

The 2003 Outlook for Milk and Dairy Products

Howard McDowell
Senior Economist
USDA-AMS-Dairy Programs

The dairy industry moves into 2003 with the all-milk prices at around \$11.80 and the dairy cow inventory up slightly over a year ago. The sector is still expanding in response to the high dairy prices in 2001. Higher prices in 2001 and expansion in the western states fueled the demand for heifers, and dairy cow numbers on January 1, 2003 were slightly higher than a year earlier. Milk production was 168.9 billion pounds for marketing year (MY) 2001/02, a 2.2 percent increase over 2000/01. Commercial use in MY 2001/02 grew by about 1 billion pounds (0.6 percent) to 170.1 billion pounds. The excess supply was absorbed by a commercial stocks increase of 2.5 billion pounds (ME, milk fat basis), an increase in CCC net removals of 3.3 billion pounds (ME, skim-solids basis). The 2001/02 all-milk price fell by \$1.75 (12 percent), to \$12.76 per hundredweight (average fat test).

Estimated MY 2002/03 total commercial use is expected to increase slightly more than the increase in commercial supply, and the all-milk price is forecast to range between \$11.20 and \$11.70. The price decline is mainly due to the reduction in the nonfat dry milk support purchase price to \$0.80 per pound coupled with the overhang of commercial stocks.

In addition to the market price impacts on the sector, 2002 saw a number of changes in dairy policies. Extension of the support program, and adjustments of buying prices have resulted in changes in CCC buying, which were not considered in generating last year's forecasts. The establishment of the Market Income Loss Contract program has also likely altered producer production decisions.

Price Support Program Changes

The Farm Security and Rural Investment Act of 2002 extended the support purchase program through December 31, 2007 at the current support price of \$9.90 per hundredweight. The program was to have ended under the 1996 Act. The Dairy Export Incentive Program (DEIP) was extended through 2007.

In November of 2002, the "tilt" on purchase prices for butter and nonfat dry milk was changed. The support purchase price for nonfat dry milk was lowered 10 cents to 80 cents per pound effective November 15, 2002. This follows a similar sharp reduction in May 2001. The support purchase price for butter was raised about 20 cents per pound, to \$1.05, in order to maintain the support price of milk at \$9.90 per cwt. Purchase prices for cheese were not changed, and are \$1.13 per pound for blocks and \$1.10 per pound for barrels.

Market prices of nonfat dry milk are expected to reflect nearly the full reduction in support purchase price because a substantial skim solids surplus is likely to persist even at the lower price. The NASS nonfat dry milk price used in the January 31, 2003 Federal order price announcement had fallen to \$0.82 per pound. The higher purchase price for butter may result in small winter butter purchases, with most of the butter stocks not trimmed sufficiently in 2002.

Past such price adjustments generally resulted in smaller longer-term surpluses of skim solids, but require time for adjustment. The price cuts will encourage food processors to boost use of dry and wet skim solids in processed foods, and reduce prices of skim-milk-based products such as cottage cheese. Lower domestic prices diminish the price advantage of imported milk proteins, as well. Delays in adjustment are associated with direct costs processors incur in re-formulating products and in the expensive process of re-labeling.

Milk Income Loss Contract (MILC) Program

The Farm Security and Rural Investment Act established the Milk Income Loss Contract (MILC) program that provides countercyclical support through fiscal 2005. The payment rate is 45 percent of the difference between \$16.94 per cwt and the month's Class I price in Boston. (This difference is equivalent to the difference between \$13.69 and the Class I mover.) The payment is made on milk marketed by a producer during the month, subject to a limit of 2.4 million pounds during each fiscal year. Farmers receiving payment on all of their milk account for less than a third of total milk production. For these producers, the impact of the payments will be significantly affected by the regulations implementing the annual limit.

County FSA Offices are making transition and contract payments to dairy producers on eligible dairy operations that have signed up for the Milk Income Loss Contract Program (MILC). By January 30, 2003, producers had received over \$1 billion in MILC payments. Payments during FY 2003 should cover milk produced from December 1, 2001 through July or August of 2003 depending on how quickly producers provide data to the FSA offices and how quickly payments are processed. Additional payments of \$1.5 billion could be made during FY 2003. Total program payments, which cover production through September 2005, are expected to total \$3 to \$4 billion.

There has been a delay in signup by some producers because they are waiting for the results of a lawsuit challenging the 2.4-million pound production cap's applicability to the transition period. Total program costs are estimated to be \$6 billion if the production cap is found inapplicable to the transition period and large producers wait until September 2005 to sign up for the program.

The MILC program has its greatest impact on producers with smaller herds, offsetting some of the price decline with a payment. The payments have likely slowed the rate of cattle culling and farm exits.

U.S. Milk Production Situation and Outlook

Milk production for 2002/03 is projected to be 170.7 billion pounds, an increase of about 1 percent. Over the 2002/03 year, milk cows are expected to average 9.105 million, as compared

to 9.129 million in 2001/02. Milk per cow is expected to average 18,750 pounds in 2002/03, reflecting a moderate 250-pound increase over last year. In the out years, annual milk per cow increases are expected to be in the 400-pound range.

Cow numbers remain above trend after the response to higher prices in recent years. During 2001/02, very strong demand for heifers to fill new barns generated soaring prices for replacement heifers, despite historically large heifer supplies. Short-run expansion demand, on top of long-run trends increasing demand for heifers, dried up heifer availability enough to significantly affect milk cow numbers, and milk per cow was weakened by lower than normal culling just to keep barns full. By the end of 2002, slowing pressure for dairy farm expansions and growth in heifer supplies had restored more normal conditions in heifer markets. Milk output per cow continues to lag longer-term trends. Higher feed prices in the face of falling milk prices may have discouraged producers from feeding to achieve maximum output per cow. In addition, the shortage of heifers likely kept sub-optimal cows in herds, depressing aggregate yields.

The milk cow inventory on January 1, 2003 was 9.152 million head, a slight increase over a year earlier. On January 1, farmers held 4.1 million dairy replacement heifers, up about 1 percent from the previous 2 years. The number of replacements per 100 milk cows was a record 44.8. A ratio of only about 41 heifers per 100 cows was adequate to expand the milk cow herd without strain twenty years earlier, and there were still only about 43 heifers per 100 cows a decade ago. Possibly most important was the relatively large number of heifers intended to enter the herd during the year, up 1 percent from a year earlier and 5 percent from 2001.

In January 2003, replacement cow prices were back to levels similar to those of 1999 or 2000. Replacement prices may ease further in coming months. In addition, the number of new facilities coming into production should be slowing. However, prices are not likely to return to the levels of most of the 1990s, forestalled by the long-run trend increase in the number of heifers needed under current management practices.

Concentrate feed prices are expected to average slightly higher this year, and reduced stocks will provide less buffer if weather should again be adverse. However, feed prices are likely to be fairly moderate by historic standards. Even so, low milk prices will hold milk-feed price ratios to levels not very conducive to increases in concentrate feeding and milk per cow.

The situation for dairy forage will be mixed, at least until the new season begins this spring. Larger output and slackening export demand left the West with large supplies and good quality of dairy alfalfa and lower prices. Conditions elsewhere were less favorable. Forage quality from the 2002 crop was erratic generally and market production was down in the Plains. Increased hay demand from beef animals probably has drained off some lower quality alfalfa. Forage supplies might be stretched quite thin this spring if new growth is delayed, with potentially serious implications for spring and summer milk per cow.

In the near term, the farm structure is not expected to change. The MILC program is assisting producers with smaller herds, and expansions are continuing in some areas. Moreover, feed prices and hay supplies are currently favorable for milk production. Drought conditions,

however, currently exist in a cone shaped region extending westward from Michigan through portions of the Corn Belt and the Great Plains up to California. If the drought extends into the growing season, milk production per cow could weaken and cow numbers could decline.

U.S. Dairy Trade

Current conditions in other countries appear to be favorable for the U.S. dairy industry. Imports are forecast to decline slightly in 2002/03, to 5.0 billion pounds milk equivalent, and modest commercial exports of nonfat dry milk are possible. The U.S. dollar has weakened against both the New Zealand dollar and Euro, reducing incentives to import and making U.S. prices more attractive for export markets. Lower U.S. butter and cheese prices reduce incentives to import beyond the Tariff Rate Quotas. Australia, adjusting to deregulation since 1999, is currently under extreme drought conditions, and cattle are being slaughtered at high rates. Recent reports indicate milk production is down 5 to 10 percent from last year's record production. Growth in New Zealand milk production is expected to slow due to low prices and dry conditions. This will result in reduced Oceania dairy product exports. Thus, the situation may provide an opportunity for the U.S. to export some nonfat dry milk, particularly to Mexico and other Central American customers. This would result in world prices capped at around the U.S. support price of \$0.80 per pound.

Exports of nonfat dry milk and cheese under the Dairy Export Incentive Program (DEIP) are expected to reach U.S. limits under the WTO (68,201 metric tons of nonfat dry milk, 21,097 metric tons of butterfat and 3,030 metric tons of cheese). Thus far in the marketing year, DEIP allocations total 42,626 metric tons of nonfat dry milk, 13,186 metric tons of butterfat, and 1,894 metric tons of cheese. The first and second nonfat dry milk and cheese allocations were used up by November. The remaining tonnage will be announced in additional allocations prior to June 30, 2003.

U.S. Dairy Market Situation and Outlook

Commercial use of dairy products on a fat basis is expected to grow by about 2.4 percent to about 174.1 billion pounds in 2002/03. Although higher than last year, this is a moderate growth rate compared to recent years when income was growing at higher rates. However, current prices for butter, cheese, and nonfat dry milk are hovering around support, with the likelihood that quantities demanded will grow in response. Income growth in 2003 is expected to increase slightly to 2.6 percent, with stronger fourth quarter growth. Unemployment is expected to drop through the year to 5.6 percent from current levels of 5.9 percent. Thus, there is potential for stronger demand through the year, but not enough to move prices to recent years' higher levels.

Cheese production totaled 8.440 million pounds in 2002, an increase of 3.8 percent. American cheese production grew by 4.2 percent, while Italian cheese production grew by 3.9 percent.

Cheese prices (NASS) reached around \$1.70 per pound in September of 2001, but fell to about \$1.30 per pound in January 2002. Prices are now about \$1.15 per pound, with no increases expected until fall of 2003. Cheese sales to the CCC began in July of 2002, with about 8 million pounds purchased since October 2002. Net CCC removals of cheese in 2002/03 are forecast to be 25 million pounds.

Butter has behaved similarly to the cheese market. Butter production totaled 1.359 million pounds in 2002, increasing by 9.9 percent over 2001 levels. Butter prices (NASS) averaged about \$1.65 per pound in 2001, peaking around \$2.10 per pound in September 2001. Butter prices averaged \$1.10 in 2002, and are expected to hover around the \$1.05 support price until the seasonal increases in fall of 2003. Recent butter sales to the CCC began in July of 2002 and continue. Thus far in MY 2002/03 about 1 million pounds have been sold to the CCC. Net CCC removals of butter in 2002/03 are forecast to be 35 million pounds.

Nonfat dry milk has been in surplus since 1998, and a large CCC stock buildup led to the adjustment in CCC purchase prices from \$0.90 to \$0.80 per pound in November 2002. Nonfat milk production in 2002 totaled about 1511.7 million pounds, a 6.9 percent increase over 2001. However, beginning in September of 2002, comparisons by months showed reductions in 2002 over 2001. Some of these solids found their way to the cheese vats. For the 2002/03 year, net CCC purchases are forecast to be 420 million pounds, down from the previous year's 650 million pounds. Nonfat dry milk prices are expected to be close to support through 2002/03. Among other programs, the CCC has made available NDM for the production of casein. It is anticipated that as much as 50 million pounds could be used over the year.

An all-milk price decline of about \$1.30 and continued CCC removals is expected to clear markets. Although commercial use is forecast to grow more rapidly than production, beginning commercial stocks of 11.3 billion pounds (as compared to 2001/02 beginning stocks of 8.8 billion pounds) places downward pressure on prices. Commercial stock draw down is forecast to be only 0.7 billion pounds, leaving ending commercial stocks at 10.6 billion pounds. CCC net removals of skim solids are expected to decline from 9.6 to 6.9 billion pounds, net removals on a milkfat basis will rise slightly, from 0.3 to 1.1 billion pounds.

The all-milk price is expected to drop from \$12.76 in 2001/2002, to range between \$11.20 and \$11.70 for 2002/03. The Class III price is expected to range between \$9.70 and \$10.20, while the Class IV price is expected to range between \$9.90 and \$10.60. Retail prices are expected to increase very slightly, which should be positive for consumption.

Domestic Price Uncertainty

Major sources for domestic price uncertainty on the supply side are worsening drought and feed conditions. If poor feed conditions develop, milk production could decline from some combination of slower growth in milk per cow and fewer milk cows. Such conditions could drive prices higher. On the demand side, the greatest sources of uncertainty are the possible impacts on the economy of events in the Middle East. A stall in economic growth resulting from disruptions could reduce dairy product consumption and further weaken prices. Disruptions such

oil price increases can affect both supply and demand sides of the market for dairy products. Costs would increase, and expected dairy price declines could be greater if demand for products drops with income declines or consumers reallocate their budgets.

World Market Issues

U.S. dairy trade is shaped by WTO commitments under the Uruguay Round Agreement on Agriculture (URAA), as well as by trade policies of other countries, and by the general and dairy economic conditions of other countries. Several issues that may have an effect on U.S. milk markets in the future are briefly mentioned.

On the import side, the U.S. Customs Service is in the process of considering a request to redefine what can be classified as a milk protein concentrate. Many dairy products, including cheeses, butter, and milk powders, entering the United States are subject to both tariff-rate quota (TRQ) provisions and licensing requirements. Milk protein concentrates (MPCs), casein, and caseinates are not under the TRQ system. MPCs contain 40 to 90 percent protein and can substitute for nonfat dry milk. Casein is imported duty free, while a duty of \$0.0037 per kilogram is imposed on MPCs and caseinates. Thus, it is possible that the conditions for importing MPCs could change.

The Doha Round of WTO discussions on agriculture are under way, in which the U.S. is pursuing subsidy reductions and increased market access. It is not clear where the discussions will go. A big source of uncertainty stems from the EU's grappling with reforming the CAP under Agenda 2000, EU enlargement, and shifting political priorities. Dairy reform had been postponed until 2005. However, in the Mid-Term Review of the Agenda 2000, several dairy reform options are presented. These options range from maintaining current policies to eliminating production quotas and reducing price support. Thus, it is not clear where EU policy is headed.

In the meantime, the recent WTO ruling declaring Canada's export subsidies to be illegal will likely reduce Canada's exports in the near future, and it could guard against other countries adopting similar programs in the future. In addition to pursuing subsidy reductions and increased market access through the WTO, the United States is pursuing similar goals with discussions of a bilateral trade agreement with Australia, a regional Free Trade Area of the Americas (FTAA), a free trade agreement with Central American countries, and other regional and bilateral agreements.

The 2003 Outlook for Milk and Dairy Products

Howard McDowell
Dairy Programs

2002/03 Outlook Summary

- Beginning Commercial stocks – 11.3 bil. lbs.
- Commercial use increase exceed production growth
- Nonfat dry milk support - \$0.80 per pound
- Ending Commercial Stocks – 10.6 bil. lbs.
- CCC net purchases
 - Milk fat – 1.1 billion pounds
 - Skim-solids – 6.9 billion pounds
- All-milk price - \$11.20 to \$11.70 per cwt.
 - 2001/02 all-milk price - \$12.76

2002 Farm Bill

- Milk Income Loss Contract
 - $(\$16.94 - \text{Price}) * 0.45 = \text{payment}$
 - 2.4 million pounds per FY
- Support Price at \$9.90
 - November NDM and Butter Adjustments
 - NDM \$0.80 (- 10 cents)
 - Butter \$1.05 (+ 19.5 cents)
 - Cheese Blocks \$1.13 (no change)
 - Cheese Barrels \$1.10 (no change)

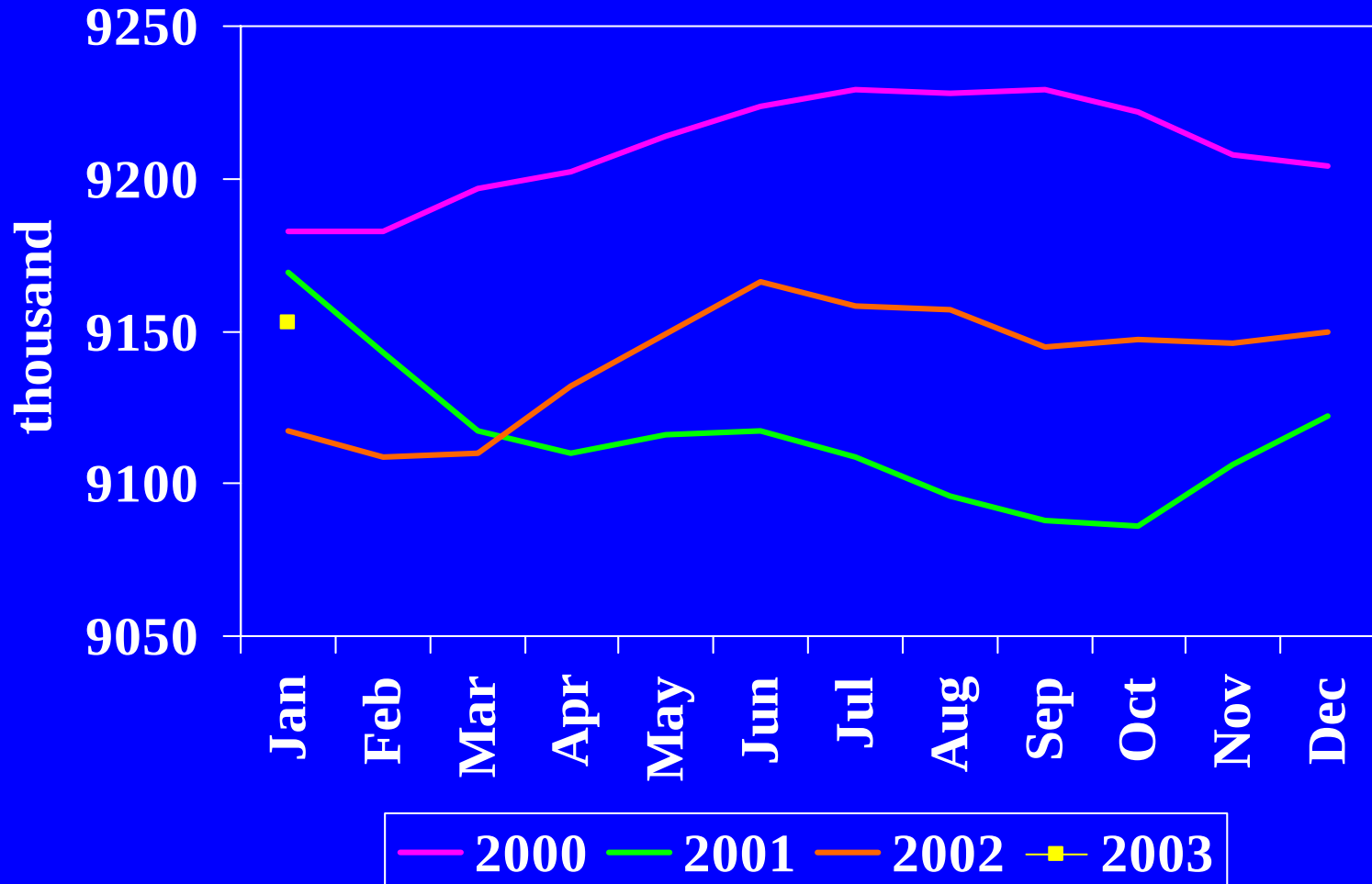
MILC Program

- \$1 billion in payments by Jan 30, 2003
- \$1.5 billion additional in FY 2003
- \$3 to \$4 billion to cover production through September 2005
- Legal challenge on 2.4 million lb. cap in transition period, \$6 billion possible

Milk Cow Numbers

2002/03: 9.105 million

- 0.26 percent



Replacement Heifers

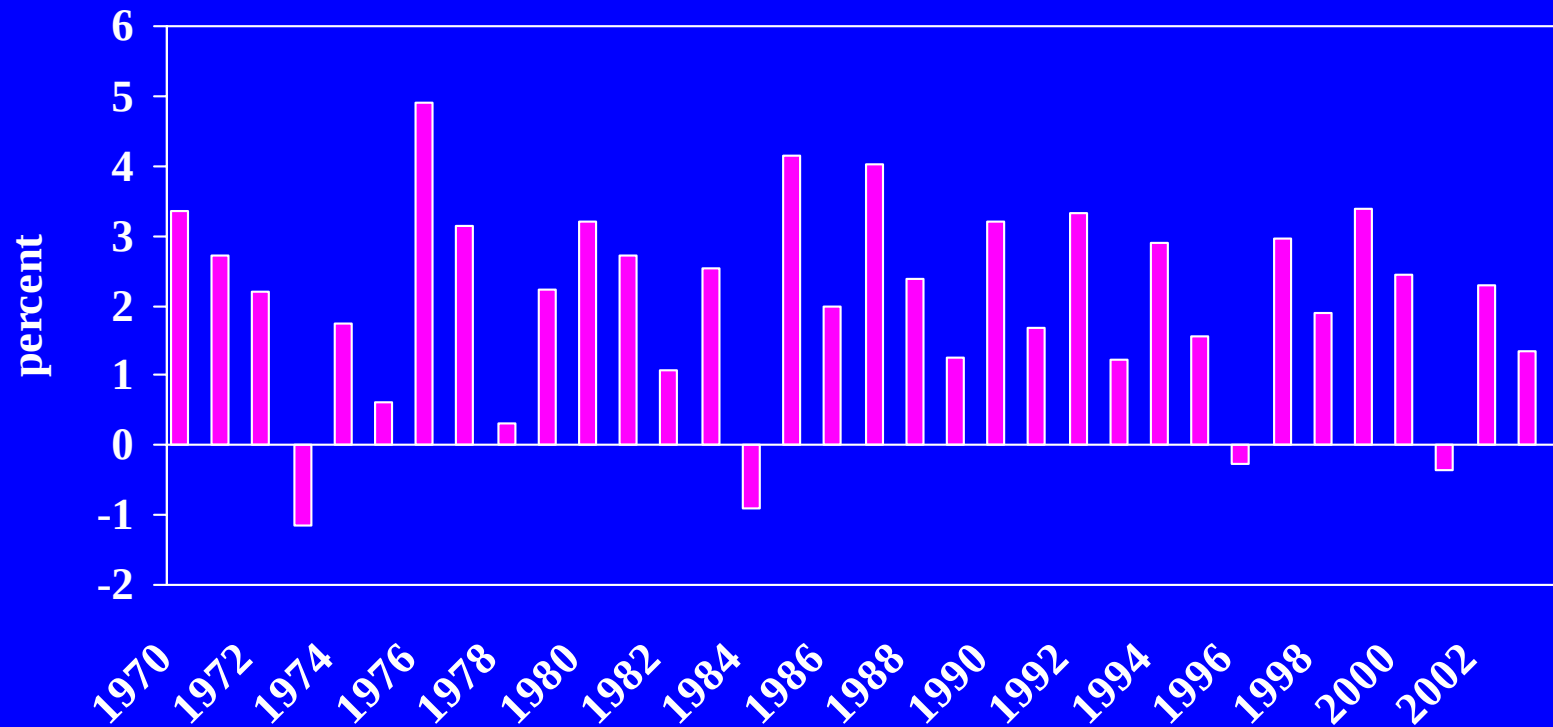
- 2002 – 30 heifers per 100 cows
- 2003 – 45 heifers per 100 cows
- 1993 - 43 heifers per 100 cows
- 1983 - 41 heifers per 100 cows

Milk Production Per Cow

2002/03: 18,750 lbs.
+ 1.35 percent

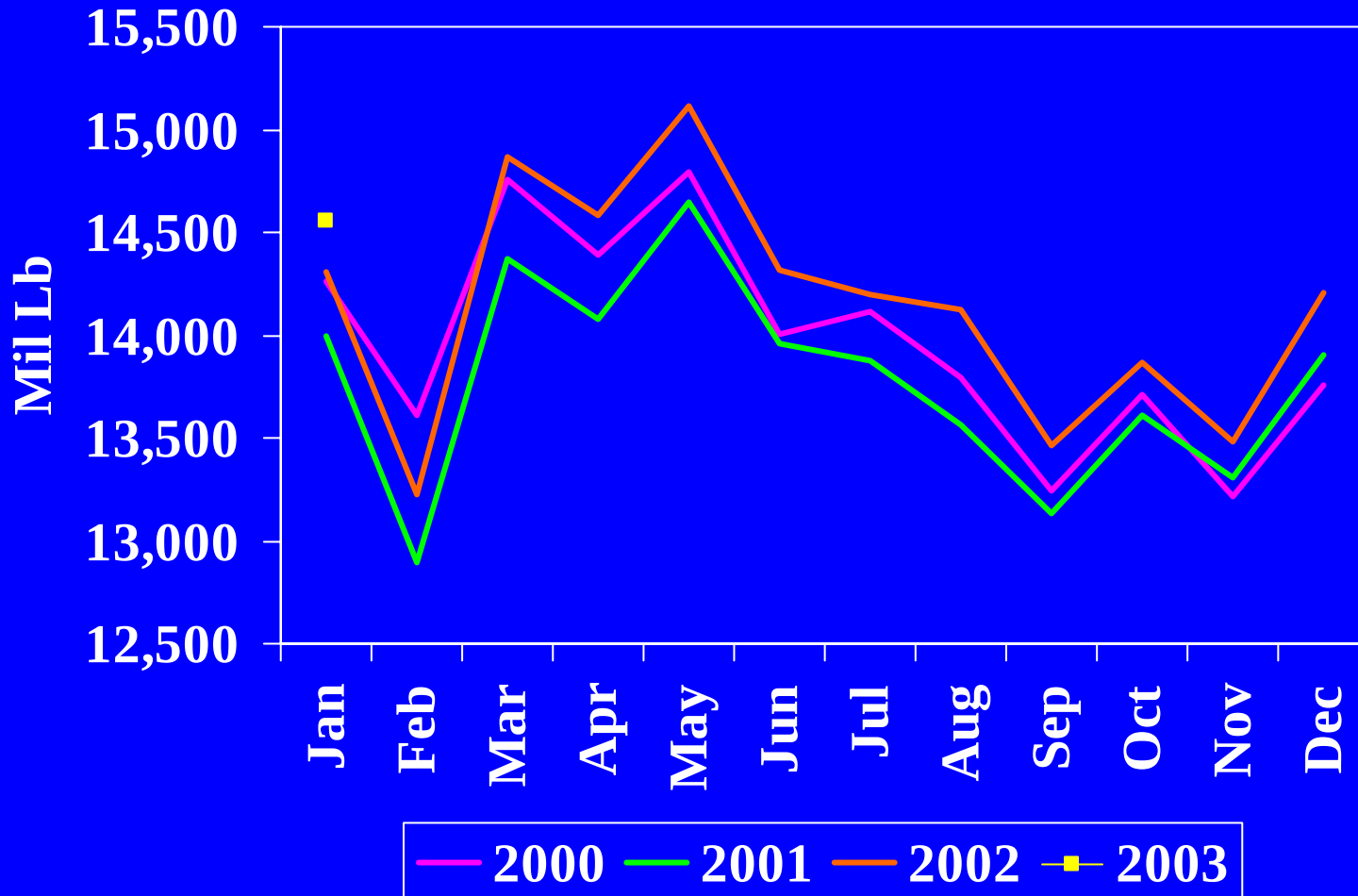


Milk per cow growth, 1970-2002



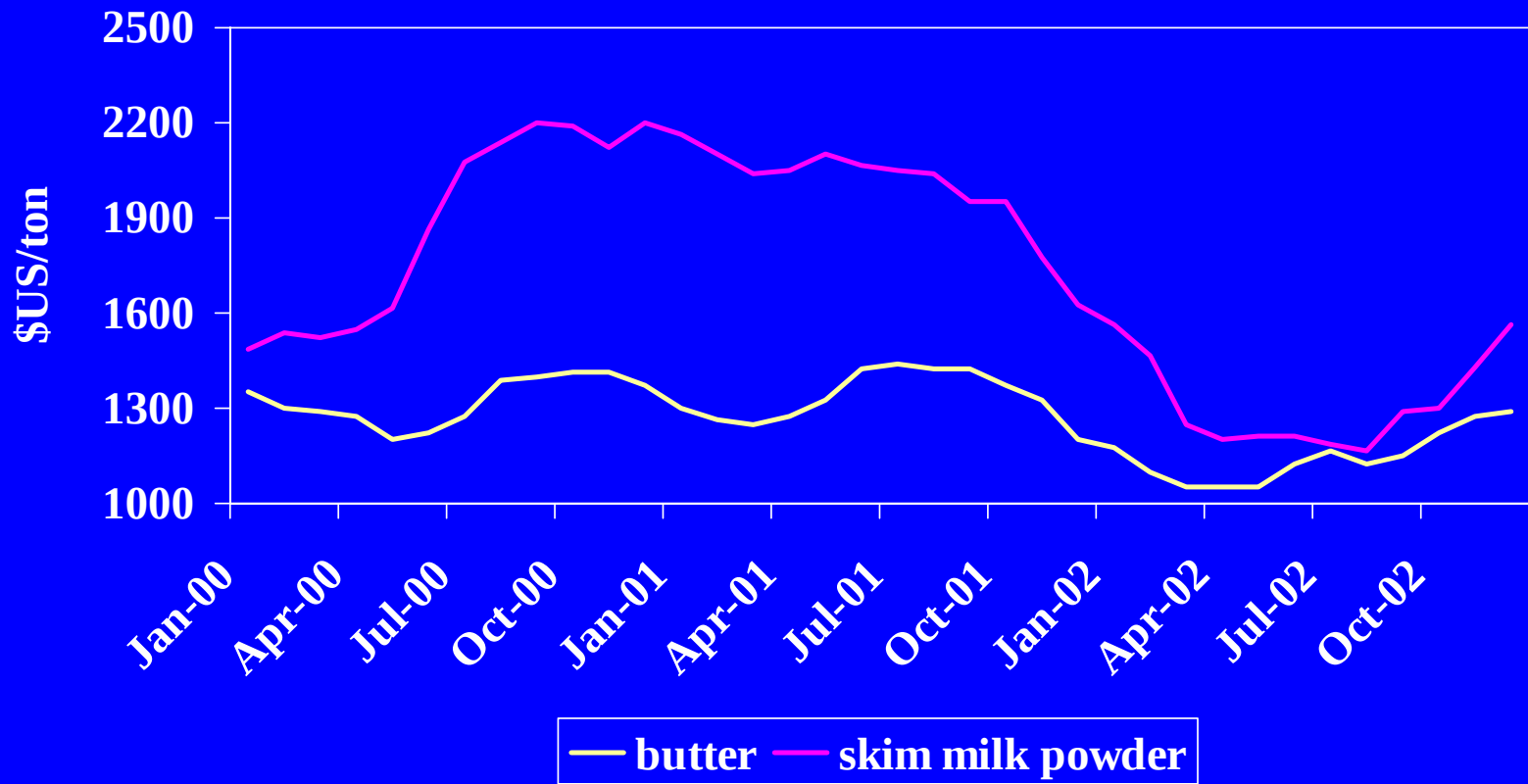
Milk Production

2002/03: 170.7 bil. lbs.
+ 1 percent



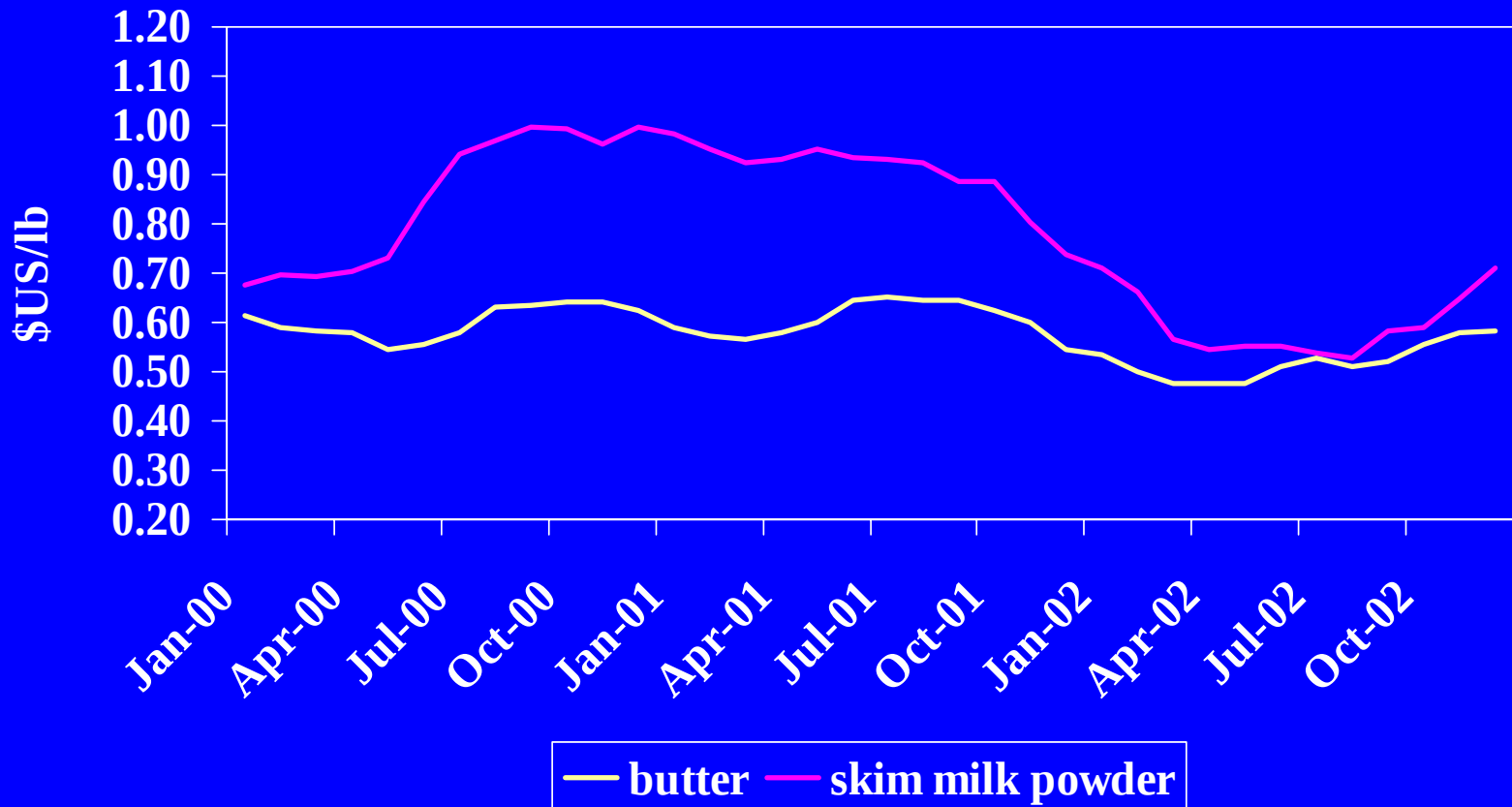
International Dairy Prices

FOB Northern Europe, \$/Ton



International Dairy Prices

FOB Northern Europe, \$/pound



Dairy Trade Conditions

- Weaker Dollar against Euro and \$NZ
- Australia – drought, milk production down
- New Zealand – drought, reduced growth
- Lower U.S. butter, cheese, and NDM prices
- Reduced incentives to import into US
- Possible US exports of NDM
 - Mexico, Central America

Dairy Export Incentive Program: DEIP

Allocated in 2002/03

- NDM 42,626 MT
- Cheese 1,894 MT
- Butterfat 13,186 MT

Limits under WTO

- 68,201 MT
- 3,030 MT
- 21,097 MT

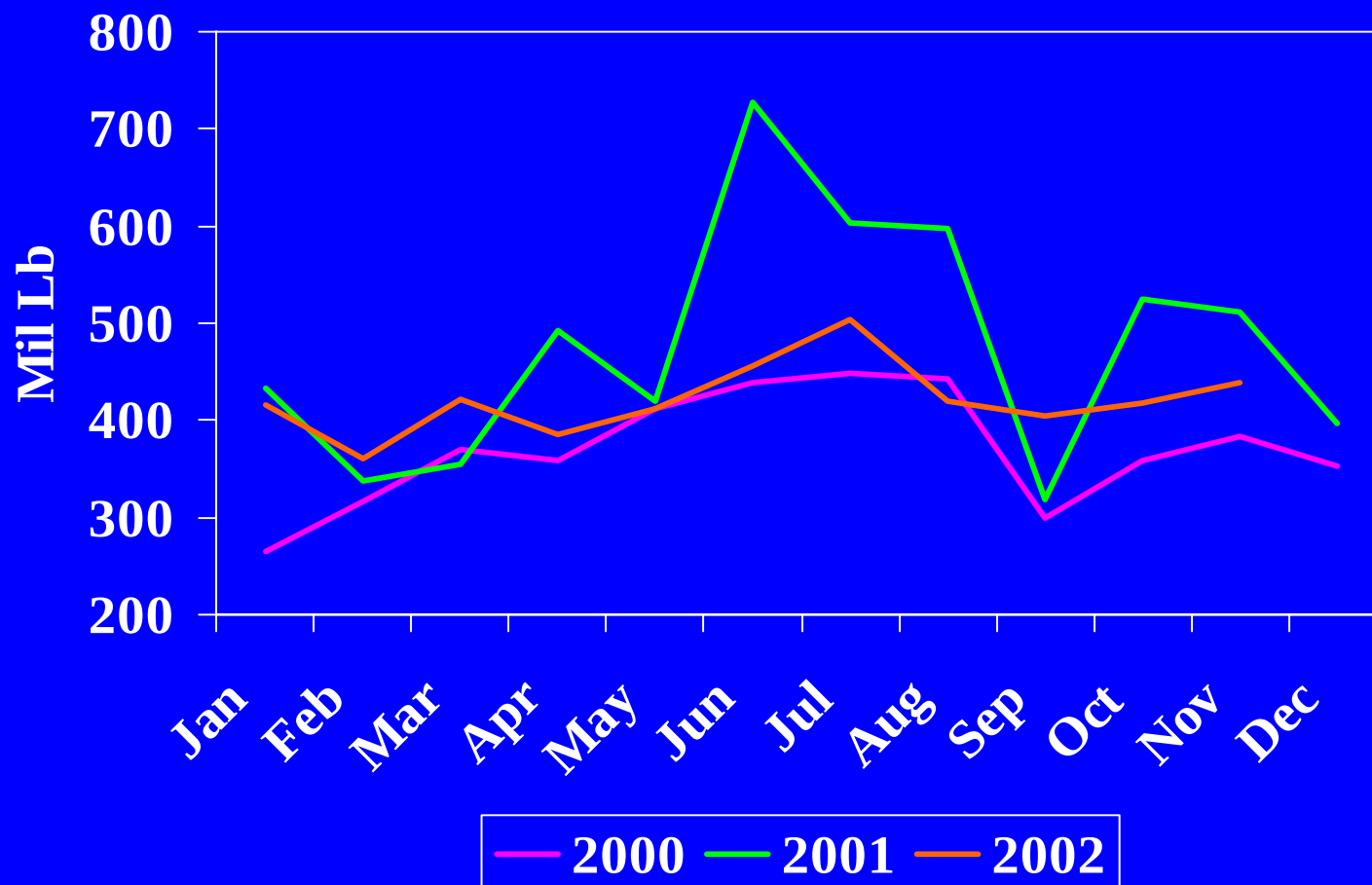
First and second NDM and cheese allocations used up by Nov. 2002.

Remaining allocations announced by June 30, 2003.

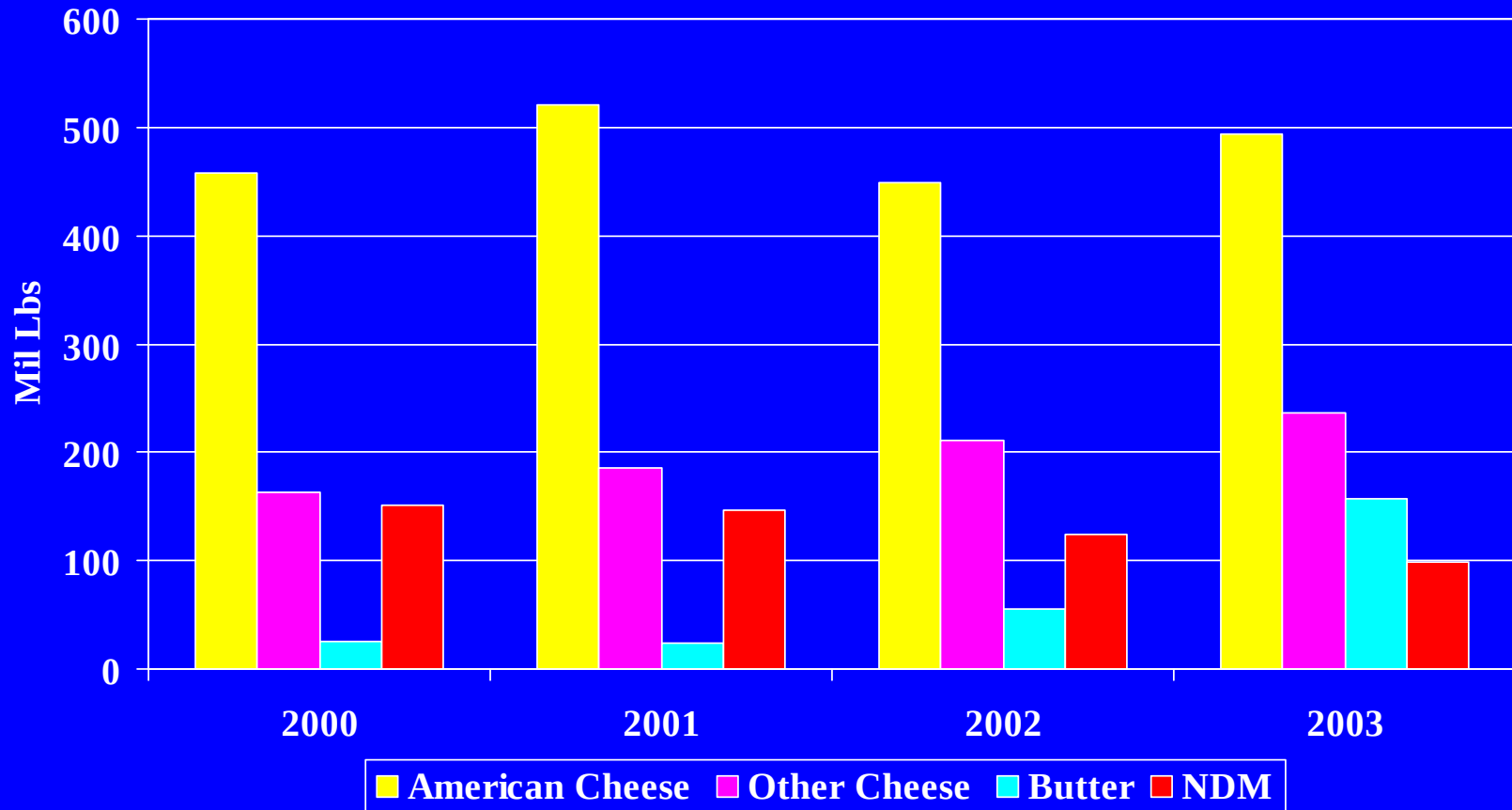
Imports of Milk Equivalent, Milkfat Basis

2002/03: 5.0 bil. lbs.

- 0.4 percent



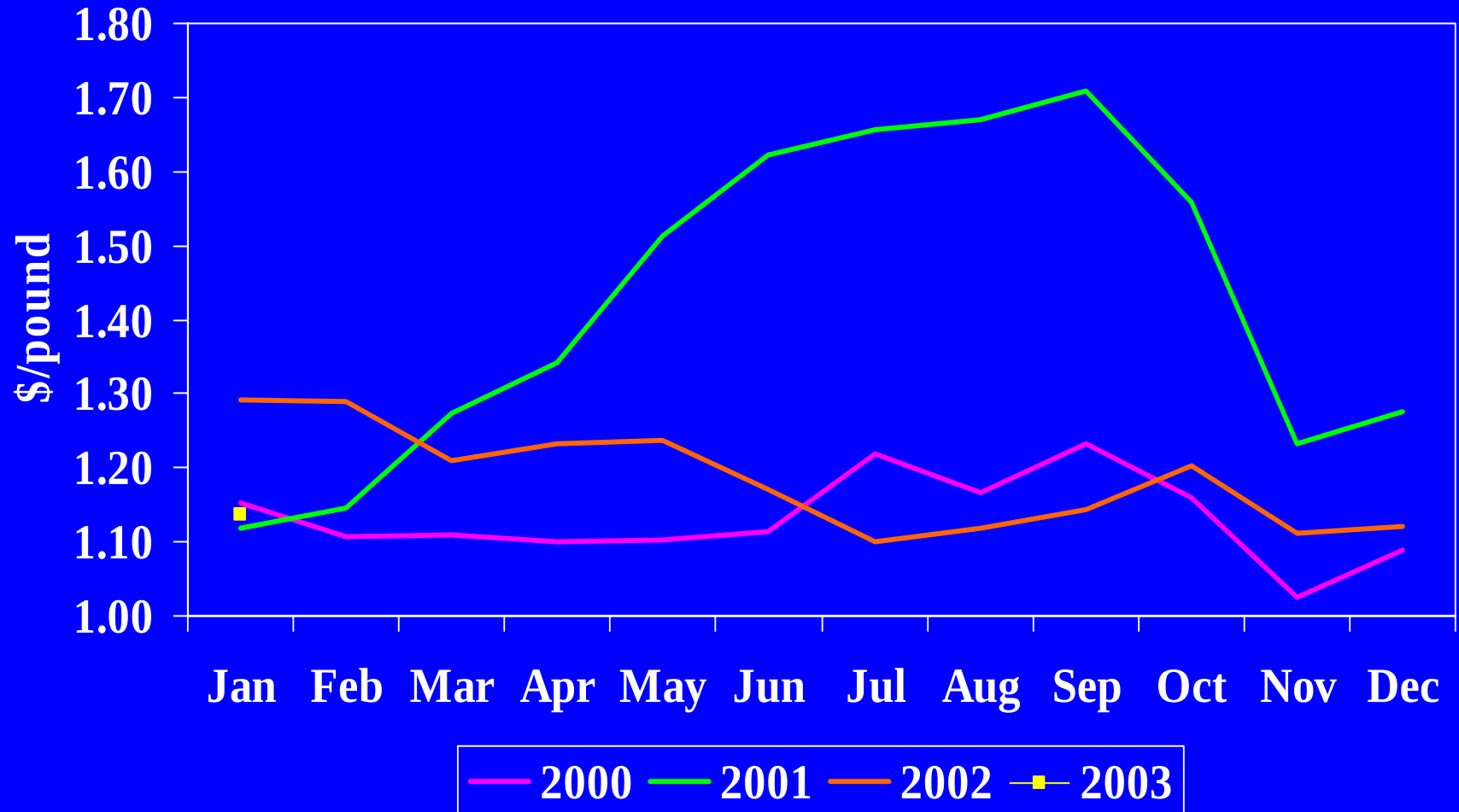
Commercial Stocks, Beginning



Cheese

- Production CY 2002
 - 8.4 billion pounds, 3.8 percent increase
- CCC
 - 8 million pounds since October 1, 2002
 - 25 million pounds net removals 2002/03
- Price
 - Peak in September 2001 \$1.70
 - Hovering above support around \$1.15

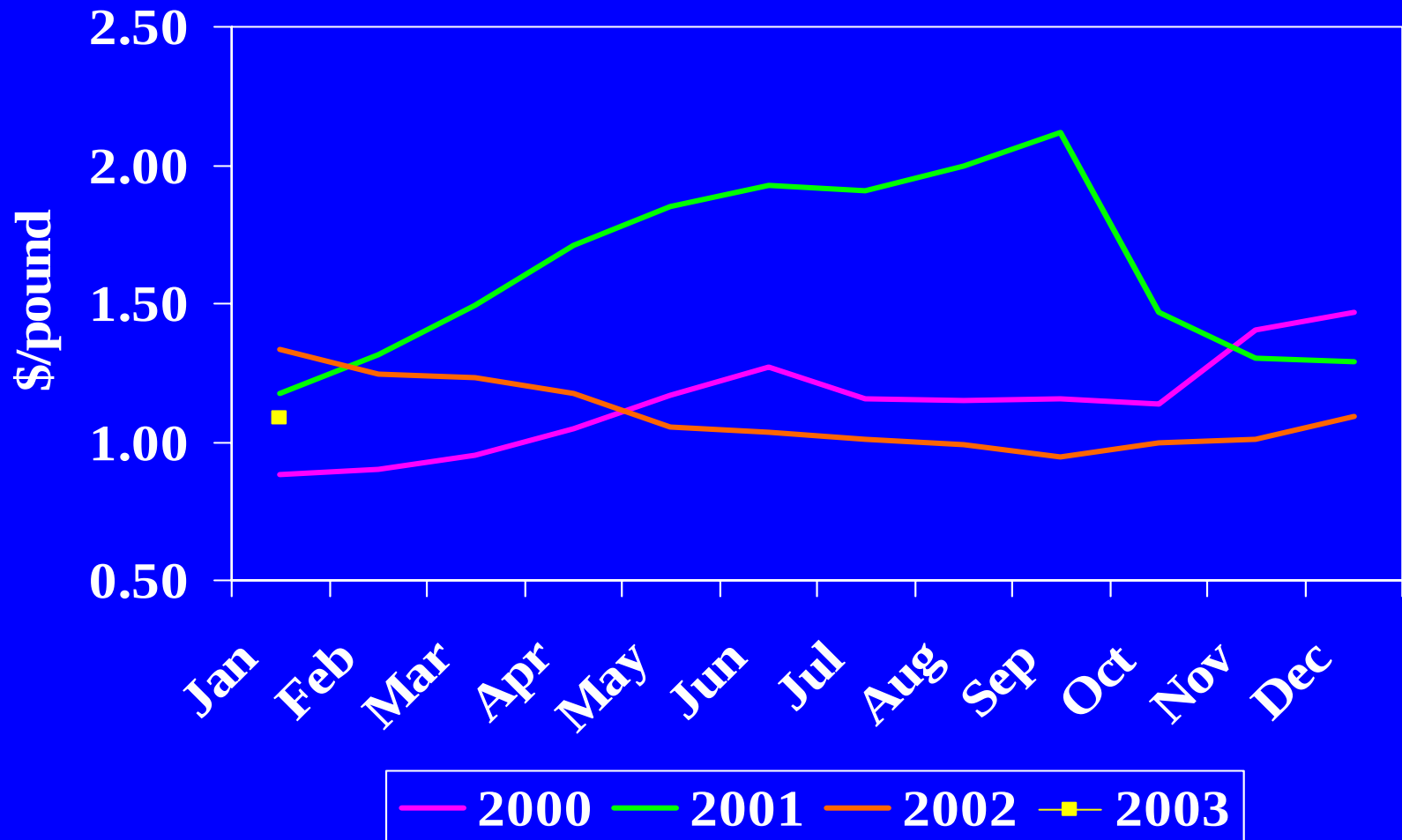
Cheese Price



Butter

- Production CY 2002
 - 1.4 billion pounds, 9.9 percent increase
- CCC
 - 1 million pounds since October 1, 2002
 - 35 million pounds net removals 2002/03
- Price
 - Peak in September 2001 \$2.10
 - Hovering above support around \$1.05

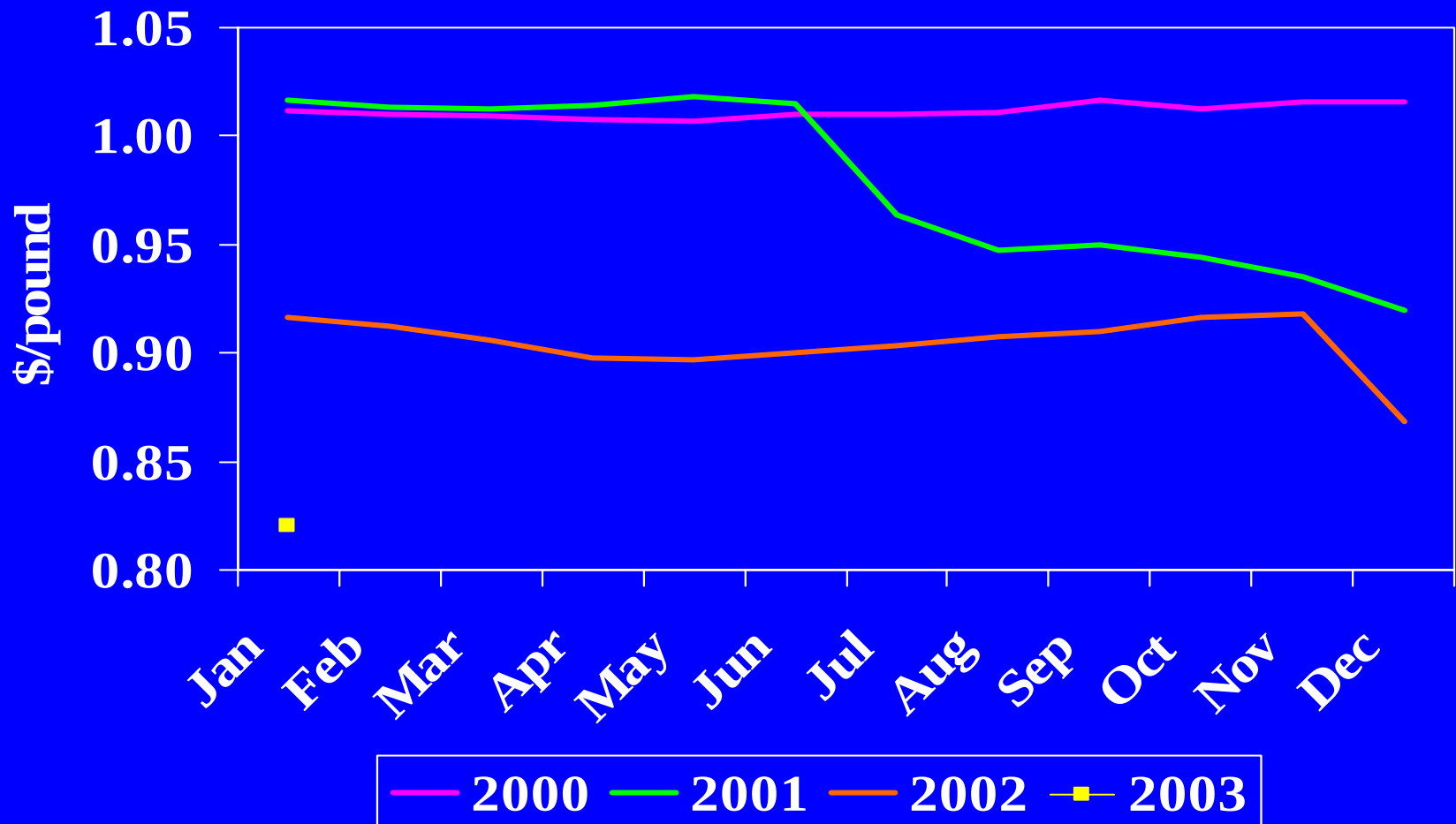
Butter Price



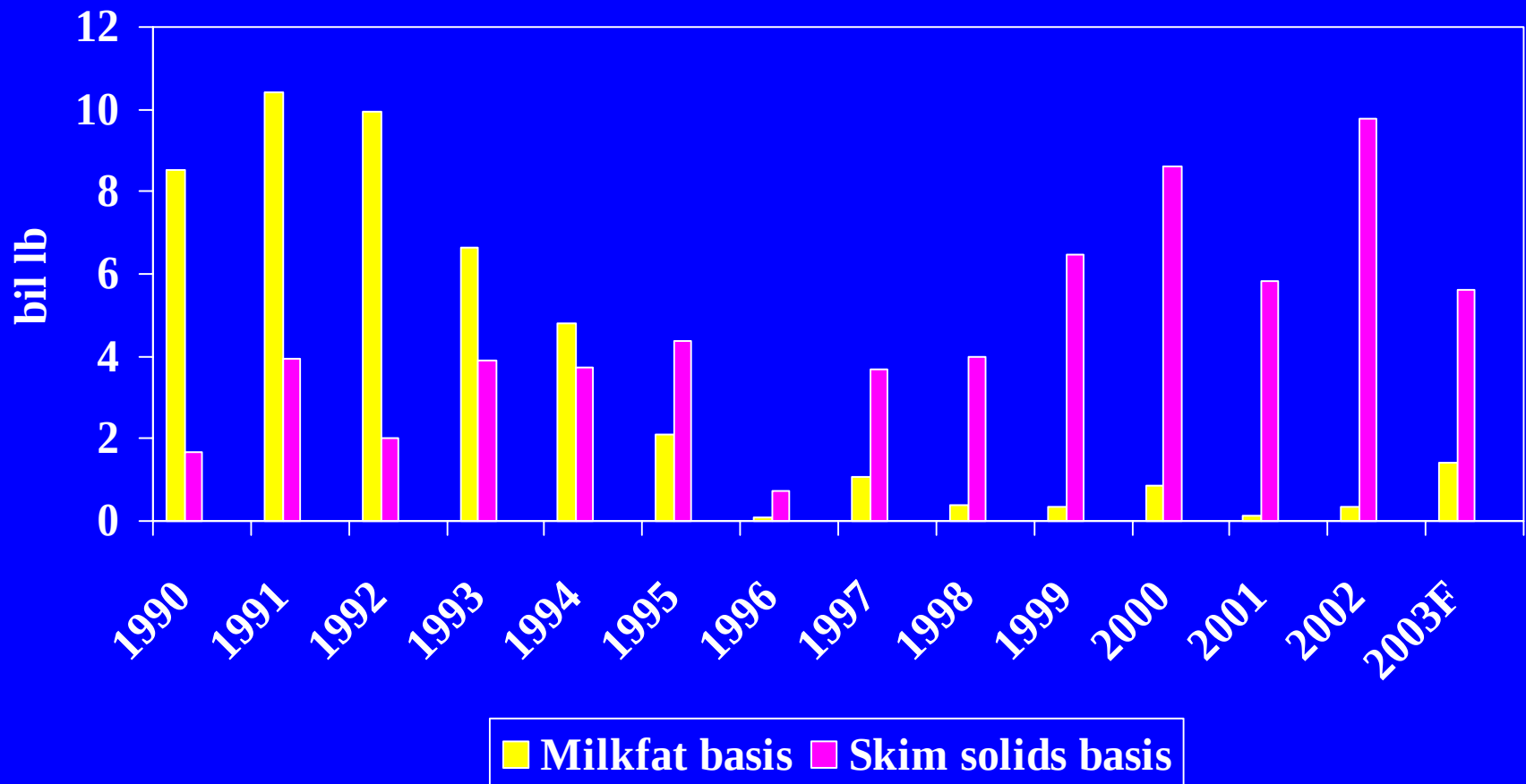
Nonfat Dry Milk

- Production CY 2002
 - 1.5 billion pounds, 6.9 percent increase
- CCC
 - 208 million pounds since October 1, 2002
 - 420 million pounds net removals 2002/03
 - down 35 percent
- Price
 - up to November 2002, \$0.90 per pound
 - Hovering just above support, \$0.80

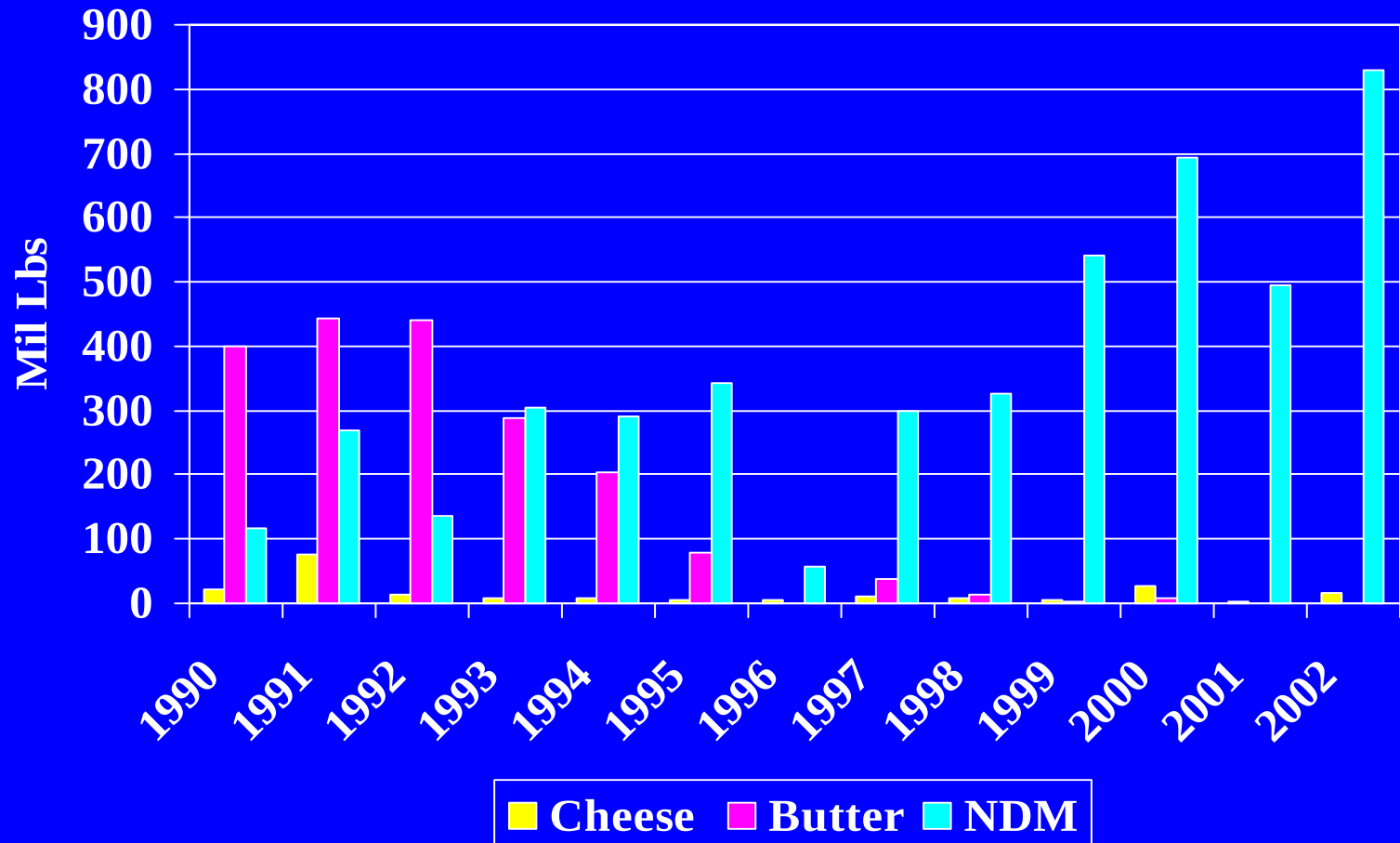
Nonfat Dry Milk Price



CCC net removals



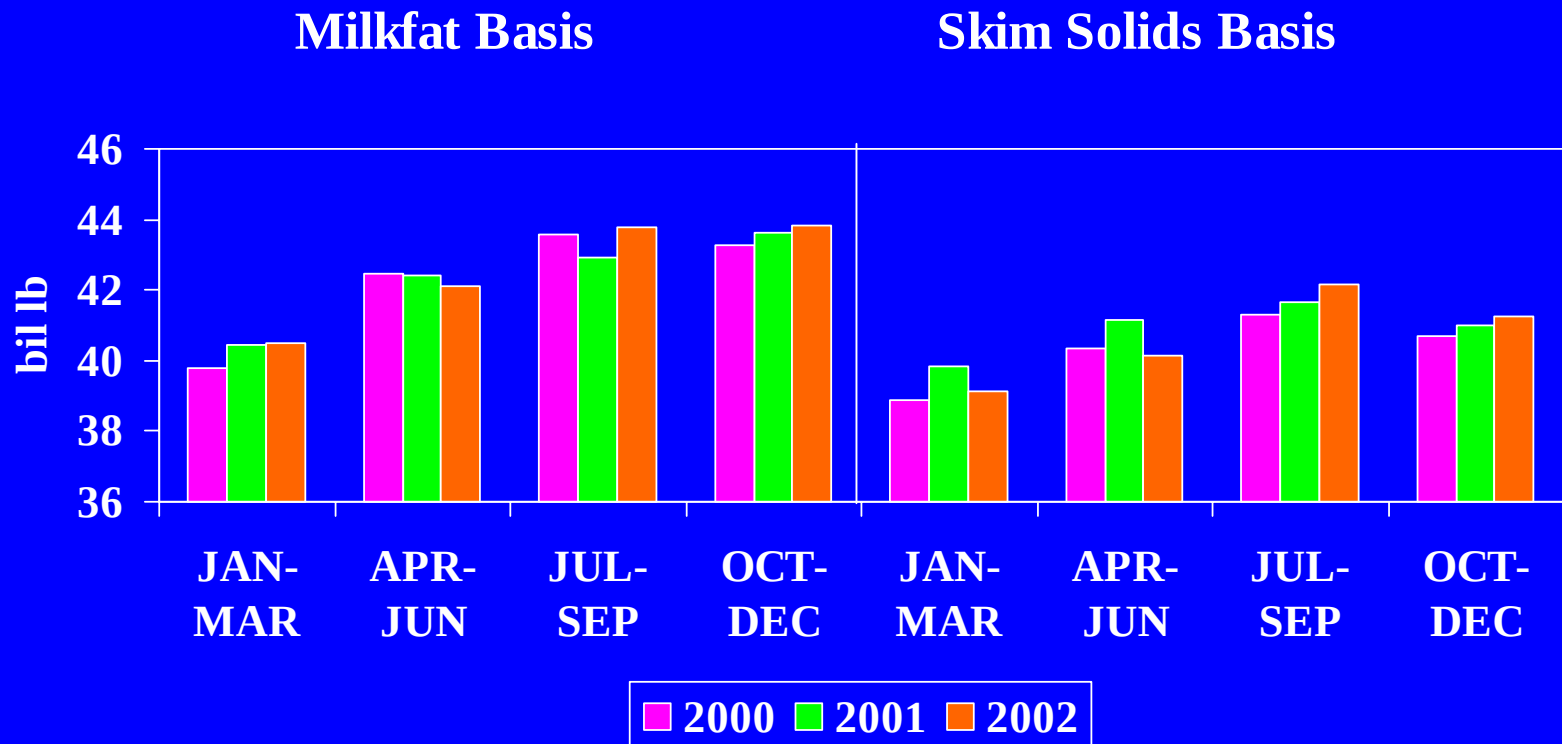
CCC Net Removals by Product



Commercial use, milk equiv.

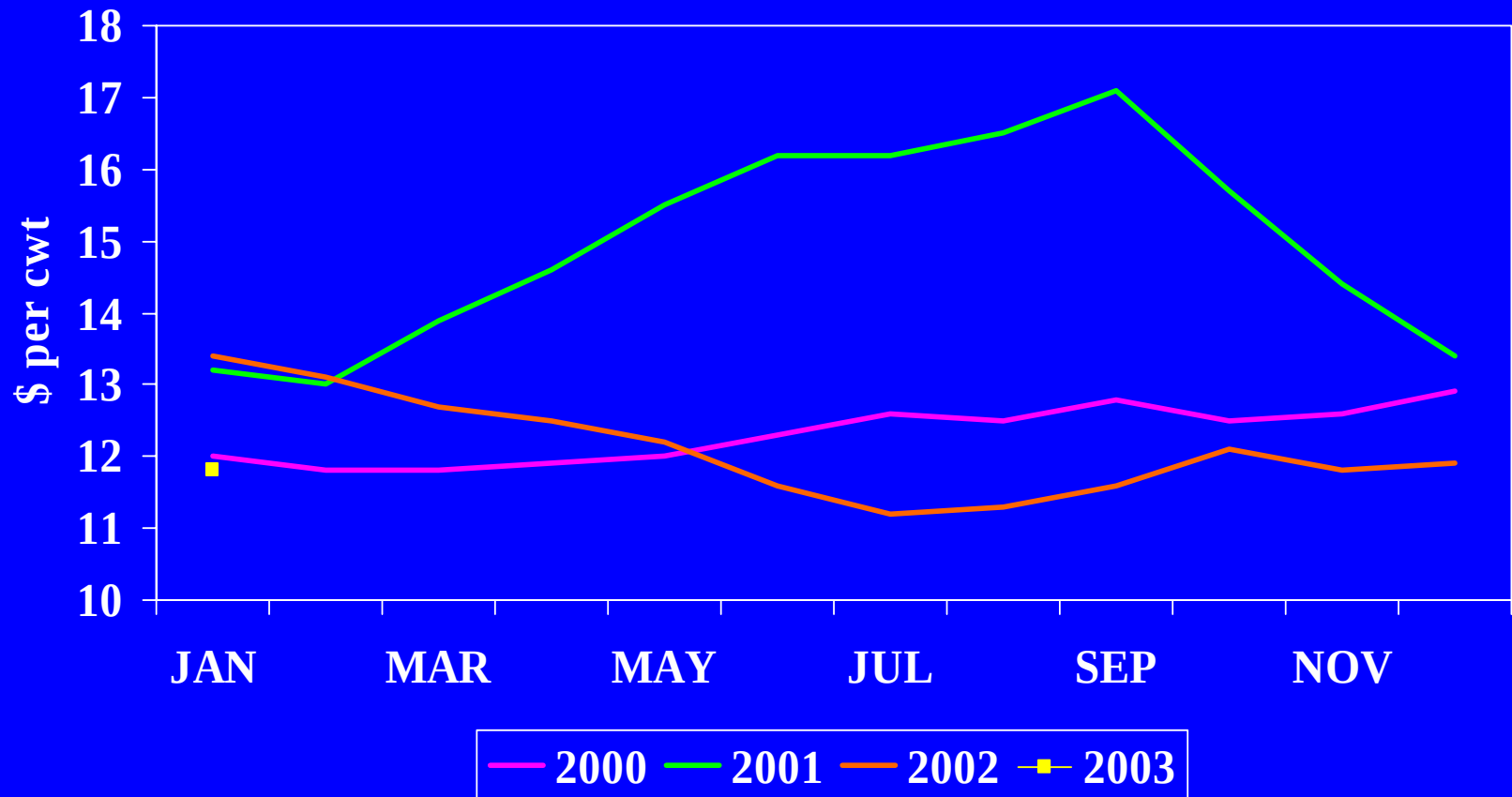
2002/03: 174.1 bil. lbs.

+ 2.4 percent

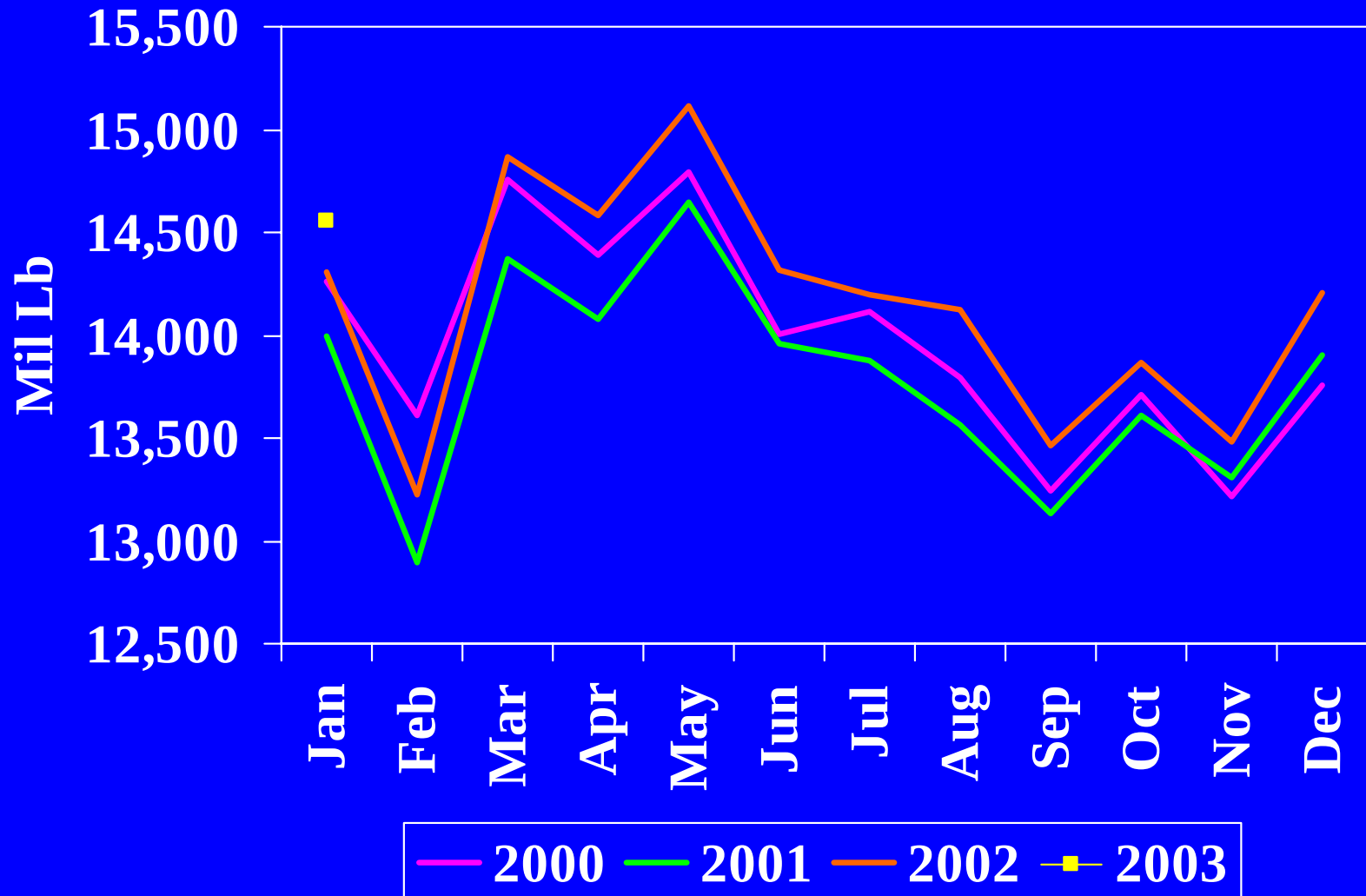


All milk price

2002/03: \$11.20 - \$11.70



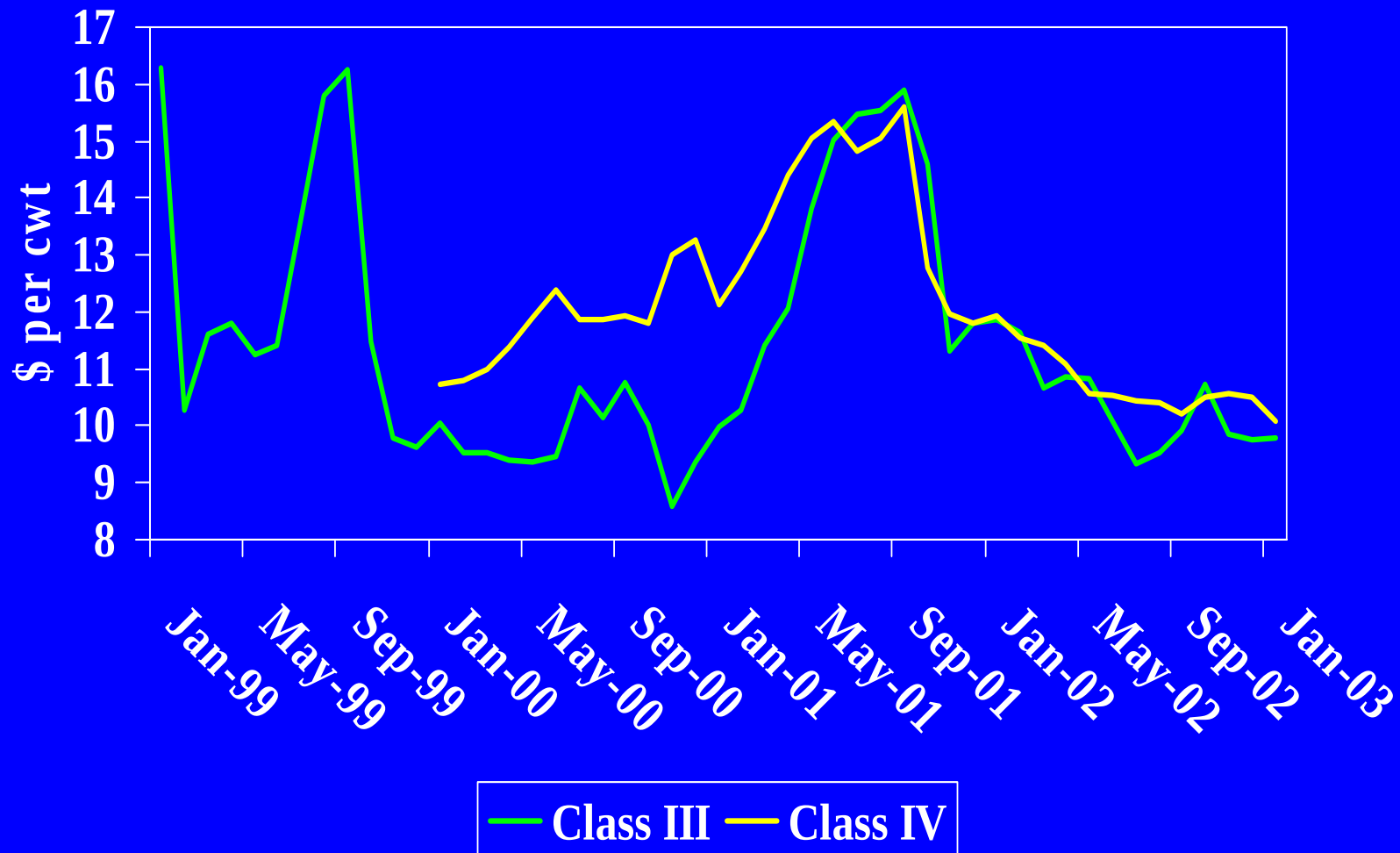
Milk Production



Class III and IV Milk Prices

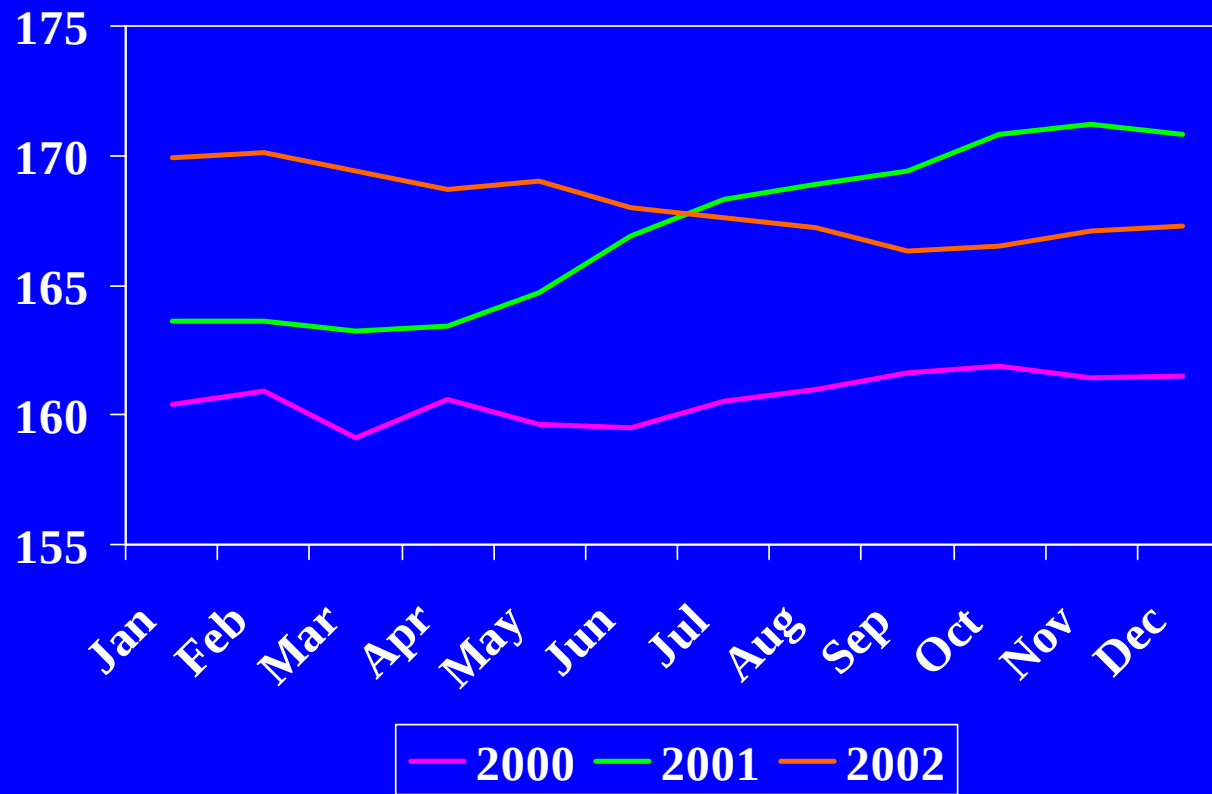
2002/03 CI III: \$9.70-\$10.20

2002/03 CI IV: \$9.90-\$10.60



CPI, Dairy and Related Products

2002/03: 168.8



Key uncertainties: Domestic markets

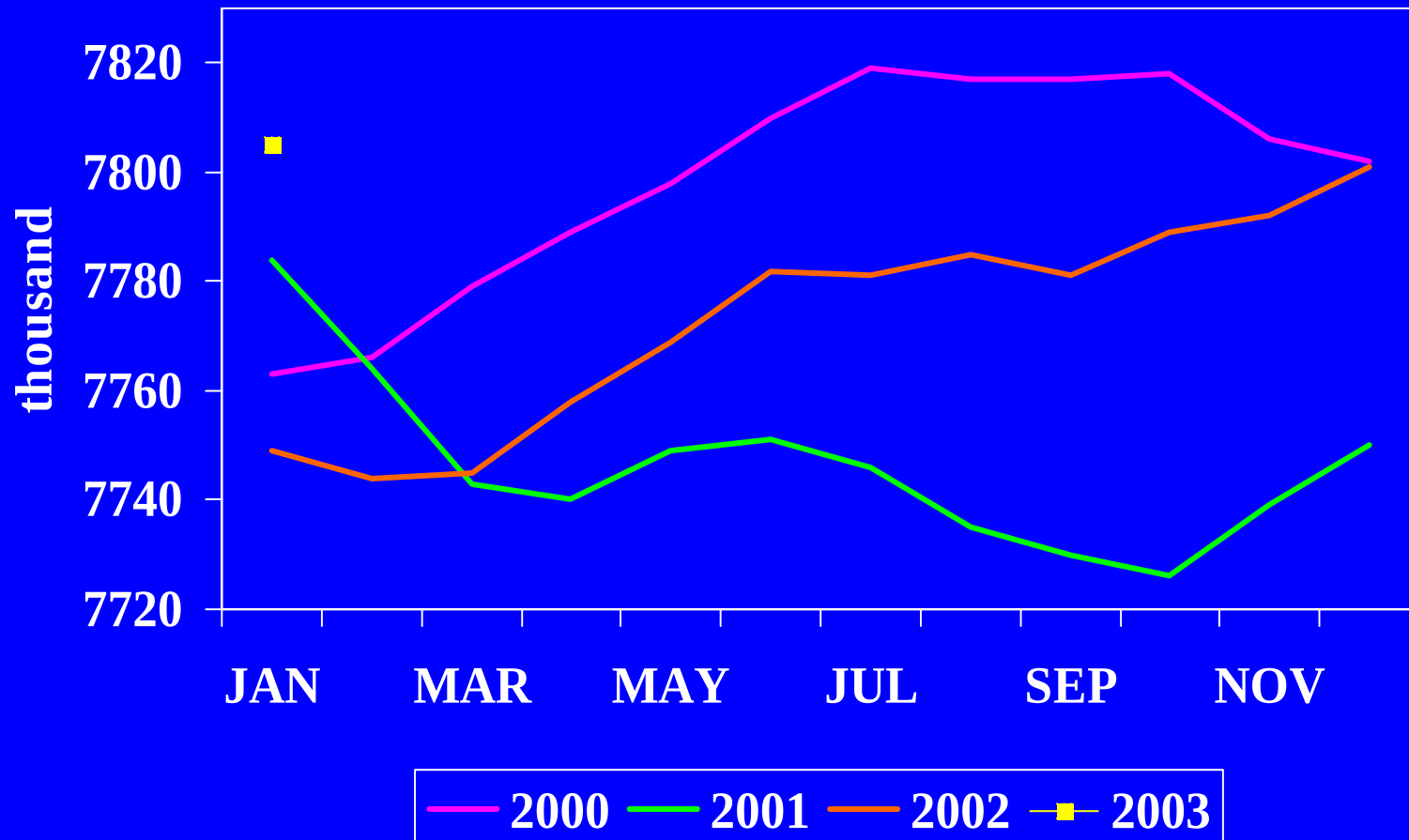
- Western alfalfa hay supplies
- Drought in Corn Belt and Plains
- Replacement heifer supply and cull rate
- Rate and steadiness of milk per cow growth
- Continued economic recovery
- Events in the Middle East

Key uncertainties: International issues

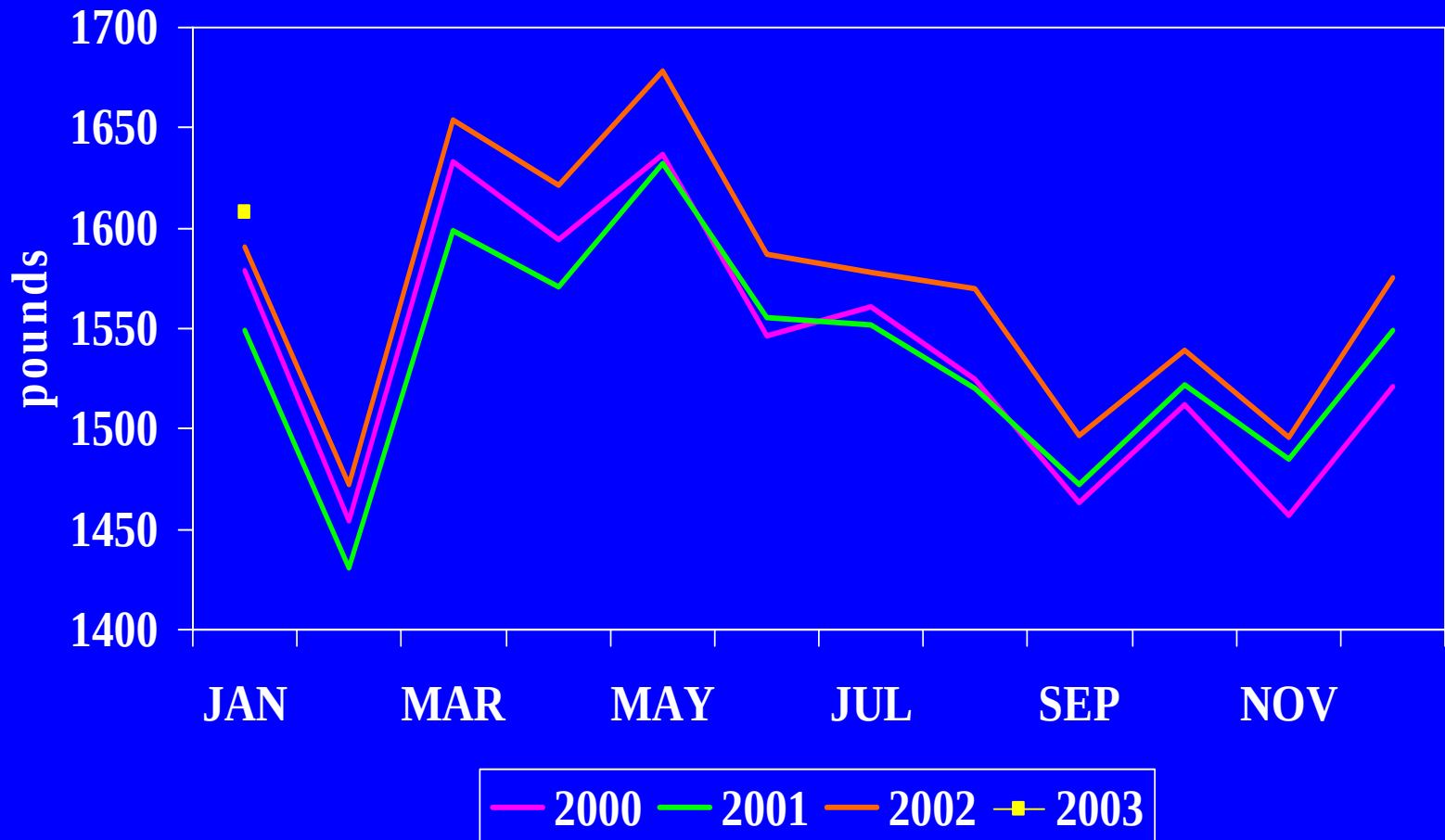
- U.S. Customs consideration of MPC
 - redefinition of MPC classification
- WTO and the Doha Agenda
 - US goals: subsidy reduction, increased market access
 - EU internal markets and policy
- Bilateral Free Trade Agreements
 - Australia
- Free Trade Area of the Americas (FTAA)
 - Argentina and Brazil
- U.S.-Central America Trade Agreement (CAFTA)

The End

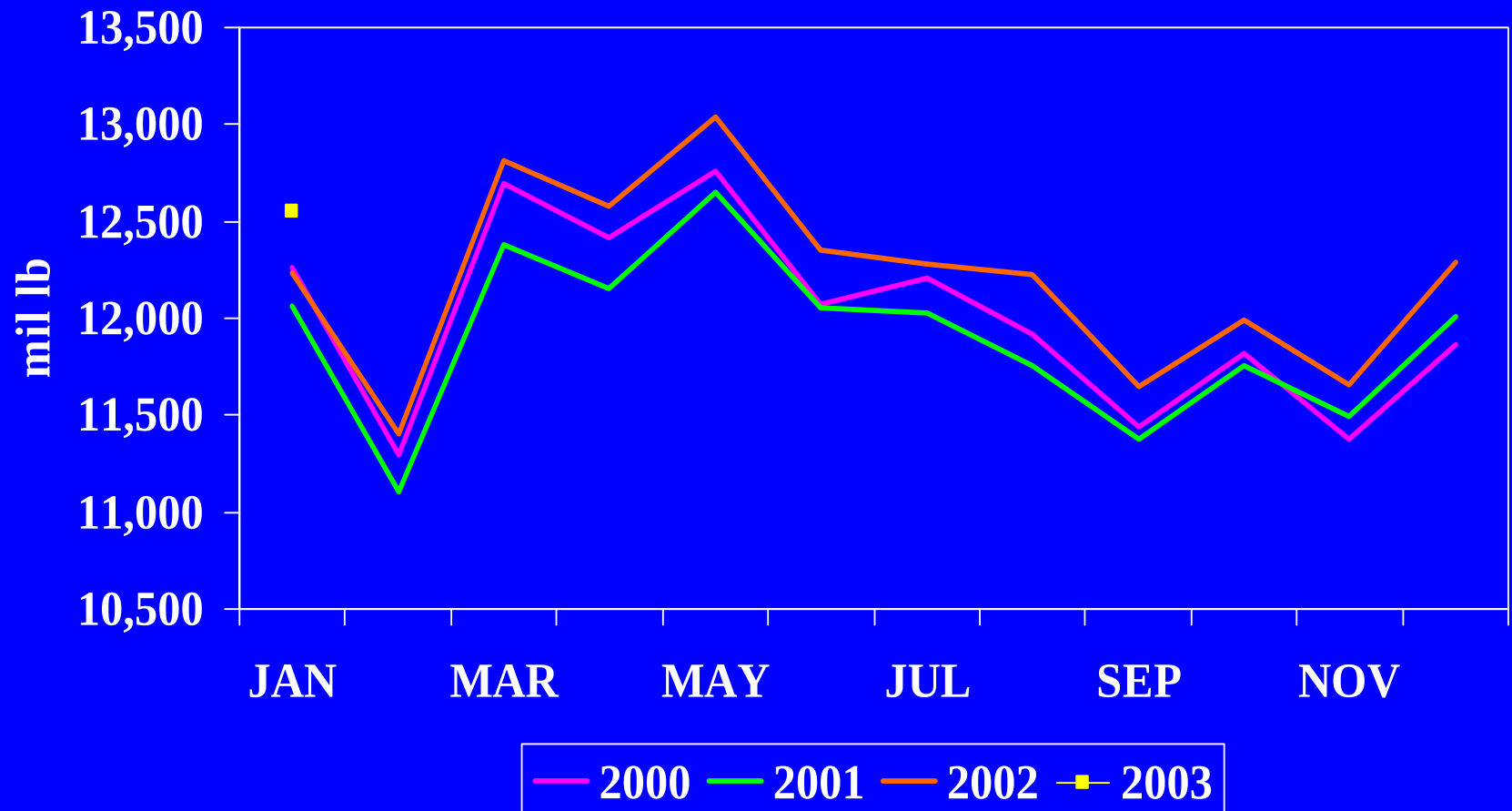
Milk cow numbers, 20 States



Milk per cow, 20 States



Milk production, 20 States



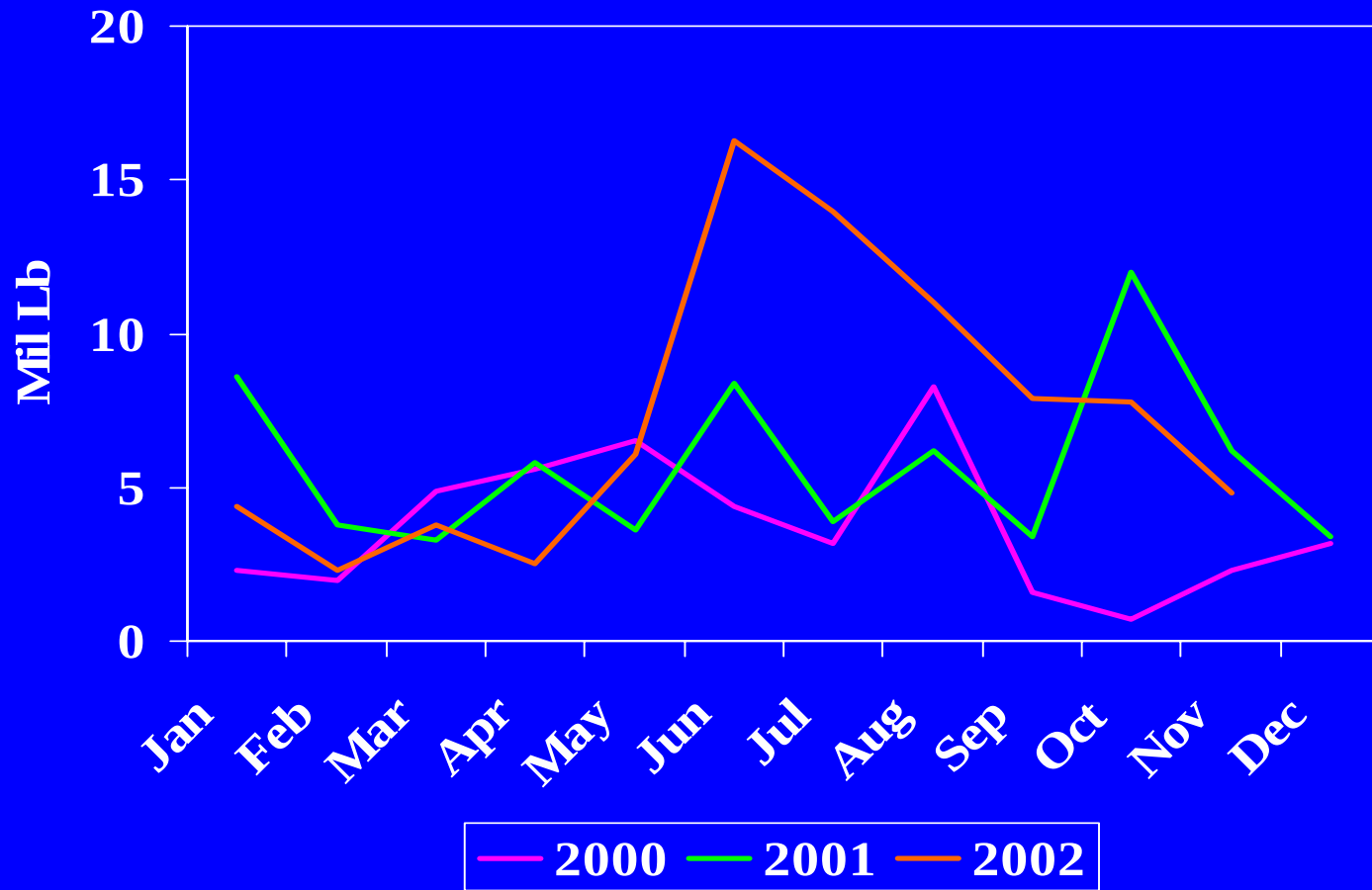
Dairy Trade Programs

- Uruguay Round Agreement on Agriculture
- Dairy Export Incentive Program (DEIP)
 - 2001-2002 (2000 forward)
 - Nonfat dry milk - 68,201 metric tons
 - Butterfat - 21,097 metric tons
 - Cheese - 3,030 metric tons
- Tariff Rate-Quota System for Licensed Imports
- MPCs and caseinates low duty – \$0.0037 per kilogram
- Casein – zero tariff

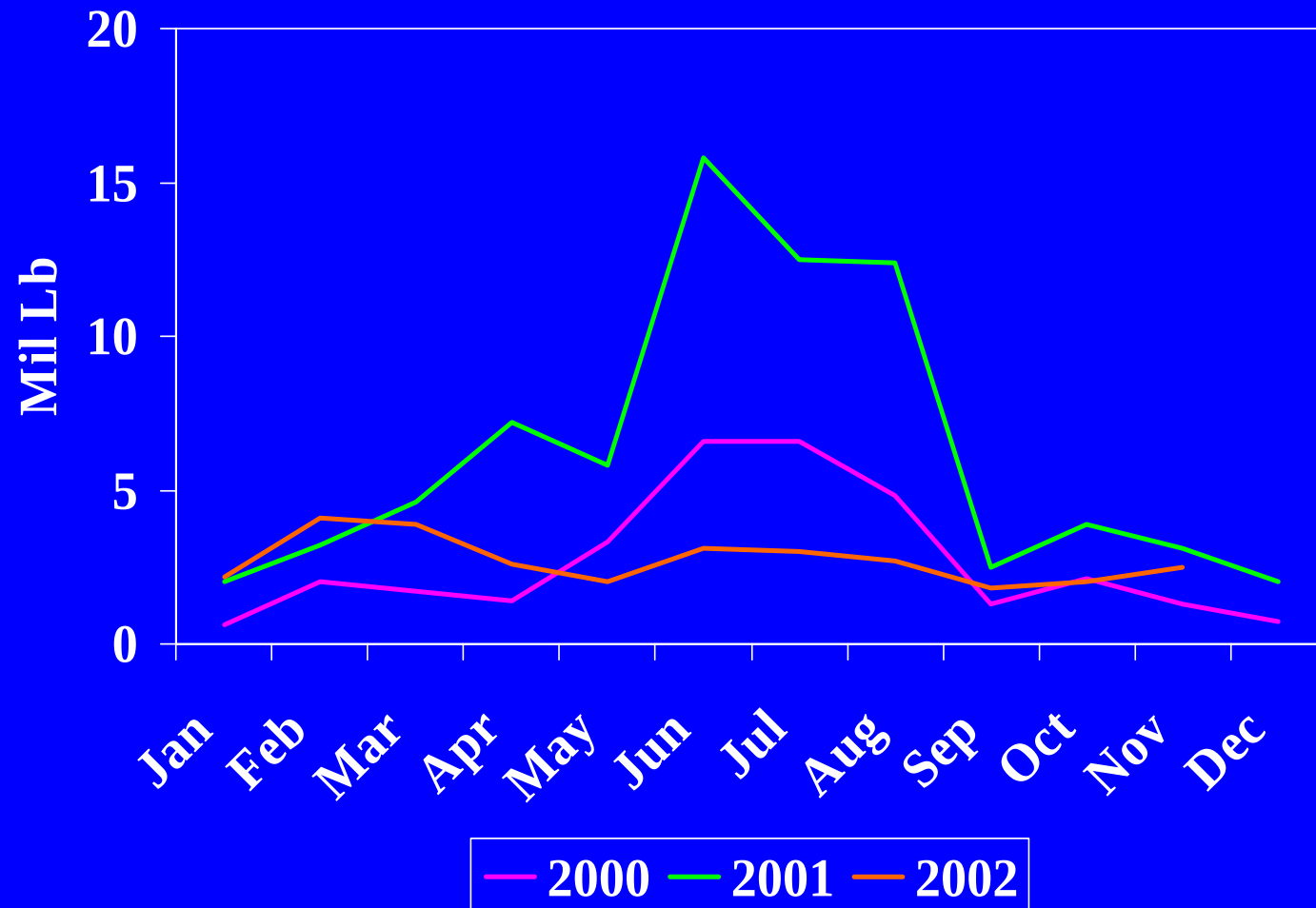
Macroeconomic Conditions

- Weak Income Growth
 - US, Europe, Japan
- Recovering Income Growth
 - Mexico, Brazil, Argentina
- Stronger Income Growth
 - China, Eastern Europe, Former Soviet Union
- Weaker Dollar

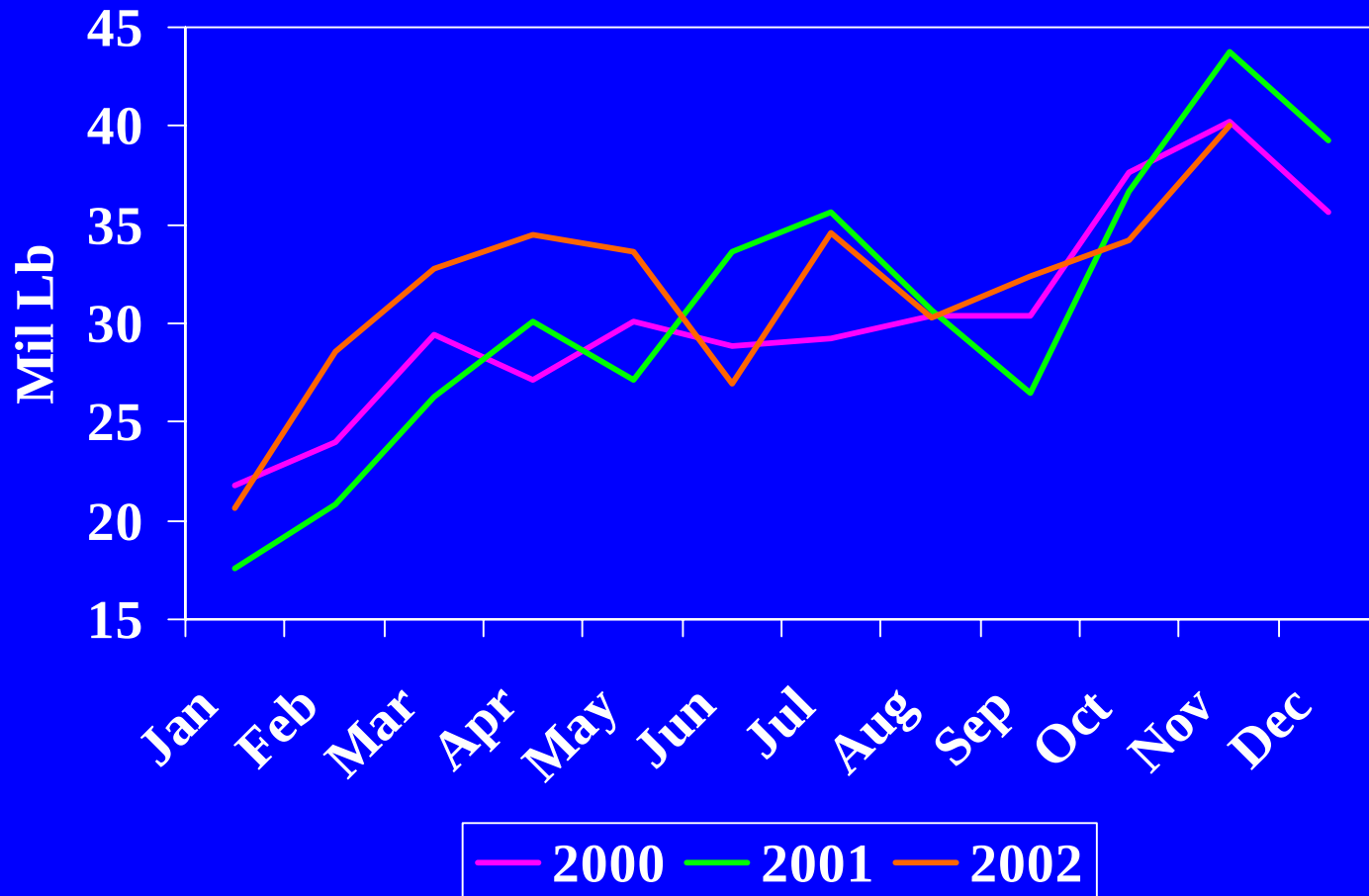
American Cheese Imports



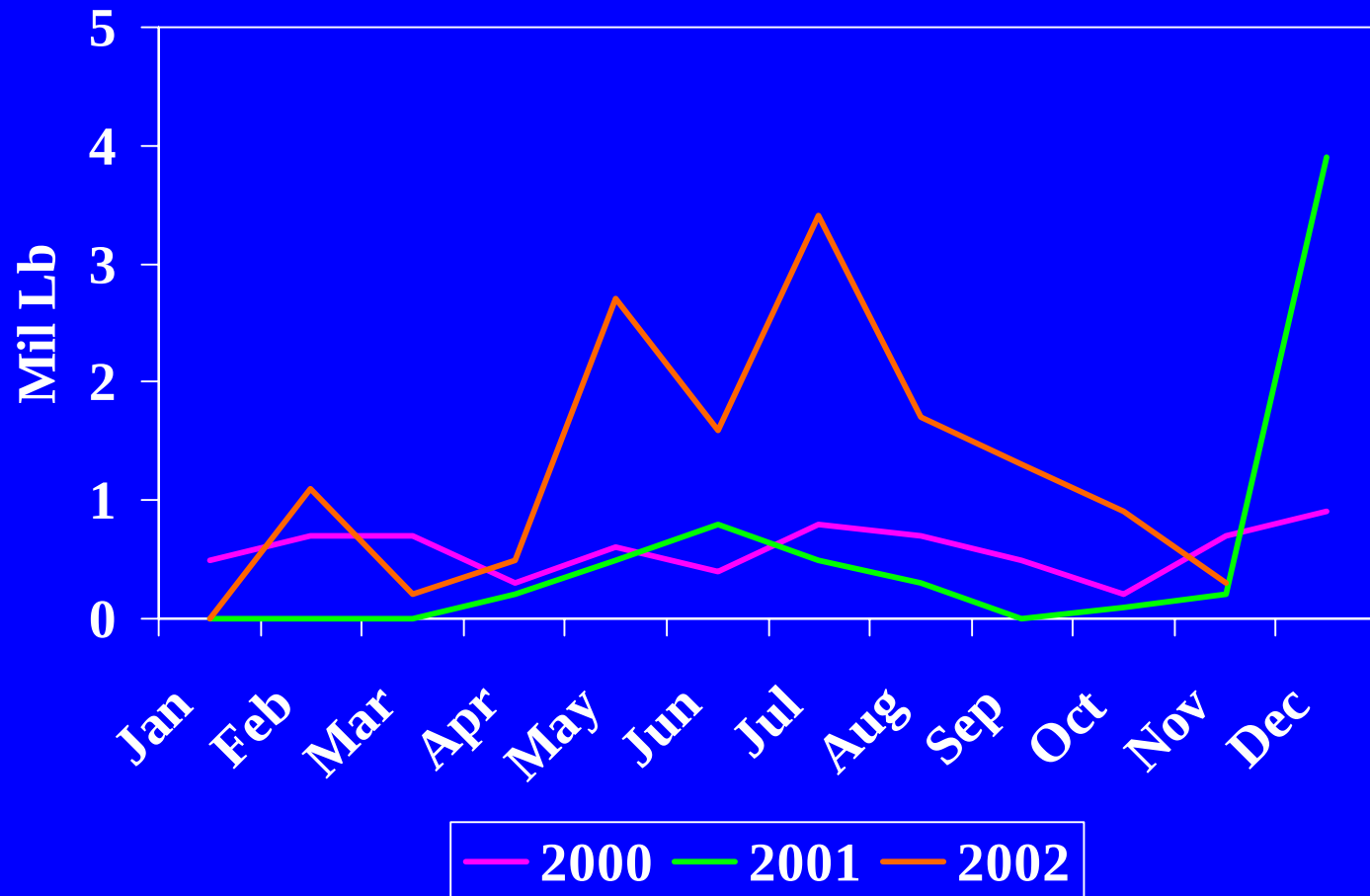
Butter Imports



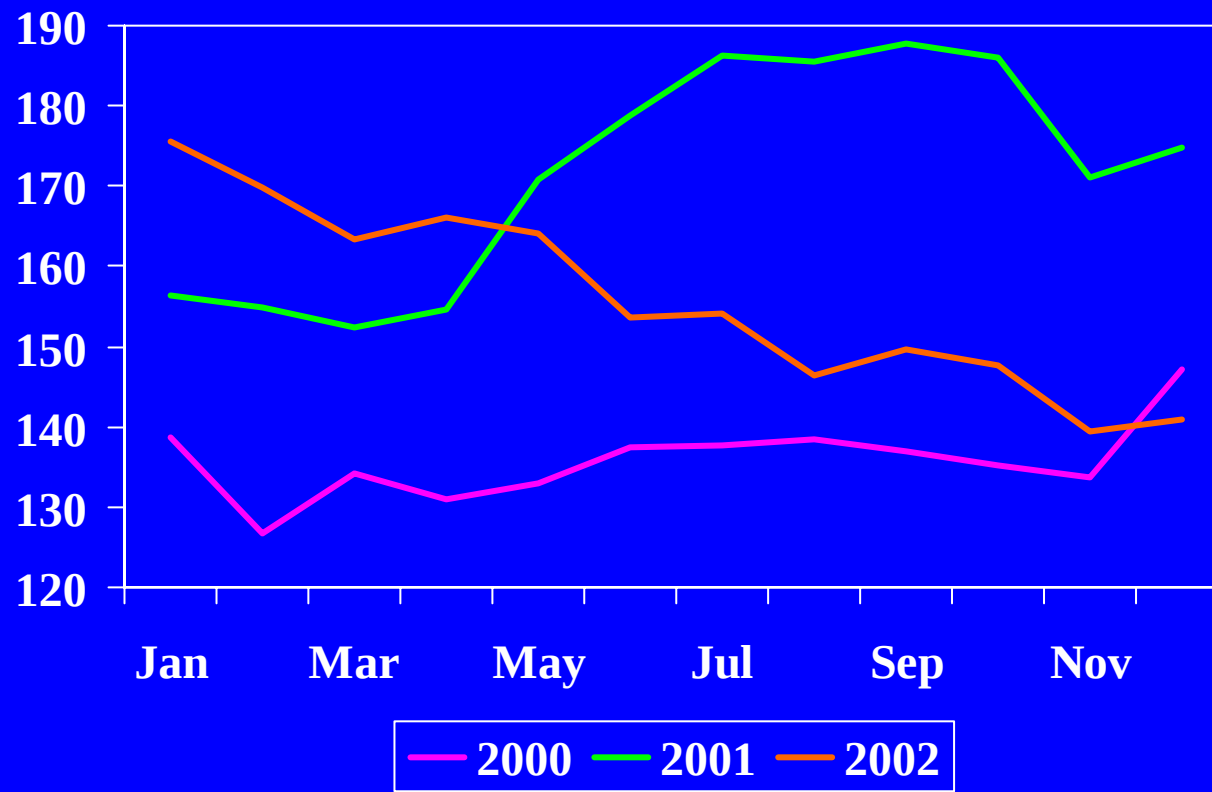
Imports, Other-Than-American Cheese



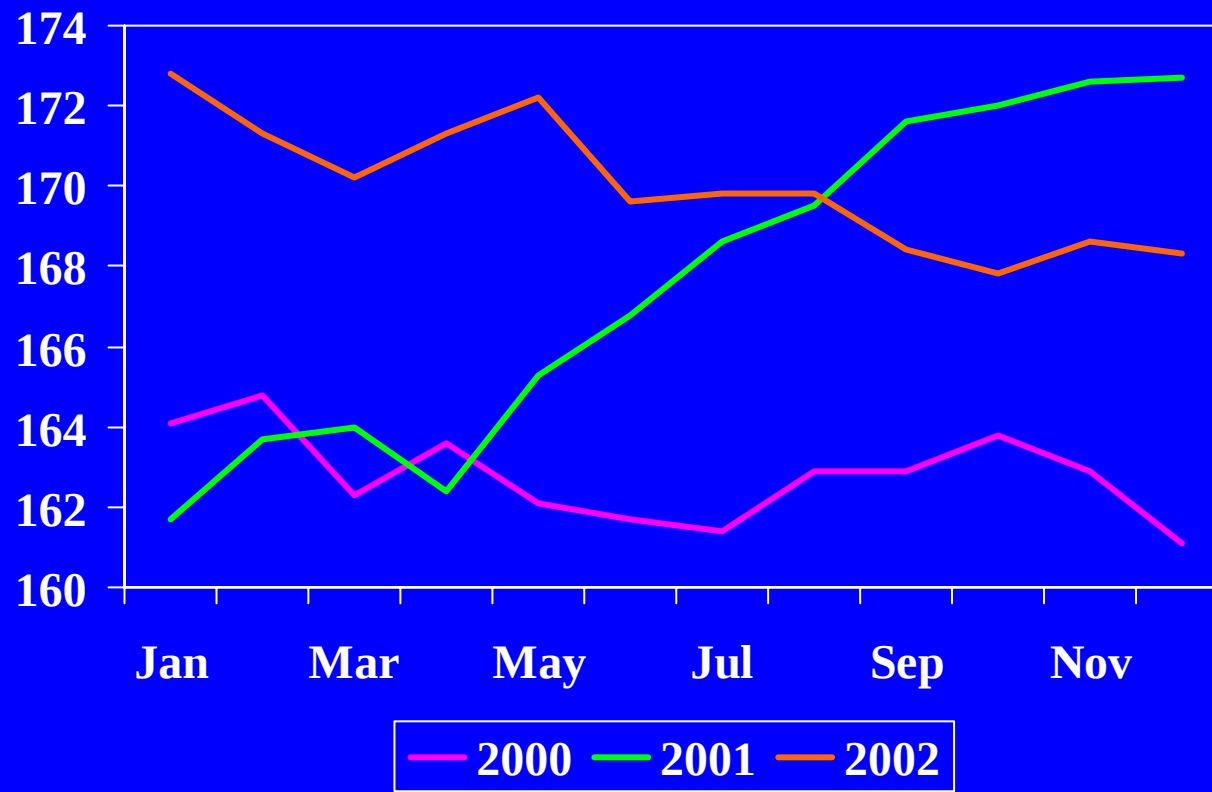
Imports of Nonfat Dry Milk



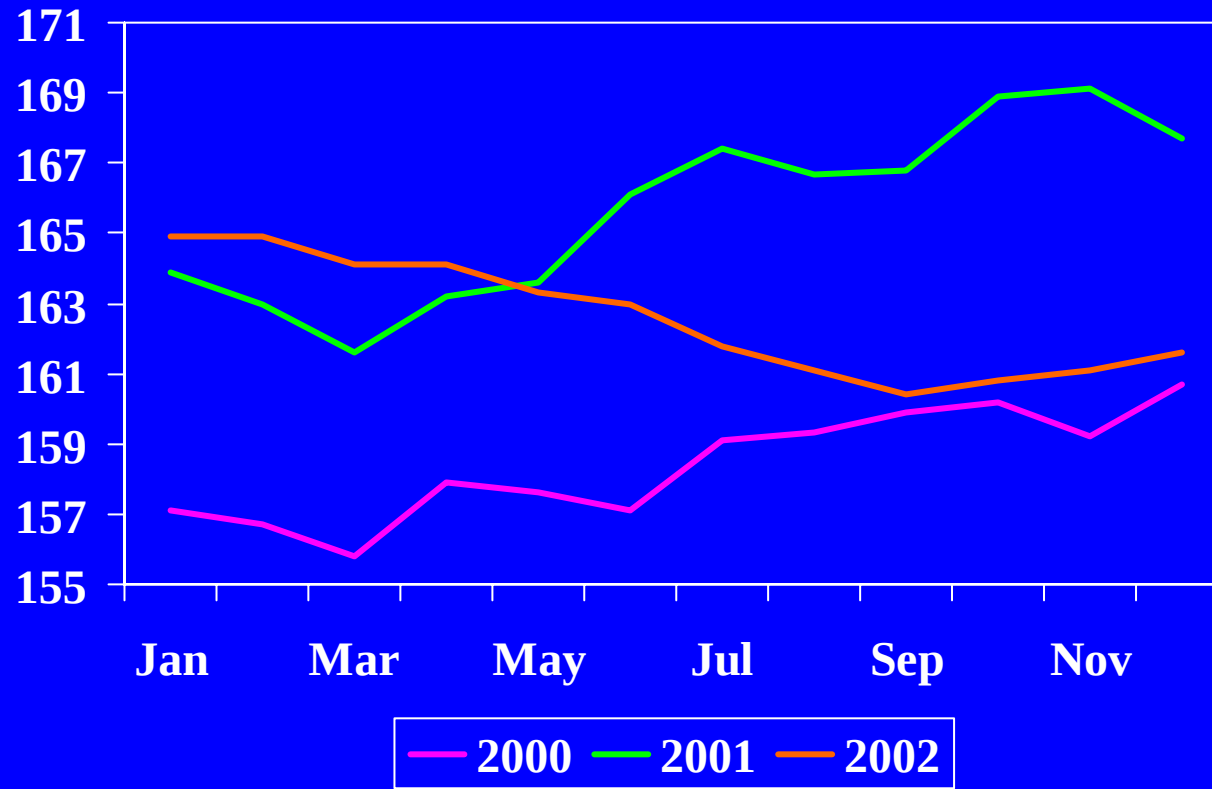
CPI, Butter



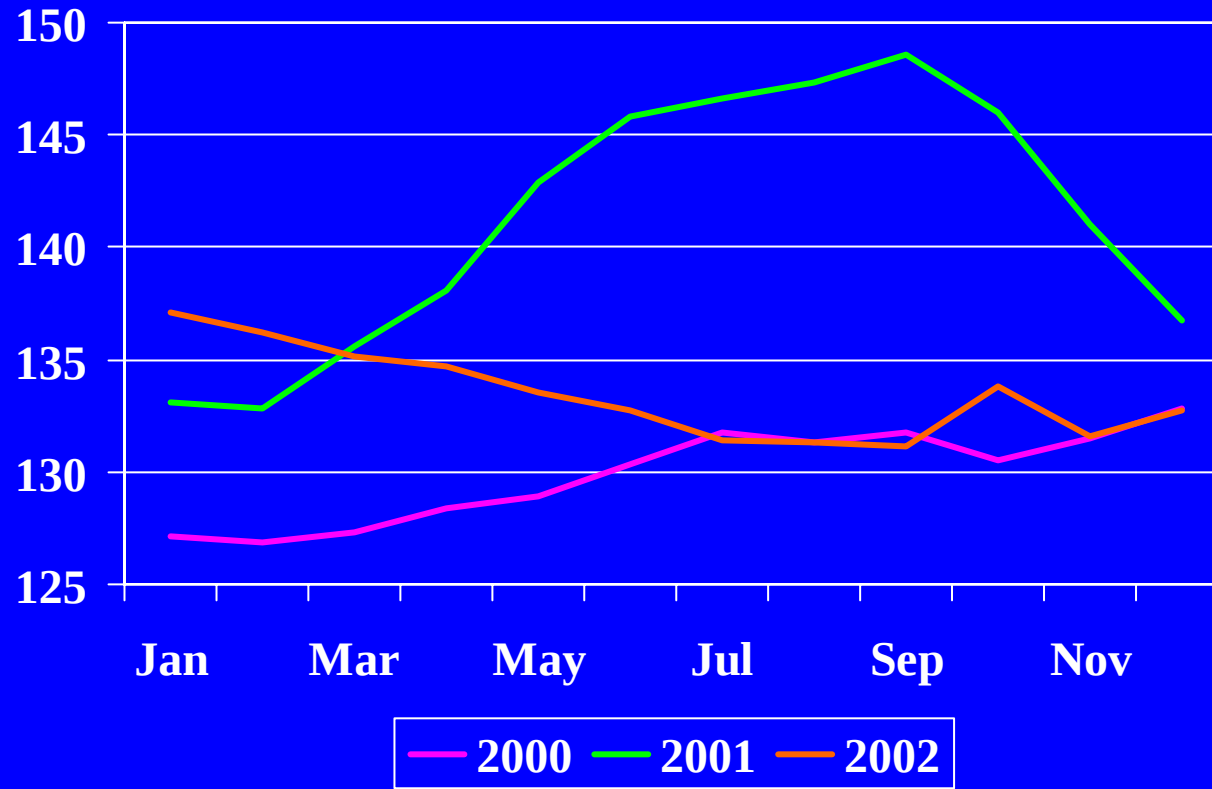
CPI, Cheese and Related Products



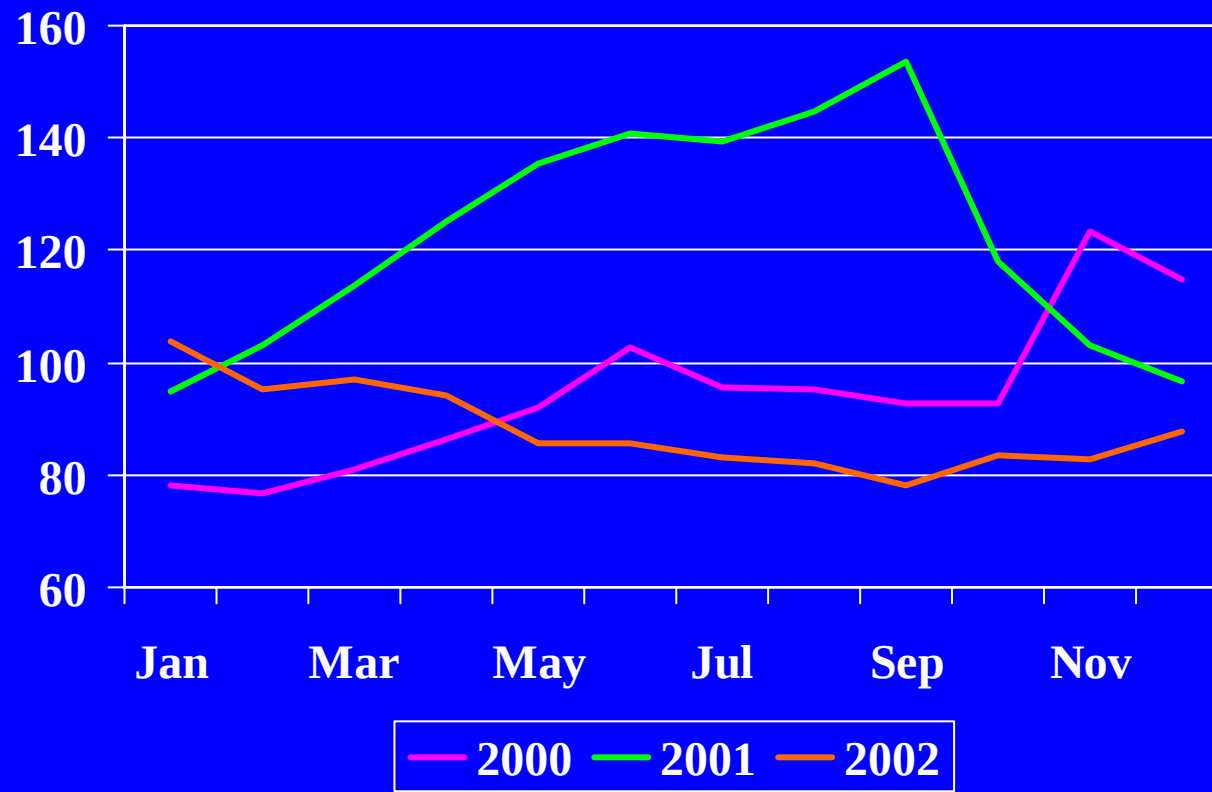
CPI, Fresh Milk and Cream



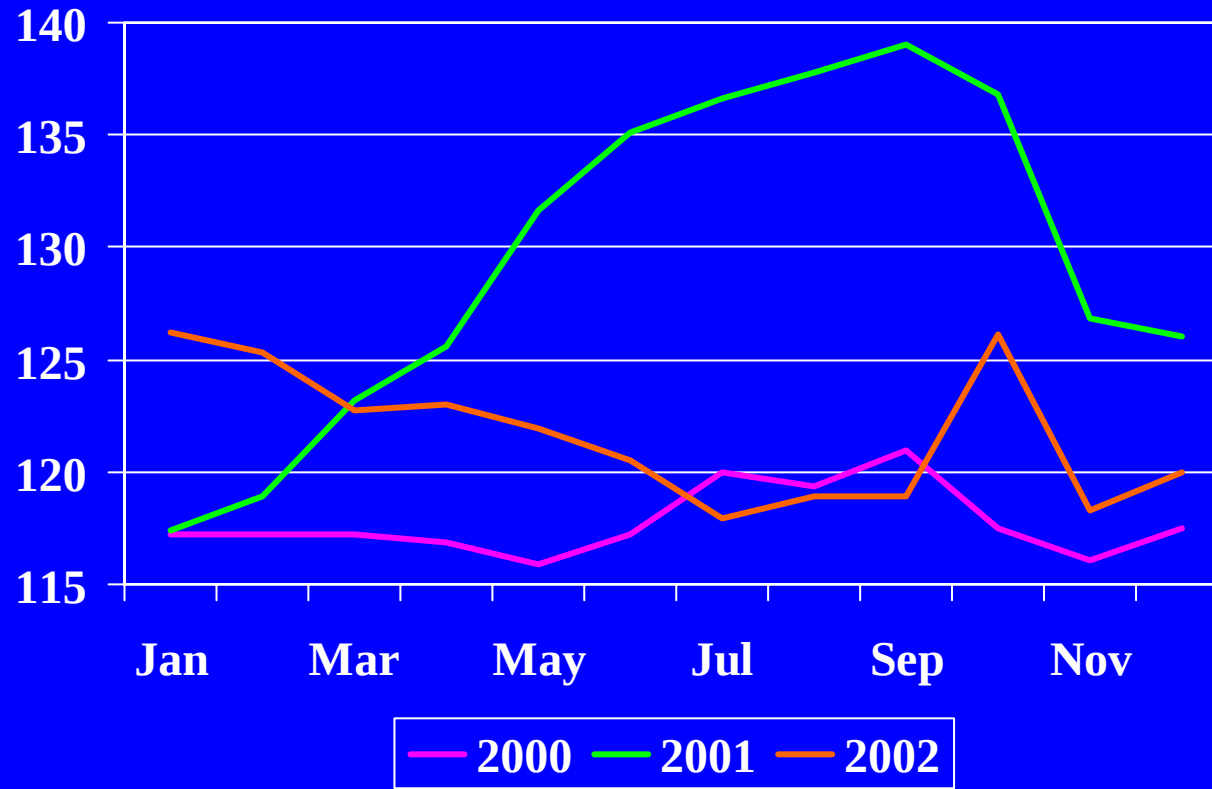
PPI, All Dairy Products



PPI, Butter



PPI, Cheese



PPI, Fluid Milk

