



# THE FOREST PRODUCTS INDUSTRY IN IDAHO

## PART 3: SALES, EMPLOYMENT AND CONTRIBUTION TO THE STATE'S ECONOMY

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### INTRODUCTION

This Forest Industry Brief is part of a series of reports presenting findings from a Bureau of Business and Economic Research (BBER) census of Idaho's primary forest products industry. Part 3 of this series presents information on sales value and employment associated with primary wood products manufacturing, the economic contribution of forest products manufacturing in the state and an analysis of the changes in the broader forest industry over time. All dollar figures included have been adjusted for inflation to constant 2015 dollars unless otherwise noted.

### IDAHO'S PRIMARY PRODUCT SALES VALUE AND MARKETS

The 2015 mill census identified 88 active primary forest products manufacturers in Idaho producing an array of products, including lumber and other sawn products, pulp and paper, veneer and plywood, log homes, posts, poles, log furniture and cedar products. Idaho manufacturers reported a total sales value of primary wood products, mill residue and residue-related products (e.g., pulp and paper, particle board, fuel pellets, bark and landscape material) of more than \$1.65 billion, free on board (f.o.b.) the producing mill. This represented a 12 percent increase from the \$1.47 billion in total sales during 2011 (Simmons and others 2014). Primary product sales alone, excluding mill residue and residue-related products, exceeded \$871 million during 2015 – almost 36

percent higher than 2011 sales (Table 1). Wood products manufactured within Idaho were mostly sold outside the state while about \$174 million (20 percent) of sales value stayed in-state. However, the in-state proportion of sales was higher in 2015 relative to 2011 (10 percent) and represented a larger share compared to both the 2006 and 2001 (14 percent) survey years.

Lumber was the main driver behind the shift to greater in-state sales. In-state lumber sales more than tripled in real dollars from 2011 to 2015 and the in-state proportion of sales increased from just 8 percent in 2011 to 20 percent in 2015. Lumber, plywood and other sawn products accounted for \$150 million (86 percent) of total in-state sales and the largest share of sales in each of the other regions. The leading geographic market areas reported for primary wood products were Idaho and other Rocky Mountain states (46 percent combined) followed by North Central states (21 percent) and then states located in the Far West (14 percent) and South (13 percent). Mills distributed their products through their own distribution channels or through independent wholesalers and selling agents. Because of subsequent wholesaling transactions the geographic destination reported here may not precisely reflect final delivery points of shipments.

### IDAHO'S FOREST INDUSTRY EMPLOYMENT AND LABOR INCOME

The primary forest products manufacturers characterized in BBER's periodic census represent just one component of the

**Table 1.** Destination and value of Idaho's 2015 primary wood product sales.<sup>a</sup> Sources: Keegan and others 1982, 1988, 1992, 1997; Morgan and others 2004; Brandt and others 2012; Simmons and others 2014.

Product	Idaho	Rocky Mountains <sup>c</sup>	Far West <sup>d</sup>	North-central <sup>e</sup>	Northeast <sup>f</sup>	South <sup>g</sup>	Other countries <sup>h</sup>	Unknown	Total
----- Sales value in thousand 2015 dollars -----									
Lumber, timbers, other sawn products, plywood and veneer <sup>b</sup>	150,069	179,507	106,630	150,891	46,097	106,694	6,844	--	746,732
Cedar products	1,606	31,747	2,506	30,533	956	2,213	255	--	69,815
Posts, poles and log furniture	18,737	8,444	12,722	3,733	750	0	876	--	45,262
House logs and log homes	3,631	3,676	915	640	381	341	0	--	9,584
<b>2015 all products total</b>	<b>174,043</b>	<b>226,374</b>	<b>122,773</b>	<b>185,797</b>	<b>48,184</b>	<b>109,248</b>	<b>7,975</b>	<b>--</b>	<b>871,393</b>
<b>Previous years</b>									
2011 total	65,543	142,158	121,618	165,563	46,382	83,840	17,886	0	642,989
2006 total	137,379	273,112	211,610	232,734	66,891	74,415	12,502	0	1,008,642
2001 total	155,372	250,152	262,517	214,683	110,476	80,829	16,823	0	1,090,852
1995 total	267,523	306,168	247,422	306,609	131,707	112,588	13,345	0	1,385,361
1990 total	157,585	153,594	226,772	285,341	188,362	125,642	19,098	25,844	1,182,238
1985 total	110,999	189,602	149,162	221,129	139,499	129,600	2,536	111,208	1,053,735
1979 total	200,010	381,188	168,957	475,087	192,839	196,025	18,774	240,929	1,873,809

<sup>a</sup> Does not include mill residue sales or sales by the residue-utilizing sector.

<sup>b</sup> Lumber, timbers and other sawn products includes plywood and veneer sales value to prevent disclosure.

<sup>c</sup> Rocky Mountains includes Arizona, Colorado, Montana, Nevada, New Mexico, Utah and Wyoming.

<sup>d</sup> Far West includes Alaska, California, Hawaii, Oregon and Washington.

<sup>e</sup> North-central includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota and Wisconsin.

<sup>f</sup> Northeast includes Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, Pennsylvania, Rhode Island and Vermont.

<sup>g</sup> Texas, Virginia and West Virginia.

<sup>h</sup> Other countries include Canada, Pacific Rim countries and other countries.

broader forest industry in Idaho. The classification of forest industries used here follows the North American Industry Classification System (NAICS) available online via the U.S. Department of Commerce. The forest industry encompasses four sectors: NAICS 113 – forestry and logging, NAICS 1153 – forestry support activities, NAICS 321 – wood products manufacturing and NAICS 322 – paper manufacturing. These sectors include employees who work in both the primary and secondary wood products and paper manufacturing sectors. County Business Patterns (CBP) data from the U.S. Census Bureau are used to distinguish primary from secondary manufacturing employment and labor income. It should be noted that these four NAICS sectors likely underestimate total employment associated with the forest industry because they do not reflect the additional employment stimulated through demand for services from log hauling (trucking) companies, lumber and construction material

wholesalers, road construction and maintenance contractors, and forest management services performed by government agencies or nonprofit organizations. The Bureau of Labor Statistics' (BLS) Quarterly Census of Employment and Wages (QCEW) data are coupled with Bureau of Economic Analysis (BEA) data to determine employment and labor income associated with forestry support activities. These publicly available data sources provide another point of comparison for estimates of employees and labor income for primary forest products manufacturers, as well as additional information on the larger forest industry.

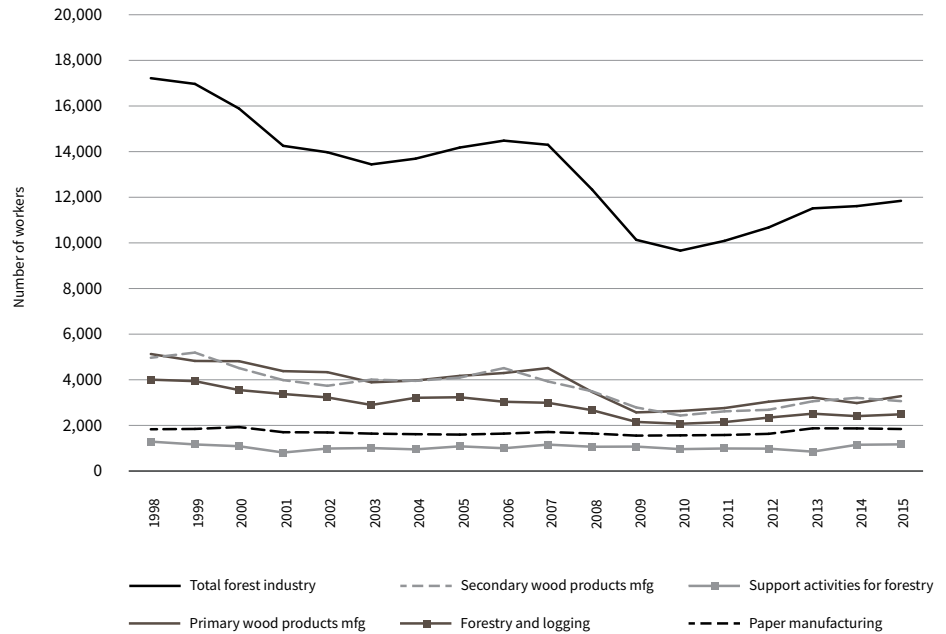
In 2015, total employment in the forest industry in Idaho was an estimated 11,843 full- and part-time workers (USDC BEA 2017; USDC CB 2017; USDL BLS 2017). Of these, approximately 3,282 workers were employed in the manufacturing of primary wood products. In addition, we estimate roughly 2,486 workers were employed in forestry and logging, 1,169 workers provided

supporting activities for forestry operations, 1,842 workers were employed in paper manufacturing and the remaining 3,064 workers were employed in secondary manufacturing of wood products.

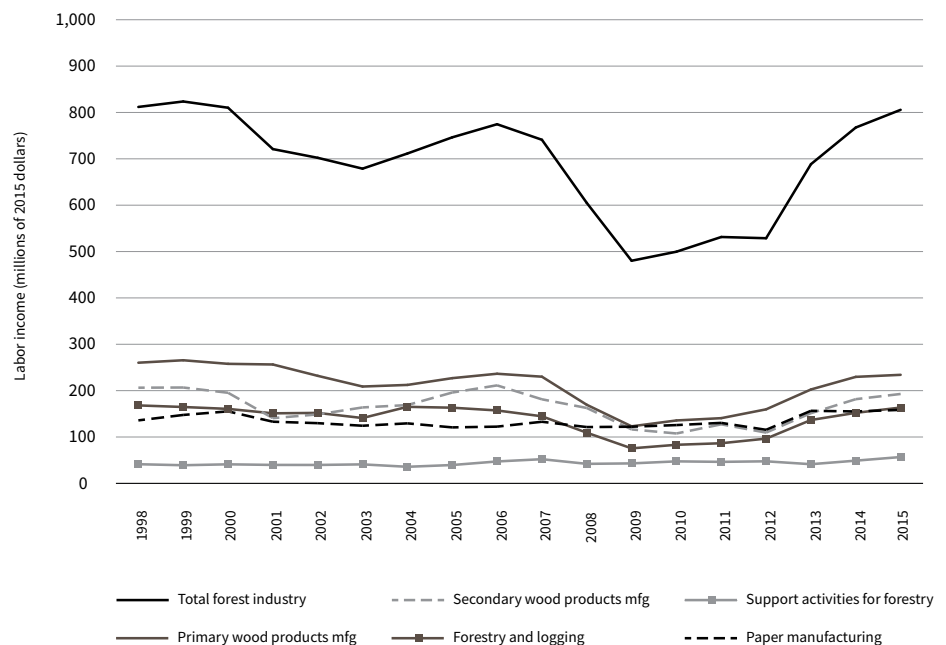
Although 2009 signaled the end of the Great Recession (NBER 2010), 2010 saw the lowest levels of employment – 9,661 workers – in Idaho’s forest industry in the past two decades. When data were collected during the 2011 BBER census, employment in

the forest industry had already begun its gradual post-recession recovery (Simmons et al. 2014). From 2011 to 2015, employment across the entire forest industry increased by 17 percent, mirrored by similar increases within each industry sector. From 2011 to 2015, employment in forestry support activities led the recovery, increasing by more than 18 percent, followed closely by both primary and secondary wood products manufacturing. Paper

**Figure 1.** Employment in Idaho’s forest industry, 1998-2015. Sources: USDC BEA 2017; USDC CB 2017; USDL BLS 2017; BBER 2017.



**Figure 2.** Inflation-adjusted earnings in Idaho’s forest products industry, 1998-2015. Sources: USDC BEA 2017; USDC CB 2017; USDL BLS 2017; BBER 2017.



**Table 2.** Average annual employment and labor income contributions from Idaho’s forest industry. Sources: U.S. Department of Commerce, Bureau of Economic Analysis (USDC BEA), 2015. Regional Input-Output Modeling System (RIMS II). <https://www.bea.gov/regional/rims/rimsii/>.

Sector	Direct employment	Indirect and induced employment	Total employment contribution <sup>a</sup>	Direct labor income	Indirect and induced labor income	Total labor income contribution <sup>a</sup>
----- Thousand 2015 dollars -----						
Primary wood products mfg.	3,282	10,607	13,889	\$ 234,107	\$ 639,651	\$ 873,758
Secondary wood products mfg.	3,064	4,259	7,323	\$ 192,835	\$ 245,344	\$ 438,179
Forestry and logging	2,486	4,202	6,688	\$ 163,508	\$ 172,550	\$ 336,058
Forestry support activities	1,169	442	1,611	\$ 56,778	\$ 23,864	\$ 80,642
Paper manufacturing	1,842	4,066	5,908	\$ 158,462	\$ 215,603	\$ 374,065
<b>Total forest industry</b>	<b>11,843</b>	<b>a</b>	<b>a</b>	<b>\$ 805,690</b>	<b>a</b>	<b>a</b>

<sup>a</sup> Indirect and induced employment and labor income should not be summed for multiple sectors due to some employment and income showing up as both direct contributions to their sector and indirect contributions to other sectors.

manufacturing increased by 17 percent between 2011 and 2015, and employment in forestry and logging experienced similar growth – 16 percent over the same period (Figure 1).

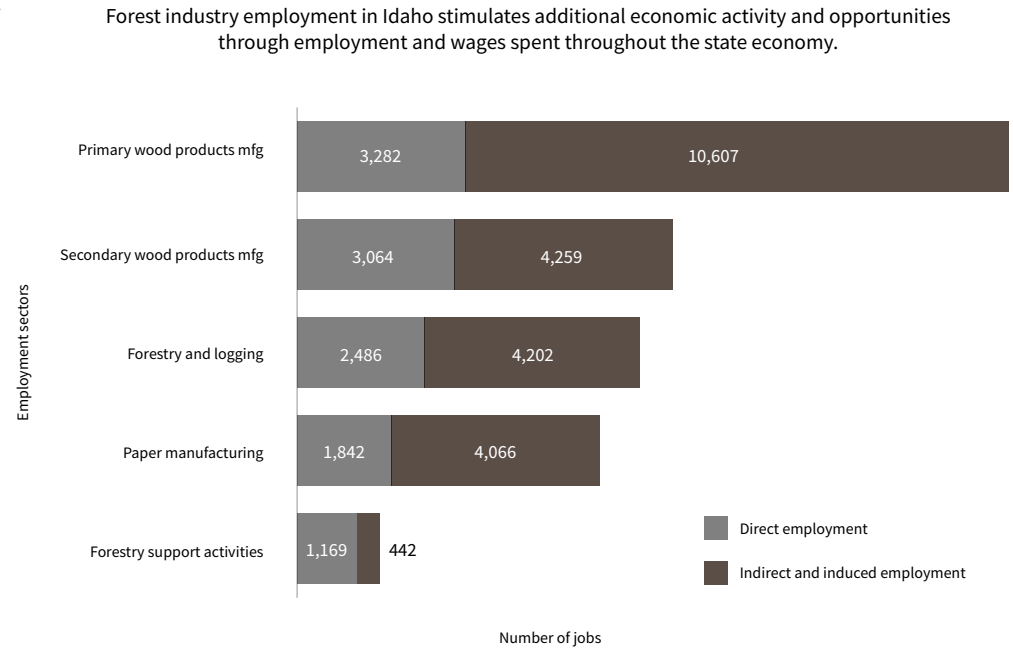
While the increasing employment trends observed from 2011 and 2015 indicate recovery in the forest industry, employment in wood products manufacturing, forestry and logging has decreased since 2006 (Brandt et al. 2006). Employment in wood products manufacturing fell by approximately 28 percent between 2006 and 2015. Reductions in employment were primarily a result of the Great Recession and corresponding reduction in U.S. home-building weakening demand for wood products and ultimately contributing to curtailments and mill closures. Technological improvements and new equipment also likely contributed to declining employment at Idaho processing facilities. The forestry and logging sector saw an 18 percent decline over the same period. However, paper manufacturing employment has continued to increase – up by 12 percent in 2015 relative to 2006 – and the number of employees engaged in forestry support activities increased by 17 percent over the same period.

During 2015, workers in the forest industry earned over \$805 million (constant 2015 dollars) in labor income or worker earnings. Labor income includes wages and salaries, some benefits and earnings of the self-employed. Labor income growth for the forest industry between 2011 and 2015 (52 percent) exceeded employment growth (17 percent). Since 2011, inflation-adjusted earnings in the primary wood products manufacturing sector increased by 66 percent, dramatically outpacing employment growth (19 percent) over the same period. The average primary wood products manufacturing employee earned over \$71,300 in 2015. Labor income for employees in forestry

and logging grew by a staggering 89 percent between 2011 and 2015 (Figure 2), more than three times the employment growth (16 percent) over the same period. In conjunction with increasing employment in the paper manufacturing sector (17 percent), labor income in the sector increased by 21 percent, with the average paper manufacturing employee earning over \$86,000 in 2015. Labor income for forestry support activities increased 22 percent from 2011 to 2015, on par with the sector’s employment growth of approximately 18 percent.

As forest industry employment has continued to steadily increase since 2011, the post-recession growth of labor income across the forest industry has been exceedingly strong. Total labor income earned by the forest industry was 52 percent higher than in 2011 (\$531 million), recovering to pre-recession levels and reflecting 2001 levels of worker earnings. The forestry and logging sector has led the recovery with the average worker making 63 percent more in 2015 relative to 2011 and wood products manufacturing employees making approximately 35 percent more over the same period. The outpacing of wage growth over employment could be attributed to a variety of factors, including general wage increases across forest industry sectors, efforts towards employee retention, as well as the inclusion of both full- and part-time workers in BEA employment estimates. For example, when wages grow faster than employment it may point to employees who were previously part-time adding more hours or days of work, which increases wages paid by businesses, but does not change the overall employment estimate. Total labor income increased between 2011 and 2015 and workers earnings across the forest industry were also up 4 percent in 2015 relative to 2006. This trend was mirrored in the forestry

**Figure 3. Economic contribution of Idaho's forest industry employment (number of workers) by sector in 2015.** Sources: USDC BEA 2017; USDC CB 2017; USDL BLS 2017; USDC BEA 2015; BBER 2017.



and logging sector with an increase in labor income of 4 percent over the same 10 year period. However, earnings for wood products manufacturers in 2015 were still below 2006 levels (5 percent) despite the rapid recovery between 2011 and 2015. Conversely, paper manufacturing earnings were 30 percent higher in 2015 compared to 2006 and earnings for forestry support activities were up approximately 20 percent.

Support activities for forestry (NAICS 1153) encompasses a variety of activities, including wildfire suppression and prevention activities, tree thinning and planting, as well as pest management. The employment and wage growth experienced in this category may be explained by a number of interrelated factors. First, the timing of the upward trend (2009-10) coincides with federal investments in infrastructure made through the American Reinvestment and Recovery Act (ARRA). Second, as timber harvest levels have declined businesses previously involved in commercial timber harvesting have diversified into non-commercial thinning, fuels reduction and wildfire suppression activities, thus potentially leading to a reclassification of these businesses from forestry and logging to support activities for forestry. And finally, investments in non-commercial forest management activities likely increased in western states including Idaho during this time due to extensive mortality in the wake of the mountain pine beetle epidemic.

### ECONOMIC CONTRIBUTION OF IDAHO'S FOREST INDUSTRY TO THE STATE ECONOMY

Idaho's forest industry directly contributes to the statewide economy, as well as through the additional economic activity it generates. Economic contribution analyses measure gross changes in economic activity that can be associated with an industry, event or policy on an existing regional economy (Watson et al. 2007). For this report, we assess the contribution of Idaho's forest industry as dollars spent on intermediate inputs, taxes, labor and, in turn, by households, all of which generate economic opportunities as they cycle through the state's economy.

Primary and secondary wood products manufacturers, forestry and logging workers, paper manufacturers and forestry support firms composing Idaho's forest industry directly contributed approximately 11,843 jobs and over \$805 million in labor income to the state economy. For every million board feet (MMBF) harvested in Idaho during 2015, approximately 10 jobs and \$709,000 in labor income are directly provided in the forest industry. The activity associated with those directly employed in the forest industry generates additional economic opportunities by relying upon other industries for raw and intermediate inputs and services, thus indirectly supporting employment and wages in additional sectors. Using regional data and existing linkages within Idaho's economy represented by the BEA RIMS II multipliers,<sup>1</sup> BBER estimates that the primary wood products manufacturing sector alone supported

<sup>4</sup> The Bureau of Economic Analysis does not endorse any resulting estimates and/or conclusions about the contribution of a given sector on an area.

over 13,800 full- and part-time jobs and an associated \$874 million in labor income (Table 2). Thus, for every primary wood products manufacturing job in the state, another 3.23 jobs were supported in related sectors, while for every \$1.00 paid in labor income by wood products manufacturers another \$2.73 was paid in supporting sectors, including forestry and logging, forestry support, trucking, wholesale trade and management.

Likewise, BBER estimates that the 2,486 people employed in the forestry and logging sector supported an additional 4,202 full- and part-time jobs along with nearly \$173 million in labor income in supporting sectors, such as equipment sales and repair. Leveraging the BEA RIMS II multipliers allows for a broad economic contribution analysis of the economic activity generated and cycled through Idaho's economy by different sectors within the forest industry. It should be noted that we do not aggregate sectors and avoid providing estimates of the total employment and labor income contribution for the entire forest industry to avoid double counting – given that some employment and labor income shows up as both direct contributions to their sector and indirect contributions to other sectors. For example, some or all of the direct employment and labor income in the forestry and logging sector would be included with the indirect and induced contributions from primary wood products manufacturing since these manufacturers rely upon forestry and logging business to supply their raw material inputs.

The findings from the 2015 census of Idaho's forest products industry demonstrate an overall improvement in the primary wood products sector since the 2011 census, indicating recovery from the Great Recession. The average inflation-adjusted wages for workers have increased over time, thus indicating the role jobs within Idaho's forest industry have in the state economy. At a time when continuing discussions focus on maintaining good paying jobs in rural communities, the jobs sustained through harvesting and processing Idaho timber can be vital in many locations. The number of workers employed, associated labor income and the volume of timber processed can vary substantially across the forest industry sectors. Idaho communities where timber harvesting and wood processing co-exist have a strong economic reliance on timber harvest levels within their region. Efforts to further analyze the economic contribution of Idaho's forest products industry indicate increasing levels of direct and support employment, labor income and state gross domestic product (GDP) generated by the harvest and processing of wood products (Alward et al. 2018).

## ABOUT THE DATA

This survey effort is the ninth application of its kind in Idaho and presents information collected from a BBER census of primary manufacturers in the state, as well as facilities in surrounding states that receive timber harvested in Idaho. Primary forest product

manufacturers are firms that process timber into products, such as lumber and plywood, as well as facilities like particle board plants that use the wood fiber residue directly from timber processors. Through a written questionnaire, phone or in-person interview, timber-processing and residue-utilizing facilities provided information about their 2015 operations, including:

- Plant location, production, capacity and employment.
- Volume of raw material received by county and ownership.
- Species of timber received and live/dead proportions.
- Finished product volumes, types, sales value and market locations.
- Volume, utilization and marketing of manufacturing residue.

In the event of nonresponse from a facility, data collected in previous surveys were updated using current data collected for facilities of a similar size, product type and location, as well as information on market trends and prices. For the 2015 Idaho mill survey, data were received for 47 of the 88 active, in-state facilities, accounting for 81 percent of facilities processing more than 5 MMBF Scribner of timber. While some estimation was required, responding firms accounted for 79 percent of the statewide harvest and 78 percent of the timber volume processed in Idaho during the calendar year 2015.

The University of Montana's Bureau of Business and Economic Research (BBER) and the USDA Forest Service's Forest Inventory and Analysis (FIA) Program at the Rocky Mountain Research Station (Ogden, Utah) cooperated in the analysis and preparation of this report. In collaboration with the FIA programs at the Rocky Mountain and Pacific Northwest Research Stations, BBER has developed the Forest Industries Data Collection System (FIDACS) to collect, compile and make available state and county information on the operations of the forest products industry. Information collected from manufacturers is stored at BBER in Missoula, Montana. Additional information not presented here, including the full set of data tables and map of active facilities, is available on the BBER website [http://www.bber.umt.edu/FIR/S\\_ID.asp](http://www.bber.umt.edu/FIR/S_ID.asp) and upon request. However, individual firm-level data are confidential and will not be released.

See also, **Part 1: Timber Harvest, Products and Flow** (BBER-FIB-10), **Part 2: Industry Sectors, Capacity and Outputs** (BBER-FIB-11) and **Idaho 2015 Data Tables and Figures**.

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A full set of data tables are also available at: <http://www.bber.umt.edu/pubs/forest/fidacs/ID2015Tables.pdf>



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