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# 1997 Indiana Forest Products Price Report and Trend Analysis

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**1997 INDIANA FOREST PRODUCTS PRICE  
REPORT AND TREND ANALYSIS**

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## SUMMARY

A questionnaire requesting prices paid for timber products was sent to all known commercial sawmills and veneer mills in the state of Indiana. Thirty of the 230 mills surveyed responded with 26 providing usable data. Forty-three mills provided usable data last year.

Compared to May 1996, prices paid for sawlogs increased overall, especially for black cherry and all the "white woods," especially hard maple. Oak prices also increased significantly by well over 10 percent on average.

The long-term overall price trend remains positive. The trend line for the real price of the average stand continues to reflect a real price increase of about 1.1 percent per annum. This is essentially unchanged from 1996. The trend for quality stands continues to show a 1.8 percent per annum increase, although the index was down significantly. This is most likely an unrealistic result because of the few mills reporting veneer log prices.

Adequately stocked stands of hardwood timber in Indiana represent an ever growing investment opportunity when properly managed. These stands provide very competitive real rates of return with income tax deferral on accumulated unrealized value increments. Timber owners should consult a professional forester to properly assess the options available to manage and market their timber assets.

## INTRODUCTION

The Department of Forestry and Natural Resources, Purdue University in cooperation with the Indiana Agricultural Statistics Service has conducted a formal survey of Indiana sawmills and veneer mills since at least 1957. The primary data collected are prices paid for logs delivered to the mills. From 1957 to 1976 the results were published as an Extension Circular.

From 1977 to 1989 the results were published in the Indiana Forest Products Marketing and Wood Utilization Report. The results also appear in the *Woodland Steward* published by the Woodland Steward Institute, a cooperative effort of Indiana's leading forest resource related organizations. Historical data are available by contacting the primary author.

## METHODOLOGY

The questionnaire was mailed by the Indiana Agricultural Statistics Service in early May of 1997 to the 230 mills listed in the data base as buying logs. A second mailing was made three weeks later to non-respondents.

A total of 230 questionnaires were mailed. Thirty mills responded, less than one-half of those who responded in 1996. The overall response rate was 13 percent (30/230). Four provided no data. The small number of reports for some species and product classes, especially veneer logs, makes the data suspect, and year-to-year variations very large. The size distribution of mills included in the survey and responding is presented in Table 1. No attempt was made to sample non-respondents. Therefore, it must be assumed that the response is biased. The standard errors should be used for year-to-year comparisons only.

Responses were analyzed using a PC-based Excel spreadsheet. Data that appeared to be in error were purged. For example, if the responses for a category included most mills reporting prices of \$40, \$50, \$60, \$70, \$80, and only one reporting \$240, the \$240 response was discarded.

The median price shown in Tables 2 and 4 is the reported price that divides the distribution into two equal halves. The median and mean would have the same value if the distribution was an exact bell-

shaped normal curve. The standard error of the mean (s.e.) is a measure of the variability of the responses. It indicates the amount by which the mean would vary if a different set of mills had responded to the survey. Note that the standard error is relatively small for those species/grade categories for which ten or more mills responded but is high for categories for which only a few mills responded.

Table 1. Type of mills included in data base and providing data.

	Total	Reporting Mills
Sawmills (SIC 2421)	215 <sup>1</sup>	24
Size Class (MBF)		
1 - 100	66	2
100 - 500	42	3
500 - 1,000	25	2
1,000 - 2,000	40	3
2,000 - 4,000	46	6
4,000 - 7,000	10	3
> 7,000	8	5
Prod. not reported		4
Veneer (SIC 2435)	15	2
Total	230	30

<sup>1</sup> Most custom mills didn't receive the questionnaire since they are listed in the data base as not buying logs.

## SAWLOG PRICES

Sawlog prices overall were higher compared to May of 1996, Table 2. The exception is black walnut. Table 3 shows lumber prices through the first of July 1997. Figures 1 to 14 show lumber prices through September 1997.

**Ash** lumber prices started down in the winter of 1995 and leveled off in mid 1996, Figure 1. Ash is not currently a hot species for furniture and other high valued end uses. Mean log prices were up about 5 percent, Table 2, although the median was unchanged.

**Basswood** lumber prices rose in the Spring of 1997 and leveled off in the Summer, Figure 2. The No. 2A grade recovered to the steady level of the mid-1990's. Prime basswood log prices increased by only 3.6 percent, Table 2. The increase was greater for lower grade logs ranging from 11 to 14 percent. The northern hardwood region remains the primary basswood production area. Prices were much stronger in this region than the Appalachian.

**Beech** lumber prices resumed the substantial upward trend of the early 1990's, Figure 3. Log prices followed suit with 10 to 18 percent increases for the three upper grades, Table 2. Although beech isn't as "white" hard and soft maple sapwood, it's close enough to get caught up in the trend toward white woods.

**Black cherry** lumber prices, Figure 4, resumed their upward spiral, but had leveled off by July. Sawlog prices were up 20 to 40 percent with No. 2's showing the largest gain. Black cherry remains the preferred dark wood. It's now more valuable than black walnut.

**Cottonwood** lumber prices, Figure 5, peaked in 1994, declined from June 1995 to February 1996, and have been steady since

then. Cottonwood sawlog prices were up from 5 to 10 percent, Table 2. Current levels remain above historical trends. This species is participating in the move to white wood but it's less preferred because of its lower in strength and harder to finish.

**Elm** lumber prices, Figure 6, peaked in the mid-1980's, declined substantially into the 1990's, and continued the level set in 1994. Elm sawlog prices were up well over 10 percent, Table 2.

**Hickory** lumber prices, Figure 7, continue to increase through July of this year. Sawlog prices were mixed with prime declining by 12 percent and No. 1's and 2's increasing by 6 to 8 percent, Table 2. The current \$755 for FAS is 86 percent above the 1994 price.

**Hard maple** lumber prices, Figure 8, resumed it's upward spiral. It has been increasing steadily all year no top in sight. Buyers continue to shop for white sapwood. The premium for saps alone is \$350 per MBF. Sawlog prices were up from 22 to 36 percent, Table 2.

**Soft maple** lumber prices, Figure 9, followed hard maple up until August. Sawlog prices were up from 7 to 23 percent. This is also a white wood, but no white wood premium is offered for saps because of the tendency of this species to stain from defects.

**White oak** lumber prices, Figure 10, increased during the year, but had leveled off by this summer. No. 2A increased to its historically high level in 1993. Sawlog prices increased from 11 to 21 percent, Table 2. Demand is especially strong for larger white oak logs for veneer and quarter sawing.

**Red oak** lumber prices, Figure 11, recovered part of the ground lost in 1994 and 1995. No. 2A increased throughout the year. Sawlog prices were up from 3 to 13 percent. The smallest increase was for

No. 1's. Red oak is retaining its market segment, but usage isn't increasing.

**Black oak** sawlog prices were up about the same amount on average as red oak, Table 2. The lumber market doesn't distinguish any species in the red oak family. Black oak, however, does provide a lower grade yield than red oak.

**Tulip (yellow) poplar** lumber prices, Figure 12, continued their recovery after hitting a cyclical bottom in the winter of 1995. Sawlog prices were up 5 to 12 percent. No. 1C lumber has leveled off at the high set in 1994. FAS, however, remains below its peak and started down at the beginning of 1997.

**Sycamore** lumber prices, Figure 13, have held steady at the record high levels first reached in the second quarter of 1994. Sawlog prices were mixed again this year. No. 1's increased about 2 percent while No. 2's were up almost 15 percent. Sycamore is a second tier white wood which can be substituted for other white woods.

**Black walnut** lumber prices, Figure 14, were falling into 1997 but leveled off in the winter and have been steady since. By late summer there were signs of renewed interest in walnut. This may be due to the exceptional run-up of black cherry prices. Who would have thought a few years ago that walnut would be following cherry in the dark wood sector. Sawlog prices were down from 4 to 12 percent when the date was collected this Spring. Only No. 3's were up.

**Softwood** prices were reported for red cedar and pine, Table 2. Although pine lumber is produced in Indiana the volume is small and limited primarily to custom sawing for local use and pallets. Harvest restrictions in the West have reduced the volume of western cedar species available. This has increased harvests of the eastern species for cedar particleboard and lumber for novelty items.

**Table 2.** Prices paid for delivered sawlogs by Indiana sawmills, May 1996 and May 1997.

Species/Grade	Range (\$/MBF)	No. Respon.		Mean (s.e.) <sup>1</sup>		Median		Change	
		1996	1997	1996 (\$/MBF)	1997 (\$/MBF)	1996 (\$/MBF)	1997 (\$/MBF)	Mean (%)	Median
White Ash									
Prime	500-700	21	14	576 (23.8)	606 (15.0)	600	600	5.2	0.0
No. 1	210-650	21	15	409 (25)	427 (27.6)	400	400	4.4	0.0
No. 2	150-400	19	14	234 (19.1)	266 (18.0)	210	255	13.7	9.0
No. 3	80-250	17	12	161 (10.6)	168 (13.5)	160	170	4.4	6.3
Basswood									
Prime	200-500	14	9	308 (23.4)	319 (42.8)	313	300	3.57	-4.2
No. 1	150-400	16	11	243 (15.1)	278 (24.5)	250	300	14.4	20.0
No. 2	120-260	16	11	184 (18.7)	205 (12.6)	190	200	11.4	5.3
No. 3	80-250	14	10	144 (10.5)	164 (14.9)	155	160	14.0	3.2
Beech									
Prime	80-400	15	10	201 (14.3)	219 (28.9)	200	200	9.0	0.0
No. 1	80-300	13	11	171 (13.9)	189 (21.7)	160	200	10.5	25.0
No. 2	80-200	13	11	139 (10.8)	164 (14.0)	130	200	18.0	53.9
No. 3	80-200	14	9	150 (10.4)	154 (12.8)	155	160	2.7	3.2
Cottonwood									
Prime	80-200	11	8	133 (10.3)	140 (12.4)	120	145	5.3	20.8
No. 1	80-160	8	6	119 (8.5)	133 (12.0)	110	145	11.8	31.8
No. 2	80-160	10	6	125 (10.9)	133 (12.0)	110	145	6.4	31.8
No. 3	80-160	13	7	141 (12.2)	133 (13.0)	140	145	-5.7	3.6

<sup>1</sup> Standard error of the mean is given in parentheses below the mean.

**Table 2.** Prices paid for delivered sawlogs by Indiana sawmills, May 1996 and May 1997, continued.

Species/Grade	Range (\$/MBF)	No. Respon.		Mean (s.e.) <sup>1</sup>		1996	Median 1997 (\$/MBF)	Change	
		1996	1997	1996	1997			Mean	Median
Cherry									
Prime	600-1500	21	12	736 (30.9)	908 (79.0)	700	800	23.4	14.3
No. 1	400-1000	21	14	514 (29.9)	674 (47.0)	450	600	31.1	33.3
No. 2	200-700	19	13	316 (27.5)	446 (48.5)	280	450	41.1	60.7
No. 3	80-300	18	11	173 (12.1)	205 (19.8)	175	200	18.5	16.3
Elm									
Prime	80-250	13	9	162 (13.1)	190 (20.1)	160	200	17.3	25.0
No. 1	80-240	13	8	166 (14.6)	185 (17.2)	160	200	11.5	25.0
No. 2	80-200	12	8	142 (10.4)	160 (15.6)	155	170	12.7	9.7
No. 3	80-200	15	8	146 (10.8)	154 (14.5)	150	155	5.5	3.3
S. Hickory									
Prime	100-450	19	12	280 (34.4)	246 (29.4)	250	200	-12.1	-20.0
No. 1	100-400	19	13	213 (15)	226 (27.9)	200	200	6.1	0.0
No. 2	100-300	18	14	161 (11.8)	174 (16.2)	160	180	8.1	12.5
No. 3	80-200	17	10	147 (10.4)	144 (11.4)	150	150	-2.0	0.0
Hard Maple									
Prime	250-1200	19	13	542 (21.8)	664 (63.8)	550	675	22.5	22.7
No. 1	300-850	20	15	393 (26.9)	533 (42.0)	390	550	35.6	41.0
No. 2	150-500	19	15	244 (22)	315 (29.1)	210	300	29.1	42.9
No. 3	80-300	18	12	156 (11.2)	190 (17.8)	155	200	21.8	29.0
Soft Maple									
Prime	200-400	18	12	285 (12.1)	319 (22.4)	300	335	11.9	11.7
No. 1	160-400	19	14	226 (11.4)	263 (20.8)	220	250	16.4	13.6
No. 2	120-280	18	14	163 (9.5)	201 (12.0)	170	200	23.3	17.7
No. 3	80-200	17	10	149 (9.7)	160 (13.7)	160	170	7.4	6.3

<sup>1</sup> Standard error of the mean is given in parentheses below the mean.



**Table 2.** Prices paid for delivered sawlogs by Indiana sawmills, May 1996 and May 1997, cont.

Species/Grade	Range (\$/MBF)	No. Respon.		Mean (s.e.) <sup>1</sup>		Median		Change	
		1996	1997	1996 (\$/MBF)	1997 (\$/MBF)	1996 (\$/MBF)	1997 (\$/MBF)	Mean (%)	Median (%)
White Oak									
Prime	500-1050	22	12	612 (31.1)	711 (47.6)	600	675	16.2	12.5
No. 1	150-850	21	14	438 (23)	486 (40.4)	450	500	11.0	11.1
No. 2	150-550	20	14	268 (19.2)	317 (26.1)	295	300	18.3	1.7
No. 3	80-350	18	11	162 (11.3)	196 (20.0)	160	200	21.0	25.0
Red Oak									
Prime	600-800	22	13	700 (16.3)	754 (17.4)	700	800	7.7	14.3
No. 1	350-700	21	14	519 (26.3)	536 (32.5)	550	600	3.3	9.1
No. 2	200-500	20	14	301 (21.5)	342 (29.7)	300	325	13.6	8.3
No. 3	80-250	18	11	167 (12.8)	179 (15.3)	160	200	7.2	25.0
Black Oak									
Prime	650-800	20	10	636 (19.4)	706 (14.2)	625	700	11.0	12.0
No. 1	100-600	21	12	460 (21.9)	453 (39.8)	450	500	-1.5	11.1
No. 2	170-450	20	13	261 (15.5)	305 (22.3)	300	300	16.9	0.0
No. 3	80-250	17	11	154 (10)	168 (14.8)	160	180	9.1	12.5
Tulip Poplar									
Prime	325-450	21	13	384 (10.3)	402 (11.5)	400	400	4.7	0.0
No. 1	200-350	21	15	265 (11.2)	298 (11.8)	275	300	12.5	9.1
No. 2	140-260	19	14	189 (10.1)	213 (11.0)	200	210	12.7	5.0
No. 3	80-200	18	11	151 (9.4)	160 (12.4)	155	160	6.0	3.2
Sycamore									
Prime	80-400	14	11	181 (7.3)	194 (24.9)	200	200	7.2	0.0
No. 1	80-300	13	10	169 (10.5)	172 (18.9)	160	170	1.8	6.3
No. 2	80-200	12	11	135 (10.4)	155 (13.5)	135	160	14.8	18.5
No. 3	80-200	14	7	156 (11.5)	163 (17.7)	160	180	4.5	12.5

<sup>1</sup> Standard error of the mean is given in parentheses below the mean.

**Table 2.** Prices paid for delivered sawlogs by Indiana sawmills, May 1996 and May 1997, continued

Species/Grade	Range 1997 (\$/MBF)	No. Respon.		Mean (s.e) <sup>1</sup>		Median (SE) 1		Change (%)	
		1996	1997	1996	1997	1996	1997	Mean	Median
<b>Sweetgum</b>									
Prime	80-250	11	10	194 (12.2)	165 (16.0)	180	170	-15.0	-5.6
No. 1	80-200	11	8	166 (6.1)	155 (14.5)	160	160	-6.6	0.0
No. 2	80-200	11	9	143 (9.2)	156 (14.4)	140	160	9.1	14.3
No. 3	80-200	13	7	152 (11.2)	154 (16.7)	160	160	1.3	0.0
<b>Black Walnut</b>									
Prime	400-1040	17	9	827 (42)	732 (77.2)	800	700	-11.5	-12.5
No. 1	300-880	19	12	615 (33.4)	585 (62.1)	650	500	-4.9	-23.0
No. 2	200-500	17	11	350 (32.9)	335 (34.0)	400	300	-4.3	-25.0
No. 3	80-300	17	10	184 (15.8)	199 (21.2)	180	200	8.2	11.1
<b>Softwood</b>									
Pine	200	1	1	240	200	240	200	-16.7	-16.7
Red cedar	350	1	1	350	350	350	350	0.0	0.0

<sup>1</sup> Standard error of the mean is given in parentheses below the mean.

**Table 3.** Hardwood Lumber prices, 4/4 Appalachian unless otherwise indicated (Hardwood Market Report, Memphis, Tenn.), \$ per MBF.

	Lumber Grade	Jan. 1994	July 1994	Jan 1995	June 1995	Jan 1996	July 1996	Jan 1997	July 1997
Ash	FAS + Prem.	860	870	935	970	925	845	845	845
	No. 1C	565	630	695	725	680	600	590	590
	No. 2A	285	330	365	380	360	325	320	320
Basswood	FAS + Prem.	675	690	710	710	710	710	710	735
	No. 1C	320	335	350	350	350	350	350	360
	No. 2A	225	225	225	225	220	195	195	225
Beech	FAS	395	425	440	440	440	430	435	465
	No. 1C	355	385	400	400	400	390	395	415
	No. 2A	285	315	325	325	325	320	325	335
Cottonwood (Southern)	FAS	555	625	635	625	605	600	600	600
	No. 1C	380	430	435	425	405	400	400	400
	No. 2A	240	260	255	240	220	220	220	220
Cherry	FAS + Prem.	1,510	1,585	1,685	1,725	1,670	1,670	1,785	1,875
	No. 1C	1,040	1,040	1,040	990	845	845	855	885
	No. 2A	590	590	590	550	445	445	445	465
Elm (Southern)	FAS	345	355	355	355	355	355	355	355
	No. 1C	325	335	335	335	335	335	335	335
	No. 2B	265	270	270	270	270	270	270	270
Hickory	FAS	405	445	455	455	455	455	645	755
	No. 1C	385	425	435	435	435	435	460	510
	No. 2A	245	265	265	265	265	265	275	300
Hard Maple	FAS + Prem.	1,030	1,015	1,015	1,015	990	1,060	1,215	1,370
	No. 1C	750	730	675	660	625	635	715	805
	NO. 2A	485	475	425	400	370	370	445	495
Soft Maple	FAS + Prem.	815	825	825	760	700	715	835	975
	No. 1C	600	610	600	560	500	500	560	650
	No. 2A	405	410	400	365	325	325	355	400
White Oak -Plain	FAS + Prem.	880	880	975	990	1,005	1,005	1,015	1,080
	No. 1C	535	535	565	585	600	600	600	615
	No. 2A	340	325	315	315	315	305	305	365
Red Oak-Plain	FAS + Prem.	1,140	1,170	1,275	1,265	1,130	1,010	1,050	1,100
	No. 1C	780	750	740	735	705	705	710	740
	No. 2A	455	420	400	400	400	400	430	500
Yellow Poplar	FAS + Prem.	710	750	750	685	625	650	665	710
	No. 1C	425	425	420	365	330	355	390	435
	No. 2A	310	305	275	240	235	250	270	295

**Table 3.** Hardwood Lumber prices, 4/4 Appalachian unless otherwise indicated (Hardwood Market Report, Memphis, Tenn.), \$ per MBF, cont.

	Lumber Grade	Jan. 1994	July 1994	Jan. 1995	June 1995	Jan. 1996	July 1996	Jan. 1997	July 1997
<b>Sycamore (Southern, Plain)</b>									
	FAS	415	445	455	455	455	455	455	455
	No. 1C	395	425	435	435	435	435	435	435
	No. 2A	350	370	375	375	375	375	375	375
<b>Black Walnut</b>									
	FAS	1,615	1,615	1,615	1,600	1535	1455	1410	1410
	No. 1C	855	855	855	855	810	780	775	775
	No. 2A	290	290	290	290	290	290	290	290

## VENEER LOG PRICES

The number of reporting mills decreased again this year. The data

provided is presented without comment, Table 4. We do not believe the small number of responses is sufficient to reflect actual market conditions.

**Table 4.** Prices paid for delivered veneer logs by Indiana veneer mills, May 1996 and May 1997.

Species/Grade/Log Dia.	1997 Range	No. Respon.		Mean (s.e.) <sup>1</sup>		Median		Change (%)	
		1996	1997	1996	1997	1996	1997	Mean	Median
				(\$/MBF)		(\$/MBF)			
Black Walnut									
Prime									
12-13	200-1500	3	3	1500 (0)	1000 (404.0)	1500	1300		
14-15	1400-1500	3	2	2000 (288.7)	1450 (50.0)	2000	1450		
16-17	1650-2500	3	2	3000 (288.7)	2075 (425)	3000	2075		
18-20	1700	2	1	4000 (1000)	1700	4000	1700		
21-23	1700	2	1	5000 (1000)	1700	5000	1700		
24-28	1700	0	1		1700		1700		
*28	1800	0	1		1800		1800		
Select									
12-13	1250	1	1		1250		1250		
14-15	1350	2	1	1750 (250)	1350	1750	1350		
16-17	1500-1600	2	2	2750 (250)	1550 (50.0)	2750	1550		
18-20	1650	1	1		1650	4000	1650		
21-23	1650	1	1		1650	5500	1650		
24-28	1650	0	1		1650		1650		
*28	1650	0	1		1650		1650		

<sup>1</sup> Standard error of the mean is given in parentheses below the mean

**Table 4.** Prices paid for delivered veneer logs by Indiana veneer mills, May 1996 and May 1997, cont..

Species/Grade	1997 Log Dia. Range (\$/MBF)	No. Respon.		Mean (s.e.) <sup>1</sup>		Median		Change (%)	
		1996	1997	1996	1997	1996	1997	Mean	Median
White Oak				(\$/MBF)		(\$/MBF)			
Prime									
13-14	500-1500	4	2	1238 (151.9)	1000 (500)	1325	1000		
15-17	900-2000	4	2	1650 (253.3)	1450 (550)	1750	1450		
18-20	1000-2000	4	2	2263 (219.2)	1500 (500)	2250	1500		
21-23	1250	4	1	2850 (150.0)	1250	3000	1250		
24-28	1500	1	1		1500		1500		
*28	2000	1	1		2000		2000		
Select									
13-14	400	2	1	950 (250)	400	950	400		
15-17	500	3	1	1333 (352.8)	500	1200	500		
18-20	600	3	1	1916 (268.2)	600	1500	600		
21-23	700	3	1	2000 (220.5)	700	2000	700		
24-28	700	0	1		700		700		
*28	700	0	1		700		700		

<sup>1</sup> Standard error of the mean is given in parentheses below the mean.

**Table 4.** Prices paid for delivered veneer logs by Indiana veneer mills, May 1996 and May 1997, cont.

Species/Grade/ 1997	Log Dia. Range (\$/MBF)	No. Respon.		Mean (s.e) <sup>1</sup>		Median		Change (%)	
		1996	1997	1996	1997	1996	1997	Mean	Median
Red Oak Prime				(\$/MBF)		(\$/MBF)			
16-17	600-12100	3	2	1733 (260.3)	900 (300)	1700	900		
18-20	700-1200	3	2	1867 (348.0)	950 (250)	1800	950		
21-23	900	3	1	1867 (348.0)	900	1800	900		
24-28	1100	1	1		1100		1100		
*28	1250	1	1		1250		1250		
Select									
16-17	400	2	1	1325 (125)	400	1325	400		
18-20	600	2	1	1350 (150)	600	1350	600		
21-23	700	2	1	1350 (150)	700	1350	700		
24-28	900	0	1		900		900		
*28	1000	0	1		1000		1000		

<sup>1</sup> Standard error of the mean is given in parentheses below the mean.

**Table 4.** Prices paid for delivered veneer logs by Indiana veneer mills, May 1996 and May 1997, cont.

Species/Grade/ Log Dia.	1997 Range (\$/MBF)	No. Respon.		Mean (s.e.) <sup>1</sup>		Median		Change (%)	
		1996	1997	1996	1997	1996	1997	Mean	Median
Hard Maple				(\$/MBF)		(\$/MBF)			
Prime									
16-20	2000	3	1	2233 (371)	2000	2500	2000		
*20		1	0						
Select									
16-20		2	0	1100 (100.0)		1100			
*20		0	0						
Tulip Poplar									
Prime									
16-20	500	3	1	500 (57.7)	500	500	500		
*20		2	0	450 (50)		450			
Select									
16-20		2	0	450 (150)		450			
*20		1	0						

<sup>1</sup> Standard error of the mean is given in parentheses below the mean.



## CUSTOM COSTS AND MISCELLANEOUS PRODUCTS

The few mills reporting custom costs and prices for minor forest products makes analysis difficult.

### Custom Costs

Custom costs in 1997 were about the same as 1996. An exception is hauling cost which increased by \$10 per MBF. Haul distance also continued to increase. Mills continue to reach out to a larger purchase area to meet wood yard needs.

**Table 5.** Custom costs reported by Indiana mills, May 1996, and May 1997.

	No. Responses	1997 Range	Mean		Median	
			1996	1997	1996	1997
Sawing (\$/MBF)	6	20-200	169	141	180	180
Logging (\$/MBF)	2	85-110	98	98	100	98
Hauling (\$/MBF)	1	65	56	65	55	65
Distance (Miles)	3	40-63	48	54	50	60
\$/MBF/Mile	n.a.	n.a.	1.22	n.a.	1.30	n.a.

### Miscellaneous Products

Prices for miscellaneous products, Table 6, were mixed. The price for pallet logs was \$10 high. Pulp chip price was down slightly. Markets for bark for mulch remains strong but the prices reported in May were down slightly on average.

**Table 6.** Prices of miscellaneous products reported by Indiana mills, May 1996 and May 1997, fob the producing mill.

	No. Responses	1997 Range	Mean		Median	
			1996	1997	1996	1997
Pallet logs, \$/MBF	9	80-240	181	181	180	190
Pulp Chips, \$/ton	10	8.50-21	13.60	13.30	13.75	12.50
Sawdust, \$/ton	10	0.50-11.00	6.00	4.50	5.13	4.67
Bark, \$/ton	11	2.00-22.50	14.70	10.70	9.30	10.00

## Handle and Container Veneer Logs

Handle log prices were mixed, Table 7. Three mills continued to reporting handle log prices. All the mills reporting were handle mills. One mill reported prices for yellow poplar, \$400, and \$350 for No. 1's and 2's respectively. Indiana continues to be a major center of tool handle production. It provides a good speciality market for a limited number of loggers who know the specifications.

**Table 7.** Prices paid for handle logs by Indiana mills, May 1996 and May 1997, fob mill.

	No. Responses	1997 Range	Mean	
			1996 (\$/MBF)	1997 (\$/MBF)
<b>White Ash</b>				
No. 1	3	550-650	600	600
No. 2	3	400-500	417	433
No. 3	2	250-300	325	275
<b>Hickory</b>				
No. 1	0		300	
No. 2	0		250	
No. 3	0		200	
<b>Sugar Maple</b>				
No. 1	1	550	475	550
No. 2	1	350	325	350
No. 3	1	250	250	250

## INDIANA TIMBER PRICE INDEX -- UPDATE

The delivered log prices collected in the Indiana Forest Products Price Survey are used to calculate the delivered log value of typical stands of timber. This provides trend-line data that can be used to monitor long-term price trends for timber. The species distribution used to calculate the weighted averages are presented in Table 8. The log quality weights used are presented in Table 9. These weights are based primarily on the 1967 Forest Survey of Indiana. The weights will be adjusted in the future to reflect changes in species composition and timber quality as reflected in the 1986 Forest Survey.

The nominal (not deflated) price, columns 3 and 6 of Table 10, are a weighted average of the delivered log prices reported in the price survey. The price indexes, columns 4 and 7, are the series of nominal prices divided by the price in 1957, the base year multiplied by 100. Thus, the index is the percentage of the 1957 price. For example, the average price in 1996 was 615 percent of the price in 1957. The real prices, columns 5 and 8 are the actual prices deflated by the producer price index for finished goods with 1982 as the base year, Figure 10. The real price series represents the purchasing power of dollars based on a 1982 market basket of industrial goods. It's this real price trend that is important to long-term investments like timber.

### Average Stand

The nominal weighted average price increased from \$341.80 in 1996 to \$356.54 in 1997 for the

average stand, Table 10, column 3. This is a 4.3 percent increase, but still below the 1994 high of 367.61.

The real price of \$270.72 was slightly above the trend line price in 1997 of \$267.75. By definition the trend line splits the difference between annual prices above and below the trend line. It takes several years of price movement in one direction to significantly adjust the trend line for the 41 year period used.

The average annual compound rate of increase for the trend line was the same, 1.09 in 1996 and 1997, Figure 16. The new equation for the trend line for the 1957 to 1997 period is,

$$\text{Avg. Index} = 171.35 + 2.35 \times T,$$

where,

T=1 for 1957, 2 for 1958, etc.

A linear trend line should be used if it's necessary to project timber prices, as discussed in greater detail in Station Bulletin No. 148. Although it's easier to simply plug the average annual compound rate of increase value into the compound interest formula (exponential rate of increase), projections much over 15 years gives unrealistic results. Real prices can't increase exponentially for long periods of time. Market adjustments, like those observed for black walnut, come into play to retard the increase and eventually reverse it.

### Quality Stand

The nominal weighted average price for the quality stand decreased by 13.2 percent from 553.06 in 1996 to 480.2 in 1997, Table 10, column 6. The decrease was due the decline in reported veneer log prices. As noted above, the small number of mills reporting these prices means that this change may not reflect actual market conditions.

The average annual compound rate of increase for the trend line declined from 1.81% in 1996 to 1.75 in 1997. Again, it takes several years of movement in one direction to impact the trend line. The equation for the trend line is

$$\text{Qual. Index} = 196.18 + 5.02 \times T$$

**Table 8.** Species composition of the Indiana timber price index for an average and a quality stand.

Species	Average Stand	Quality Stand
Veneer species:	(%)	(%)
White oak	13.4	21.0
Red oak	15.1	20.0
Hard maple	9.6	14.0
Yellow poplar	7.5	9.0
Black walnut	5.4	5.0
Nonveneer species:		
White ash	5.8	3.1
Basswood	1.5	3.1
Beech	5.6	3.1
Cottonwood	6.2	3.1
Black cherry	0.8	3.1
Elm	1.2	3.1
Hickory	4.7	3.1
Soft maple	6.7	3.1
Black oak	11.4	3.1
Sycamore	5.1	3.1

**Table 9.** Log quality composition of the Indiana timber price index for an average and a quality stand.

Log Grade	Average Stand		Quality Stand	
	Veneer Species	Nonveneer Species	Veneer Species	Nonveneer Species
Veneer logs	(%)	(%)	(%)	(%)
Prime	1.0	0.0	7.0	0.0
Select	3.0	0.0	13.0	0.0
Sawlogs				
Prime	20.0	24.0	19.0	24.0
No. 1	26.0	26.0	21.0	26.0
No. 2	38.0	38.0	33.0	38.0
No. 3	12.0	12.0	7.0	12.0

**Table 10.** Weighted average actual price, price index, and deflated price for an average and quality stand of timber in Indiana, 1957 to 1997.

Year	Producer Price Index	Average Stand			Quality Stand		
		Nominal Price	Index Number	Real Price <sup>1</sup>	Nominal Price	Index Number	Real Price <sup>1</sup>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		(\$/MBF)		(\$/MBF)	(\$/MBF)		(\$/MBF)
1957	32.5	55.6	100.0	171.0	66.5	100.0	204.7
1958	33.2	54.3	97.7	163.6	66.1	99.4	199.2
1959	33.1	54.7	98.4	165.2	68.1	102.4	205.7
1960	33.4	58.0	104.4	173.6	69.9	105.1	209.3
1961	33.4	59.5	107.1	178.1	70.4	105.9	210.9
1962	33.5	59.8	107.6	178.4	72.9	109.5	217.5
1963	33.4	59.4	107.0	177.9	75.3	113.1	225.3
1964	33.5	60.9	109.6	181.7	75.1	112.9	224.2
1965	34.1	65.0	117.0	190.7	80.6	121.1	236.3
1966	35.2	69.7	125.5	198.1	88.0	132.2	249.9
1967	35.6	71.9	129.4	202.0	89.0	133.7	249.9
1968	36.6	76.5	137.6	208.9	97.6	146.6	266.6
1969	38.0	78.7	141.6	207.1	100.0	150.3	263.1
1970	39.3	84.1	151.4	214.0	105.5	158.5	268.4
1971	40.5	87.0	156.6	214.8	109.5	164.5	270.3
1972	41.8	89.8	161.7	214.9	112.8	169.6	269.9
1973	45.6	113.5	204.3	249.0	143.7	215.9	315.1
1974	52.6	135.1	243.2	256.8	175.9	264.4	334.4
1975	58.2	124.9	224.9	214.7	169.9	255.4	292.0
1976	60.8	133.5	240.2	219.5	177.6	266.9	292.1
1977	64.7	143.5	258.2	221.8	194.7	292.7	300.9
1978	69.8	181.7	327.1	260.4	247.6	372.1	354.7
1979	77.6	200.1	360.2	257.9	276.7	415.9	356.5
1980	88.0	208.8	375.8	237.3	326.7	491.0	371.2
1981	96.1	206.6	371.9	215.0	300.2	451.2	312.3
1982	100.0	201.5	362.6	201.5	293.3	440.9	293.3
1983	101.6	201.0	361.8	197.8	278.3	418.3	273.9
1984	103.7	233.6	420.4	225.3	336.7	506.1	324.7
1985	104.7	210.4	378.8	201.0	290.3	436.4	277.3
1986	103.2	224.1	403.4	217.2	331.6	498.4	321.3
1987	105.4	258.0	464.3	244.7	358.4	538.7	340.0
1988	108.0	262.7	472.8	243.2	366.5	550.9	339.4
1989	113.6	288.8	519.9	254.3	445.0	668.9	391.7
1990	119.2	290.5	522.9	243.7	433.4	651.4	363.6
1991	121.7	270.1	486.2	222.0	395.5	594.4	325.0
1992	123.2	295.1	531.2	239.5	454.9	683.8	369.2
1993	124.7	357.1	642.7	286.4	537.8	808.3	431.2
1994	125.5	367.6	661.6	292.9	563.1	846.5	448.7
1995	127.9	354.6	638.1	277.2	487.0	732.1	380.8
1996	131.5	341.8	615.1	259.9	553.1	831.3	420.6
1997	131.7	356.5	641.2	270.7	480.2	722.1	364.6

<sup>1</sup> Actual price deflated by Producer Price Index for Finished Goods, U.S. Dept. Commerce, 1982 base year.

## IMPLICATIONS

Looking at the price trends for hardwood lumber and sawlogs makes most of us wish we had purchased more timberland over the last 30 years. It's a wonder that the major investment institutions are chasing after hardwood land like they did after softwood lands starting in the 1970's.

The concern of some in the industry is that high demand will result in over-cutting of the resource to the point that many more mills will have to shut down. Recent closures have been due to consolidation. The new larger more efficient mills can out bid other for stumpage and logs. Increased yields and value added activities at the mills remain keys to profitability in face of increasing log costs.

As always timber owners need to use appropriate marketing strategies, just like timber buyers need to carefully adjust their offering prices to reflect changes in lumber and veneer markets. The last several years have clearly demonstrated the desirability of maintaining a diversified species mix in your woods. Most of us certainly wouldn't have predicted that hard maple and other white woods would reach their current high price levels.

Keeping a mix of species allows timber owners who have established a regular cutting cycle to capture the value of the species in favor at the time of a timber sale while leaving others for future growth. But, relative values and the need for quality must still be given high priority when marking a TSI or selective harvest.

Remember that prices in this report reflect trends, not current market conditions. It's appropriate to use them to determine if a quoted price is "reasonable," but not to establish the current fair market value of a given stand

of timber or to make offers on timber or logs.

The trend for the real price of timber on average to increase in the 1 to 2 percent range per year can be expected to continue. Expectations should be realistic, however. Real prices can't go up forever. Walnut prices have taught us a lesson, I hope, about the great capacity of markets to accommodate scarcity. The trend to the use of white woods reflects a change in consumer preferences to a great extent. But the development of technology that allows these species to be finished to look like most any species is also a big factor.

Figure 1. Ash lumber prices, monthly, 1974 to Sep. 1997,  
4/4 Applachian, Hdwd. Mkt. Report, Memphis, TN.

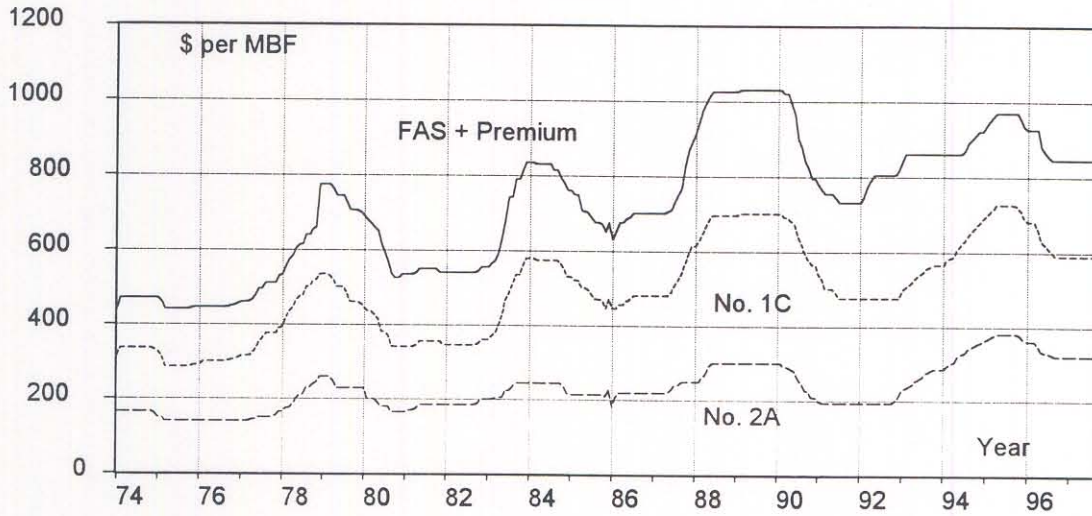


Figure 2. Basswood lumber prices, monthly, 1974 to Sep. 1997,  
4/4 Applachian, Hdwd. Mkt. Report, Memphis, TN.

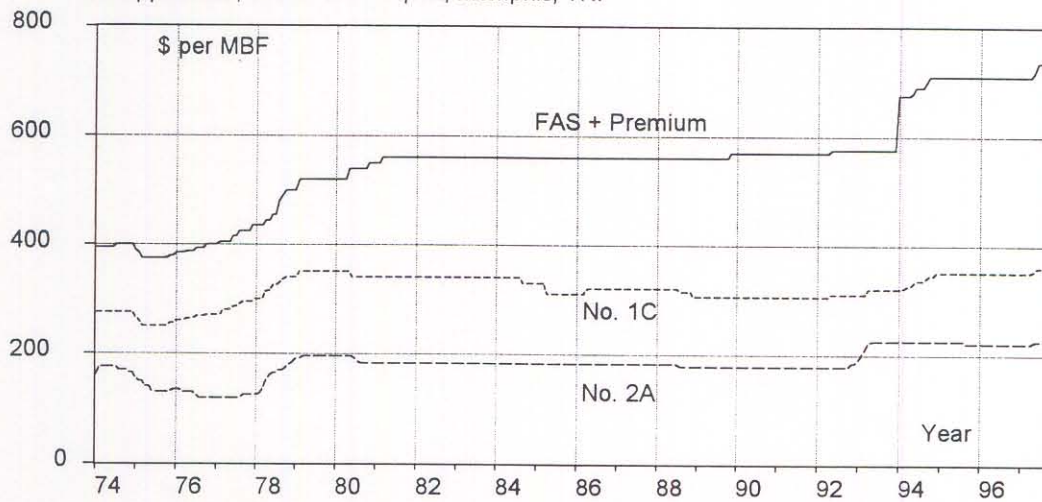


Figure 3. Beech lumber prices, monthly, 1974 to Sep. 1997,  
4/4 Applachian, Hdwd. Mkt. Report, Memphis, TN.

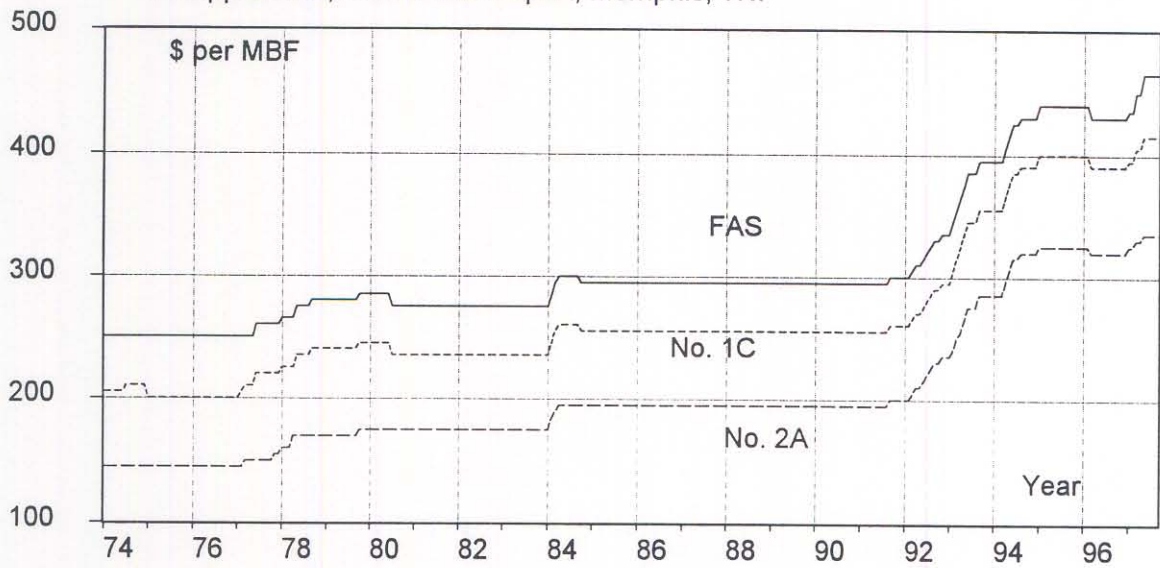


Figure 4. Black cherry lumber prices, monthly, 1974 to Sep. 1997,  
4/4 Applachian, Hdwd. Mkt. Report, Memphis, TN.

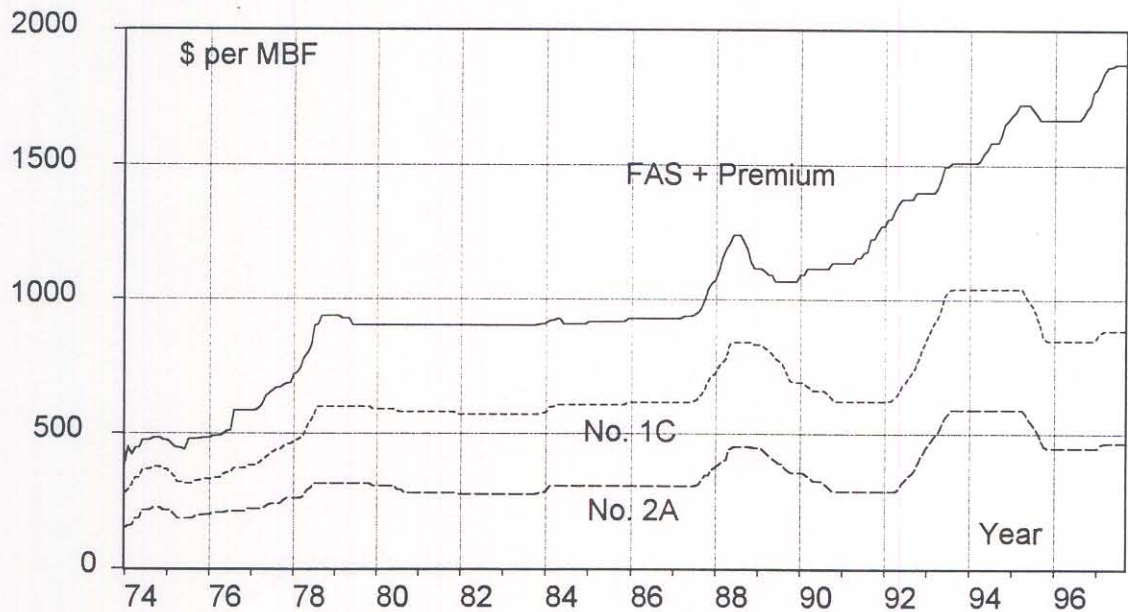




Figure 5. Cottonwood lumber prices, monthly, 1974 to Sep. 1997,  
4/4 Southern, Hdwd. Mkt. Report, Memphis, TN.

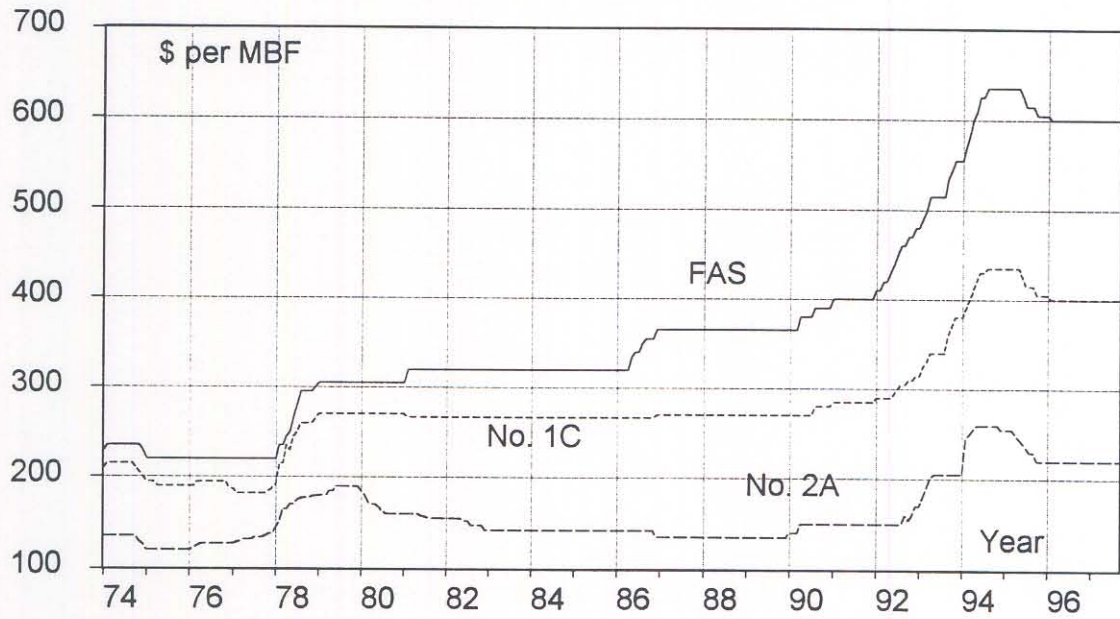


Figure 6. Elm lumber prices, monthly, 1974 to Sep. 1997,  
4/4 Southern, Hdwd. Mkt. Report, Memphis, TN.

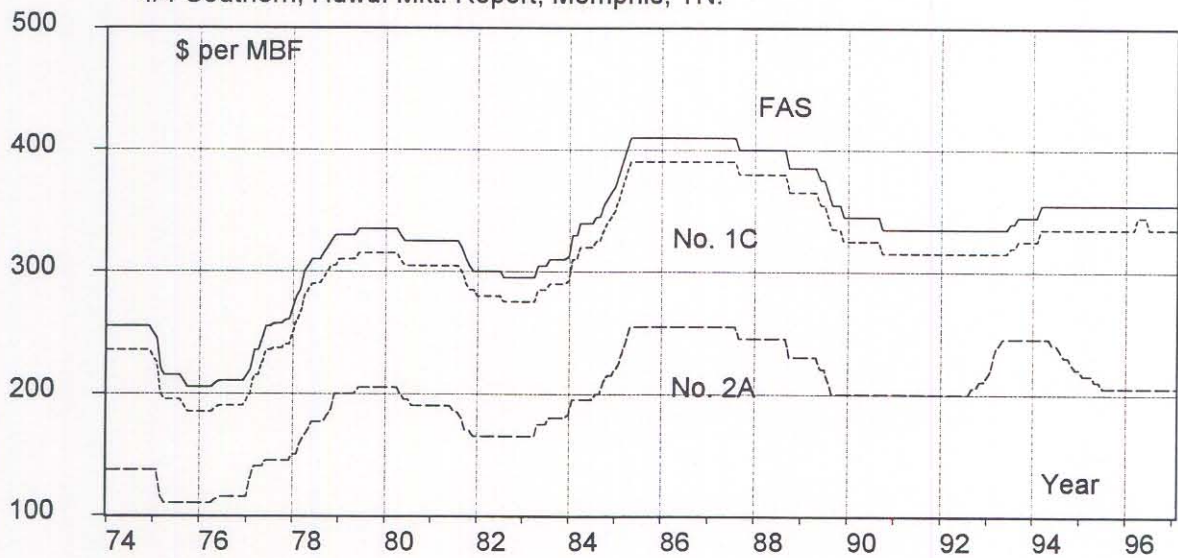


Figure 7. Hickory lumber prices, monthly, 1974 to Sep. 1997,  
4/4 Applachian, Hdwd. Mkt. Report, Memphis, TN.

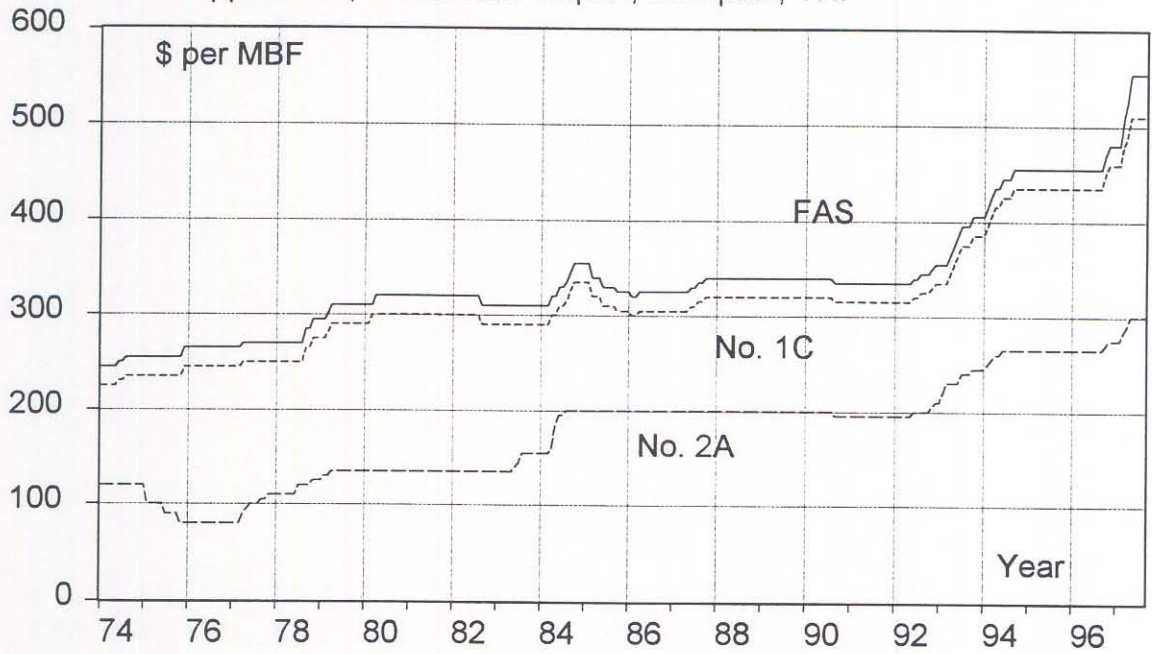


Figure 8. Hard maple lumber prices, monthly, 1974 to Sep. 1997,  
4/4 Applachian, Hdwd. Mkt. Report, Memphis, TN.

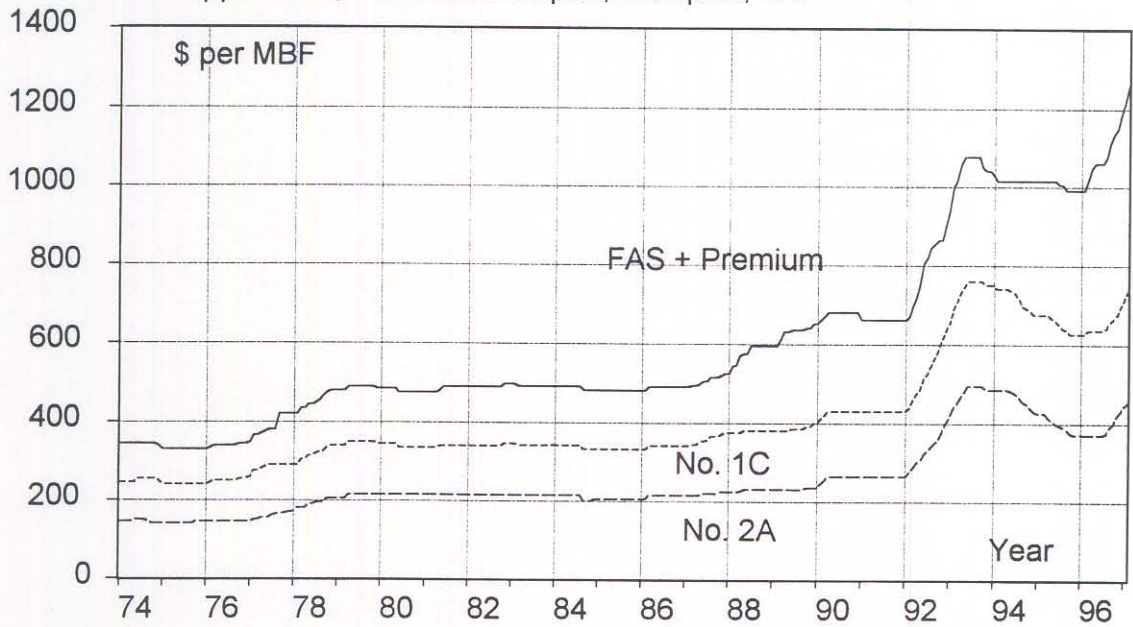


Figure 9. Soft maple lumber prices, monthly, 1974 to Sep. 1997,  
4/4 Applachian, Hdwd. Mkt. Report, Memphis, TN.

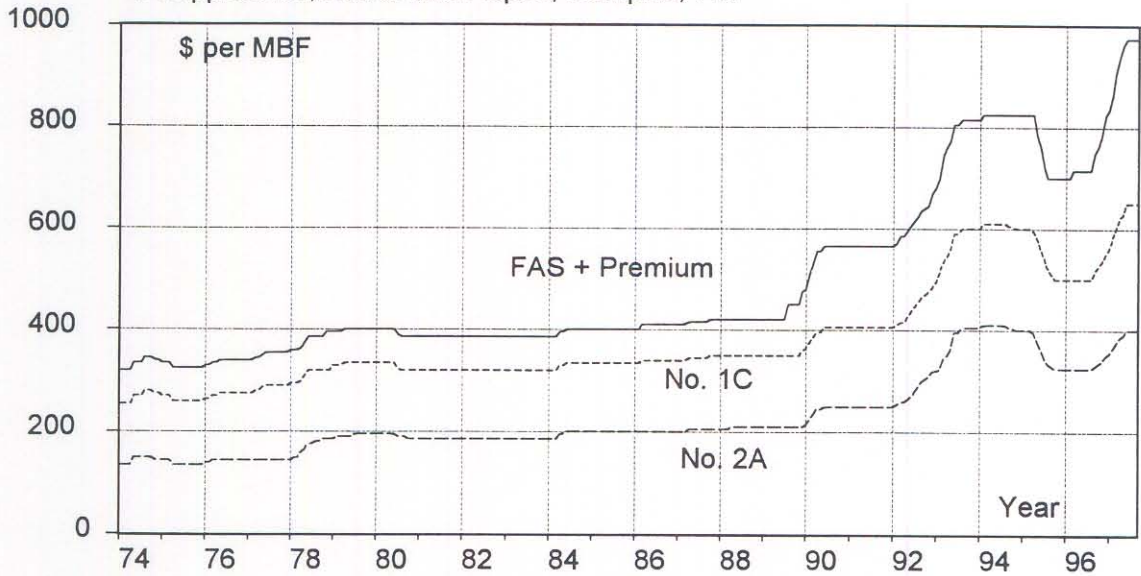


Figure 10. White oak lumber prices, monthly, 1974 to Sep. 1997,  
4/4 Applachian, Hdwd. Mkt. Report, Memphis, TN.

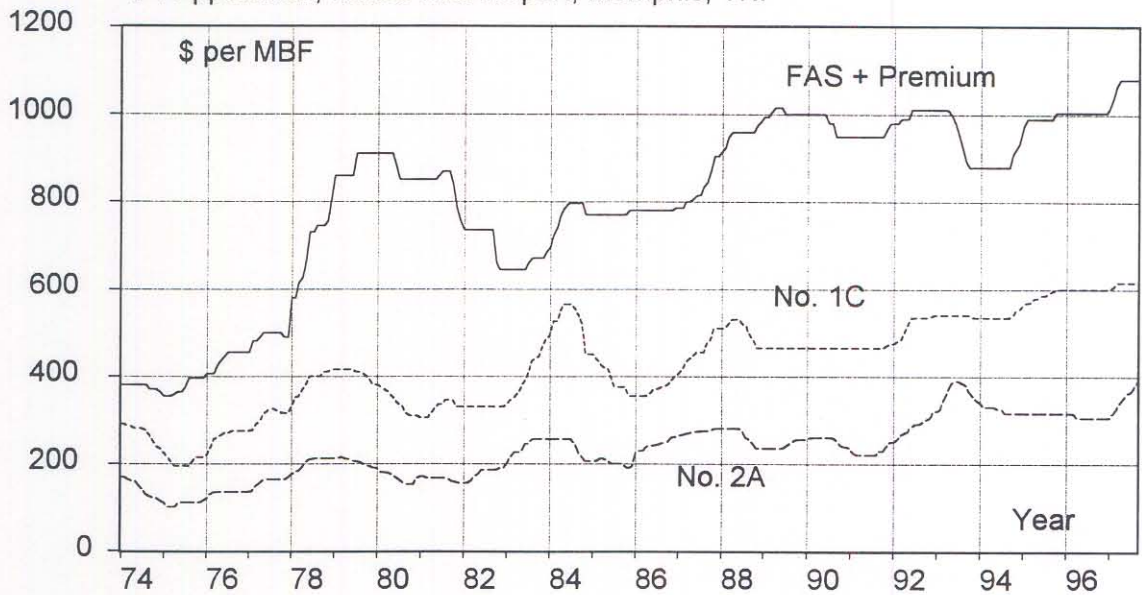


Figure 11. Red oak lumber prices, monthly, 1974 to Sep. 1997,  
4/4 Applachian, Hdwd. Mkt. Report, Memphis, TN.

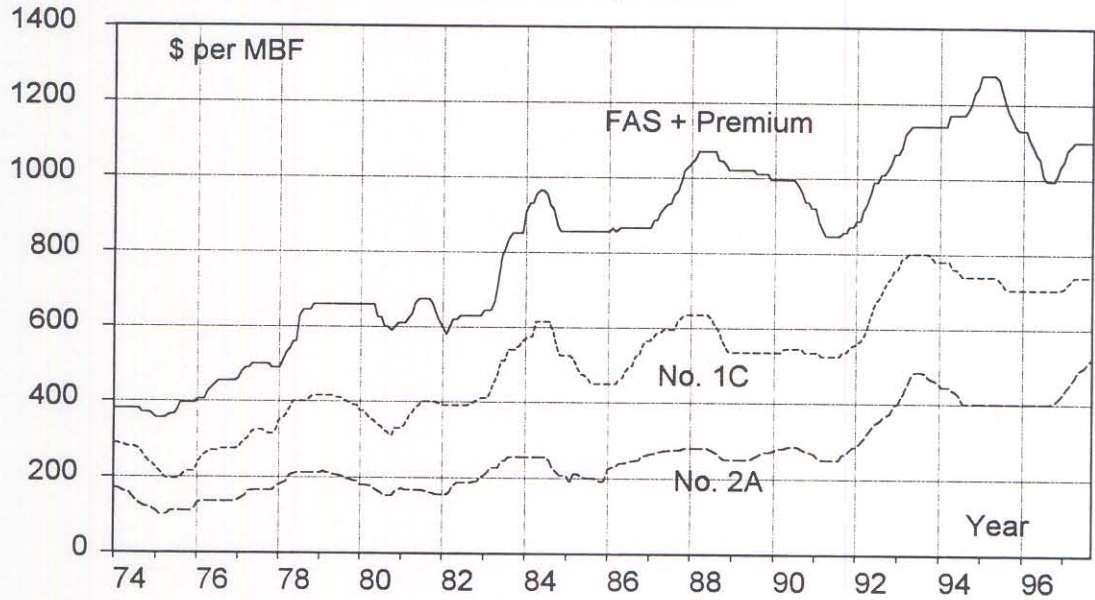


Figure 12. Tulip (yellow) poplar lumber prices, monthly, 1974 to Sep.  
1997, 4/4 Applachian, Hdwd. Mkt. Report, Memphis, TN.

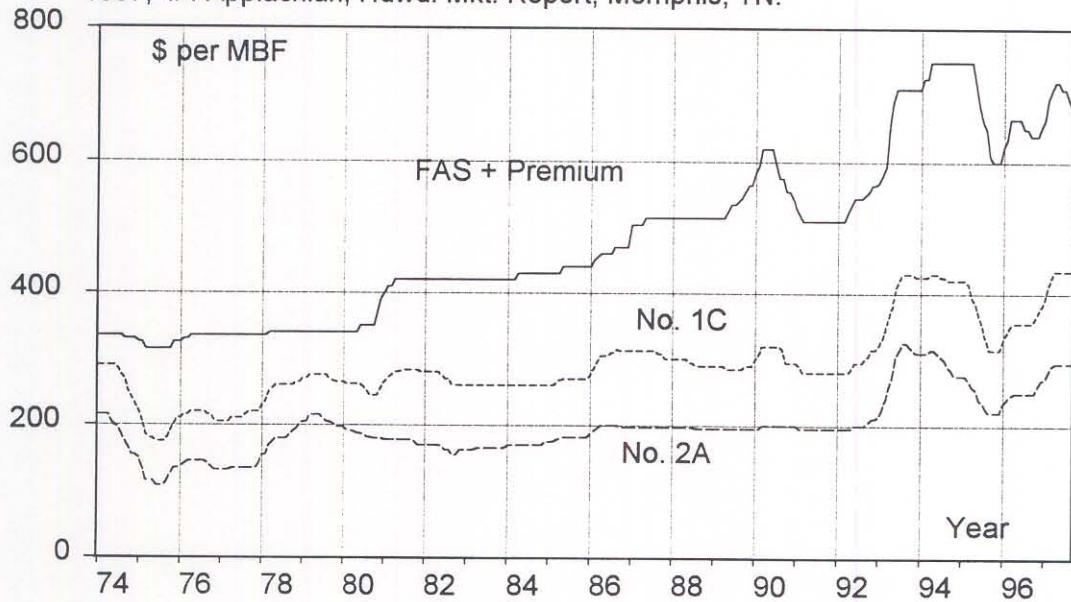


Figure 13. Sycamore lumber price, monthly, 1974 to Sep. 1997,  
4/4 Southern, Hdwd. Mkt. Report, Memphis, TN.

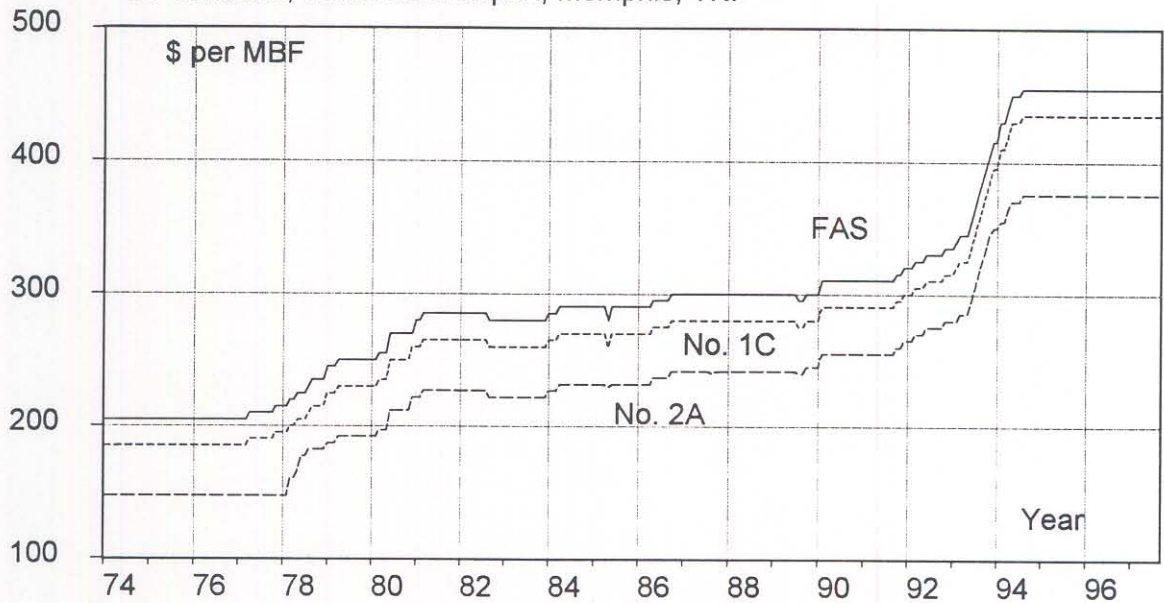


Figure 14. Black walnut lumber price, monthly, 1974 to Sep. 1997,  
4/4 Applachian, Hdwd. Mkt. Report, Memphis, TN.

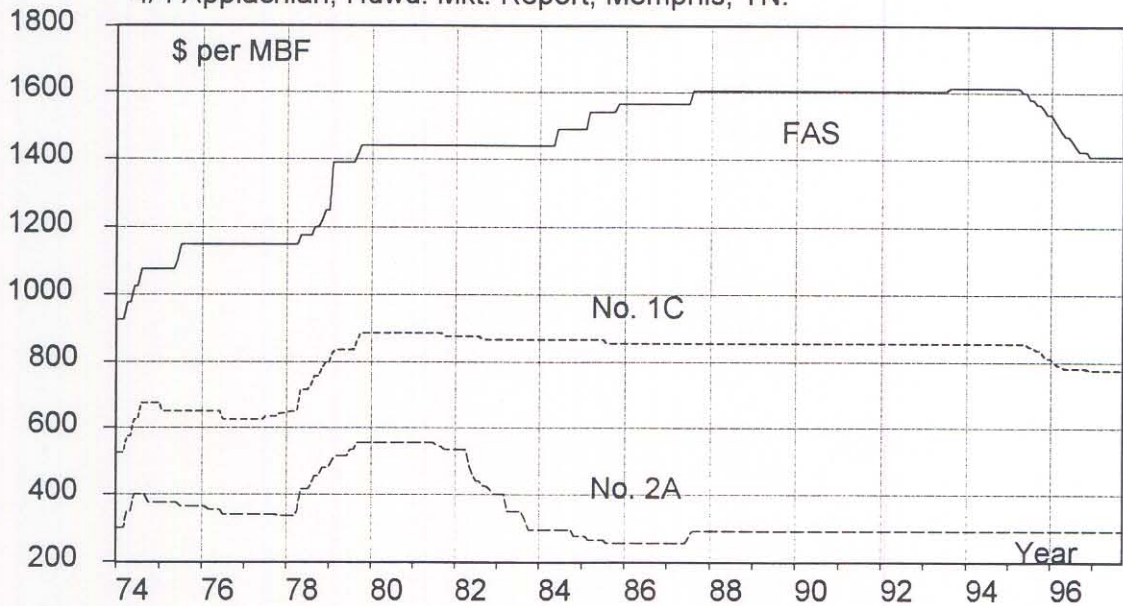


Figure 15. Producer price index for finished goods,  
U.S. Department of Commerce, 1957 to 1997.

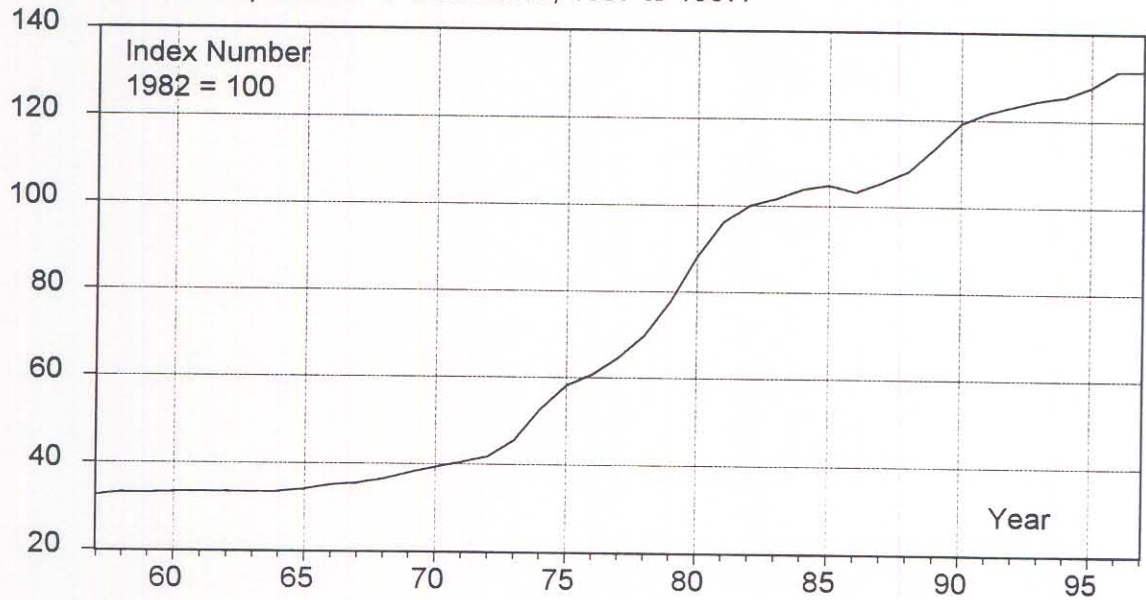


Figure 16. Average stand, nominal, real, and trend line price,  
1957 to 1997.

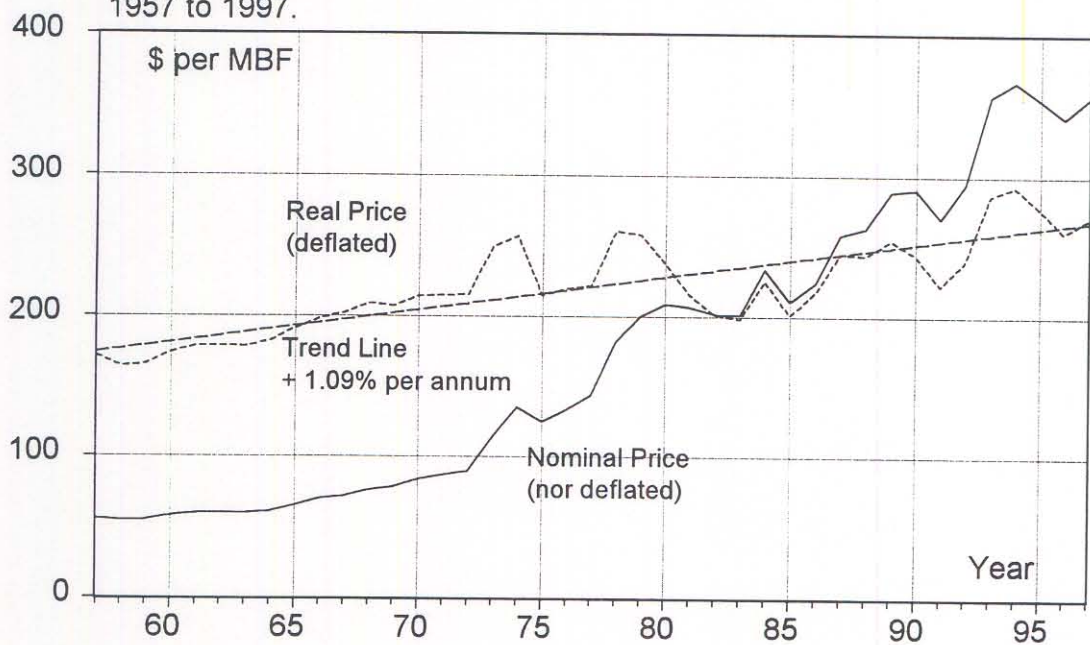


Figure 17. Quality stand, nominal, real, and trend line price, 1957 to 1997.

