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DOMESTIC POLICY INTERDEPENDENCE: ANALYSIS OF DAIRY POLICIES IN THE UNITED STATES AND THE EUROPEAN COMMUNITY IN THE 1980s

by

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ABSTRACT

This paper compares domestic dairy policies in both the United States (US) and the European Community (EC) and examines the impact of these policies on each respective dairy industry in order to explore domestic policy interdependence. The EC and the US have similar goals of improving farm income and use similar price support policies to achieve these goals. These policies have historically encouraged overproduction, generated surpluses and government stocks, and resulted in large government expenditures. Both have followed a mixed surplus disposal strategy with one key difference—the EC has used export subsidies to dispose of part of its surplus on the world market. In the mid 1980s, both the US and the EC took strong action to confront these problems. The EC's marketing quota and commitment to reducing its stockpiles ultimately affected the world market as its exports fell in 1989. As a result, US stocks virtually disappeared, US prices increased substantially and US surplus disposal programs ended. By recognizing the policy linkage of EC domestic policy through the international market on US stockpiles, policymakers can choose policy instruments more precisely.

DOMESTIC POLICY INTERDEPENDENCE: ANALYSIS OF DAIRY POLICIES IN THE UNITED STATES AND THE EUROPEAN COMMUNITY IN THE 1980s

Introduction

This paper compares domestic dairy policies in both the US and the EC and examines the impact of these policies on each respective dairy industry in order to explore domestic policy interdependence. By recognizing policy linkages, policymakers can choose policy instruments more precisely resulting in reduced price and budget variability, increased stability of domestic and international markets, increased stability of government stockpiles and of the programs which use government stocks, e.g., domestic and international donations (the school lunch and welfare programs for domestic donations, and PL 480-Title II, Section 416 of the Agricultural Marketing Act of 1949 for international donations)

US and EC Dairy Industry Characteristics

Since 1988, significant changes have occurred in both US and EC dairy industries indicating policy linkages. Both the US and the EC use price support programs to directly support manufactured dairy products (butter, cheese and powder) and indirectly support fluid milk prices. Both reinforce domestic support programs with restrictive border policies. The US restricts the amount of imports primarily by imposing a quota, supplemented with small tariffs. The EC imposes a variable import levy generating government revenues. In addition, the EC uses export subsidies, making EC dairy products competitive on the world market. The US implicitly subsidizes exports through its international donation programs, e.g., P.L. 480-Title II and Section 416.

US and EC domestic prices have historically averaged two times the world price (Table I) These domestic prices have historically encouraged overproduction and generated surpluses that were purchased by each respective government, stored initially in government stockpiles, and disposed of using a variety of methods. Historically, the US primarily used donations to dispose of its

Comparison of US, EC, and International Milk Price Equivalents

Year	World	US Support	EC Support	EC/World Ratio	US/World Ratio
	(\$US/cwt)	(\$US/cwt)	(\$US/cwt)		
1982	7.16	13.10	12.74	1.78	1.83
1983	6.26	13 06	14.35	2 29	2.09
1984	5 16	12.60	15.98	3.10	2.44
1985	4.39	11.98	16.76	3.82	2.73
1986	4.66	11.60	12.99	2.78	2.49
1987	5.34	11.29	11 08	2.08	2 11
1988	8.71	10.60	10.81	1.24	1.22
1989	10.56	10.73	11.37	1.08	1.02
1990	8.05	10.10	9.66	1.20	1.26
1991	7.84	10.10	10.26	1.31	1.29
Average	6.81	11.51	12.60	2.07	1 85

surplus manufactured dairy products (MDP). (Domestic donations were the dominant disposal method for butter and cheese relative to international donations for powder, between 1955 and 1989 (Fallert, et al., 1990, and Marchant, 1989))

In addition to donations, the EC also used export subsidies to sell surplus MDP on the world market at world prices. The use of export subsidies dramatically increased between 1985 and 1988 as a method of surplus disposal for both EC butter and powder due to the EC's extraordinary

¹ World milk price equivalent calculated from butter and nonfat dry milk prices quoted in World Dairy Situation.

USDA/FAS US annual milk support prices calculated from ASCS Commodity Fact Sheet 1990-91 Dairy Price Support Program, USDA/FAS EC support prices are the intervention Milk Price Equivalent, CAP Monitor, Agra Europe Exchange rate fluctuations in the 1980s make the EC support price, reported in dollars, appear more variable than if they were reported in European Currency Units (ECU)

appropriation of funds to reduce its stocks (Commission of the European Communities, <u>The Agricultural Situation in the Community</u>, 1990, and USDA, <u>Western Europe Agriculture and Trade Report</u>, 1989) (From 1974 to 1983, the dominant disposal method for EC butter was the world market using export subsidies; between 1984 and 1986, a combination of domestic and international strategies has been used. For EC powder, between 1974 and 1986, the dominant disposal method has been subsidized domestic consumption, with a primary outlet being animal feed for calves. (Marchant, 1989).)

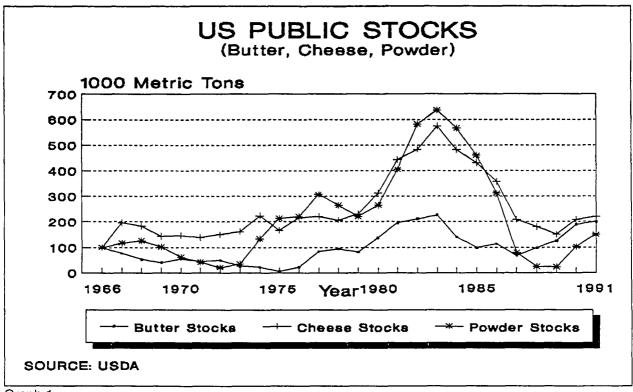
Supporting the dairy industry has been costly and variable, with record government expenditures spent by both the US and the EC in the 1980s. For example, US dairy program costs during the 1980s ranged from \$700 million in 1989 to \$2.6 billion in 1983 (USDA, ASCS, 1991), compared to an EC range of 3.3 billion ECU (European Currency Unit) in 1982 to a maximum of 5.9 billion ECU in 1985, 1988, and 1991 (USDA ERS, Western Europe Agriculture and Trade Report, 1991) (An undetermined amount of this variability is due to fluctuations in international prices.) The budget problem was magnified in the EC where dairy policy was draining the Common Agricultural Policy (CAP) budget as described below (Newman and Gardiner, 1988)

Domestic Dairy Policy Actions in the 1980s

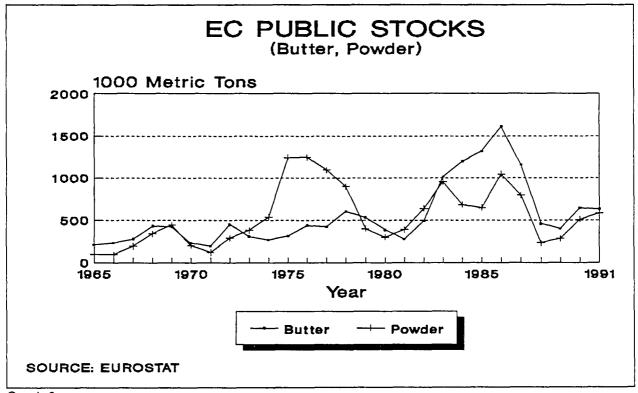
Both the EC and the US took strong domestic action in the mid 1980s. In 1984, the EC instituted a marketing quota, reinforced with a superlevy penalty for its violation (European Community Commission, 1984 and Burrell, 1989). In 1987, the quotas were further reduced and the EC made an extraordinary appropriation of funds to dispose of its mountain of butter and powder stocks. Powder stocks fell markedly to 5,000 (metric) tons in 1989 and 1990 from 1,068,000 tons in September, 1986. Butter stocks were reduced to 20,000 tons in January, 1990 from 1.4 million tons in August, 1986 (Agra Europe). This policy ultimately affected the world market since the EC had historically used the export market for surplus disposal.

Concurrent with EC policy setting, the US sought to reduce its surplus through strong action in the 1985 Food Security Act by instituting (1) the Dairy Termination Program (also known as the Whole Herd Buy-Out Program), which paid dairy farmers to leave the industry for five years and (2) the supply-demand adjuster (trigger mechanism), which for the first time related changes in the support price to government stock levels. Due to large government stockpiles upon passage of the 1985 Farm Bill, the US support price fell, and continued to fall from \$12.60 per cwt (100 pounds) in 1985 to \$10 10 per cwt in 1990 (manufacturing grade milk, national average fat test) (USDA, Dairy Situation and Outlook Report, Oct. 1990). As a result of the Dairy Termination Program, dairy farmers left the industry. Both of these events caused US government stockpiles to decline (Graph 1).

Both US and EC policies of the mid 1980s affected the world market. Due to the EC's effective marketing quota and subsequent reduction in exports, world supply of MDP diminished, particularly for powder. As a result of the decrease in world market supply, US stockpiles were drawn down, beginning in 1984 (Graph 1), as stocks were placed on the world market. The export market then became a feasible outlet for surplus disposal of US stocks. The Minnesota-Wisconsin price (base price for MDP) rose substantially from \$11.48 per cwt in 1985 to \$14.93 per cwt in December 1989 (3.5% milkfat) (USDA, <u>Dairy Situation and Outlook Report</u>). Donations from government stockpiles came to an abrupt end, since surplus MDP no longer existed. At the end of 1989, Commodity Credit Corporation (CCC) uncommitted stocks did not exist for cheese and powder, although butter stocks did exist (USDA, ASCS, monthly press releases). The point is, EC dairy policy affected the world market, which in turn affected the US market. Policymakers must recognize the international environment in which domestic policy is set (McCalla and Josling, 1985)



Graph 1



Graph 2

Government Stock Accumulation

Graphs 1 and 2 show government stock levels for manufactured dairy products in the US and the EC, respectively. Upon comparing y-axis scales for the graphs describing US and EC stocks, one can readily see the severity of the EC surplus MDP problem relative to the US. Examination of government stock levels provides insight into the overproduction problem since governments must first purchase surplus MDP and then determine the appropriate surplus disposal method. Related to government stocks is the price support level. In general, high support prices encourage overproduction generating surpluses which are purchased by the government and stockpiled. Powder has been the dominant US surplus MDP since the mid 1970s. Commodity Credit Corporation (CCC) purchases peaked in 1983, corresponding to high support prices and large surpluses of MDPs. CCC stock levels for MDP peaked in late 1983 and early 1984. As of 1989, CCC stock levels for butter, cheese and powder decreased 63%, 95% and over 99%, respectively, from their 1984 peak levels (USDA, Aug. 1990). In the EC, both butter and powder have been dominant surplus MDP. Stocks peaked in 1986 for both products. As of 1989, EC stock levels for butter and powder decreased 98.6% and 99.5%, respectively, from their 1986 peak levels (Agra Europe)

Surplus Disposal Policies and Methods

Once stocks are accumulated, this surplus can be dealt with in several ways (1) it can be donated via domestic and international donations, (2) it can be stored in domestic stockpiles, (3) its volume can be controlled via production controls, buy-out schemes, or a reduction in the price support level, and (4) it can be sold domestically or on the world market. No matter which method is chosen, taxpayers incur a cost for surplus disposal

The EC and the US manage surpluses generated from domestic policies differently. As shown by the different y-axis scales in Graphs 1 and 2, the overproduction problem is more severe in the EC than the US. When comparing government stock levels of MDP to fluid milk production (on a milk equivalent basis), EC stocks peaked in 1986 and equalled 36.8% of production while US stocks peaked in 1983 and equalled

24% of production (USDA, Western Europe Agriculture and Trade Report, 1989, and USDA, Dairy Situation and Outlook Yearbook, 1990) Consequently, EC dairy policy has evolved into taking strong action to reduce surpluses, culminating with a marketing quota. The EC uses a variety of strategies to dispose of surplus MDP including domestic donations, subsidized consumption, export subsidies, and stock accumulation (Marchant, 1989). The strongest policy measures have occurred in the supply control area. Historic EC policies to curb production and reduce stocks include (1) slaughter premiums and beef conversion programs which diverted cows from the dairy sector to the beef sector (similar to the US Dairy Termination Program) and (2) producer co-responsibility levy used to finance sales promotion and school milk subsidy programs. These EC policies had failed at controlling the ever growing surplus and ever increasing stocks. Production had dramatically outpaced consumption, even with expansion in the export market In the early 1980s, EC production increased 2.1% per year, while consumption increased only 0 2% per year (Trostle, et al., 1986) By 1983, total MDP stocks reached a record peak, totalling 19% of EC milk production. The future looked rather bleak, with surpluses expected to continue growing. Storage costs, export subsidies and price supports were draining the CAP budget. As a result, in 1984 the Ministers agreed upon new reforms using a five year milk marketing quota system which imposed a 'superlevy' penalty for over-base production and froze the target price

The US has also developed many different dairy surplus disposal policies including (1) domestic and international donation programs, e.g., P.L. 480, food stamps, school lunch and the Special Distribution Program of the Agricultural and Food Act of 1981, which directed the US Department of Agriculture (USDA) to distribute CCC commodities to the needy. (The program was extended under the Temporary Emergency Food Assistance Program and further extended under the Food Security Act of 1985), (2) subsidized exports through the Dairy Export Incentive Program (DEIP) for the purpose of making US exports more competitive on the world market. The DEIP enabled US exports to meet the prevailing world price, using export subsidies in the form of dairy products from CCC stockpiles (Newman and Gardiner, 1988), (3) international marketing programs, e.g., the Targeted Export Assistance (TEA) Program, and (4) stockpiling

In regards to specific MDP surplus disposal methods in the US, the primary historic surplus disposal mechanism for butter has been domestic donations. When large surpluses accumulated, surplus disposal methods also included exports and stock accumulation. Dominant EC butter surplus disposal methods include subsidized exports and subsidized domestic consumption, e.g., Christmas butter sales. In recent years, the EC increased both its butter stocks and subsidized international sales, particularly to the USSR For cheese, which is supported in the US, but to a much lesser extent in the EC, domestic donations and stockpiling have been the dominant US surplus disposal methods. (See Marchant, 1989 for detailed analysis of US and EC surplus disposal methods based on data from the USDA and the Commission of the European Communities, respectively.)

Powder has historically been the leading surplus MDP in both the US and the EC. In the US, powder surplus disposal has consisted of stock accumulation, particularly between 1974 and 1984, and export disposal, primarily international food aid. In the EC, the dominant surplus disposal method has been subsidized domestic consumption, with the majority used as animal feed. In summary, the US has historically disposed of surplus processed dairy products using domestic and international donations along with stockpiling, whereas the EC has historically used domestic consumption and export subsidies. Thus, both have used some form of domestic disposal

Supply control is the most direct method to control surpluses. The US has used voluntary supply control programs including (1) the Dairy and Tobacco Act of 1983, whereby participating dairy farmers agreed to reduce herd size in order to receive a diversion payment, financed by the dairy industry and (2) the Dairy Termination Program (Whole Herd Buy-Out Program), whereby participating dairy farmers left the dairy industry for five years and had to dispose of their herds. In addition to the Dairy Termination Program, the Food Security Act of 1985 created a supply-demand adjuster (trigger mechanism) which linked the support price to projected CCC net removals. For the years 1988 through 1990, if forecast CCC removals were greater than five billion pounds (milk equivalent), then the support price decreased by 50 cents per

hundredweight. If net removals were estimated to be less than or equal to 2.5 billion pounds (milk equivalent), then the price support increased 50 cents per hundredweight. Since enactment, the support price has dropped 20% from the original 1985 level of \$12.60 to the 1990 level of \$10.10 per cwt of grade B milk, testing 3.67% butterfat (USDA, <u>Dairy Situation and Outlook Report,</u> Oct. 1990). Thus, the US has also attempted to control supply via support price reductions. The EC has taken even stronger action with its marketing quota.

Government Cost Comparison for Dairy Programs in the US and the EC

In the EC, the dairy support program has historically been the largest expenditure for the CAP budget, 21 3% in 1988 (Commission of the European Communities, The Agricultural Situation in the Community, 1989) Dairy expenditures have dramatically increased since the EC switched from being a net importer to a net exporter of MDP in 1972. Government expenditures increased 18% per year between the years 1975 and 1983, primarily due to the large dairy surplus storage costs and the cost of export subsidies corresponding to the expansion of export markets and the fall in the value of the dollar through exchange rates. The nominal cost of each of these two items increased 50% in the mid 1970s (Trostle, et al., 1986). The EC expenditures for agricultural support have increased from \$15.7 billion in 1985 to \$32.5 billion in 1989 (Newman and Gardiner, 1988 and Commission of the European Communities, The Agricultural Situation in the Community, annual reports)

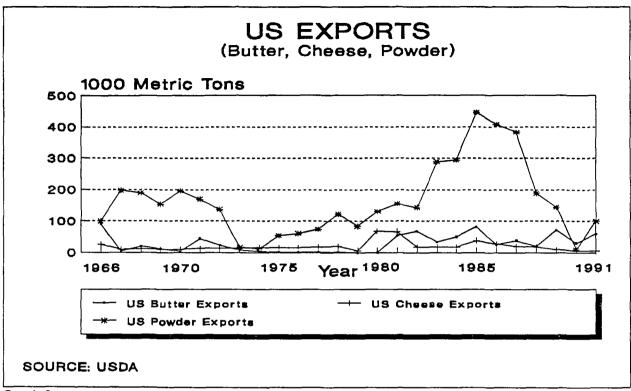
In the US, annual expenditures for the dairy price support program averaged \$325 million between 1953 and 1973. Costs fluctuated in the 1970s corresponding to the variability in milk production. In the 1980s, high support prices encouraged overproduction, which generated surpluses and resulted in large budget outlays associated with CCC purchases of this surplus. US government expenditures peaked in 1983, reaching nearly \$2.6 billion which appears relatively small compared to EC expenditures (USDA, ASCS, 1991).

International Trade Comparison in the US and the EC

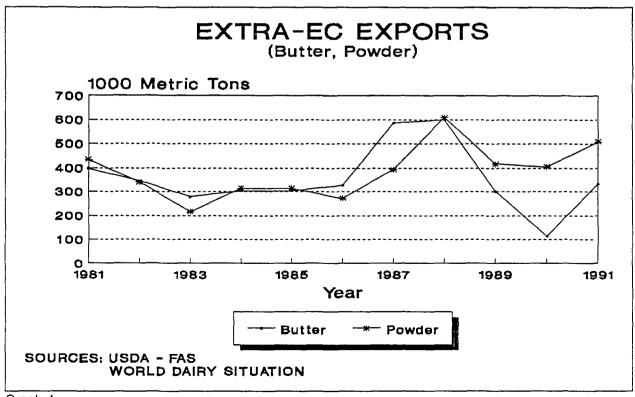
Due to the perishability of fluid milk, only MDPs are traded (except for small quantities of fluid milk moving across local borders). Once again, the magnitude of EC exports exceeds that of the US. Historic US trade trends for each processed product are presented (Graph 3), including exports by the USDA from CCC stockpiles (the sum of P L. 480 international donations and exports sold on the world market). Powder is the dominant US export, while cheese is the dominant import--mainly specialty cheeses from the EC. (See Marchant, 1989 for import graphs). For butter, US exports have fluctuated widely since 1950, while imports have been almost nonexistent during that same time period (USDA, Dairy Situation and Outlook Yearbook, 1990). In regards to US cheese trade, imports dominate. USDA exports are minimal (Graph 3). Virtually no imports exist for powder (USDA, Dairy Situation and Outlook Yearbook, 1990). In regards to US exports of powder, the CCC follows a mixed strategy, whereby approximately 75% of USDA exports were international donations and the remaining 25% were international sales between 1975 and 1985 (Marchant, 1989). In the early 1980s, exports of all MDP increased with powder being both the dominant surplus MDP and also the dominant export MDP from CCC stocks. After 1985, both US exports and CCC stocks of all MDP declined dramatically and, at the beginning of 1990, were virtually nonexistent.

The EC is the world's largest producer and exporter of dairy products with a 41% market share for world dairy trade between 1983 and 1990 (Figure 1) Prior to obtaining self sufficiency in 1972, the EC was a net importer of dairy products. At great cost to the CAP, export subsidies make EC products competitive on the international market.

Graph 4 shows extra-EC exports (exports between the EC and non-member countries) for butter and powder. In Marchant, 1989, butter and powder trade were itemized, showing a detailed breakdown of exports going toward international food aid, exports at reduced prices or special schemes, exports at the world market price using export subsidies, and imports based on data from the Commission of the European Communities (The Agricultural Situation in the Community). For butter, exports at the world



Graph 3



Graph 4

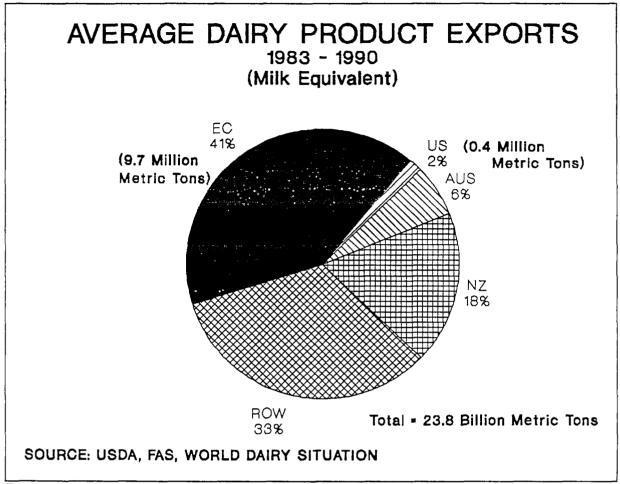


Figure 1

market price using subsidies have historically dominated, peaking in 1980, declining until 1985, and increasing from 1985 to 1988 (The Agricultural Situation in the Community, 1990) Food aid has been a minor, yet fairly constant outlet for exports. Prior to 1984, butter exports at reduced prices were nonexistent. Since then, the EC has sold reduced priced butter to the Soviet Union, providing an even greater subsidy. Butter imports have been fairly constant.

For powder, exports at the world price using export subsidies follow a similar trend as that of butter-peaking (initially) in 1980 and historically dominating as the primary outlet for exports. Powder exports at

the world price using subsidies have dramatically increased between 1985 and 1988, surpassing the previous 1980 peak (The Agricultural Situation in the Community, 1990). This dramatic increase of the use of export subsidies for both butter and powder is the result of the EC's commitment to reduce stocks. Powder special schemes, consisting of sales to developing countries at reduced prices, only occurred prior to 1980. Since 1988, powder food aid has maintained a relatively constant share of the export market. Unlike butter, powder imports are virtually nonexistent

Research Conclusions and Contributions

What conclusions can be drawn from this analysis? The EC and the US have similar goals of improving farm income and use similar price support policies to achieve these goals. These policies have historically encouraged overproduction, generated surpluses and government stocks, and resulted in large government expenditures. These impacts have been more severe in the EC. Both have followed a mixed surplus disposal strategy with one key difference—the EC has used export subsidies to dispose of part of its surplus on the world market. In the mid 1980s, both the US and the EC took strong action to confront these problems. The EC's marketing quota and commitment to reducing its stockpiles affected the world market resulting in decreasing EC exports. As a result, US stocks virtually disappeared, US prices for MDP increased substantially and US surplus disposal programs, e.g., donations, ended Thus, it appears that EC dairy policy affected the world market, which in turn affected the US market. Policymakers must recognize the international environment in which domestic policy is set. By recognizing the policy linkage of EC domestic policy through the international market on US stockpiles, policymakers can choose policy instruments more precisely

¹ The international market for dairy products remains dynamic. After world prices peaked in 1989, the market collapsed to the International Dairy Arrangement minimum prices. Both the US and the EC had accumulated substantial stocks by the summer of 1991.

REFERENCES

Agra Europe. London, UK: AGRA EUROPE, Ltd., various issues.

Burrell, Alison M., ed. Milk Quotas in the European Community. Oxon, U.K.: CAB International, 1989.

CAP Monitor London, UK. AGRA EUROPE, Ltd., various issues.

Commission of the European Communities The Agricultural Situation in the Community Various issues

Fallert, Richard F, DP Blayney, and JJ Miller <u>Dairy Background for 1990 Farm Legislation</u> Washington, D.C: USDA ERS Staff Report No. AGES9020, March 1990.

Marchant, Mary A. "Political Economic Analysis of Dairy Policies in the United States" Ph D thesis, University of California at Davis, 1989.

McCalla, A.F., and T.E. Josling <u>Agricultural Policies and World Markets</u> New York Macmillan Publishing Co., 1985

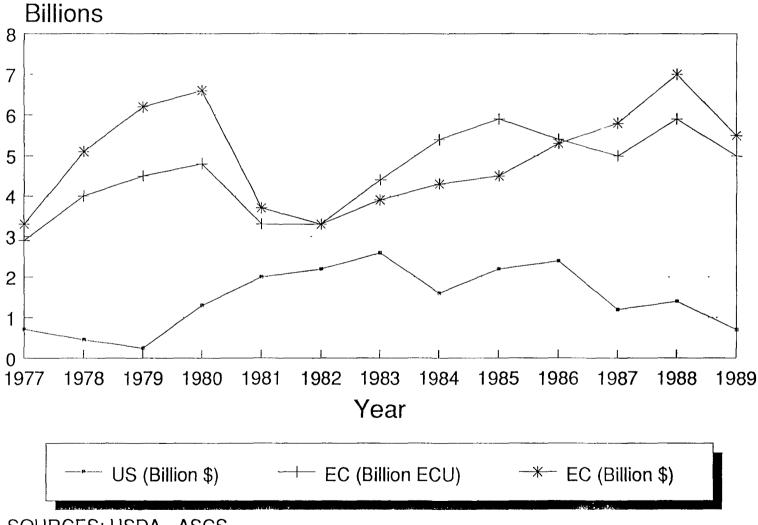
Newman, Mark D and W H Gardiner. "Impacts of 1988 EC Budget; Stabilizers, and Set-Aside Decisions on EC Wheat Surpluses" Western Europe Agriculture and Trade Report Situation and Outlook Series, pg 13-22. Washington, D C · USDA ERS RS88-1, June 1988

Trostle, Ronald, M. Lambert, S. Sposato, J. Lopes, and M. Cohen. <u>European Community Dairy Sector</u> <u>Policies, Problems, and Prospects</u> Washington, D.C.: USDA ERS Staff Report No AGES860316, Oct. 1986.

- U.S. Department of Agriculture, ASCS Monthly Press Releases, various issues.
- U.S Department of Agriculture ASCS Commodity Fact Sheet: 1990-91 Dairy Price Support Program Washington, D.C. ASCS, May, 1991.
- U.S. Department of Agriculture <u>Dairy Situation and Outlook Report</u> Washington, D.C. ERS, various issues.
- U.S. Department of Agriculture. <u>Dairy Situation and Outlook Yearbook.</u> Washington, D.C: ERS, DS-426, Aug, 1990.
- U.S. Department of Agriculture <u>Western Europe Agriculture and Trade Report</u> Washington, D.C. ERS ATAD, various issues.
- U.S. Department of Agriculture World Dairy Situation Washington, D.C. FAS, various issues

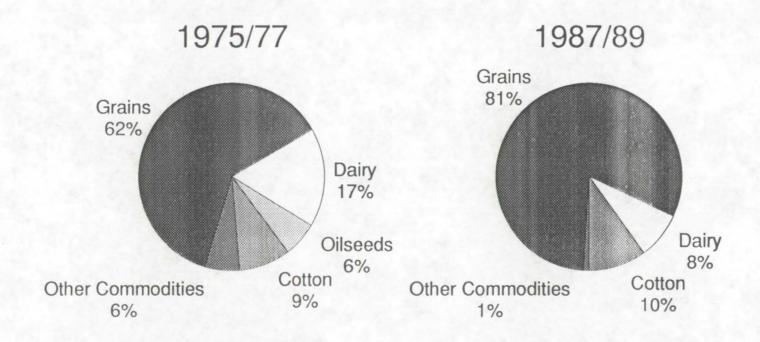
APPENDIX: TABLES AND GRAPHS

US & EC DAIRY PROGRAM EXPENDITURES



SOURCES: USDA - ASCS EC COMMISSION

US BUDGET OUTLAYS BY COMMODITY

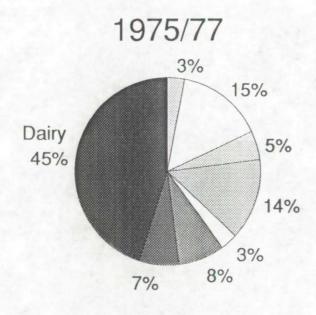


1976 Total Expenditures = \$1.5 Billion

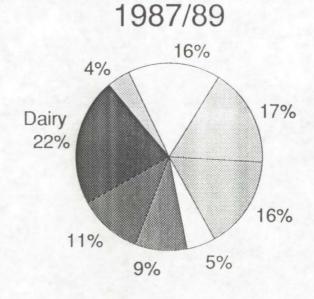
1988 Total Expenditures = \$12.5 Billion

SOURCE: USDA

EC BUDGET OUTLAYS BY COMMODITY



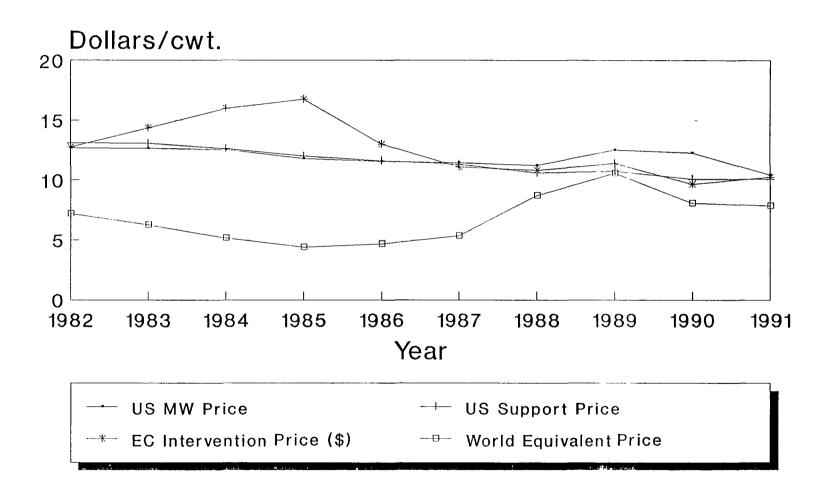
1976 Total Expenditures = 5.6 Billion ECU = \$6.3 Billion



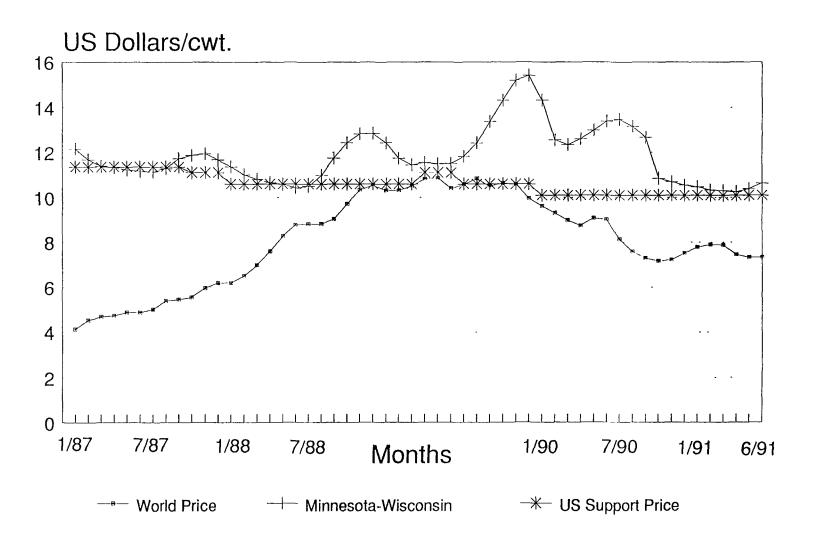
1988 Total EC Expenditures = 27.7 Billion ECU = \$32.7 Billion

SOURCE: EC COMMISSION

COMPARISON OF US, EC, & WORLD EQUIVALENT MILK PRICES

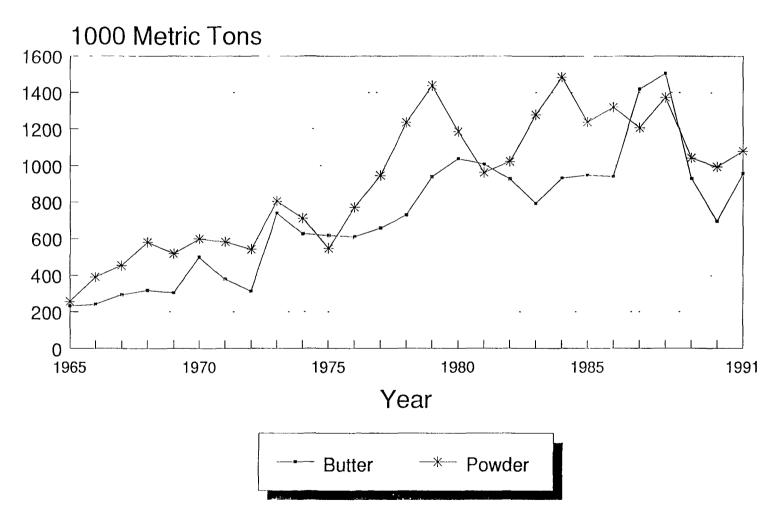


US & WORLD MILK EQUIVALENT PRICES



SOURCE: USDA

TOTAL EC EXPORTS (INTRA & EXTRA) (Butter, Powder)



SOURCE: USDA