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Pecan Production and Price Trends

1979-1995

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PECAN PRODUCTION AND PRICE TRENDS

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Pecans are traded in one of the freest markets of any U.S. agricultural commodity. The season's pecan prices are determined largely by the current season's expected pecan production (USDA crop forecasts) and carry-in stocks from last year against a rather stable demand. Pecan quality, exports and imports of pecans as well as the supplies of competing commodities such as almonds and walnuts would be expected to have some influence on pecan price. Filberts (hazelnuts), pistachios, and macadamia nuts may be substitutes for pecans in some products. A considerable volume of imported nuts (types which are not grown domestically) may also be a factor in determining pecan prices; Brazil, cashews, pignolias, chestnuts and others.

The purpose of this paper is to briefly discuss pecan production and price data, present the overall tree nut situation and suggest major supply forces which

influence the season's average pecan price levels.

Pecan Situation

Pecans are produced throughout the southern U.S. The official USDA pecan crop year runs from July 1 through June 30. Most pecans are harvested September through December. Year-to-year changes in pecan price (USPT:blend of improved and native/seedling prices) are clearly associated with changes in total pecan supply (USQS) defined as U.S. total production and carry-in stocks, Figure 1. Price and total supply moved inversely 15 of 16 times during the 1979 to 1995 period. The general response of prices to changes in total supply seems clear.

Pecan prices plateaued around the 60 to 70 cents level for 11 years from 1979 through 1989 and then increased to unprecedented heights during 1990 - 1995. These high prices were associated with significantly lower levels of pecan supplies during the same period (with the exception of 1993), Figure 1.

The supply variables (i) production (USQT) and (ii) carry-in stocks (CSJ) are inversely related because large carry-in stocks come from the previous year's large crops and vice versa, Figure 2. Carry-in stocks and production during 1990 through 1995 were both at their lowest levels since the late 1970's (excepting 1993 production and, thus, 1994 stocks), resulting in the high prices during the early 1990's.

Separating total pecan production into improved (USQI) and native/seedling

(USQN) categories shows that trends in both have been relatively flat since 1980. Native/seedling production was clearly the most volatile, Figure 3. However, annual changes in improved production became more volatile in the early 1990's, accentuating annual price changes. In recent decades, improved production has been increasing relative to native/seedling production. The increased proportion of improved pecans should result in more stable year-to-year U.S. pecan supply and price.

The large annual variations in total U.S. pecan production (USQT) were due to similar variations in the native/seedling crop (USQN), accentuated by the recent increased volatitity in improved pecan production, Figure 4. These large variations in total crop resulted in corresponding inverse changes in prices and, frequently, short supplies, both of which may adversely affect pecan use by food processors and marketers who prefer a stable supply at steady prices.

Pecans are sold by producers as higher priced improved varieties (USPI) or as lower priced native/seedlings (USPN), Figure 5. While improved pecans clearly bring a higher price than natives, the parallel movement of the two prices suggests that they are, to some extent, substitutes and, thus, competitors. Both improved and native/seedling prices were at unprecedented levels during 1990 through 1995, except for 1993. Improved and native prices diverged significantly in 1995 with natives falling 10 cents/lb and improved increasing by 3 cents/lb. This may have been due to a quality problem with the native pecans.

International trade in pecans was a rather minor domestic supply/demand

factor until the mid-1980's when both exports and imports, particularly the latter, began to rise, Figure 6. Imports exceeded exports in eight of the ten years from 1985 through 1994. Net imports (imports minus exports) were about 18 million pounds shelled; i.e., 9 percent of U.S. total pecan supply in 1994, Table 1. Net imports, mostly from Mexico, have increased substantially in recent years and may continue to be a significant part of U.S. domestic consumption. In 1994, U.S. total pecan exports of 33.5 million pounds (in-shell) went to Canada (44%), the European Community (34%), and Mexico (16%) The North American Free Trade Agreement may have some effect on the U.S. pecan situation in that the modest five percent value added tariff on imports will be removed. However, since imports from Mexico are already entering in some volume, the removal of the tariff may not be particularly disruptive. Perhaps more important is that a significant amount of Mexico's pecan acreage is in the pre-production stage. If Mexico's export's share of their production continues, the volume of imports could have a significant impact on U.S. market prices. The import situation certainly requires watching as an important source of competition (Pena, Rosson and Adcock).

Production, prices and crop values for improved, native and seedling, and total pecans (in-shell basis) are presented in Table 2. The 1990 price, the first to exceed one dollar a pound for both improved and blend prices, was associated with the smallest total crop since 1980. The small total l990 pecan crop was due mainly to the smallest native/seedling crop since 1976. The total crop value in 1990 was the highest on record, $247.6 million, until the 1991 and 1992 crops which yielded $309.5 and $240.3 million dollars, respectively. The large decline in Georgia's improved crop and the drop in native/seedling crops in several states reduced total

production in 1992 by 44 percent, Table 2. Thus, the last six years, 1990 through 1995, are unprecedented in terms of higher prices and larger total crop values (nominal or undeflated). The high prices are in the face of significant increases in net imports. Again, the supply and utilization of pecans (shelled) shows that both imports and exports of pecans were fairly modest until the mid-'80's, Table 1.

Other Tree Nuts

Data on the supply and utilization of pecans and other major tree nuts (shelled basis) show pecans second behind almonds and close to walnuts in production and domestic use, Table 3. Note the small volume of pecan exports compared to exports of almonds and walnuts.

Figure 7 shows the production and prices for almonds, walnuts, pecans, pistachios, and hazelnuts for 1985 through 1995 (preliminary). The increases in pecan prices during the first half of the '90's are in contrast to price levels for the other four tree nuts, a market reality which does not favor use of pecans based on cost alone.

Starting in the late 1980's, pecans have been the highest priced of the three major tree nuts; almonds, walnuts and pecans, Table 4. Thus, pecans are at a price disadvantage where almonds and/or walnuts can be substituted. The unprecedented pecan prices of the last six seasons, while good for producers, may reduce market demand for pecans where users and consumers have a choice.

Pecans and walnuts are quite similar in domestic U.S. per capita consumption and both are second to almonds, Table 5. Recall that both almonds and walnuts have had major export markets while pecan exports have been modest.

Forecasting Pecan Prices

Because pecans are traded in a relatively free market setting, prices are sensitive to changes in supply and demand each season. Supply is the major price determining variable. Demand appears to be relatively stable. Supply can be measured as carry-in stocks from the previous crop and current year's crop plus net imports. Forecasting improved and native/seedling pecan prices early in the season requires information on carry-in stocks and the forecast crop size. The U.S. Department of Agriculture issues pecan crop forecasts in the fall of the year; i.e., October pecan crop forecasts are used here. Crop forecasts, of course, frequently differ from the "final" total crop reported in the following July. Preliminary "final" crop estimates are available in January at the end of harvest; final revised production data is available the following July. Forecasts higher than the actual crop tend to bias prices downward and vice versa (Shafer). The price forecasting models used USDA October crop estimates and the June carry-in stocks in cold storage as the independent variables. Only forecast pecan production and reported carry-in stocks were used in making the price forecasts because no significant price effects were detected from changes in the supplies of other nuts or net imports. Further, forecasts of these other variables are difficult, if not impossible (exports/imports),

to obtain. Although not used for forecasting here, other tree nuts and net pecan imports, as well as quality, must be considered potential determinants of pecan prices.

The forecasting equations were based on price and quantity (a) levels and, alternatively, (b) first differences of (1) October crop estimates for both improved and native production and (2) June carry-in stocks. Price changes between the 1991 and 1995 seasons are the forecasted values. Only forecasts for the 1995/6 season are discussed below.

The October 1995 improved crop estimate was 39.2 million pounds above the 1994 final reported improved crop size. The actual increase was 38.5 million pounds. The October 1995 native crop estimate was 13.6 million pounds above the 1994 final reported native crop size, the actual increase was 8 million pounds. Thus, the reported increase in the 1995 crop was only 5 percent less than the October forecast change in total crop size. June 1995 carry-in stocks were down 50.9 million pounds from June 1994.

U.S. improved pecan price reportedly increased 3 cents/lb. (preliminary) from 115 cents in 1994 to 118 cents/lb. in 1995. The forecast price increase was also about 3 cents, essentially the same as reported, Table 6.

U.S. native/seedling pecan price <u>decreased</u> about 10 cents/lb. (preliminary) from 76 cents in 1994 to 66 cents in 1995. The forecast price <u>increase</u> was roughly 6 cents/lb, contrary to the reported 10 cents drop(?), Table 6.

U.S. blend price was unchanged at 104 cents/lb. in both 1994 and 1995. The forecast 5 cents increase in the blend price was, obviously, 5 cents too high. Of course, the blend price forecast is a combination of the improved and native/seedling prices and, in this case, was biased upward by the native price forecast.

The 1995 price forecast for improved pecans was fairly accurate while the native price forecast clearly missed the mark in both direction and amount. The latter situation may have been due to lower than usual native pecan quality in selected production areas (USDA 1996).

Summary

Total U.S. pecan supply trended upward 1976 through 1989 but declined significantly during the 1990-1995 period, "explaining" most of the unprecedented price increases during the early '90's. Improved production was less variable than native/seedling crop until the 1990's. Most of the year-to-year variation in the total pecan crop was due to native pecans until the 1990's. Improved production has been gaining relative to native/seedling production.

Pecan exports and imports are both up since the mid-1980's but net imports (imports minus exports) have been increasing. Net imports at 18 million pounds (shelled) were about 9 percent of total supply in 1994/5, Table 1. Increases in

imports from Mexico could exert significant pressure on U.S. prices in the future.

Almond production appears steady in recent years (except for a large drop in 1995) and prices have not been out of line with those of past years. Walnut production and prices trended upward between 1985 and 1995. Hazelnut and pistachio production seem to be increasing while their prices are in-line with the recent past. Total U.S. tree nut production was down in 1995, Figure 7.

Pecan prices were up considerably relative to other tree nut prices during 1990-1995. Again, these price levels were associated with exceptionally low pecan production and stocks. If pecan production begins to climb and/or imports continue to increase, pecan prices may well resume the more modest levels of the pre-1990's.

One step ahead price forecasts for improved pecans were fairly accurate during 1991/2 through 1995/6. Native price forecasts were less accurate.

Sources of Current Pecan Market Information

The Pecan Newsletter which provides beltwide market information is published weekly during the September-December harvest season. *Pecan South* contains beltwide pecan production, marketing and related information and is published monthly throughout the year. Both publications may be obtained from The Texas Pecan Growers Association, Drawer CC, College Station, Texas, 77841; 409/846-3285.

Market news on pecans may be obtained from the Texas Department of Agriculture during the September-December season by calling 1 800/252 3407.

The *Southeastern Fruit & Vegetable Report* provides marketwide data on pecans and is obtainable from the Georgia Department of Agriculture, Markets Division, Federal-State Market News, P. O. Box 1447, Thomasville, GA 31792.

Crop Production is published monthly and provides the September and October pecan crop estimates and commentary. *Noncitrus Fruits & Nuts*, published January and July, provides detail on tree nut production and prices. *The Fruit and Tree Nut Situation*, published four times annually, contains information and data on tree nuts. All three of these items may be obtained from the U.S. Department of Agriculture by calling 1 800/999-6779.

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