Staff Paper

SOME ECONOMIC CONSIDERATIONS FOR A PROPOSED SUPPLY MANAGEMENT PROGRAM FOR TART CHERRIES

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December 1990 90-80

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Some Economic Considerations for a Proposed Supply Management Program for Tart Cherries*

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The Michigan and U.S. tart cherry industry continues to be faced with two major supply problems. One of these is a problem of persistent oversupplies, or an imbalance of supply with demand, which has plagued the industry each year since 1985. (The current 1990 crop year is a temporary exception to this since the quite short crop in 1990 has resulted in an approximate balance of supplies with demand for the 1990-91 marketing year). The other major supply problem is provided by substantial annual fluctuations in production and market supplies. As a result of the annual fluctuations, in some years there are substantially excessive supplies, such as occurred in the large crop year of 1987, whereas other years there are significantly shorter supplies as has been experienced in 1990.

The problem of persistent oversupplies is related to excessive productive capacity in the cherry industry. That is, there has been sufficiently large tart cherry acreage, along with technological improvements in cherry growing, to produce substantially more supply than has been demanded by the market during recent years. When national cherry supplies are substantially greater than demand, this puts strong downward pressure on grower prices. This imbalance of supply with demand has occurred in most recent years, and is expected to continue to an important degree during the next few years.

The excess acreage in the cherry industry occurred because of large new plantings of tart cherries during the late 1970's and early 1980's. These substantial new acreages were made by growers in response to very high grower prices and favorable profit levels for growers between

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* Based upon testimony presented at a public hearing conducted by the Michigan Department of Agriculture on December 17, 1990, regarding use of P.A. 232 for a supply management program for tart cherries.

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1976 and 1981. As those large new plantings have reached bearing age by the late 1980's, the industry has since experienced a substantial amount of over-capacity from this earlier surge of plantings.

In contrast to the large increase in production capacity in the cherry industry during the 1980's, demand for tart cherries has grown relatively slowly during recent years. The industry is devoting substantial efforts to expanding the demand as much as possible. The Cherry Marketing Institute has a major program to expand demand including export expansion and development of new products and new markets for tart cherries. These generic industry efforts supplement the activities of processors and other cherry marketers to expand cherry demand. All of the demand expansion efforts are quite desirable for the industry. They will help reduce the size of the gap between the production capacity and cherry demand. Nevertheless, during the next few years it appears that there will continue be a gap between the production capacity, or the amount that can be produced in the industry, and the amount of cherries demanded by the market.

The industry's overcapacity problem was demonstrated to a substantial degree in 1987 when the industry produced 359 million pounds. That large production can be compared to an average demand quantity in recent years of 250 million pounds. As a result of the large supply-demand imbalance in 1987, grower prices where extremely low that year. In the years since 1987 there have been large carryover stocks which built up after the large 1987 crop and these contributed to oversupplies in 1988 and 1989. Grower prices have been generally low in most recent years.

Although some acreage has been removed since 1987, currently available data indicate that the industry may well have the capacity to continue to produce considerably more supply

than demand during the next few years. The supply potential in years of favorable weather could possibly be as much as was produced in 1987.

The program which is proposed by the industry, and which is the topic of this hearing, includes three major operational provisions: (1) orchard removal incentive provisions to reduce some of the excessive acreage by volunteer grower bidding for removal payments, (2) market allocation provisions to manage the amount of supply in a given large-crop year which can go into designated primary and secondary markets, and (3) supply diversion provisions to manage some portion of surplus supplies which may occur in certain large-crop years. A number of other perennial crop industries in the United States have used marketing and supply management programs with somewhat similar provisions. The California almond industry, the Oregon filbert industry, the California raisin industry, the California walnut industry and the California-Arizona lemon industry all have operated federal marketing order programs for many years that include market allocation provisions. The California raisin industry and the California cling peach industry have had orchard removal incentive programs to reduce some excessive acreage. The U.S. cranberry industry and the California prune industry have marketing order programs with provisions for surplus diversion. The U.S. tart cherry industry, of which Michigan is, of course, a predominate state, operated a marketing order program for a number of years which had provisions for market allocation and surplus diversion along with provisions for a reserve pool. All of these industry programs demonstrate the use of supply management provisions which are somewhat similar in nature to the main provisions of the program which is currently being proposed for the tart cherry industry.

Since the cherry industry seems to have an over-capacity problem, or one of excessive planted acreage, an orchard removal incentive program is a logical approach to reduce the excessive acreage somewhat. This would help bring the industry's production capacity into a

closer balance with its slowly growing demand. If growers are offered an incentive payment to take out certain tart cherry blocks, some growers would be expected to voluntarily bid to take out some of their acreage more rapidly than without this kind of orchard removal incentive program. Thus this proposed program can be expected to speed up the needed industry adjustment process to bring supply in closer balance with demand for a return to somewhat positive returns on investment for cherry growers.

The proposed orchard removal incentive program is intended to be funded by a special grower assessment upon the remaining production. An orchard removal or disinvestment incentive program might alternatively be financed from government funds. This has been done in recent years through the dairy herd buyout program which was partially funded by the federal government. Orchard removal incentive programs paid by government funds have been undertaken in some European countries and in certain other countries such as Australia. Economically cherry growers would be substantially benefitted if an orchard removal program were funded by the government instead of by industry assessments. Philosophically, however, many tart cherry growers seem to prefer to finance such an orchard removal program by industry funds rather than to rely upon taxpayer monies. The use of a P.A. 232 program for this purpose is a logical way to provide a broad base of grower funding support for a removal incentive program.

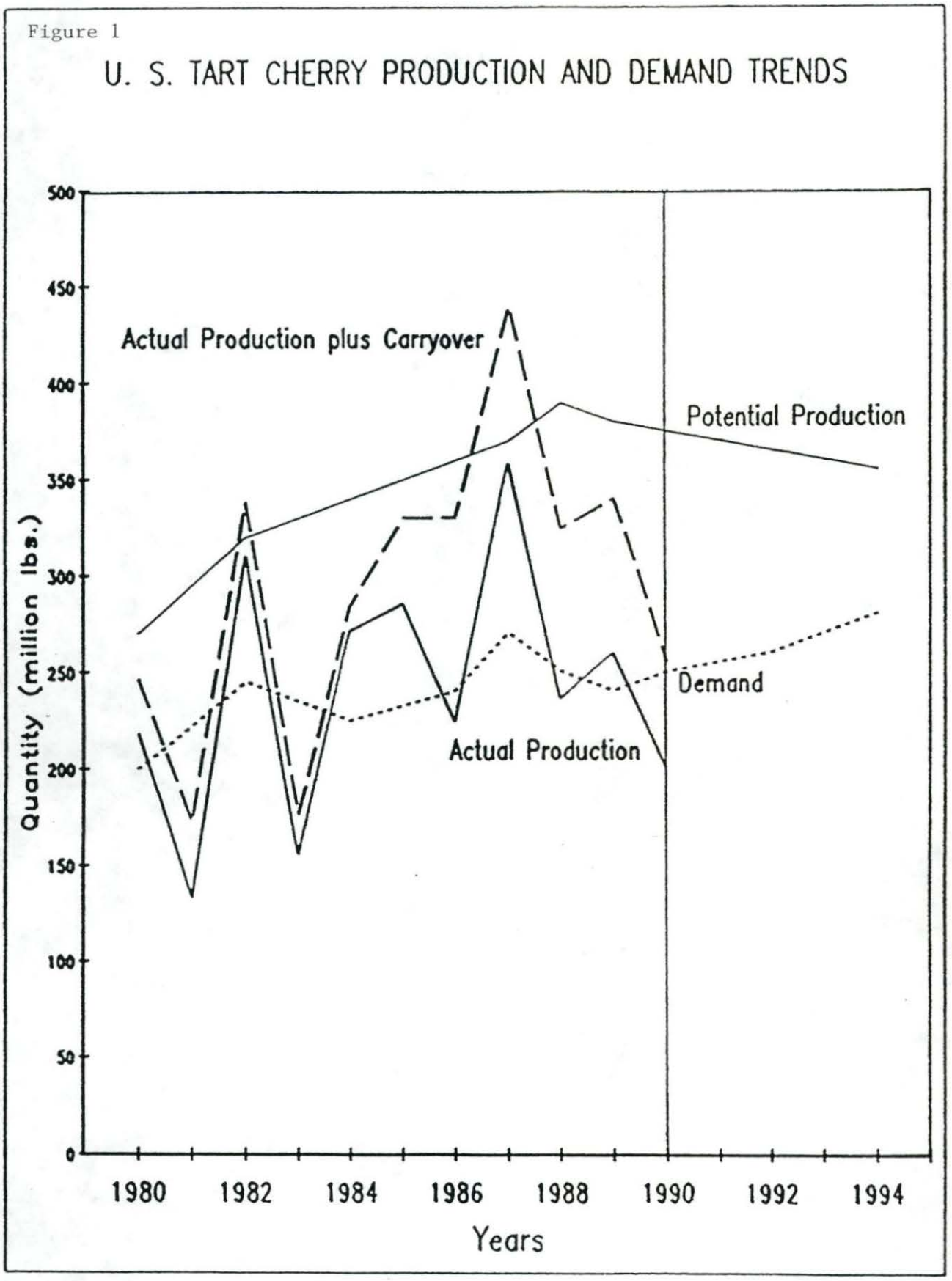
A key question regarding implementation of an orchard removal program is: What is the most appropriate amount of acreage that should be removed with such a program? The answer to that question is complicated by two important factors including: (1) The fact that up-to-date comprehensive orchard data on existing orchards are not available for Michigan since the last orchard survey which was done four years ago in 1986; and (2) the substantial annual fluctuations in supplies which occur in the industry due to the impact of variable weather.

Because of the lack of up-to-date data on existing orchards, the tart cherry industry itself is currently undertaking a comprehensive orchard survey. Even though this role has traditionally been done by the Michigan Agriculture Statistics Service (MASS), because of the lack of funds for a orchard survey by MASS, the industry is undertaking their own survey. When this data becomes available sometime this winter, it will provide a comprehensive up-to-date data base for decisions regarding how much acreage should be taken out with an orchard removal incentive program.

Until the new orchard survey data becomes available, estimates of existing acreage must rely on the best available information, even though it is recognized that there are short-comings in this data base. The currently available information on existing acreage is based upon Michigan's last comprehensive orchard survey done in 1986 by MASS along with projections to the present time. This aging data base has also been supplemented somewhat by partial grower survey's done in conjunction with MASS's objective yield survey to estimate the annual cherry crop size, and by a MACMA orchard survey which was done in January 1990. MASS and NASS also estimate currently existing bearing acres for various states based on projections from previous orchard surveys and upon other data.

Recognizing that the data base for estimates of existing acreage is limited in its up-to-datedness and its comprehensiveness, currently available data indicate that the industry may now have the capacity to produce well over 300 million pounds in a large crop year. This is depicted in Figure 1 by the gradually downward sloping line after 1990 labeled "Potential Production". The estimate of the industry's production capacity will need to be re-evaluated as soon as the orchard survey which currently in progress is finished. If this up-date survey substantiates that the indicated potential production which is based on currently available data is fairly accurate, this data would indicate a need for a substantial orchard removal incentive program. On the

Figure 1

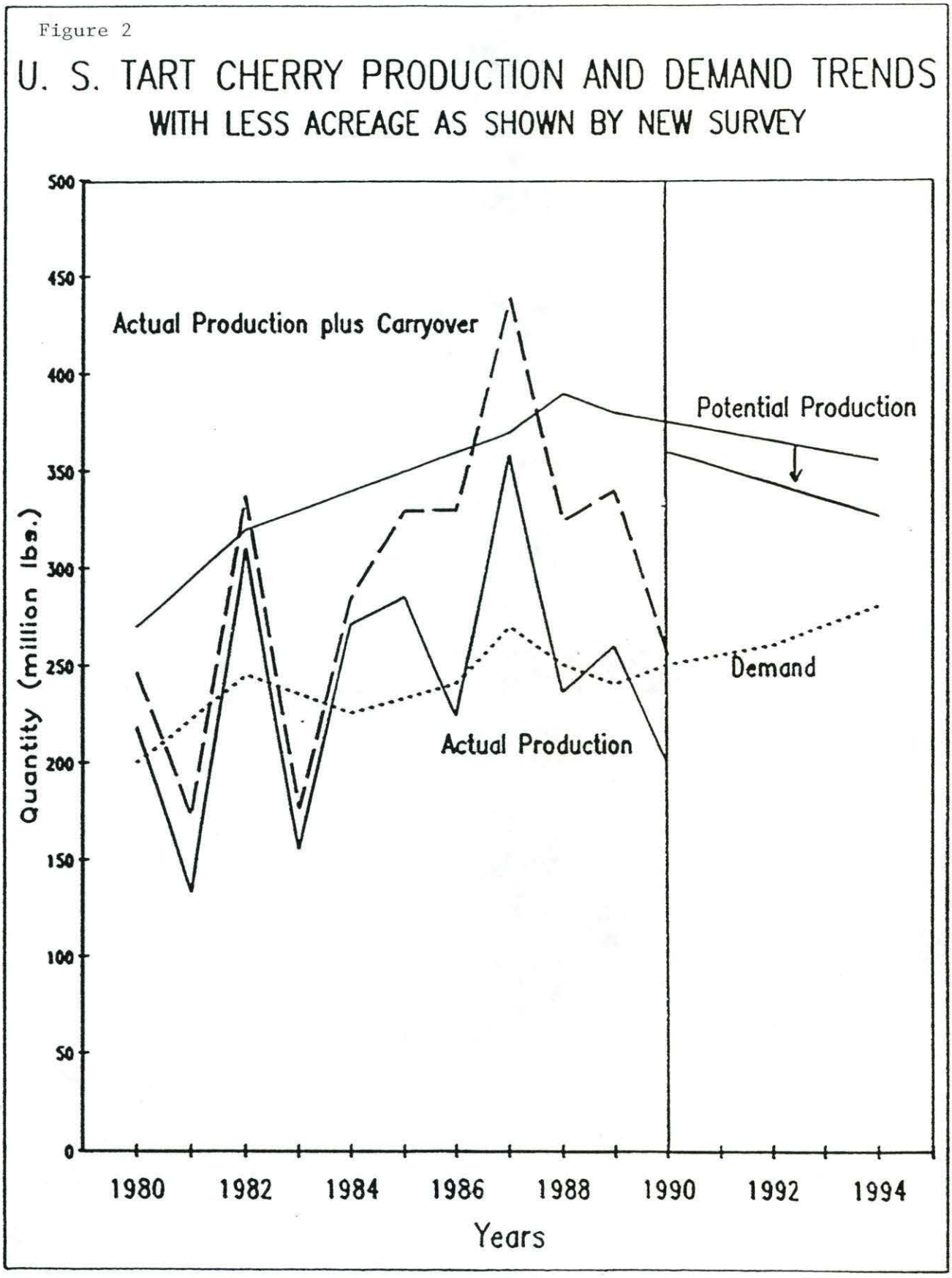

U. S. TART CHERRY PRODUCTION AND DEMAND TRENDS
Actual Production plus Carryover
Potential Production
Demand
Actual Production
Quantity (million lbs.)
Years
0
50
100
150
200
250
300
350
400
450
500
1980
1982
1984
1986
1988
1990
1992
1994

other hand, many in the industry believe that the orchard survey which is now in progress will show a smaller acreage than is indicated by the currently available data, and hence that there will be a lower potential production during the next few years. This is depicted in Figure 2 by a downward shifted line for "potential production" during the next few years. If the expectation of less bearing acres is in fact documented by the results of the current orchard survey, a smaller amount of acreage to be removed with a proposed the orchard removal incentive program would be warranted. If there is to be an orchard removal program, the magnitude of the acreage to be removed will need to be re-evaluated based upon the results of the orchard survey which is currently in progress.

Although the goal of reducing the industry's over-capacity somewhat to provide a better balance with demand is a sound, logical goal, it is important that the orchard removal incentive program not be used to the extent that too much acreage is taken out. The substantial fluctuations in annual crop size must also be taken into account. It would not be desirable to take out so much acreage so that in the large-crop years supplies are just equal to the demand quantity. In that case in the short crop years, when production is reduced by spring frost, there would be a supply shortage. That would hamper the ability of the industry to expand long-run demand equal to its potential.

Several steps can be taken to estimate how much acreage needs to be taken out in view of both the overcapacity problem in the industry and the substantial annual crop fluctuations. First the industry can estimate the likely overall demand for tart cherries during the next few years, including current levels of demand plus an estimate of the likely increase in demand because of market expansion programs and other factors. Then the amount of acreage needed to be removed with the orchard removal incentive program can be estimated based on the remaining acreage having the capacity to produce on average over a period of several years an

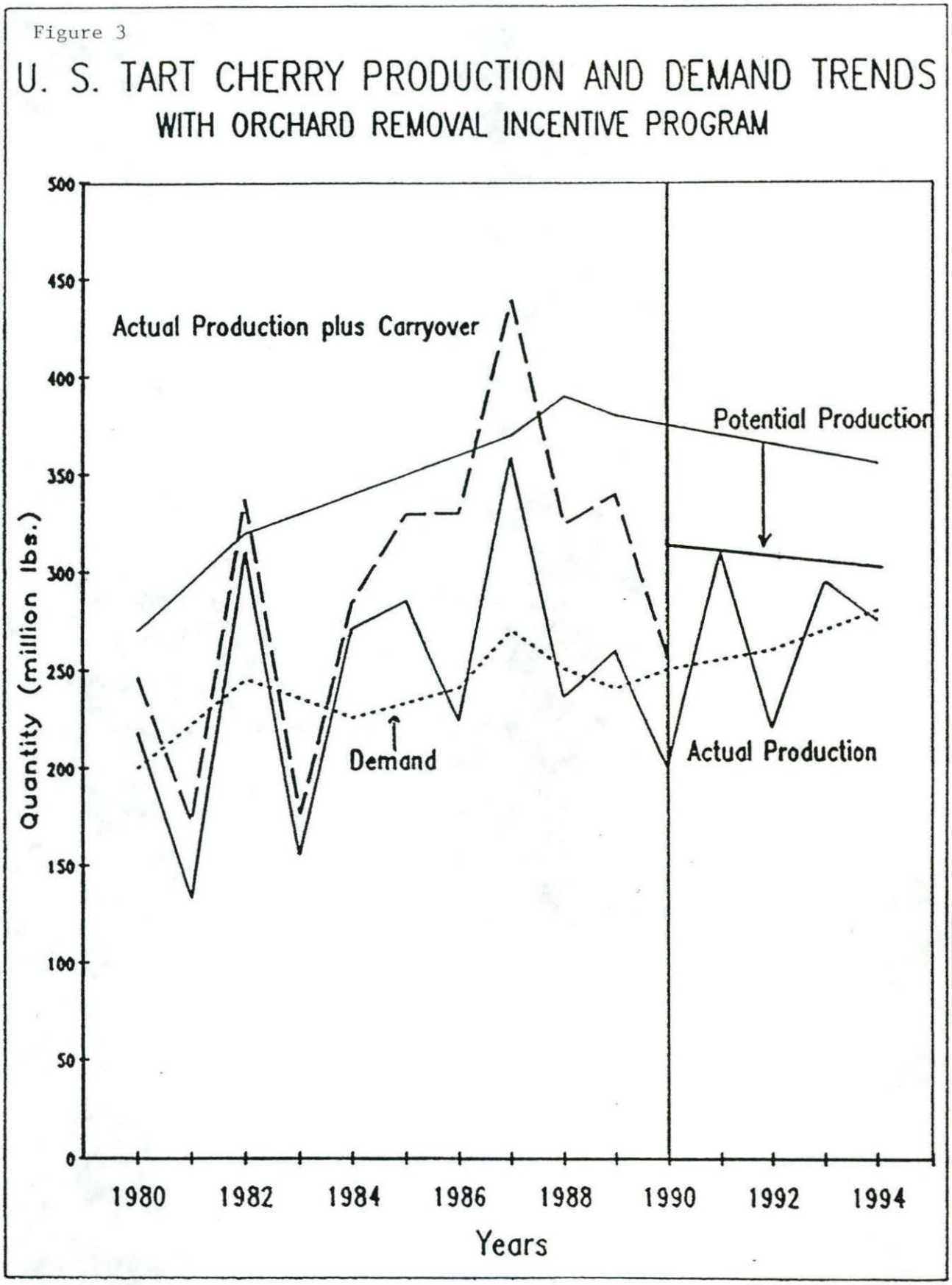
Figure 2


U. S. TART CHERRY PRODUCTION AND DEMAND TRENDS
WITH LESS ACREAGE AS SHOWN BY NEW SURVEY
Actual Production plus Carryover
Potential Production
Demand
Actual Production
Quantity (million lbs.)
500
450
400
350
300
250
200
150
100
50
0
1980
1982
1984
1986
1988
1990
1992
1994
Years

amount near, but somewhat greater than, the expected demand with its projected growth. Targeting the adjusted production average to be somewhat greater than the expected demand with growth might be considered a fairly conservative strategy, but it is probably desirable to permit and to encourage demand to expand as much as possible while also attempting to avoid very large surplus production. This approach would allow a small additional production capacity over the expected demand that would provide a cushion to make sure that the market was not shorted. Then annual supplies would fluctuate around a smaller average production than without an orchard removal program, but there would still be enough supplies to encourage potential demand growth. This type of result of the orchard removal program is illustrated graphically in Figure 3 whereby the potential production and average production are reduced somewhat by the removal program. Although there would be a closer overall balance with demand, there would still be some large-crop years when supply would be substantially above projected demand as is shown by some example fluctuations in Figure 3.

The fact that the cherry industry often has substantial annual fluctuations in production complicates the use of an orchard removal incentive program in order to achieve a better balance of long-run supply with demand. Because of the annual fluctuations in production it cannot be expected that an orchard removal program would result in a close balance of supply with demand each year. In large crop years there would still be surplus supplies, while in some moderate crop years there might be an approximate balance between supply and demand, and in some years of very short crops there might be somewhat of a shortage. Thus although the orchard removal incentive program would aid in attaining a better long-run balance of supply and demand, and would thus help to reduce the problem of persistent oversupplies, there would still be a likelihood that there would be some temporary surpluses in large crop years (as are shown in Figure 3). Therefore, some additional program action provisions are logical in order

Figure 3


U. S. TART CHERRY PRODUCTION AND DEMAND TRENDS
WITH ORCHARD REMOVAL INCENTIVE PROGRAM
Actual Production plus Carryover
Potential Production
Demand
Actual Production
Quantity (million lbs.)
500
450
400
350
300
250
200
150
100
50
0
1980
1982
1984
1986
1988
1990
1992
1994
Years

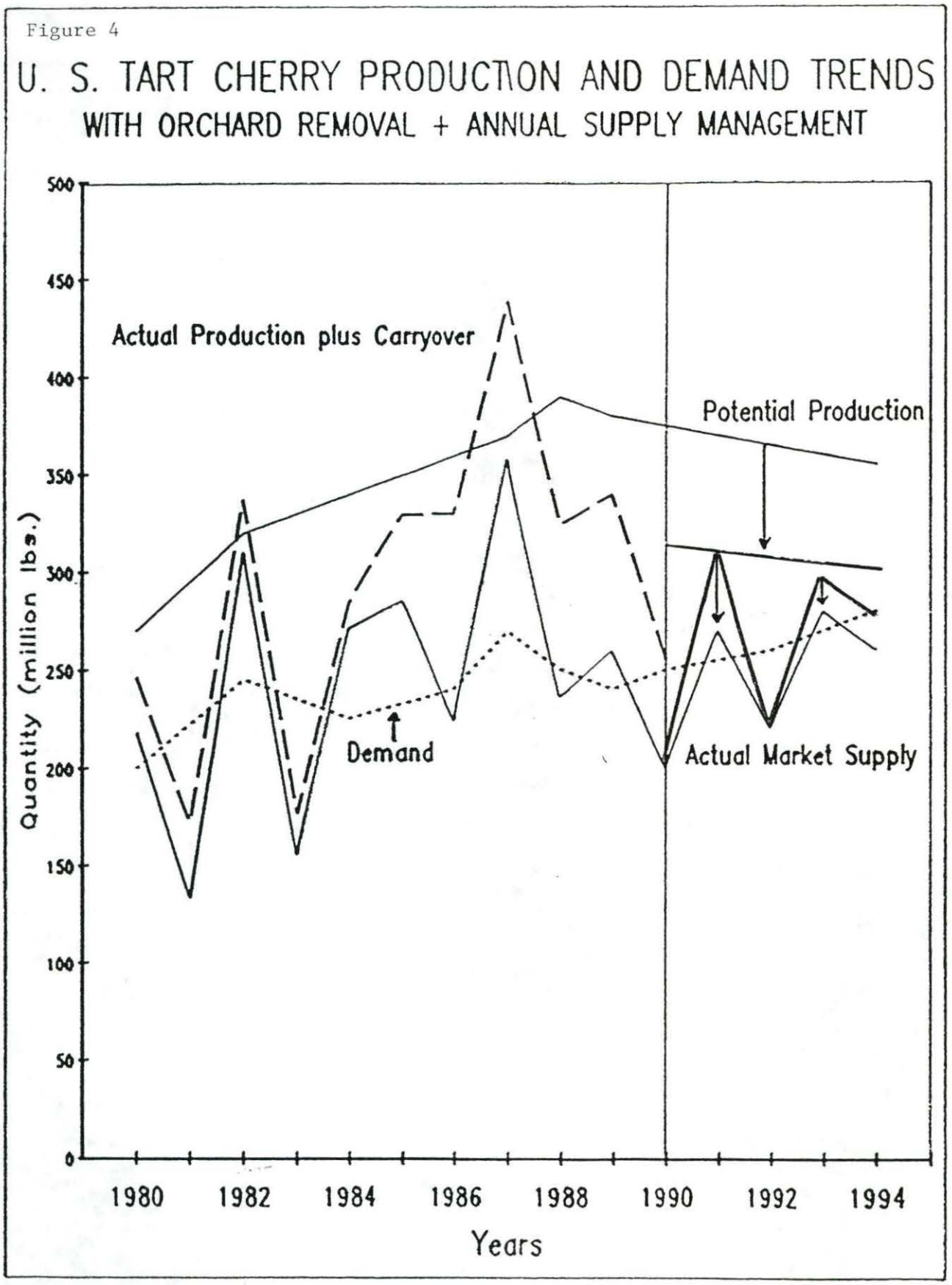
to overcome this problem of the temporary oversupplies during the large crop years.

The industry's proposal is that there would be annual supply management provisions in the program which would allow in those large crop years allocation of some supplies to secondary markets and/or would provide for in-orchard or at-plant diversion of some temporary excess supplies. As a result an approximate supply-demand balance in the large crop year could be achieved by a combination of both an orchard removal program and the annual supply management techniques as is shown in Figure 4. After the limited orchard removal program has brought the existing acreage and hence productive capacity down somewhat, as shown by the lower "potential production" line in Figure 4, the annual supply management approaches of market allocation and excess supply diversion could be used to fine-tune the large-crop year's supply with the demand as shown by the reduced supplies in the large-crop years in Figure 4.

The annual supply management approaches would not be used in many years when annual supplies were moderate or somewhat short. These provisions would only be used in years in which there was a large crop and hence an excess of supplies. The acreage reduction through the orchard removal incentive program could initially be used to reduce the large over-capacity and hence to reduce the likelihood of persistent oversupplies as has occurred in some recent years.

When considering a proposed program to reduce and manage excessive supplies, one logical question that may be considered is: Why have growers not removed more cherry acreage in response to low cherry prices during recent years? One aspect is that when growers become discouraged with low returns or are forced out of business, they will often sell the farm to someone else. Alternatively if a lender forecloses on the farm, the lender may operate the farm or, more likely, sell it to another grower. In these cases many of the orchards remain in production, adding to the industry's supplies eventhough certain growers go out of business.

Figure 4


U. S. TART CHERRY PRODUCTION AND DEMAND TRENDS
WITH ORCHARD REMOVAL + ANNUAL SUPPLY MANAGEMENT
Actual Production plus Carryover
Potential Production
Demand
Actual Market Supply
Quantity (million lbs.)
500
450
400
350
300
250
200
150
100
50
0
1980
1982
1984
1986
1988
1990
1992
1994
Years

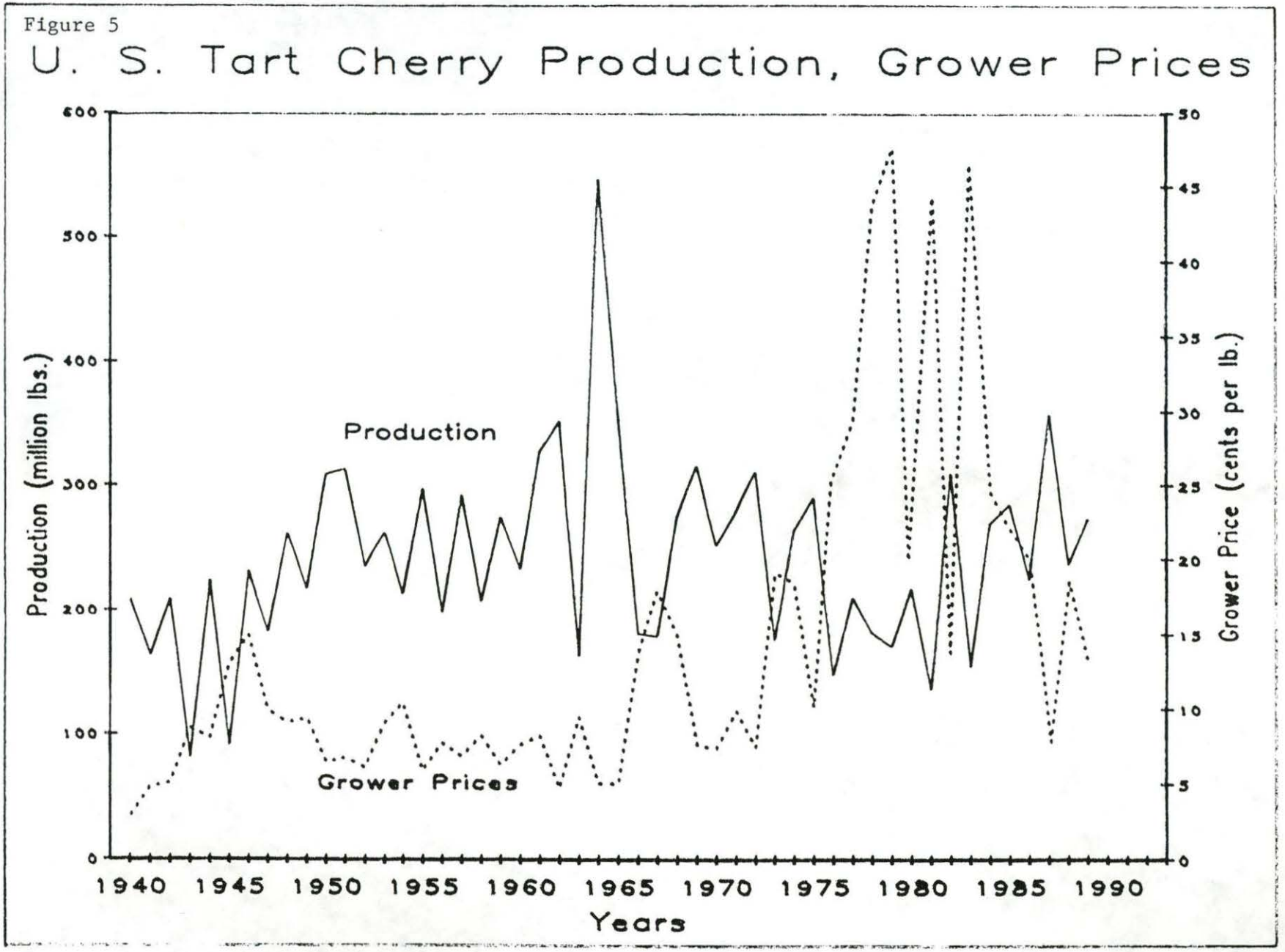
Another factor that slows down the amount of orchard removal somewhat is the fact that the fixed costs for long-term orchard and land investments are large while the annual variable costs are only a portion of the grower's costs. Thus if a grower's returns are sufficient to somewhat more than cover the annual variable costs of growing and harvesting, the grower will have a better cash-flow by keeping the orchard than by pulling it out. This may be the case for several years eventhough the cherry orchard may not be returning enough to make adequate living expenses for the grower nor to pay off long-term loans on the farm.

This is not to say that orchard removals have not occurred. Growers have taken out some cherry orchards during recent years. On the other hand, the above factors provide some impediments to even more rapid orchard removals and hence explain to some degree why a larger reduction in supplies in response to low market returns have not yet occurred for this perennial crop.

Another logical question concerning a supply management program might be: What kind of price increases might be expected to result from a program such as is being proposed? This cannot be predicted with great precision. For this reason it is probably best to leave it primarily to knowledgeable industry people to estimate price gains which may result from the proposed program. A graph of past grower prices and production levels is included, however, as shown in Figure 5. This shows that when cherry supplies are reduced, the experience in the industry has been that there is often a substantial increase in grower prices.

When considering an industry supply-management program of this nature, a key economic consideration is: What will likely be the economic impact on Michigan growers, in light of the fact that the proposed program would be mandatory on all Michigan growers but would have voluntary participation in other states? P.A. 232 says that for surplus management programs ". . . particular attention shall be given to determining that Michigan producers

Figure 5


U. S. Tart Cherry Production, Grower Prices
Production (million lbs.)
Grower Price (cents per lb.)
Production
Grower Prices
0
100
200
300
400
500
600
0
5
10
15
20
25
30
35
40
45
50
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
Years

affected by the (surplus management) provisions produce a sufficient proportion of the product covered by the (surplus management) provisions for the program to be effective . . . ." This is an important aspect the Michigan industry, including especially Michigan growers, should consider even if they were not required to do so.

For tart cherries Michigan has an unusually high percent of the national crop. As shown in Table 1, Michigan has had an average of 76% of the U.S. production during recent years.

TABLE 1.

Michigan Tart Cherry Production As A Percent of the U.S.

	Michigan Percent of the U.S. Crop
1990	75%
1989	69%
1988	76%
1987	74%
1986	76%
1985	77%
1984	82%
Average	76%

Because of the high percent of the nation's crop produced in Michigan, in general it seems that Michigan probably does have enough of the U.S. production that a supply management program can be effective. The specific results and costs impacts for Michigan growers will depend upon the voluntary participation percentages which are achieved for this program in other cherry states. This type of impact on growers with different participation rates is illustrated in Table 2 using the costs of the orchard removal program as an example.

TABLE 2

Costs to Growers of an Orchard Removal Program
With Various Participation Levels

Percent of U.S. Growers Tonnage Which Bears the Costs	Program Costs per lb. to Participating Growers
100%	1.3¢
95%	1.4¢
90%	1.5¢
85%	1.6¢
80%	1.7¢
75%	1.8¢

The costs shown in Table 2 are based estimated one-time program costs for orchard removal of $2.8 million, plus $0.4 million for administration and interest costs, or a total of $3.2 million. These example calculations are also based upon an average potential tonnage of 240 million lbs. in the U.S. for a special orchard removal assessment after the orchard removal program.

If there were 100% participation in the program, the cost of the removal program to growers would be 1.3¢ per lb. Alternatively if there were enough participation in other states so that the cost were borne by 90% of the grower tonnage, the cost to the participating growers would be 1.5¢ per lb. Since Michigan produces about 75% of the nation's tonnage, if there were another 15% participating from other states this would result in total participation of 90% of the U.S. tonnage. This 90% percentage participation level might be achievable according to the proponents with a combination of a mandatory program in Michigan and voluntary co-operative membership in other states. If the 90% participation is achieved, this would only cost 0.2¢ per lb. more than it would cost with 100% participation of all cherry grower tonnage in the country. Since the assessment for orchard removal is proposed to be made over a two-year period, this

would mean that Michigan growers would only pay 0.1¢ per lb. per year more than would be the case if all U.S. growers paid for the program. Price gains from the program are expected by the proponents to be many times greater than the costs of the orchard removal program as shown in Table 2.

The worst-case scenario for Michigan growers' cost burden for an orchard removal program, would be if Michigan's 75% of the tonnage carried the entire assessment costs with no grower participation in other states. As shown in Table 2, this would result in cost for the orchard removal program of 1.8¢ per lb., or 0.5¢ per lb. more than the costs if all the U.S. tonnage participated. This would be 0.25¢ per lb. more for each of the two years of the special assessment. On the other hand this worst-case scenario seems quite unlikely to occur, since if the program is implemented, at lease some participation from other states, and perhaps substantial participation in some states, seems likely.

This analysis, with the figures summarized in Table 2, shows that for that example part of the proposed program, Michigan does seem to have enough of the U.S. production to be economically effective. This is especially likely in view of the proponents' plans to include as much tonnage as possible through voluntary co-operative membership.

The above analysis refers to some economic aspect of the cost burden on Michigan growers for an orchard removal program. In addition to the economic aspects, growers' attitudes and their willingness to bear some more in costs than would non-participating growers in other states is another important aspect. This will probably be influenced, in part, by the anticipated participation percentage in other states.

As mentioned earlier the U.S. tart cherry industry operated a supply management program under a federal marketing order for 15 years during the 1970's and early 1980's. This

program was administered by the Cherry Administrative Board, commonly referred to as the CAB.

This previous federal marketing order program had somewhat similar objectives and a number of provisions which were similar to certain of the provisions in the program which is currently being proposed. The industry's experience with the earlier federal marketing order should be useful in providing an informational base for strategy and decisions in operating the currently proposed program. The experience with the federal marketing order can perhaps also help to avoid certain potential pitfalls for this type of supply management program.

In summary, the industry proposal addresses both of the major supply problems which have been very troublesome to the tart cherry industry in recent years. These are (1) a problem of excessive production capacity or persistent oversupplies and (2) substantial fluctuations in annual supplies. The orchard removal incentive program provisions are aimed at the overcapacity aspect, while the market allocation and diversion provisions are directed toward managing occasional surpluses due to the annual supply fluctuations. The combination of these two approaches can provide effective marketing-improvement program tools to co-ordinate supply with demand. A key question is: Will these proposed programs be supported by a sufficient percentage of the growers and tonnage in the industry? The use of a mandatory program under P.A. 232 in Michigan along with concurrent voluntary grower membership in a co-operative in both Michigan and other states is a very interesting approach to attain the necessary support for a supply management program. Some Michigan people who are concerned about the potential free-rider problem would prefer a mandatory national program as might be done under a federal marketing order. Others do not support the use of a mandatory program on a national basis. It remains to be seen if there will be adequate grower and

processor support for a P.A. 232 program referendum in Michigan and adequate grower membership support in the several states to bring the program as proposed into being.