

# Structure and Contribution of the U.S. Forest Products Industry Over Time

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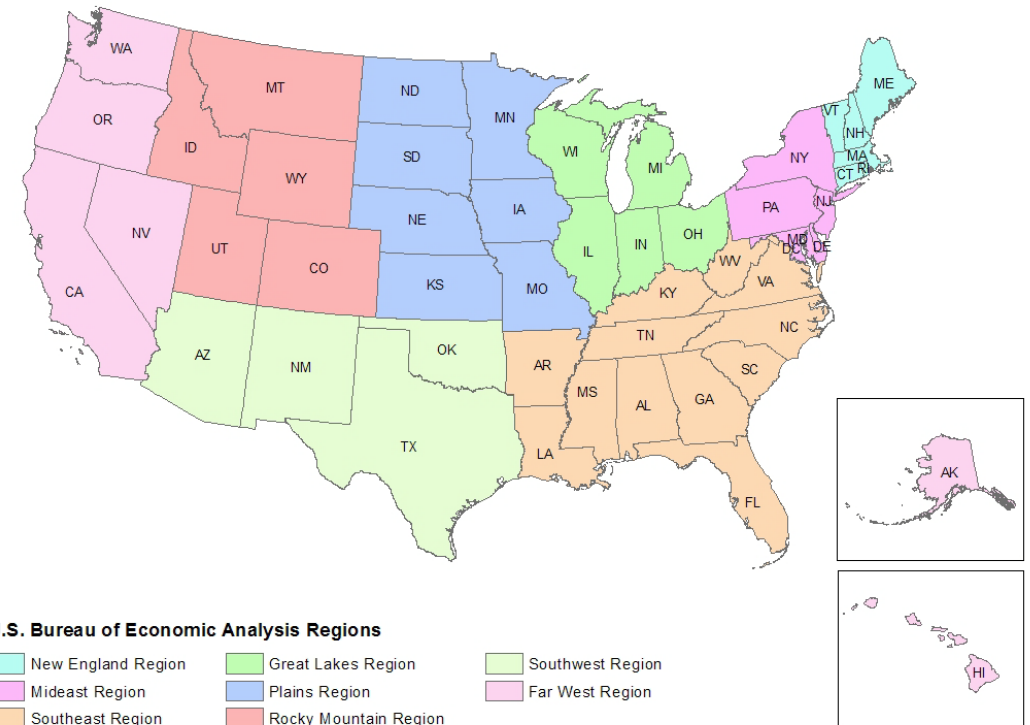
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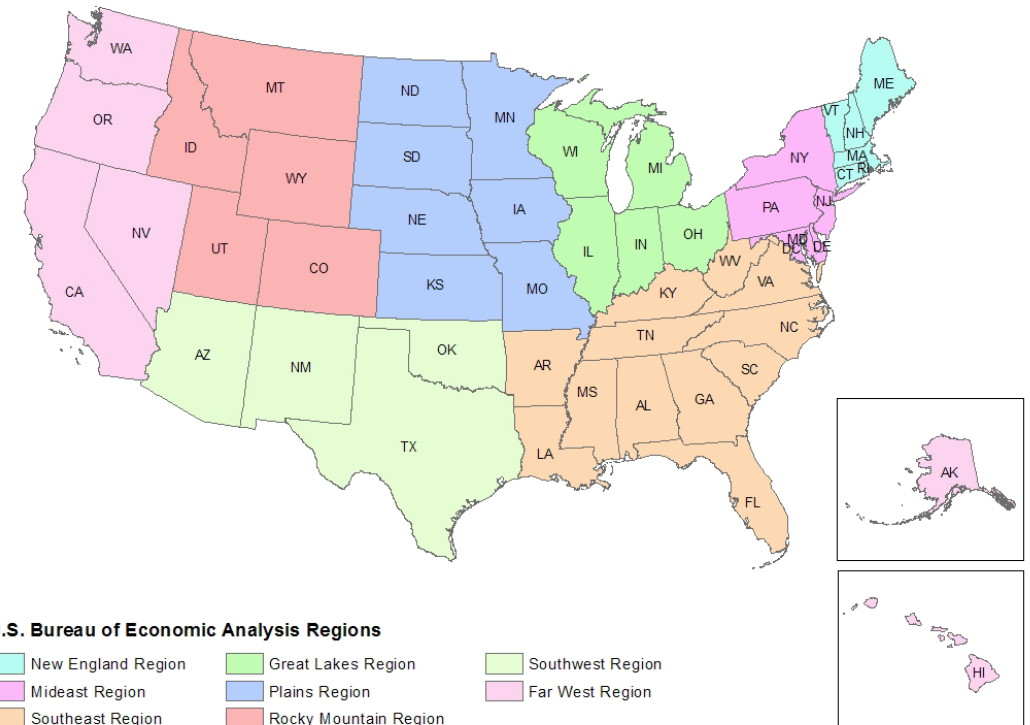
# INTRODUCTION

- Has the structure of the U.S. forest products industry changed over time?
- Do changes vary by regions within the U.S.?



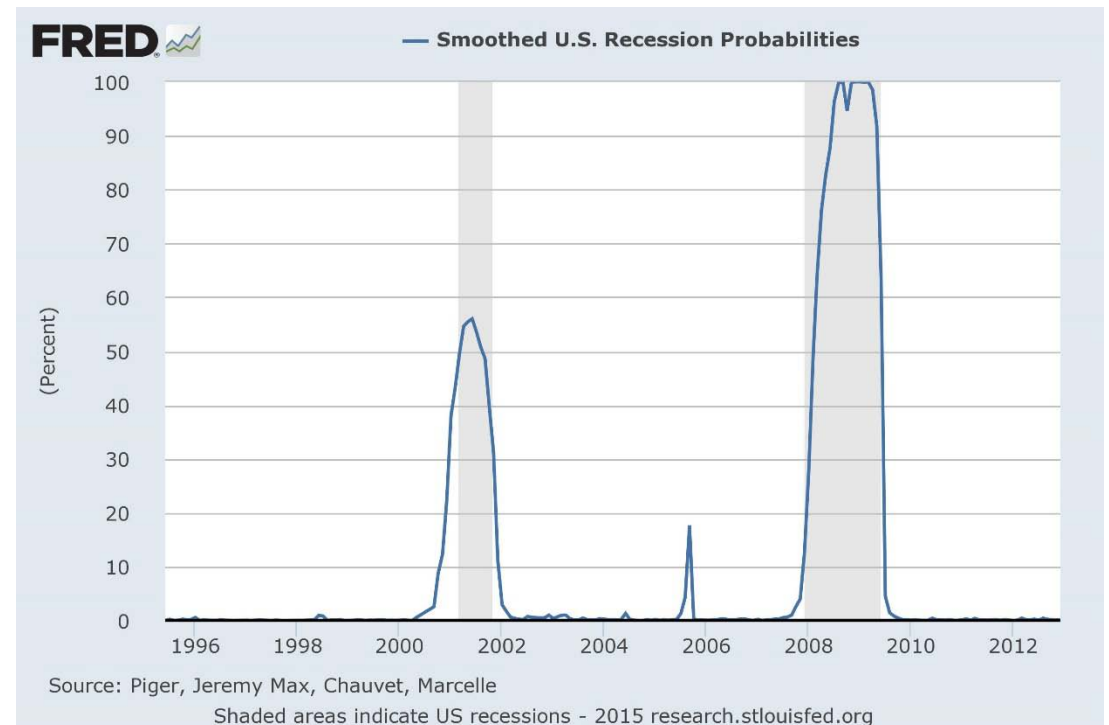
# INTRODUCTION

- Changes were examined for
  - 3 subsectors of the forest products industry (solid wood products, pulp and paper, and wood furniture manufacturing)
  - Across 8 regions of the U.S. (8 Bureau of Economic Analyses Regions)
  - Over time (1996 to 2012)
  - Size of the industry measured by employment, income, output, and value-added



# Two Recessionary Periods over 1996 - 2012

- According to the U.S. National Bureau of Economic Research (the official arbiter of U.S. recessions)
- 1<sup>st</sup> began in **March 2001** and ended in **November 2001**, and thus lasted 8 months, which is slightly less than average for recessions since World War II
- 2<sup>nd</sup> recession began in **December 2007** and ended in **June 2009**, and thus extended over 18 months



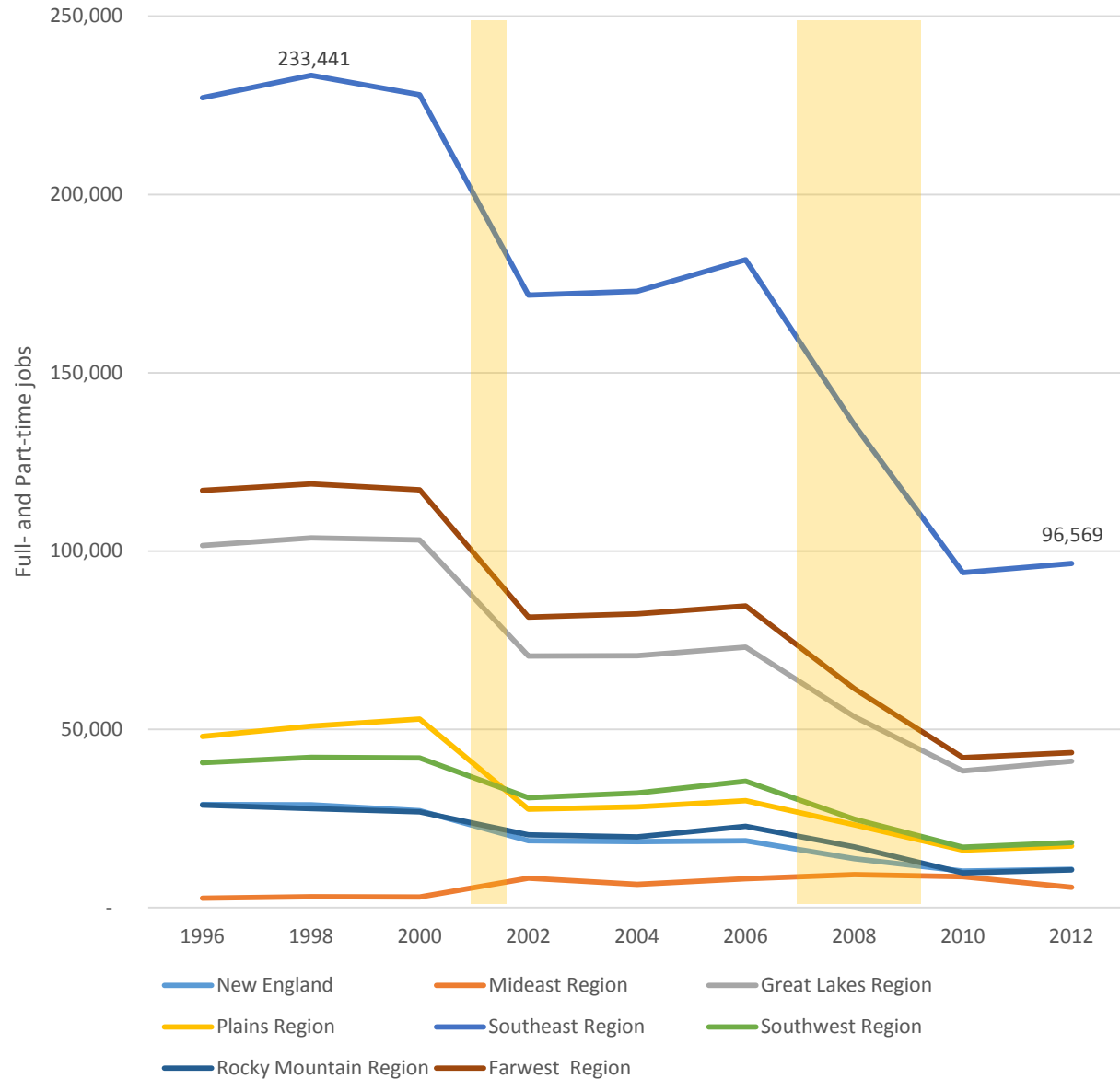
# IMPLAN Sectors Over Time

- Over the study period IMPLAN sector schemes have changed
- All three sector schemes are referenced to NAICS
- North American Industrial Classification System

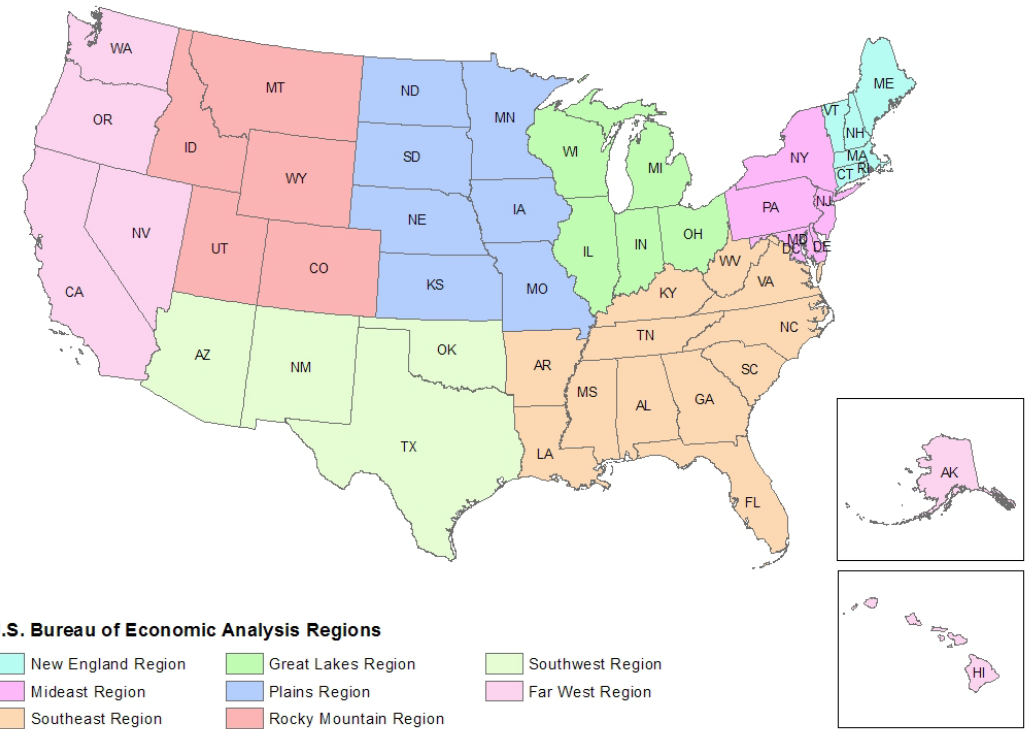
Before 2001	2001-2006	After 2006	IMPLAN Sectors, FPI related
			<b>Solid Wood Products</b>
134	112	95	Sawmills
145	113	95	Wood preservation
146	114	98	Reconstituted wood product manufacturing
139	115	96	Veneer and plywood manufacturing
140	116	97	Engineered wood member and truss manufacturing
137	118		Cut stock, resawing lumber, and planing
135 and 136	119		Other millwork, including flooring
141 and 142	120	100	Wood container and pallet manufacturing
144	122	102	Prefabricated wood building manufacturing
147	123	103	Miscellaneous wood product manufacturing
			<b>Wood Furniture</b>
	117	99	Wood windows and door manufacturing
138	362	295	Wood kitchen cabinet and countertop manufacturing
149	363	296	Upholstered household furniture manufacturing
148	364	297	Nonupholstered wood household furniture manufacturing
156	366	299	Institutional furniture manufacturing
152,153,160	367		Other household and institutional furniture
154	368	300	Wood office furniture manufacturing
154	369	301	Custom architectural woodwork and millwork
157	371	302	Showcases, partitions, shelving, and lockers
			<b>Paper and allied products</b>
161	124	104	Pulp mills
162 and 163	125	105 and 106	Paper and paperboard mills
164	126	107	Paperboard container manufacturing
169	128		Surface-coated paperboard manufacturing
165 and 166	129	108	Coated and laminated paper and packaging materials
168	130		Coated and uncoated paper bag manufacturing
169	131		Die-cut paper office supplies manufacturing
171	132		Envelope manufacturing
170	134	111	Sanitary paper product manufacturing
173	135	112	All other converted paper product manufacturing
		109	all other paperbag and coated and treated paperbag manufacturing
172	133	110	Stationary product manufacturing

# Employment and Labor Income

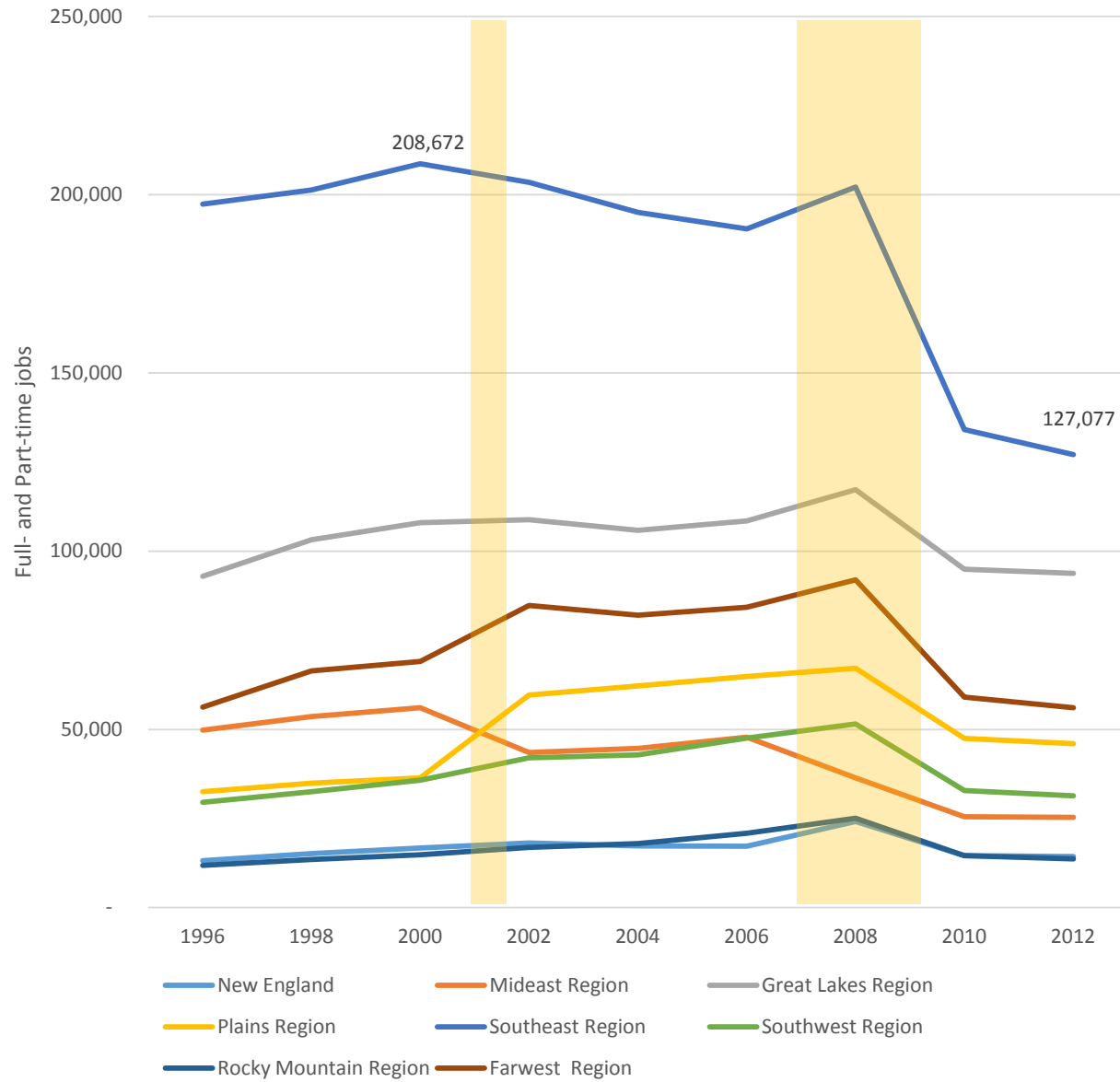
**Solid Wood Products Manufacturing Employment (Direct Effect)**  
1996-2012 BEA Region



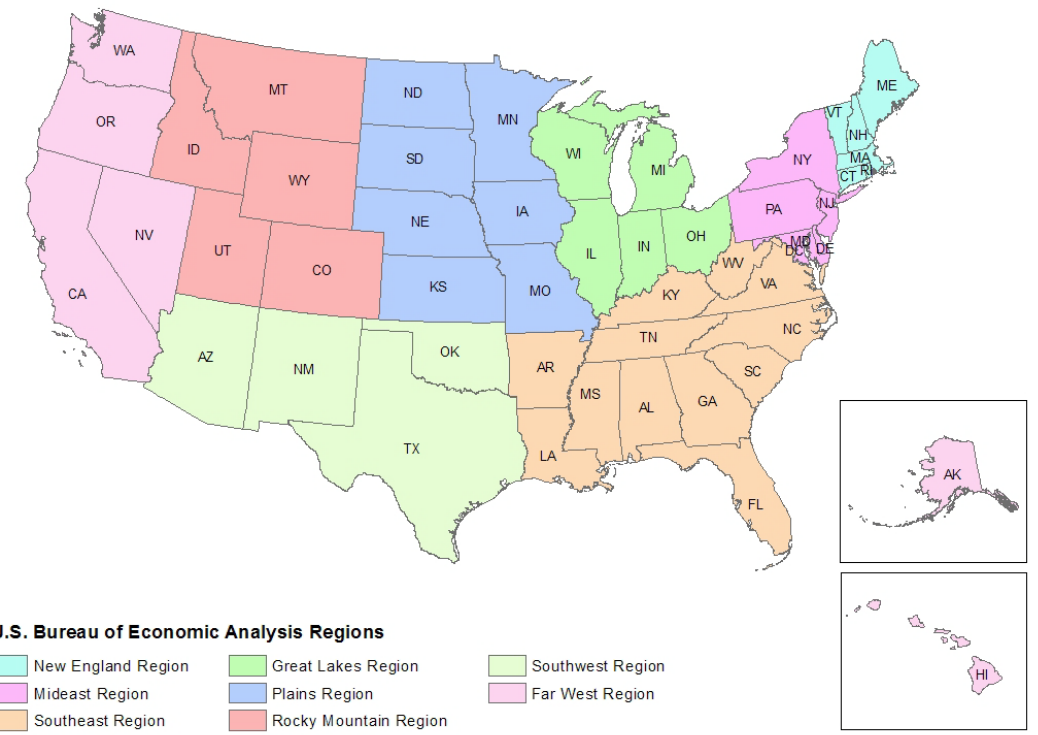
- Both recessions have clear impacts
- Most notable in largest three regions
- Mideast is the lone exception



**Wood Furniture Products Manufacturing Employment (Direct Effect) 1996-2012 BEA Region**

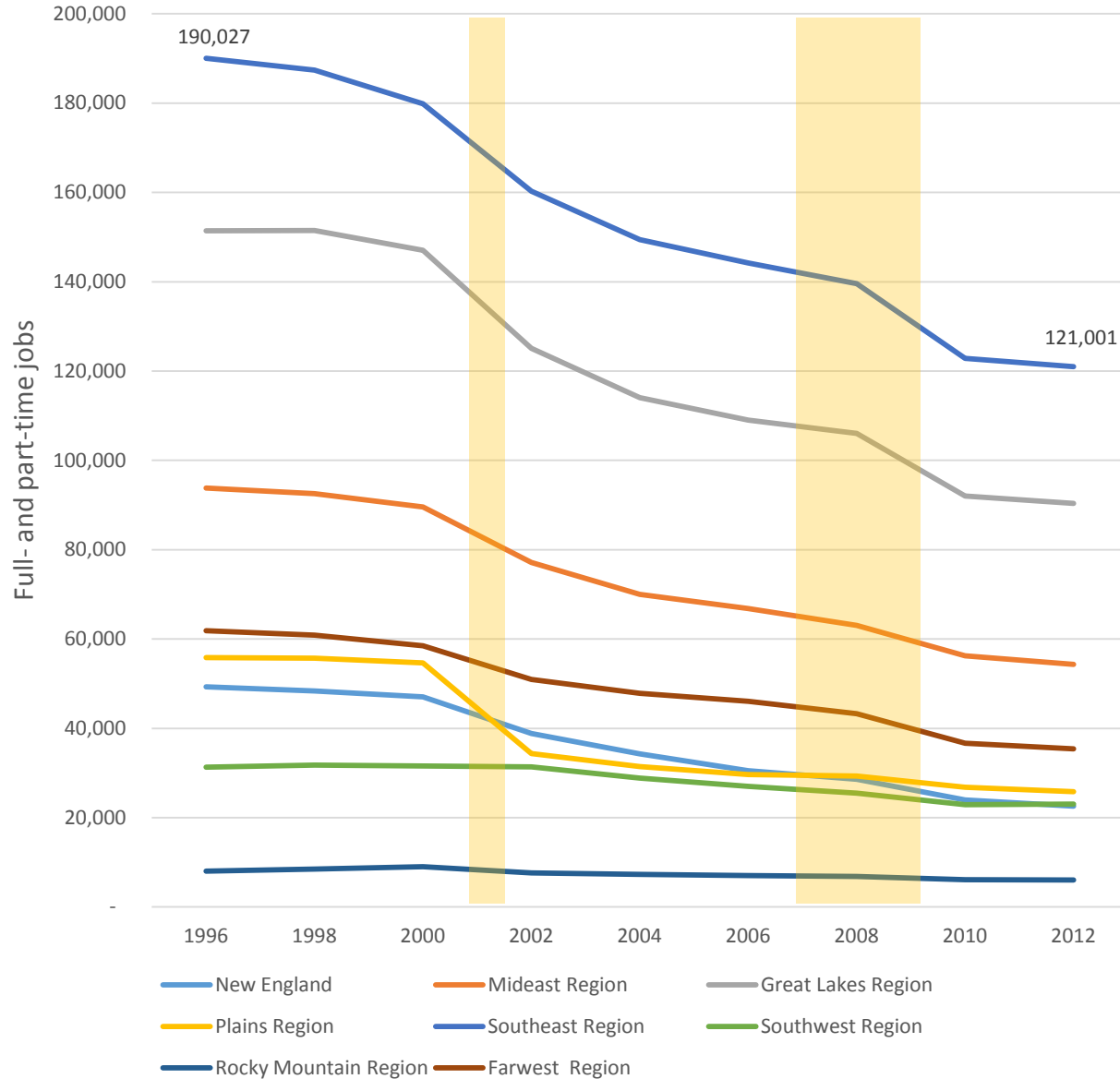


- 2001 recession had mixed impacts by region
- 2007 recession produced sharp declines
- Growth was negative 2010-2012

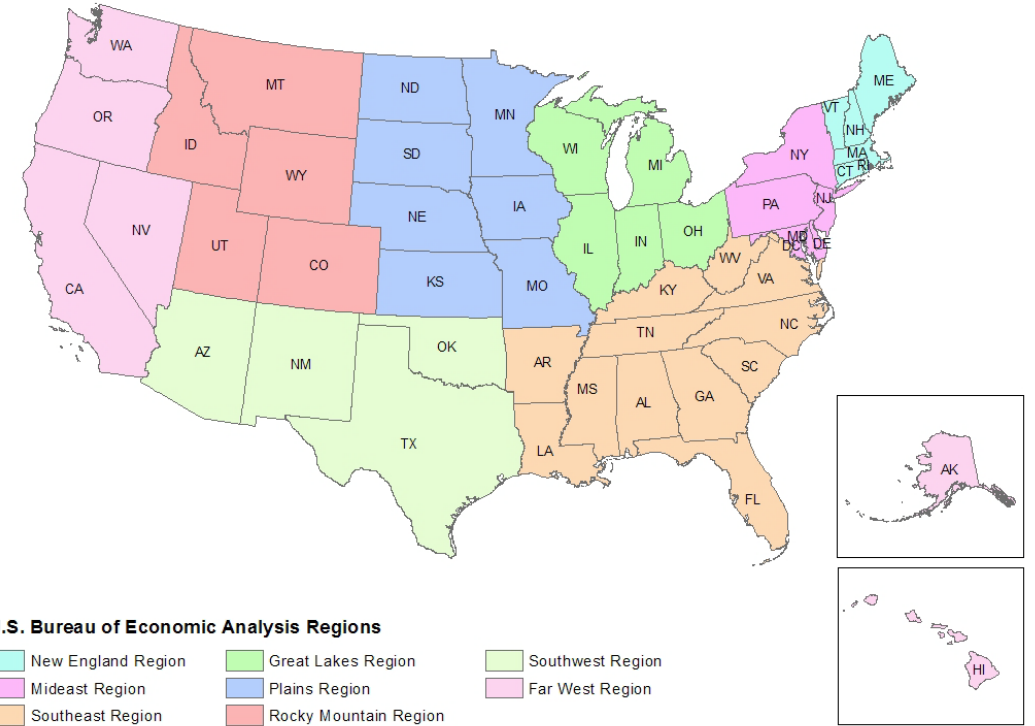




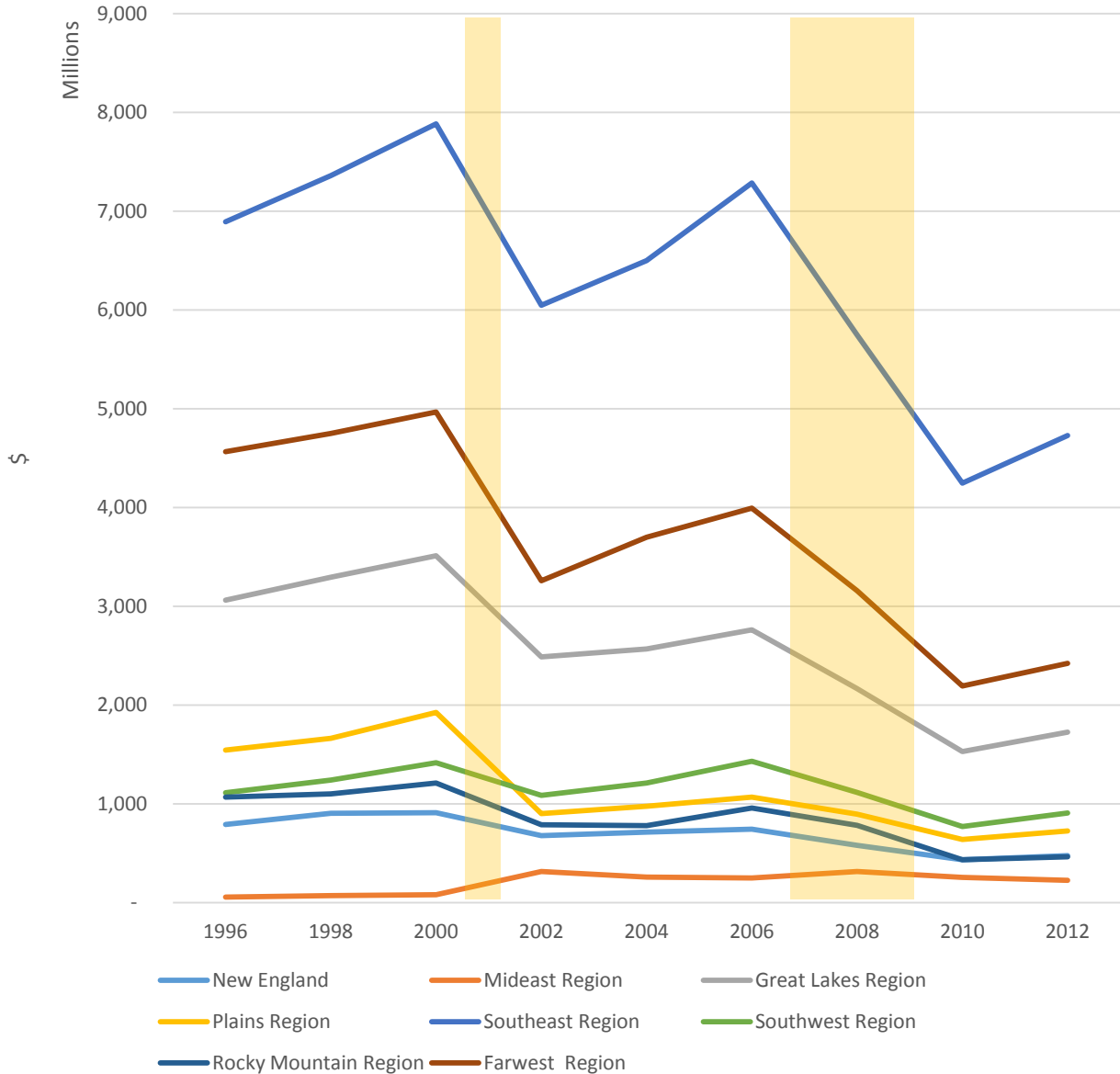
**Paper and Allied Products Manufacturing Employment (Direct Effect) 1996-2012 BEA Region**



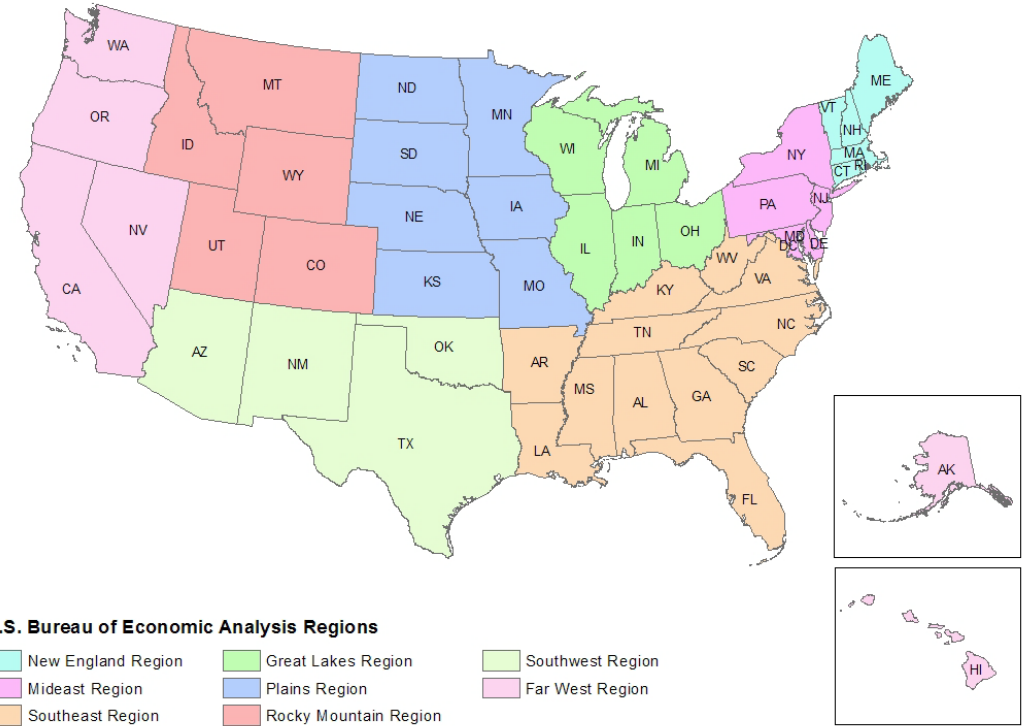
- Fairly stable downward trend
- Rate of decline increased with both recessions



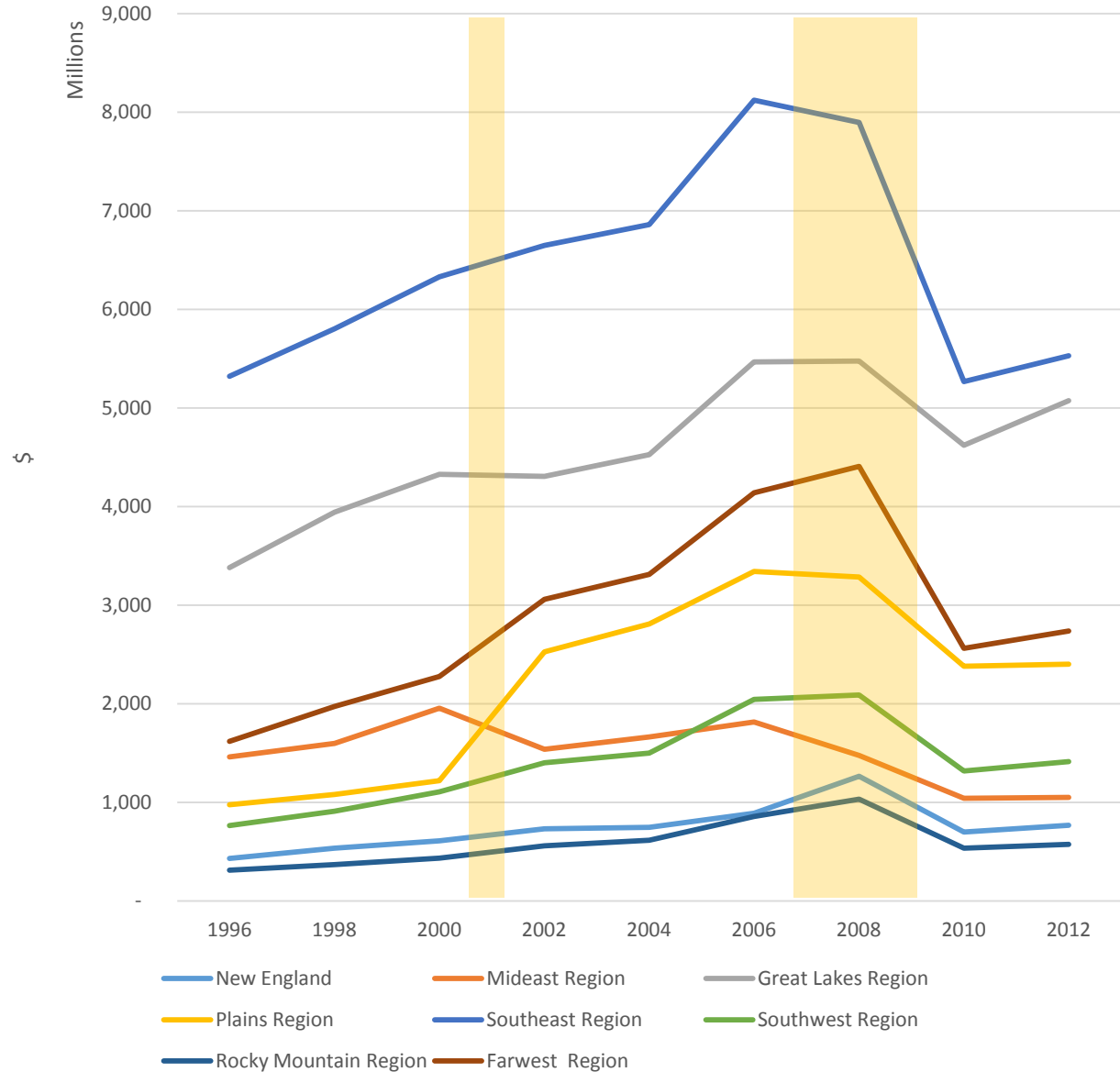
**Solid Wood Products Manufacturing Labor Income (Direct Effect)**  
1996-2012 BEA Region



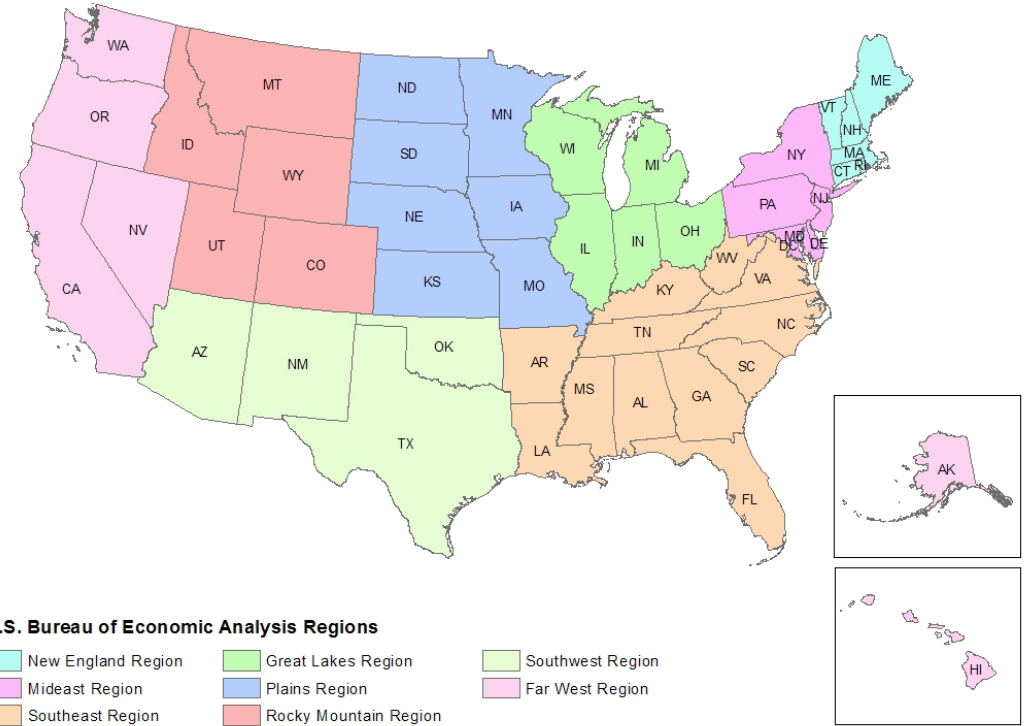
- Growth evident before and after each recession
- Sharp declines with each recession



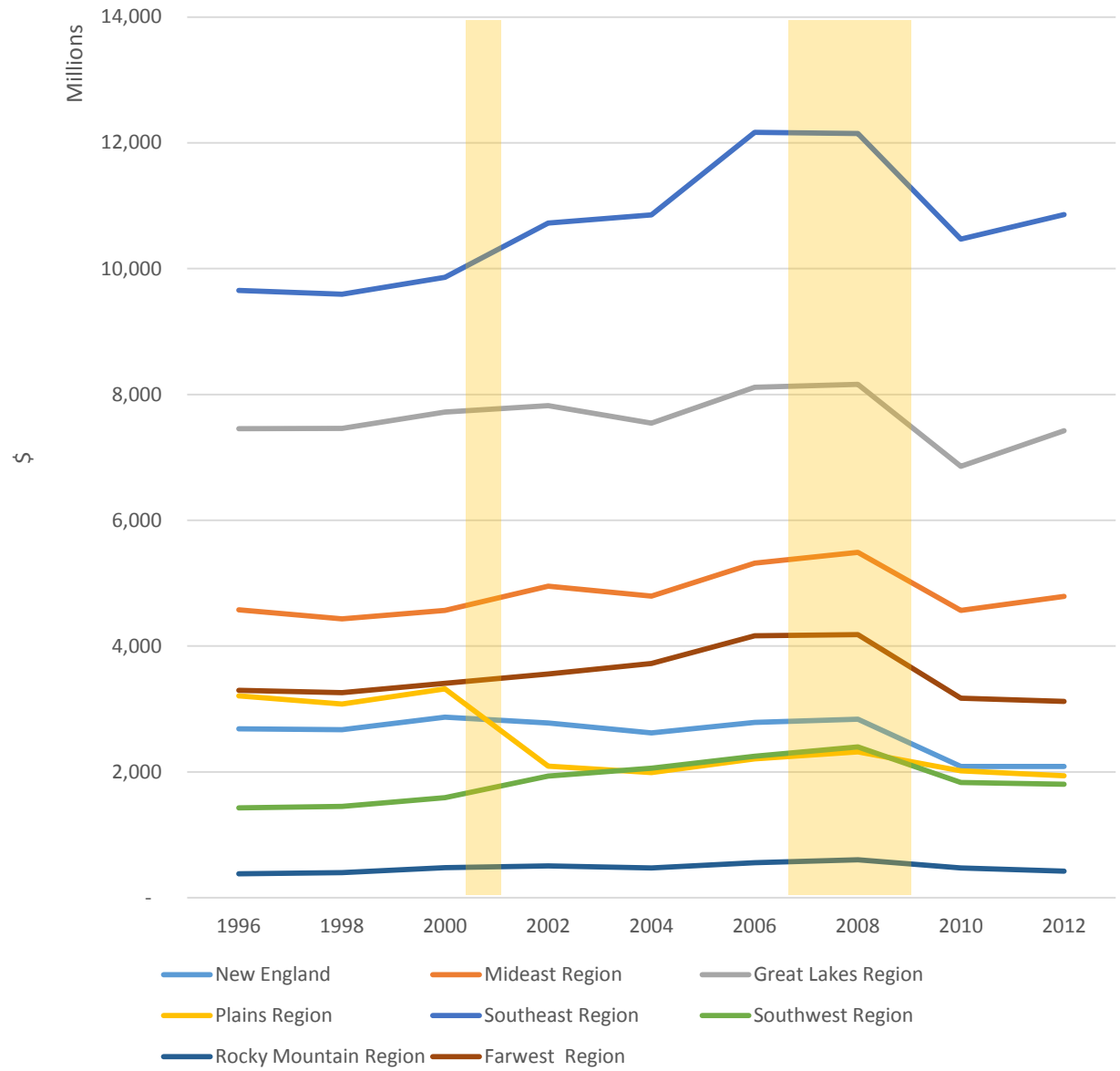
**Wood Furniture Products Manufacturing Labor Income (Direct Effect) 1996-2012 BEA Region**



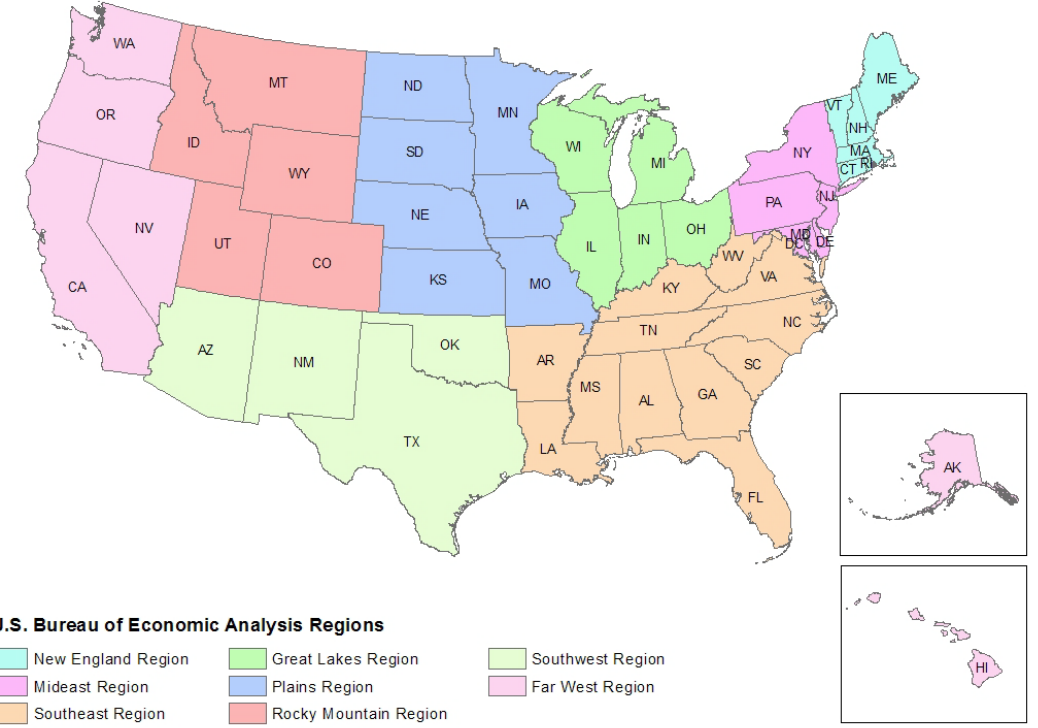
- 2001 recession had little effect
- 2007 recession produced sharp declines



**Paper and Allied Products Manufacturing Labor Income (Direct Effect) 1996-2012 BEA Region**



- 2001 recession had little effect
- Plains region is the exception
- 2007 recession notable declines
- Top 3 regions experienced growth following 2007 recession



# Observations

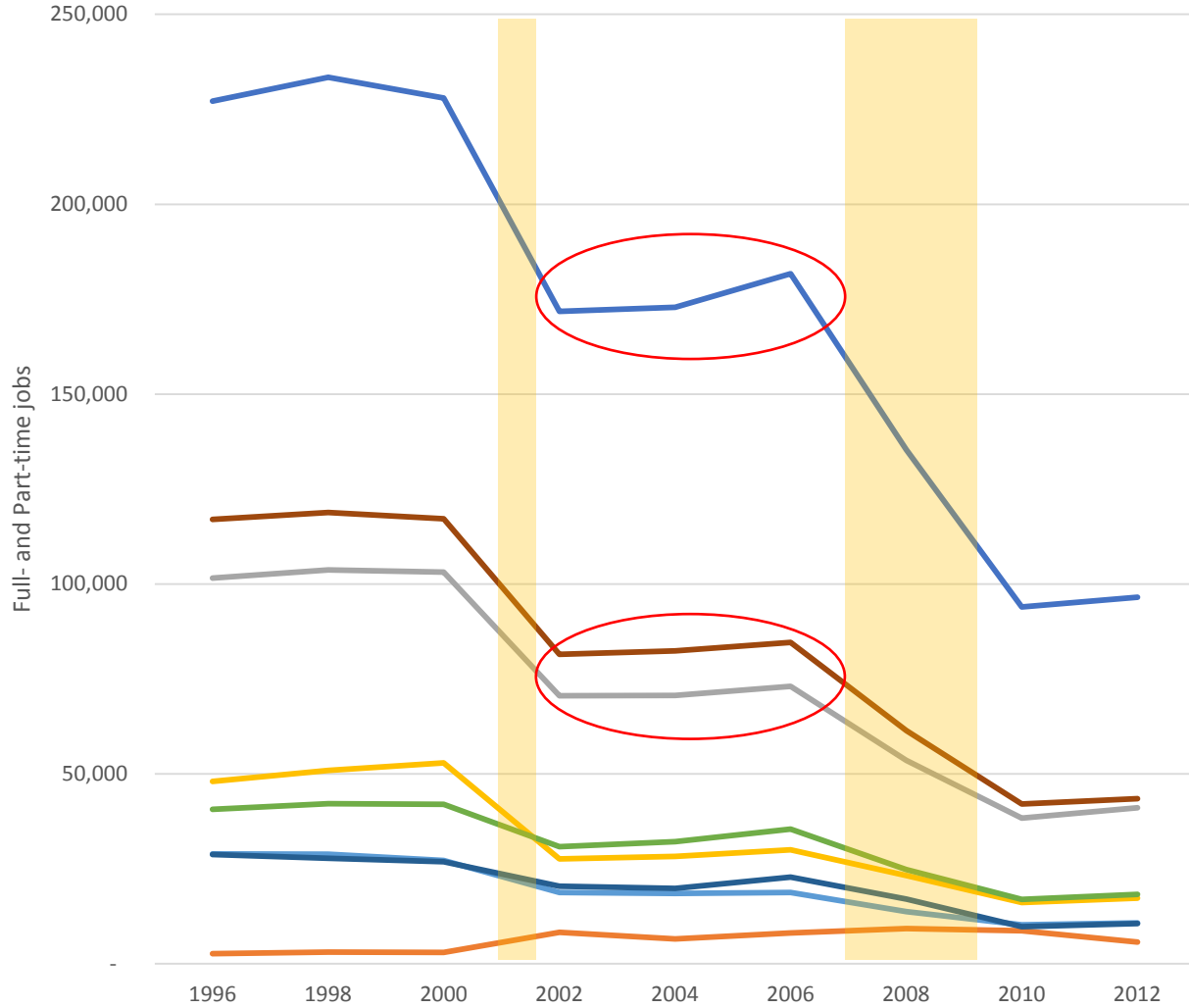
## Employment

- **Solid wood products manufacturing**
- Sustained decreases in industry size across regions
- Sharper decreases for larger FPI regions\*
  - \*Southeast, Farwest, Great Lakes
- **Wood furniture manufacturing**
- Increases for all regions\* until Great Recession
  - \*Southeast and Midwest
- Decreases for all regions after Great Recession
- **Paper and Allied Products Manufacturing**
- Sharper decreases for larger FPI regions\*
  - \*Southeast, Farwest, Great Lakes

## Labor Income

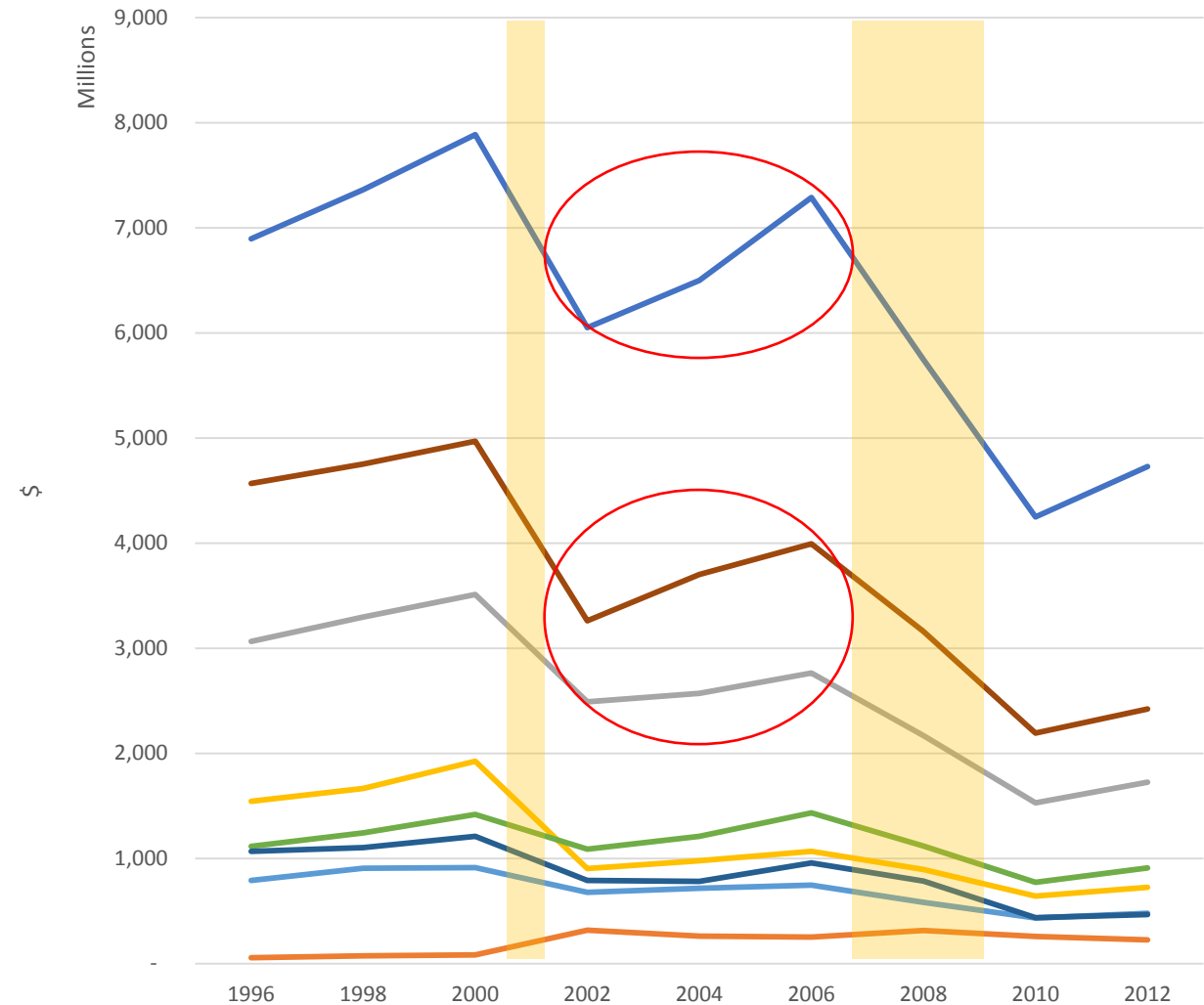
- **Solid wood products manufacturing**
- Decreases with each recession followed by increases
  - \* except Midwest
- Post Great Recession increase for all regions\*
  - \*except Mideast
- Worker hours were decreased with each recession and then increased rather than increasing jobs (next 3 slides)
- **Wood furniture manufacturing**
- Increases for all regions\* until Great Recession
  - \* except Plains region
- Decreases for all regions after Great Recession
- Post Great Recession increase for top 3 regions\*
  - Southeast, Great Lakes, and Farwest
- **Paper and Allied Products Manufacturing**
- Increases for all regions\* until Great Recession
  - \* except Plains region
- Post Great Recession increases for top 3 regions\*
  - Southeast, Great Lakes, and Midwest

Solid Wood Products Manufacturing **Employment** (Direct Effect)  
1996-2012 BEA Region



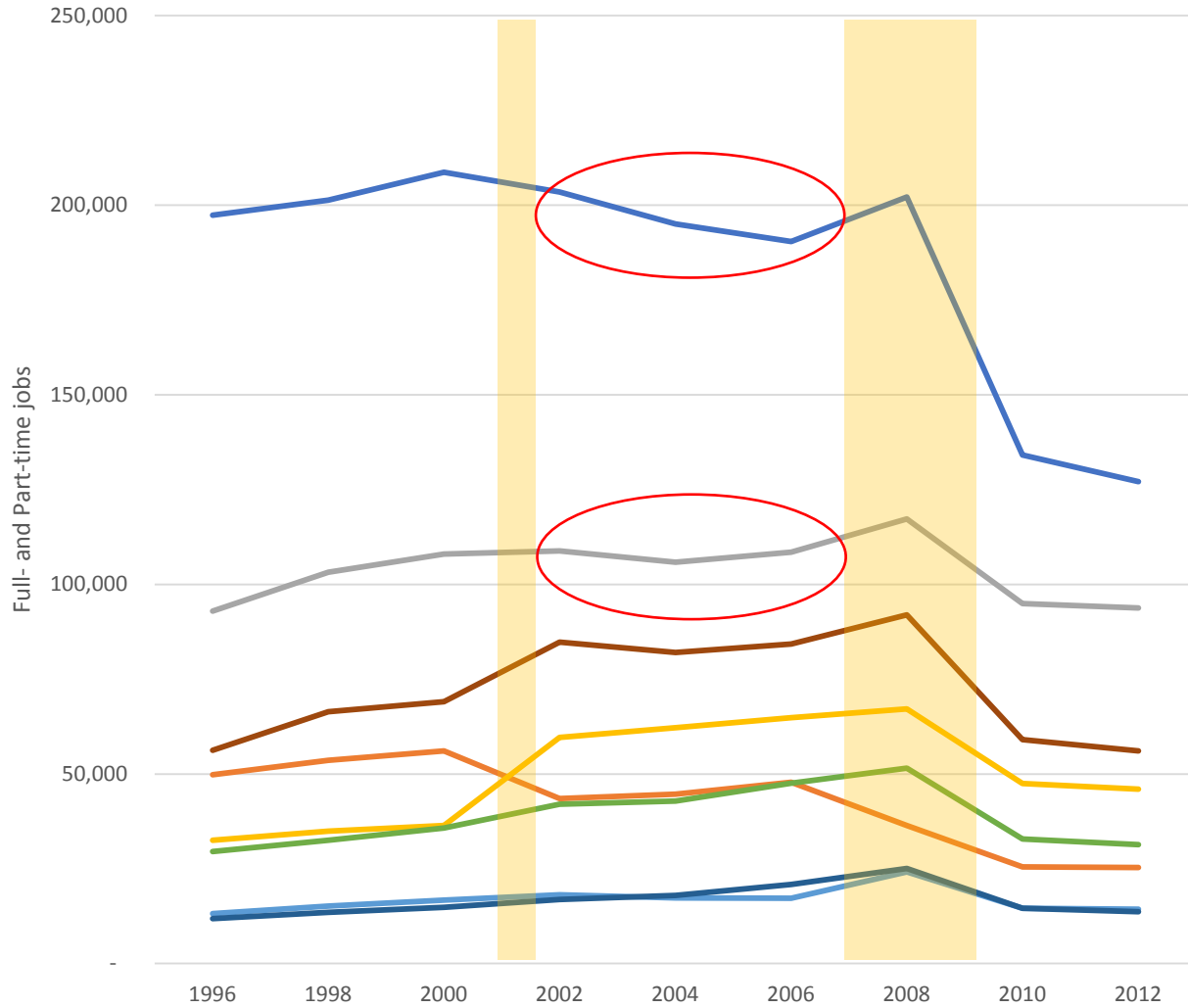
- New England
- Plains Region
- Rocky Mountain Region
- Mideast Region
- Southeast Region
- Farwest Region
- Great Lakes Region
- Southwest Region

Solid Wood Products Manufacturing **Labor Income** (Direct Effect)  
1996-2012 BEA Region



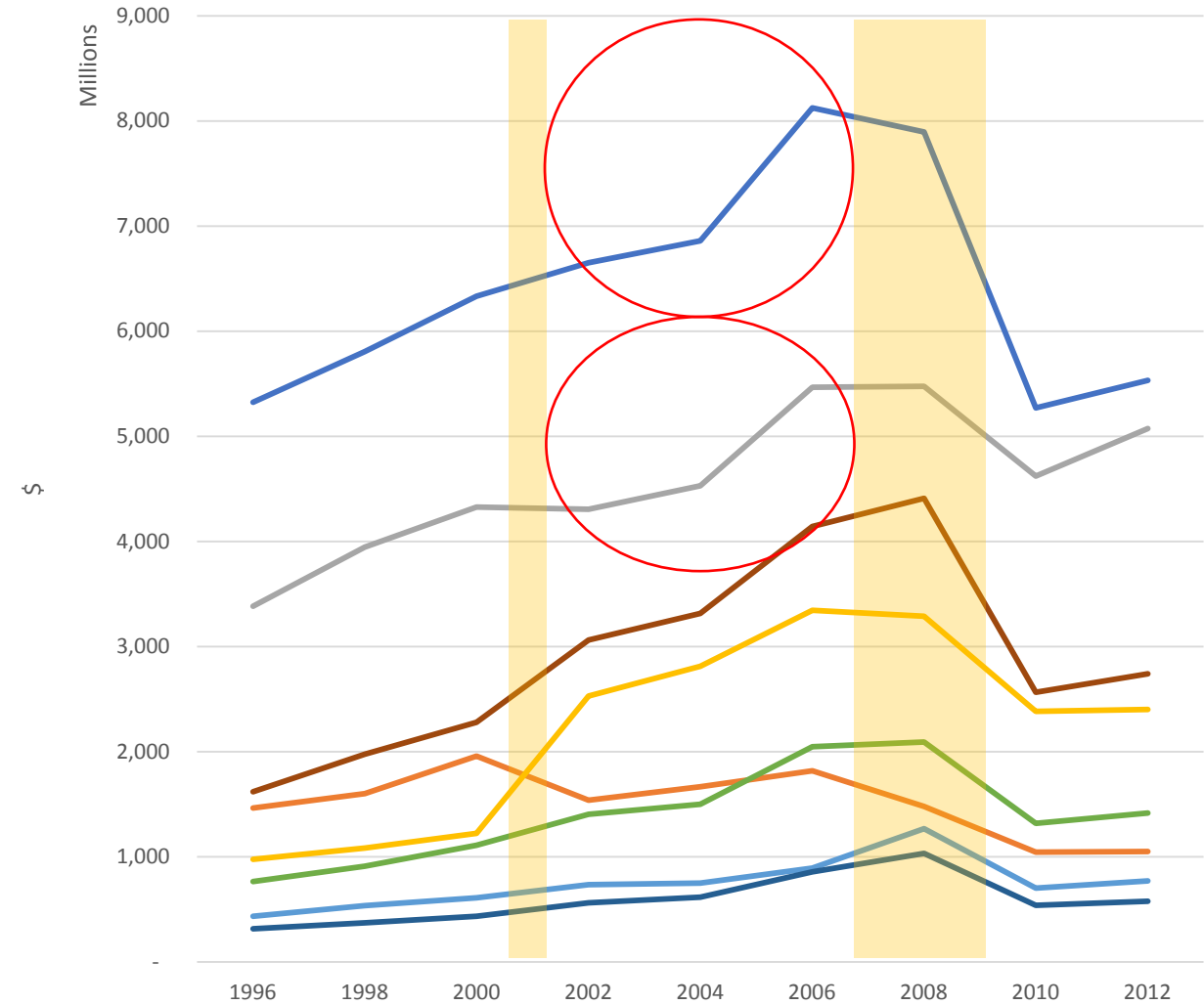
- New England
- Plains Region
- Rocky Mountain Region
- Mideast Region
- Southeast Region
- Farwest Region
- Great Lakes Region
- Southwest Region

Wood Furniture Products Manufacturing **Employment** (Direct Effect) 1996-2012 BEA Region



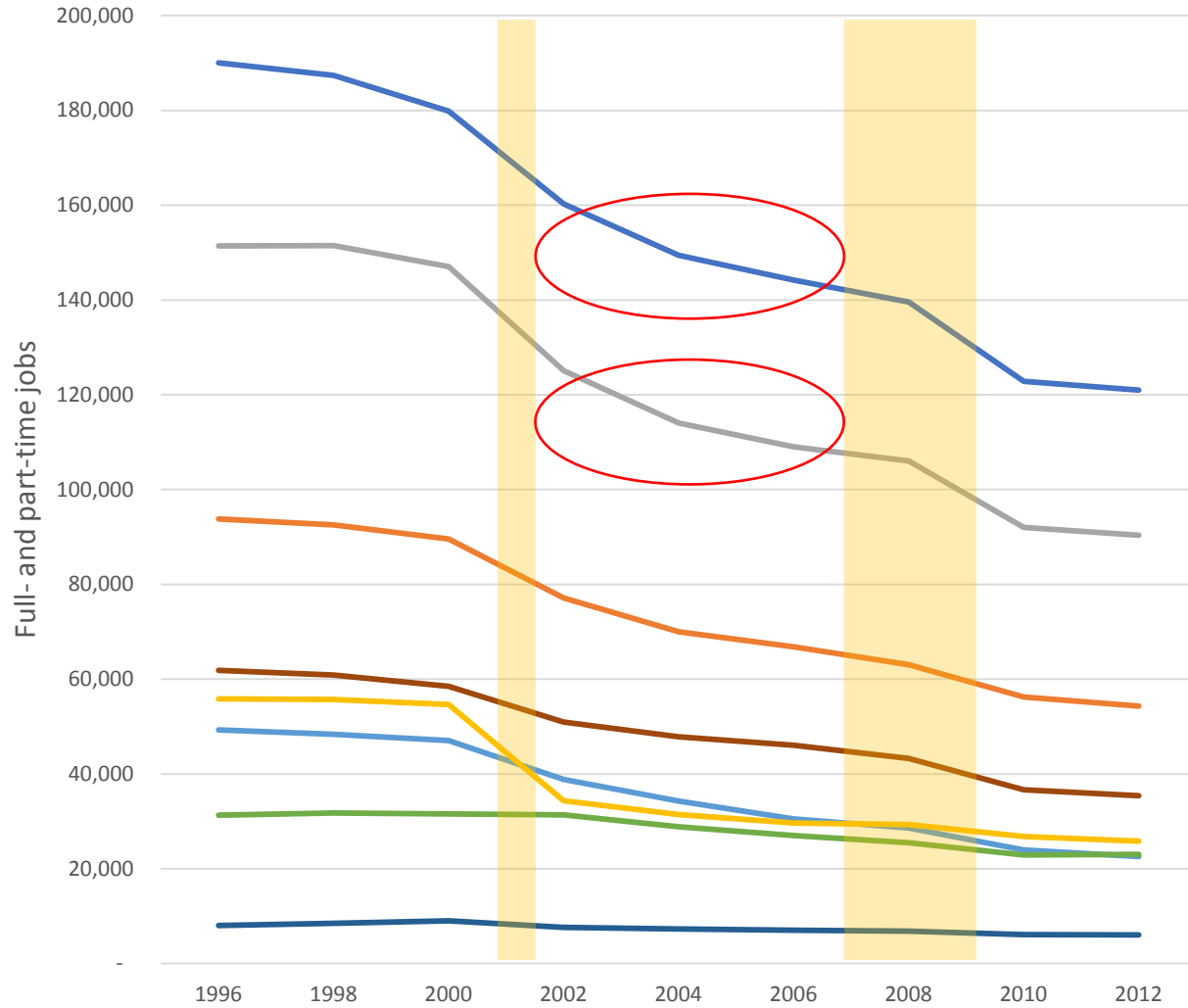
- New England
- Plains Region
- Rocky Mountain Region
- Midwest Region
- Southeast Region
- Farwest Region
- Great Lakes Region
- Southwest Region

Wood Furniture Products Manufacturing **Labor Income** (Direct Effect) 1996-2012 BEA Region



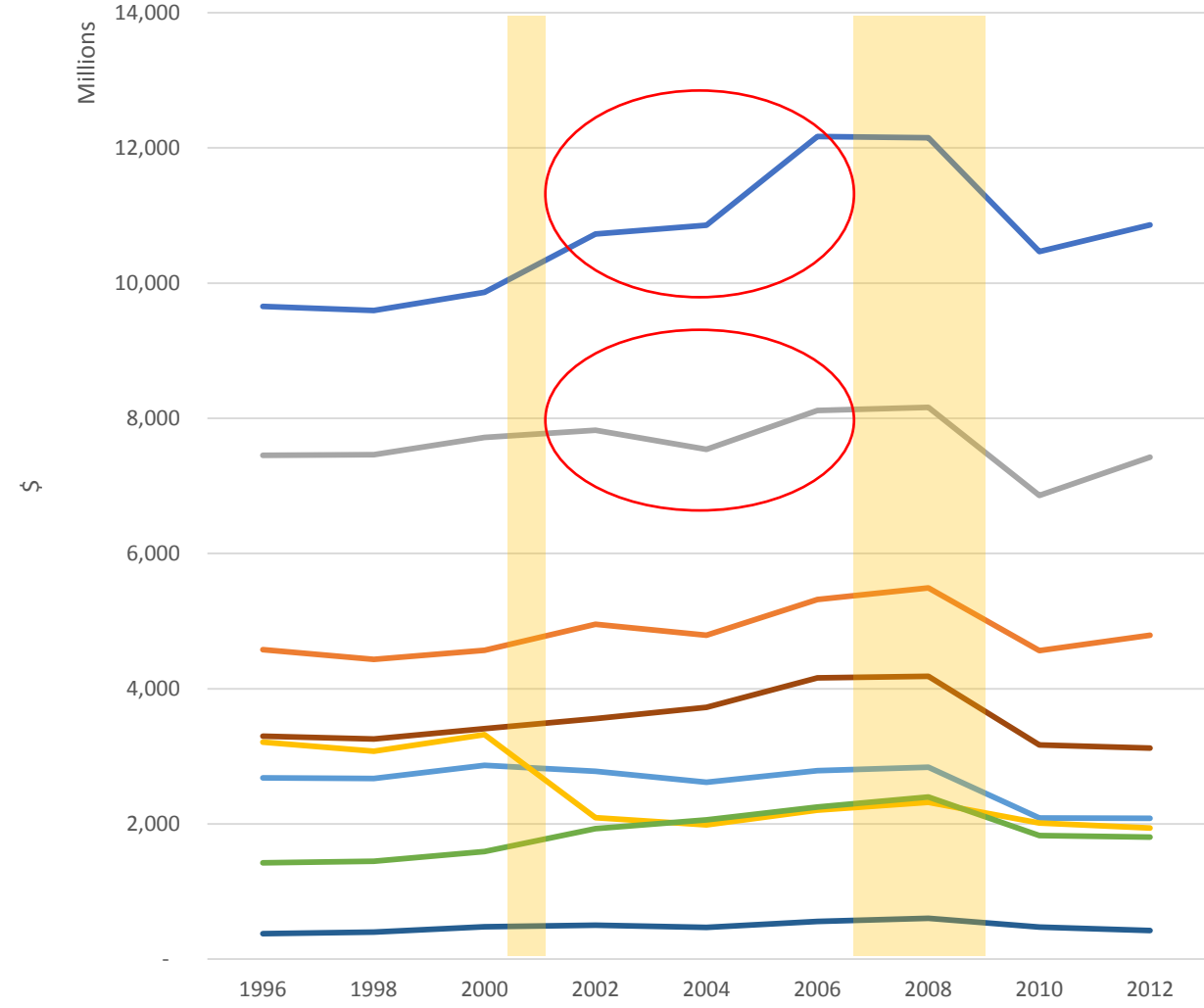
- New England
- Plains Region
- Rocky Mountain Region
- Midwest Region
- Southeast Region
- Farwest Region
- Great Lakes Region
- Southwest Region

Paper and Allied Products Manufacturing **Employment** (Direct Effect) 1996-2012 BEA Region



- New England
- Mideast Region
- Great Lakes Region
- Plains Region
- Southeast Region
- Southwest Region
- Rocky Mountain Region
- Farwest Region

Paper and Allied Products Manufacturing **Labor Income** (Direct Effect) 1996-2012 BEA Region

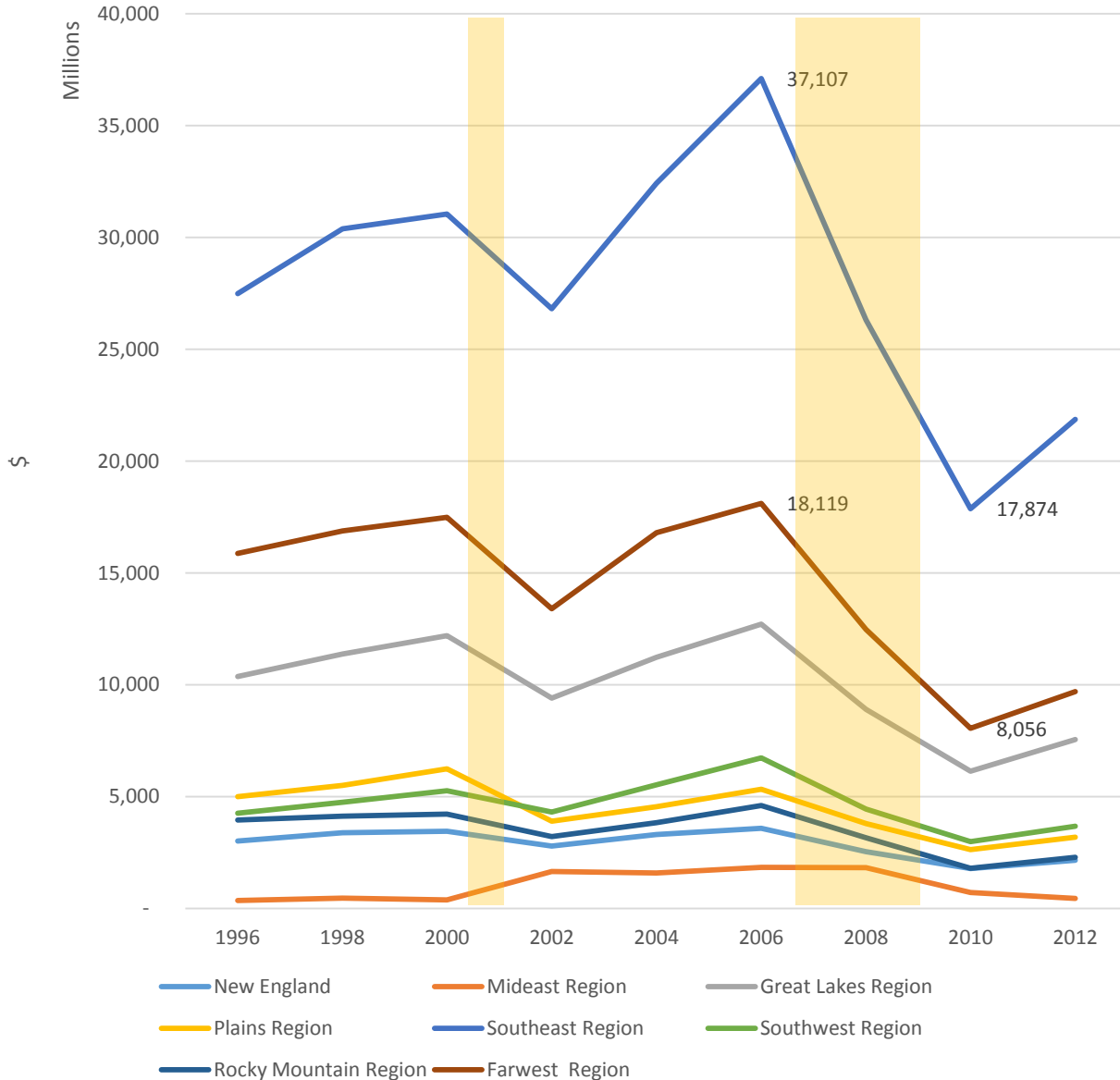


- New England
- Mideast Region
- Great Lakes Region
- Plains Region
- Southeast Region
- Southwest Region
- Rocky Mountain Region
- Farwest Region

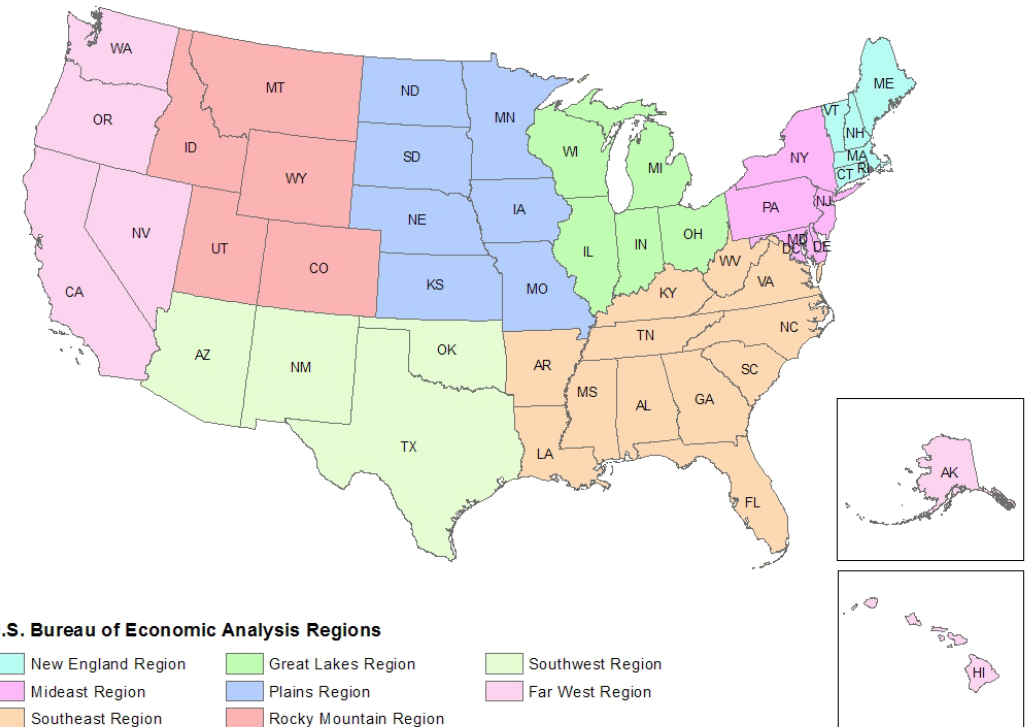


Total Output and Value-Added

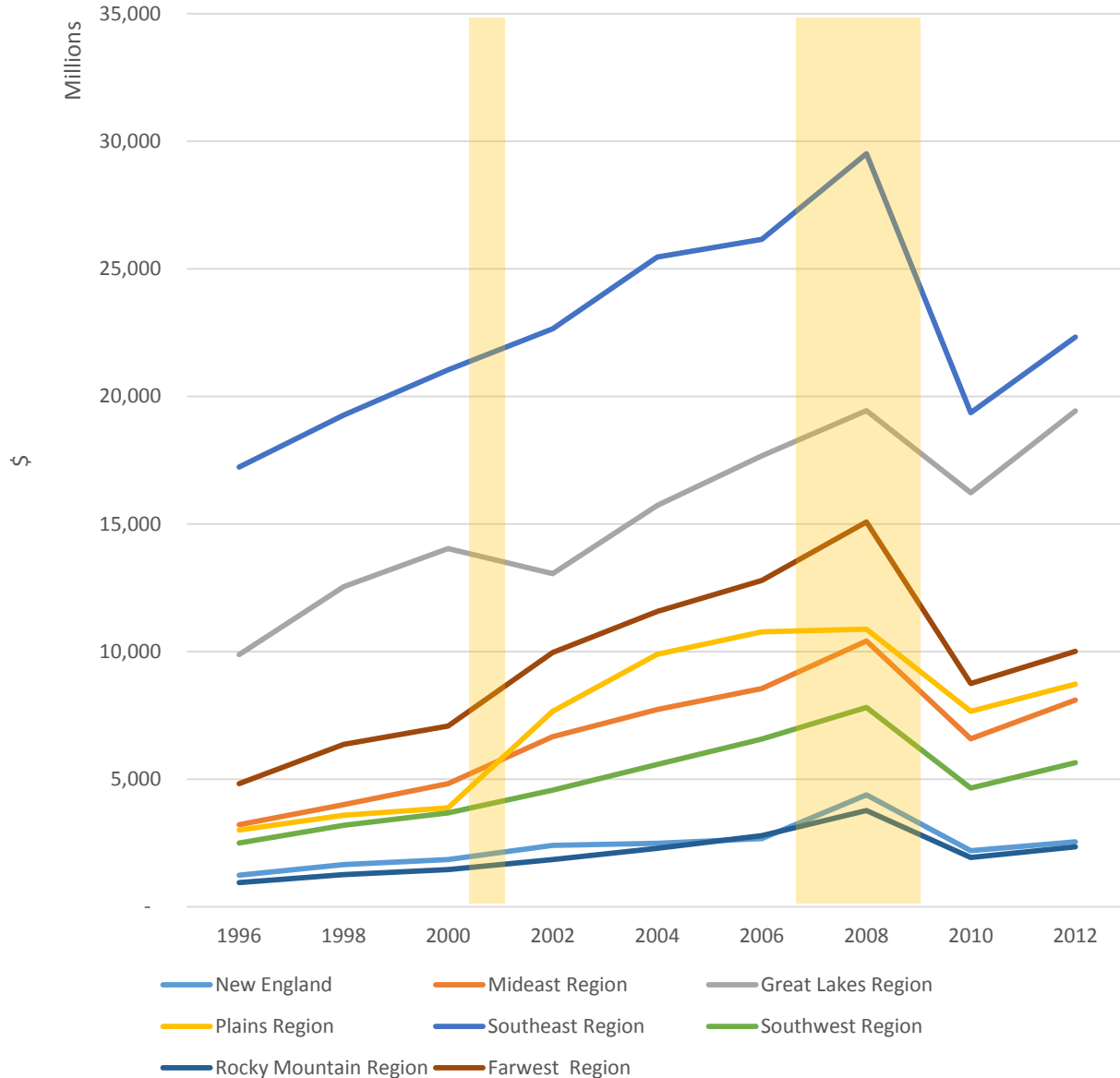
Solid Wood Products Manufacturing Total Industry Output (Direct Effect) 1996-2012 BEA Region



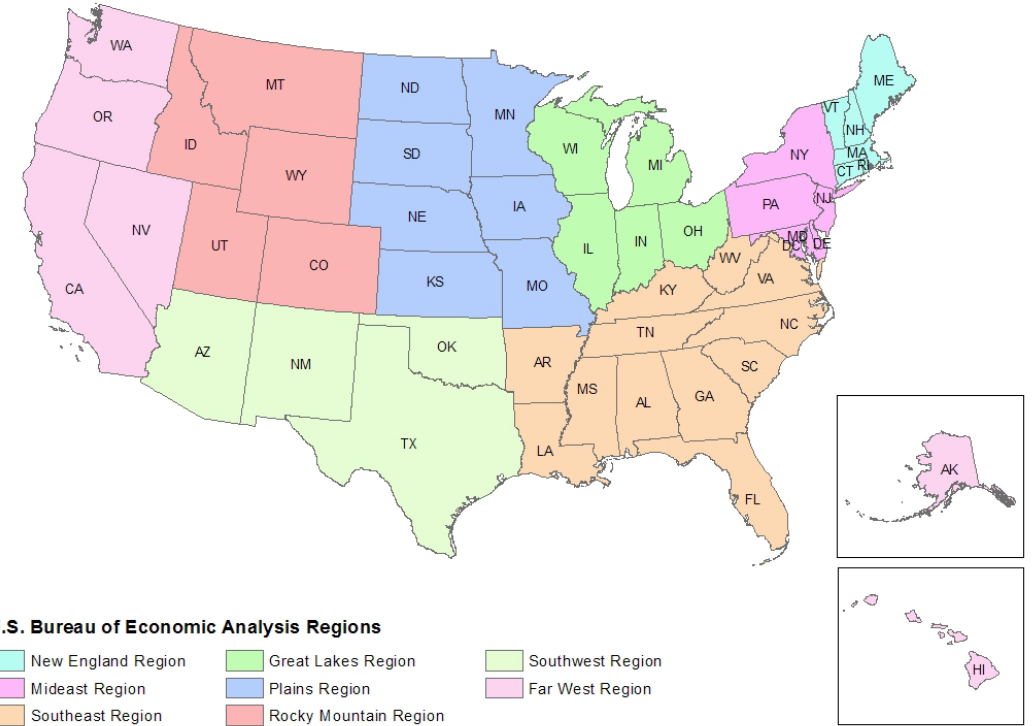
- Declines evident during both recessions
- output decreased by more than half for the top 5 producing regions during the 2007 recession



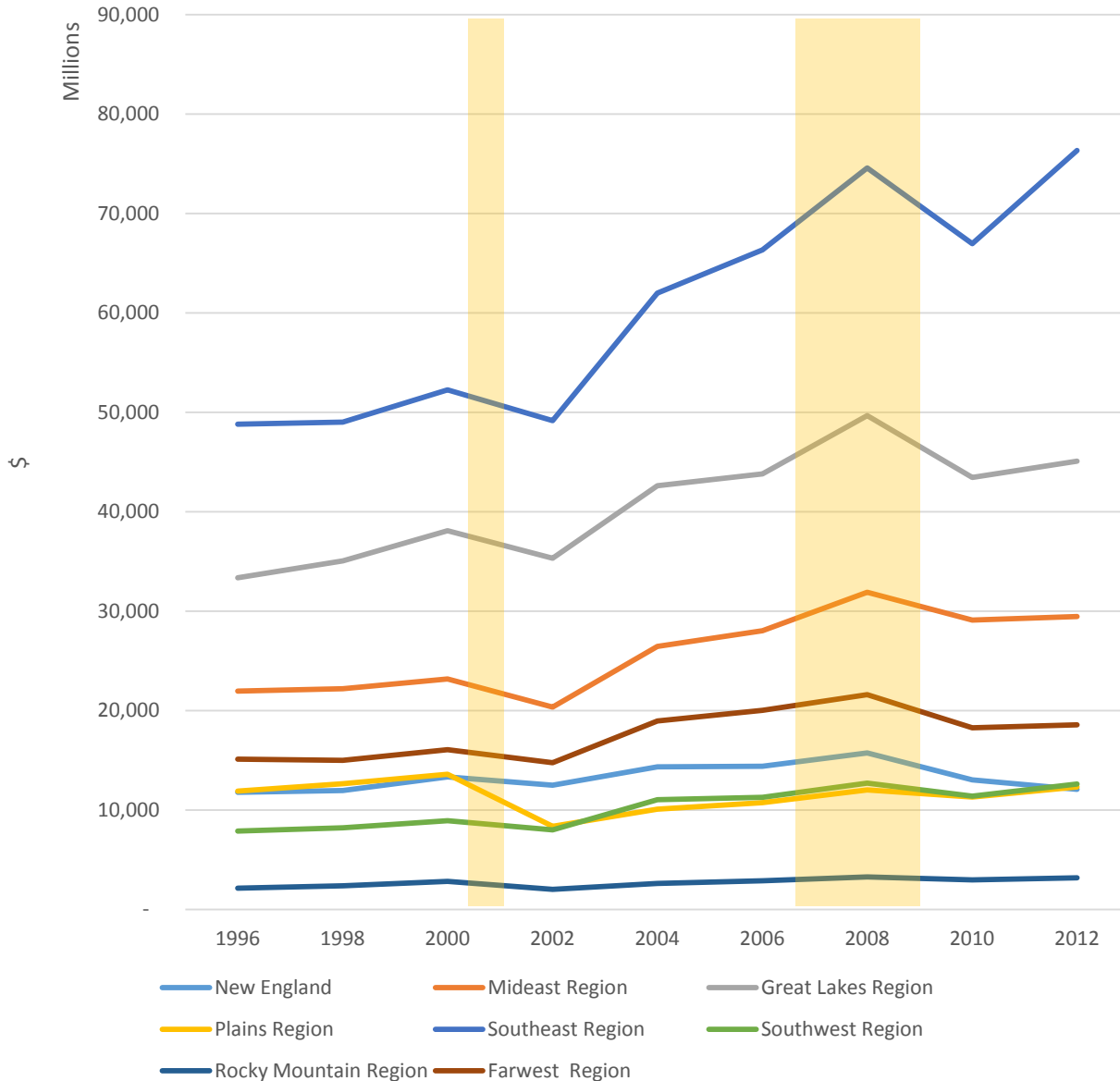
Wood Furniture Products Manufacturing Total Industry Output  
(Direct Effect) 1996-2012 BEA Region



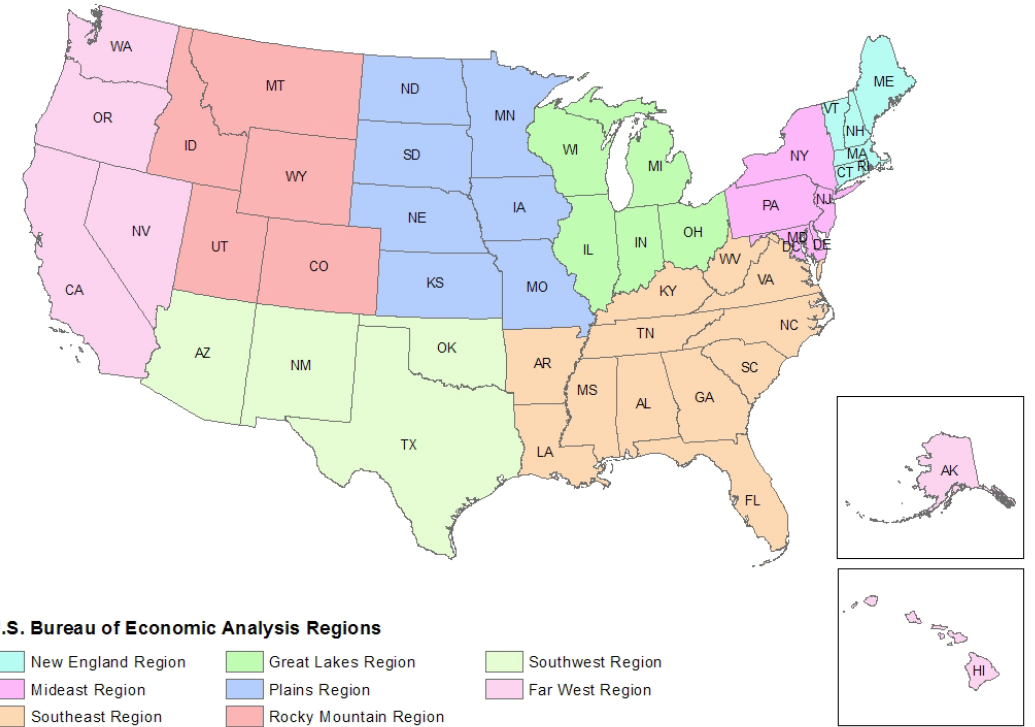
- 2001 recession had little effect
  - Great Lakes regions is the exception
- 2007 recession notable declines
- Top 3 regions experienced growth following 2007 recession



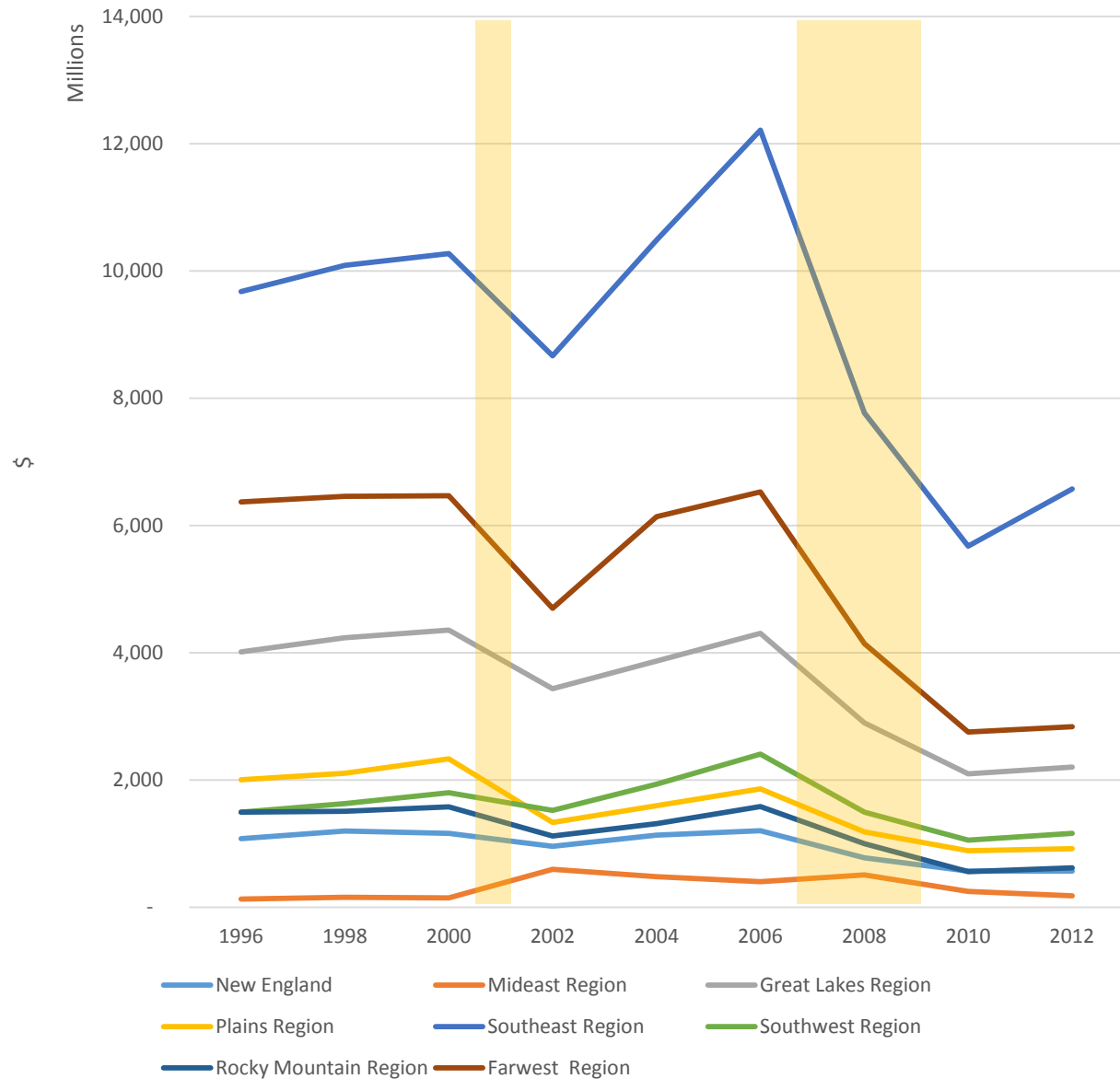
Paper and Allied Products Manufacturing Total Industry Output (Direct Effect) 1996-2012 BEA Region



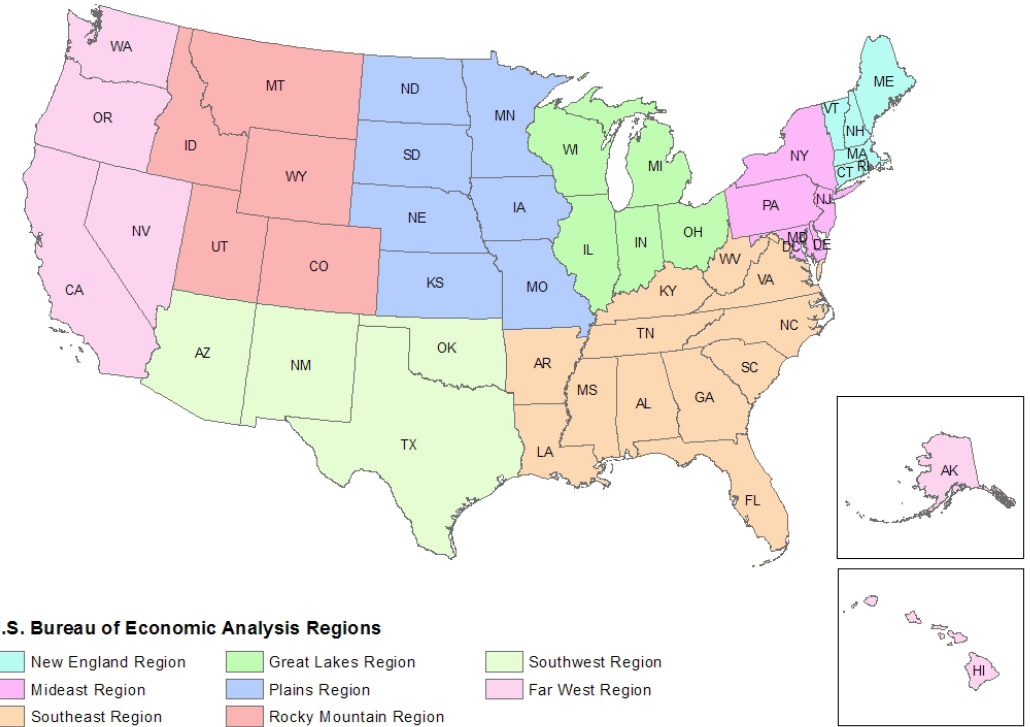
- Growth evident after both recessions
  - Plains region is the exception
- Post 2007 recession growth varied by region



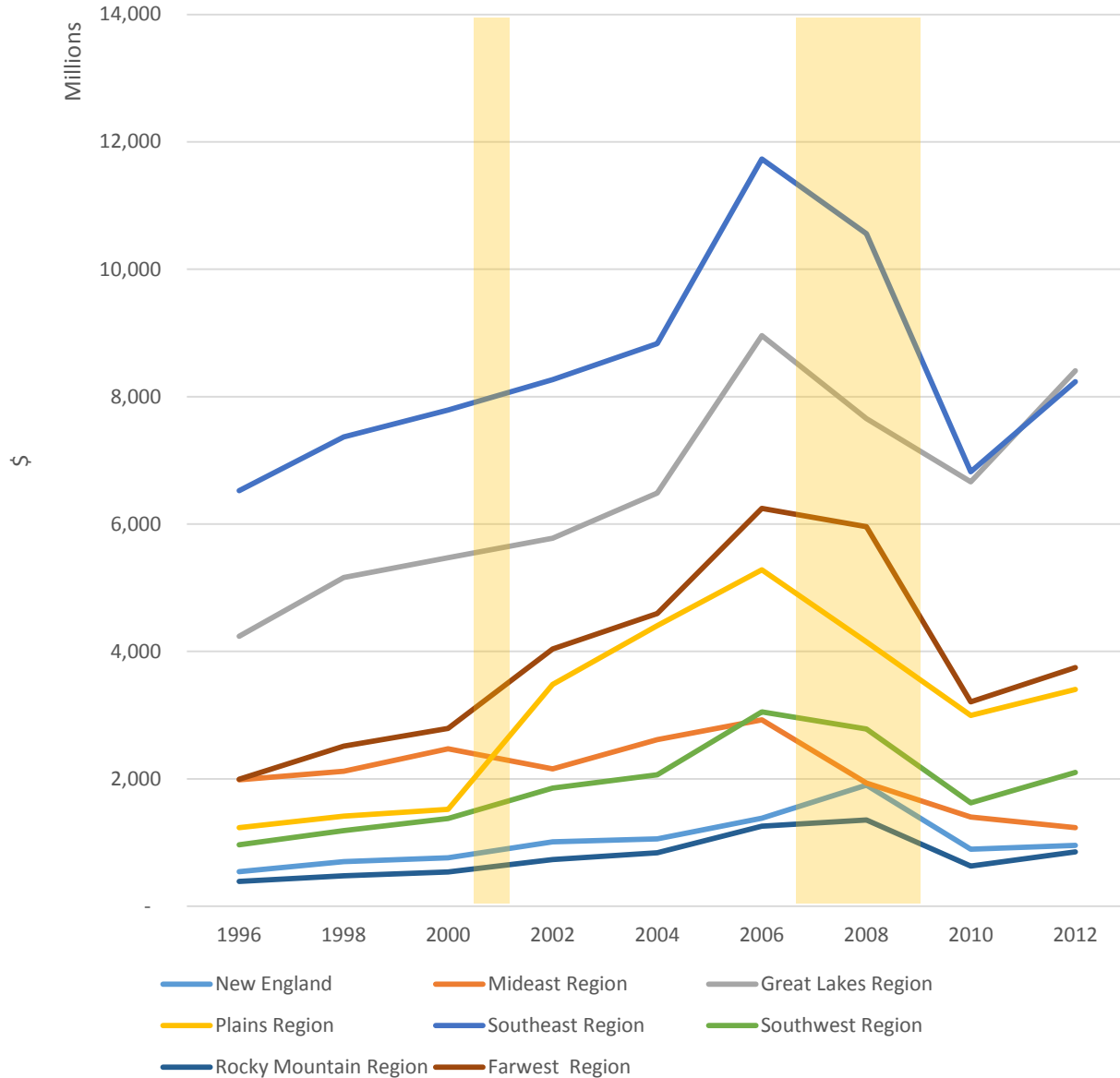
Solid Wood Products Manufacturing Value-Added (Direct Effect)  
1996-2012 BEA Region



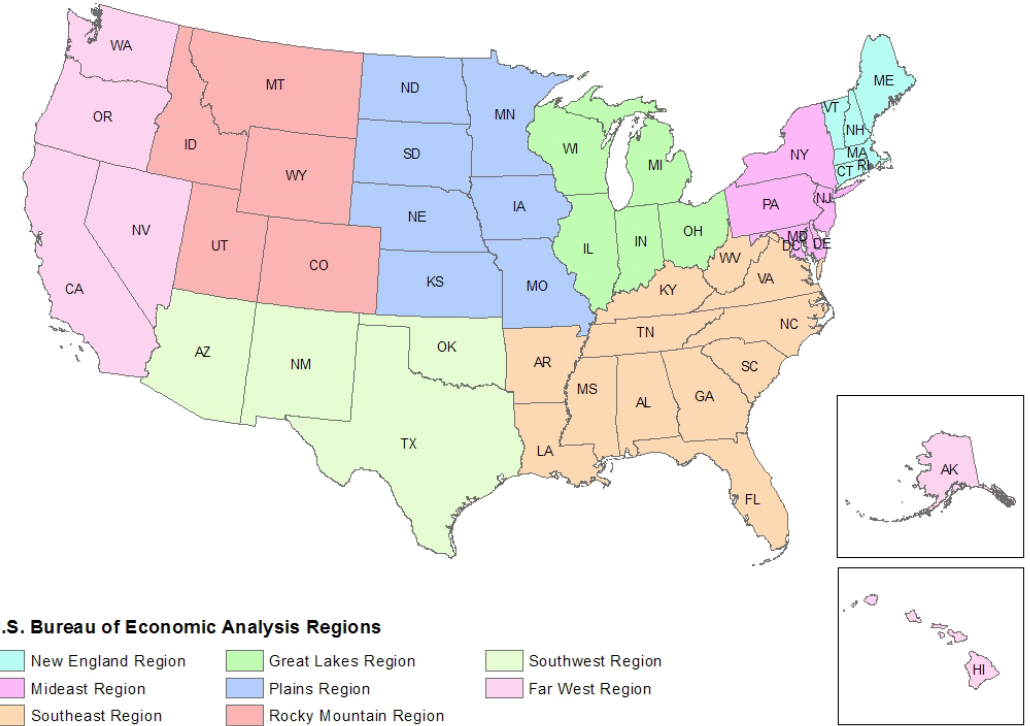
- 2001 recession resulted in declines followed by gains
  - Mideast is the exception
- 2007 recession produced sharp declines with mixed results



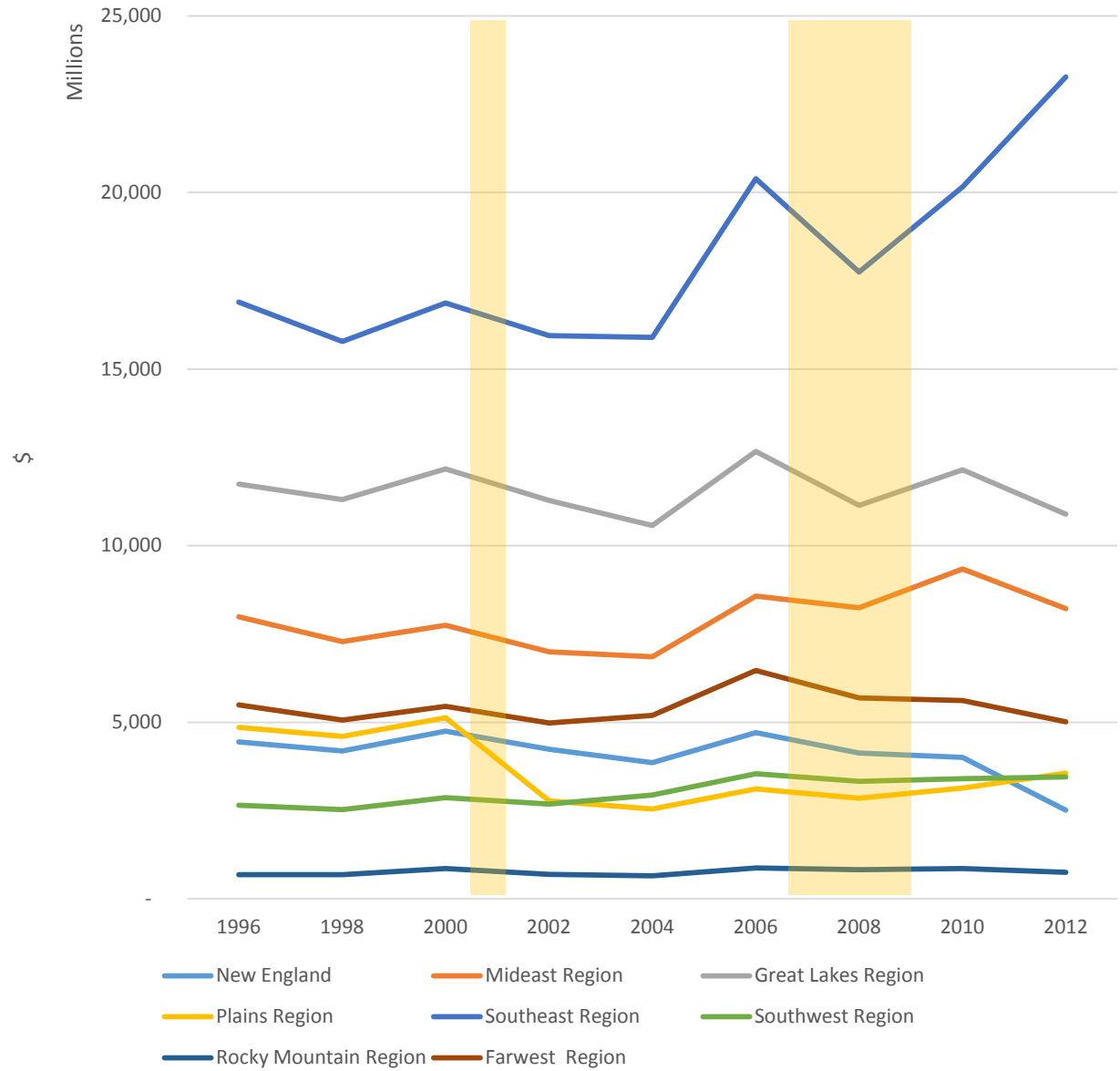
Wood Furniture Products Manufacturing Value-Added (Direct Effect) 1996-2012 BEA Region



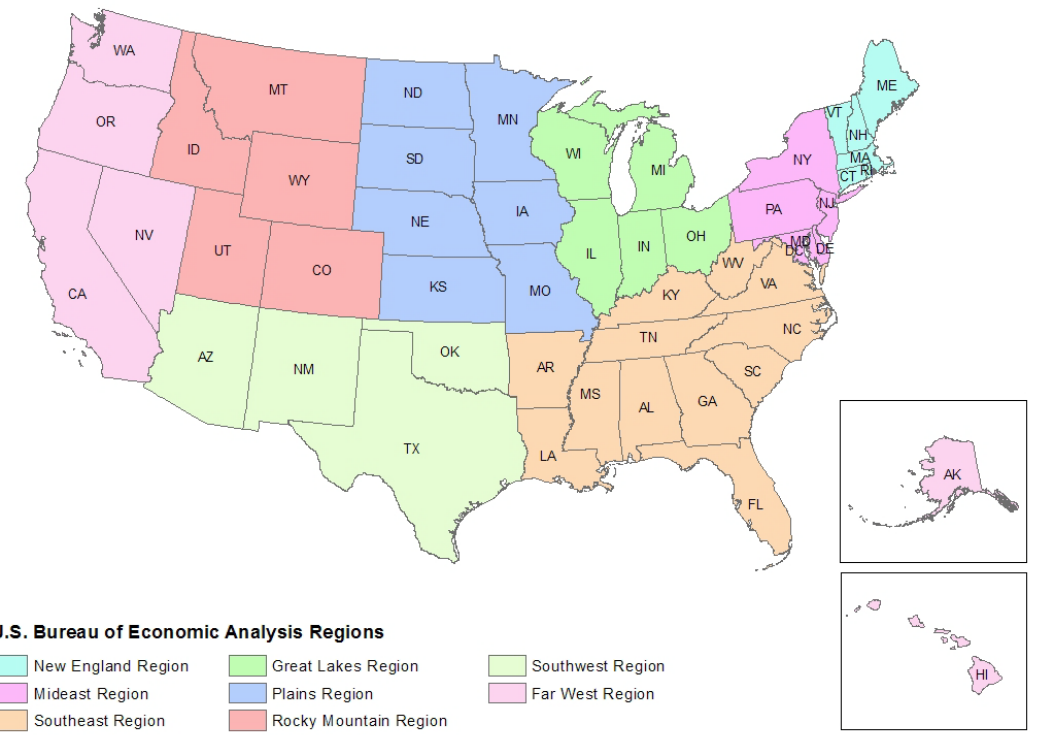
- 2001 recession had little effect
  - Mideast region is the exception
- 2007 recession notable declines
- All but one region experienced growth following 2007 recession



Paper and Allied Products Manufacturing Value-Added (Direct Effect) 1996-2012 BEA Region



- 2001 recession produced declines followed by delayed growth
- Declines were evident pre-2007 recession with rebounds prior to the recession's official end



# Observations

## Output and Value-Added

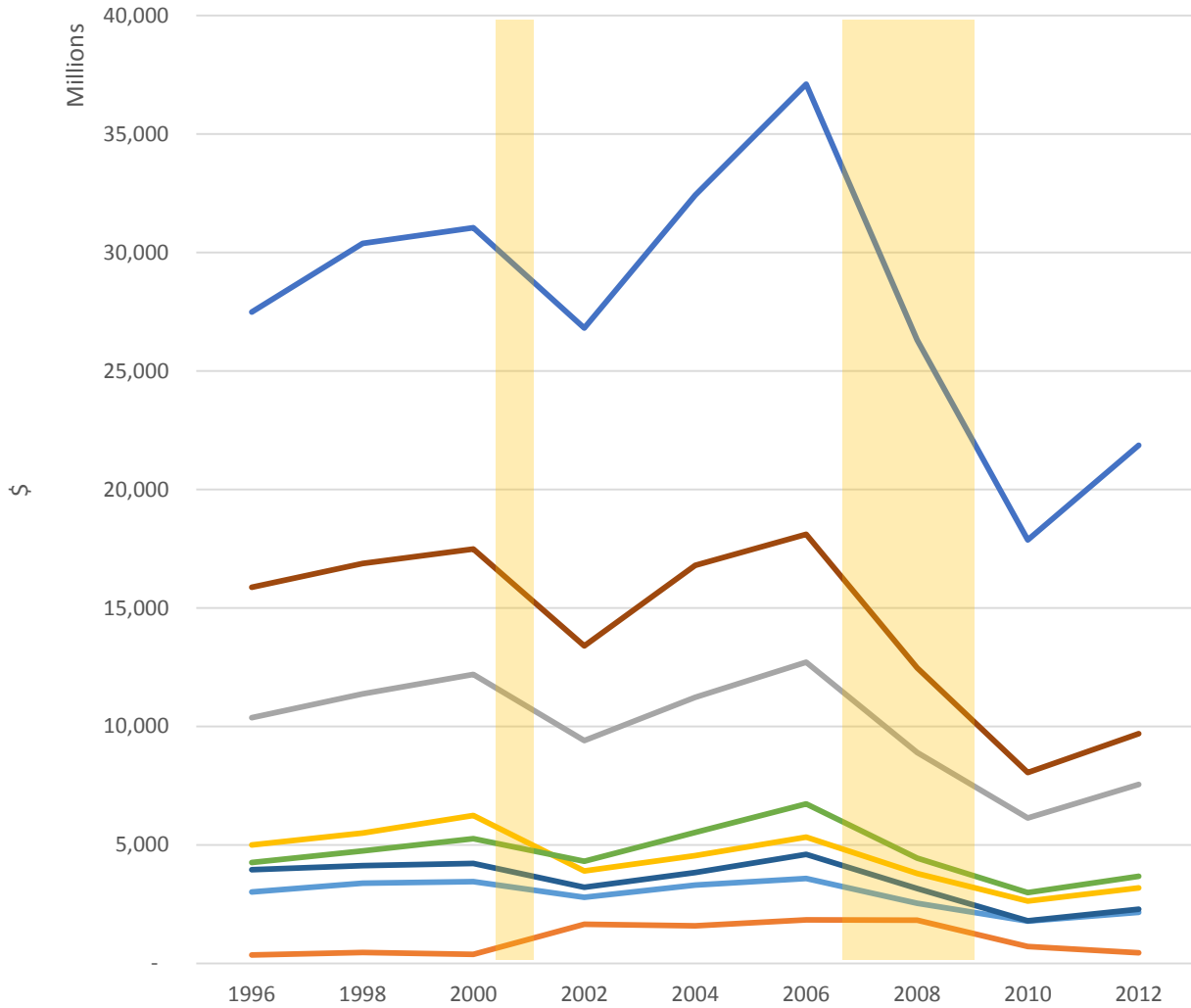
- Value-Added mirrors Output (next 3 slides) except between 2001 and 2007 with Wood furniture and Paper & Allied manufacturing
- Implies that input costs for materials increased during this time period

## Output and Value-Added

- Solid wood products manufacturing
- Decreases for all regions\* with each recession followed by increases\*
  - \*Mideast
- Production swings are greats for the top 3 regions\*
  - \*Southeast, Farwest, Great Lakes
- Wood furniture manufacturing
- Increases for all regions\* until Great Recession
  - \*post 2001 recession brief decline for Great Lakes region
- Decreases for all regions after Great Recession and then increases
- Paper and Allied Products Manufacturing
- Decreases for all regions with each recession followed by increases
- Post Great Recession production increase greatest for Southeast

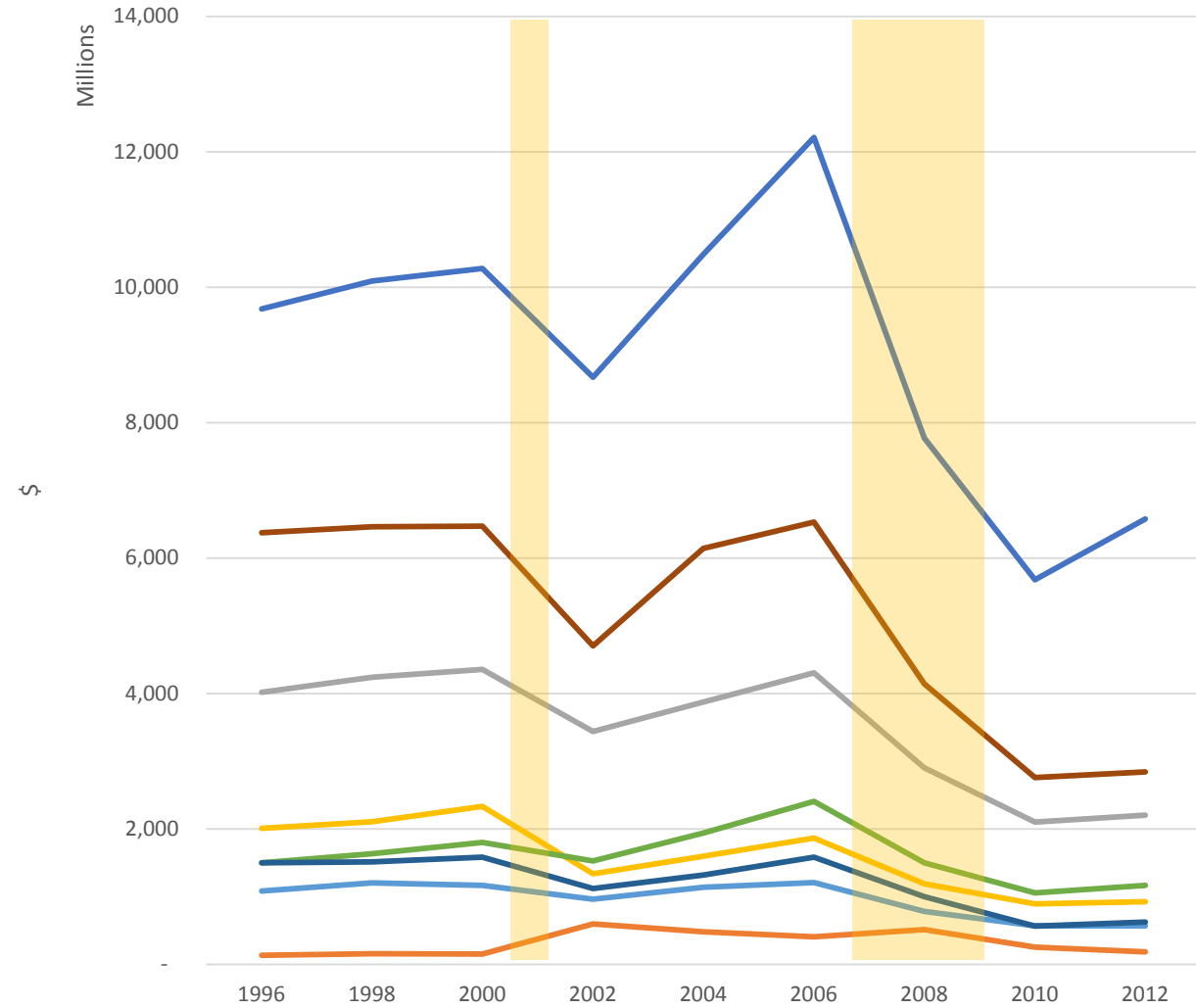


Solid Wood Products Manufacturing **Total Industry Output** (Direct Effect) 1996-2012 BEA Region



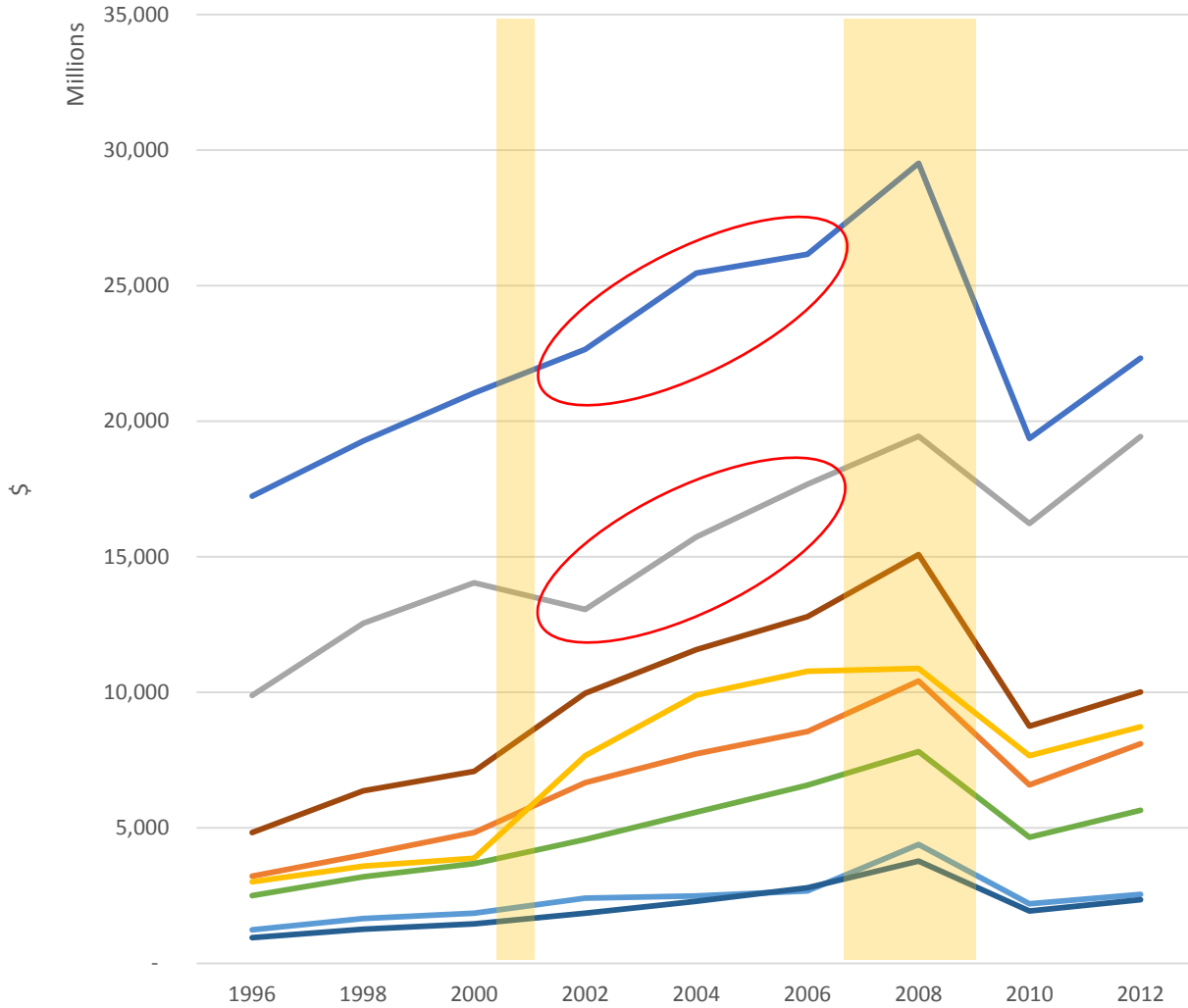
- New England
- Mideast Region
- Great Lakes Region
- Plains Region
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- Southwest Region
- Rocky Mountain Region
- Farwest Region

Solid Wood Products Manufacturing **Value-Added** (Direct Effect) 1996-2012 BEA Region



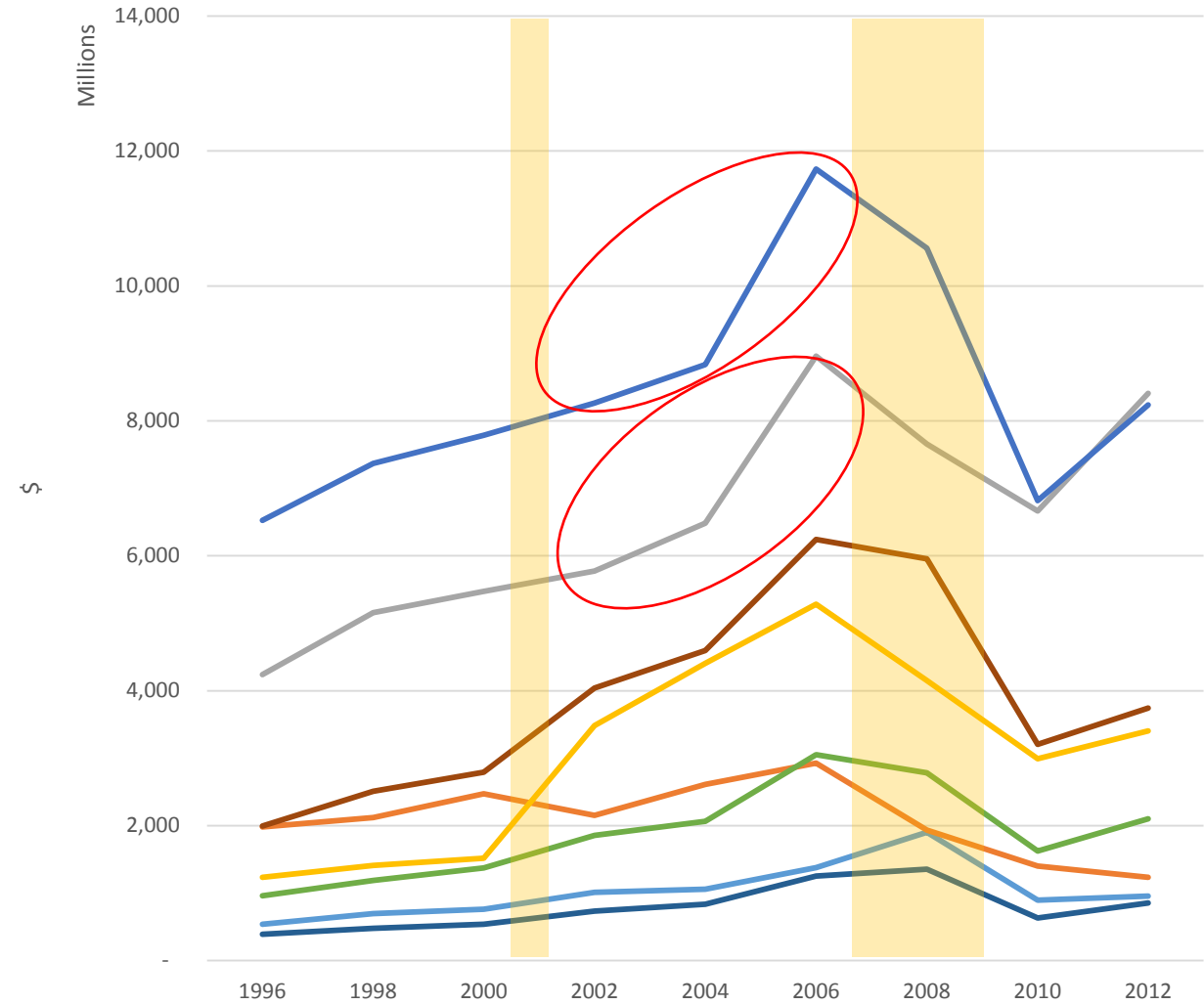
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Wood Furniture Products Manufacturing **Total Industry Output**  
(Direct Effect) 1996-2012 BEA Region



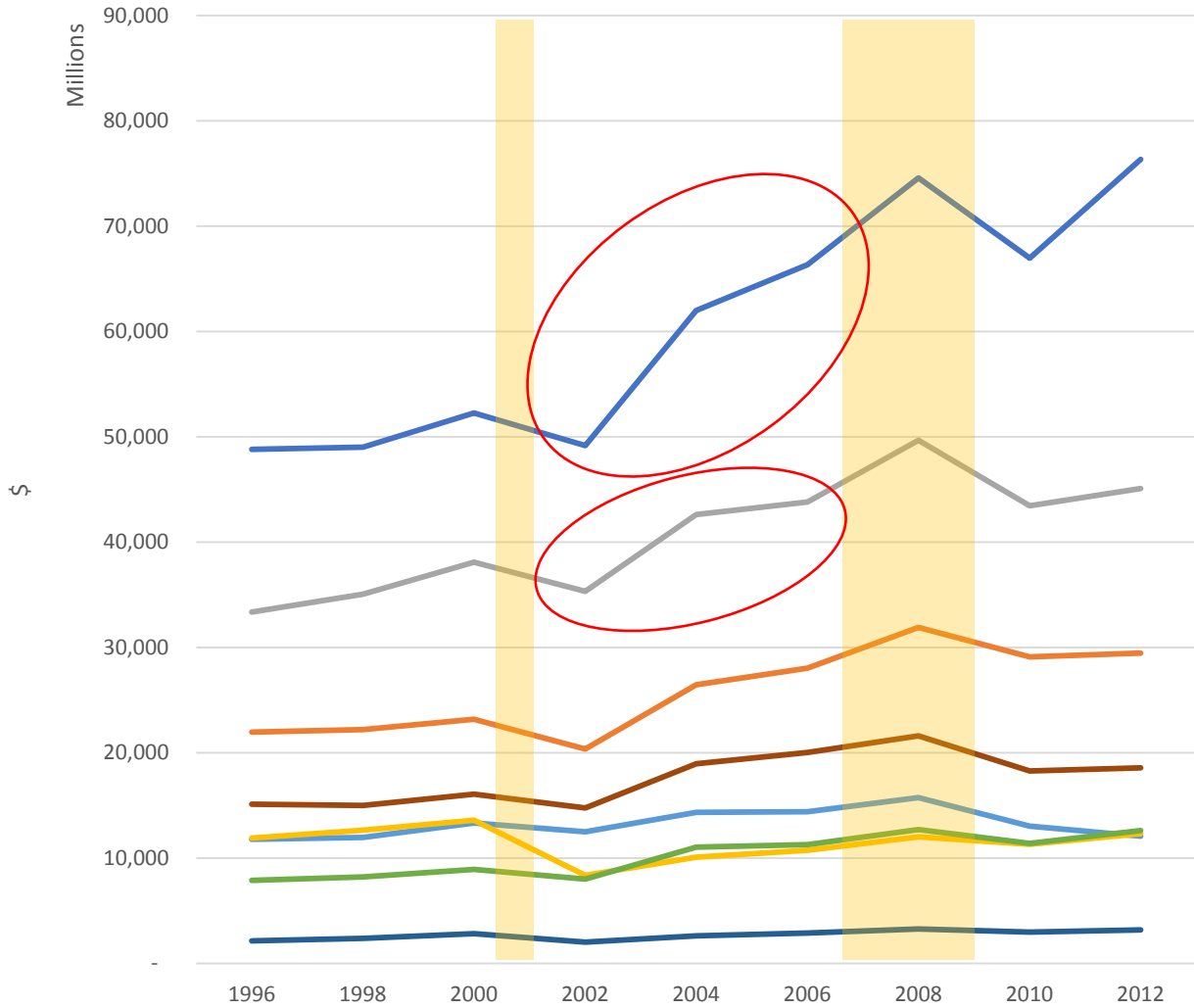
- New England
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Wood Furniture Products Manufacturing **Value-Added (Direct Effect)** 1996-2012 BEA Region



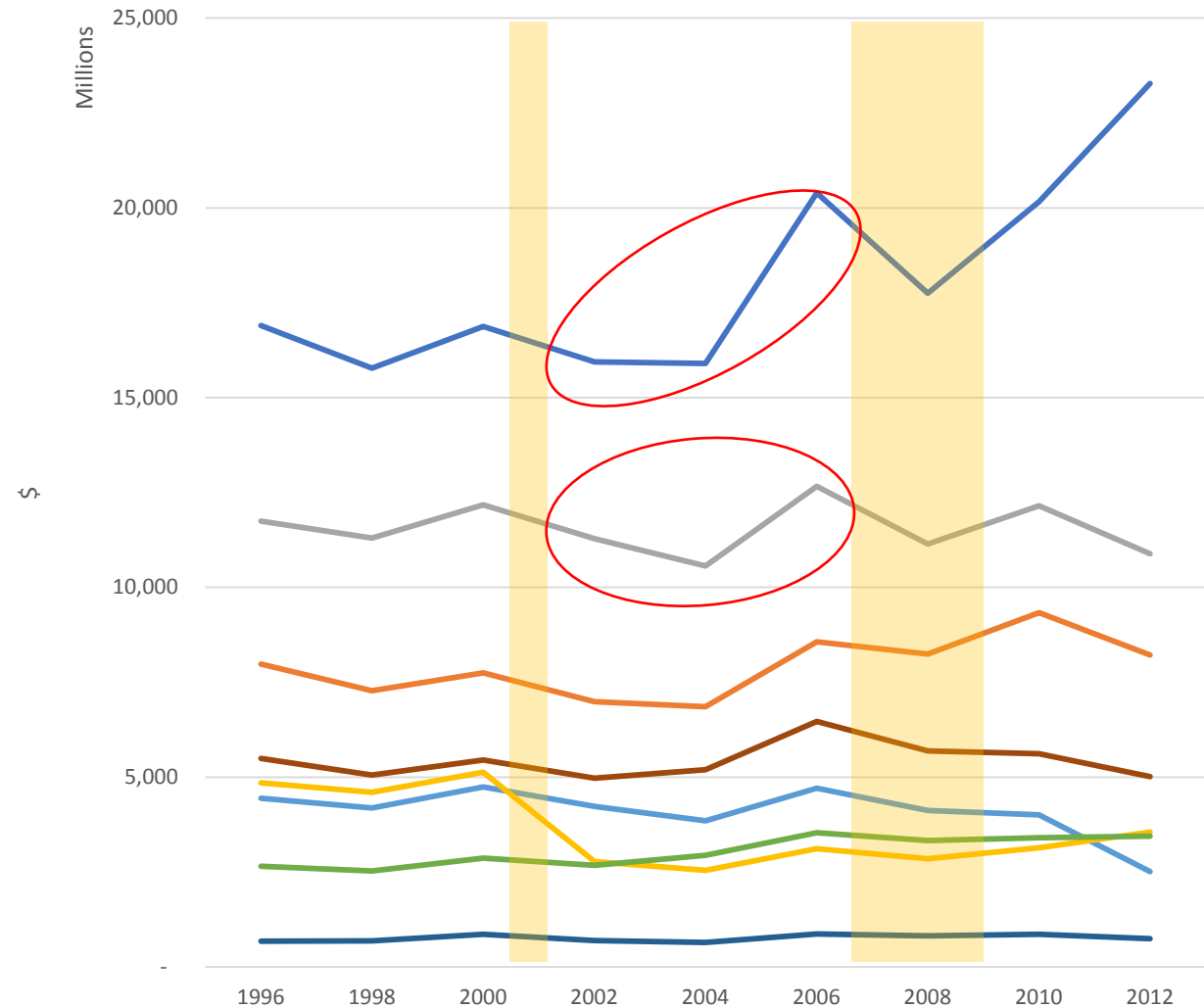
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Paper and Allied Products Manufacturing **Total Industry Output**  
(Direct Effect) 1996-2012 BEA Region



- New England
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- Southeast Region
- Southwest Region
- Rocky Mountain Region
- Farwest Region

Paper and Allied Products Manufacturing **Value-Added** (Direct Effect) 1996-2012 BEA Region



- New England
- Mideast Region
- Great Lakes Region
- Plains Region
- Southeast Region
- Southwest Region
- Rocky Mountain Region
- Farwest Region

# Future Analysis

- Does rate of growth differ by region for pre- and post-recession?
- Does the multiplier effect of these industries vary by region over time?
- Compare time series with housing starts, existing home sales, and U.S. GDP

**THANK YOU!**