

# **Economic Contributions of the Forest Products Industries to Michigan's Economy**

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# Acknowledgements

- Financial support from the Michigan Department of Natural Resources, Forest Resources Division and the National Institute of Food and Agriculture via MSU AgBioResearch
- Guidance and coordination on this project by Mr. David Neumann, MDNR-FRD

# Context

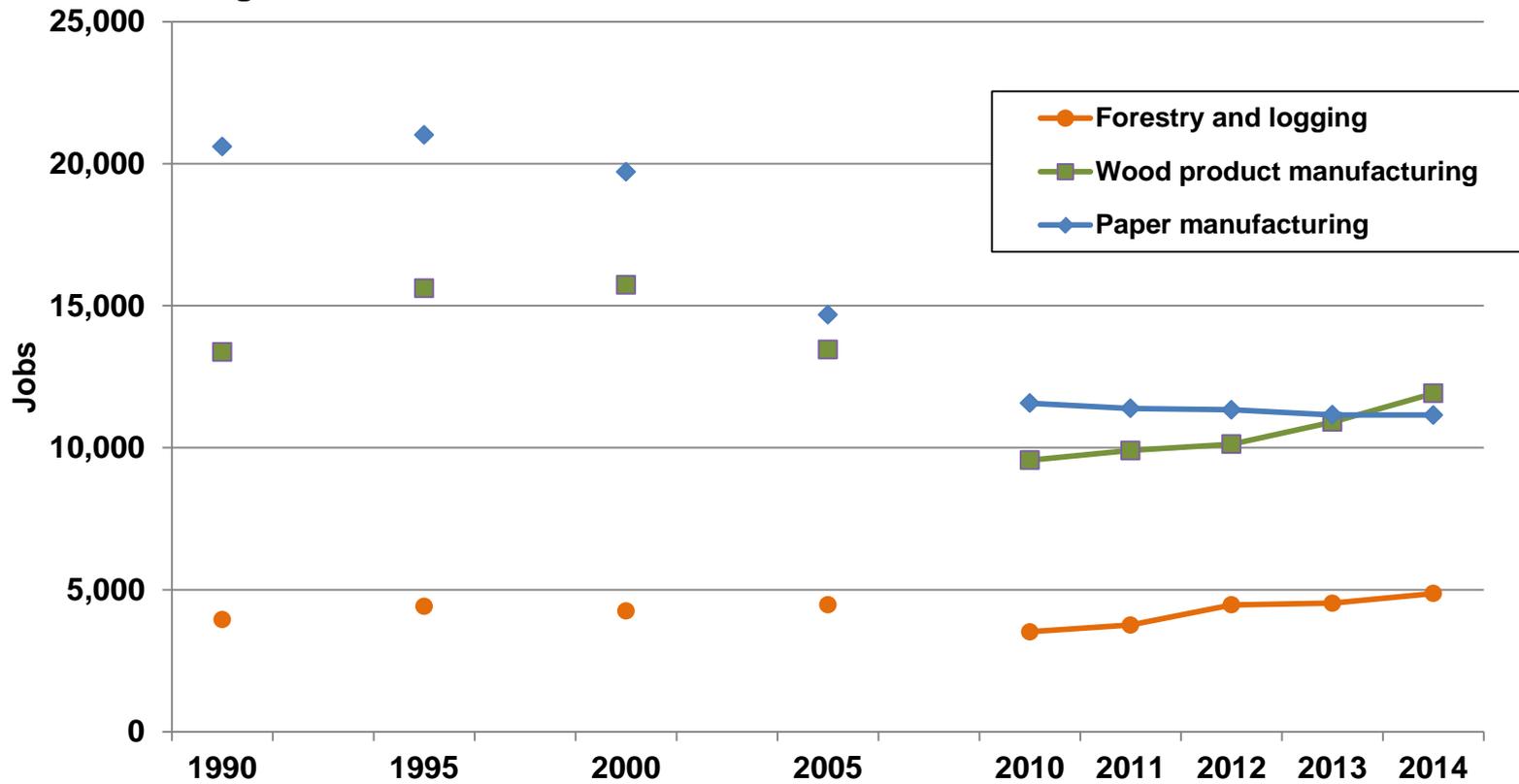
The Michigan Department of Natural Resources (MDNR) and the Governor-appointed Timber Advisory Council developed five-year (2018) goals related to the industries; they are:

- Increasing the economic impact of the timber industry on state and regional economies from \$14 billion to \$20 billion,
- Increasing the export of value-added forest products by 50%,
- Increasing forest products-related careers by 10%,
- Supporting existing industry, and
- Encouraging regionally based industry development.

# Data Sources

- 2012 and earlier data used from Leefers, Pedersen, Potter-Witter, Vasievich, and Yin—Michigan's Forest Products Industries: Centerpiece of the Green Economy.
- 2013 IMPLAN software (V3.1) and data (Release 3), a commercial input-output model which relies on data from various government agencies (e.g., US Census Bureau, US Bureau of Labor Statistics, and the US Bureau of Economic Analysis).
- Trade data from US Department of Commerce's International Trade Administration and the US Census Bureau's Commodity Flow Survey.

# Historic data on total full-time and part-time employment in selected forest products industries, 1990-2014



Bureau of Economic Analysis, Regional Economic Accounts

# Defining forest products industries

INDUSTRY NAME
Forestry
Logging
Primary Solid Wood Products and Wood-based Power
Secondary Solid Wood Products
Wood Furniture
Primary Paper and Paperboard Products
Secondary Paper and Paperboard Products

# Defining forest products industries (sectors)

IMPLAN Sector	SECTOR NAME
	<b>Forestry</b>
15	Forestry, forest products, and timber tract production
19	Support activities for forestry*
	<b>Logging</b>
16	Commercial logging

Sectors with an “\*” indicate that only a portion of the sector is included in the forest products industries.

<b>IMPLAN Sector</b>	<b>SECTOR NAME</b>
	<b>Primary Solid Wood Products and Wood-based Power</b>
<b>134 (95)</b>	Sawmills
<b>135 (95)</b>	Wood preservation
<b>136 (96)</b>	Veneer and plywood manufacturing
<b>138 (98)</b>	Reconstituted wood product manufacturing
<b>47 (NA)</b>	Electric Power Generation - Biomass
	<b>Secondary Solid Wood Products</b>
<b>137 (97)</b>	Engineered wood member and truss manufacturing
<b>139 (99)</b>	Wood windows and doors manufacturing
<b>140 (99)</b>	Cut Stock, resawing lumber, and planing
<b>141 (99)</b>	Other millwork, including flooring
<b>142 (100)</b>	Wood Container and Pallet Manufacturing
<b>143 (101)</b>	Manufactured home (mobile home) manufacturing
<b>144 (102)</b>	Prefabricated wood building manufacturing
<b>145 (103)</b>	All other miscellaneous wood product manufacturing

**Parentheses “( )” indicate 2012 IMPLAN sector number.**

IMPLAN Sector	SECTOR NAME
	<b>Wood Furniture</b>
368 (295)	Wood kitchen cabinet and countertop manufacturing
369 (296)	Upholstered household furniture manufacturing
370 (297)	Nonupholstered wood household furniture manufacturing
372 (299)	Institutional wood furniture manufacturing*
373 (300)	Wood office furniture manufacturing
374 (301)	Custom architectural woodwork and millwork manufacturing
376 (302)	Showcase, partition, shelving, and locker manufacturing*

IMPLAN Sector	SECTOR NAME
	<b>Primary Paper and Paperboard Products</b>
146 (104)	Pulp mills
147 (105)	Paper mills
148 (106)	Paperboard Mills
	<b>Secondary Paper and Paperboard Products</b>
149 (107)	Paperboard container manufacturing
150 (108 & 109)	Paper bag and coated and treated paper manufacturing
151 (110)	Stationery product manufacturing
152 (111)	Sanitary paper product manufacturing
153 (112)	All other converted paper product manufacturing

# Terms used to describe economic contributions

Term	Description
<b>Output</b>	The dollar measure of production within an area; it is also viewed as sales.
<b>Employment</b>	The number of full-time and part-time jobs associated with an industry.
<b>Labor income</b>	The dollar total of employee compensation and proprietor income; the latter is associated with self-employed individuals.
<b>Value added</b>	The sum labor income, other property income (e.g., rents and profits) and indirect business taxes (e.g., excise and sales taxes). It is the difference between an industry's total output and the cost of its intermediate inputs. The sum of value added for all economic sectors within the state equals the Gross State Product.
<b>Direct effects</b>	The economic activities (e.g., output, employment, labor income, and value added) associated with an industry or sector in the study area. These can describe the current economic sectors or changes to those sectors.
<b>Indirect effects</b>	The impact of local industries purchasing goods and services from other industries leading to others' outputs, employment and labor income.
<b>Induced effects</b>	The impact of labor income (employee compensation and proprietor income) via goods and services purchased due to the direct and indirect spending by industries.
<b>Total effects</b>	Sum of direct, indirect and induced effects.
<b>Social Accounting Matrix (SAM) multipliers</b>	These multipliers are derived by dividing the sum of direct, indirect and induced effects by the direct effects. The social accounts include payments made between households, households and government, etc. These are available for output, employment, labor income, and value added and are used to assess effects of changes in industry activity (i.e., "ripple effects").

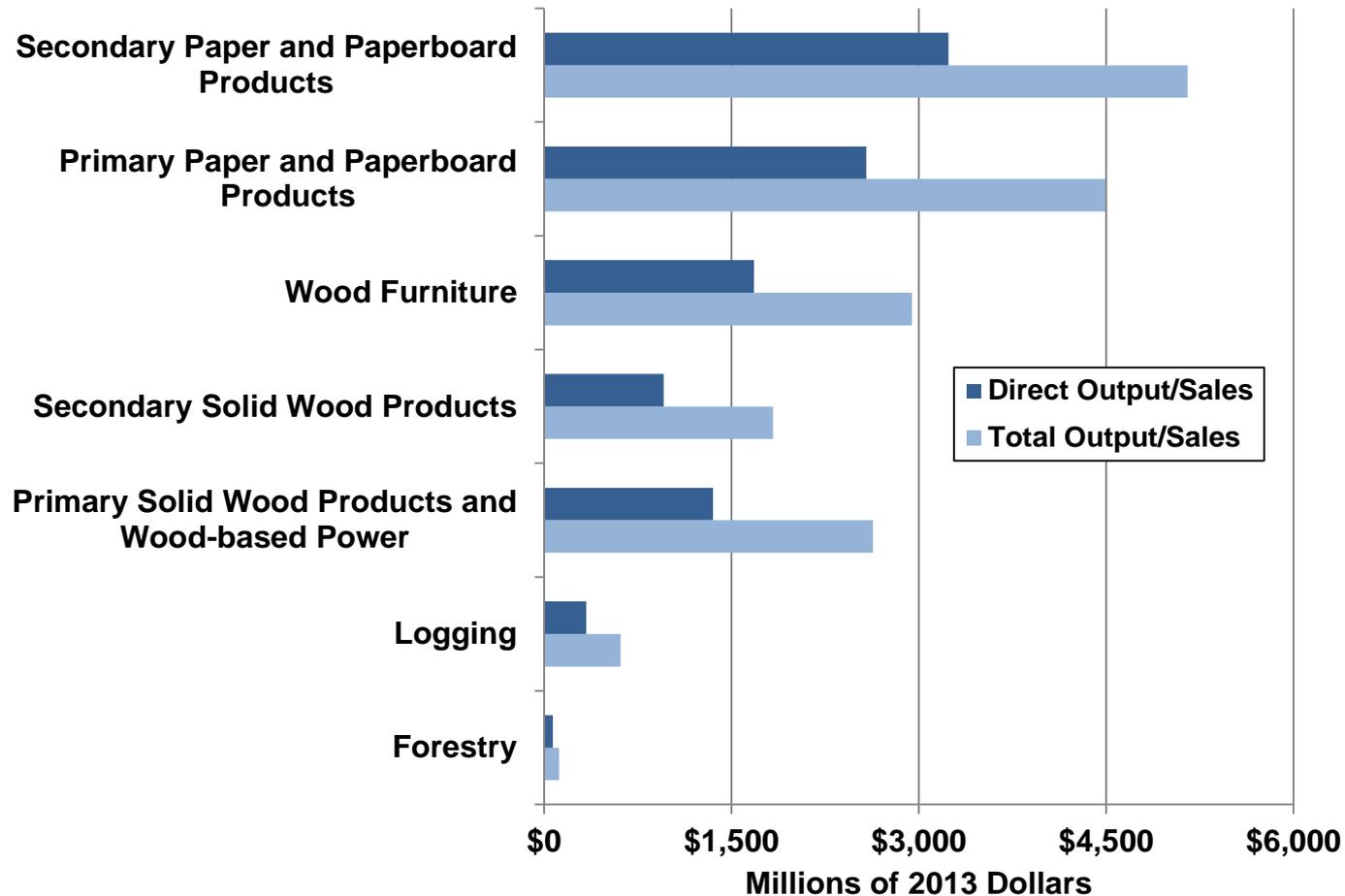
Ripple effects



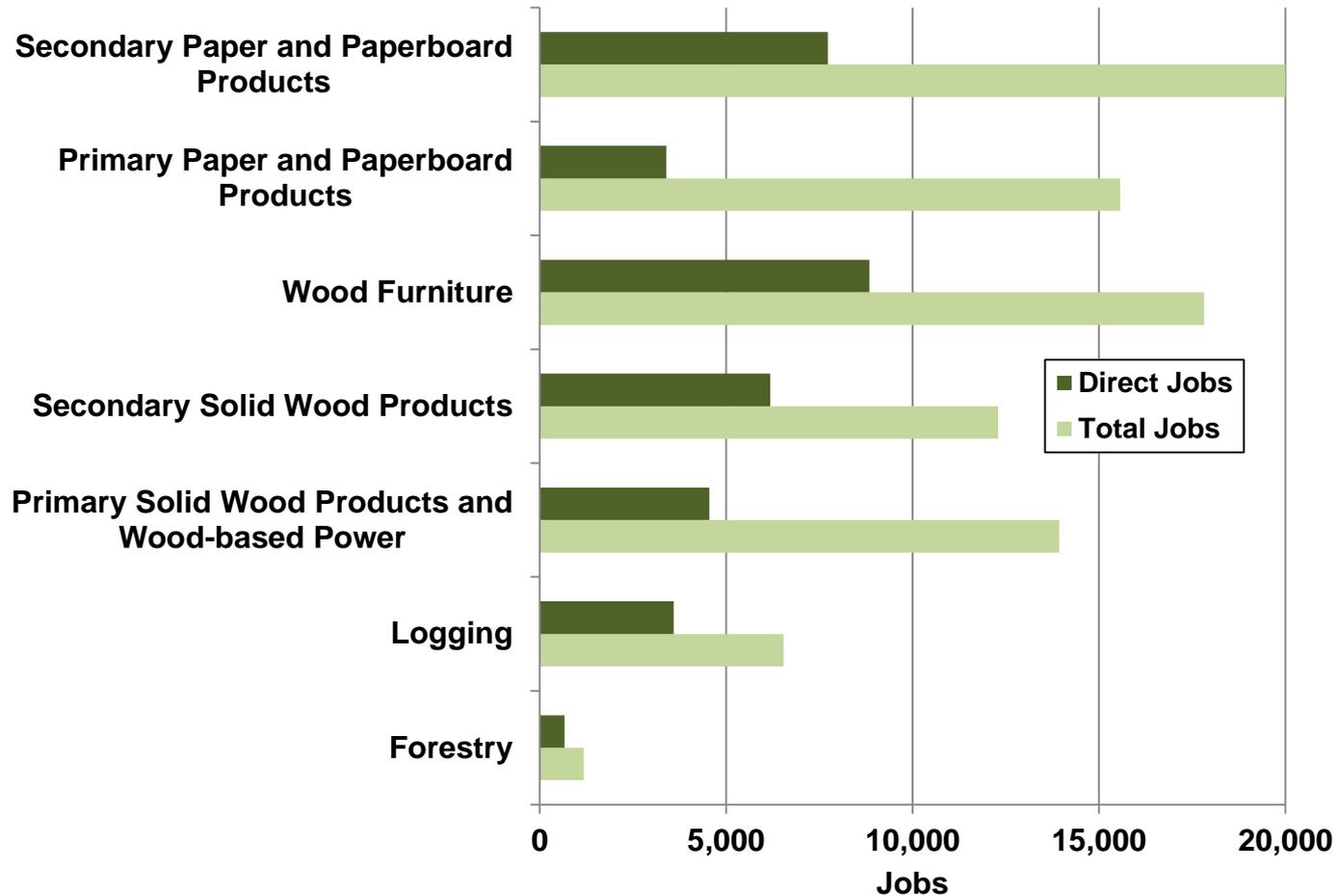
# Direct contributions, total contributions and SAM multipliers for forest products industries, 2013

Contributions/Multipliers	Employment	Output	Labor Income
	(Jobs)	(Millions of 2013 Dollars)	
Direct Contributions	<u>34,951</u>	10,214	2,076
Total Contributions	87,381	<u>17,789</u>	4,535
SAM Multiplier	Ratios (Total Contributions/Direct Contributions)		
Industry Level	2.50	1.74	2.18

# Michigan direct and total output/sales by forest products industry, 2013



# Michigan direct and total employment by forest products industry, 2013



# Michigan direct employment (%) in forest products industries by region, 2013

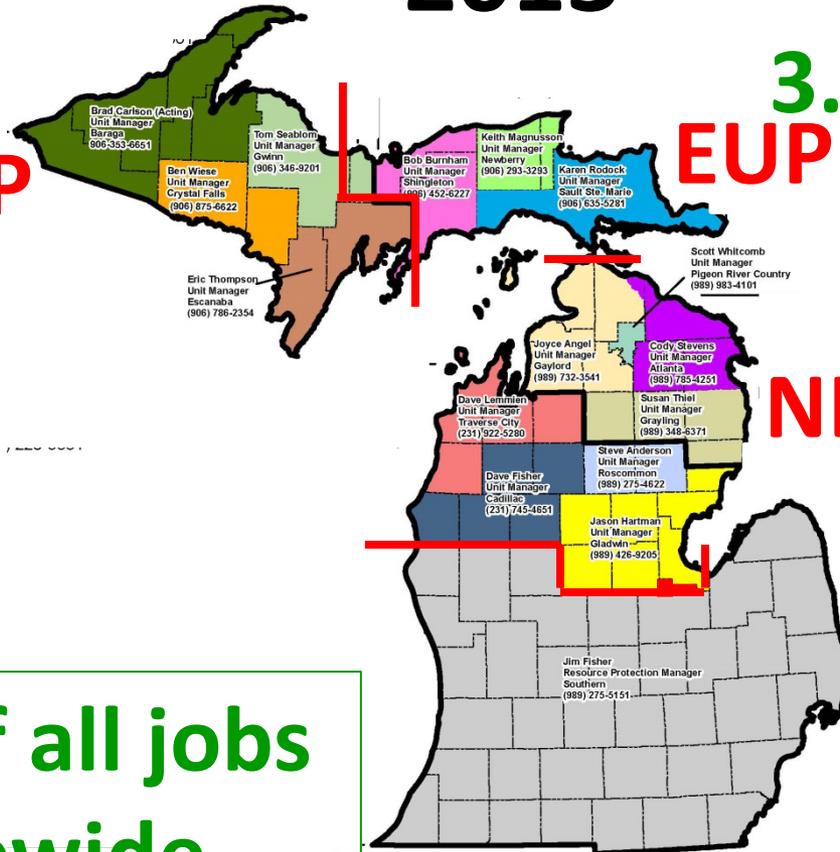
4.3%  
WUP

3.2%  
EUP

1.0%  
NLP

0.5%  
SLP

0.7% of all jobs  
statewide



# Michigan direct employment (**jobs**) in forest products industries by region, 2013

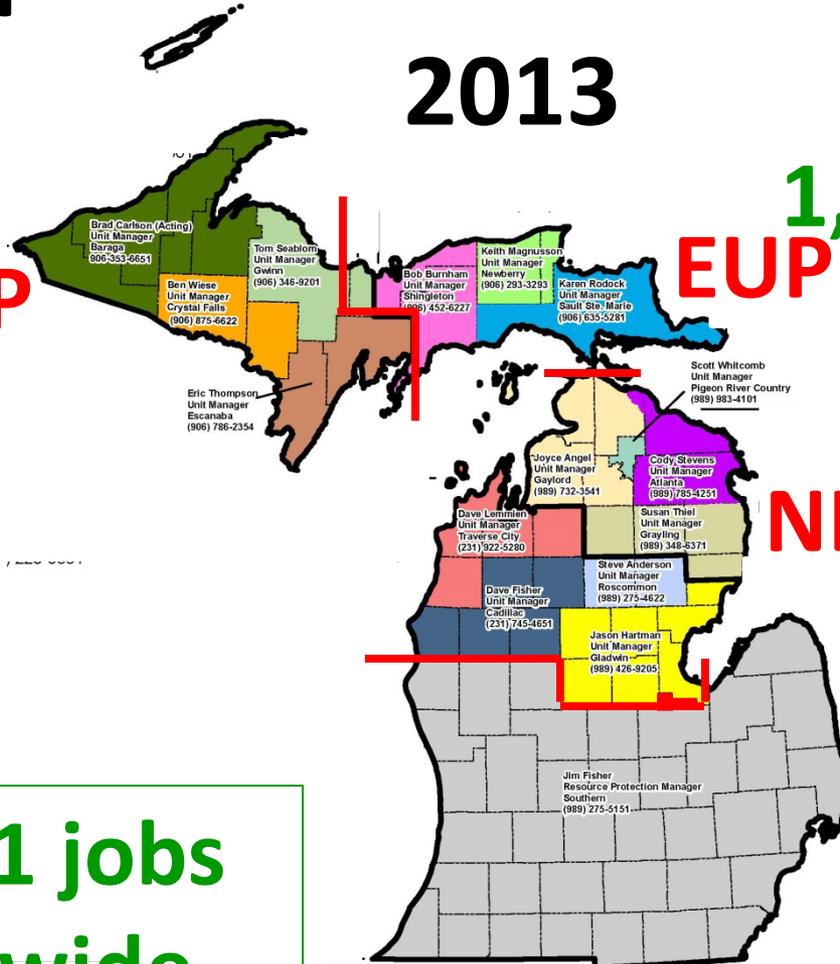
**5,094**  
**WUP**

**1,126**  
**EUP**

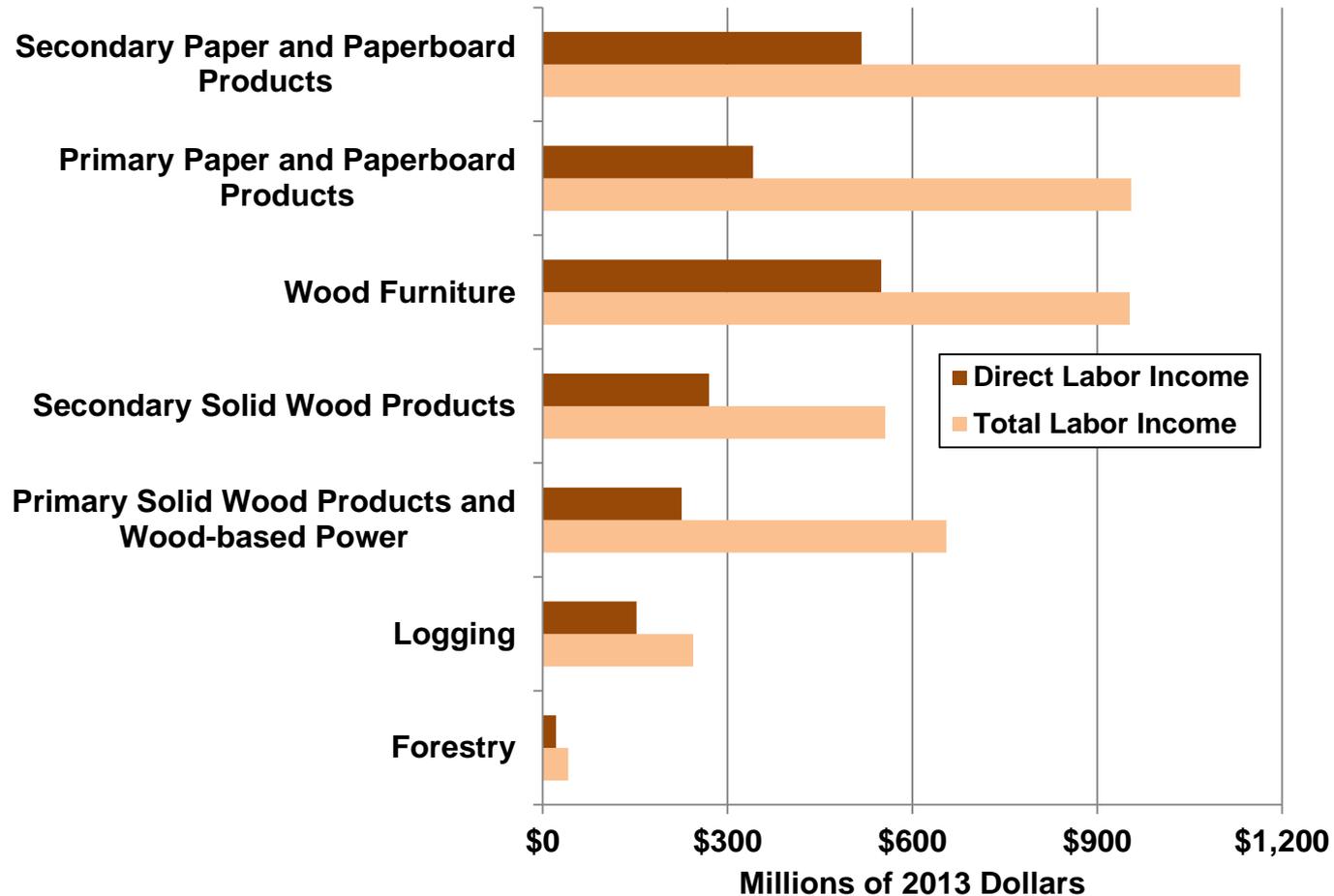
**4,511**  
**NLP**

**24,222**  
**SLP**

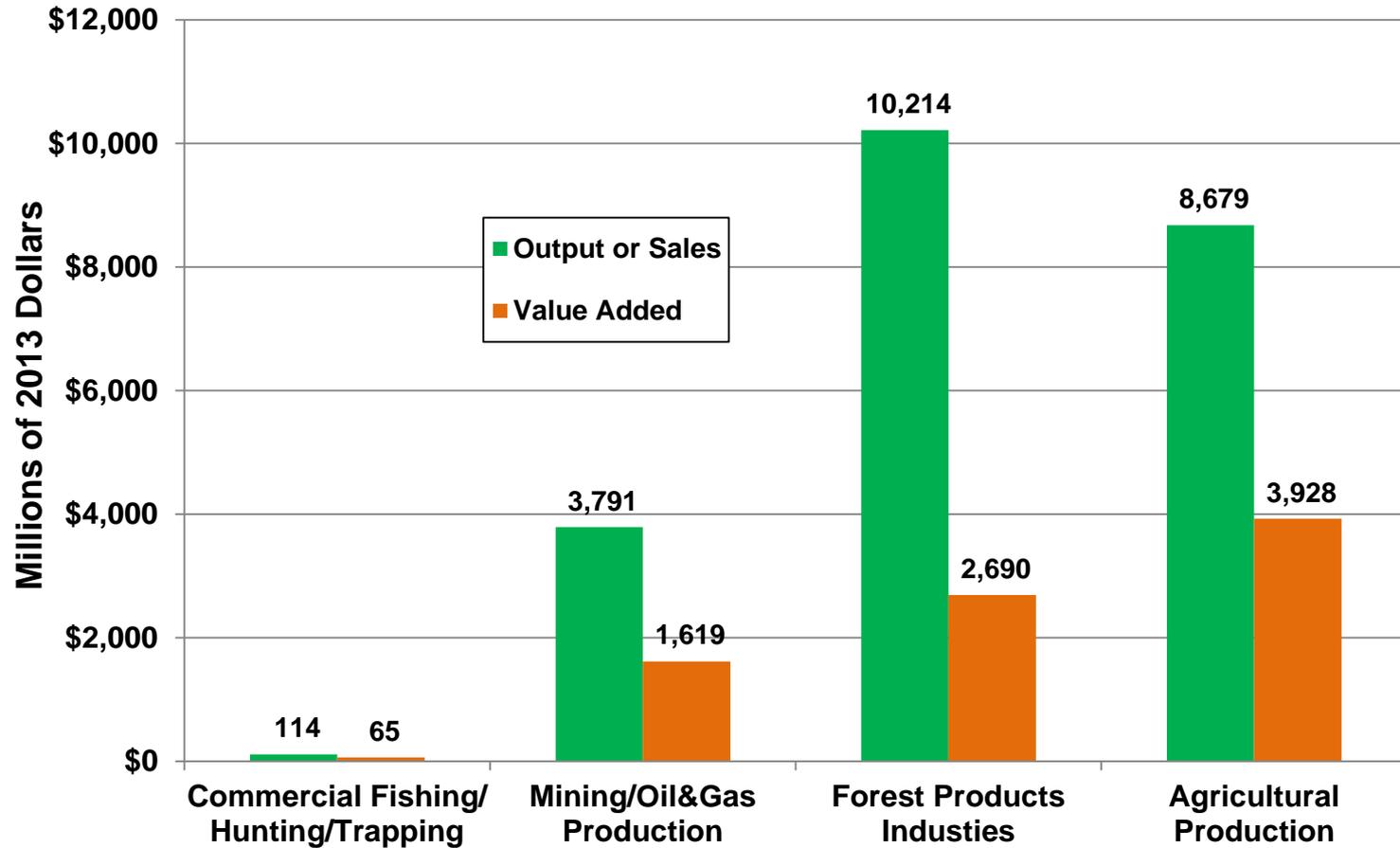
**34,951 jobs**  
**statewide**



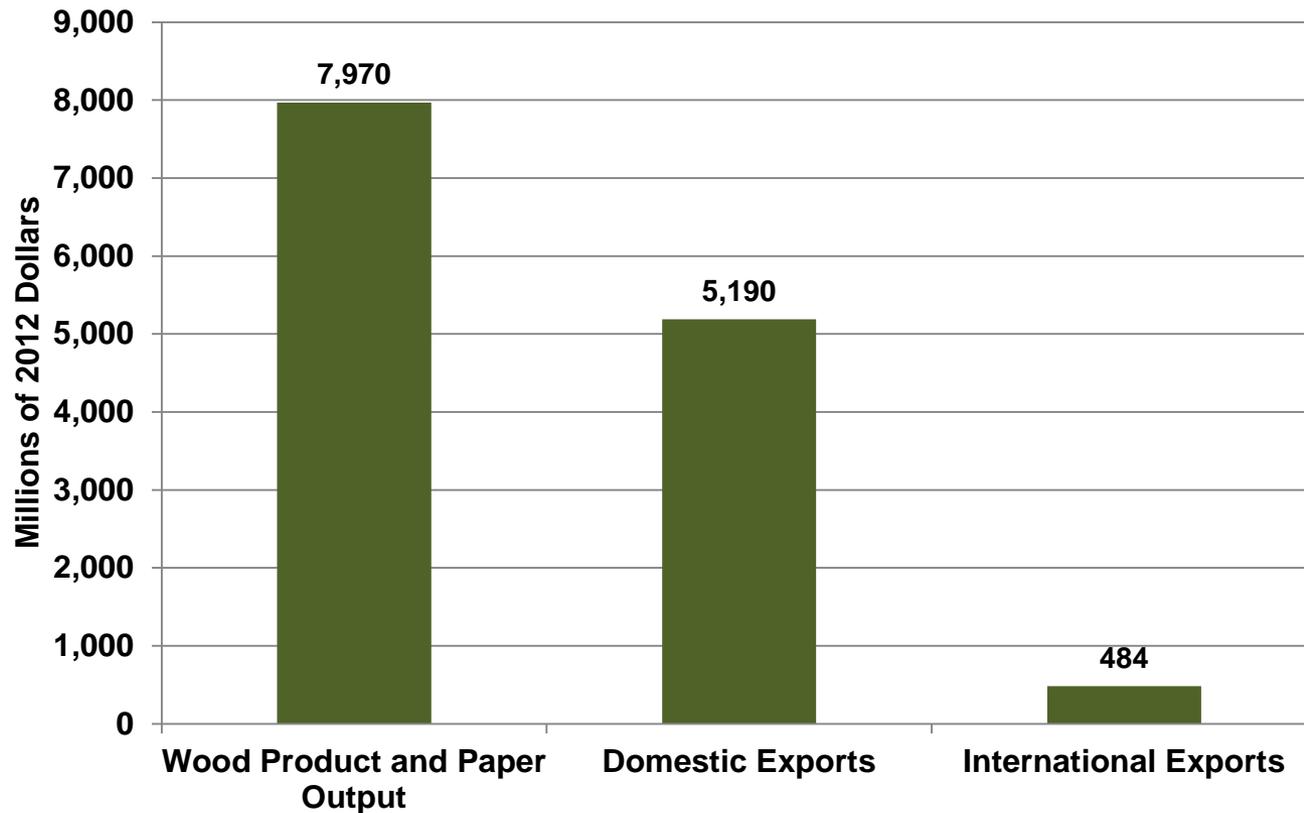
# Michigan direct and total labor income by forest products industry, 2013



# Michigan direct output and value added for selected industries, 2013

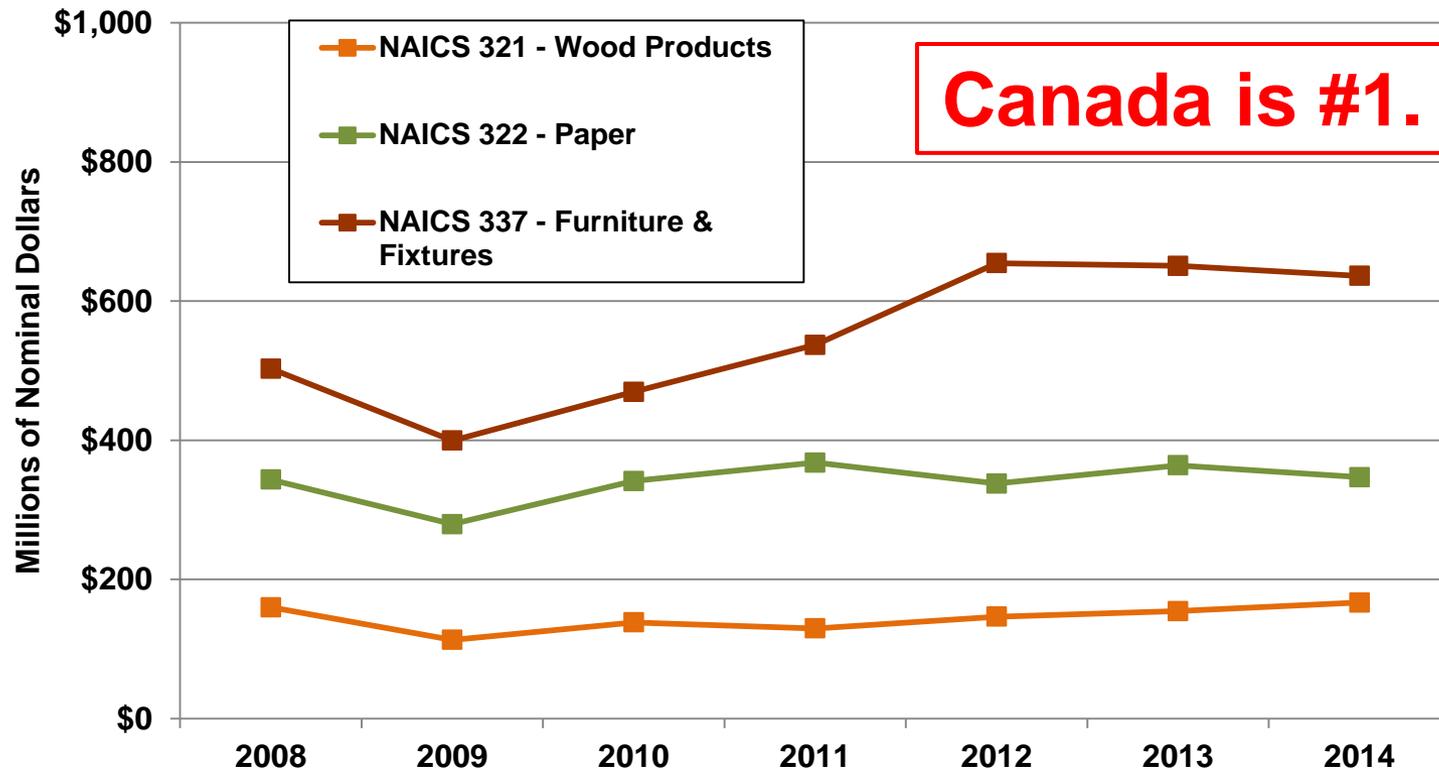


# Michigan direct wood product and paper output, domestic exports and international exports, 2012

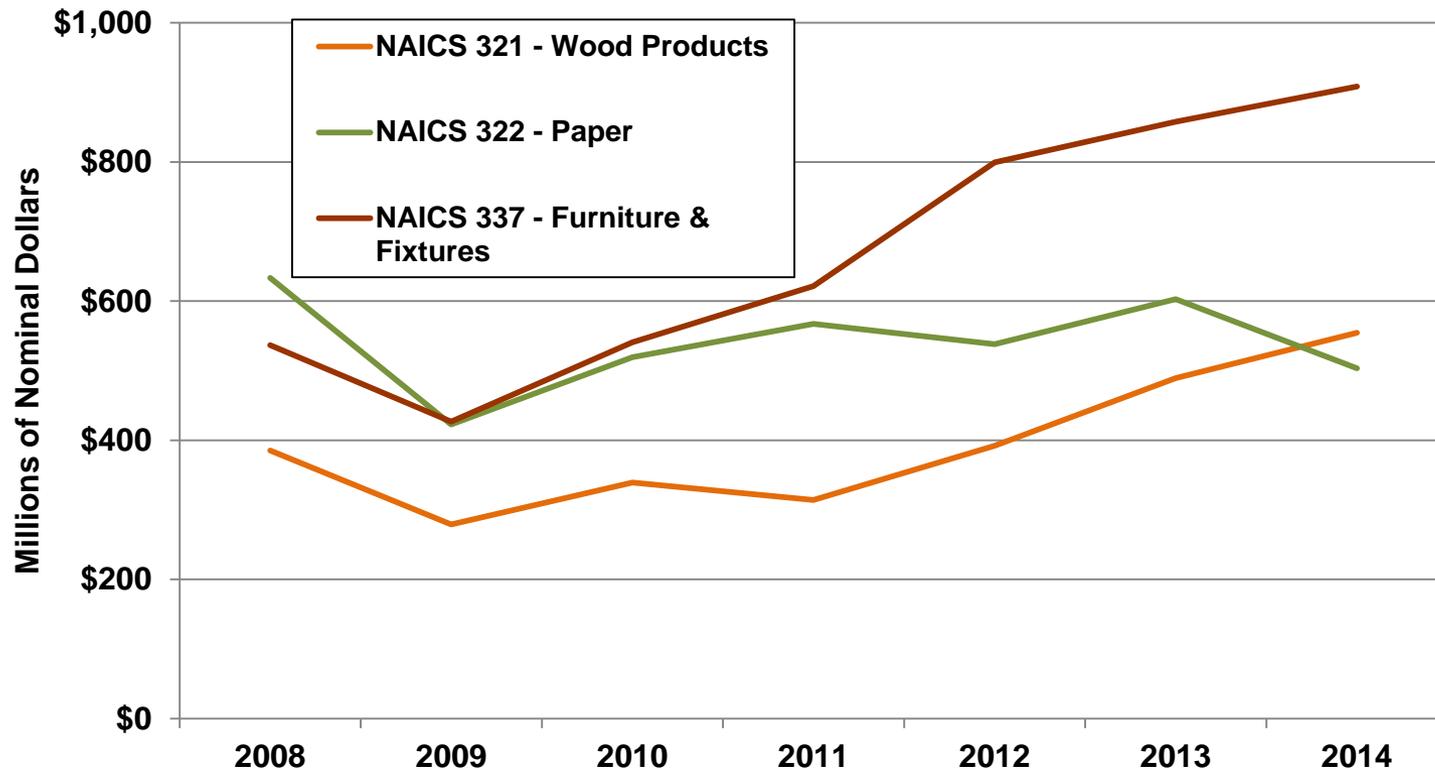


Sources: 2012 IMPLAN data, US Department of Commerce-International Trade Administration, US Census Bureau-Commodity Flow Survey

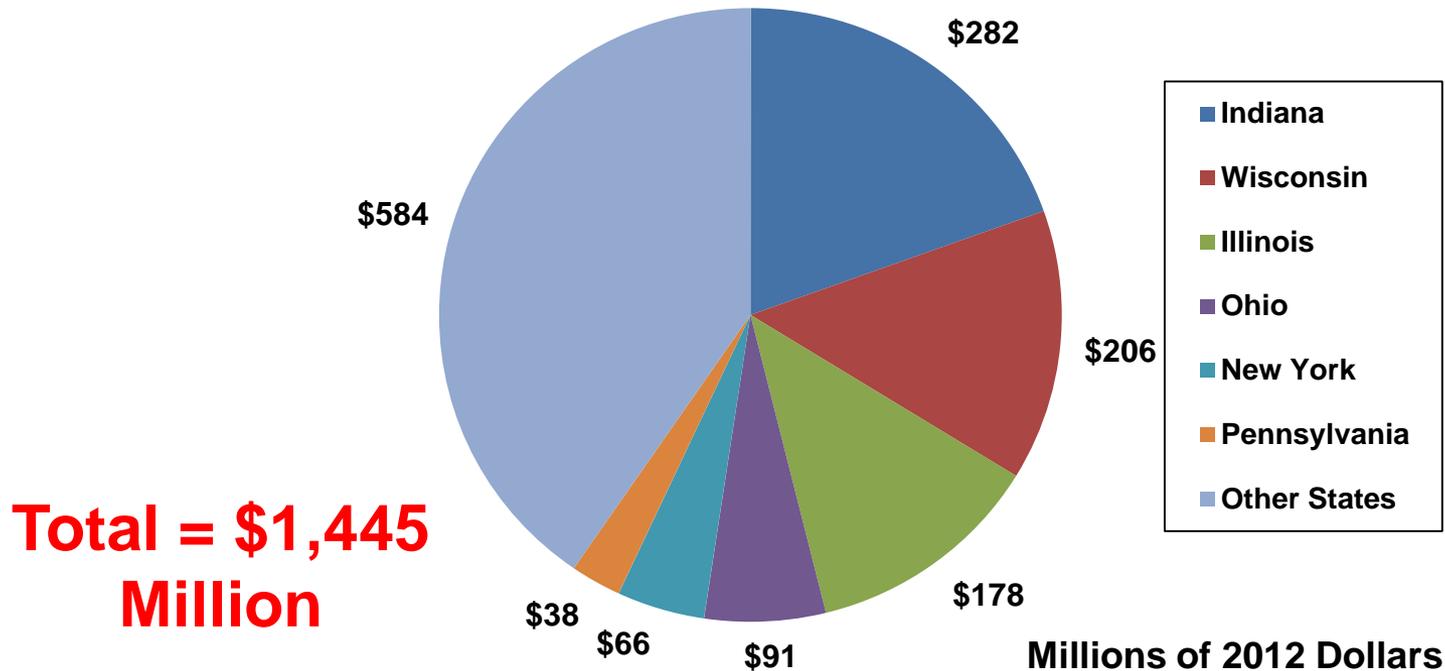
# Value of international exports from Michigan for NAICS 321, 322 and 337, 2008-2014



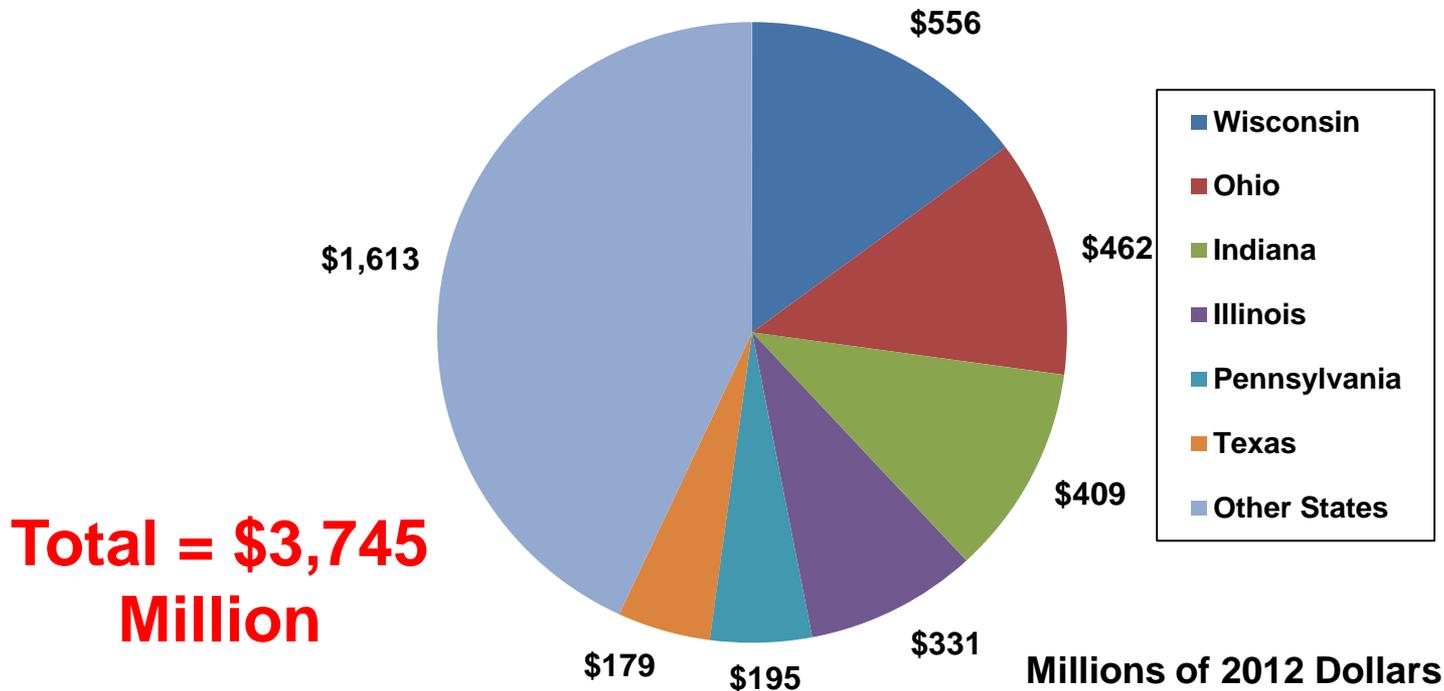
# Value of international imports from Michigan for NAICS 321, 322 and 337, 2008-2014



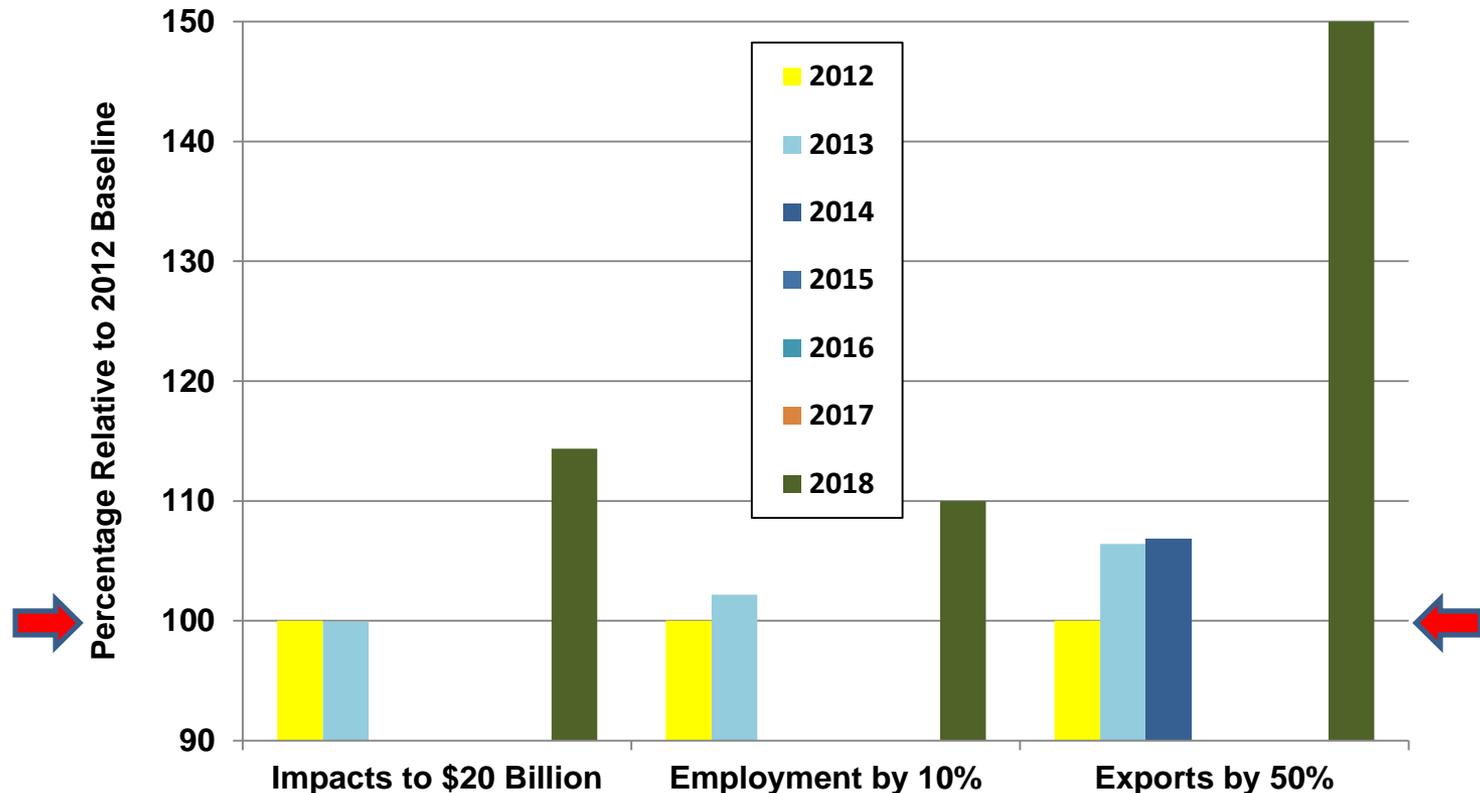
# Value of domestic exports from Michigan for NAICS 321-Wood Products for the top six importing states, **2012**



# Value of domestic exports from Michigan for NAICS 322-Paper for the top six importing states, **2012**



# Progress toward 5-year goals (2018) from 2013 Governor's Forest Products Summit



# Future Opportunities

- **Increasing Michigan's:**
  - Sales
  - Import substitution
  - Domestic exports
  - International exports
- **Improving policies to support:**
  - existing industry, and
  - regionally based industry development

# Goals

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