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CONFIDENTIAL

To: Dr. R. B. Seligman

Date: May 21, 1975

From: Myron Johnston

Subject: The Decline in the Rate of Growth of Marlboro Red

I think Dr. Dunn's memo has very effectively dispelled the notion that nicotine reductions have been the cause of the slackening in the rate of growth of Marlboro Red.

In view of my fields of interest, it should come as no surprise that I chose to investigate the economic and demographic factors that could be responsible for the decline in Marlboro's rate of growth. Indeed, I treated these factors in my 1975-1980 Economic Forecast. It was my contention that Marlboro's phenomenal growth rate in the past has been attributable in large part to our high market penetration among younger smokers and the rapid growth in that population segment. I pointed out that the number of 15-19 year-olds is now increasing more slowly and will peak in 1976, and then begin to decline. I also hypothesized that Marlboro would be particularly vulnerable to the recession.

In my opinion, the decline in Marlboro's growth rate is due to four factors:

1. Slower growth in the number of 15-19 year-olds
2. The recession
3. Price increases in 1974
4. Changing brand preferences of younger smokers

Obviously, we can do nothing about factors 1 and 2 and have only partial control over factor 3. (State taxes are beyond our control, for example.) Let us look at each of these factors individually.

Demographics

It has been well established by the National Tracking Study and other studies that Marlboro has for many years had its highest market penetration among younger smokers. Most of these studies have been restricted to people age 18 and over, but my own data, which includes younger teenagers, shows even higher Marlboro market penetration among 15-17 year-olds. The teenage years are also important because those are the years during which most smokers begin to smoke, the years in which initial brand selections are made, and the period in the life-cycle in which conformity to peer-group norms is greatest.

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It seemed reasonable to believe, therefore, that there should be a relationship between the number of 15-19 year-olds and Marlboro sales during the period of Marlboro's rapid growth. I started running some correlations and found some interesting relationships, all significant at better than the .005 level:

1. The correlation between Marlboro sales and 15-19 year-olds as a proportion of total population is .993. Projected into the future, this shows Marlboro sales peaking in 1976 and then beginning a decline.
2. The correlation between Marlboro sales and the number of 15-19 year-olds is .996. Projected, this shows Marlboro sales peaking in 1976 and then declining.
3. The correlation between Marlboro share of market and 15-19 year-olds as a proportion of total population is .9997. Projected, this shows a 12.08% share of market for 1975, a peak of 12.21% in 1976, and then a decline.
4. The correlation between Marlboro market share and the number of 15-19 year-olds is .99985. Projected, this shows Marlboro market share peaking at 12.92% in 1976 and then declining.

It should be noted, however, that these were all correlations of time-series data, and correlations of time-series data frequently yield correlations that, while statistically significant, may be spurious. Accordingly, I began investigating year-to-year changes in the relationship of Marlboro sales and teenagers. Again, I found some interesting results:

1. The correlation between percent change in the number of 15-19 year-olds and the change in Marlboro market share is .963. This shows Marlboro market share peaking at 13.34% in 1978 before beginning a decline.
2. The correlation between the change in the number of 15-19 year-olds and the change in Marlboro market share is .971 and shows Marlboro peaking in 1978 at a 13.40% share of market and then declining.
3. The correlation between the percent change in the number of 15-19 year-olds and the percent change in Marlboro sales is .987. A projection of this relationship shows Marlboro sales peaking at 94 billion units in 1979 before declining.

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4. The correlation between the change in the number of 15-19 year-olds and the percent change in Marlboro sales is .988 and also shows Marlboro peaking at 94 billion units in 1979.

These correlations all show Marlboro sales and market share peaking in 1978 or 1979 and then declining.

While these correlations are certainly more favorable for Marlboro's future than the correlations of time-series data, they also show that heavy reliance for sales on an age group that is declining in number is dangerous. Another interesting observation is that in all of these correlations 1974 fell far below the trend line, i. e., below what was predicted for 1974 by the effect of 15-19 year-olds. The question, then, is why things fell apart in 1974.

The Recession

This must, of necessity, be somewhat speculative, since at no time since 1946 has there been such a sharp and prolonged decline in real disposable personal income (DPI) per capita as we have witnessed in the past 18 months. After a very smooth and virtually uninterrupted increase from 1960 to the end of 1973 (at an average annual rate of 3.50 percent), real per capita DPI tumbled 5.2 percent from the fourth quarter of 1973 to the fourth quarter of 1974 and another 0.8 percent in the first quarter of 1975.

Many cigarette sales forecasting models have shown some income elasticity in the demand for cigarettes (i. e., expenditures on cigarettes decline with a decline in incomes). As I noted in my economic forecast, the Conference Board calculated the price elasticity of cigarettes to be 0.29. Given the 5.2 percent decline in real per capita DPI, an income elasticity of 0.29 would account for a shortfall of 9 billion units in 1974. Marlboro's share of this would have been about 1.1 billion units and its sales increase in 1974 would have been 8.0 percent instead of 6.4 percent. This would have closed about 40% of the gap between Marlboro's actual 1974 sales increase and the sales increase it should theoretically have achieved on the basis of my regression equations.

This still leaves some of the gap to be accounted for, and does not explain why Marlboro market share is below the regression line. In my economic forecast, you may recall I said that Marlboro was particularly vulnerable to the effects of the recession because the highest unemployment rates are among the younger age groups, precisely the groups in which Marlboro's market penetration is highest. In the first quarter of 1975, the unemployment rate of persons 16-19 years old was 20.4 percent, the highest it has been since the Bureau of Labor Statistics began compiling rates by age in 1948.

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It is my contention that income elasticity is inversely proportional to income level. That is, the lower the income of a specific population group, the greater will be the depressing effect on cigarette sales of a decline in real income. Families whose incomes are well above the median will feel the pinch of declining real income and may cut back on expenditures, but since cigarettes are a relatively small proportion of their total expenditures, they will cut back very little on expenditures on cigarettes, and what cutbacks they do make are likely to take the form of buying by the carton rather than from a machine. Lower income people, on the other hand, feel the decline in real income much more acutely, and since expenditures for cigarettes constitute a larger proportion of their discretionary purchases, they are more likely to quit smoking or reduce consumption. Marlboro smokers, being on the average considerably younger than the total smoking population, tend to have lower than average incomes. Thus, I would expect a disproportionately large number of Marlboro smokers to quit smoking or reduce daily consumption. In addition, young smokers are less habituated than older smokers, and can therefore probably quit or cut down more easily than an older smoker. Furthermore, many teenagers who might otherwise have begun to smoke may have decided against it because of the adverse economic conditions.

These things, I think, help explain Marlboro's unusually poor showing in 1974. It is, perhaps, significant that Marlboro's growth rate departed from the trend line in the first quarter of 1974, the very quarter in which real per capita DPI showed its sharpest decline.

Price Increases

Virtually all investigators agree that there is a certain amount of price elasticity in the demand for cigarettes, although we all disagree as to the actual figure. In any event, the wholesale price increases of 1974, which were, of course, passed on to the consumer, undoubtedly depressed sales.

I think price elasticity, like income elasticity, has a greater effect on lower income people than on those with higher incomes. As mentioned above, Marlboro smokers, being younger, tend to have lower incomes. Thus, Marlboro sales are probably more responsive to price changes than are the sales of brands which appeal to older segments of the population.

Combined Effect of Demographic and Economic Factors

I am convinced that the recession and the price increases are responsible for the slower industry growth, and that these factors have hurt Marlboro more than any other brand. As we recover from the recession both industry sales and Marlboro share should increase. Because of the decline in the

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number of young people, however, I expect Marlboro's rate of increase to continue to decline. Other things being equal, Marlboro sales after the recession will almost certainly resume their upward trend, but at a progressively slower rate. Unfortunately, other things tend not to remain equal, such as changes in brand preference.

Changing Brand Preferences of Young Smokers

A much more serious factor is the apparent decline in Marlboro's popularity among the young, as reported in the College Student Smoker Survey. Since this survey did not also sample the 70 percent of 18-22 year-olds who are not enrolled in college, we do not know if the results of the survey are projectable to the total population aged 18 to 22. One suggestion that it is not projectable is the reported incidence of smoking: The College Student Smoker Survey shows a decline in the incidence of smoking for both sexes from 1968 to 1974, but data for 17-18 year-olds from the National Clearinghouse for Smoking and Health in 1968 and 1974 show no differences for males and a 39% increase for females. The data from the National Clearinghouse, as well as data from the National Panel, show that college students are less likely to smoke than people of the same age who are not in college. Thus, the decline in incidences of smoking may well be true only of college students. It may also be true that the decline in Marlboro's popularity among 18-22 year-olds is also only a college phenomenon.

Nonetheless, there is cause for concern, partly because college students do constitute a significant share of the Marlboro market, and partly because college students' behavioral and attitudinal patterns tend to carry over to non-college youth with a one-to-three year lag, as noted in various Yankelovich studies. Thus, the decline in the popularity of Marlboro Red among younger smokers will probably continue and, thus, further reduce its rate of growth.

Conclusion

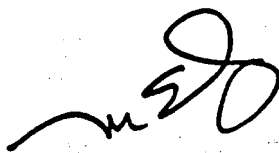
I think it is clear that demographic factors have been important in the recent decline in Marlboro's rate of growth and will cause a continuing decline. The recession and 1974 price increases have been further temporary depressants on Marlboro sales. Taking only economic and demographic factors into consideration, a reasonable conclusion would be that as economic conditions improve Marlboro will resume its growth but at a declining rate and on a permanently lower trend line, until it peaks in 1978 or 1979.

If we consider further the reported decline in Marlboro's popularity among the young, we are left with the unpleasant but very real likelihood that Marlboro market share will peak in the very near future, probably in 1976 or 1977. The company will then have to rely on other brands for growth. Cigarette tastes, like other tastes, do change over time, and products tend to have life cycles. Much as we might like to think otherwise, Marlboro Red is probably no exception.

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MEJ:fs

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A handwritten signature in black ink, appearing to be 'J. Morgan', is written over the list of names.

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