The Palm Oil Situation

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ABSTRACT

In broad perspective, total world demand for oils is growing rapidly, and palm oil will be seen in future years as a welcome addition to total world supply. It also seems clear that palm oil utilization is broadening at a faster rate than production is increasing. It appears this utilization is growing fastest in the "new markets" of Asia, the Mid-East and Latin America, rather than in the "old markets" of Europe and the United States.

INTRODUCTION

Palm oil is here, is doing great, and the world is lucky to have it. The first two points are fact, the third is my strong opinion that palm oil is a good oil capable of being produced more efficiently than most oils and capable of being used successfully in an increasingly broad range of products. And I should add "over an increasingly broad area of the globe."

This oil has passed through the European and U.S. price-depressing "glut" phase of a few years ago. This glut phase has been typical of a great number of "new" oils created by a production breakthrough not immediately matched by consumption technology. Palm oil production has increased strongly and will continue to increase strongly. Improved technology is creating global demand that is more than matching the pace of production.

Figure 1 shows price relationships among soybean oil, cottonseed oil, and palm oil. Soybean oil is the central "zero line" with cottonseed oil and palm oil shown as price premiums or discounts relative to soybean oil. The time period shown is from October 1974 to the present. The figure illustrates clearly that the major palm oil discounts prevailing prior to mid-1975 had largely disappeared by 1976 and that full parity or premiums have prevailed during 1977 and 1978.

It seems clear that palm oil is now in the early part of a "mature demand" phase of its existence.

U.S. net import data (in metric tons) reflect the consequences of price parity and price premiums on usage in the U.S.

1972	178
1973	161
1974	176
1975	421
1976	334
1977	215

The poor first quarter of 1978 (roughly 45,000 tons) and the even smaller indications for the second quarter strongly indicate low tonnage for the year.

I'll offer a tentative conclusion to startle you a trifle: palm oil seems to represent a generalized cycle for any major "new" oil – a glut is created by a production breakthrough of some sort. Technology for use of this oil is understood only by a few firms (who may or may not have anticipated the affair). In any event there is more of this type oil than can be readily absorbed. Price declines so radically compared to other oils that those with some technology go into high priority development to broaden the range of substitution. Those firms without past technology watch their competitors' cost structures with envy and go into what they regard as a battle for survival.

Usage of other oils tends to wither and prices decline to suggest that acreage of annual-crop competitors should be cut back for the next season. Producers, and governments, "threatened" by the new oil tend to go into something of a panic at this point. Still further along the path, the less developed countries are observing costs and trying out the new oil in their old products.

It seems almost without warning that price discounts

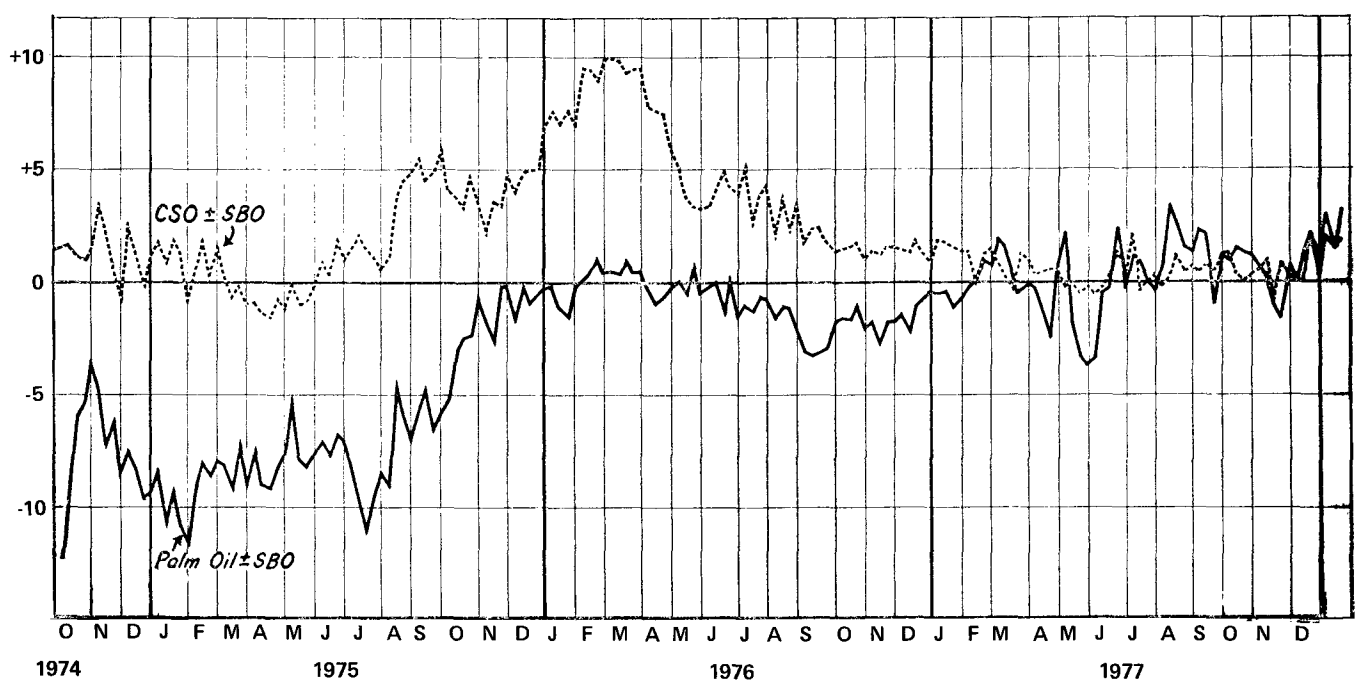

FIG. 1. Price relationships: cottonseed (F.O.B. Valley) and palm oils (C.I.F. New York) relative to soybean oil (F.O.B. Decatur).

disappear; total supply of oils collectively don't fully keep pace with population or income/consumption patterns. The oil goes to a premium; production of other oils is again stimulated.

Over the years we've seen the "perpetual" surpluses to be created by a glutted supply of oil from a new type or a new area. Who can now remember the surplus caused by CCC cottonseed oil, by Peruvian fish oil, by Russian sunflower oil – or Malaysian palm oil?

PALM OIL DEVELOPMENT AND GROWTH

While palm oil was an established African product for many years, production was static and usage mainly confined to Africa and Europe.

The production "breakthrough" came from development of a hybrid variety of oil palm in the Belgian Congo during the early 1940s. This variety featured a thin shelled palm kernel and a fleshy pericarp containing 80% palm oil. More importantly, the new variety yielded 30% more oil per acre. This variety was adopted by Malaysian planters in the dynamic expansion following World War II. The new variety on suitable soil has yielded around three tons per acre, about double the national average. Average yields should increase rapidly as the newer plantations reach full maturity.

The Malaysian planters industry observed synthetic rubber on their horizon and during the 1960s converted more than 500,000 acres from rubber to palms.

Along with their activity came an aggressive land reform and development program by the Malaysian Federal Land Development Authority (FELDA), later augmented by additional governmental and state developmental agencies to create one million new acres of palm by the end of 1975. Their target seems to be roughly another million acres by 1980, with even further growth ahead.

Experimentally, there is talk of still another palm variety in which the palmitic fatty acid drops below 21%, oleic and linoleic increase to 88. I have no information on speed of reaching maturity or yield factors, but some commercial plantings apparently have been made.

I will not attempt to quantify major trends toward Malaysian refineries and toward operation of new fractionating plants, with consumer products also on the rise.

Various (and variable) export duty advantages were established relative to crude palm oil. With Europe's duty structure taxing these processed oils more heavily than crude, we have seen various forms of refined oils dominating duty-free imports into the U.S., often on a parity with crude. Apparently most U.S. firms using palm are fairly content to see the refinery dregs left in Malaysian waters rather than in the U.S.

It is also clear that these refined and further processed oils are gaining significant penetration into the rapidly expanding Asian markets. I would guess that this will further alleviate pressure on U.S. markets.

PRODUCTION TRENDS

Palm oil production in Malaysia reached 1.59 million metric tons during 1977, an increase of nearly 15% over 1976 but well below projections made a year or so ago. With production in early 1978 quite disappointing (apparently a drought effect) a number of observers expect very little increase for the year.

It should be noted that 1977 Malaysian production was roughly half of the world total. This implies that most other areas have stagnated or declined. We have actually observed palm oil imported into some former African countries which have been traditional exporters; all the larger ones will probably cease to be exporters within a year or two.

Indonesian production appears to be increasing but less is apparently being exported.

The Ivory Coast has expanded acreage and production sharply, but there seems to be some production pause while they battle insect infestations that some observers believe stem from ecological imbalances created by diversions to palm. We trust solutions will be found to these problems.

Even in Malaysia there are those who believe that the stripping of land cover created by the massive new plantings may be a factor in higher soil temperatures and locally modified precipitation patterns. If true, weather patterns should improve as maturing plantations restore ground covers.

Now back to Malaysian production trends; I'm going to make no long term projections. There are plenty of these around and they all point sharply higher, apparently based on increased average maturity of present acreages plus planned new acreage. In such projections there also is an implicit assumption that land, labor, and management quality is equal to that of the earlier plantings. This assumption is not necessarily true. Weather already has shown it is not always ideal.

I also notice increasing study of crop alternatives; some nostalgia (plus economic promise) for a return to rubber, some interesting research and development work with a rapid maturing hybrid coconut, and even curiosity about cocoa production. It is, of course, far too soon to reach even tentative conclusions about the future for any of these.

U.S. USAGE PATTERNS FOR PALM OIL

Since utilization statistics show incomplete coverage of total usage to date, I'm merely going to sketch some industry-observed trends over the years. (Many of these probably reflect my individual biases.)

The initial substantial penetration into the U.S. was in Western state frozen "french-fry" potato processing. Delivered costs of oil were cheaper than other materials. Palm oil has not totally replaced other oils and is probably used to some extent at times in the Northeast.

Penetration into shortenings and commercial cooking fats was fairly rapid, with various blends of oils. Percentages of palm are very high in the cheaper institutional formulations, but vary with relative price.

Here I would like to interpose my personal bias that this highly saturated fat isn't too far different from the saturation level of any heavily hydrogenated "liquid oil." Most of the heat from critics of palm seem to stem from invalid comparisons based on the unmodified form of the liquid oil. This seems unfair to me even as a nonchemist.

Usage has crept, not leapt, into margarines, particularly in the "price-brands." I would guess there is still incomplete reporting in this category, but this coverage should improve as new labeling laws are implemented.

At the peak of the recent shortages of edible tallow and lard, we saw some almost involuntary conversions to palm oil in baking. I don't know if this usage has continued.

Penetration appears to have occurred in the "hard-butter" areas.

In general, use has scarcely begun in those areas where fractionated oil may have promise. (This is an inference drawn totally from the fact that U.S. fractionating capacities are somewhat limited and total imports of palm oil fractions are still low volume.) ●