

1994 TAPPI salary survey

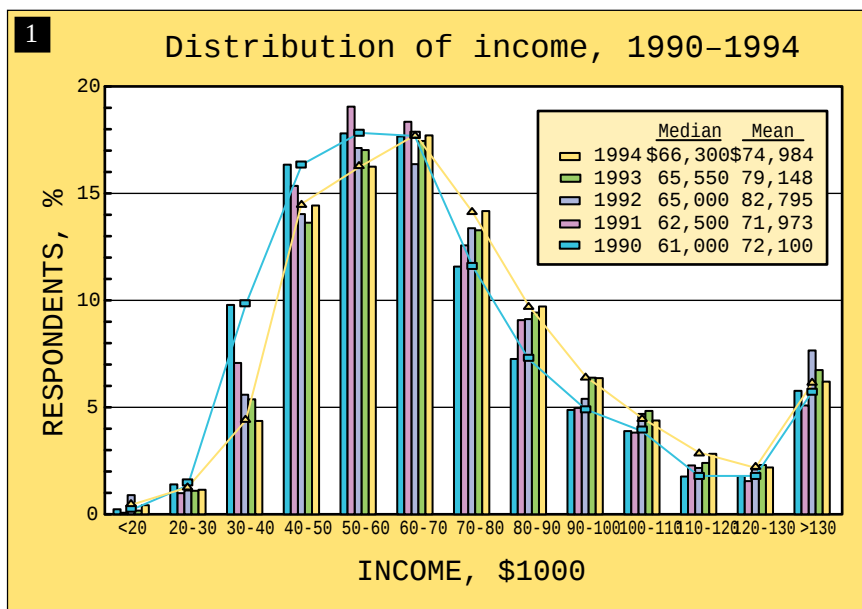
DOUGLAS J. BURKE

For the second year in a row—and the fourth time in five years—median income has failed to keep pace with the rate of inflation.

With pulp prices skyrocketing and paper mills operating at full capacity, 1994 looked to be the year for a significant boost in income* for TAPPI members. It didn't happen. Median income increased a mere 1.1% to \$66,300, a better performance than the meager increase of 0.8% in 1993, but still well shy of last year's modest inflation rate of 2.7%. This caps a half decade of sluggish income growth, when median income failed to keep pace with inflation four years out of five. At the same time, inflation has declined steadily since 1990 and now stands at its lowest point since 1986, when the consumer price index (CPI) increased by an astonishingly low 1.1%. With the exception of 1986, one must reach back to 1965 to find a year with a lower rate of inflation than the 2.7% posted in 1994.

The sluggish growth in income seems unusual in a time of increasing corporate profits and decreasing unemployment. However, judging from a trend beginning in 1988—with inflation outpacing median income five years out of seven—it seems clear that companies are no longer linking pay to inflation. Instead, there seems to be movement toward the use of pay incentives in favor of permanent increases in salary. This is an effective

strategy for controlling the fixed costs for labor. A company that rewards employees with bonuses during good times has the flexibility to withdraw those bonuses during lean times. If this is indeed a new trend, we are likely to see more volatility in



the movement of median income in coming years. Indeed, we might even see a drop in the median, something that has never occurred since TAPPI's first salary survey in 1974.

It could be argued that the sluggish growth also reflects lowered expectations of insecure employees who favor job

*Income is defined as base salary plus earnings from bonuses, commissions, and other sources. Monetary units are U.S. dollars.

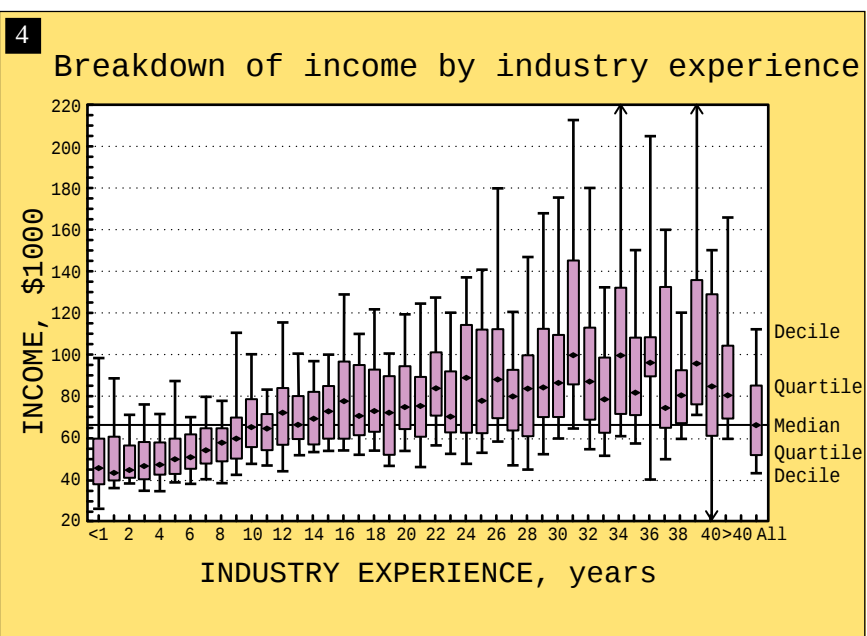
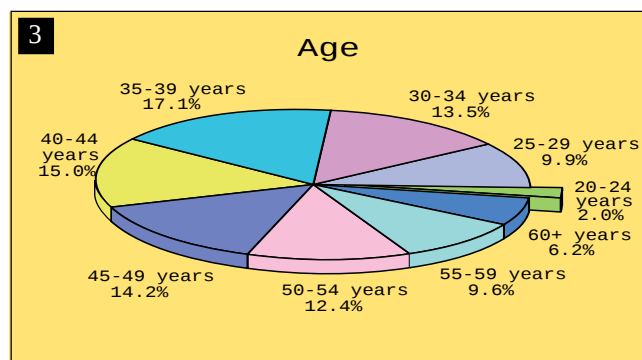
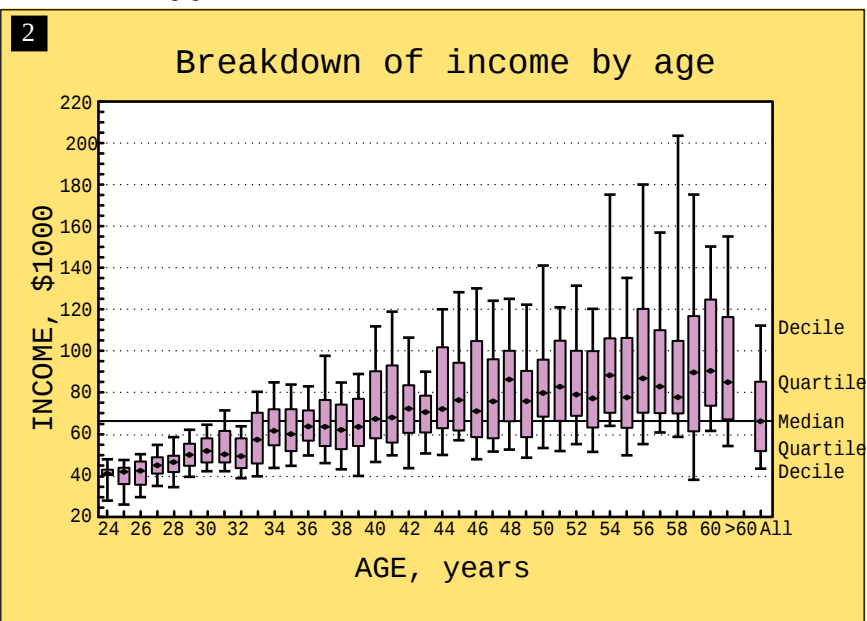
stability over income growth. This argument is based on the premise that employees can maximize their earnings by shopping their skills and working for the highest bidder. If this is true, then someone who has worked for several employers would be expected to earn more than someone who has remained with the same employer. In fact, the opposite is true. Our data show that job stability also yields financial benefits. Employees who stick with one employer are likely to earn more than their peripatetic counterparts who hop from one company to another. Median income for those who have worked for one company in the past decade was \$71,000, compared with \$64,000 for those who have worked for two employers and \$60,000 for those working for three or more employers.

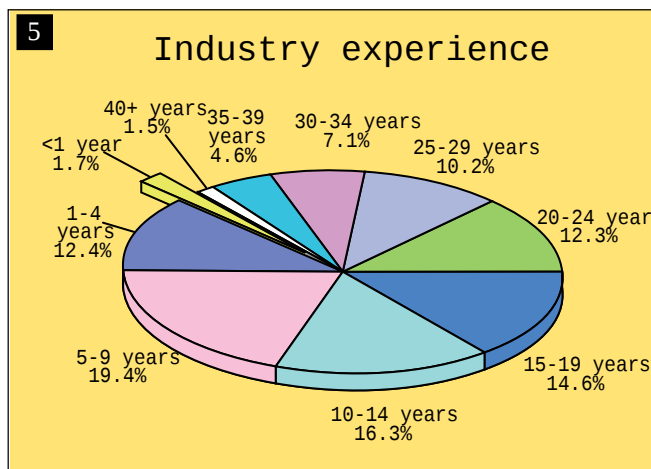
Moreover, a shift in employee attitudes about job security would be reflected by a shift in mobility from one company to another. However, a review of data from 1990 to 1994 reveals a consistent pattern of employee behavior for each of the five years during this time span. Half of the TAPPI membership has remained with the same employer during the past decade. Another 30% have worked for two employers, and the final 20% report working for three or more companies. The stability of these figures suggests that there has not been a shift in employee attitudes about job stability since 1990.

The survey

The response rate to the survey was again gratifyingly high, with 2305 members returning the 27-item questionnaire. A major difference in this year's survey was the way in which respondents reported their incomes. In the past, we asked them to report gross income. This year, we asked them to break income down into components of base salary, commissions, bonus, and other sources of remuneration. The breakdown revealed some new and interesting facts about the structure of income packages for the TAPPI membership. We directed particular attention to the topic of bonuses, and our findings appear later in this report.

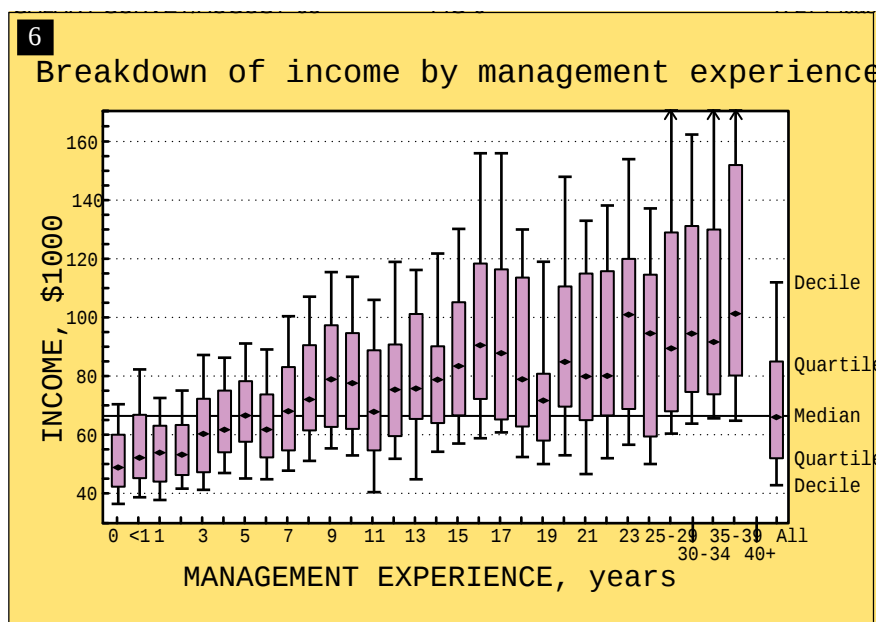
Another major difference was in the variables dealing with time. Instead of asking respondents to check the appropriate time span for a given variable (e.g., age 30-39, industry experience 10-14



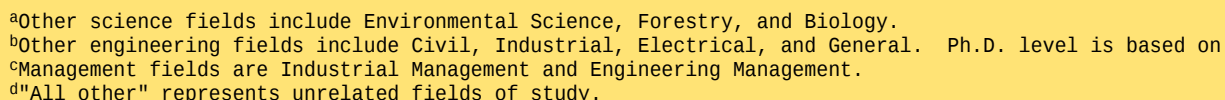


years, management experience 15 or more years, etc.), we asked them to fill in the blank and give us precise figures. This allowed us to examine the relationship between income and age, industry experience, and management experience in much greater detail than ever before.

The basic questions asked in the survey remained unchanged, but the available categories in several questions were expanded to accommodate trends in the membership. For example, "process control" was added to the list of "principal areas of involvement." "Mill manager/plant manager" is a new item in the list of job functions, and the former category of "production" is now broken down into two components, one for management and the other for operations. Finally, the streamlined categories for "level of responsibility" eliminate the potential for overlap by providing a clear hierarchy of choices.

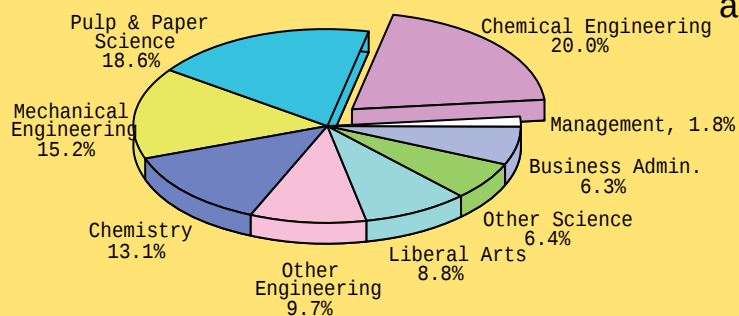


Income distribution at highest level of education in various fields of study

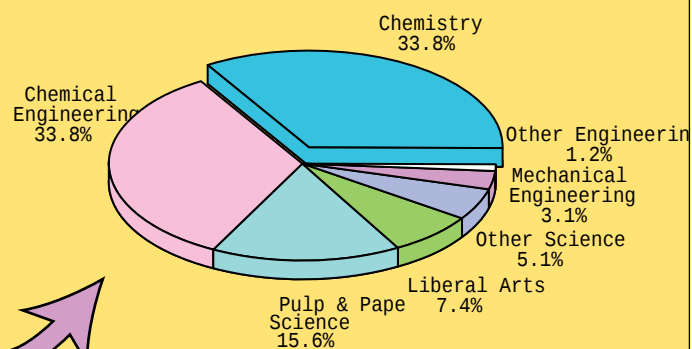


Highest level of education
and fields of study at each

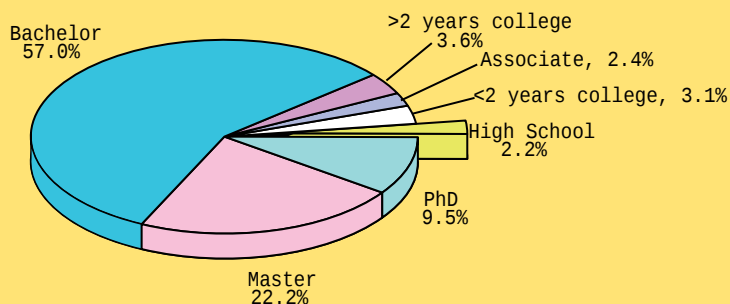
Bachelor



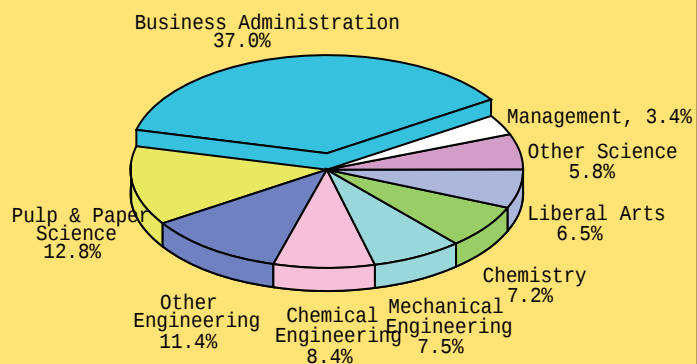
Ph.D.



Highest level of education



Master



increase at the same rate, the two categories can be out of sync.

Eliminating these respondents left us with a sample consisting of people in their 20s with less than one year of experience—the profile of an entry-level person. The median income in this group was \$40,000. In 1992, the median entry-level salary for a similar group was \$39,000. The 2.6% increase in entry-level salaries over the past two years is a slightly better performance than the 2% increase in median income for the overall membership since 1992.

Income and management experience

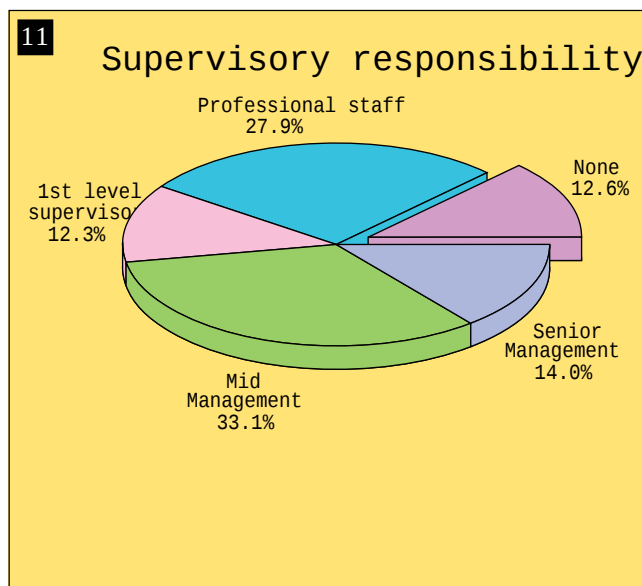
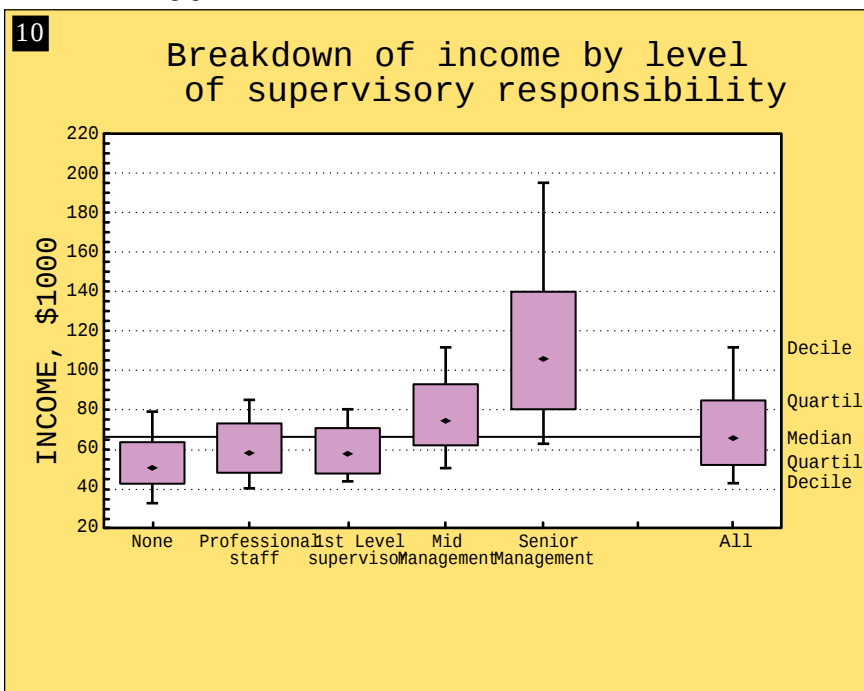
Figure 6 is a quantile plot showing the relationship between income and management experience. The number of respondents with 25 or more years of management experience was too small to provide statistically meaningful results for individual years, so we grouped these individuals in time bands of five years.

Predictably, workers with no management experience had the lowest incomes. The powerful effect of this variable on income is apparent in the jump that occurs even for those with less than a year of management experience. As in the other two time categories (age and industry experience), median income advances to a certain point and then begins to fluctuate. In this case, 10 years seems to be the cutoff. After that, this variable loses much of its potency as an income predictor, although the general trend in income is still upward. The results in this figure also show that the break point for median income occurs at seven years. From that point on, median income consistently surpasses the median for the overall membership.

Figure 7 shows the breakdown of management experience within the TAPPI membership. The median for management experience was 7 years.

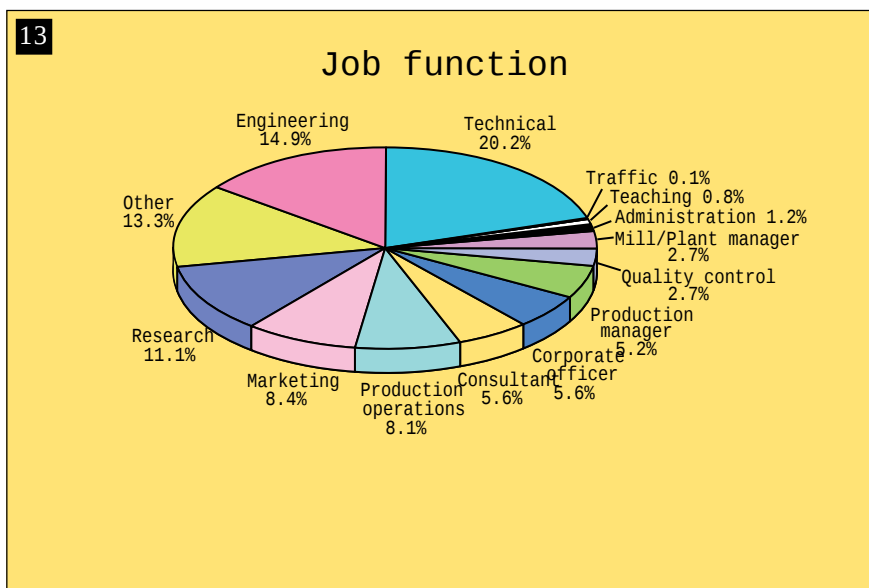
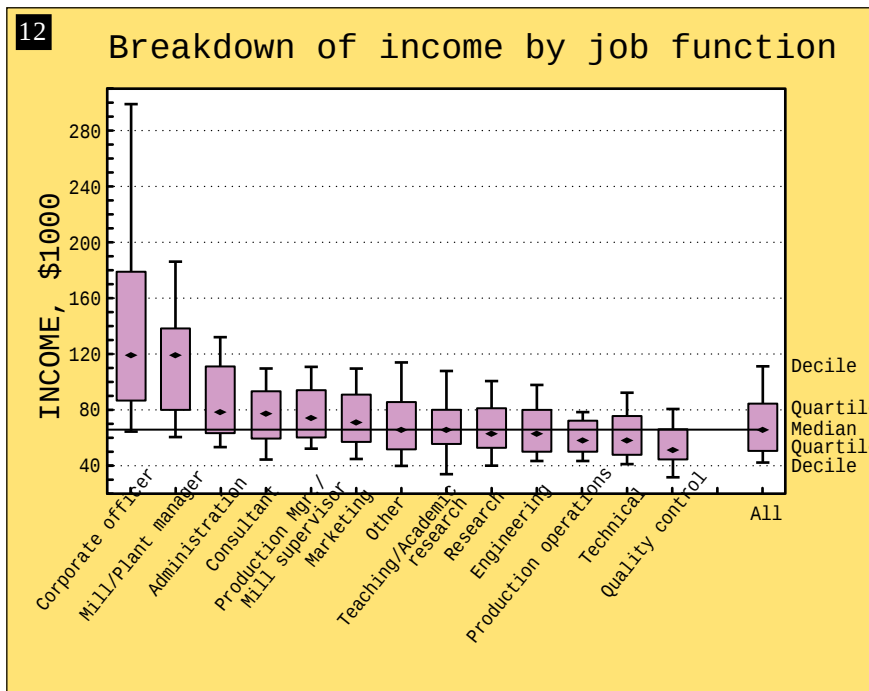
Income and education

Figure 8 is a quantile plot showing income distributions within the major fields of study at the bachelor, master, and Ph.D. levels. The data in this figure are based on the *highest* level of education reported by each respondent. Thus bachelors and masters degrees reported by someone with a Ph.D. are not included in this figure. In the past two surveys, we did not have the resources to include multiple degrees at the highest level of education from a single respondent. As we reported then, we simply chose the degree that was listed first. This year, we have eliminated that bias by including all of the degrees at the same level. Thus a respondent with a Ph.D. in chemistry and another in pulp and paper science would be included in both columns.



If we ignore the data for the Ph.D. level of the “other engineering” category (based on only three respondents), the category with the highest median income was pulp and paper science at the Ph.D. level. The medians for a Ph.D. in chemistry and chemical engineering were only slightly lower. Other fields with notably high median incomes include business administration, mechanical engineering, and other engineering at the masters level.

In most cases, median income rises predictably with the level of education. The two exceptions to this rule—other science and mechanical engineering at the Ph.D. level—are based on unreliably small samples of 13 respondents and 8 respondents, respectively. The field of pulp and paper science



shows a touch of schizophrenia, with lower-than-average medians at the bachelors and masters levels and the highest overall median at the Ph.D. level.

The data for all respondents at the right-hand side of Fig. 8 show that median income for associates degrees and bachelors degrees is lower than the median for the entire membership. For each step in education from associates degree through Ph.D., median income increases approximately \$6000. However, the gaps between the various levels are not equal. The difference between an associates and a bachelors degree is only \$4000, while the difference between a bachelors and a masters degree is \$8000.

Figure 9 shows the overall educational makeup of the TAPPI membership and breaks down each of the three major educational levels (bachelor, master, Ph.D.) into the various fields of study identified in Fig. 8.

Income and supervisory responsibility

In past years, respondents had to choose among six categories of "supervisory responsibility." This year, we reduced the number of choices to five and redefined several categories to eliminate overlap. Figure 10 is a quantile plot showing the income distribution at the five levels of supervisory responsibility. Median income for professional staff, first-level supervisors, and those with no supervisory responsibility is below the median income of the overall membership. The jump from first-level supervisor to middle management is quite large, suggesting the need for an additional intervening category.

Figure 11 is a breakdown of supervisory responsibility within the TAPPI membership.

Income and job function

Figure 12 is a quantile plot showing income distribution within various job functions. The accompanying chart in Fig. 13 shows the breakdown of job functions within the TAPPI membership.

As always, the highest median income goes to corporate officers. However, the median for this category dropped to \$120,000 after holding steady at \$125,000 for the previous two years. Moreover, the position for the top spot was strongly challenged by the new category of "mill manager/plant manager," with a median income that fell a few

dollars shy of the median for corporate officers.

The "quality control" and "technical" job functions assumed their usual positions at the other end of the spectrum. Among the surprising trends is the ascension of "teaching/academic research" from next-to-last in 1992 to the bottom of the mid range in 1993 to a position near the center of the mid range in 1994. For the same time span, median income within this field has surged from \$59,000 to \$65,400. The field that seems to have suffered the most in the past three years is "engineering," which has dropped from its customary position near the center of the mid range to the top of the low range.

Income in various sectors of the pulp and paper industry

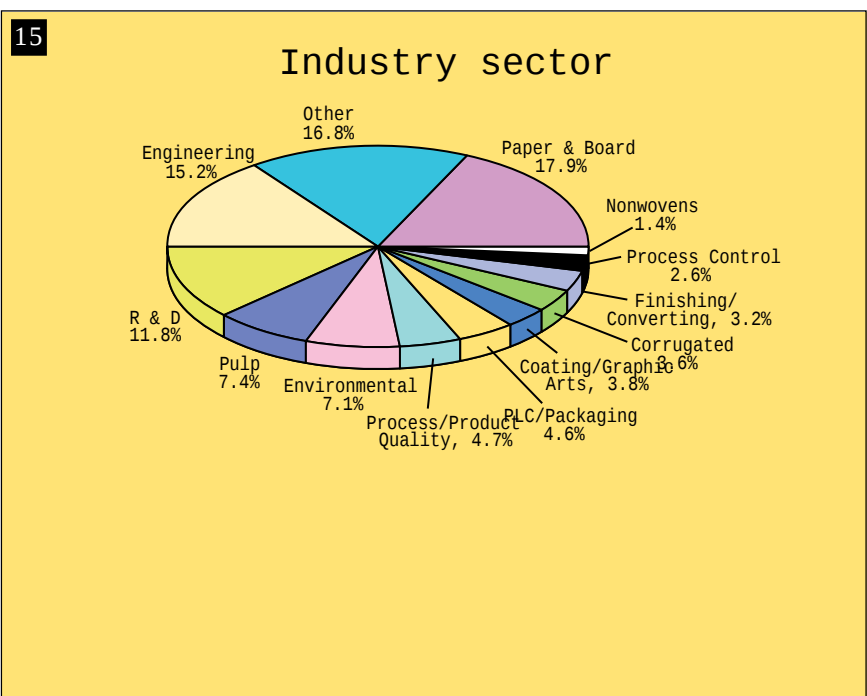
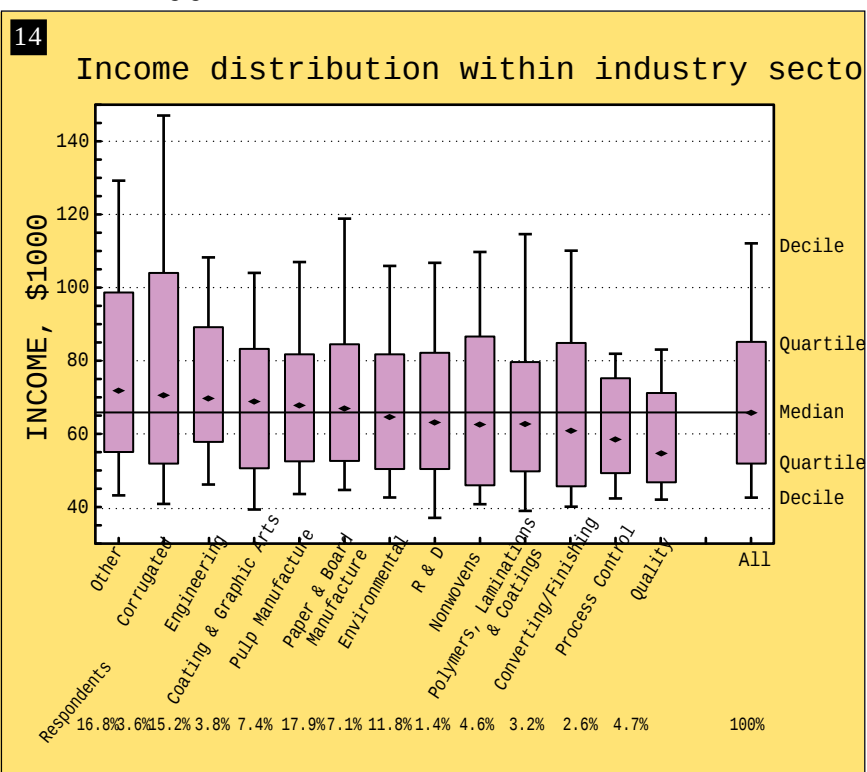
Figure 14 is a quantile plot of income distribution within various industry sectors. Figure 15 is a breakdown of the TAPPI membership into the 13 sectors listed on the survey questionnaire.

The "other" category is a new addition to this question, and the respondents latched onto it with unusual tenacity. As seen in Fig. 15, nearly 17% of the surveyed members placed themselves in this vague category. Even more disturbing is the fact that this was the category with the highest median income. Clearly, we need to develop a few new categories for industry sectors.

The relative positions of the remaining sectors showed quite a bit of movement, which is not surprising given the strong migration from our traditional categories to "other." "Corrugated" assumed its usual place at the top, but "paper and board manufacture" tumbled from second place to sixth. In the meantime, "pulp manufacture" leaped forward several positions to the number-five spot. The new category "process control" settled at second from the bottom, a notch above "quality," which occupied its usual position. "Converting and finishing" dropped from the middle of the pack to the third position from the bottom.

Income in six U.S. regions

The map in Fig. 16 shows that the proportion of respondents from each region was about the same as in 1993. Participation from the various regions has been remarkably stable from at least as far back as 1988. The median incomes for each region tell a more interesting story. The Southeast and the Northwest suffered a decline in median income, while the Northeast maintained its 1993 level and the Southwest held steady at \$70,000 for the third straight year. Median income increased modestly in the Midwest, but the median in that region was still the lowest in the nation. In the Mid-Atlantic region, the median increased to \$71,000—the highest in the nation—after holding steady at \$68,000 for two years.

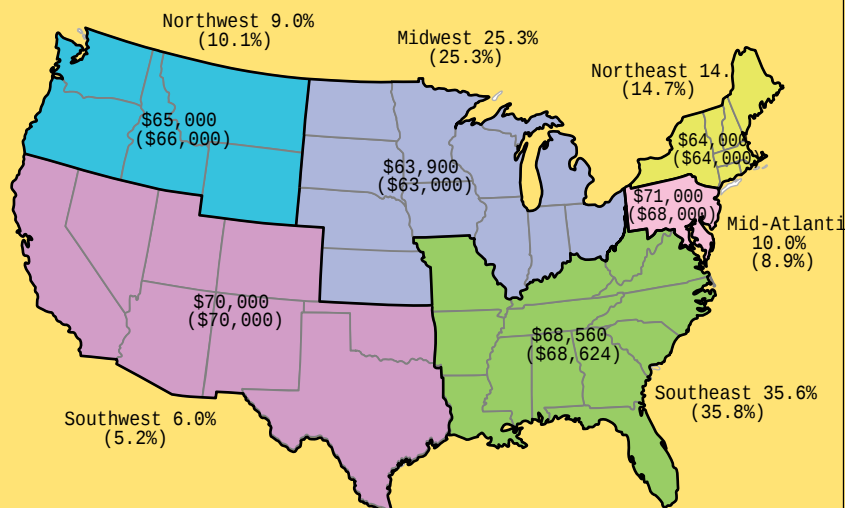


Bonuses

The phrase "lean and mean" leaped into the national consciousness about five years ago, when a harsh economic environment forced companies to reevaluate their strategies for long-term survival. Since that time, we've seen companies

16

Median income and response rate for six U.S. regions



*Figures in parentheses represent data from 1993.

nuses—makes sense theoretically. During good times, bonuses can motivate a small number of employees to work harder and produce more. During lean times, the bonuses can be withdrawn, and key employees will be reluctant to leave because of the limited opportunities in a depressed economy.

We have no historical data to verify that income structures are undergoing a quiet revolution, but it does seem a reasonable proposition. This is one of the reasons why we asked respondents to provide detailed information about the structure of their incomes. In an effort to provide a benchmark for future analyses of this trend, we focused on the bonanza of information about bonuses in this year's revised survey.

Nearly half of all TAPPI members (44%) received bonuses in 1994. The median bonus was \$5000. The size of the company had no influence on the size of the bonus.

Supervisory responsibility

As expected, the median bonus rose sharply for those in middle and senior management, as seen in Fig. 17. However, it is interesting to note that bonuses were a part of the income package at every level of supervisory responsibility. About one-third of those with little or no supervisory responsibility receive bonuses. More than half of those working at the middle-management level and nearly 60% of senior management reported receiving bonuses.

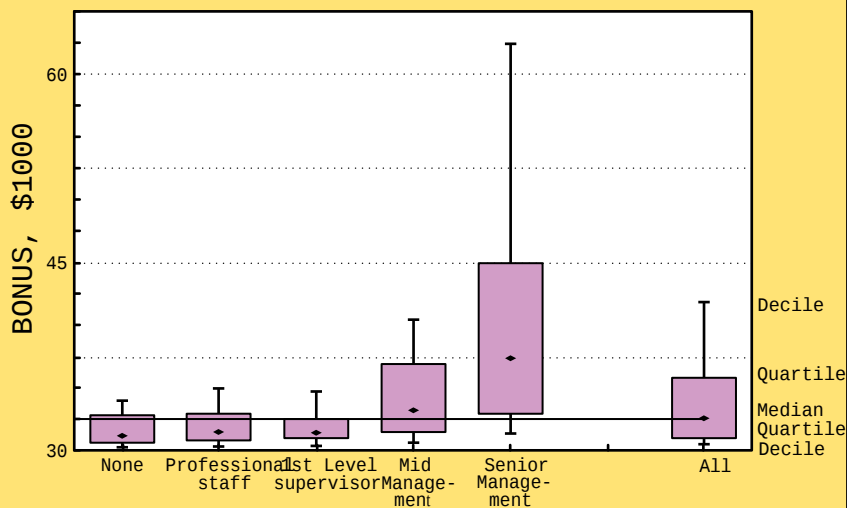
Figure 18 shows the median base salary and bonus at five levels of responsibility for respondents who reported a bonus. At the top two levels of supervisory responsibility, the bonuses naturally get larger. The bonuses also make up a larger portion of the total income package.

Income level

As expected, the proportion of respondents receiving bonuses increased with income. However, we were surprised to find that nearly 30% of those earning less than \$50,000 reported receiving a bonus. In the next bracket, 37% earned bonuses. About half of those in the \$75,000–100,000 bracket received bonuses. Above that, 73% of respondents earned bonuses. For workers at the low

17

Bonus awarded at five levels of supervisory responsibility



prune their payrolls in an effort to reduce and control their fixed costs for labor. According to the financial press, the shakeout has resulted in a greater reliance on temporary workers and the substitution of pay incentives in lieu of fixed increases in salary. The move toward pay incentives—bo-

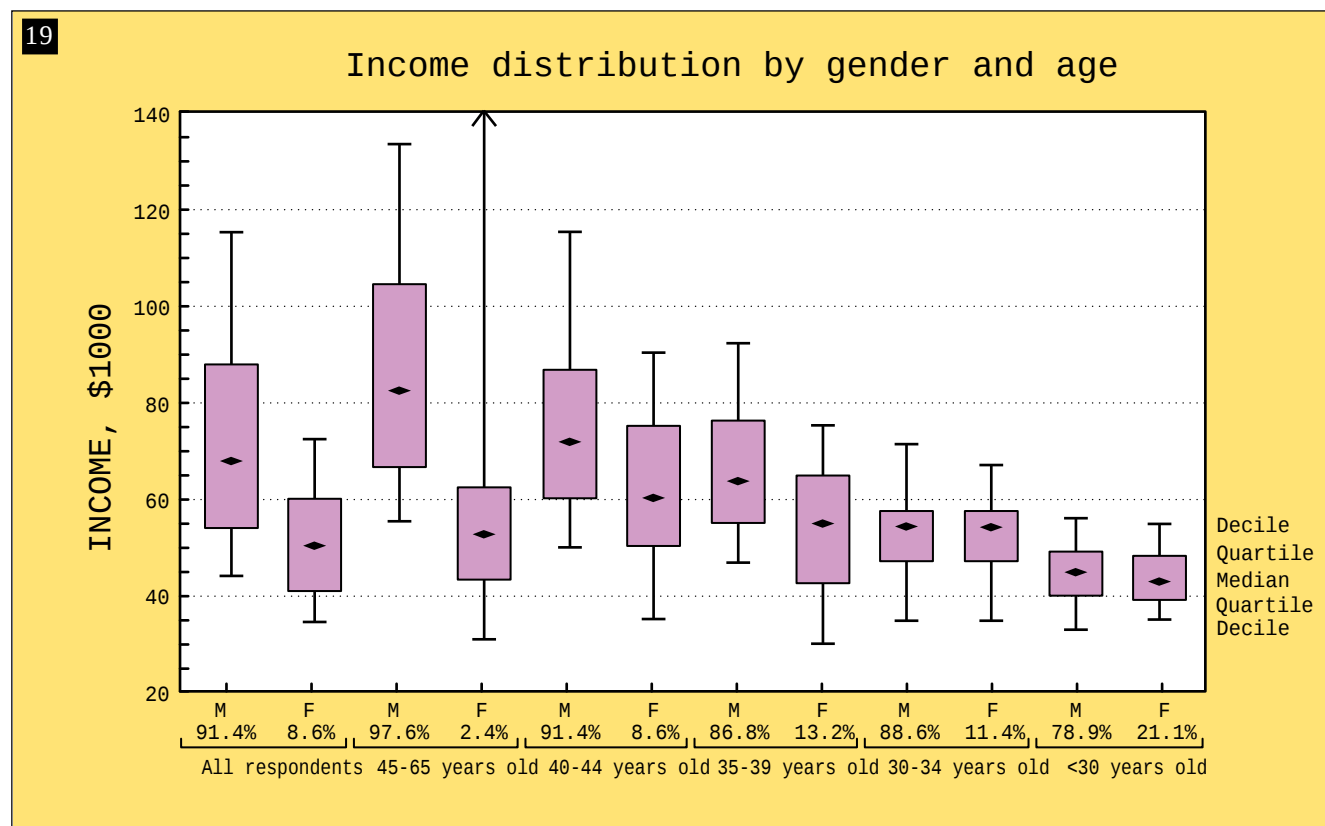
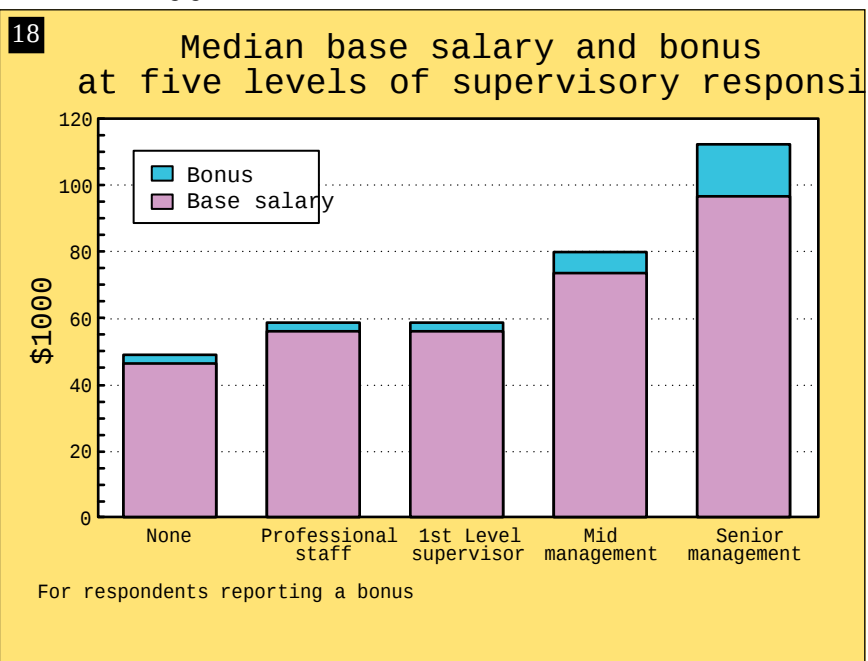
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end of the pay scale, bonuses account for about 5% of earnings. For those at the other end of the income spectrum, bonuses account for nearly 20% of total income.

Gender and age

The overall data for gender show that median income for women was \$15,000 lower than for men. This gap has decreased steadily in recent years, from \$21,000 in 1992 to \$19,000 in 1993. Still, only the top 15% of women earn incomes equaling or exceeding the median income for men. However, this big-picture perspective is somewhat misleading.

Closer scrutiny of the data reveals a more interesting and complex relationship between gender and income. When

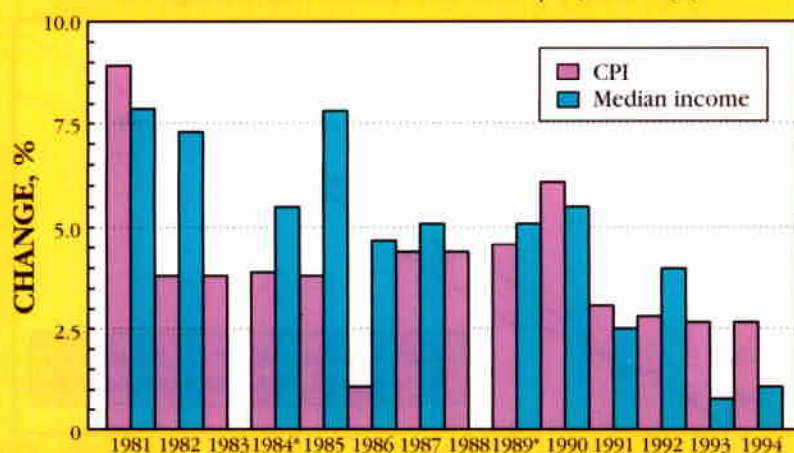


age is considered as a factor, the gender disparity revealed by the overall data shows a peculiar trend. **Figure 19** breaks down the income distribution for men and women into five age categories. The right side of this figure shows that the income distribution for men and women is similar for people in their

20s and early 30s. Gender does not become a significant factor until about age 35, after which income disparity increases with increasing age. The gap in median income jumps from zero to about \$9000 for women aged 35–39 years. This gap widens to \$12,000 at age 40–44 and becomes a gulf of almost \$30,000 thereafter.

20

Year-to-year change in CPI and median income, 1981-1994



*Median income is estimated for 1984 and 1989

the lower salaries paid to women entering the work force in the 1970s and earlier. From this perspective, income is something like an escalator, with the male passenger several steps ahead of the female passenger. Both are heading upward, but their relative positions remain the same. Finally, it can be argued that the income gap reflects the biological imperative of childbirth. Women often must interrupt their careers to raise children. When they return to the work force, their male peers have an advantage in experience and thus command higher incomes.

The income gap between all men and all women is mostly a function of age and not gender. The vast majority of female respondents are less than 45 years old. However, the highest incomes are earned by workers older than 45 years of age, and this group was overwhelmingly male, containing only 2.4% women. Indeed, the paucity of female respondents in this age group is evident in the erratic upper decile (\$160,000) of the income distribution for women aged 45–65 years. This contrasts sharply with the youngest segment of the TAPPI membership, where one in five members is a woman.

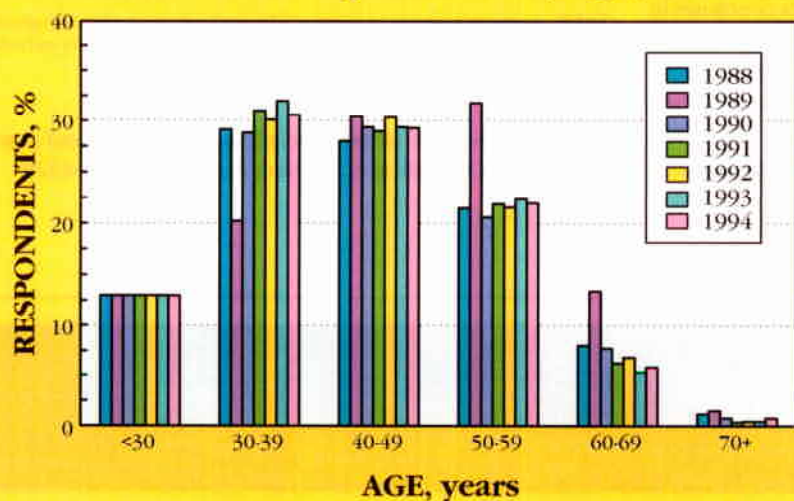
Inflation and income

Consumer prices rose 2.7% in 1994, the same as 1993. This is the lowest annual increase since 1986, when the CPI grew at the astonishingly low rate of 1.1%. With the exception of 1986, the rate of inflation in 1994 is the lowest since 1965. Unfortunately, income continues its trend of stagnation, with the median edging up to \$66,300, a mere 1.1% over last year's median of \$65,550. For the fourth time in the past five years, median income has failed to keep pace with the rate of inflation. This is a sharp contrast to—and perhaps a consequence of—the substantial gains that were made in the early to mid 1980s. These gains are apparent in Fig. 20, which shows the year-to-year change in the CPI and median income since 1981.

(Note that income data for 1984 and 1989 are estimated. There was no salary survey in 1984, and the median income reported in 1989 is unreliable because it was skewed upward by an exceptionally high proportion of respondents in their 50s and 60s, as seen in Fig. 21.) From 1981 to 1989, the increase in median income exceeded the rate of inflation—sometimes

21

Distribution of respondents by age, 1988-1994



There are several hypotheses to explain this trend. The familiar “glass ceiling” theory implies an invisible but tangible threshold barring women from advancing to the topmost levels of power and responsibility. “Salary compression” is another recent construct that explains the income gap as an artifact of

by substantial margins—in six out of nine years.

Figure 22 tracks the annual growth in the CPI and TAPPI median income since 1980. Inflation has continued to grow at a fairly consistent rate over this span of time. TAPPI median income showed substantial growth between 1984 and 1987. Income was flat in 1988, cooling off the apparently unsustainable growth in median income and substantially narrowing the gap between median income and CPI. Income continued to keep pace with inflation from 1988 to 1992, preserving the gains that remained from the expansion in the mid 1980s. Since 1992, however, income has failed to keep up with inflation, and median income is now at about the same level as it was in 1980.

The median income of \$38,000 in 1980 would be worth \$65,854 in 1994 dollars. This year's median of \$66,300 is 0.7% higher, representing a "bonus" of \$446. This bonus—the difference between median income and the 1980 median after adjusting for inflation—has eroded from \$2600 in 1992 to \$1444 in 1993 to \$446 in 1994. If the trend of the past two years continues in 1995, this "bonus" will become a "deficit," and TAPPI median income will have less purchasing power than it did in 1980. Indeed, if inflation continues at its present modest pace, the cost of living will have doubled by the year 2000. The 1980 median income of \$38,000 would then be equivalent to

\$76,000. On the other hand, if median income continues to grow at its present pace, it will limp in at \$71,000 in the year 2000. ■

TAPPI extends its gratitude to everyone who graciously made time to respond to the survey. The author welcomes all comments about this year's survey and solicits suggestions for the 1995 survey.

Burke is a freelance writer specializing in the pulp and paper industry, 1011 Larch Ave., Takoma Park, MD 20912-6520.

