

COMPARISON OF INCREASE IN COST OF LIVING WITH INCREASE IN
WAGES AND OUTPUT OF ARIZONA COPPER MINERS.

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Reports of the U. S. Bureau of Mines and the Arizona Employment Security Commission were used in making this study and they have revealed some interesting comparisons.

Copper wage-scales have been used in this report because the Arizona Employment Security Commission has segregated them from other metal mining and quarrying, and gives more detailed figures as to hourly earnings and weekly hours. Moreover, they constitute about 85% of the total mining and quarrying payroll, and form the standard of wage-scales under which the mining of other minerals is conducted. For example in the mining of lead, zinc, manganese, asbestos, etc., the copper miner's wage-scale is used throughout the industry. In fact, the shutting-down of the Arizona lead-zinc mines may be traced partly to the high wages paid which made it impossible to operate when the price of lead and zinc dropped.

The high wage-scale of Arizona miners also contributed to the desire and objective of all users of labor to install mining equipment which would make a lesser amount of labor necessary to do the job. Capital investment in great amounts has been made to get greater tonnage with fewer men.

It might be well to state that this Department has in an earlier report (September 1952) explained that an attempt to compare increased wages with an increase in product per man is met with too many misleading figures to be of much value. A lowering of grade of ore would have an effect on the output of copper per man-hour of labor, and the miner can hardly be responsible for the ore containing less metal. Likewise, in mining some of the ore, a large tonnage of waste had to be handled, and if the miner is given credit for this tonnage, his product per man would greatly increase. However, this increased tonnage (of ore and waste) should more accurately be credited to the use of mechanical shovels in open-pit mining.

The proportion of open-pit ore tonnage has increased from 30% in 1940 to 80% in 1951. Technological advances in both open-pit and underground mining, especially in the development of improvements in mechanical equipment, have been the chief factor in increased output per man. Likewise in the milling of the ore, increase in recovery has been entirely due to technological and mechanical improvements. The big copper producers have spent millions of dollars in technological research.

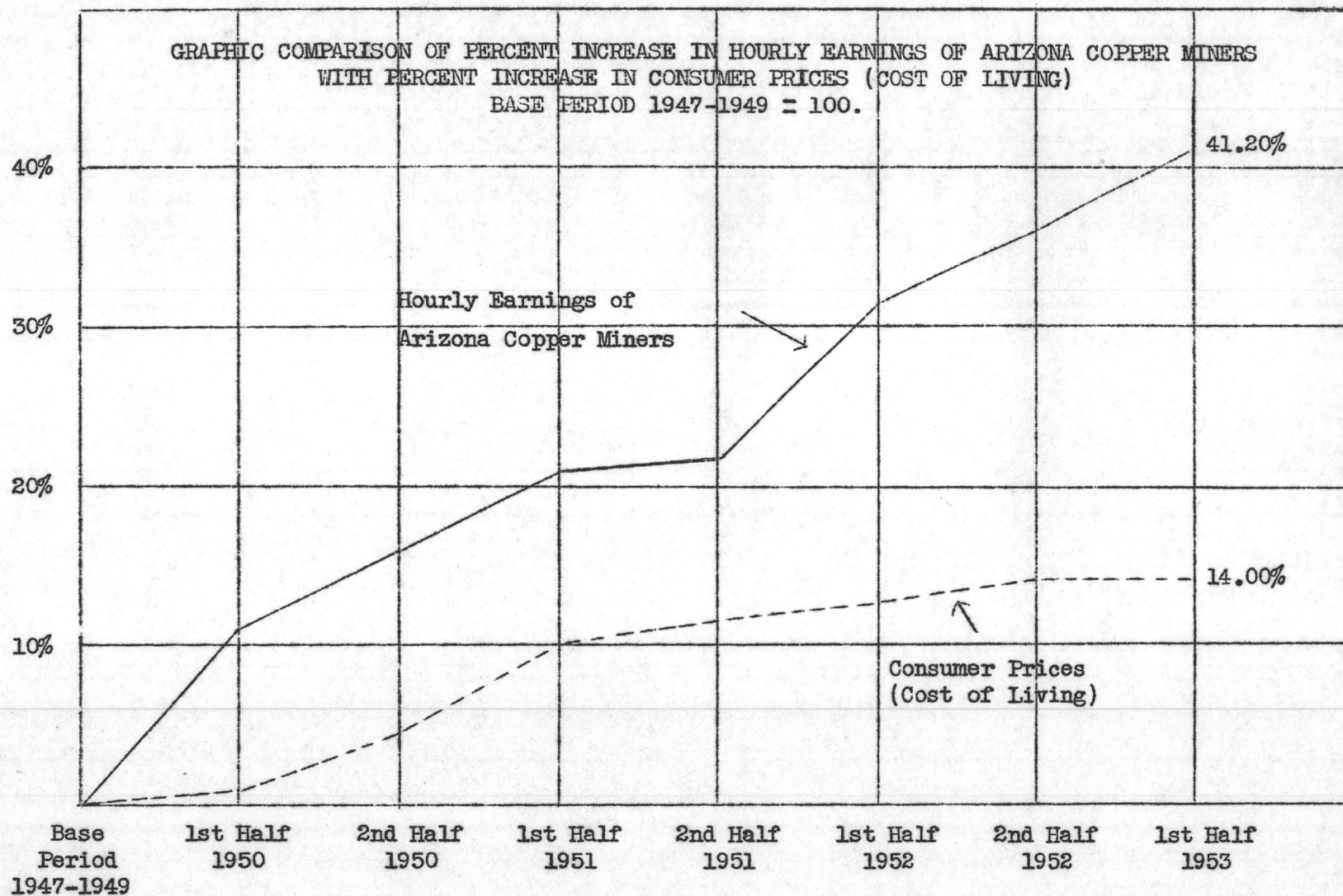
Comparing wage scales with the cost of living seems to be the only fair method of determining the proper relation of one to the other. With this in mind, a graph has been constructed which shows that while the cost of living had by June 30, 1953 increased 14% over the base-period, 1947-1949, the average hourly earnings of the copper miner have increased 41.2%. If the chart shows anything it very definitely shows that the copper companies have very liberally shared their improved earnings with their employees.

In order to show the relation of man-hour productivity to that of the base-period, tables are herewith presented showing the % increase for the years 1950, 1951 and 1952 in tons copper ore, metal value and pounds of copper (including gold and silver equivalent) per man-hour of labor. Here, too, even if it were assumed that man-labor alone was responsible for the increase in productivity, it is clear that the employers have shared their increased earnings with their employees. For example, in the year 1952, the copper miner's output of copper ore per man-hour of labor, increased 12.08%, the metal value produced per man-hour increased 12.41% and the pounds of copper (incl. gold-silver equivalent) produced per man-hour actually decreased, while the average hourly earnings increased about 34% over the base-period.

All these figures have been based on the actual payroll wages paid, and do not include fringe benefits which now amount to almost sixteen percent of the regular payroll. This is an additional dividend which the copper companies are paying their employees, and would further increase the disparity between the increase in hourly earnings and the increase in the cost of living.

Report by Frank J. Tuck
Arizona Department of Mineral Resources

August, 1953



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Source: Arizona Employment Security Commission - U.S. Bureau of Labor Statistics.

<u>Period</u>	<u>Consumer Price Index</u>	<u>Average Hourly Earnings</u>		<u>Average Weekly Hours</u>		<u>Average Weekly Earnings</u>	
			<u>% Increase</u>				<u>% Increase</u>
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1st Half 1950	100.93	1.593	11.24	46.23	73.65	14.72	
2nd Half 1950	104.73	1.662	16.06	46.67	77.70	21.03	
1st Half 1951	110.15	1.732	20.95	47.92	83.02	29.31	
2nd Half 1951	111.90	1.745	21.86	48.10	83.96	30.78	
1st Half 1952	112.87	1.887	31.77	47.20	89.06	38.72	
2nd Half 1952	114.18	1.950	36.17	46.90	91.49	42.51	
1st Half 1953 p.	113.77	2.022	41.20	46.37	93.78	46.08	

p. - Preliminary

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% Increase in Actual Annual Wages.

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	<u>Average No. of Employees</u>	<u>Total Annual Wages</u>		<u>Average Annual Wage Rec'd by Each Employee</u>	<u>% Increase</u>
1947 - 1949	11,278	\$ 39,432,006	= 27,536,319 Man-hours @ \$ 1.432	\$ 3,496	-
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1951	10,754	47,825,698	= 27,509,749 " " @ 1.7385	4,447	27.20
1952	11,365	54,950,235	= 28,694,634 " " @ 1.915	4,835	38.30

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Source: U. S. Bureau of Mines and Arizona Employment Security Commission.

<u>Period</u>	<u>Tons Copper Ore Annual Rate</u>	<u>Gold Ounces & Value</u>	<u>Silver Ounces & Value</u>	<u>Copper Pounds & Value</u>	<u>Copper Price cts/lb.</u>	<u>Value of Copper Gold-Silver</u>	<u>Pounds Copper Equivalent to Total Value of Copper, Gold and Silver</u>
1947-1949	38,082,754	79,612 \$2,786,420	2,603,485 \$2,356,154	723,353,767 \$150,588,843	20.818	\$155,731,417	748,061,370
1950	41,757,037	79,562 \$2,784,670	2,853,375 \$2,582,304	765,334,514 \$159,189,578	20.8	\$164,556,552	791,137,270
1951	42,784,388	83,521 \$2,923,235	3,087,865 \$2,794,518	775,609,514 \$187,697,502	24.2	\$193,415,255	799,236,600
1952	44,472,522	83,692 \$2,929,220	2,900,851 \$2,625,270	730,809,903 \$176,855,996	24.2	\$182,410,486	753,762,340

PERCENT INCREASE IN OUTPUT PER MAN-HOUR OVER BASE PERIOD 1947 - 1949.

<u>Period</u>	<u>Total Man-hours of Annual Labor</u>	<u>Tons Copper Ore Per Man-hour.</u> <u>% Increase</u>	<u>Total Metal Value Produced Per Man-hour.</u> <u>% Increase</u>	<u>Total Lbs.Copper(Incl.Gold- Silver Equiv.) Produced Per Man-hour.</u> <u>% Increase</u>
1947-1949	27,536,319	1.383 -	\$5,655 -	27.166 -
1950	25,802,962	1.618 16.99	6.377 12.77	30.661 12.87
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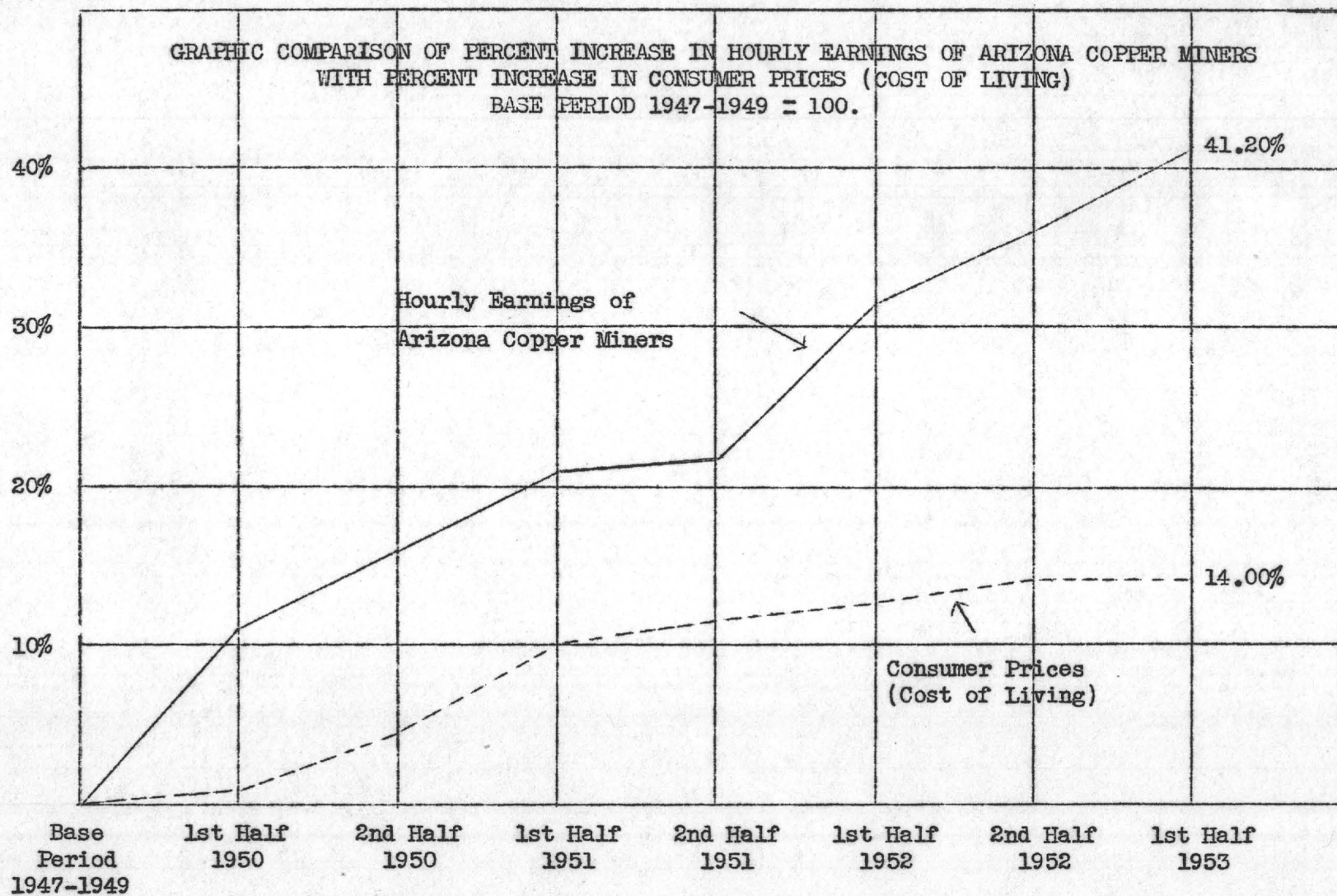
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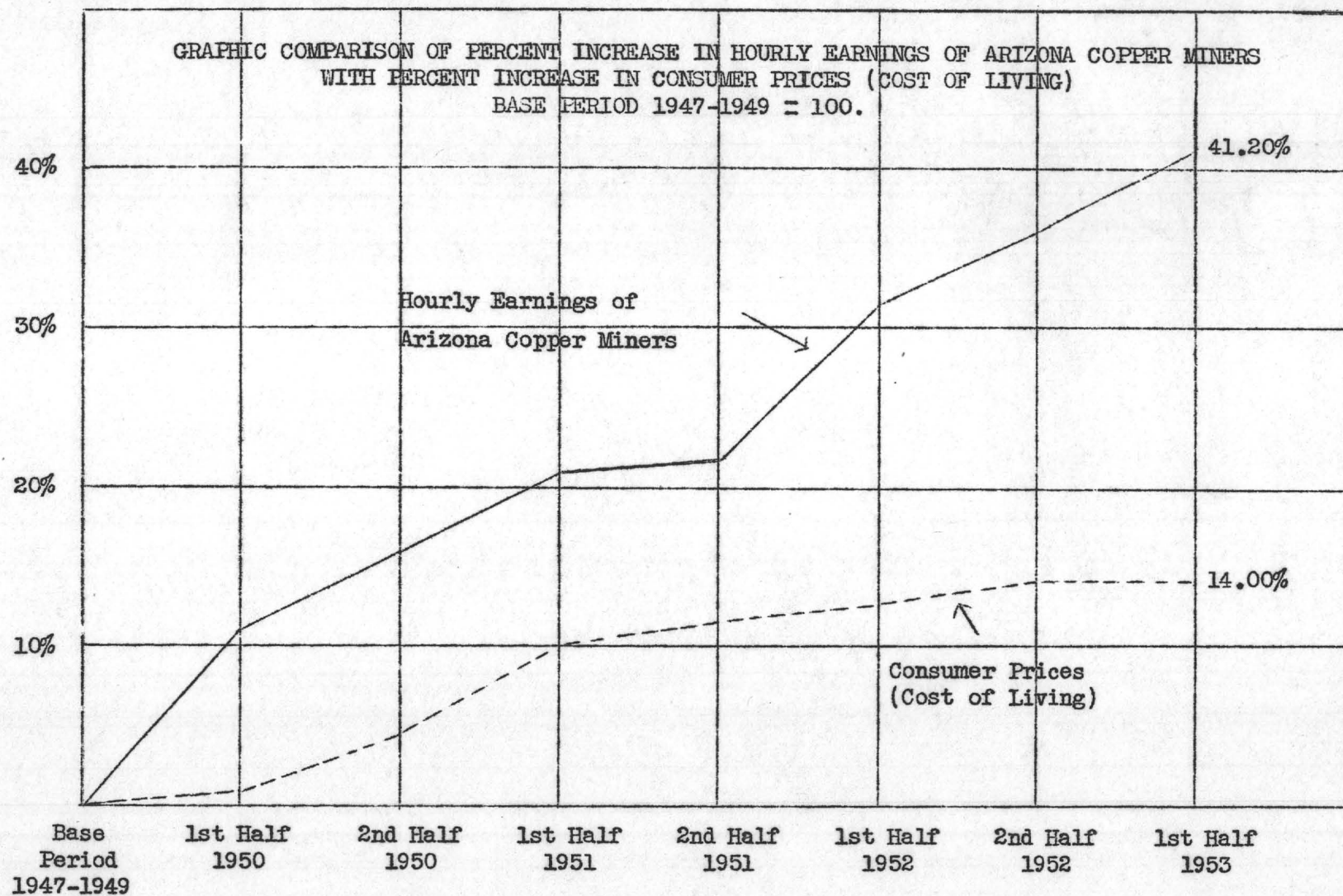
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