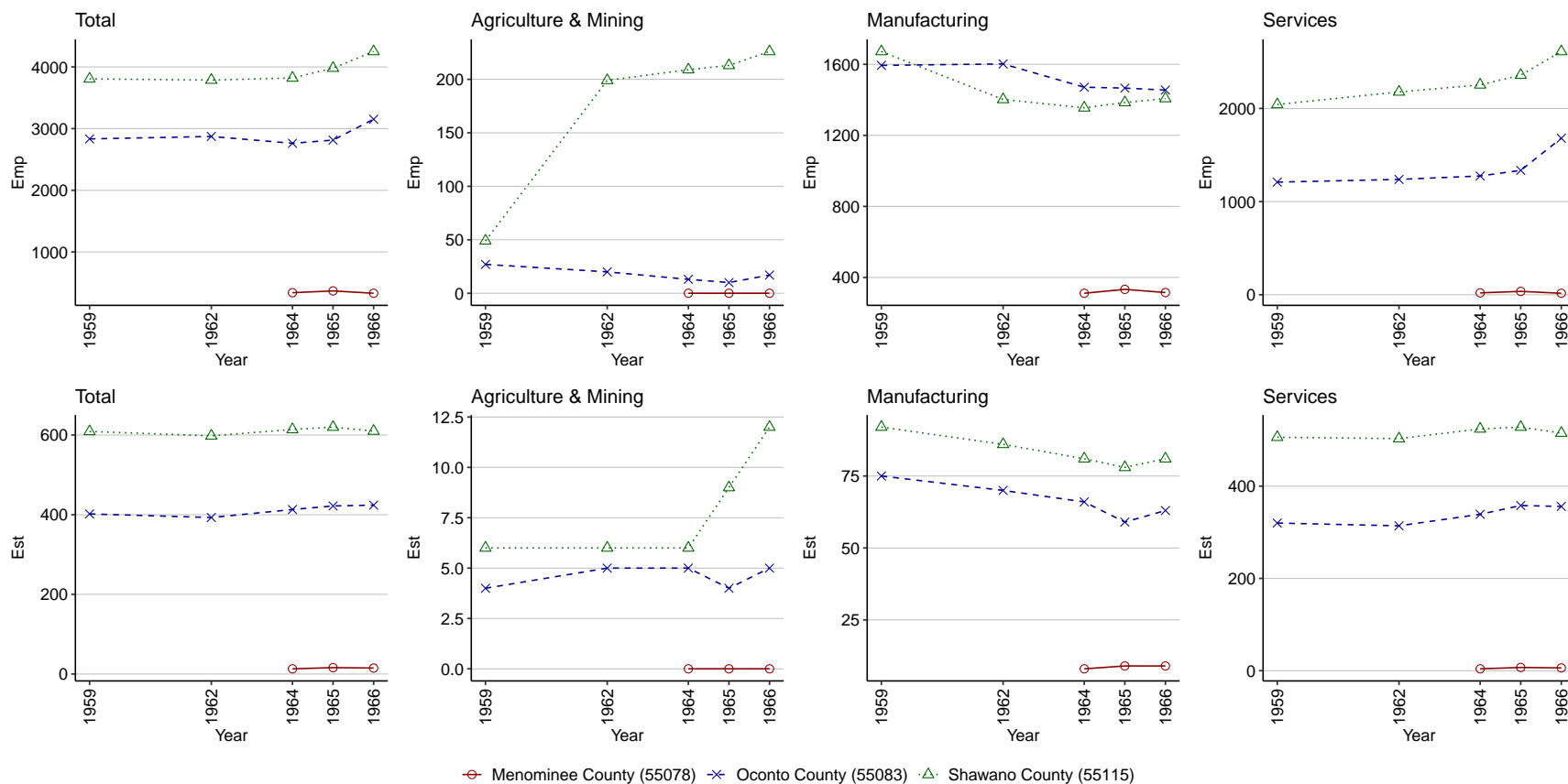


Figure A.17: County boundary change—Menominee, Oconto & Shawano, WI

Notes: This figure plots the number of employment and establishments in Menominee (FIPS55078), Oconto (FIPS55083) and Shawano (FIPS55115) Counties of Wisconsin. Menominee County, Wisconsin (FIPS55078) was created from parts of Oconto County and Shawano County on May 1, 1961. CBP incorporated this change in 1964.

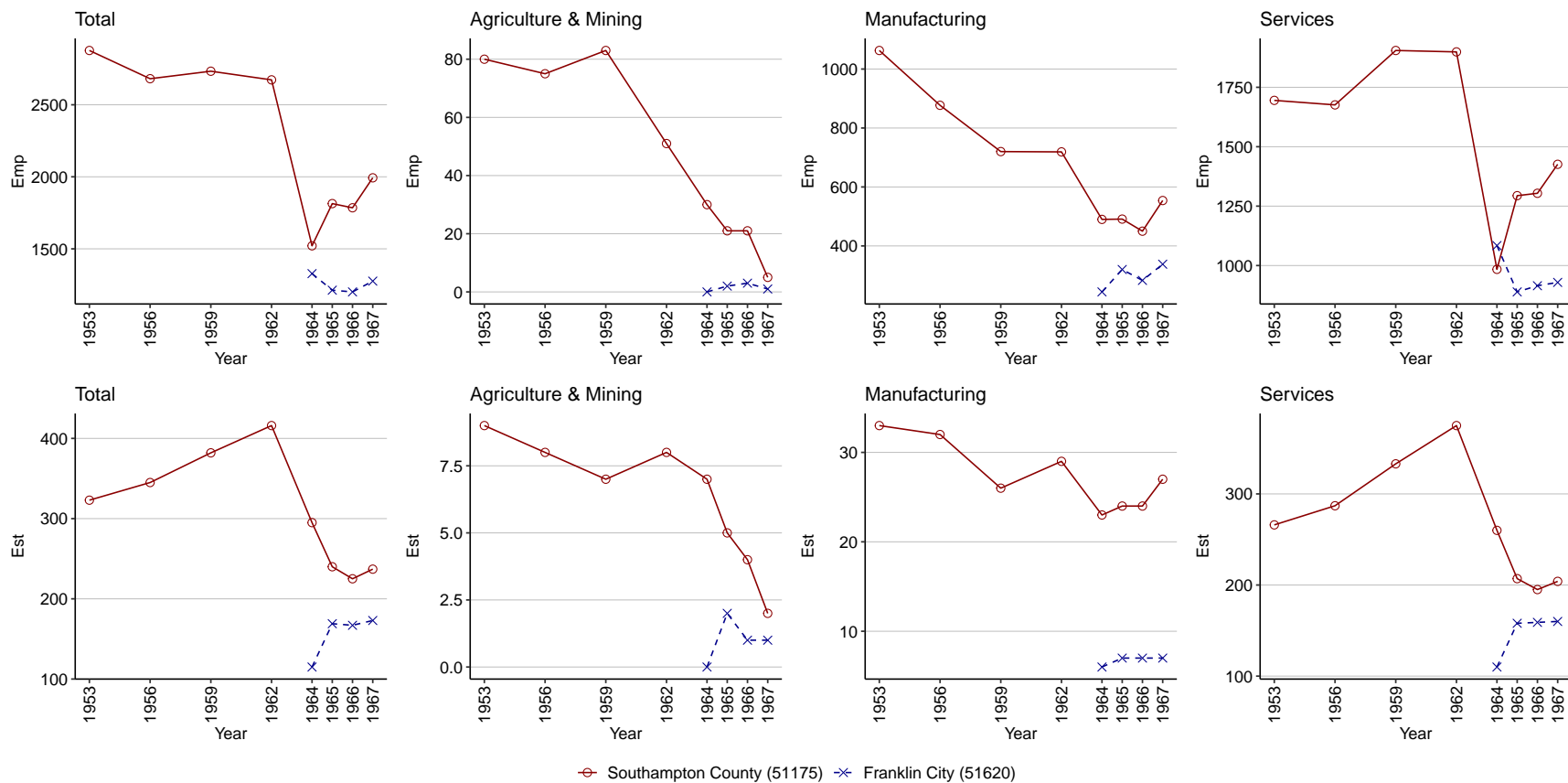


Figure A.18: County boundary change—Southampton County & Franklin City, VA

Notes: This figure plots the number of employment and establishments in Southampton County (FIPS51175) and Franklin City (FIPS51620) of Virginia. Franklin City was created from Southampton County on Dec 22, 1961. CBP incorporated this change in 1964.

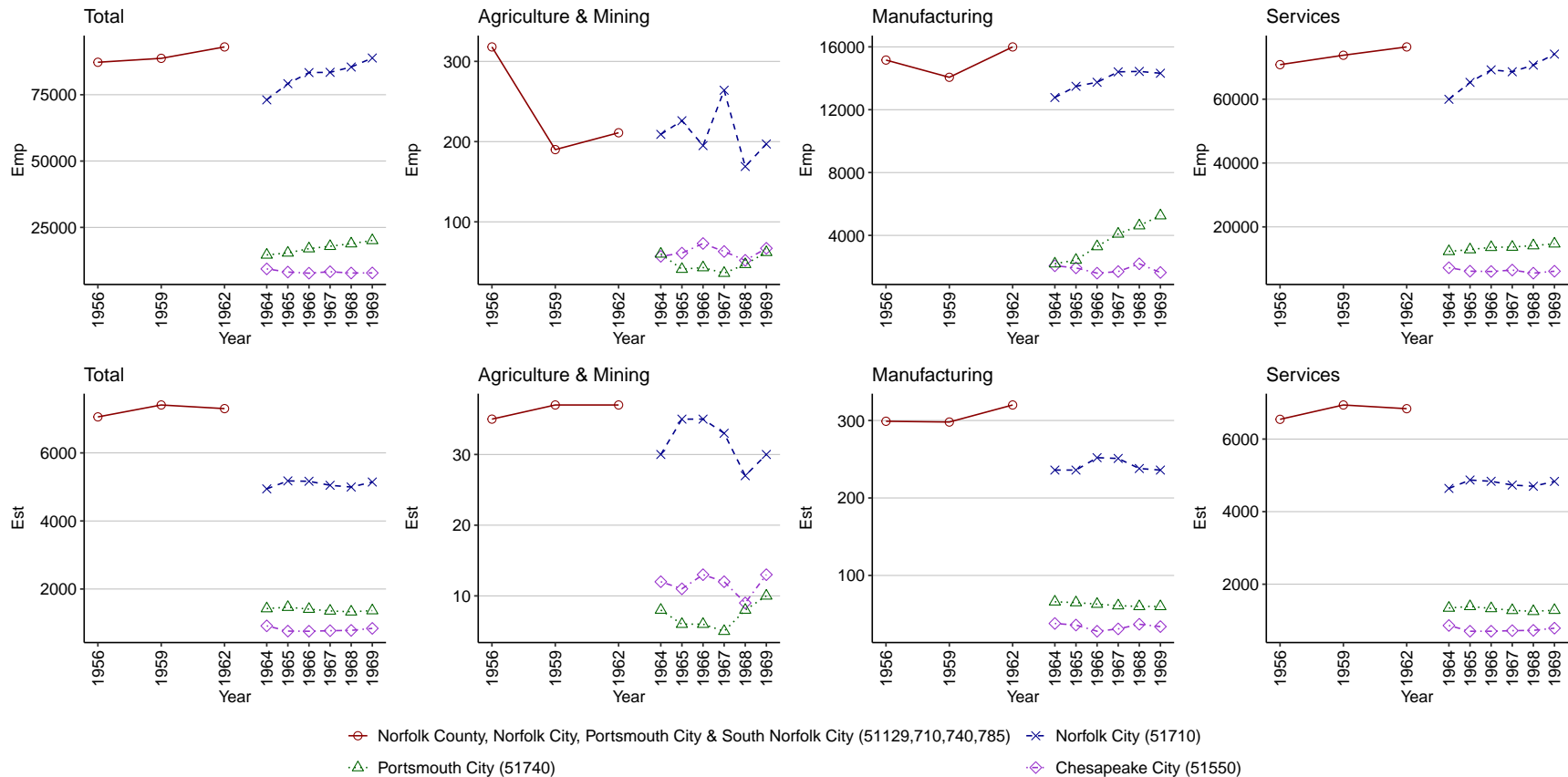


Figure A.19: County boundary change—Norfolk County, South Norfolk & Chesapeake City, VA

Notes: This figure plots the number of employment and establishments in Norfolk County, South Norfolk and Chesapeake City of Virginia. Norfolk County (FIPS51129) and South Norfolk City (FIPS51785) merged to form Chesapeake City (FIPS51550) on Jan 1, 1963. CBP incorporated this change in 1964. Prior to 1964, Norfolk County and South Norfolk City were combined with Norfolk City (FIPS51510) and Portsmouth City (FIPS51740).

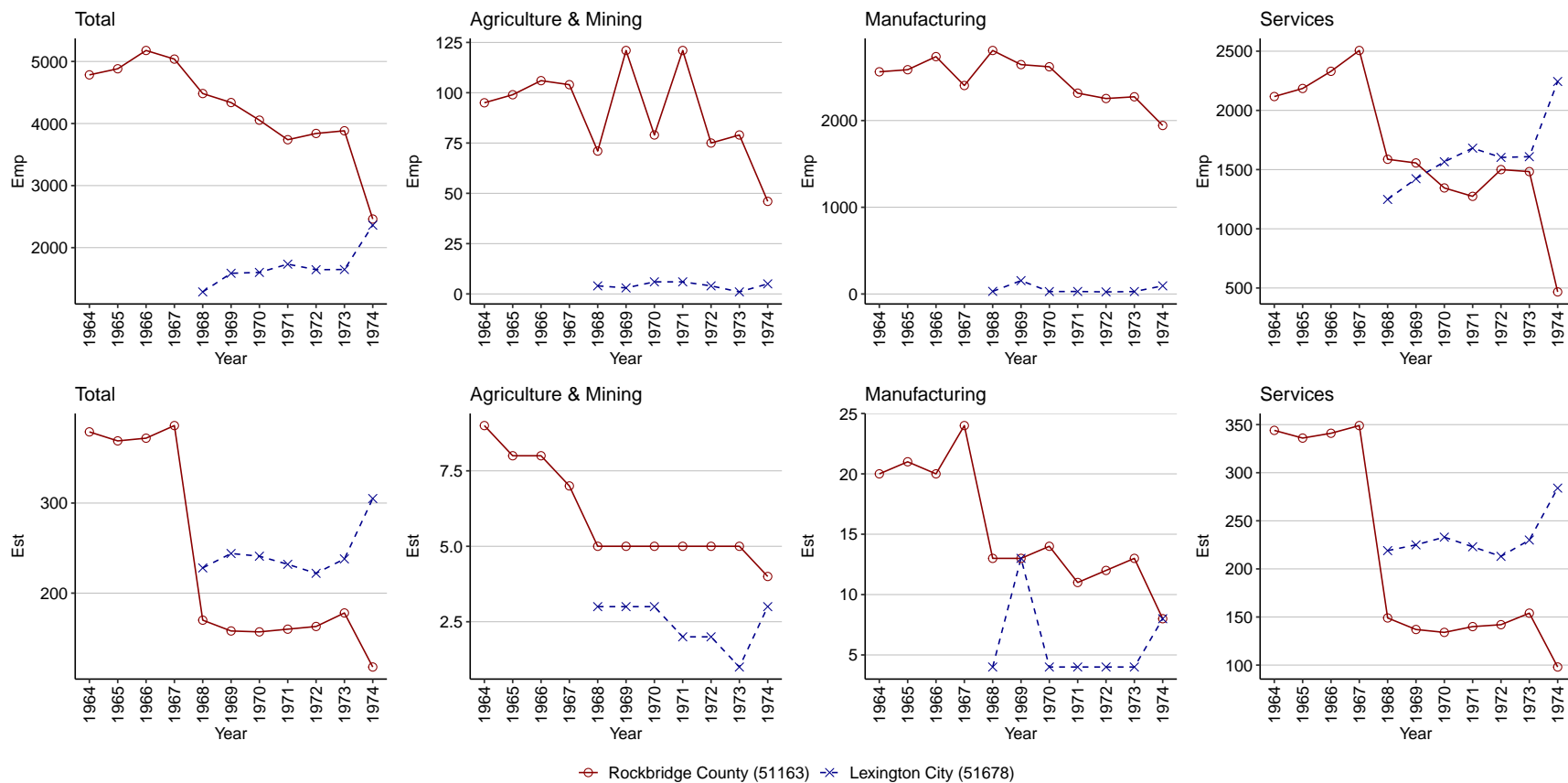


Figure A.20: County boundary change—Rockbridge County & Lexington City, VA

Notes: This figure plots the number of employment and establishments in Rockbridge County (FIPS51163) and Lexington City (FIPS51678) of Virginia. Lexington City was created from Rockbridge County on Jan 1, 1966. CBP incorporated this change in 1968.

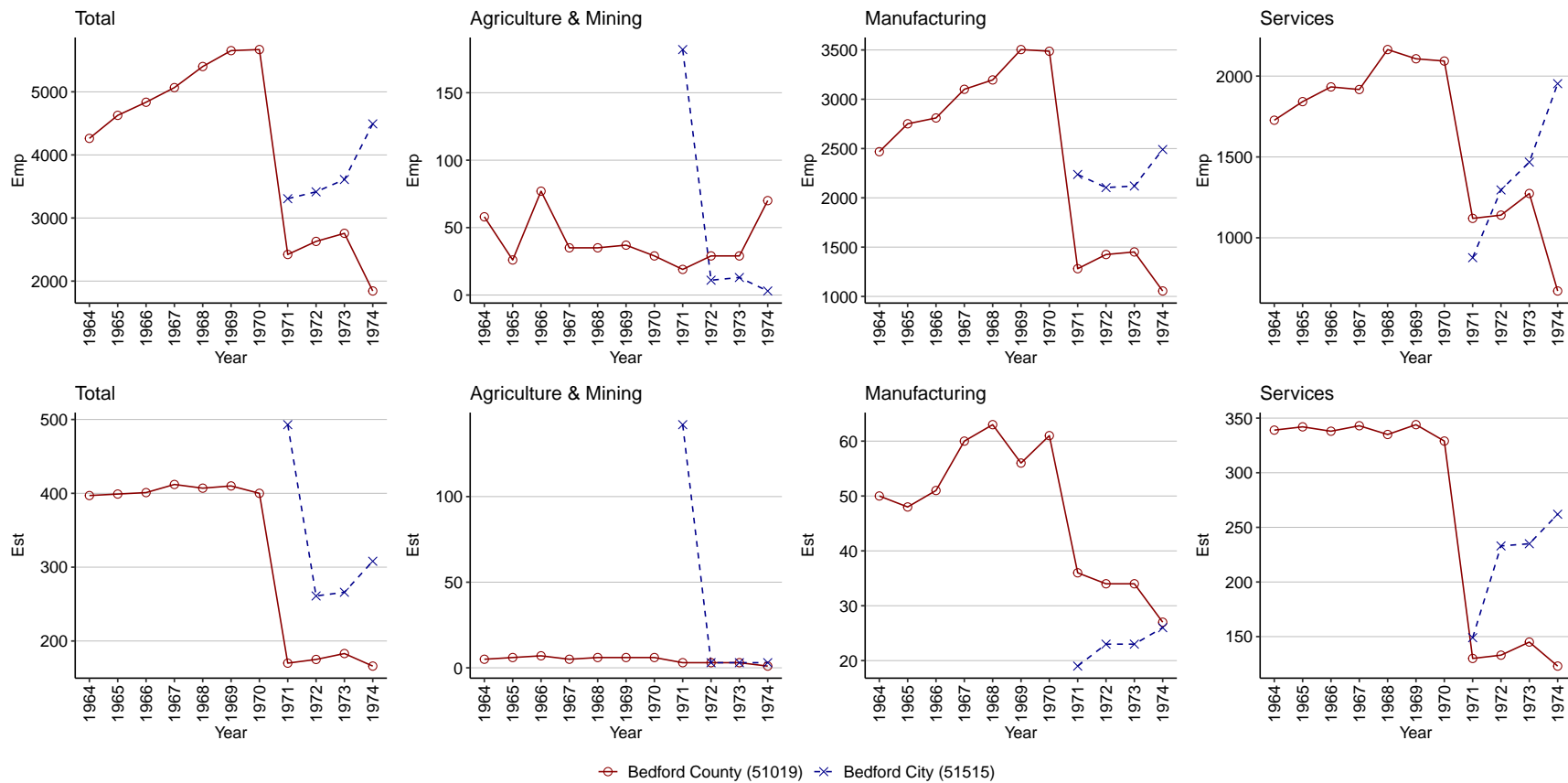


Figure A.21: County boundary change—Bedford County & Bedford City, VA

Notes: This figure plots the number of employment and establishments in Bedford County (FIPS51019) and Bedford City (FIPS51515) of Virginia. Bedford City was created from Bedford County on Sep 1, 1968. CBP incorporated this change in 1971.

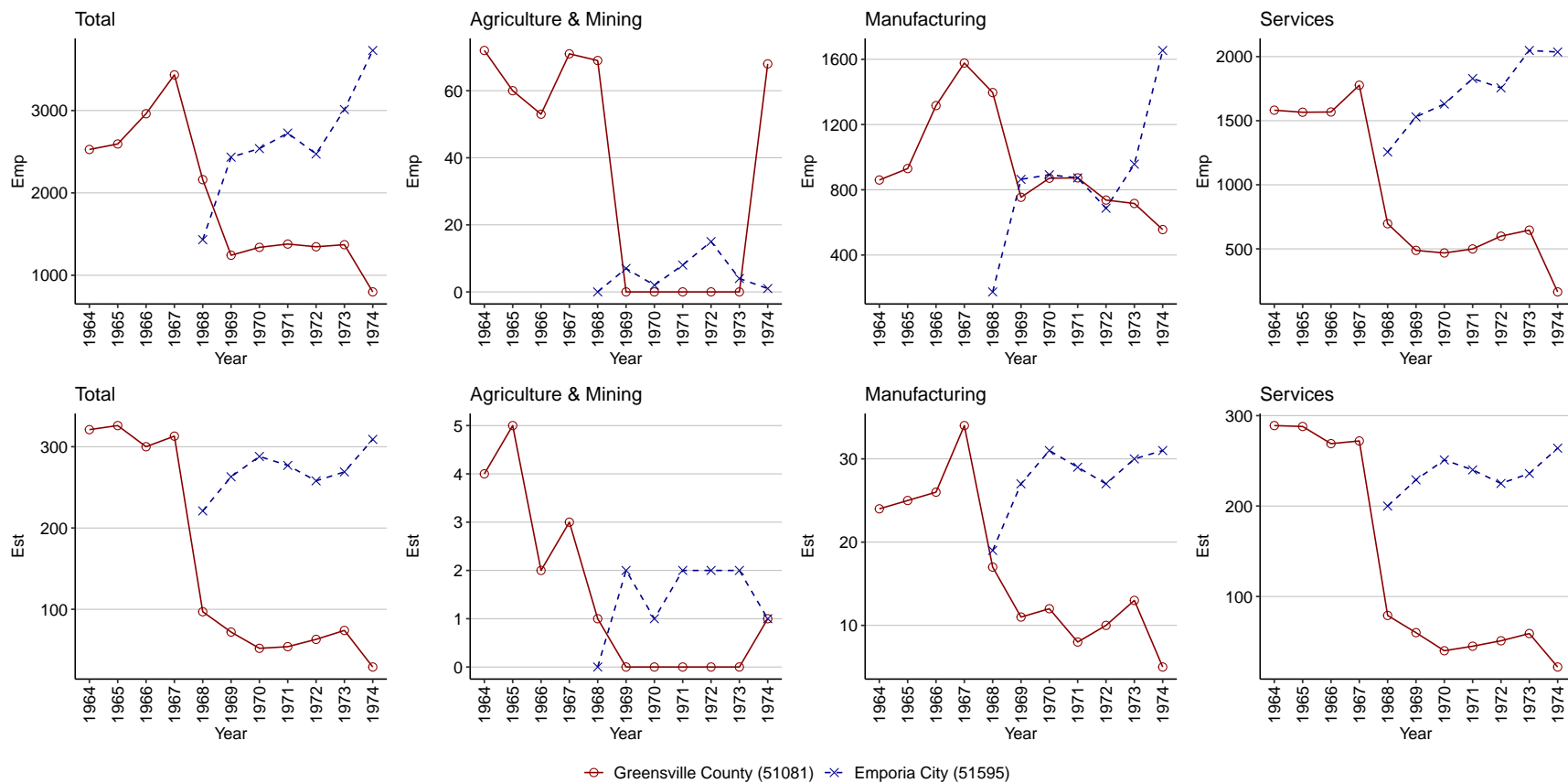


Figure A.22: County boundary change—Greenville County & Emporia City, VA

Notes: This figure plots the number of employment and establishments in Greenville County (FIPS51081) and Emporia City (FIPS51595) of Virginia. Emporia City was created from Greenville County on Feb 28, 1968. CBP incorporated this change in 1968.

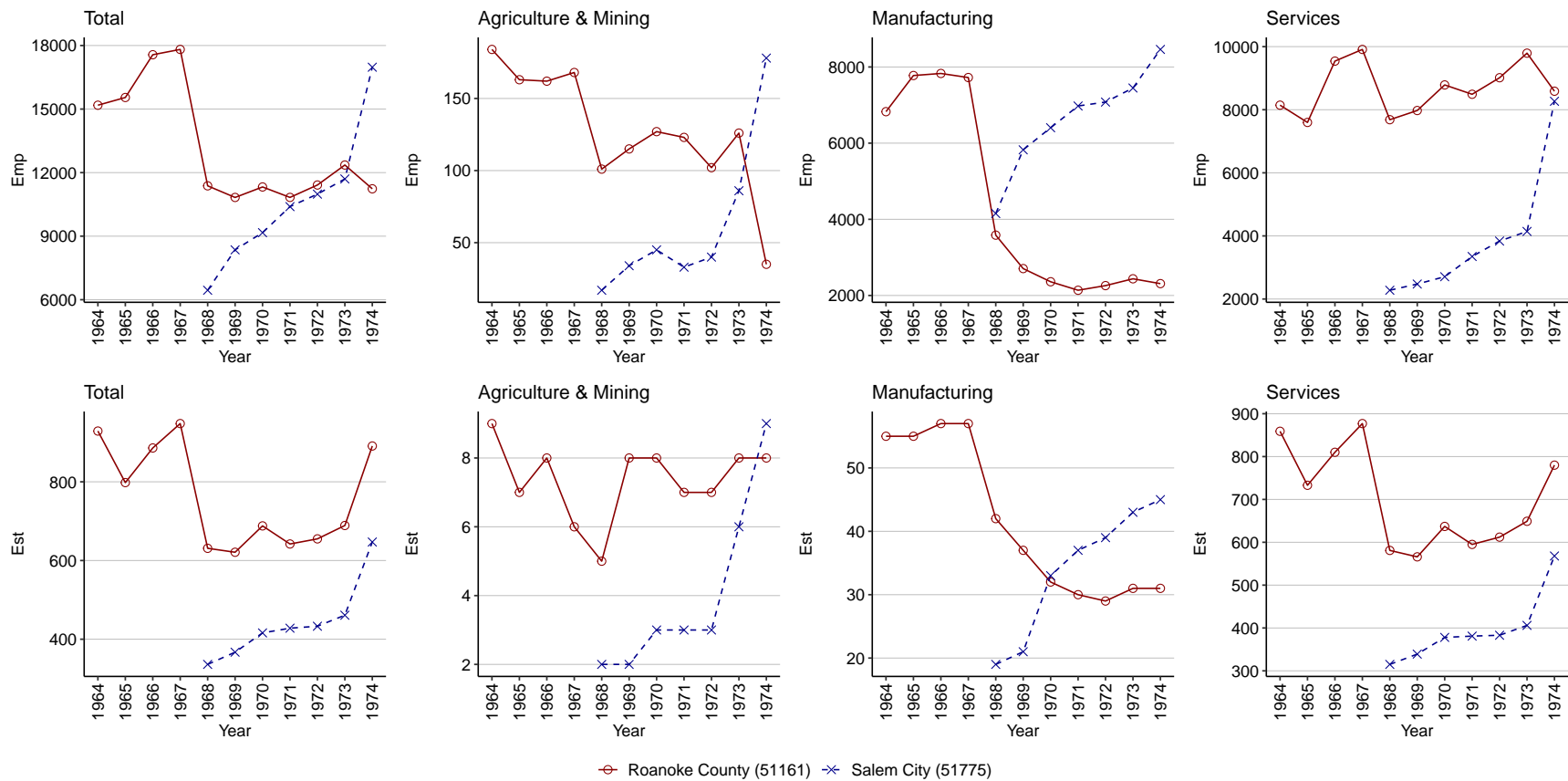


Figure A.23: County boundary change—Roanoke County & Salem City, VA

Notes: This figure plots the number of employment and establishments in Roanoke County (FIPS51161) and Salem City (FIPS51775) of Virginia. Salem City was created from Roanoke County on Jan 1, 1968. CBP incorporated this change in 1968.

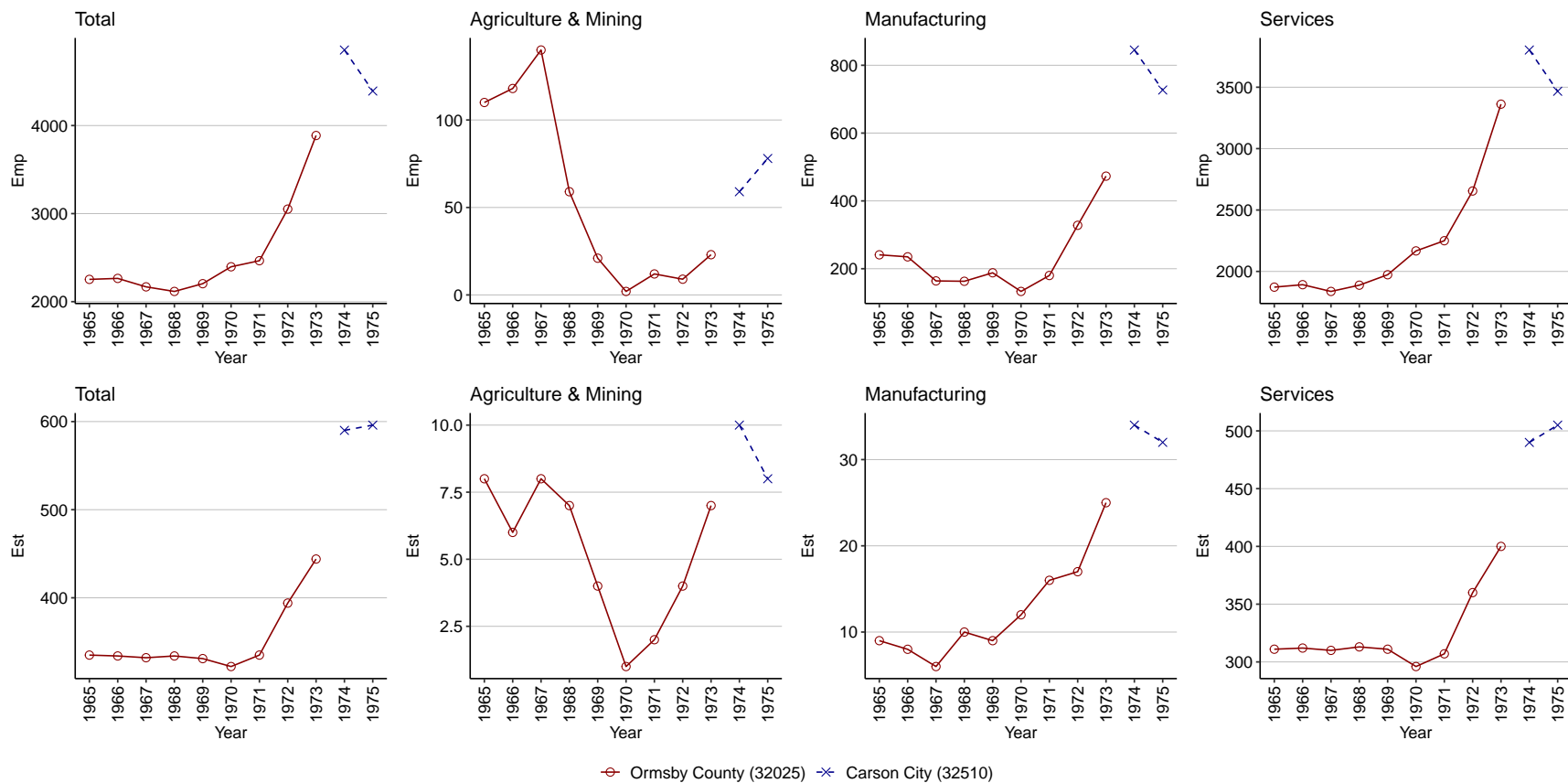


Figure A.24: County boundary change—Ormsby County & Carson City, NV

Notes: This figure plots the number of employment and establishments in Ormsby County (FIPS32025) and Carson City (FIPS32510) of Nevada. The independent city of Carson City was created by the consolidation of Ormsby County and Carson City on Jul 1, 1969. CBP incorporated this change in 1974.

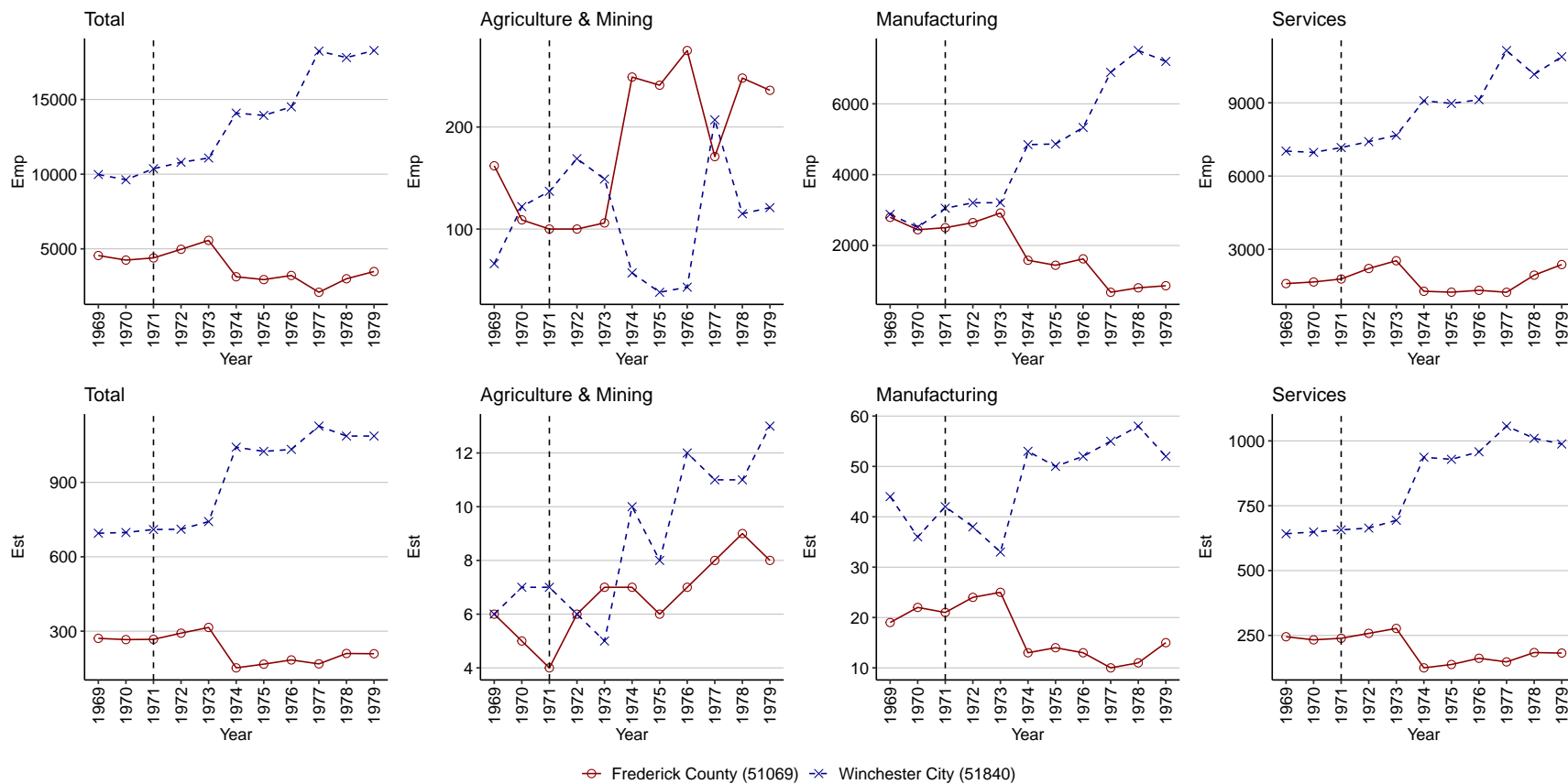


Figure A.25: County boundary change—Frederick County & Winchester City, VA

Notes: This figure plots the number of employment and establishments in Frederick County (FIPS51069) and Winchester City (FIPS51840) of Virginia. Winchester City gained from Frederick County on Dec 31, 1970. CBP likely incorporated this change in 1974.

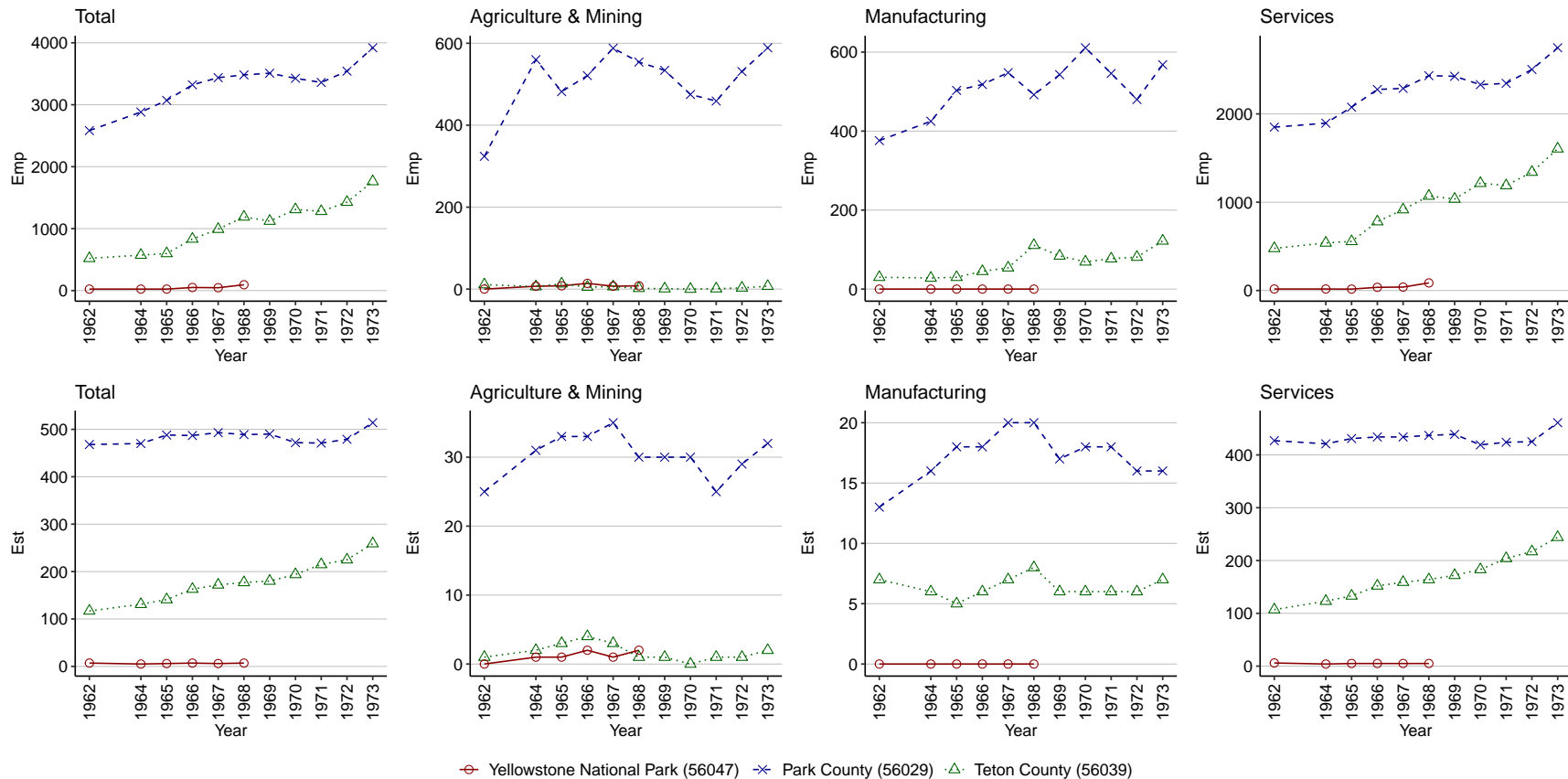


Figure A.26: County boundary change—Yellowstone National Park, Park & Teton Counties, WY

Notes: This figure plots the number of employment and establishments in Yellowstone National Park County (FIPS56047), Park County (FIPS56029) and Teton County (FIPS56039) of Wyoming. Yellowstone National Park merged into Park County on Feb 7, 1929, and into Teton County on Feb 14, 1929. CBP incorporated this change in 1969.

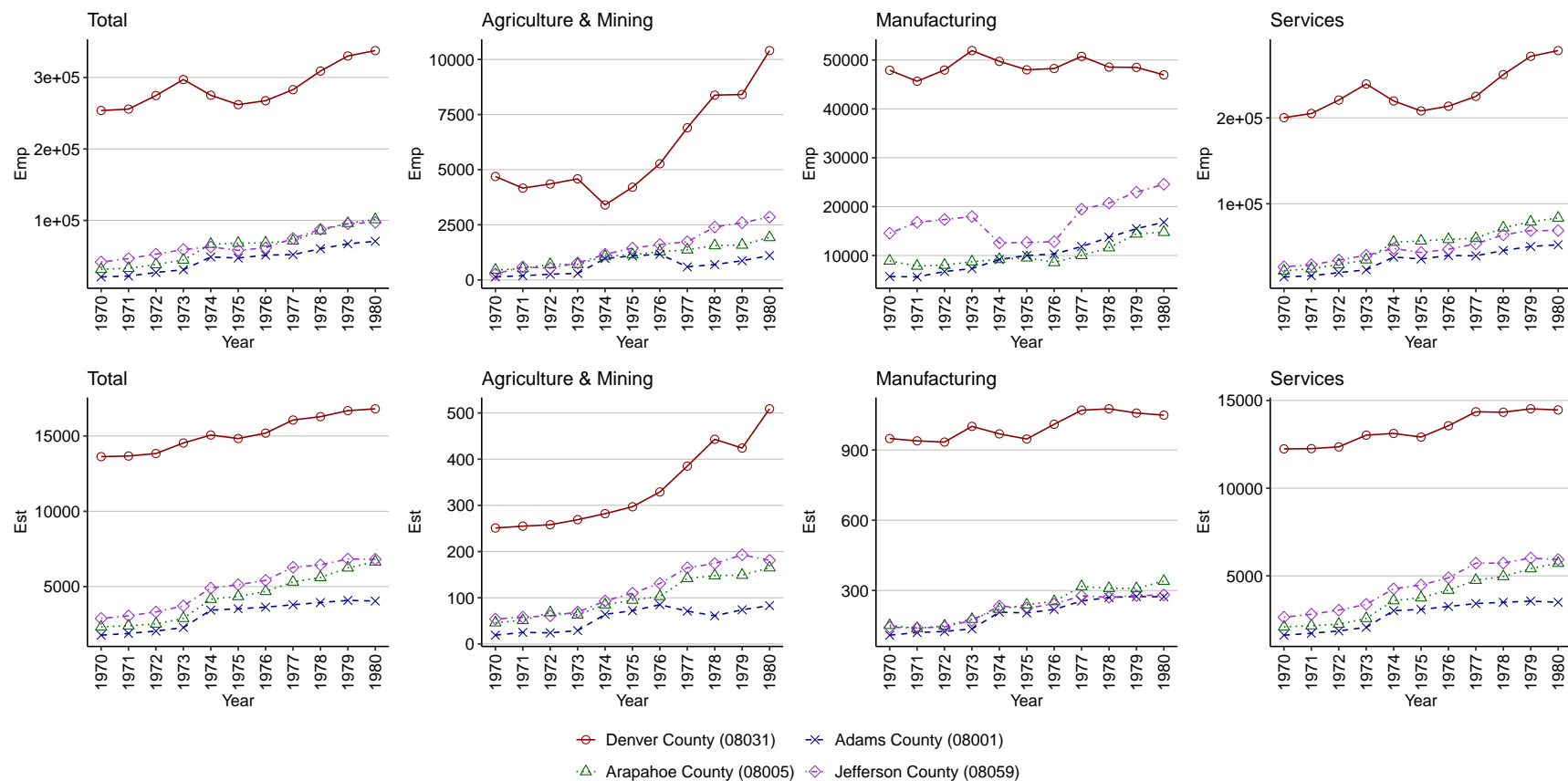


Figure A.27: County boundary change—Denver, Adams, Arapahoe & Jefferson, CO

Notes: This figure plots the number of employment and establishments in Adams (FIPS08001), Arapahoe (FIPS08005), Denver (FIPS08031), and Jefferson (FIPS08059) Counties of Colorado. Denver gained territories from the other counties throughout the 1970s. It is not clear when CBP incorporated these changes.

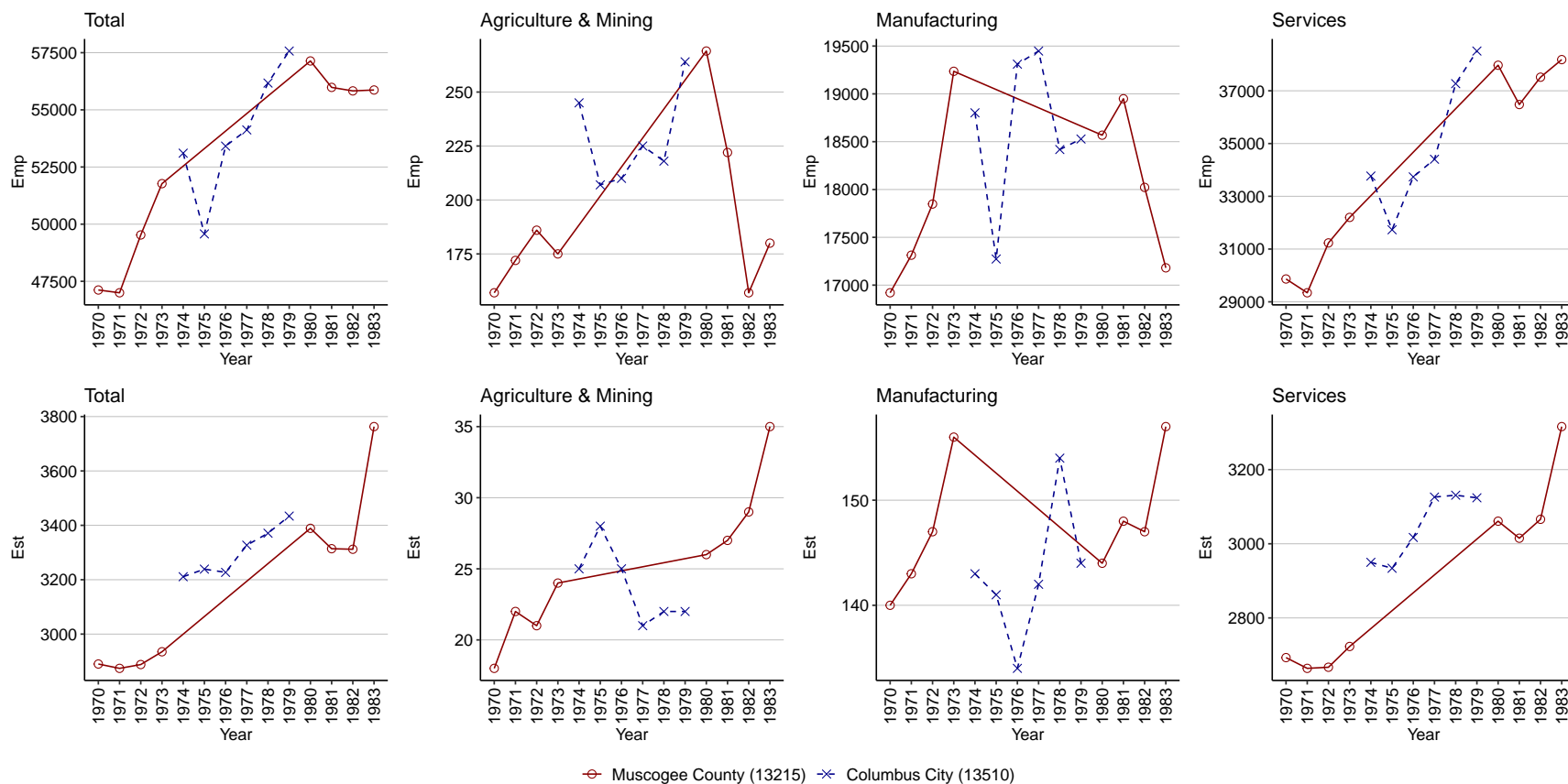


Figure A.28: County boundary change—Muscogee County & Columbus City, GA

Notes: This figure plots the number of employment and establishments in Muscogee County (FIPS13215) and Columbus City (FIPS13510) of Georgia. Columbus City merged with Muscogee County in 1970 and became a consolidated city-county. Columbus City was displayed during 1974–1979 while Muscogee County disappeared during the exact same period. It is conjectured that these two FIPS codes correspond to the same county observation in CBP.

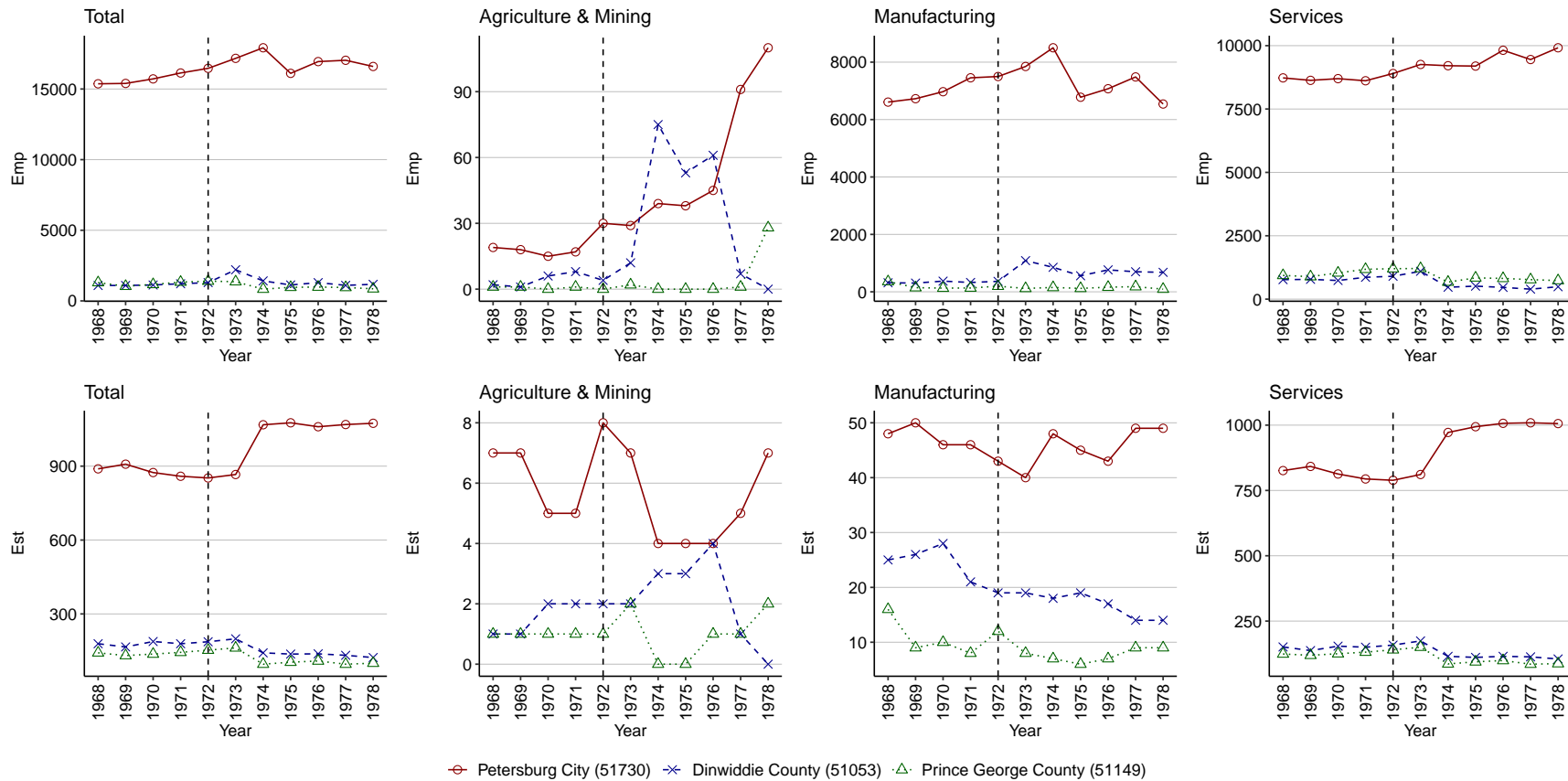


Figure A.29: County boundary change—Dinwiddie County, Prince George County & Petersburg City, VA

Notes: This figure plots the number of employment and establishments in Dinwiddie County (FIPS51053), Prince George County (FIPS51149) and Petersburg City (FIPS51730) of Virginia. Petersburg City gained from Dinwiddie County and Prince George County on Dec 12, 1971. CBP likely incorporated this change in 1974.

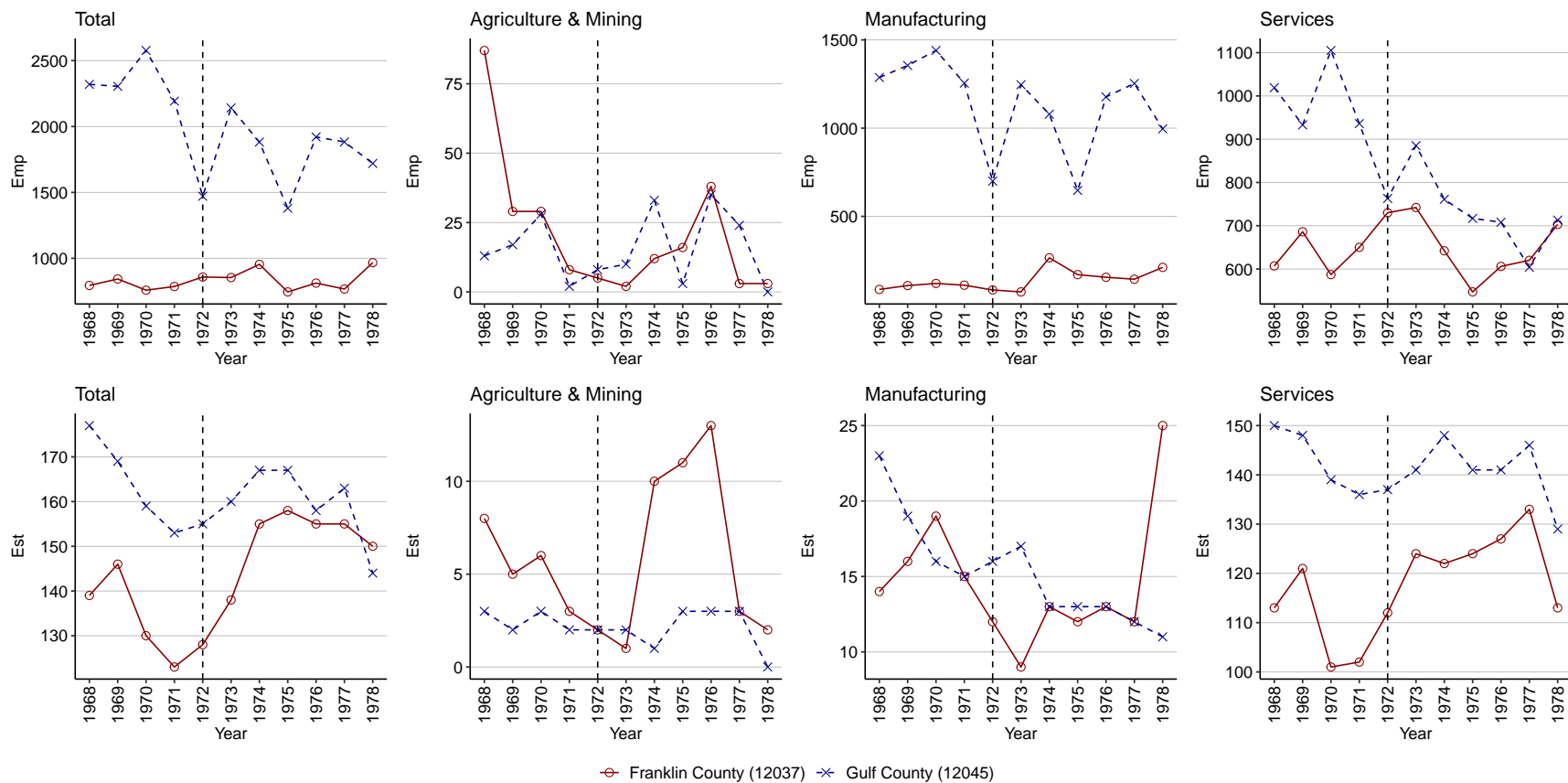


Figure A.30: County boundary change—Franklin & Gulf, FL

Notes: This figure plots the number of employment and establishments in Franklin (FIPS12037) and Gulf (FIPS12045) Counties of Florida. Franklin County gained Forbes Island from Gulf County on Mar 30, 1972. CBP likely incorporated this change in 1974.

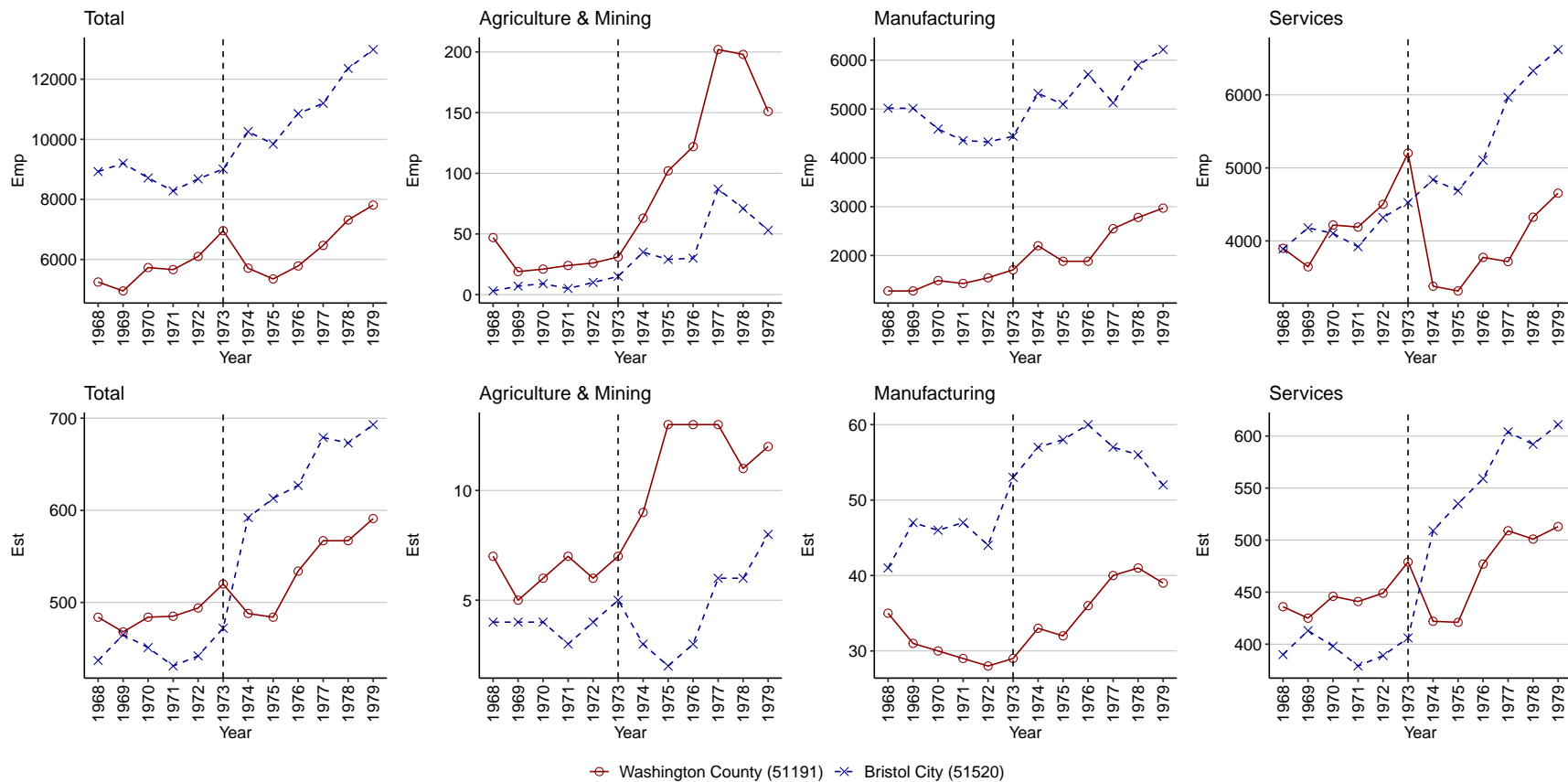


Figure A.31: County boundary change—Washington County & Bristol City, VA

Notes: This figure plots the number of employment and establishments in Washington County (FIPS51191) and Bristol City (FIPS51520) of Virginia. Bristol City gained from Washington County on Dec 31, 1973. CBP likely incorporated this change in 1974.

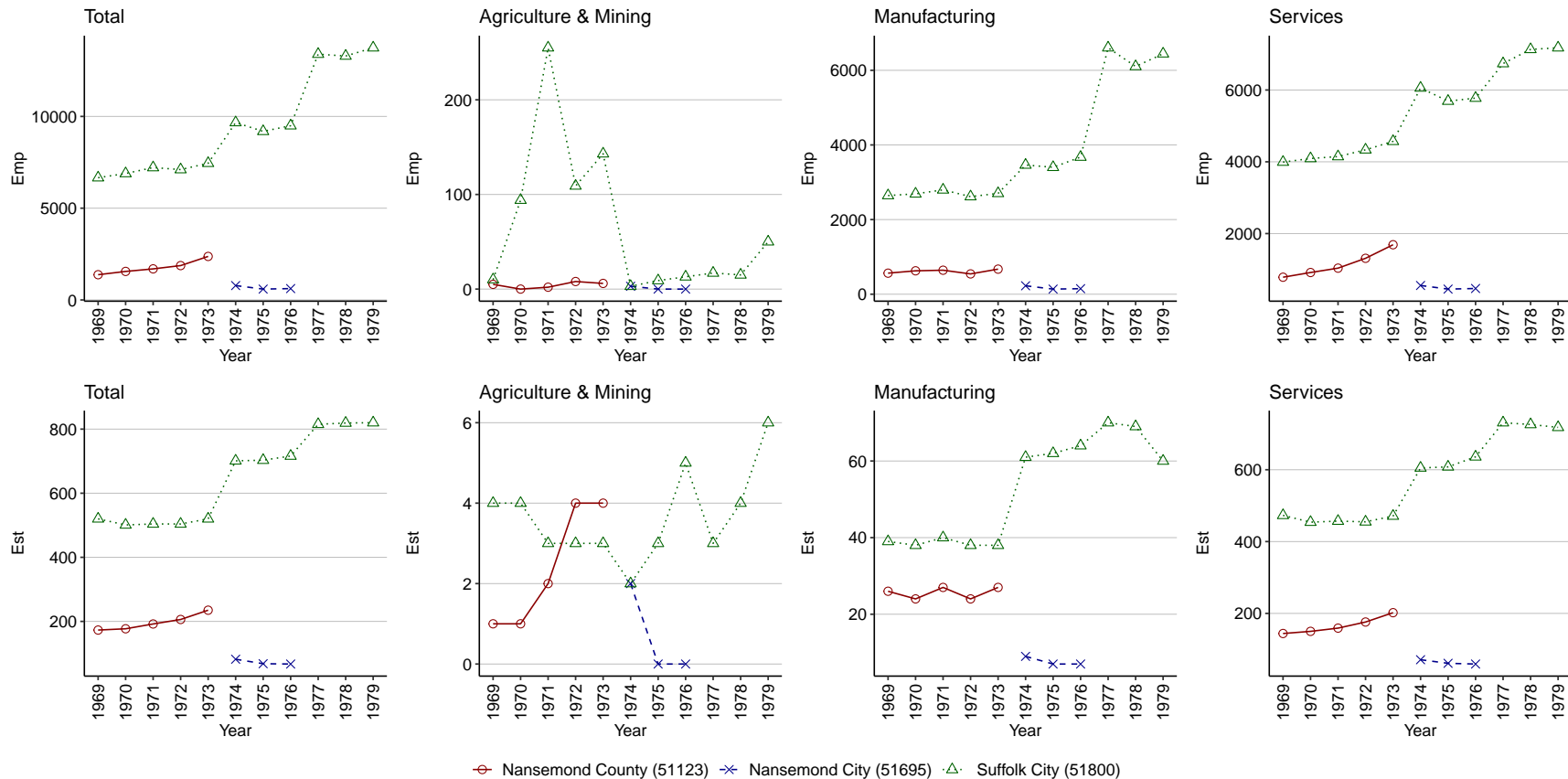


Figure A.32: County boundary change—Nansemond County, Nansemond City & Suffolk City, VA

Notes: This figure plots the number of employment and establishments in Nansemond County (FIPS51123), Nansemond City (FIPS51695) and Suffolk City (FIPS51800) of Virginia. Nansemond became an independent city from Nansemond County and the towns of Holland and Whaleyville on Jul 1, 1972. Nansemond City merged into Suffolk City on Jan 1, 1974. CBP incorporated these changes in 1974 and 1977 respectively.

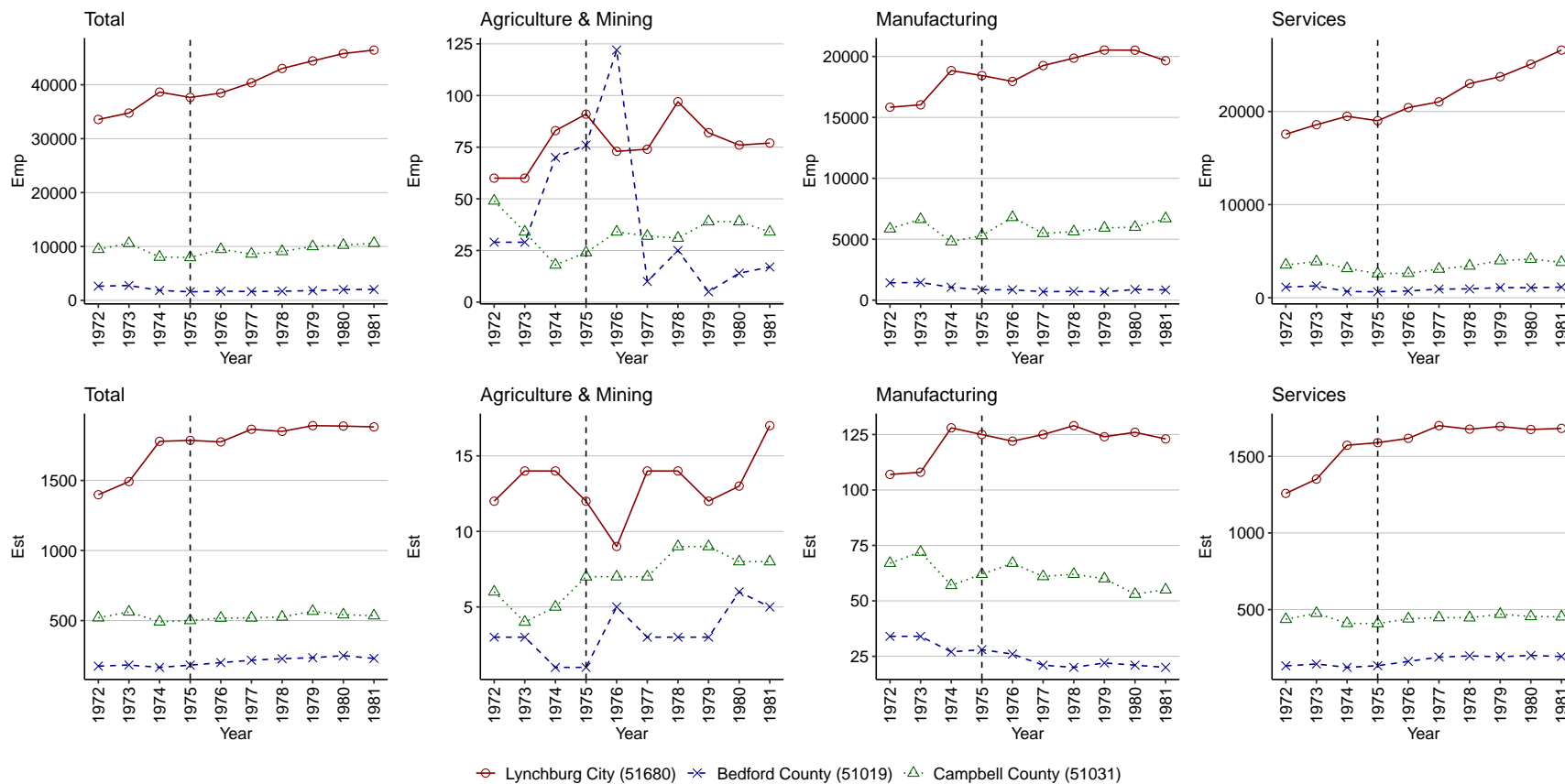


Figure A.33: County boundary change—Bedford County, Campbell County & Lynchburg City, VA

Notes: This figure plots the number of employment and establishments in Bedford County (FIPS51019), Campbell County (FIPS51031) and Lynchburg City (FIPS51680) of Virginia. Lynchburg City gained from Bedford County and Campbell County on Dec 31, 1975. CBP likely incorporated this change in 1977.



Figure A.34: County boundary change—York County & Poquoson City, VA

Notes: This figure plots the number of employment and establishments in York County (FIPS51199) and Poquoson City (FIPS51735) of Virginia. Poquoson City was created from York County on May 1, 1975. CBP incorporated this change in 1977.

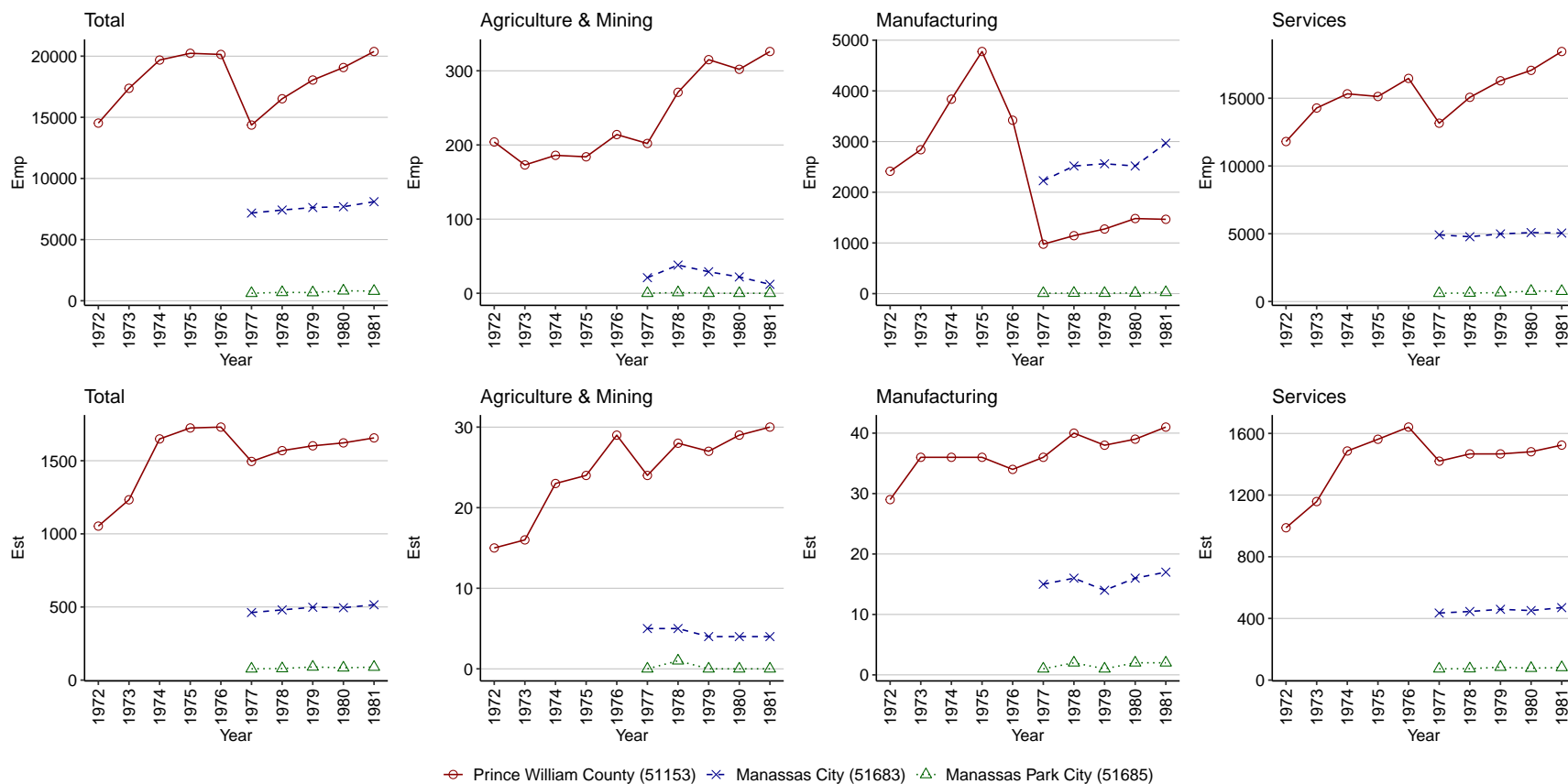


Figure A.35: County boundary change—Prince William County, Manassas City & Manassas Park City, VA

Notes: This figure plots the number of employment and establishments in Prince William County (FIPS51153), Manassas City (FIPS51683) & Manassas Park City (FIPS51685). Manassas City was created from Prince William County on May 1, 1975. Manassas Park City was created from Prince William County on Jun 1, 1975. CBP incorporated these changes in 1977.

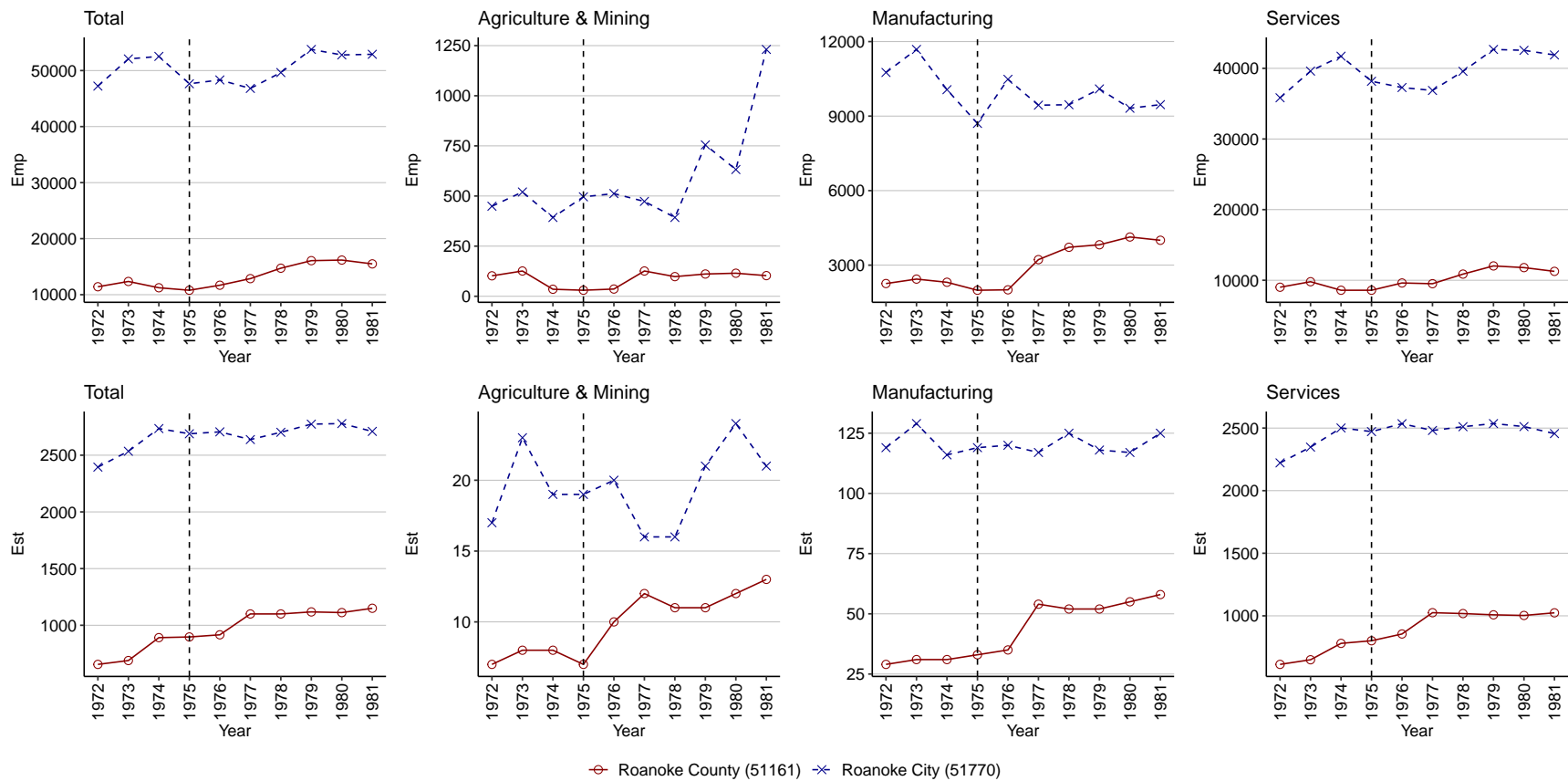


Figure A.36: County boundary change—Roanoke County & Roanoke City

Notes: This figure plots the number of employment and establishments in Roanoke County (FIPS51161) and Roanoke City (FIPS51770) of Virginia. Roanoke City gained from Roanoke County on Dec 31, 1975. It is likely that CBP incorporated this change in 1977.

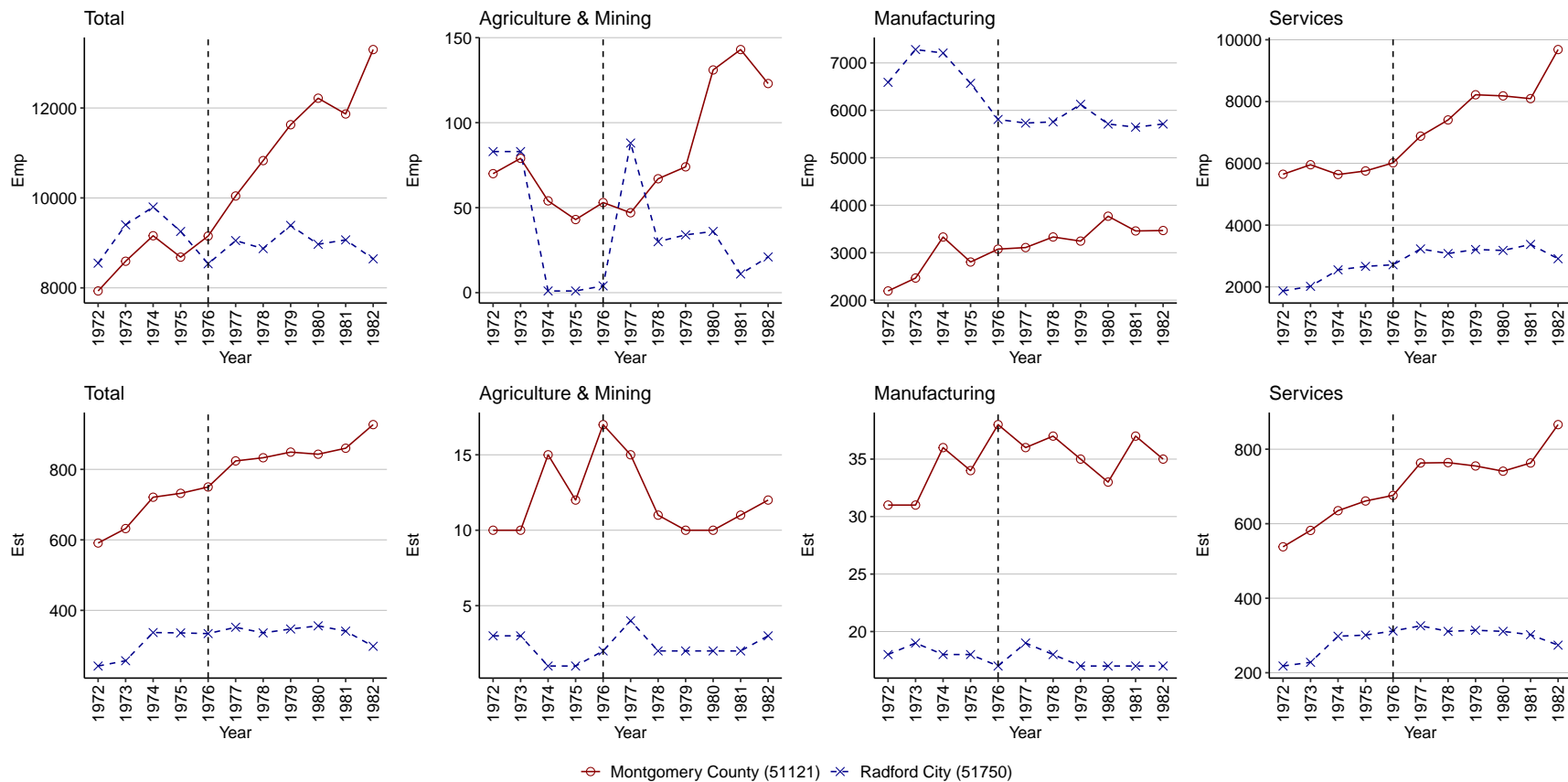


Figure A.37: County boundary change—Montgomery County & Radford City, VA

Notes: This figure plots the number of employment and establishments in Montgomery County (FIPS51121) and Radford City (FIPS51750) of Virginia. Part of Montgomery County was annexed to Radford City on Dec 31, 1976. It is likely that CBP incorporated this change in 1977.

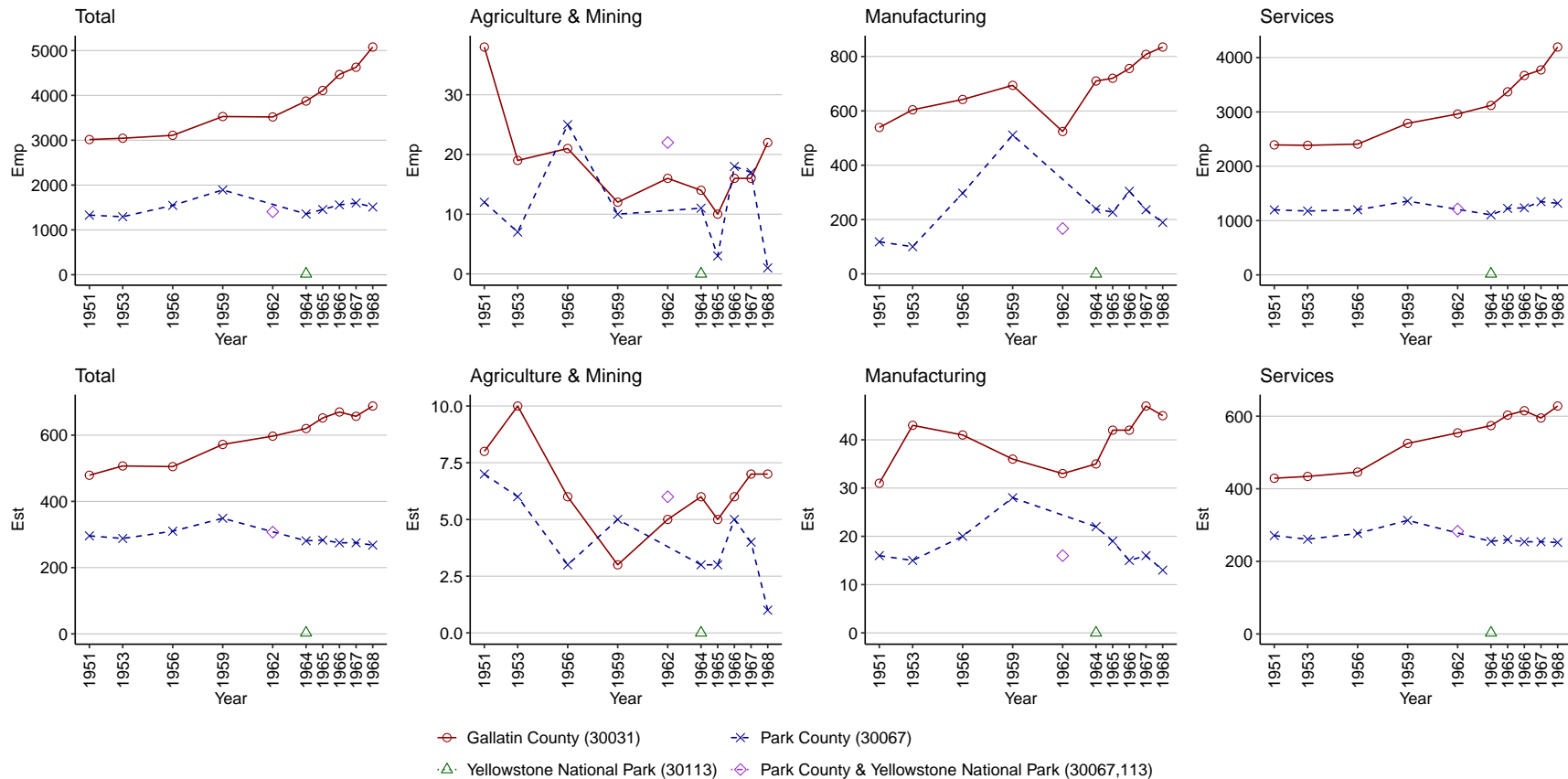


Figure A.38: County boundary change—Gallatin County, Park County & Yellowstone National Park, MT

Notes: This figure plots the number of employment and establishments in Gallatin County (FIPS30031), Park County (FIPS30067) and Yellowstone National Park (FIPS30113) of Montana. Yellowstone National Park merged into Gallatin County and Park County on Nov 7, 1978.⁷ Yellowstone National Park was displayed only in two years: in 1962 it was combined with Park County and in 1964 it was listed individually.

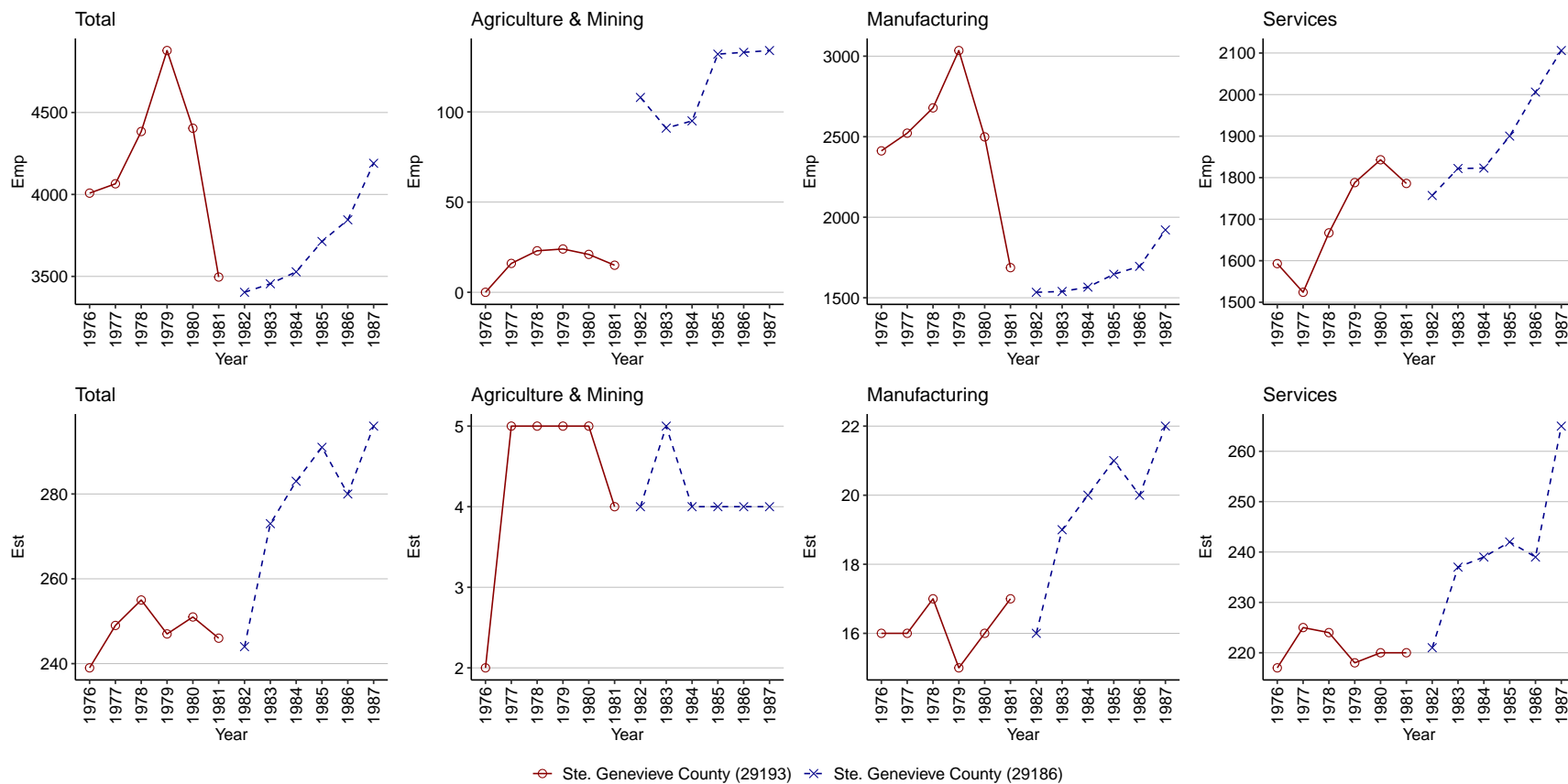


Figure A.39: County boundary change— Ste. Genevieve County, MO

Notes: This figure plots the number of employment and establishments in Ste. Genevieve County, Missouri. It changed FIPS code from 29193 to 29186 on Dec 15, 1979. CBP incorporated this change in 1982.

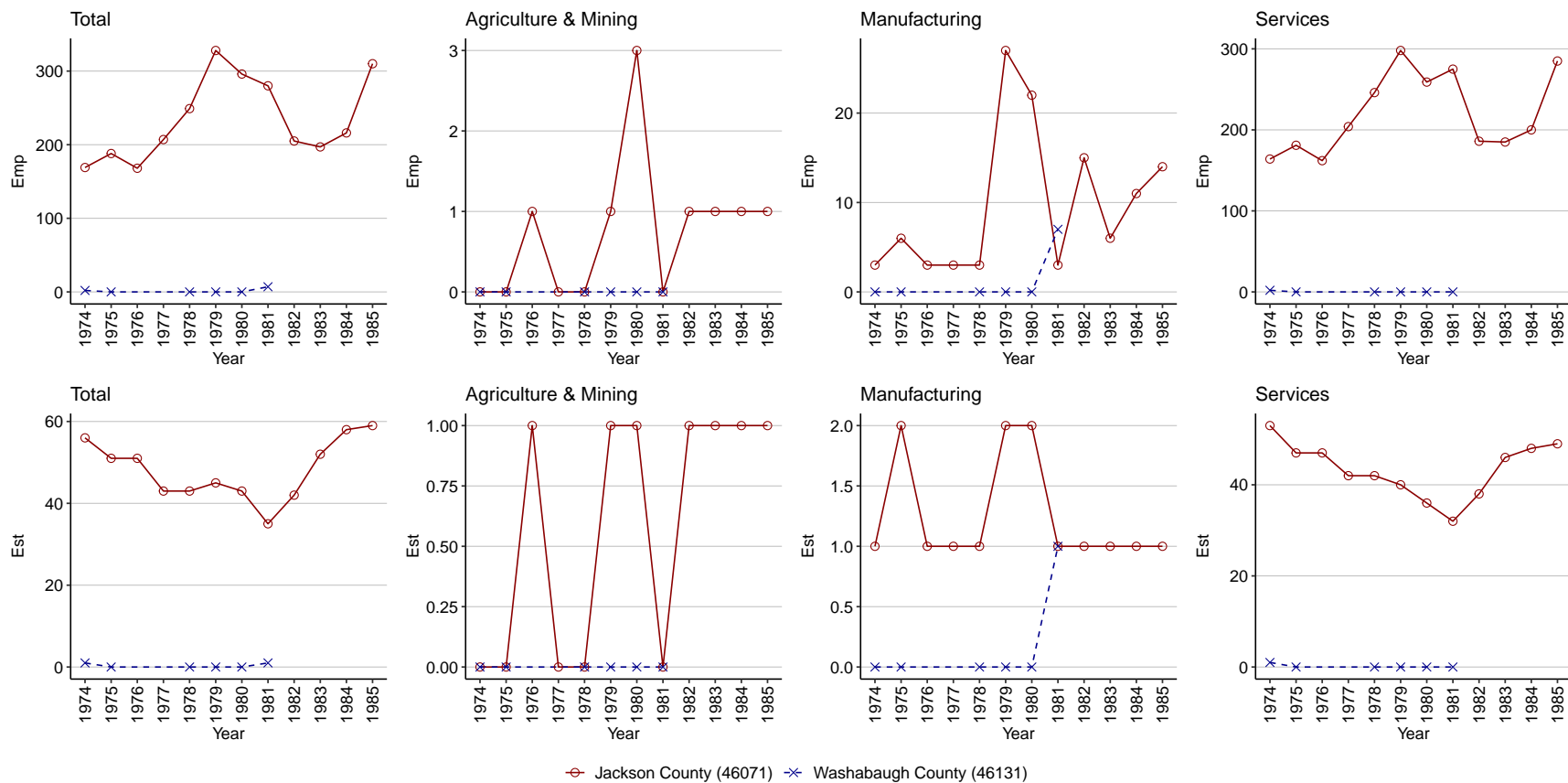


Figure A.40: County boundary change—Jackson & Washabaugh, SD

Notes: This figure plots the number of employment and establishments in Jackson (FIPS46071) and Washabaugh (FIPS46131) Counties of South Dakota. Washabaugh County merged into Jackson County on Jan 1, 1979. CBP incorporated this change in 1982.

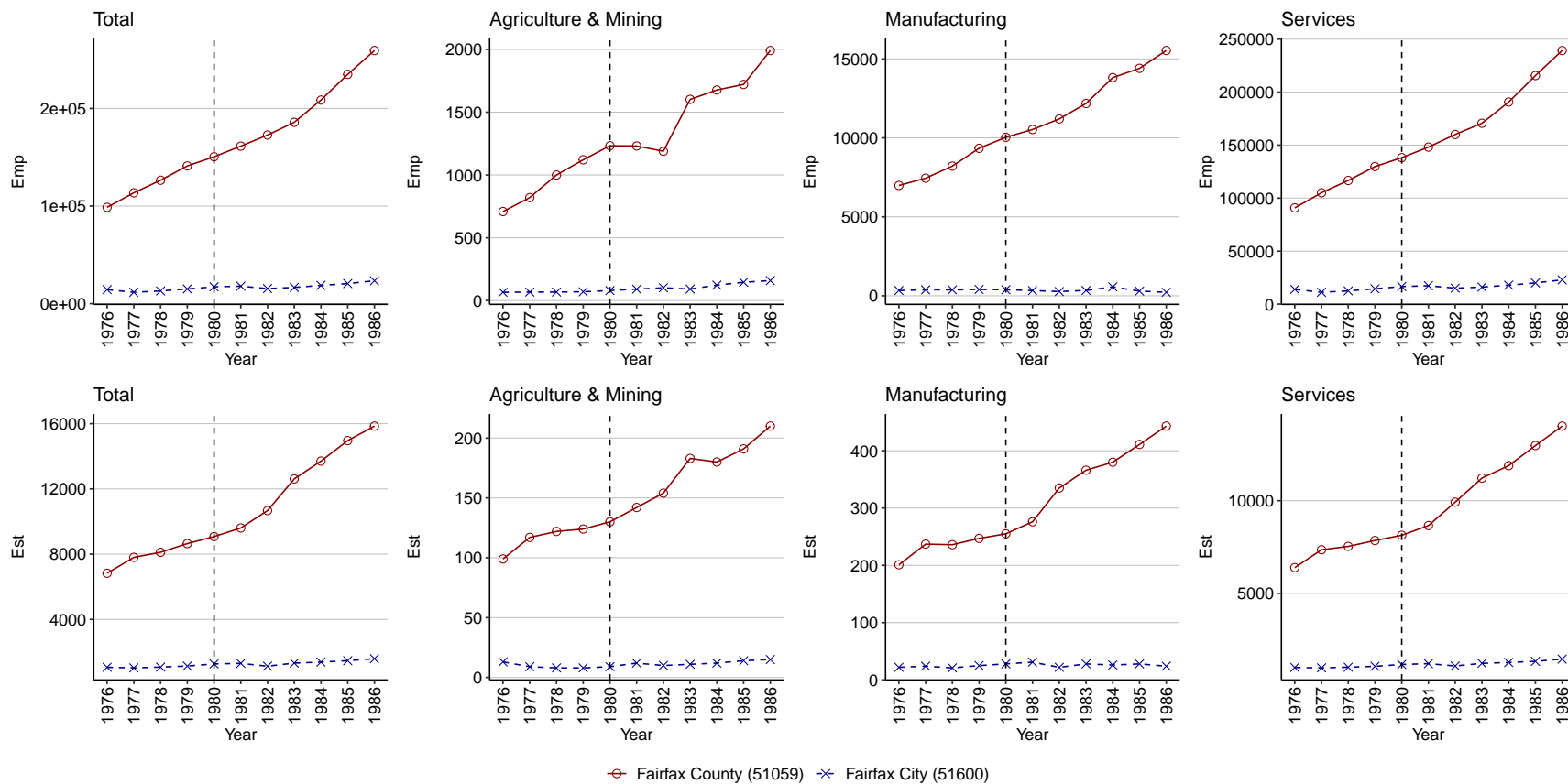


Figure A.41: County boundary change—Fairfax County & Fairfax City, VA

Notes: This figure plots the number of employment and establishments in Fairfax County (FIPS51059) and Fairfax City (FIPS51600) of Virginia. Part of Fairfax County was annexed to Fairfax City on Dec 31, 1980. It is not clear when CBP incorporated this change.

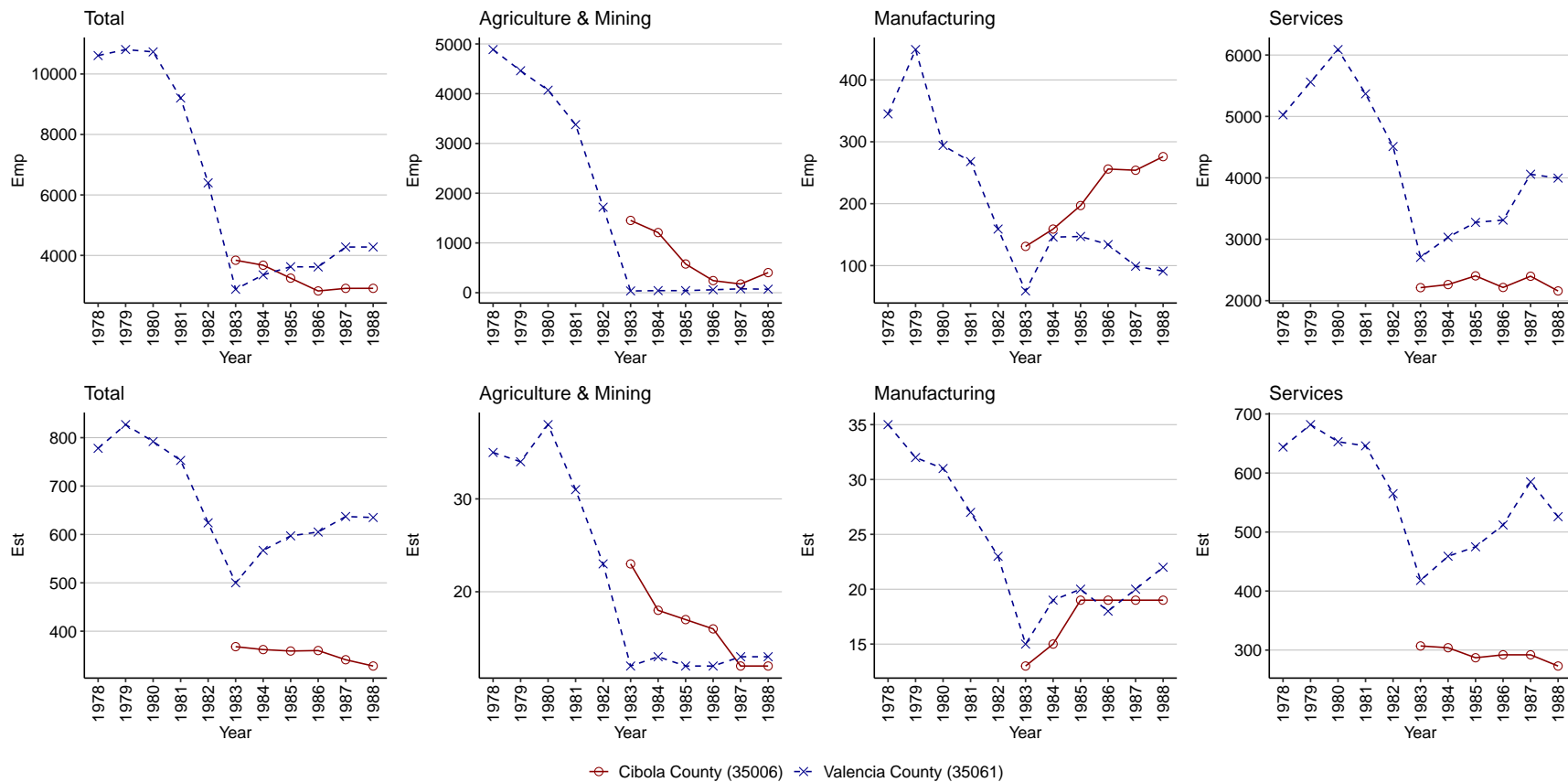


Figure A.42: County boundary change—Cibola & Valencia, NM

Notes: This figure plots the number of employment and establishments in Cibola (FIPS35006) and Valencia (FIPS35061) Counties of New Mexico. Cibola County was created from part of Valencia County on Mar 17, 1981. CBP incorporated this change in 1983.

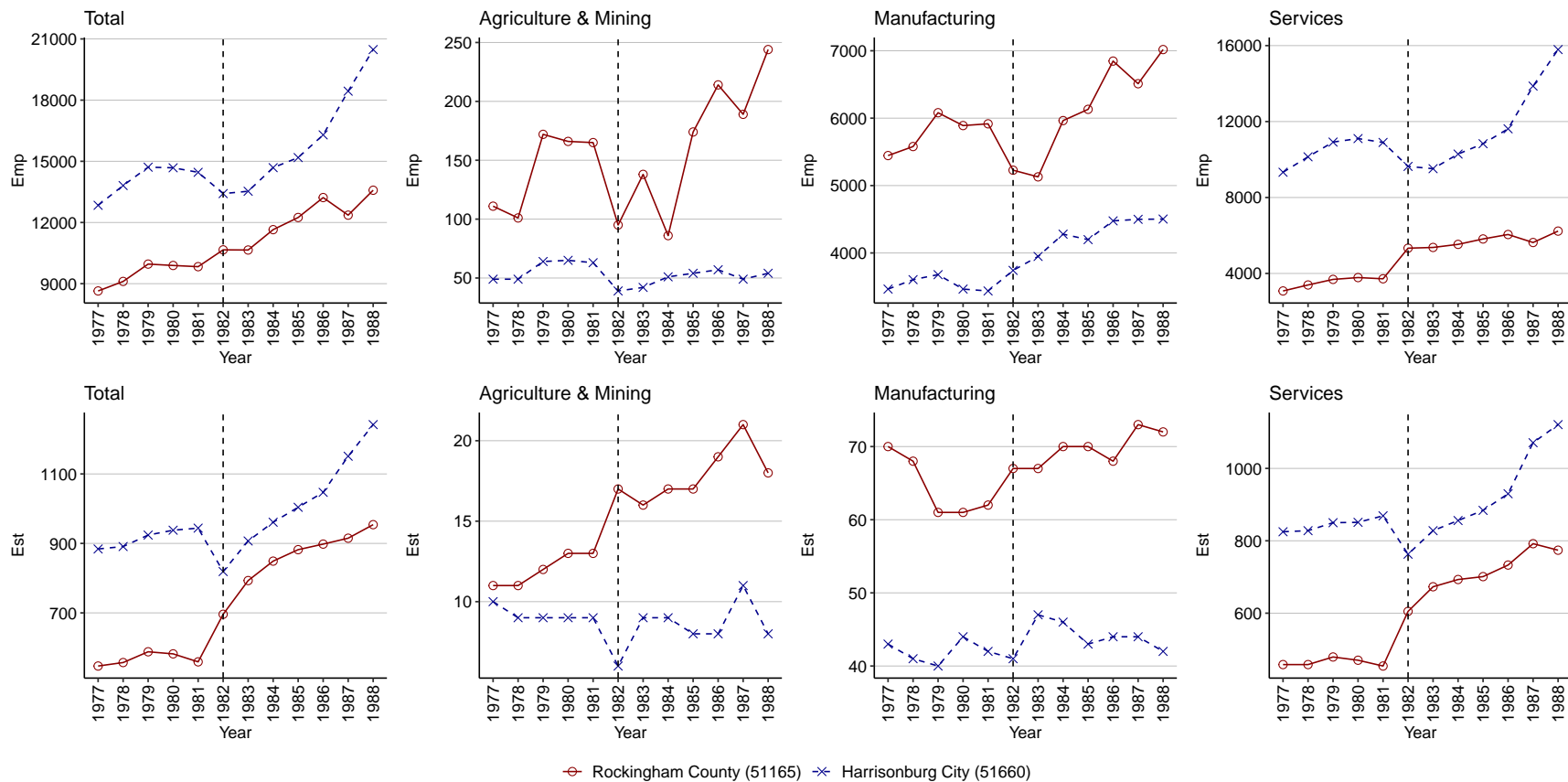


Figure A.43: County boundary change—Rockingham County & Harrisonburg City, VA

Notes: This figure plots the number of employment and establishments in Rockingham County (FIPS51165) Harrisonburg City (FIPS51660) of Virginia. Harrisonburg City gained from Rockingham County on Dec 31, 1982. It is not clear when CBP incorporated this change.

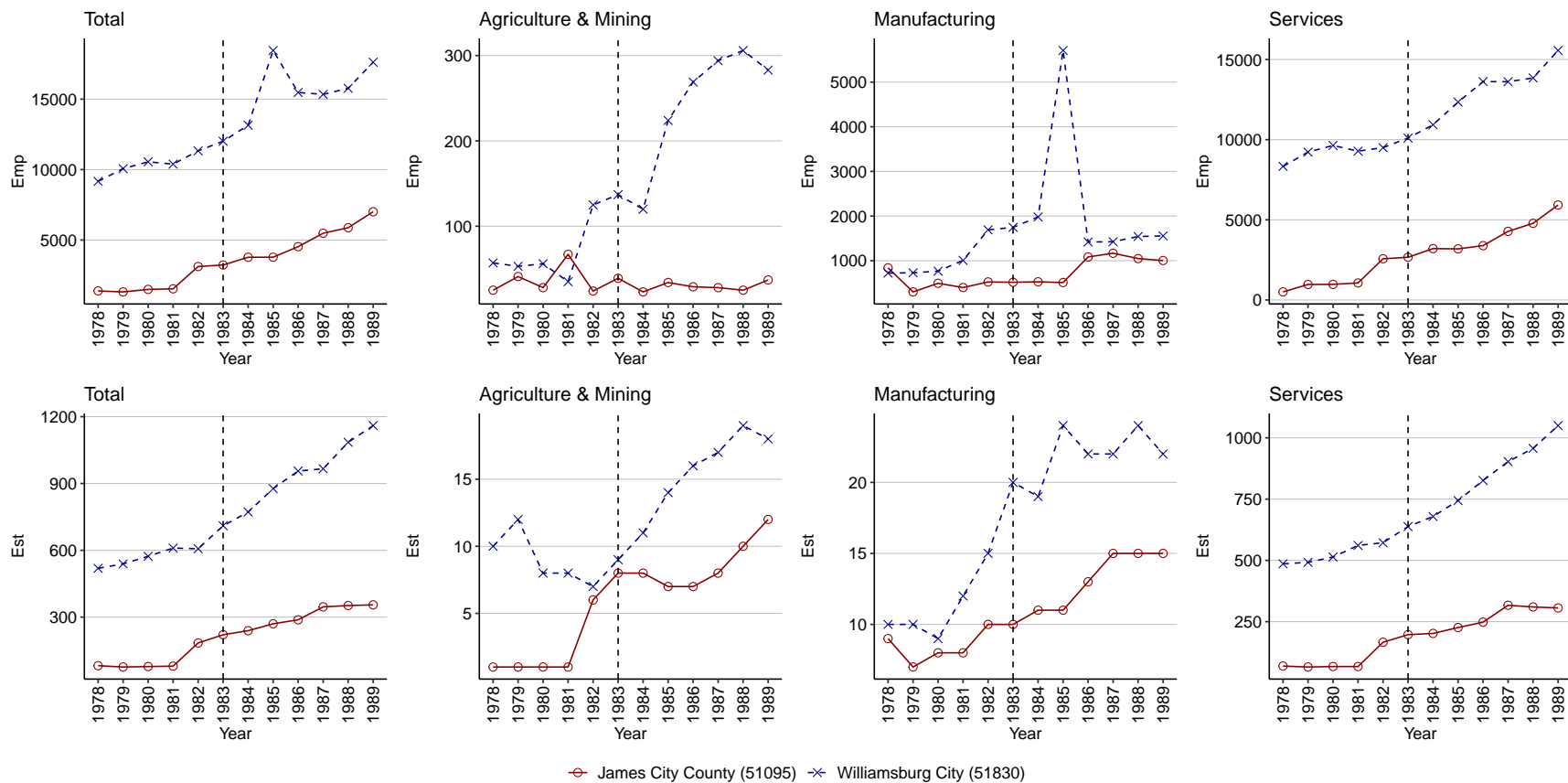


Figure A.44: County boundary change—James City County & Williamsburg City, VA

Notes: This figure plots the number of employment and establishments in James City County (FIPS51095) and Williamsburg City (FIPS51830) of Virginia. Williamsburg City gained from James City County on Dec 31, 1983. CBP likely incorporated this change in 1985.

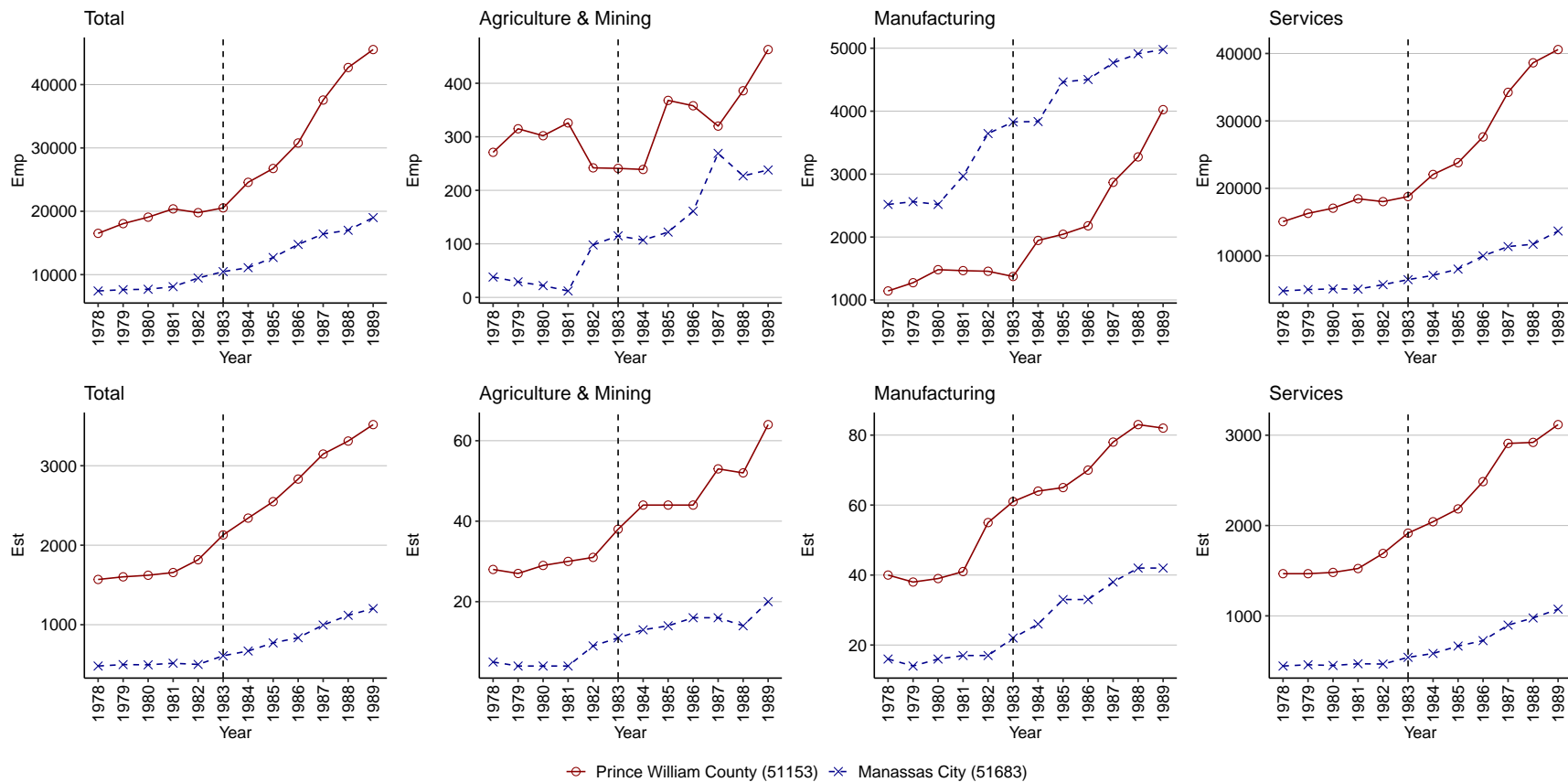


Figure A.45: County boundary change—Prince William County & Manassas City, VA

Notes: This figure plots the number of employment and establishments in Prince William County (FIPS51153) and Manassas City (FIPS51683) of Virginia. Part of Prince William County was annexed to Manassas City on Dec 31, 1983. It is not clear when CBP incorporated this change.

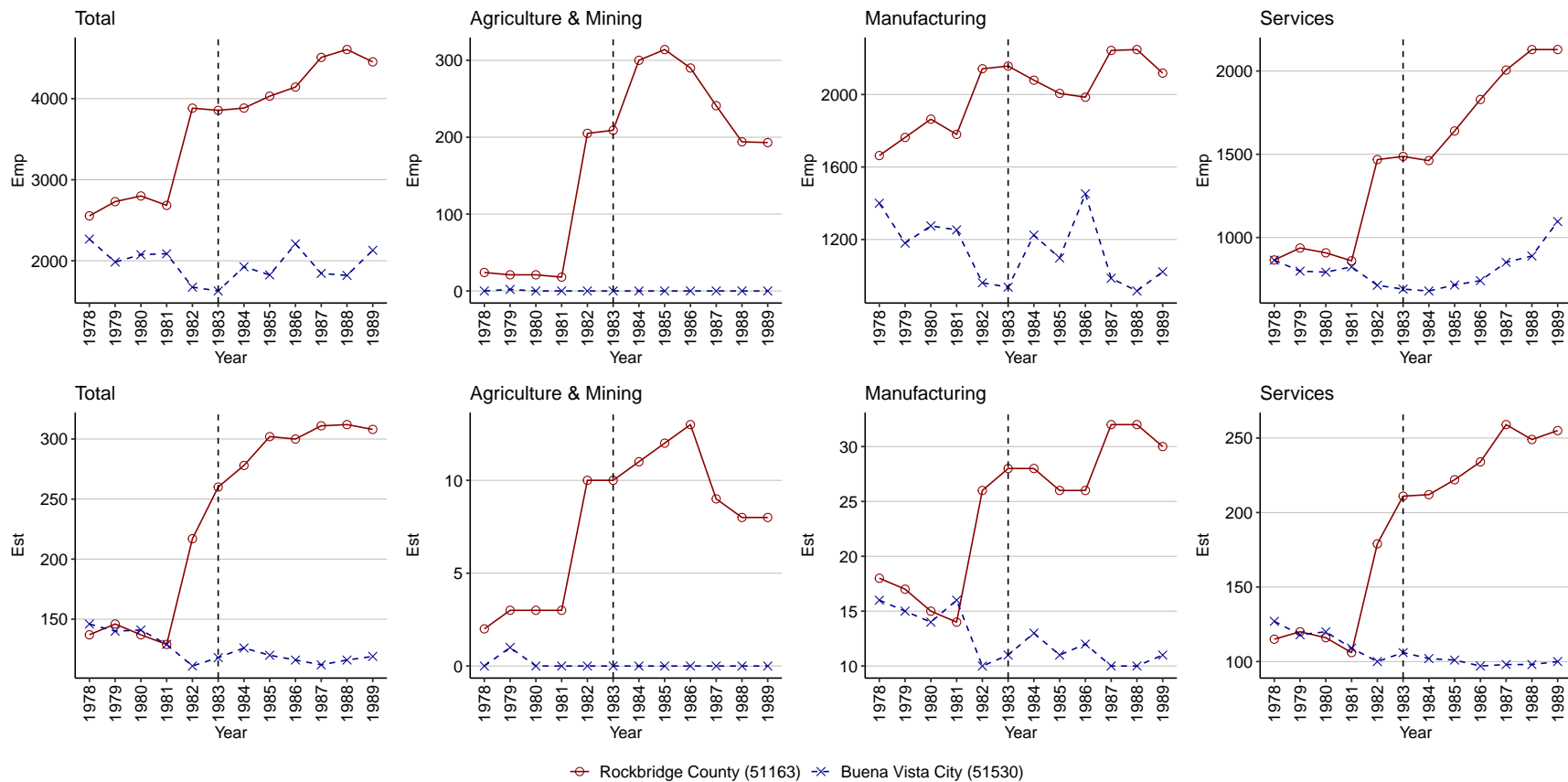


Figure A.46: County boundary change—Rockbridge County & Buena Vista City, VA

Notes: This figure plots the number of employment and establishments in Rockbridge County (FIPS51163) and Buena Vista City (FIPS51530) of Virginia. Buena Vista City gained from Rockbridge County on Dec 31, 1983. It is not clear when CBP incorporated this change.

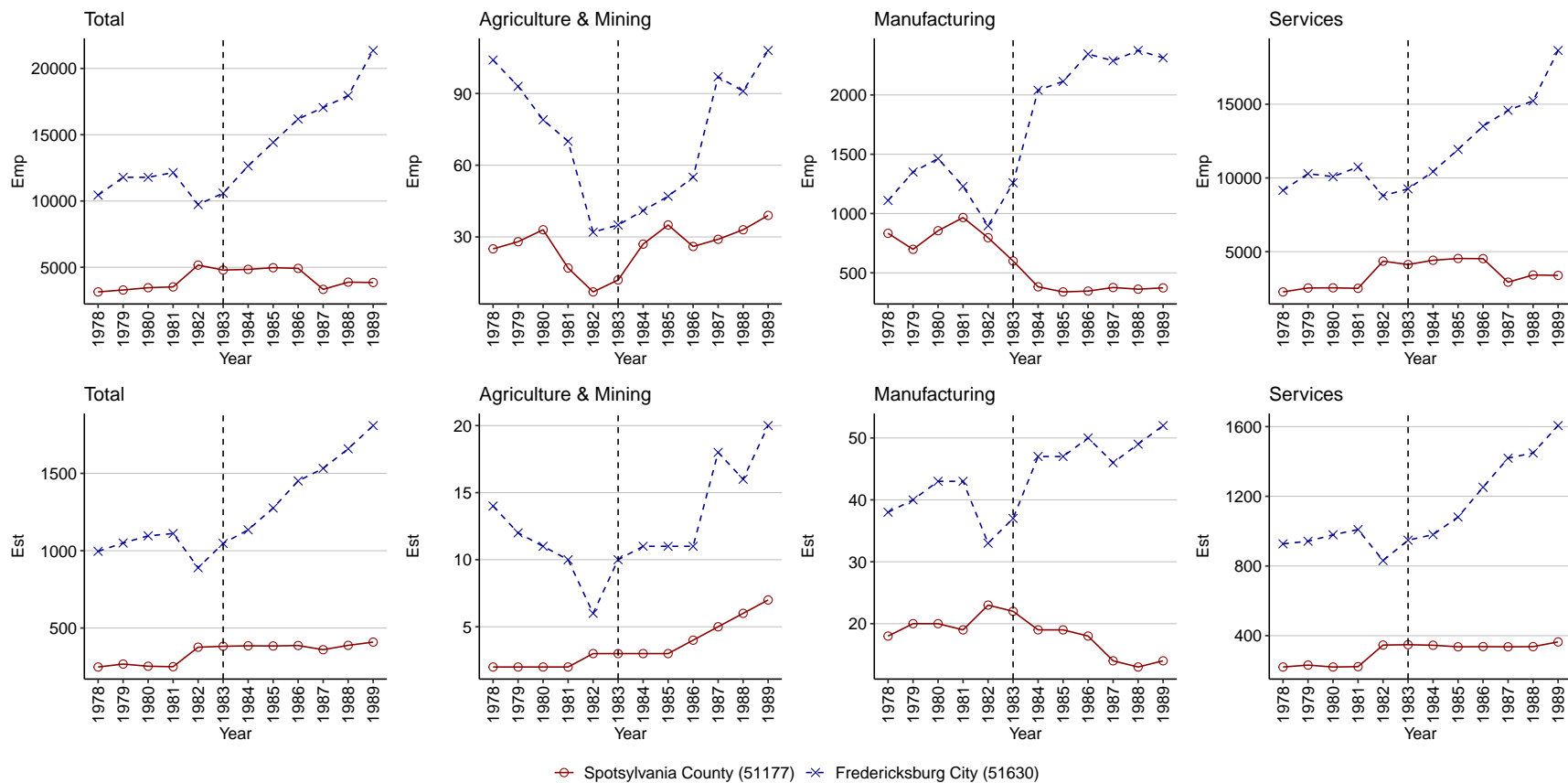


Figure A.47: County boundary change—Spotsylvania County & Fredericksburg City, VA

Notes: This figure plots the number of employment and establishments in Spotsylvania County (FIPS51177) and Fredericksburg City (FIPS51630) of Virginia. Fredericksburg City gained from Spotsylvania County on Dec 31, 1983. It is not clear when CBP incorporated this change.

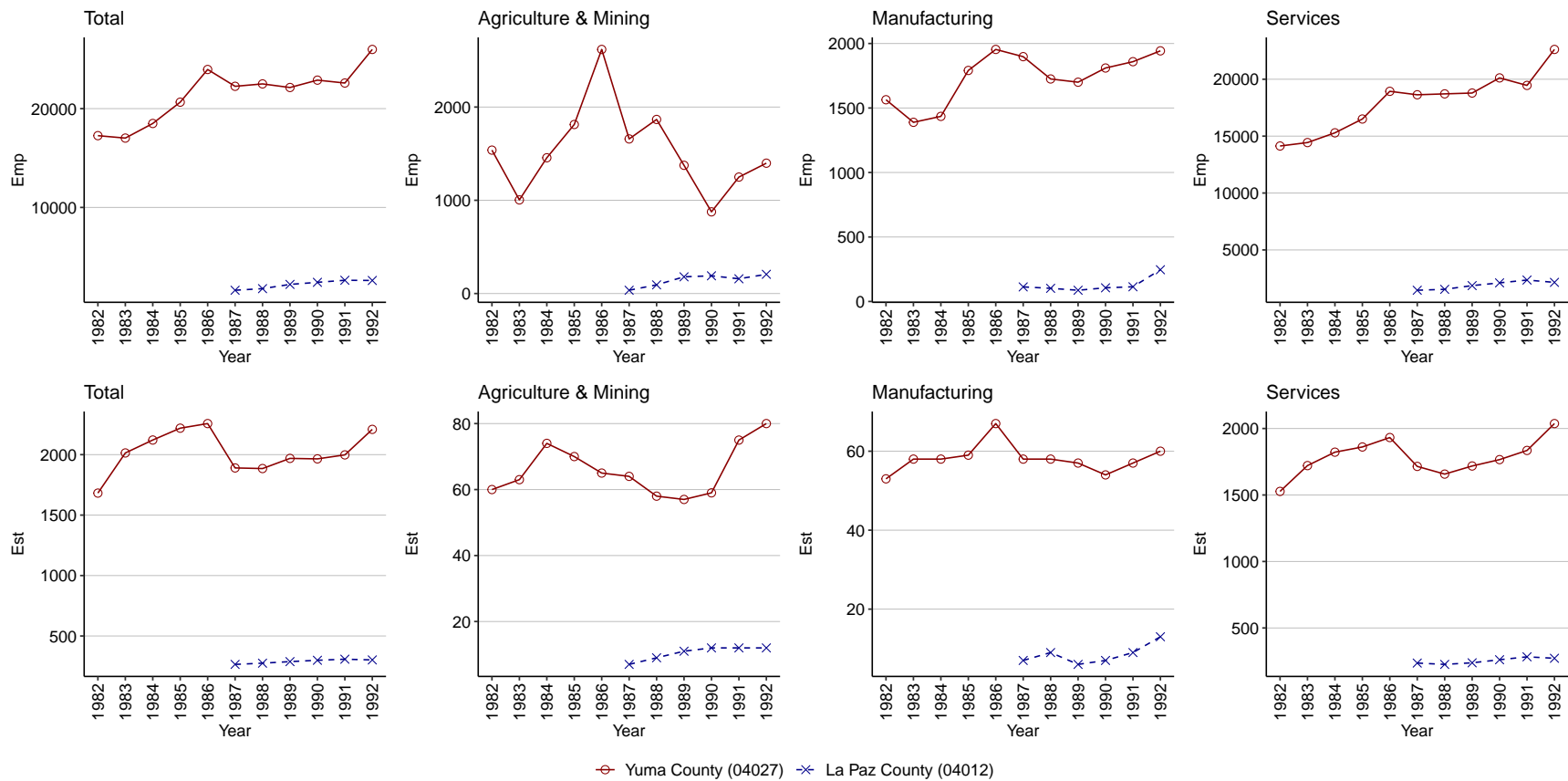


Figure A.48: County boundary change—Yuma & La Paz, AZ

Notes: This figure plots the number of employment and establishments in Yuma (FIPS04027) & La Paz (FIPS04012) Counties of Arizona. La Paz County was created from Yuma County on Apr 27, 1983. CBP incorporated this change in 1987.

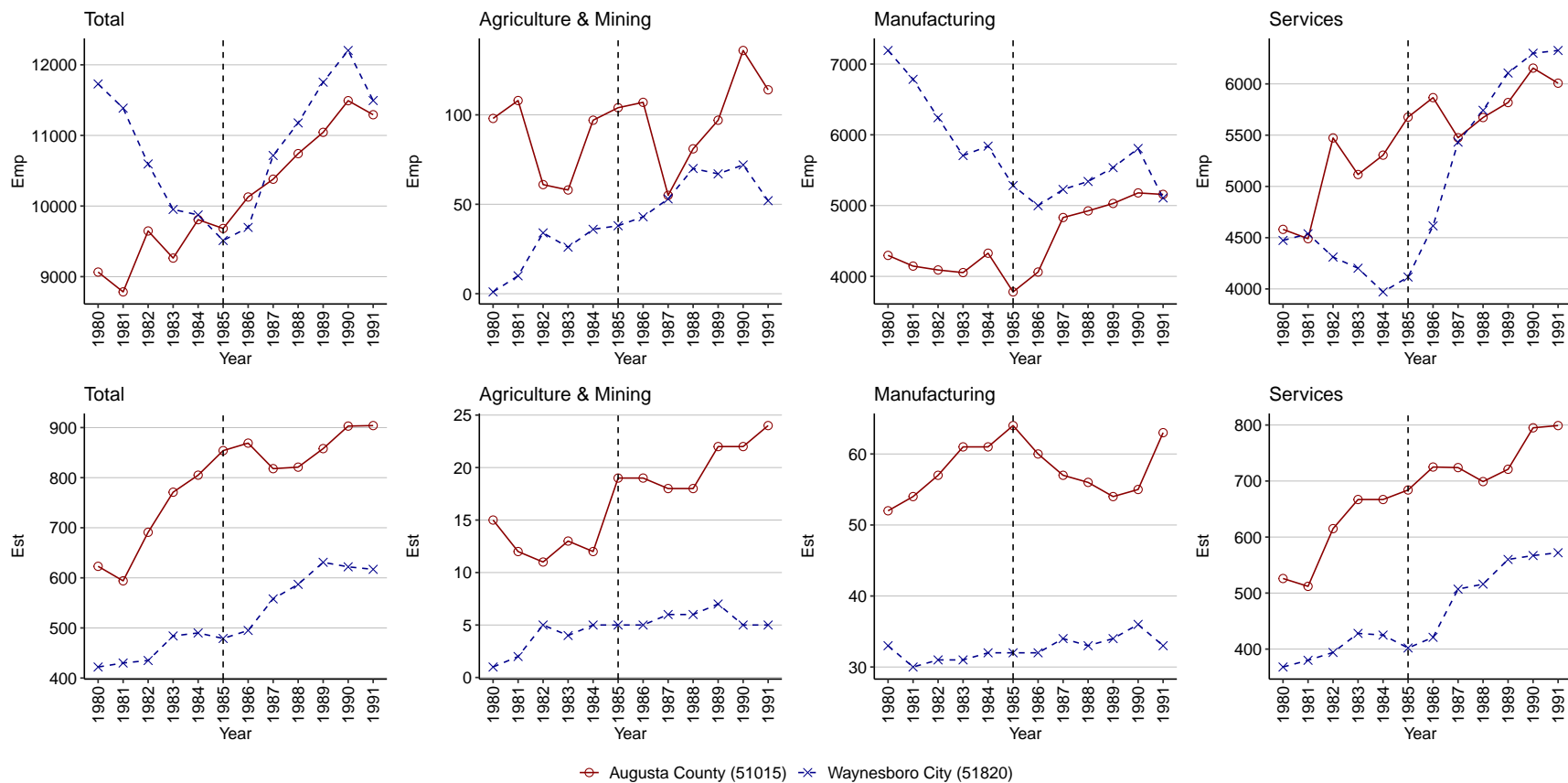


Figure A.49: County boundary change—Augusta County & Waynesboro City, VA

Notes: This figure plots the number of employment and establishments in Augusta County (FIPS51015) and Waynesboro City (FIPS51820) of Virginia. Waynesboro City gained from Augusta County on Dec 31, 1985.

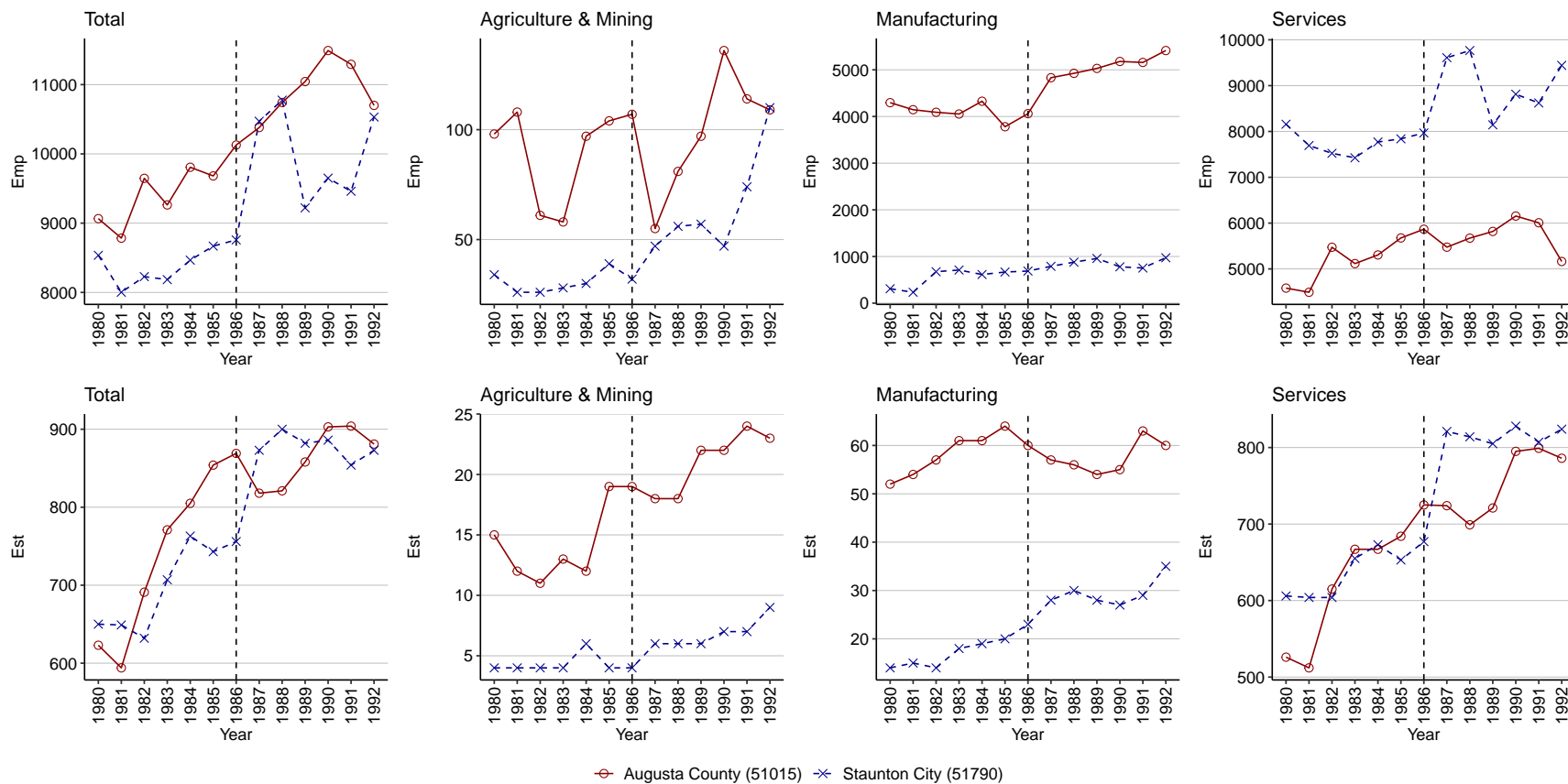


Figure A.50: County boundary change—Augusta County & Staunton City, VA

Notes: This figure plots the number of employment and establishments in Augusta County (FIPS51015) and Staunton City (FIPS51790) of Virginia. Staunton City gained small area from Augusta County on Dec 31, 1986. CBP likely incorporated this change in 1987.

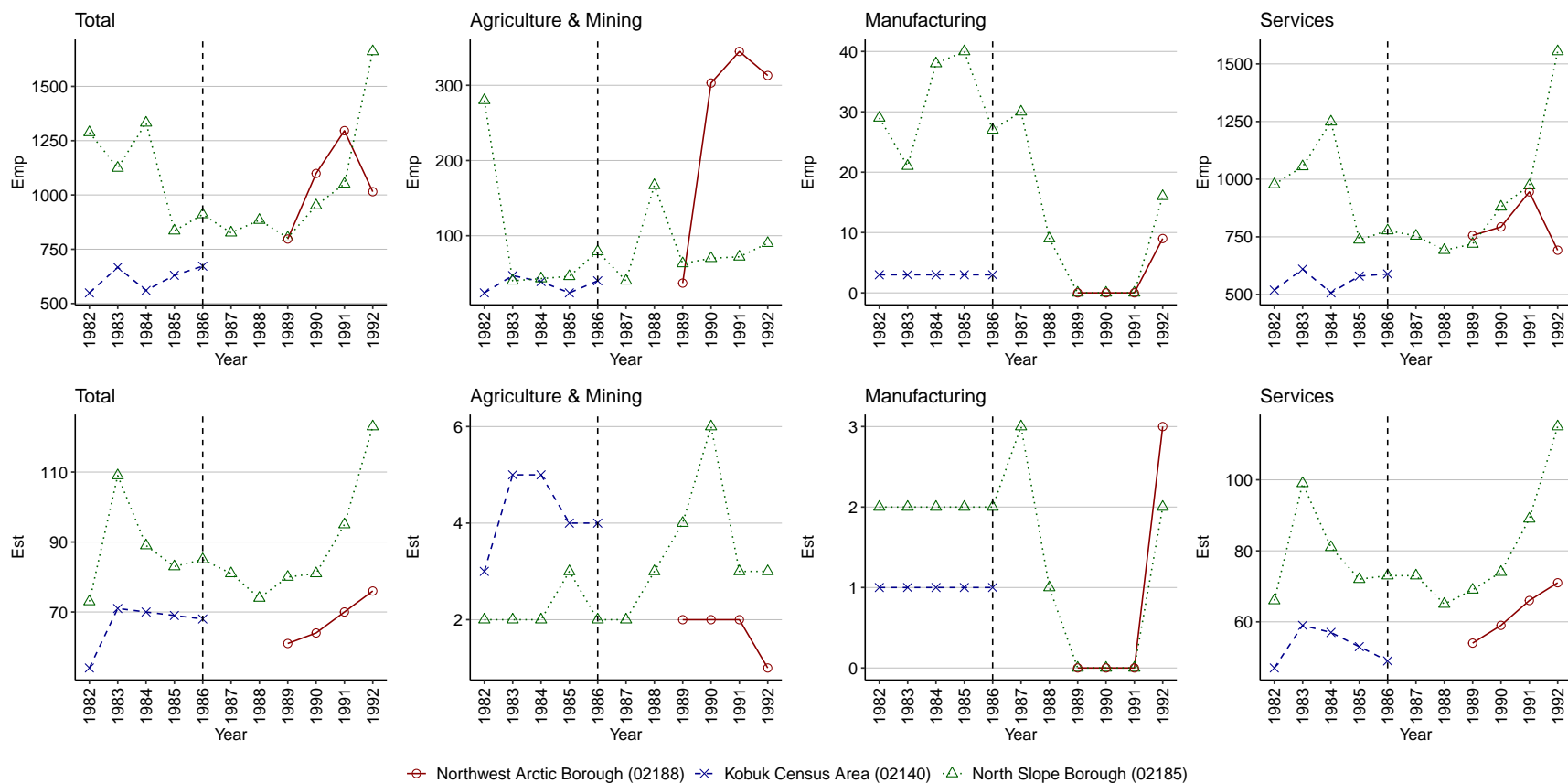


Figure A.51: County boundary change—Northwest Arctic Borough, Kobuk Census Area & North Slope Borough, AK

Notes: This figure plots the number of employment and establishments in Northwest Arctic Borough (FIPS02188), Kobuk Census Area (FIPS02140) and North Slope Borough (FIPS02185) of Alaska. Kobuk Census Area and part of North Slope Borough merged to form Northwest Arctic Borough on Jun 2, 1986. CBP record of Kobuk Census Area ended in 1986, and those of Northwest Arctic Borough started in 1989.

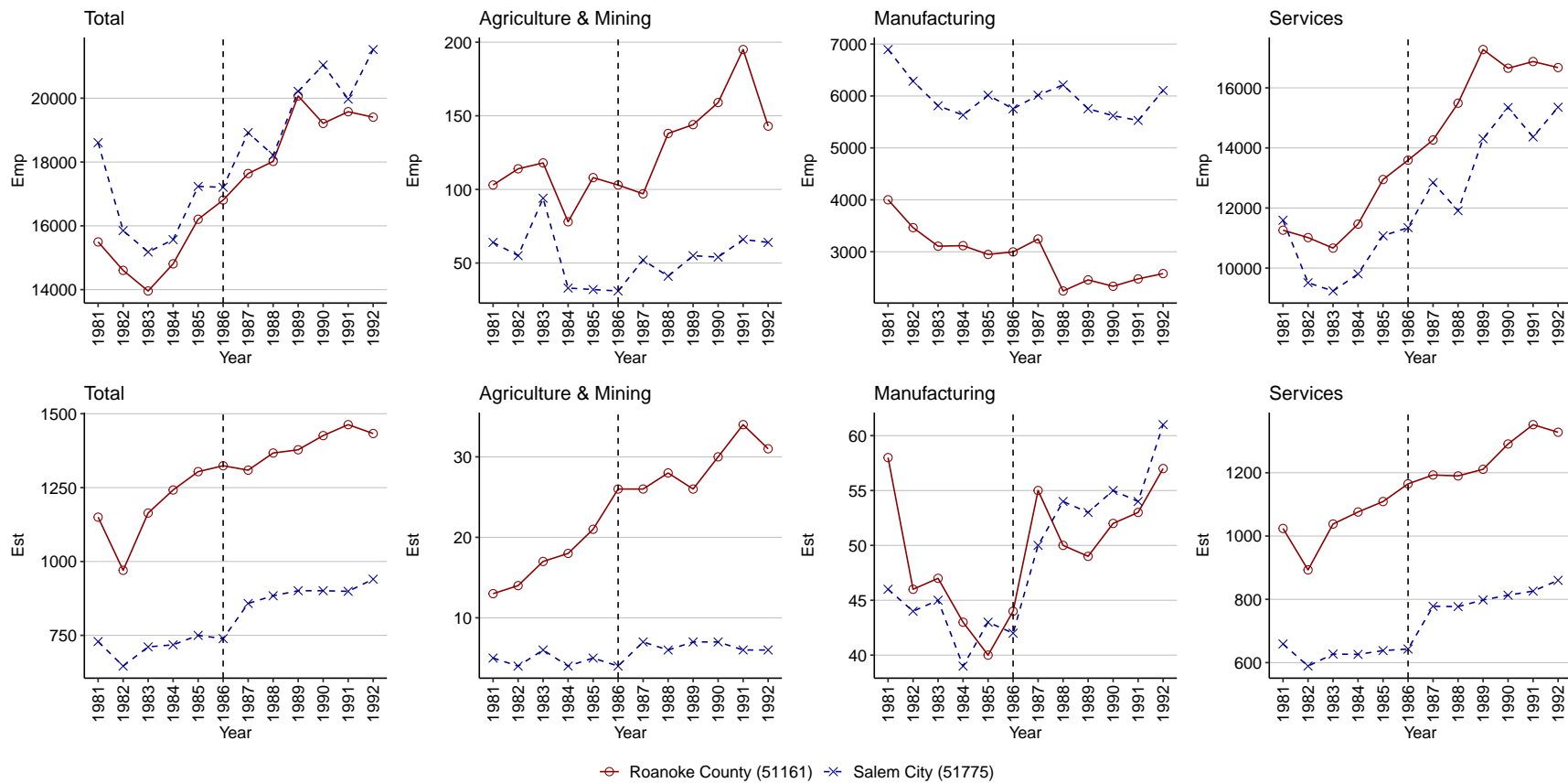


Figure A.52: County boundary change—Roanoke County & Salem City, VA

Notes: This figure plots the number of employment and establishments in Roanoke County (FIPS51161) and Salem City (FIPS51775) of Virginia. Salem City gained from Roanoke County on Jan 1, 1986.

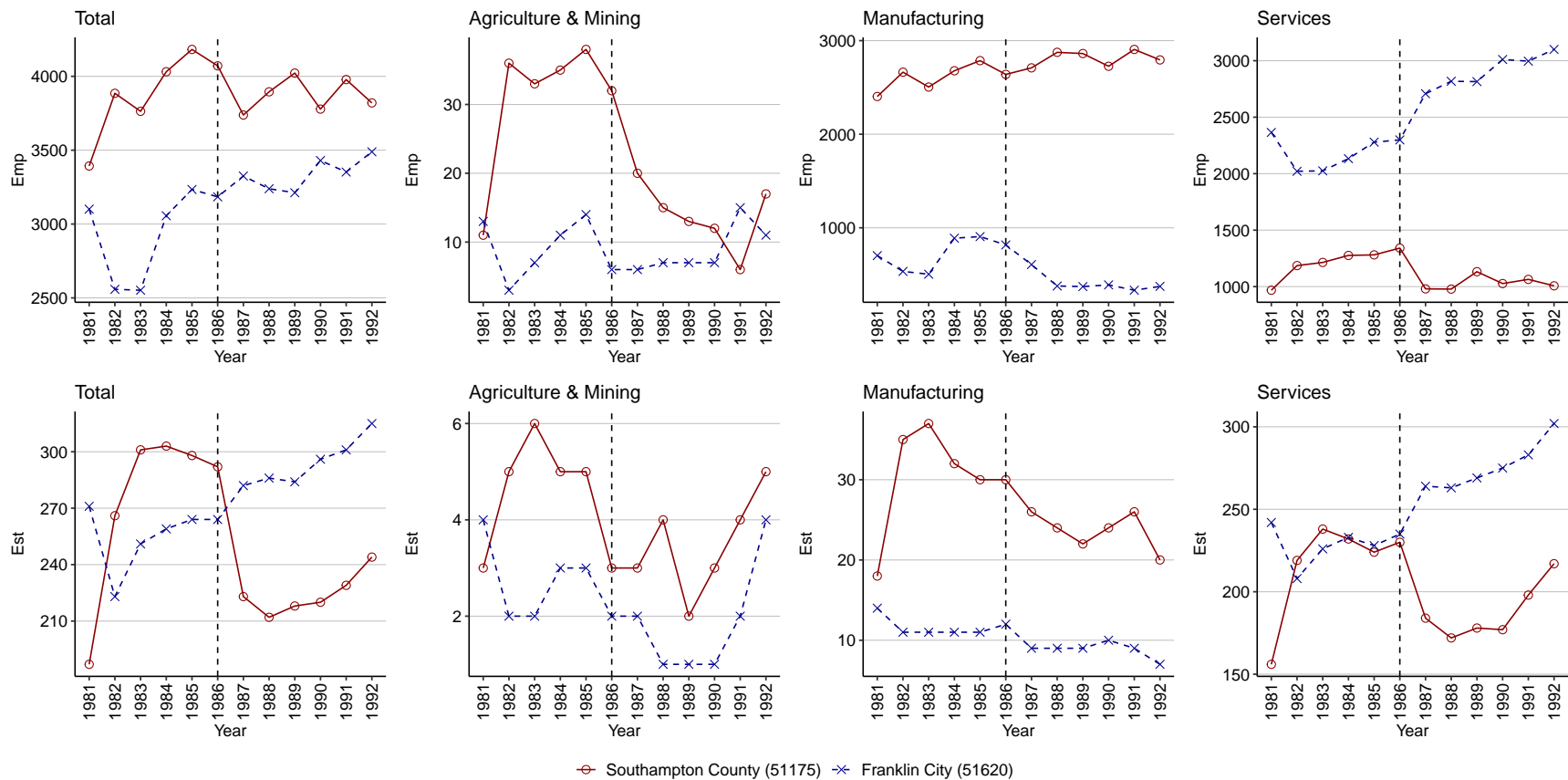


Figure A.53: County boundary change—Southampton County & Franklin City, VA

Notes: This figure plots the number of employment and establishments in Southampton County (FIPS51175) and Franklin City (FIPS51620) of Virginia. Franklin City gained from Southampton County on Jan 1, 1986. CBP likely incorporated this change in 1987.

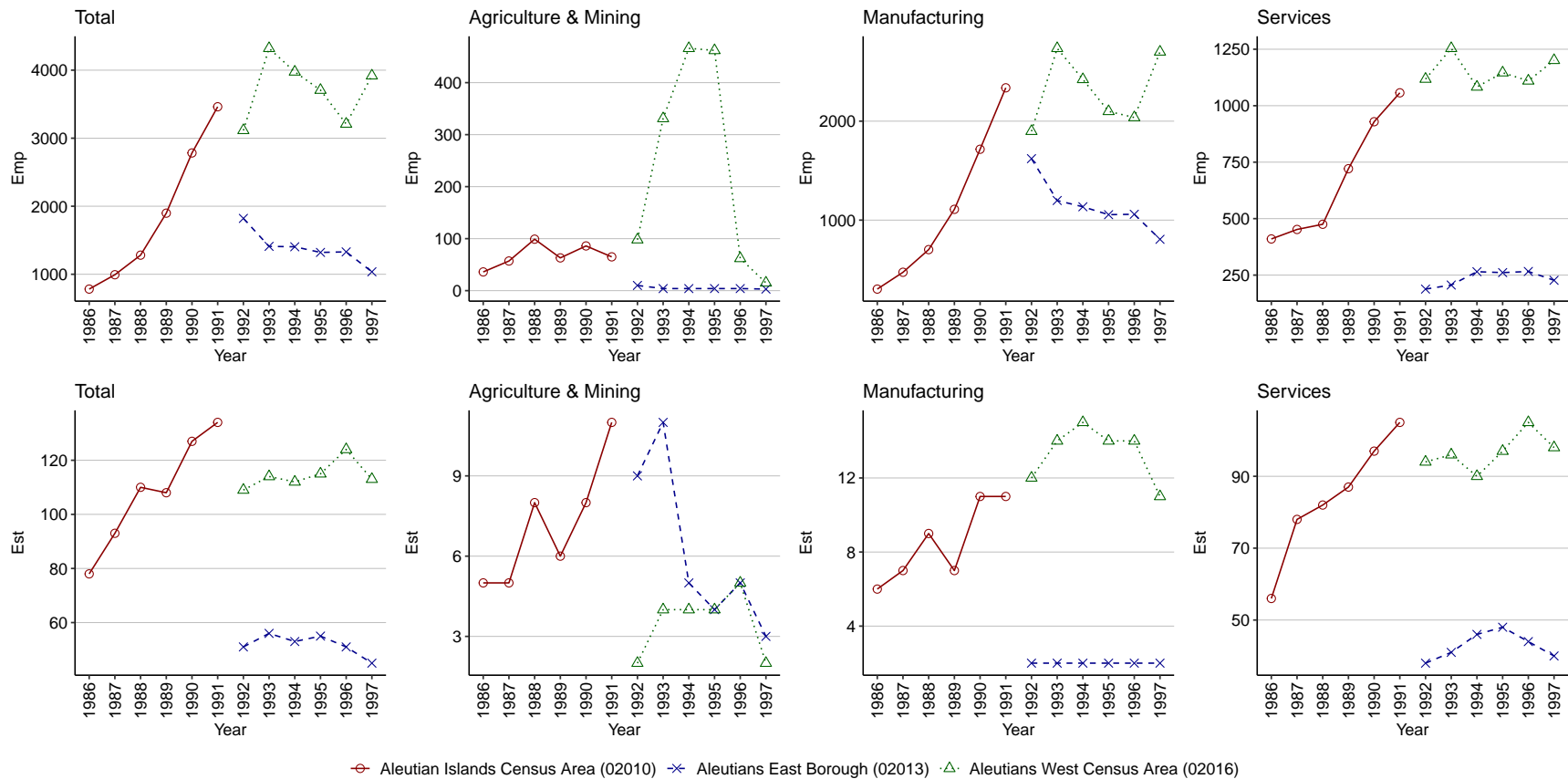


Figure A.54: County boundary change—Aleutian Islands Census Area, Aleutians East Borough & Aleutians West Census Area, AK

Notes: This figure plots the number of employment and establishments in Aleutian Islands Census Area (FIPS02010), Aleutians East Borough (FIPS02013) and Aleutians West Census Area of Alaska (FIPS02016). Aleutian Islands Census Area split to create Aleutians East Borough and Aleutians West Census Area on Oct 23, 1987. CBP incorporated this change in 1992.

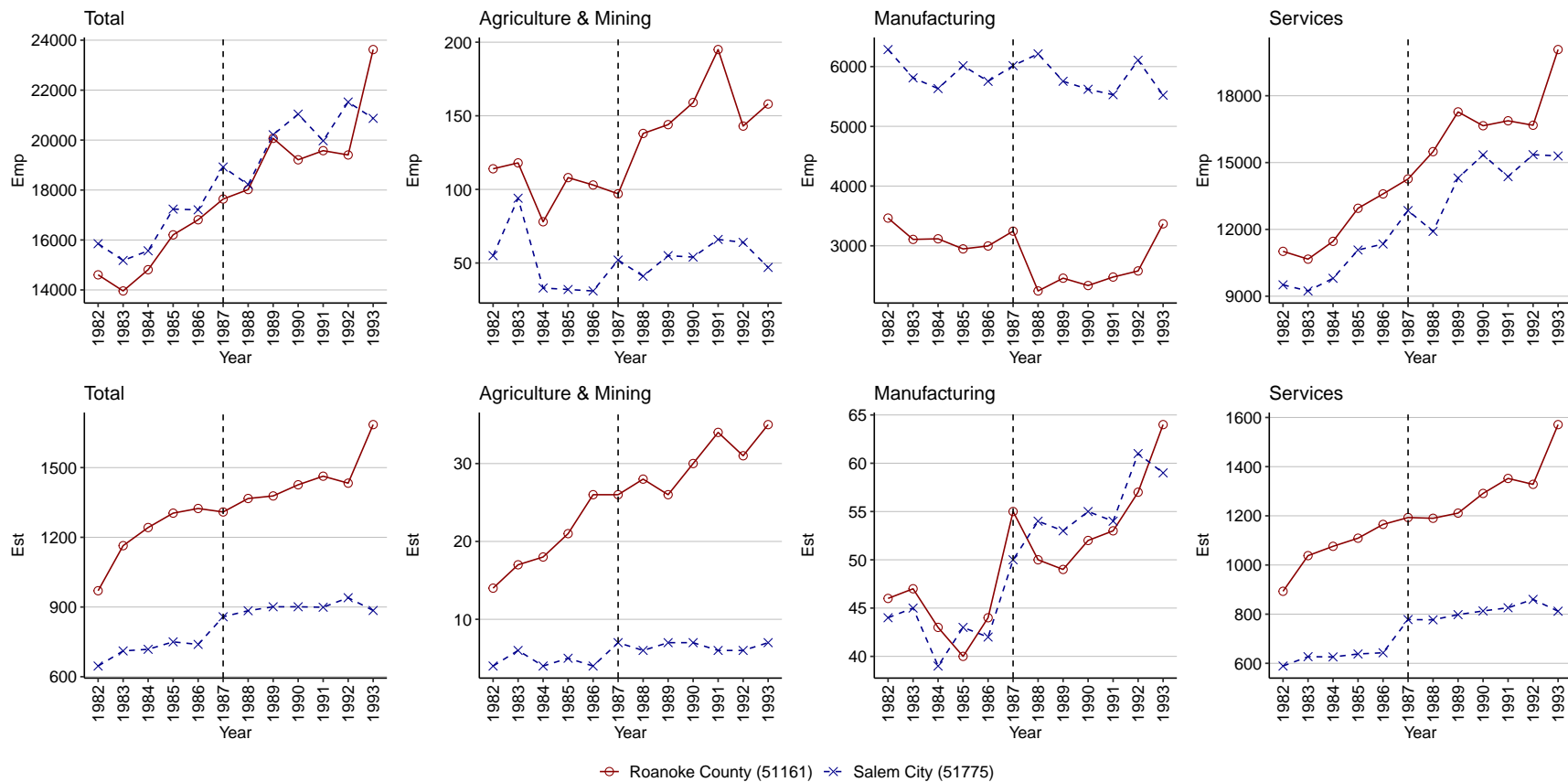


Figure A.55: County boundary change—Roanoke County & Salem City, VA

Notes: This figure plots the number of employment and establishments in Roanoke County (FIPS51161) and Salem City (FIPS51775) of Virginia. Salem City gained from Roanoke County on Dec 31, 1987. It is not clear when CBP incorporated this change.

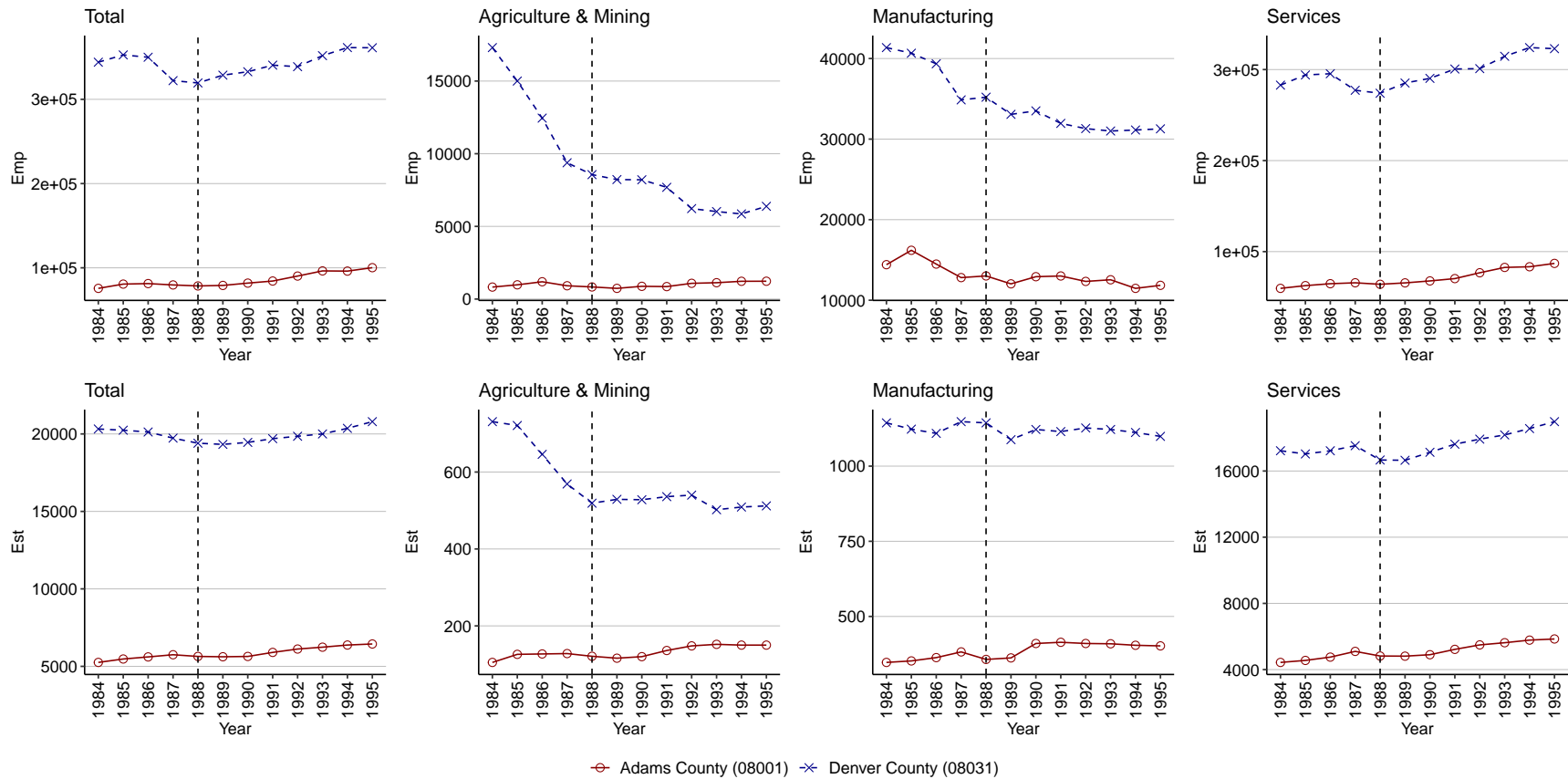


Figure A.56: County boundary change—Adams & Denver, CO

Notes: This figure plots the number of employment and establishments in Adams and Denver Counties of Colorado. Denver County annexed part of Adams County on May 17, 1988. It is not clear when CBP incorporated this change.

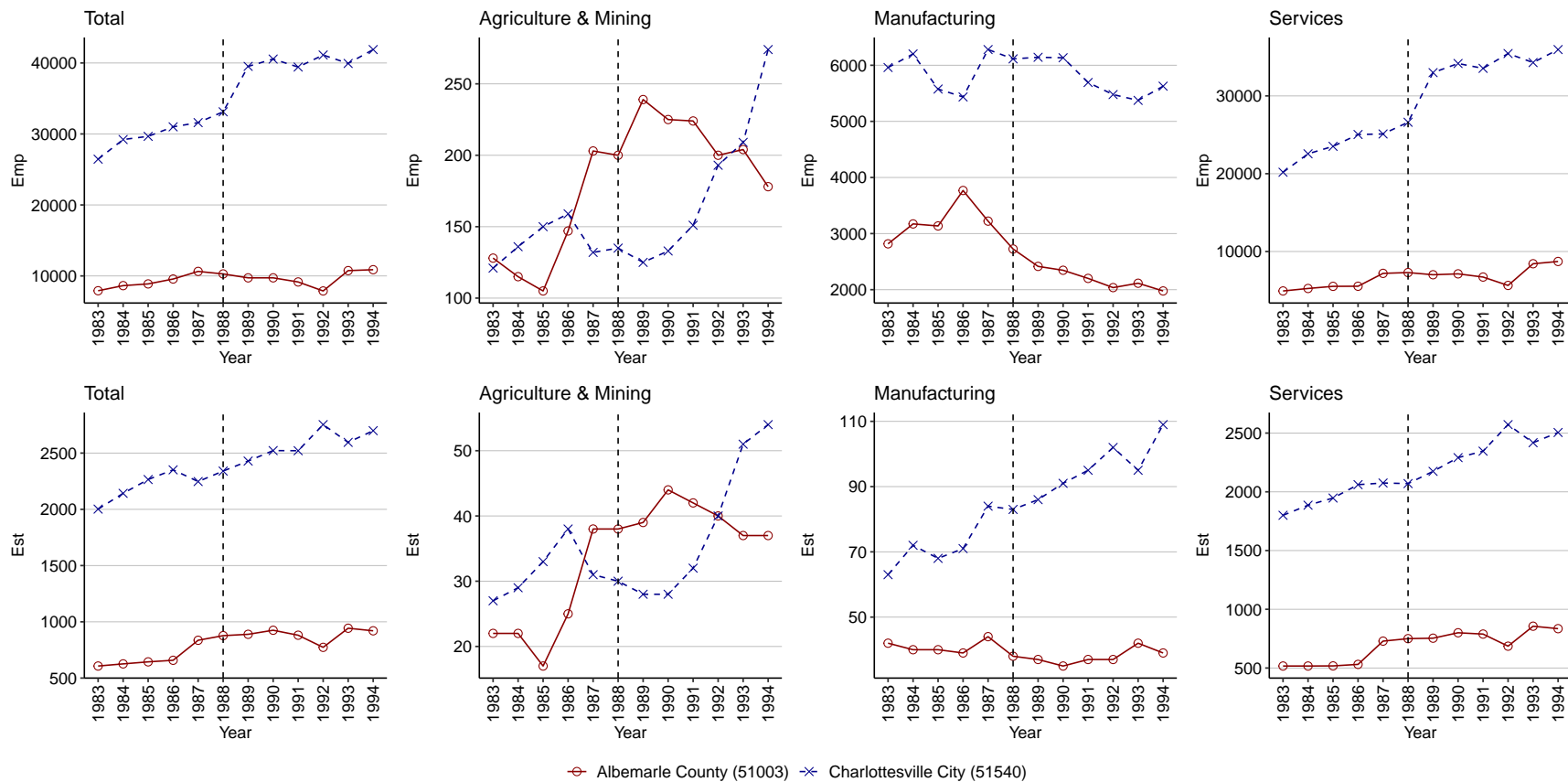


Figure A.57: County boundary change—Albemarle County & Charlottesville City, VA

Notes: This figure plots the number of employment and establishments in Albemarle County (FIPS51003) and Charlottesville City (FIPS51540) of Virginia. Part of Charlottesville City gained small area from Albemarle County on Feb 9, 1988. CBP likely incorporated this change in 1989.

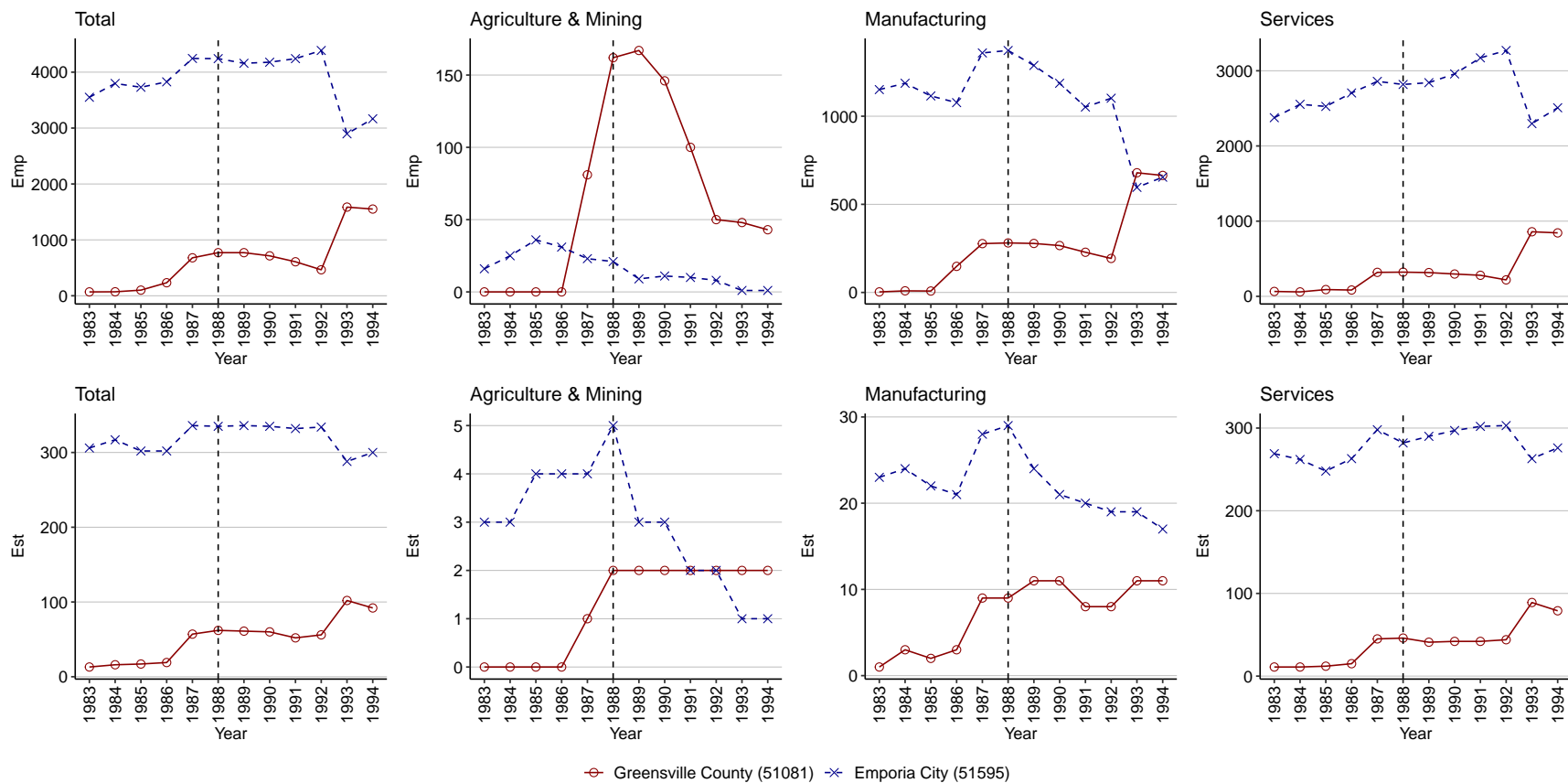


Figure A.58: County boundary change—Greenville County & Emporia City, VA

Notes: This figure plots the number of employment and establishments in Greenville County (FIPS51081) and Emporia City (FIPS51595) of Virginia. Emporia City gained from Greenville County on Jan 1, 1988. It is not clear when CBP incorporated this change.

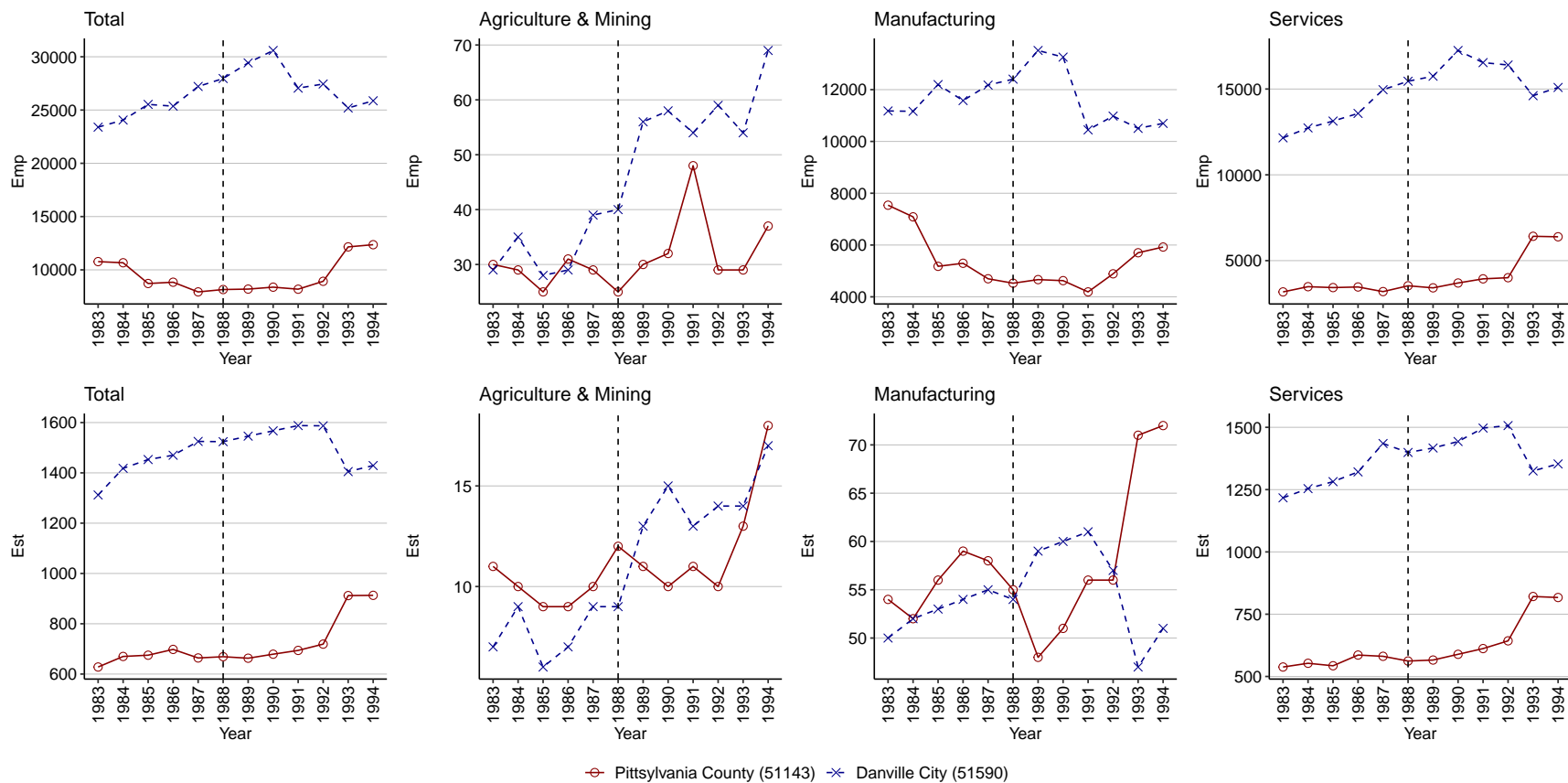


Figure A.59: County boundary change—Pittsylvania County & Danville City, VA

Notes: This figure plots the number of employment and establishments in Pittsylvania County (FIPS51143) and Danville City (FIPS51590) of Virginia. Danville City gained from Pittsylvania County on Dec 31, 1988. CBP likely incorporated this change in 1989.

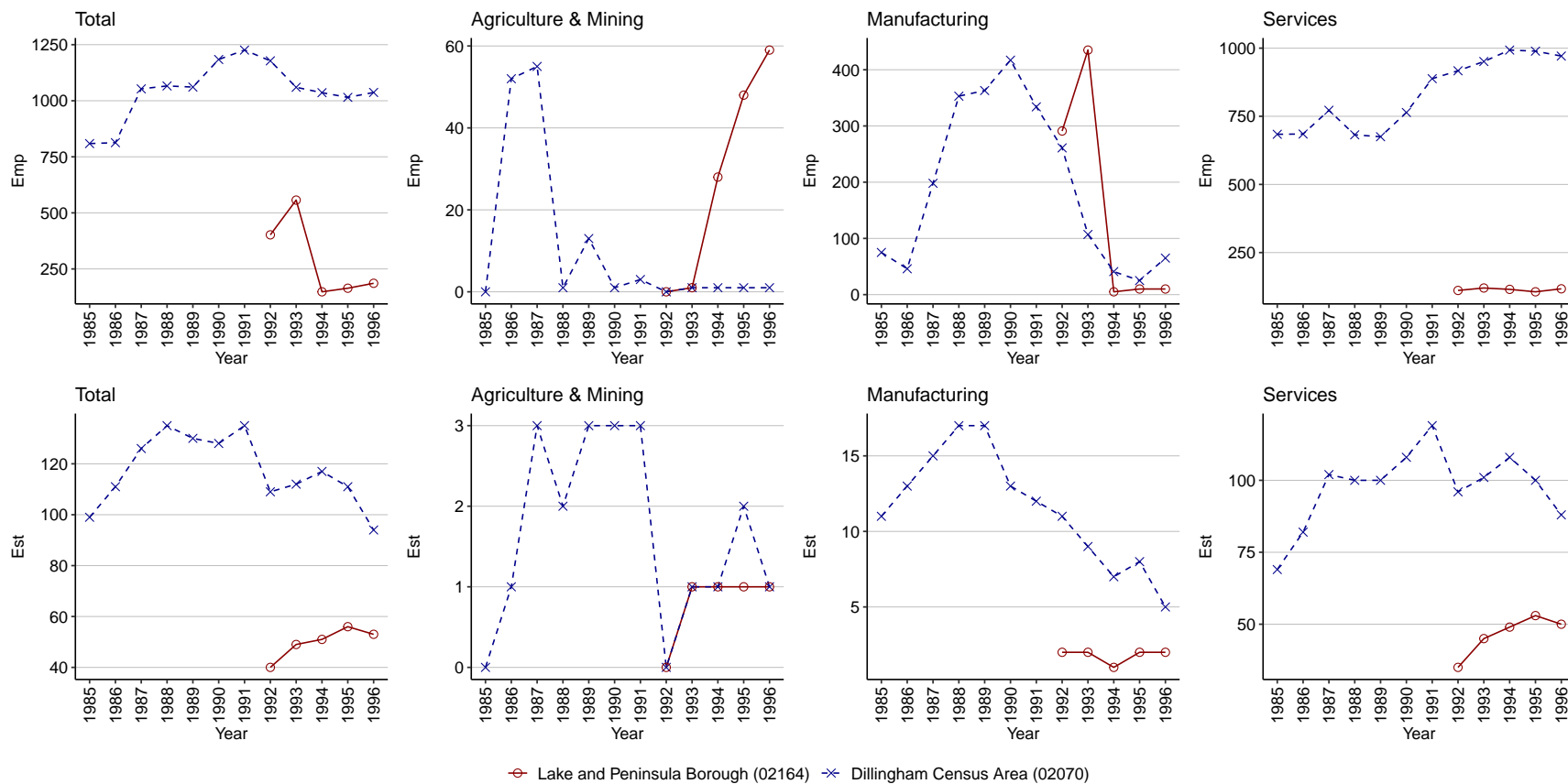


Figure A.60: County boundary change—Lake and Peninsula Borough & Dillingham Census Area, AK

Notes: This figure plots the number of employment and establishments in Lake and Peninsula Borough (FIPS02164) and Dillingham Census Area (FIPS02070) of Alaska. Lake and Peninsula Borough was created from part of Dillingham Census Area on Apr 24, 1989. CBP incorporated this change in 1992.

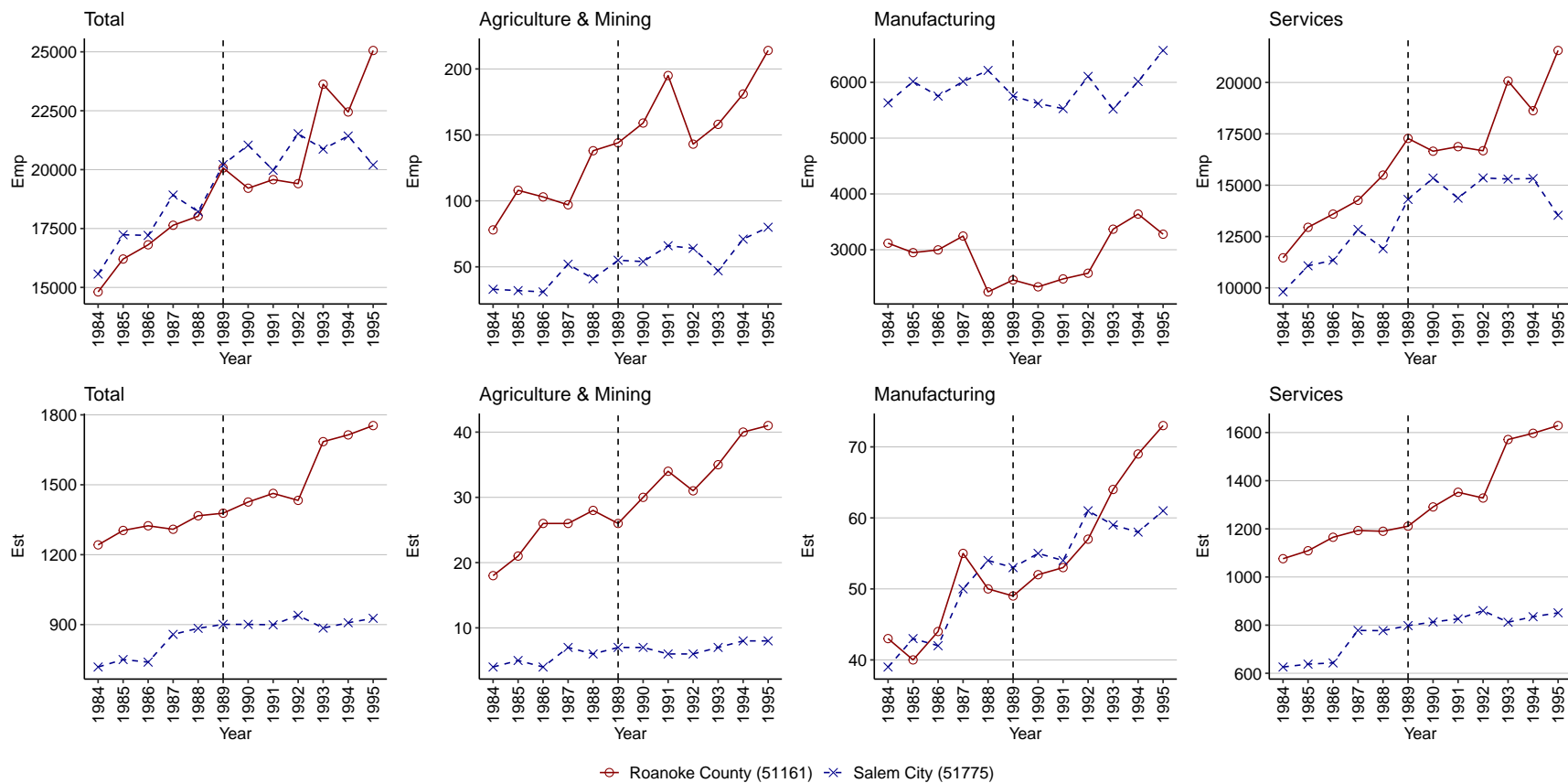


Figure A.61: County boundary change—Roanoke County & Salem City, VA

Notes: This figure plots the number of employment and establishments in Roanoke County (FIPS51161) and Salem City (FIPS51775) of Virginia. Salem City gained from Roanoke County on Jul 1, 1989. It is not clear when CBP incorporated this change.

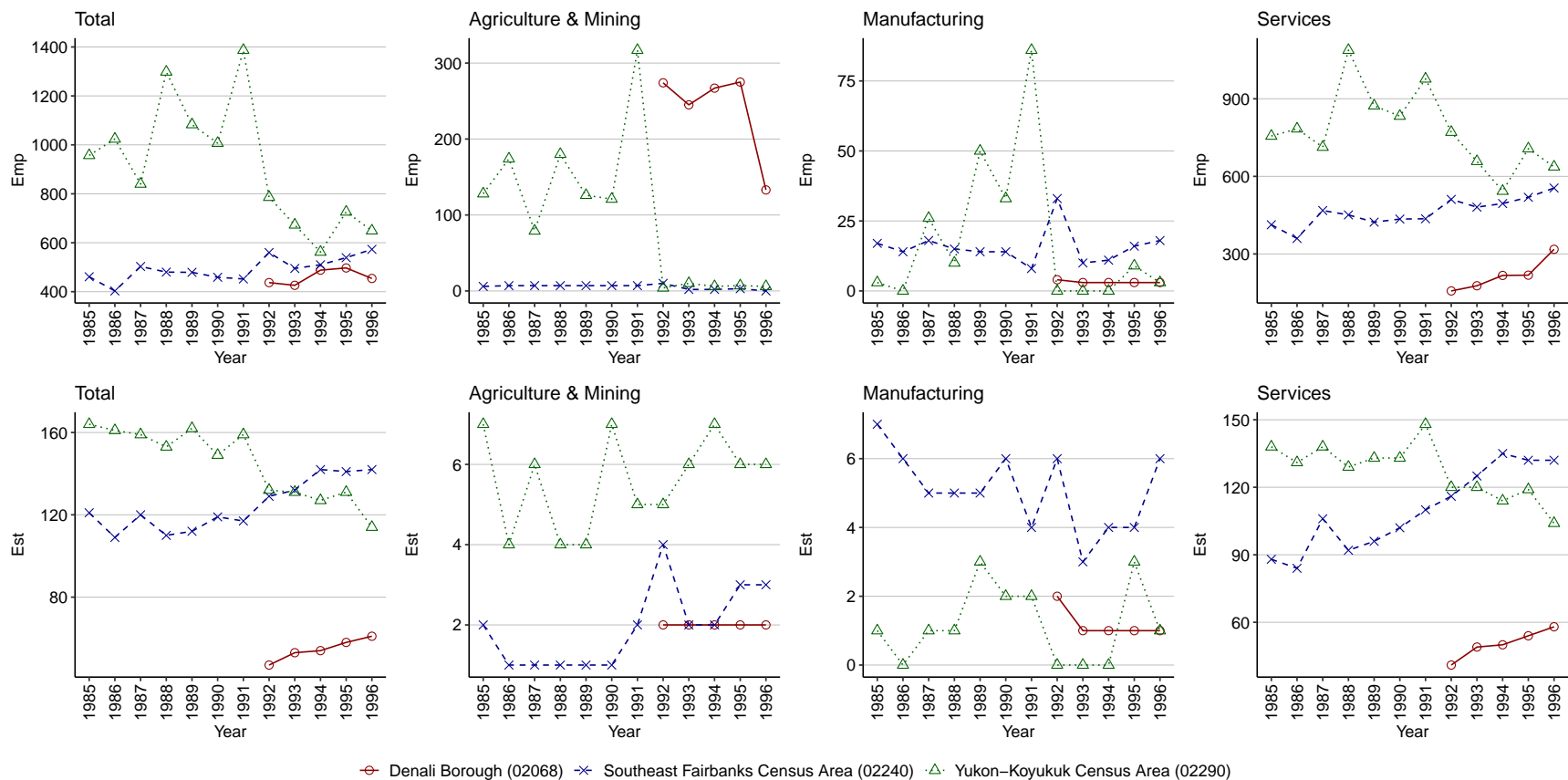


Figure A.62: County boundary change—Denali Borough, Southeast Fairbanks Census Area & Yukon-Koyukuk Census Area, AK

Notes: This figure plots the number of employment and establishments in Denali Borough (FIPS02068), Southeast Fairbanks Census Area (FIPS02240) and Yukon-Koyukuk Census Area (FIPS02290) of Alaska. Denali Borough was created from parts of Yukon-Koyukuk Census Area and Southeast Fairbanks Census Area on Dec 7, 1990. CBP incorporated this change in 1992.

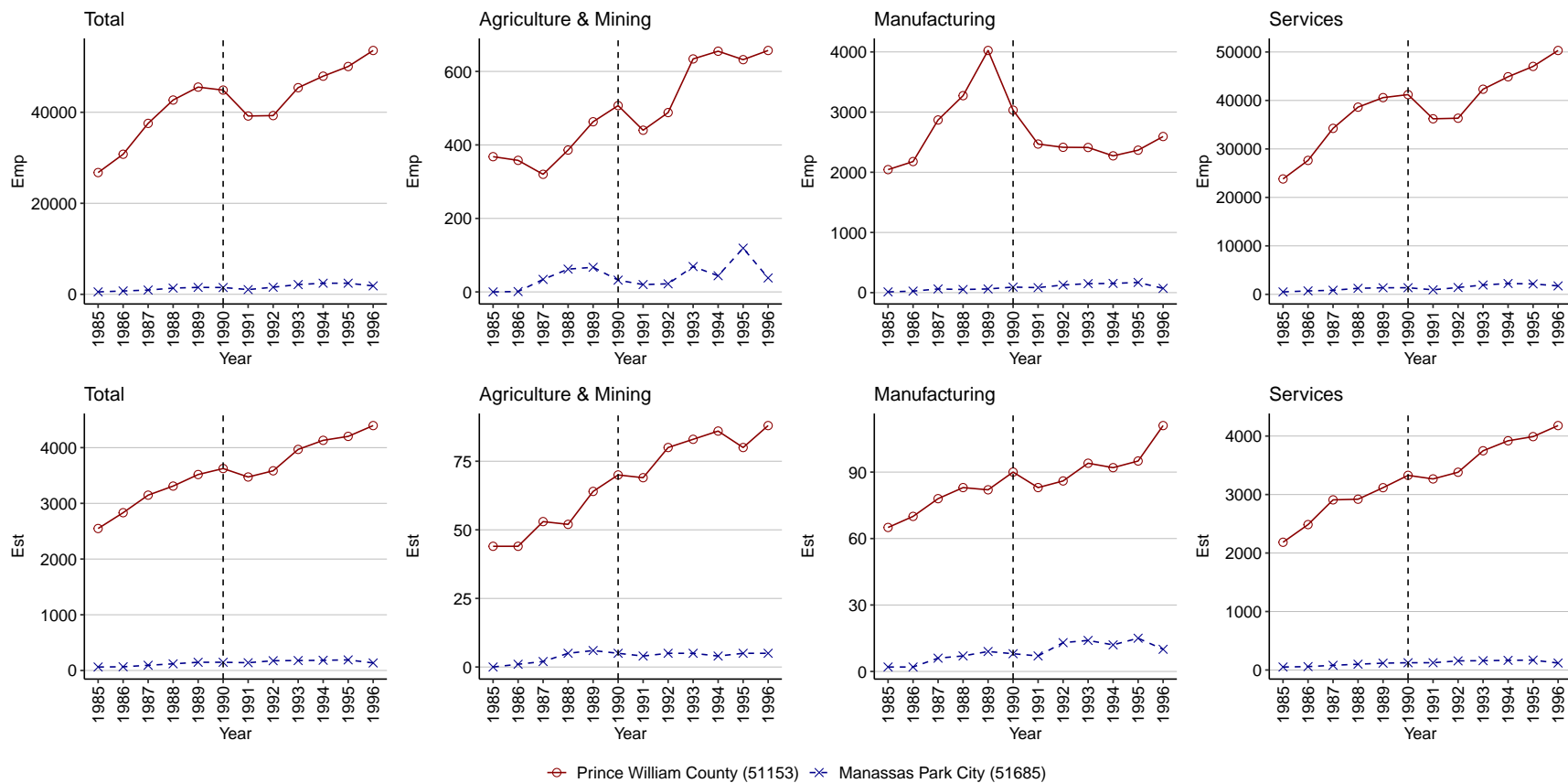


Figure A.63: County boundary change—Prince William County & Manassas Park City, VA

Notes: This figure plots the number of employment and establishments in Prince William County (FIPS51153) and Manassas Park City (FIPS51685) of Virginia. Manassas Park City gained from Prince William County on Dec 31, 1990. It is not clear when CBP incorporated this change.

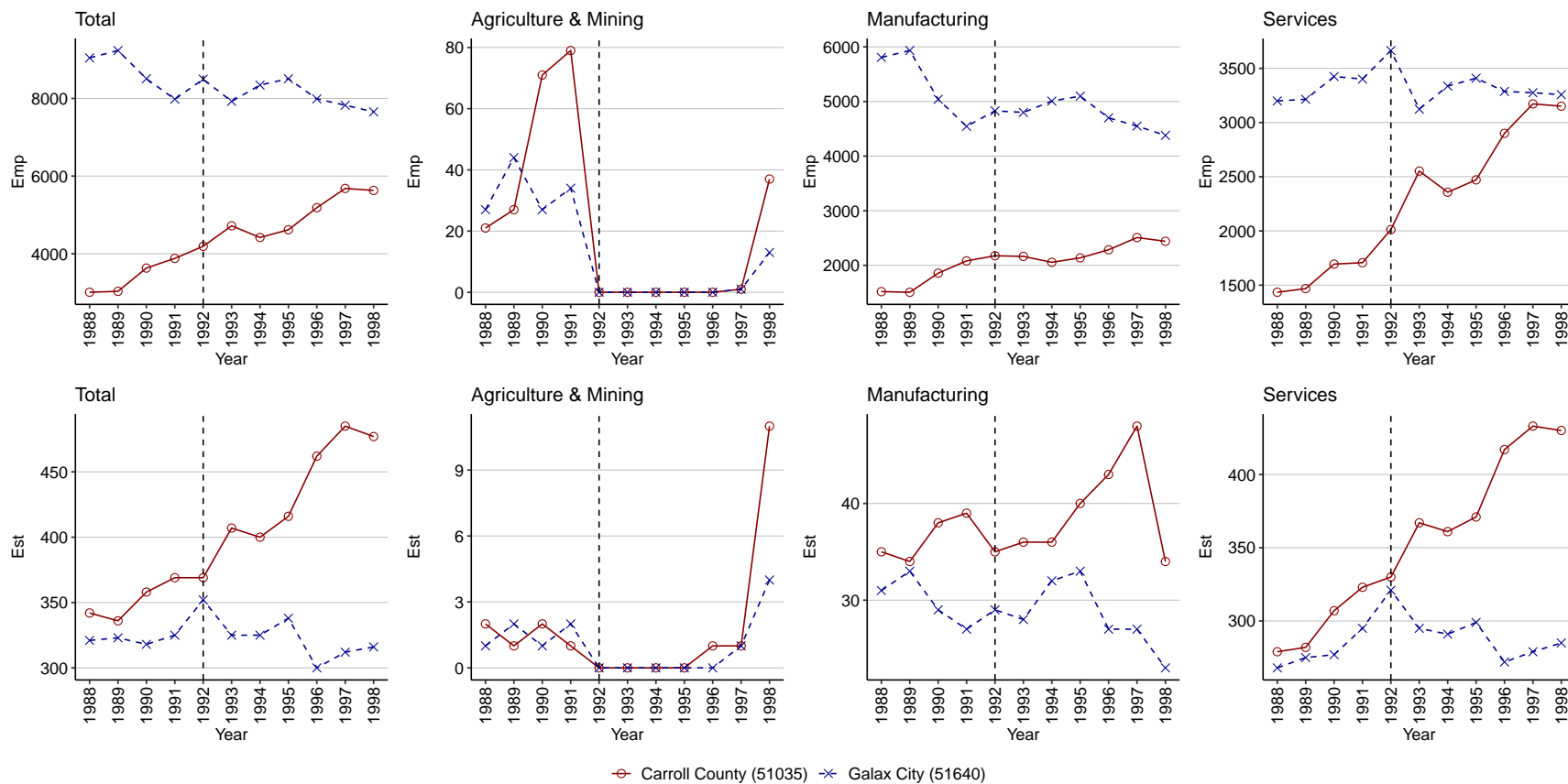


Figure A.64: County boundary change—Carroll County & Galax City, VA

Notes: This figure plots the number of employment and establishments in Carroll County (FIPS51035) and Galax City (FIPS51640) of Virginia. Galax City gained from Carroll County on Jul 1, 1992. It is not clear when CBP incorporated this change.

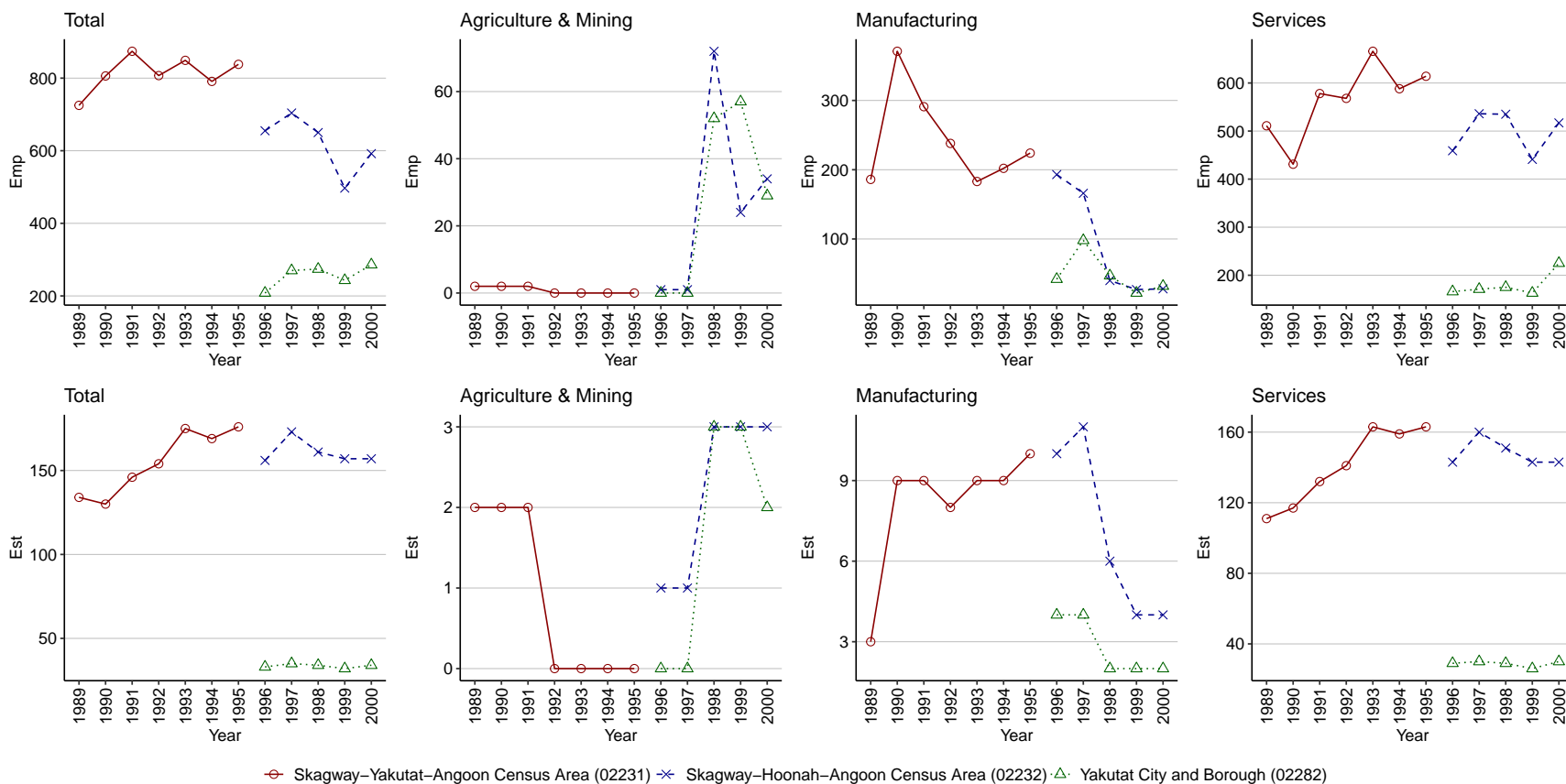


Figure A.65: County boundary change—Skagway-Yakutat-Angoon Census Area, Skagway-Hoonah-Angoon Census Area & Yakutat City and Borough, AK

Notes: This figure plots the number of employment and establishments in Skagway-Yakutat-Angoon Census Area (FIPS02231), Skagway-Hoonah-Angoon Census Area (FIPS02232) and Yakutat City and Borough (FIPS02282) of Alaska. Skagway-Yakutat-Angoon Census Area split to create Skagway-Hoonah-Angoon Census Area and Yakutat City and Borough on Sep 22, 1992. CBP incorporated this change in 1996.

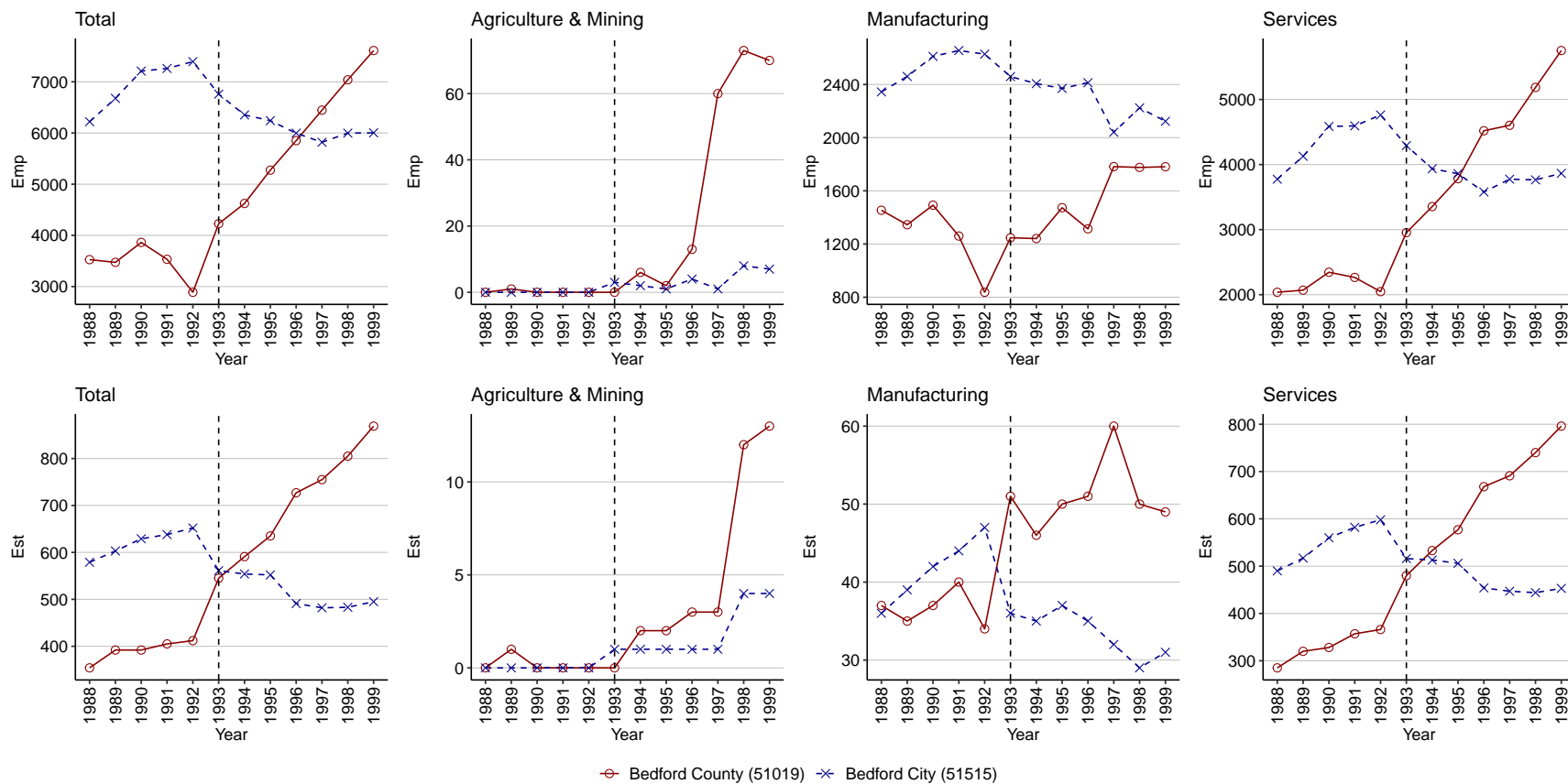


Figure A.66: County boundary change—Bedford County & Bedford City, VA

Notes: This figure plots the number of employment and establishments in Bedford County (FIPS51019) and Bedford City (FIPS51515) of Virginia on Jul 1, 1993. It is not clear when CBP incorporated this change.

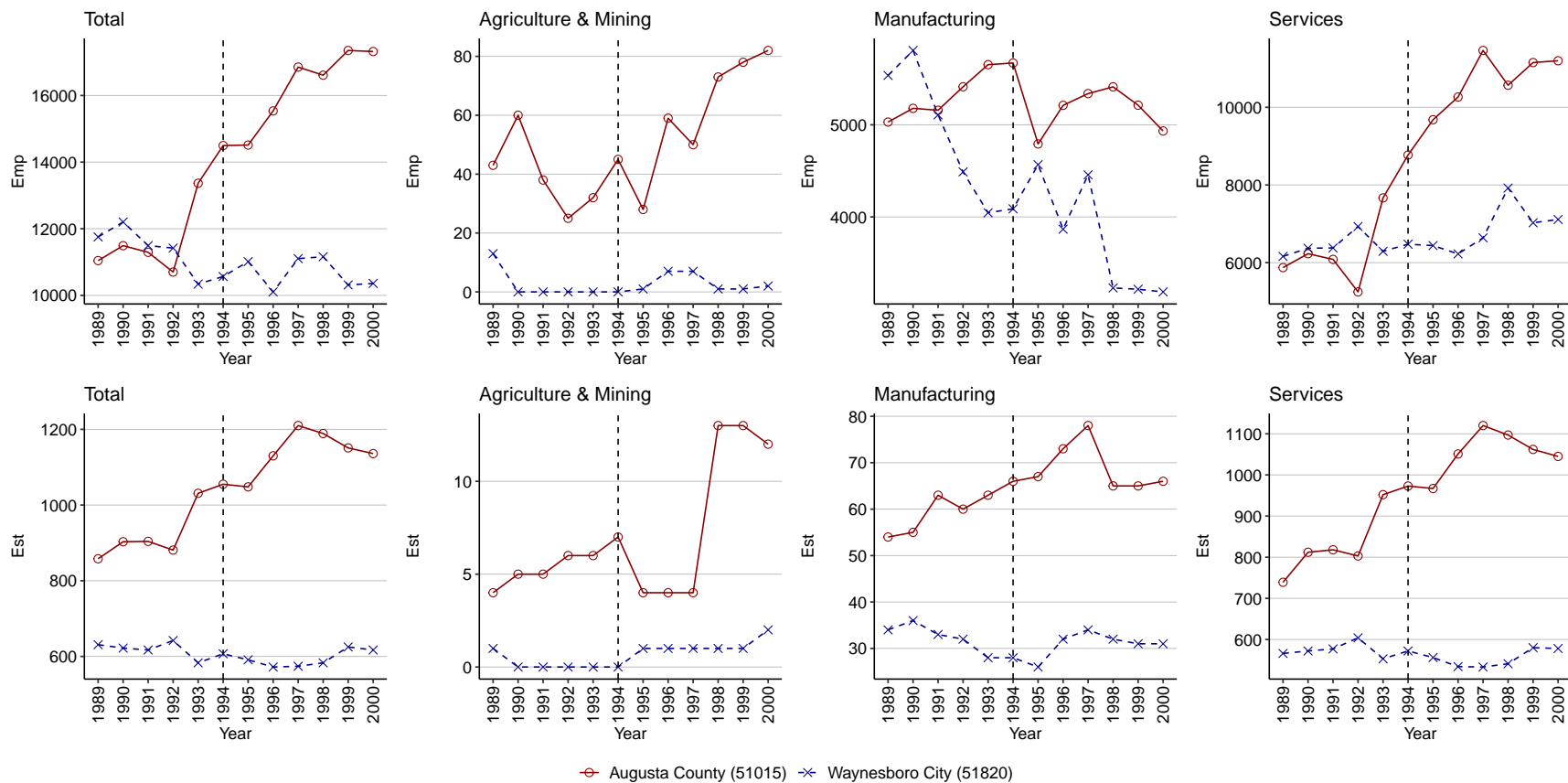


Figure A.67: County boundary change—Augusta County & Waynesboro City, VA

Notes: This figure plots the number of employment and establishments in Augusta County (FIPS51015) and Waynesboro City (FIPS51820) of Virginia. Part of Augusta County was annexed to Waynesboro City on Jul 1, 1994. CBP likely incorporated this change in 1995.

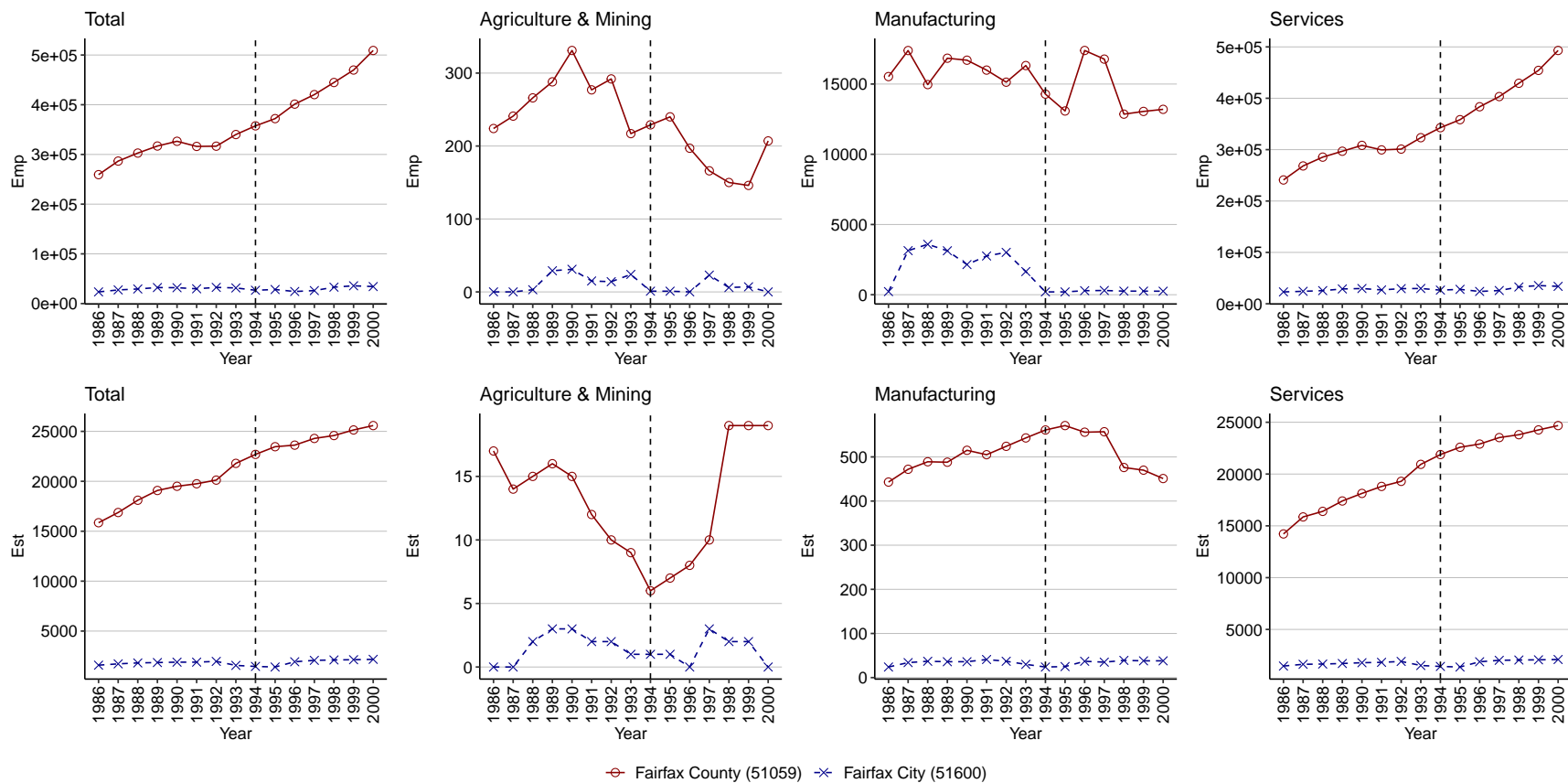


Figure A.68: County boundary change—Fairfax County & Fairfax City, VA

Notes: This figure plots the number of employment and establishments in Fairfax County (FIPS51059) and Fairfax City (FIPS51600) of Virginia. They exchanged territories on Jan 1, 1994. It is not clear when CBP incorporated this change.

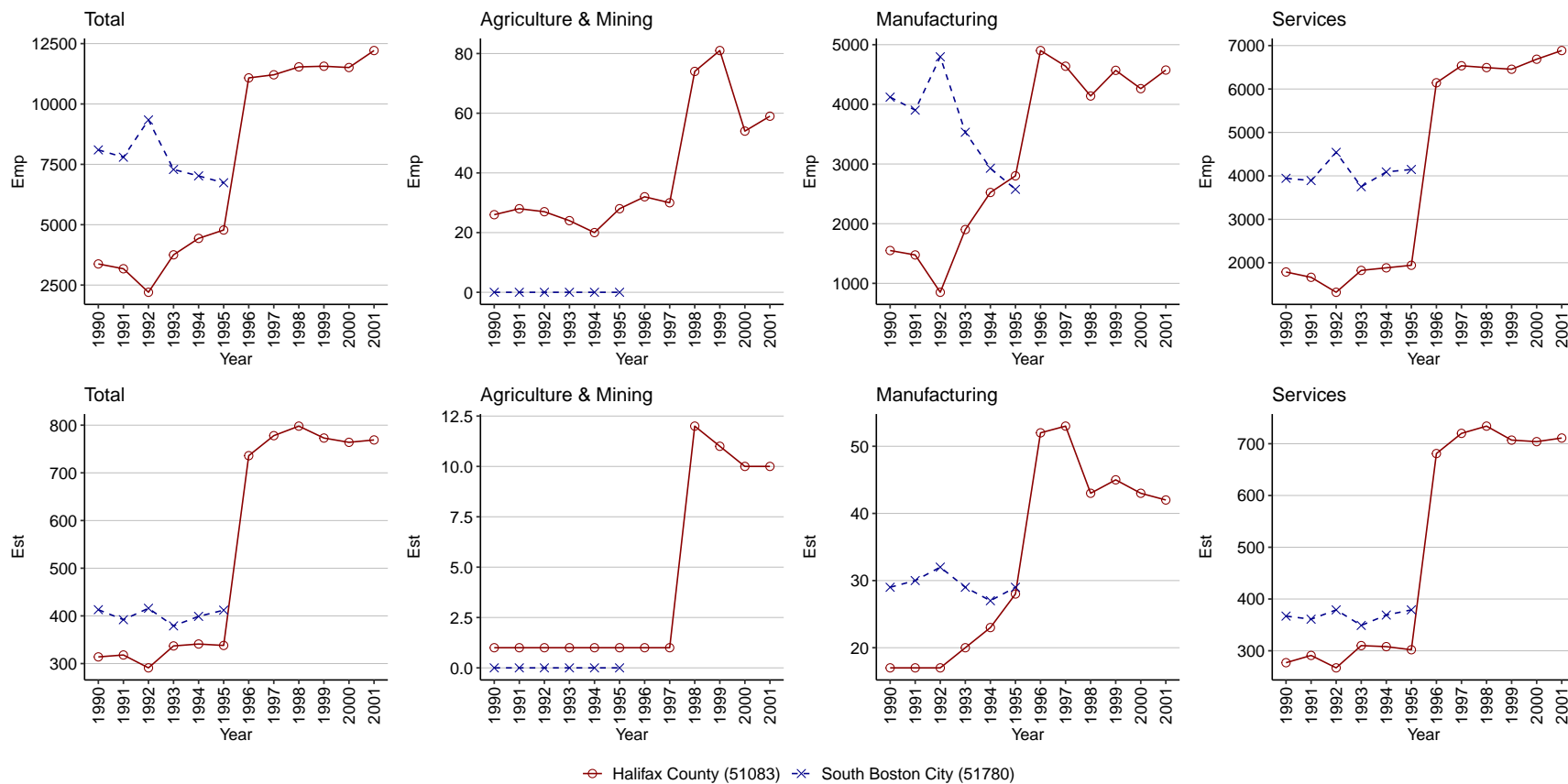


Figure A.69: County boundary change—Halifax County & South Boston City, VA

Notes: This figure plots the number of employment and establishments in Halifax County (FIPS51083) and South Boston City (FIPS51780) of Virginia. South Boston City merged into Halifax County on Jun 30, 1995. CBP incorporated this change in 1996.

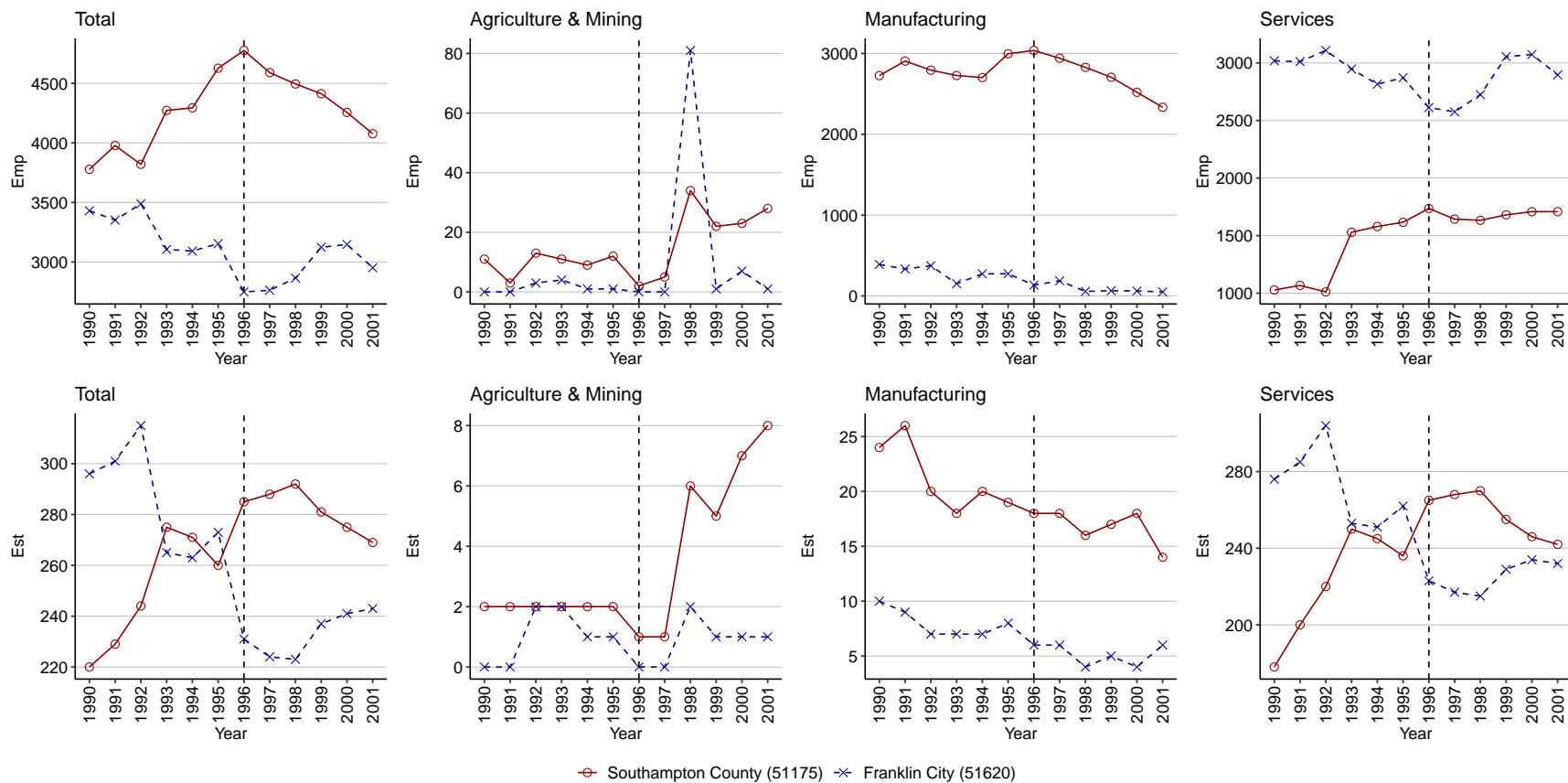


Figure A.70: County boundary change—Southampton County & Franklin City, VA

Notes: This figure plots the number of employment and establishments in Southampton County (FIPS51175) and Franklin City (FIPS51620) of Virginia. Franklin City gained territory from Southampton County on Jan 1, 1986. It is not clear when CBP incorporated this change.

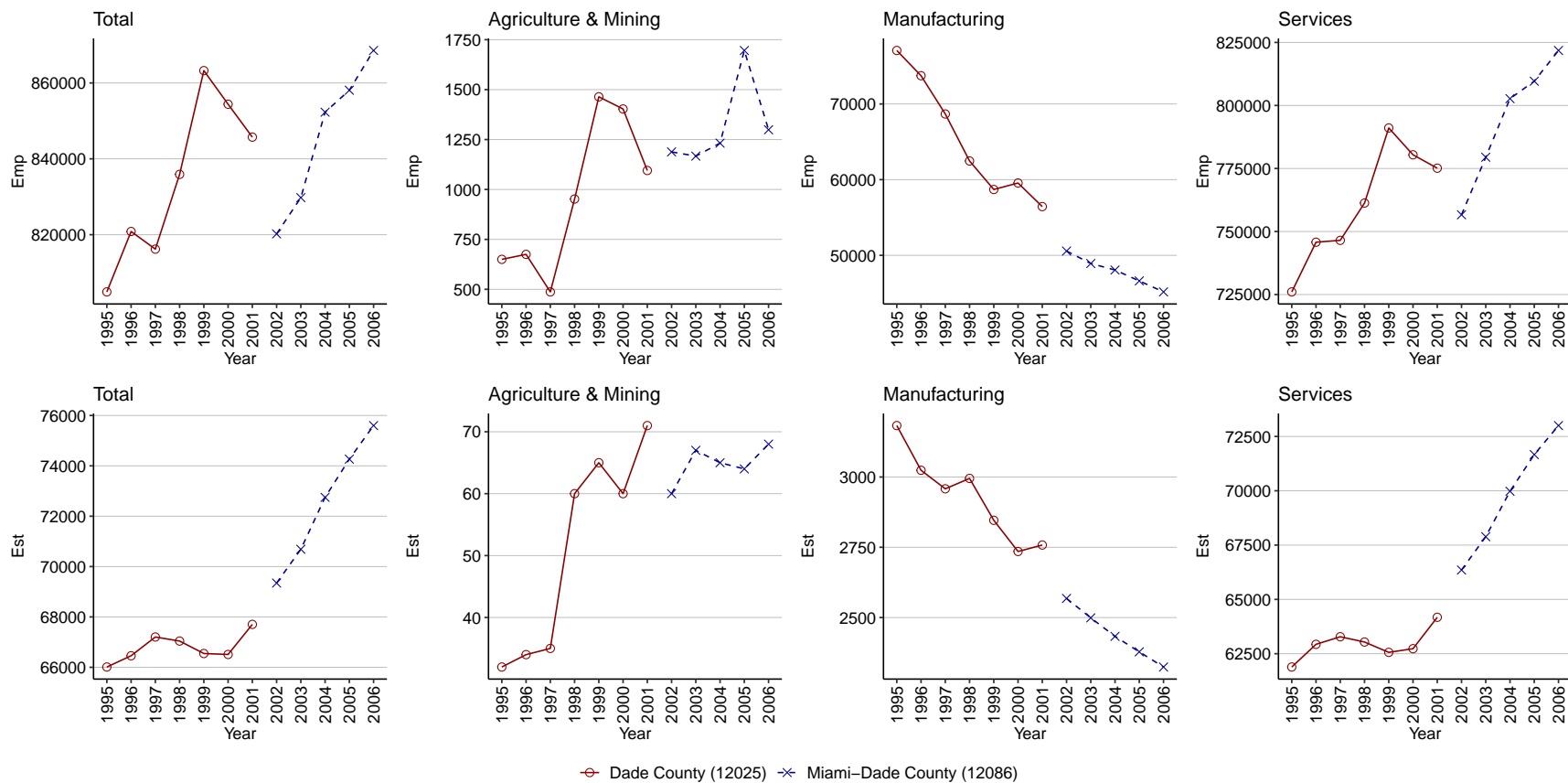


Figure A.71: County boundary change—Dade, FL

Notes: This figure plots the number of employment and establishments in Dade (FIPS12025) and Miami-Dade (FIPS12086) County of Florida. Dade County (FIPS12025) changed name and FIPS code to Miami-Dade County (FIPS12086) on Nov 13, 1997. CBP incorporated this change in 2002.

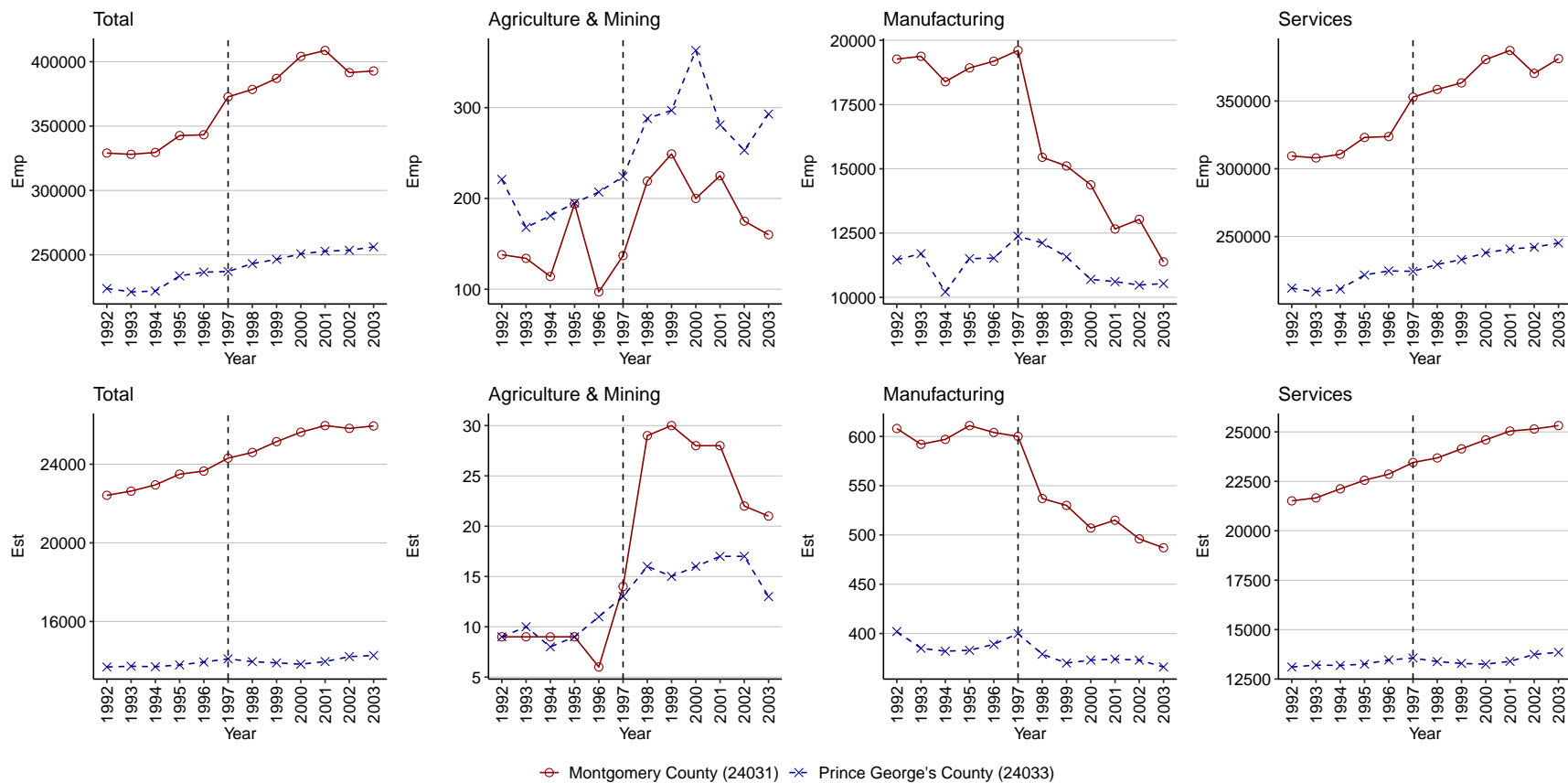


Figure A.72: County boundary change—Montgomery & Prince George's Counties, MD

Notes: This figure plots the number of employment and establishments in Montgomery County (FIPS24031) and Prince George's County (FIPS24033) of Maryland. Montgomery County gained from Prince George's County (FIPS24033) on Jul 1, 1997. It is not clear when CBP incorporated this change.

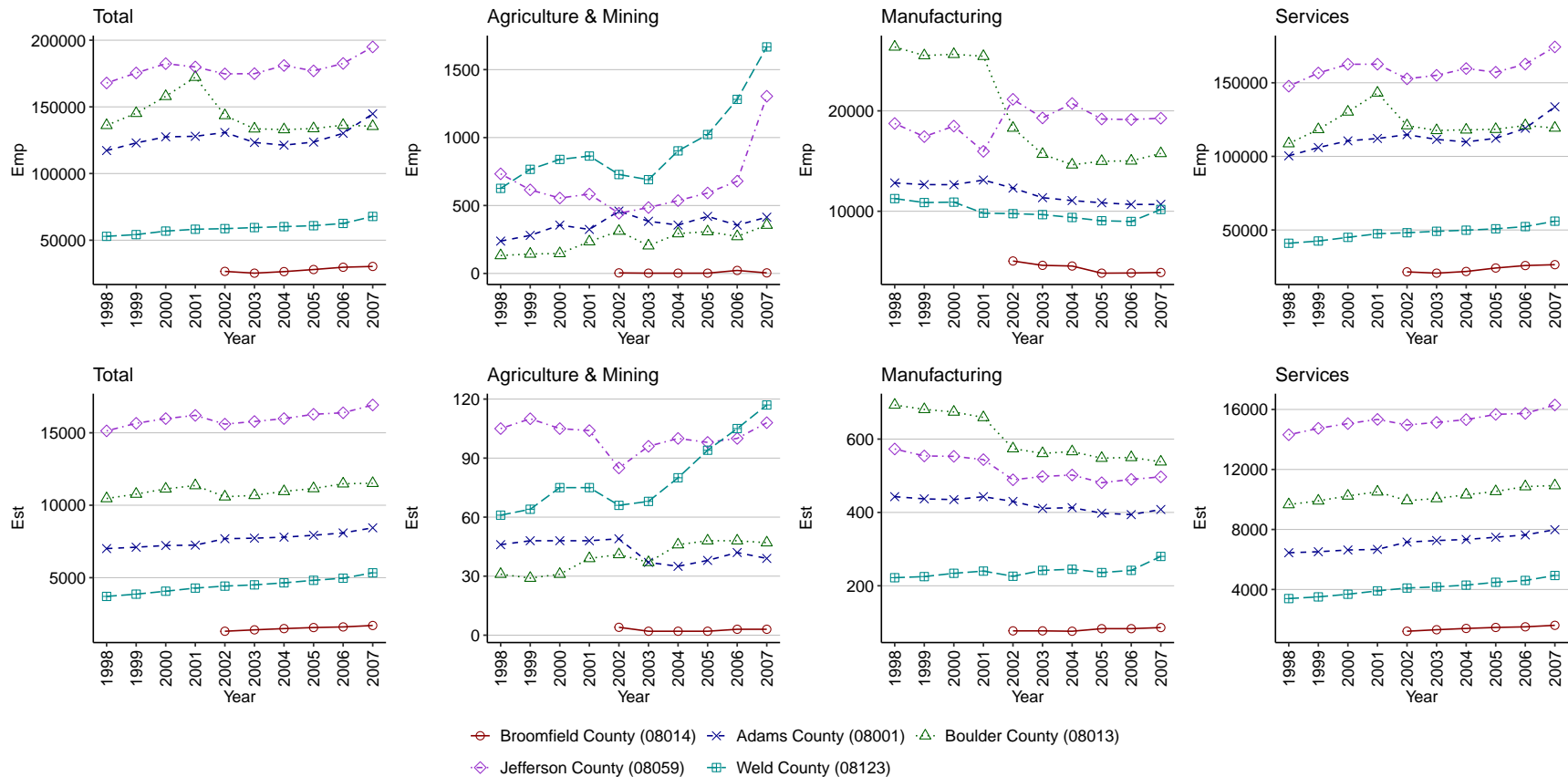


Figure A.73: County boundary change—Broomfield, CO

Notes: This figure plots the number of employment and establishments in Broomfield (FIPS08014), Adams (FIPS08001), Boulder (FIPS08013), Jefferson (FIPS08059) and Weld (FIPS08123) Counties of Colorado. Broomfield County was created from the other counties on Nov 15, 2001. CBP incorporated this change in 2002.

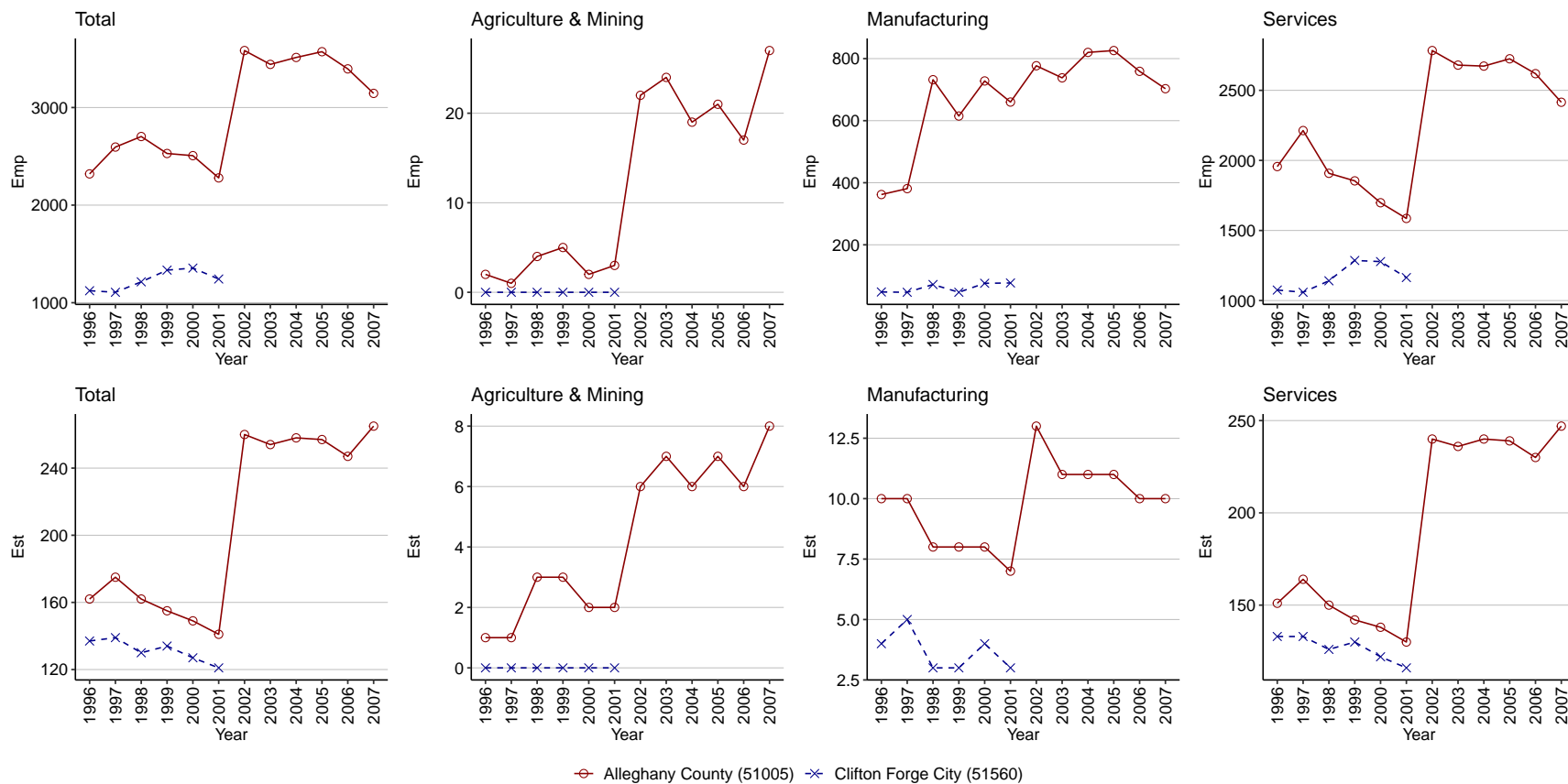


Figure A.74: County boundary change—Alleghany County & Clifton Forge City, VA

Notes: This figure plots the number of employment and establishments in Alleghany County (FIPS51005) and Clifton Forge City (FIPS51560) of Virginia. Clifton Forge City merged into Alleghany County on Jul 1, 2001. CBP incorporated this change in 2002.

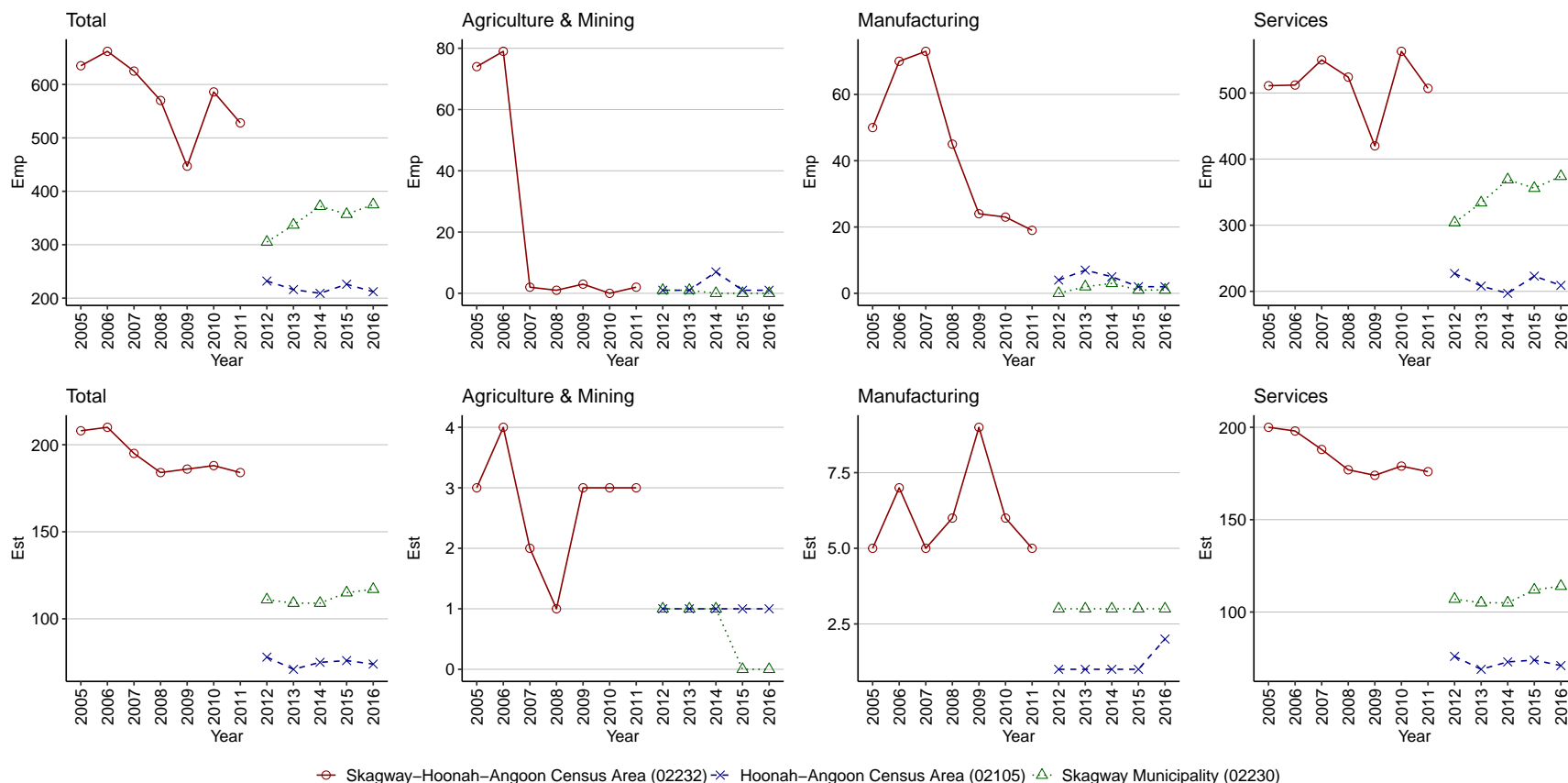


Figure A.75: County boundary change—Skagway-Hoonah-Angoon Census Area, Hoonah-Angoon Census Area & Skagway Municipality, AK

Notes: This figure plots the number of employment and establishments in County boundary change—Skagway-Hoonah-Angoon Census Area (FIPS02232), Hoonah-Angoon Census Area (FIPS02105) and Skagway Municipality (FIPS02230) of Alaska. Skagway-Hoonah-Angoon Census Area split to create Hoonah-Angoon Census Area and Skagway Municipality on Jun 20, 2007. CBP incorporated this change in 2012.

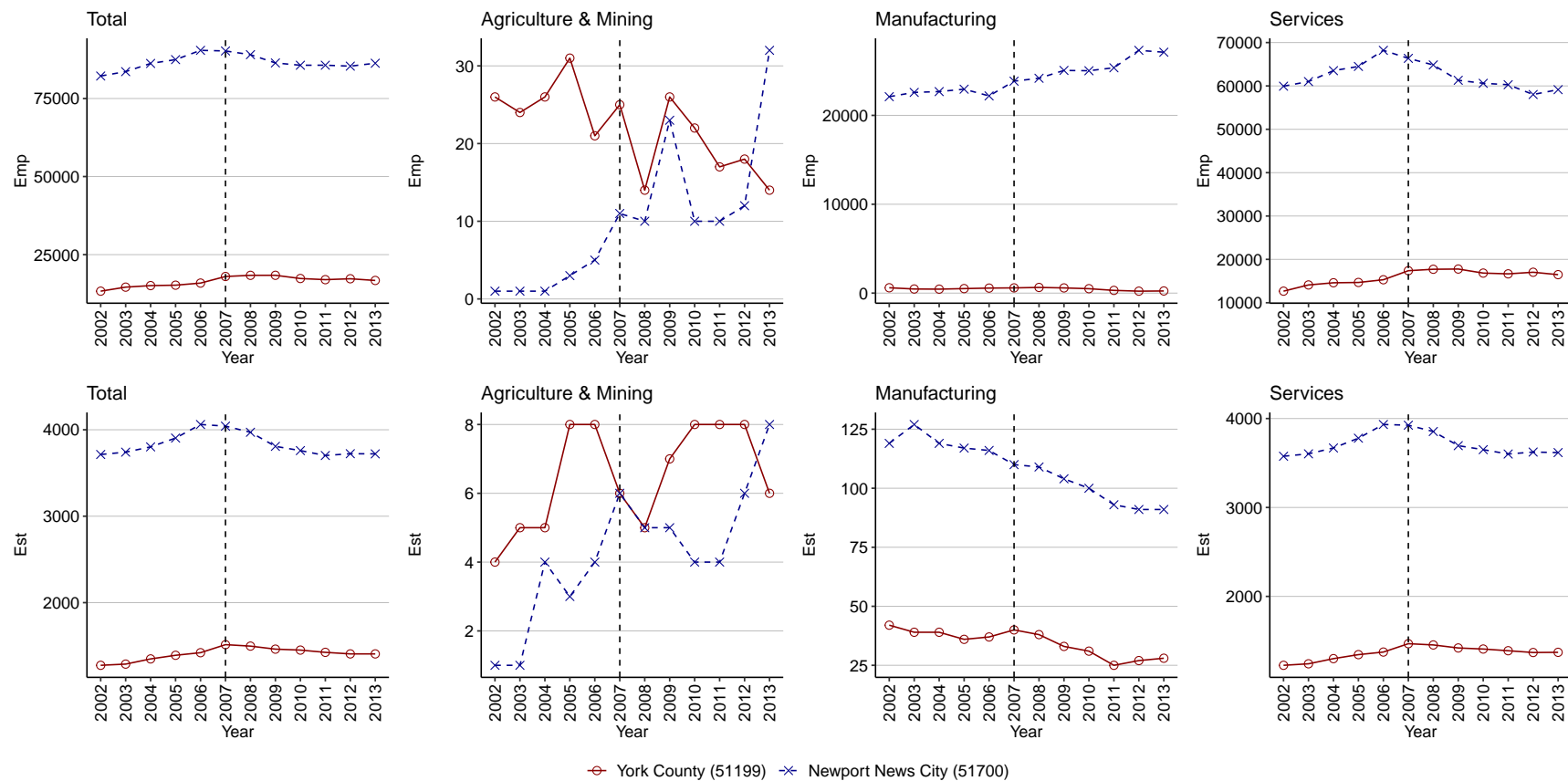


Figure A.76: County boundary change—York County & Newport News City, VA

Notes: This figure plots the number of employment and establishments in York County (FIPS51199) and Newport News City (FIPS51700) of Virginia. York County and Newport News City exchanged territories on Jul 1, 2007. It is not clear when CBP incorporated this change.

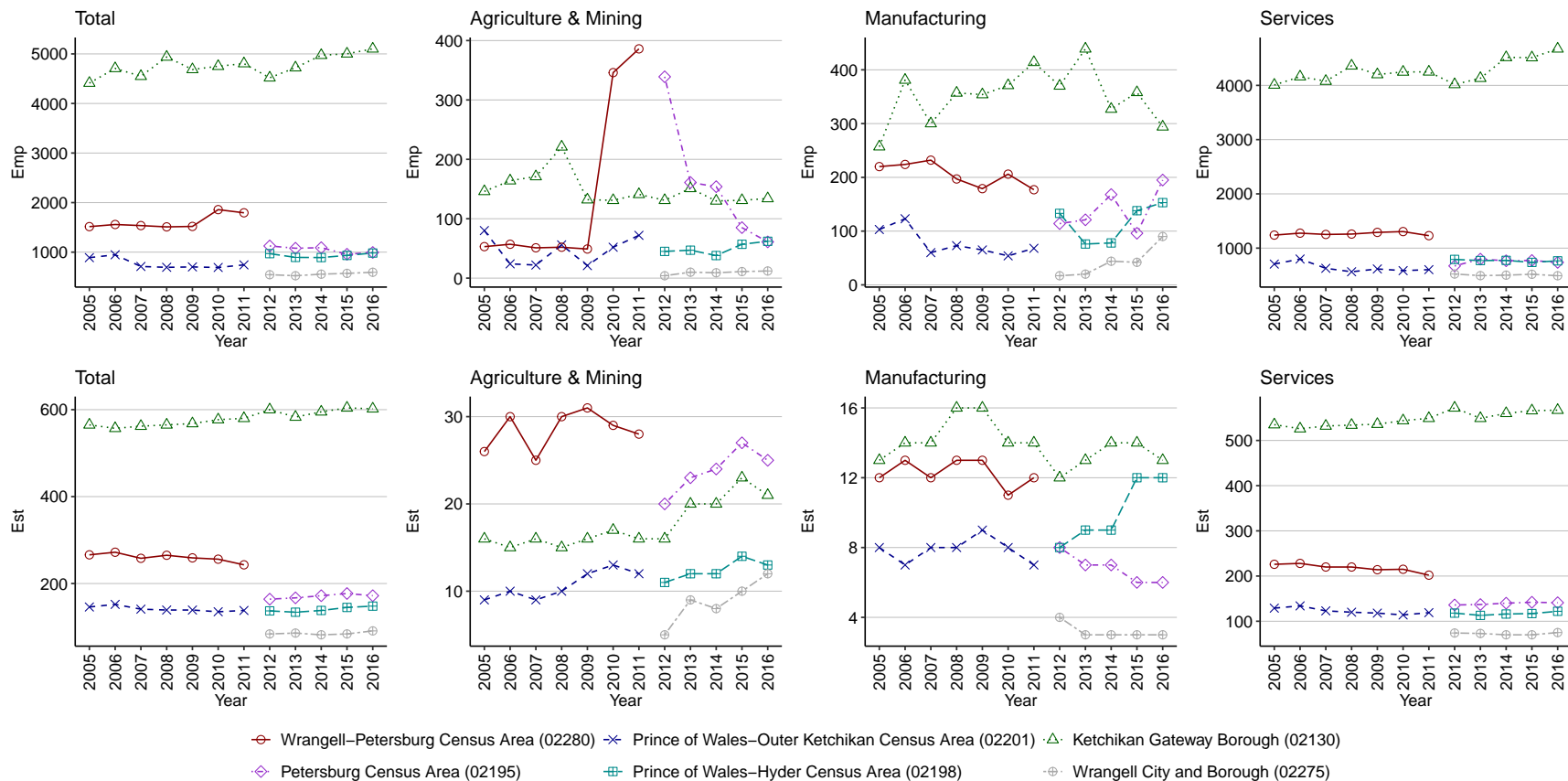


Figure A.77: County boundary change—Wrangell-Petersburg Census Area, Prince of Wales-Outer Ketchikan Census Area, Ketchikan Gateway Borough, Petersburg Census Area, Prince of Wales-Hyder Census Area & Wrangell City and Borough, AK

Notes: This figure plots the number of employment and establishments in Wrangell-Petersburg Census Area (FIPS02280), Prince of Wales-Outer Ketchikan Census Area (FIPS02201), Ketchikan Gateway Borough (FIPS02130), Petersburg Census Area (FIPS02195), Prince of Wales-Hyder Census Area (FIPS02198), and Wrangell City and Borough (FIPS02275) of Alaska. On Jun 1, 2008, Petersburg Census Area was created from part of Wrangell-Petersburg Census Area. The remaining part of Wrangell-Petersburg Census Area annexed part of Prince of Wales-Outer Ketchikan Census Area to create Wrangell City and Borough. Part of Prince of Wales-Outer Ketchikan Census Area was annexed to Ketchikan Gateway Borough. The last remaining part of Prince of Wales-Outer Ketchikan Census Area formed the new Prince of Wales-Hyder Census Area. CBP incorporated these changes in 2012.

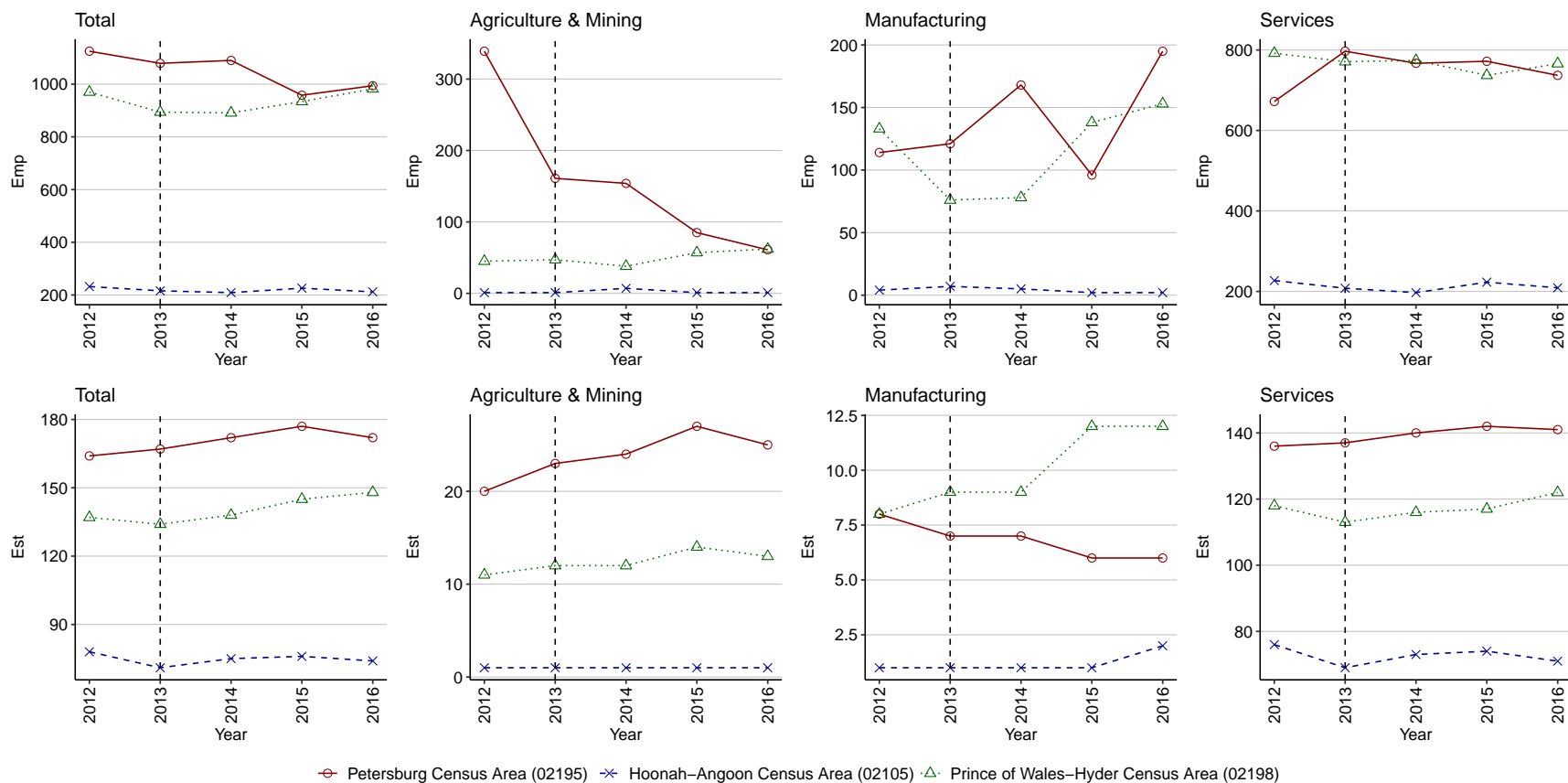


Figure A.78: County boundary change—Petersburg Census Area, Hoonah-Angoon Census Area & Prince of Wales-Hyder Census Area, AK

Notes: This figure plots the number of employment and establishments in Petersburg Census Area (FIPS02195), Hoonah-Angoon Census Area (FIPS02105) and Prince of Wales-Hyder Census Area (FIPS02198) of Alaska. Petersburg Census Area gained territories from Hoonah-Angoon Census Area and lost territories to Prince of Wales-Hyder Census Area on Jan 3, 2013. CBP likely incorporated this change in 2015.

Appendix B Imputation

This appendix section describes procedures implemented to impute undisclosed employment count. The algorithm is similar to the one implemented by [Autor et al. \(2013\)](#). We point interested readers to [Eckert et al. \(2020\)](#) and [Eckert et al. \(2022\)](#) for a more sophisticated method.

1. Add residual industries and aggregate industries

- For each industry level, add a lower level industry displaying the residual of all numerical variables, such as employment, number of reporting units / establishments, and distribution of establishments by subtracting the sum of lower level industry values from the upper level industry total.
- Add an upper level industry if there lacks one displaying the sum of numerical variables of lower level industry.
- Note: If there is undisclosed values involved the residual or the total shall also be as if it is undisclosed.

2. Compute the range of employment

- Compute an interval of possible employment according to the distribution of reporting units/establishments by employment size class.
- From the second lowest level industry to the highest, compute an interval of possible employment implied by the lower level industry. (E.g., to compute the lower bound, add up the employment of lower level industries, using the previously computed lower bound if the employment is undisclosed.)
- Take the intersection of the above two intervals.
- Note: We do not use the employment range flag provided by some datasets, because it is inconsistent with the distribution for a large number of observations.

3. Estimate the undisclosed employment

- Compile a list of industry codes of which the typical size is to be estimated: We choose the highest 3 industry levels, namely county totals, industry divisions, and 2 digit-industries for the 4-digit SIC classification, and county total, 2- and 3-digit industries for the 6-digit NAICS classification.

- Estimate the typical size of an establishment by constrained regression: For each industry listed, extract all observations with non-missing employment; Regress the employment figure on the numbers of establishments in each employment size class without a constant, subject to the constraints that the coefficients fall between the corresponding size brackets. The coefficients from the regression are taken to be the estimates of the typical size of an establishment in the corresponding employment class.
- Note: If the sample is too small for the regression to work, we take the coefficients from its corresponding upper level industry. Not all coefficients can be estimated from the corresponding sample, we keep only the ones that can be estimated, and deal with this when it causes problem in the next step.
- Estimate the employment of industries with undisclosed employment: For each such industry, find the corresponding coefficients from the previous step, (If the industry is not among the highest 3 levels, use the coefficients of the 3rd highest level industry to which it belongs) and compute the estimated employment using the distribution and the coefficients.
- Note: If the number of coefficients is insufficient, use those of its upper level industry coefficients. (This might be repeated.) If the establishment is Unclassified, use the coefficients for the county totals.

4. Adjust for vertical consistency

From the 2nd highest level industry to the lowest,

- Proportional adjustment: Adjust the estimated employment figure proportionally and recursively, until the sum of employment of lower level industries is equal to that of the upper level, but the employment of individual industries still lies in the range computed in Step 1.
- Residual adjustment: Round the estimated employment to integers, and adjust each of the lower level industries with the largest adjustable estimated employment by one unit until the vertical discrepancies diminish.
- Note: If there is only one lower level industry with undisclosed employment, then adjust to fully satisfy vertical consistency and disregard the horizontal constraints.

Appendix C Missing Data

This appendix section documents missing county observations from the current database. See Table C.1. We hope to digitize these data as soon as possible.

Table C.1: Missing county observations

Year	State	County	FIPS
1946	ALABAMA	MOBILE	01097
	DISTRICT OF COLUMBIA	DISTRICT OF COLUMBIA	11001
	All States	STATEWIDE	--999
1947	ALABAMA	JEFFERSON	01073
	CALIFORNIA	BUTTE COUNTY	06007
	MARYLAND	WASHINGTON	24043
1948	ARKANSAS	PULASKI	05119
	UTAH	SALT LAKE	49035
1949	OREGON	LANE	41039
1951	DELAWARE	KENT	10001
1956	IDAHO	IDAHO	16049
	IDAHO	JEFFERSON	16051
	WEST VIRGINIA	BARBOUR	54001
	WEST VIRGINIA	BERKELEY	54003
	WEST VIRGINIA	BOONE	54005
1962	WASHINGTON	GRANT	53025
1967	MISSOURI	JASPER	29097
	MISSOURI	JEFFERSON	29099
	MISSOURI	JOHNSON	29101
	NEW MEXICO	DE BACA	35011
	NEW MEXICO	MORA	35033
	NEW MEXICO	SANDOVAL	35043
1968	OHIO	KNOX	39083