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GRAIN MARKETING INDUSTRIES AND INSTITUTIONS IMPACTING EXPORTER COMPETITION*

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Introduction

There are a number of important characteristics of the competitive environment and markets for agricultural commodities and products grown in the Great Plains region of the United States. These include an intensely competitive environment with substantial market power, both for sellers and perhaps increasingly by the buyers. In addition there is great diversity in the quality of the crops produced within the region. This diversity exists not only between crops (e.g., barley versus wheat) but also within a crop (e.g., the multitude of different types of wheat produced in the United States; feed barley versus malting barley; feed versus nonfeed oats etc.). This diversity is greater than exists in other grain exporting countries and thus the marketing function is more complex in the United States than elsewhere. The challenge to the marketing system is to be able to simultaneously exploit the diversity of crop production capability and to achieve efficiencies in the grain handling and transportation system.

Trade between countries is influenced by numerous factors, some economic, some political and others such as weather and geography. The competitive posture of an individual exporting country is comprised of a number of key components. These include: efficiency in production; efficiency in grain handling and transportation; production and marketing of the quality of product desired in international markets; and farm and trade policies. The first three of these are highly interdependent. The world grain market experienced substantial growth during the 1970's and most countries benefitted from this by being able to expand exports and production and marketing capacity. However, since the early 1980's world trade for most commodities has stagnated and the competitive rivalry between exporting countries has intensified. The US market share for wheat, as an example, fell 45-50% in the early 1970's to early 1980's, and has since fallen to the areas of 30% to 35% (Figure 1). Most of the major exporting countries have recently gone through (or currently) internal investigations of various magnitudes evaluating their competitive position with respect to the individual components mentioned above. In a sense, each is trying to assure their marketing system is functioning as efficiently as possible in preparation for what may continue to be a volatile market with a slower growth rate than existed in the 1970's. While most attention is normally focused on issues related to trade policies (i.e., GATT, US/Canada Free Trade Agreement, European Commodity subsidies) lurking behind the scenes are developments which affect the efficiency of the production and marketing system in each country.

The purpose of this paper is to provide an overview of selected infrastructural and institutional issues impacting the competitive position of exporting countries. Major developments occurring in selected exporting countries with comparisons to the United States are discussed along three major topics. In the first section developments in grain handling and transportation systems are discussed. The second section provides an overview of the role of quality in exporter

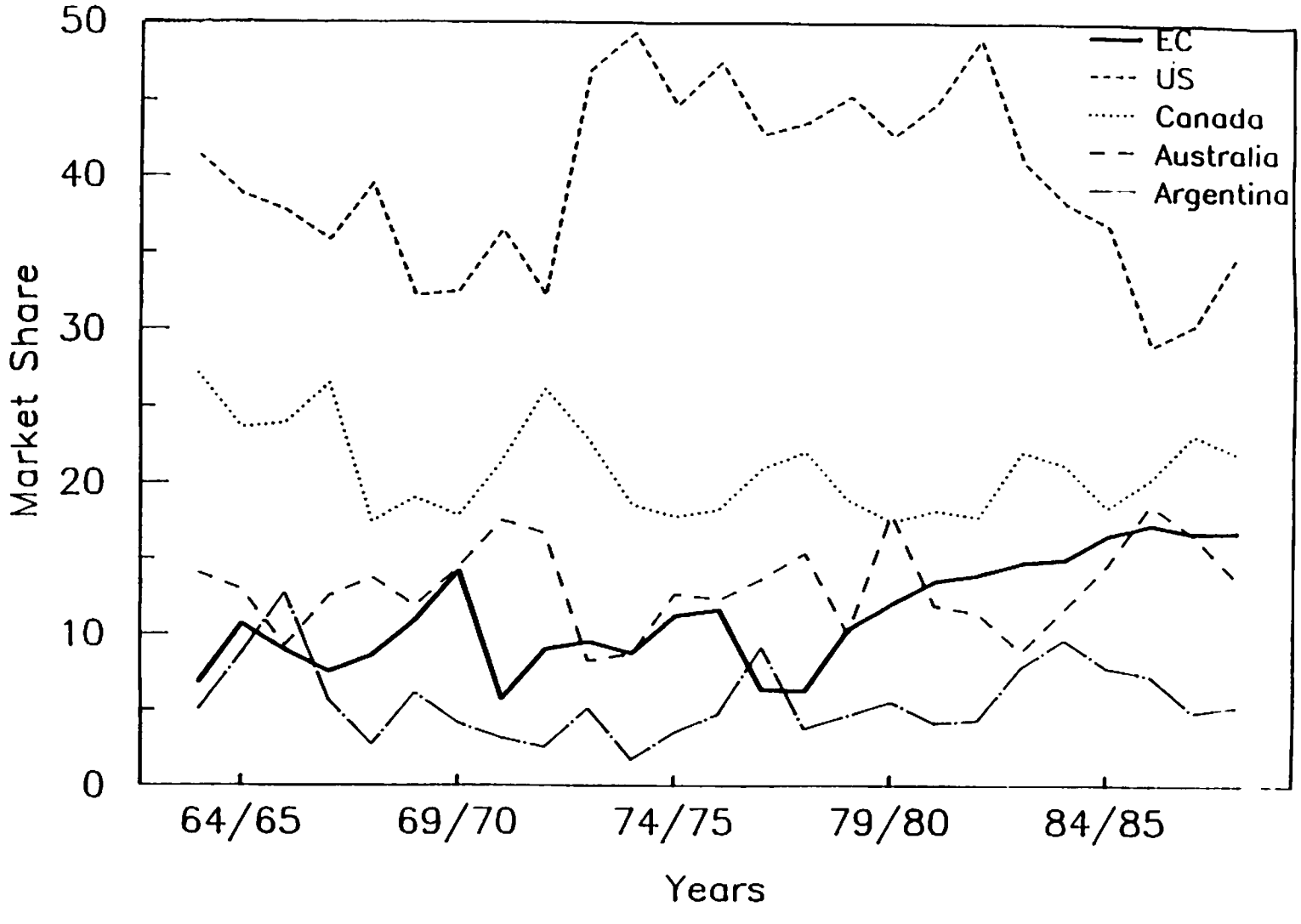

Figure 1. Market Shares of Wheat Exports by Major Exporters

competition. Embedded in any discussion of productivity (production and marketing system) is the effect of institutions impacting the quality of grain produced and marketed. A brief comparison is made of institutions, policies and trade practices which impact quality in major wheat exporting countries. The final section presents some of the issues related to trade in value added products produced from commodities grown in the Great Plains Region. Each section is self-contained including summary statements where appropriate, and implications are identified for the United States.

Grain Handling and Transportation Systems

Most exporting countries would look upon the grain handling and transportation system in the United States jealously. The grain handling and transportation system in the United States is highly efficient and responsive to the dynamics of the international grain marketing system. In describing "A World Awash in Grain" Insel attributed this as one of the most important advantages of the US exporting system. There are likely two highly related and interdependent reasons for this claim. One is simply geography which includes the Mississippi River system, and as a consequence, multiple modes of transportation and multiple ports. The other is the reliance on competitive pressures for allocating resources within this sector. At least Australia and Canada are less fortunate in either of these two respects and as shown below costs within these sectors are significantly higher and the industries are less responsive than those in the United States.

A major trend which is occurring in each of the major exporting countries is that which I refer to as "rationalization". It simply refers to an adjustment process to a system which is more efficient, (i.e., one in which the same amount of grain can be handled with less cost). The rationalization process usually includes fairly controversial ventures such as branch line abandonment, multi-car rail shipments and evolution toward fewer but larger elevators. The United States went through this transition beginning in about the mid-1970's but the rate of adjustemnt has diminshed in recent years. A more recent phenomenon is the development of short-line railroads. The impetuses for rationalization are the technical changes in grain transportation and labor costs, with concurrent competitive pressures for adoption and proliferation throughout the system. Other competing exporting countries are yet to go through the same rationalization which has already occurred in the United States. Despite the tremendous pressures on these grain marketing systems to do so there is often very significant political pressures in opposition to change. As an example, the first recommendations in Canada to initiate mechanisms to rationalize their rail line system were given by a Royal Commission report in 1967. Since then there have been numerous investigations into the problem, and into the appropriate means of implementing the recommendations. Similarly, Australia began the process of looking into the efficiencies of alternative grain marketing institutional relationships last year. The point is that in each of these countries

the grain marketing systems have been less adaptive to change than in the United States, and the fairly traumatic rationalization which the United States has just gone through has yet to be realized in these competitor countries. Ultimately, not only do producers in different exporting countries have to be competitive, but grain handling and transport systems have to be competitive as well.

In order to reinforce some of these points a recent study in Australia compared the marketing system in each of these countries (Spriggs et al.). Wheat marketing margins, the difference between farmgate and export prices, were derived over a 10 year period from 1975-85. Those in the United States were substantially less than those in Australia and Canada in 1985 (see Table 1). Over the time period those in the United States declined relative to the other countries. In particular, in real dollars the marketing margin in the United States declined by 59%, those in Canada by 23% and those in Australia increased by 7%. Though a comparison was not made in that study of handling rates in the United States, those presented for Australia and Canada were substantially greater than those which exist in at least the Upper Great Plains (see Clow and Wilson, March 1988 and Cobia et al. for comparable numbers in the United States). The principal culprits for these differences are likely rules and regulations in the industry, and labor costs (wages and work practices). As an example a study by the New South Wales Farmers' Association derived a figure called grain handled per employee at various export elevators in the United States and Australia. These figures indicate a fairly high rate of throughput per employee at U.S. elevators and the results are largely attributable to labor work rules and practices (see Table 2).

There are two emerging issues of importance to the US grain handling and transportation system. One is the impacts of apparent excess capacity throughout the grain handling and storage system. To illustrate: Cobia et al. derived that in some regions of the country there was sufficient unit-train loading capacity to handle up to 5.8 times as much grain as was produced in that region; as a result of expanded farm and off-farm storage in the early 1980's, the EEP program, the drought of 1988 and longer term set-aside programs, there is now substantial unutilized storage capacity throughout the United States, both on and off-farm.; though it is difficult to document, there have been reported capacity utilization rates in the export elevator sector as low as 40%. The major point here is that excess capacity has become pervasive throughout the system. As a result competitive pressures will continue to be intense, firms will be forced to exit the industry, and there will likely be extensive consolidation in the coming years. The second emerging issue is that of transportation equipment. The problem is one of an aging fleet and traditional pricing mechanisms have not been very efficient in allocating these resources (see Wilson December 1988). However, some railroads have responded with fairly innovative pricing mechanisms which should go a long ways towards solving these problems.

TABLE 1.* WHEAT MARKETING MARGINS AND EXCHANGE RATES FOR AUSTRALIA, CANADA, AND THE UNITED STATES[a]

Season	Australia	Canada	United States	Exchange Rates	
	$A/t	$C/t	$US/t	Can$/$A	US$/$A
1975-76	24.94	39.75	45.00	1.296	1.261
1976-77	26.61	31.94	35.58	1.165	1.153
1977-78	28.98	31.68	36.17	1.243	1.128
1978-79	26.96	33.79	36.51	1.325	1.137
1979-80	25.03	35.54	37.96	1.303	1.115
1980-81	23.66	36.74	31.70	1.374	1.161
1981-82	25.96	31.72	26.82	1.341	1.105
1982-83	23.55	28.70	24.33	1.159	0.938
1983-84	25.52	29.34	19.14	1.136	0.906
1984-85	26.81[c]	30.66	18.23	1.034	0.775
Percentage Change	+7	-23	-59		

[a]Marketing margins in each country are deflated by the consumer price index for that country (base year 1980-81).
[b]Weighted average of the marketing margins for soft white wheat grown in the northwest regions and transported via Pacific ports, and hard red winter wheat grown in the central-southern plains region and exported via the Gulf ports.
[c]Estimate from BAE (1986a).

Sources: International Wheat Council (1985); US Department of Agriculture (1985b); Australian Wheat Board (1986); Australian Bureau of Statistics (1986); Canada Grains Council (1986); OECD (1986).

*Adapted from Spriggs et al.

TABLE 2.* GRAIN TERMINAL PERFORMANCE

Terminal	Storage Capacity (t)	Throughput (t)	Throughput Storage Ratio	Employees	Throughput per Employee
St Elmo (US)	60,000	6,000,000	100.1	100	60,000
Convent (US)	180,000	8,000,000	44.1	100	80,000
Westwego (US)	117,000	10,000,000	85.1	125	80,000
Kalama (US)	60,000	4,900,000	80.1	41	120,000
Sydney	150,000	3,000,000	20.1	180	17,000
Newcastle	160,000	3,000,000	19.1	140	21,000

Sources: Queensland Bulk Grains and NSW GHA

*Adapted from New South Wales Farmers Association

Exporter Competition and Grain Quality

There has been greater attention to issues related to grain quality in recent years than during perhaps the past decade in the United States. At least part of the reason for this is the perception of the importance of quality being a competitive factor in trade. In fact it is perhaps an increasing realization of the importance of quality in exporter competition. In the United States there has been a number of pieces of legislation to address these issues, and the 1985 Farm Bill mandated a comprehensive study of these problems. This study was undertaken by the Office of Technology Assessment (OTA) and the findings were recently released to Congress. Much of the material presented below is from this project. For reference see: United States Congress Office of Technology Assessment; Wilson and Hill; Wilson and Orr. The topics presented below in particular relate to the institutions impacting quality in competitor countries and their comparisons to those in the United States.

To set the stage for this presentation, OTA conducted a survey of overseas millers about their feelings toward US wheat. Several major points gleaned from this survey are:

1) Assuming price and transport costs are the same, US wheats were nearly always the least preferred relative to competitor wheats. The rankings in particular were:

Bread wheats:	Canadian Western Red Spring (CWRS); Australia Price Hard (APH); US Dark Northern Spring (DNS); and US Hard Red Winter (HRW).
Soft wheats:	Australia Standard White (ASW); US White; US Soft Red Winter (SRW); and European Commodity (EC).
Durum:	Canadian Western Amber Durum (CWAD); US Hard Amber Durum (HAD).

2) Wheat class is not a good indicator of end use quality.

3) Important criteria in approximate ranking include protein quality; pesticide residue; insects (hidden, dead) mycotoxin[1]

4) Overseas millers: want more information on dough handling properties (e.g., farinograph measures).

5) A major concern of survey respondents was an apparent increase in lack of uniformity in end-use quality--(baking absorption, dough-handling properties).

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[1]See Wilson 1989a for an extensive discussion of these points.

In addition, a separate econometric analysis (Wilson and Gallagher and Wilson July 1989) indicated that through time there has been a growing diversity of demands for end-use characteristics. In other words, demands have never been homogenous, and the degree of differences in preferences appears to be growing through time.

In recognition of the importance of exporter competition an important component of the OTA study was specific analyses of policies, institutions, and trading practices affecting grain quality in competitor countries. Each country has a multitude of institutions which influence quality. Important factors which influence the quality of grain are listed in Table 3. It was this general paradigm which guided the analysis of each of the individual countries.

These are largely self-explanatory and only a few comments are made for perspective. An important institution in each country is the mechanisms which exist for the release of varieties. The purpose of these mechanisms often times is to provide a means to regulate quality for characteristics not capable of being easily measured in the market system. It is important to note that a prerequisite for market regulation (premiums and discounts) is the ability to easily measure the characteristic. Another implicit effect of these mechanisms is that they provide a means to reduce the extent of lack of uniformity in end-use performance, a complaint of increasing concern of domestic and export millers. The topic "trading practices" covers a wide range of issues but are crucial in making cross country comparisons. These include: the mechanisms by which premiums and discounts develop, whether by marketing boards or through a market system; local competitive environment; trading practices with respect to indigenous and extraneous quality characteristics; regulations regarding cleanliness and hygiene (e.g, infestation); and the extent that variety (declaration and marketing by variety) is used in the marketing system.

Each country has a grading system. The US grading system typically only measures physical (not chemical) characteristics--but this mechanism is relied upon for the establishment of quality measures for which premiums and discounts develop. Farm policies typically are avoided in any discussion of grain quality. However, these have an important impact on the quality of grain in a number of dimensions including: yield inducing incentives, and therefore disincentives for quality improvement; and marketing incentives related to cleanliness/hygiene and storage. The important point of the paradigm presented in Table 3 is that the institutions and policies which impact the quality of grain exported are much more complex than simply looking at issues related to grades and standards. This, of course, has been the traditional area of debate in this country. More important is that it is a highly interdependent "system" which impacts the quality of grain offered for export.

For purposes here the grain quality paradigm is briefly described as it relates to wheat in the three major competitors of Australia, Canada, and France, and comparisons are made to the United States. The ordering of presentation is generally from the most regulated to the least regulated. Greater detail on these countries is available in Wilson and Orr, Wilson and Hill, and the OTA reports cited earlier. The latter

TABLE 3. FACTORS INFLUENCING GRAIN QUALITY

Variety Development and Release Mechanism
Agronomic Conditions
Trading Practices
Grading and Standards
Farm Policies

also contains similar descriptions on corn and soybeans in Brazil and Argentina, and wheat in Argentina.

Australia

Virtually all of the varieties released in Australia are public varieties. The release mechanism consists of a 3-tier committee at the national level. These committees ultimately approve varieties for production in specific locations in each state. Varieties are not licenced, but planting of individual varieties are impacted by Australian Wheat Board (AWB) pricing policies which are described below. The criteria for release includes traditional baking criteria and more recently are trying to incorporate criteria for flat breads. All criteria are currently for bread wheats despite there being an apparent comparative advantage in the production of feed wheats. Agronomic characteristics include limited fertilizer applications and a wheat/sheep rotation which dominates the wheat economy. Growth rates in productivity are the lowest of the major competitors as shown in Figure 2 and Table 4. There has been a noticeable decline in protein over time and the AWB has instituted pricing policies and other mechanisms with the intent of averting this trend. Recently the USSR, an importer of growing importance of Australian wheat, voiced concerns about this trend, and the AWB reacted because of the impact of limiting potential market penetration due to inadequate protein levels.[2]

Trading practices are dominated by the AWB and its policies. The AWB is the sole buyer of all wheat (the domestic market was recently liberalized to allow for private sales) and seller of typically 70% or more of the wheat. The AWB sets quality criteria for purchases and price differentials. In addition it administers a Variety Control Scheme (VCS) whereby 1) criteria is established for release of varieties, 2) producers must declare the variety at the point of first sale in the marketing system and 3) price differentials are established by variety and by region (i.e., varieties in particular regions). In addition implicit in the pricing policy (i.e., the guaranteed minimum price, GMP) are substantial price differentials depending on cleanliness and other factors. Quality of grain is controlled (regulated) from origin (in the extreme, from the breeding) through to the point of export. This is facilitated by state owned grain handling enterprises

[2]The USSR requires 12% protein which could only be met by about 20-30% of the crop.

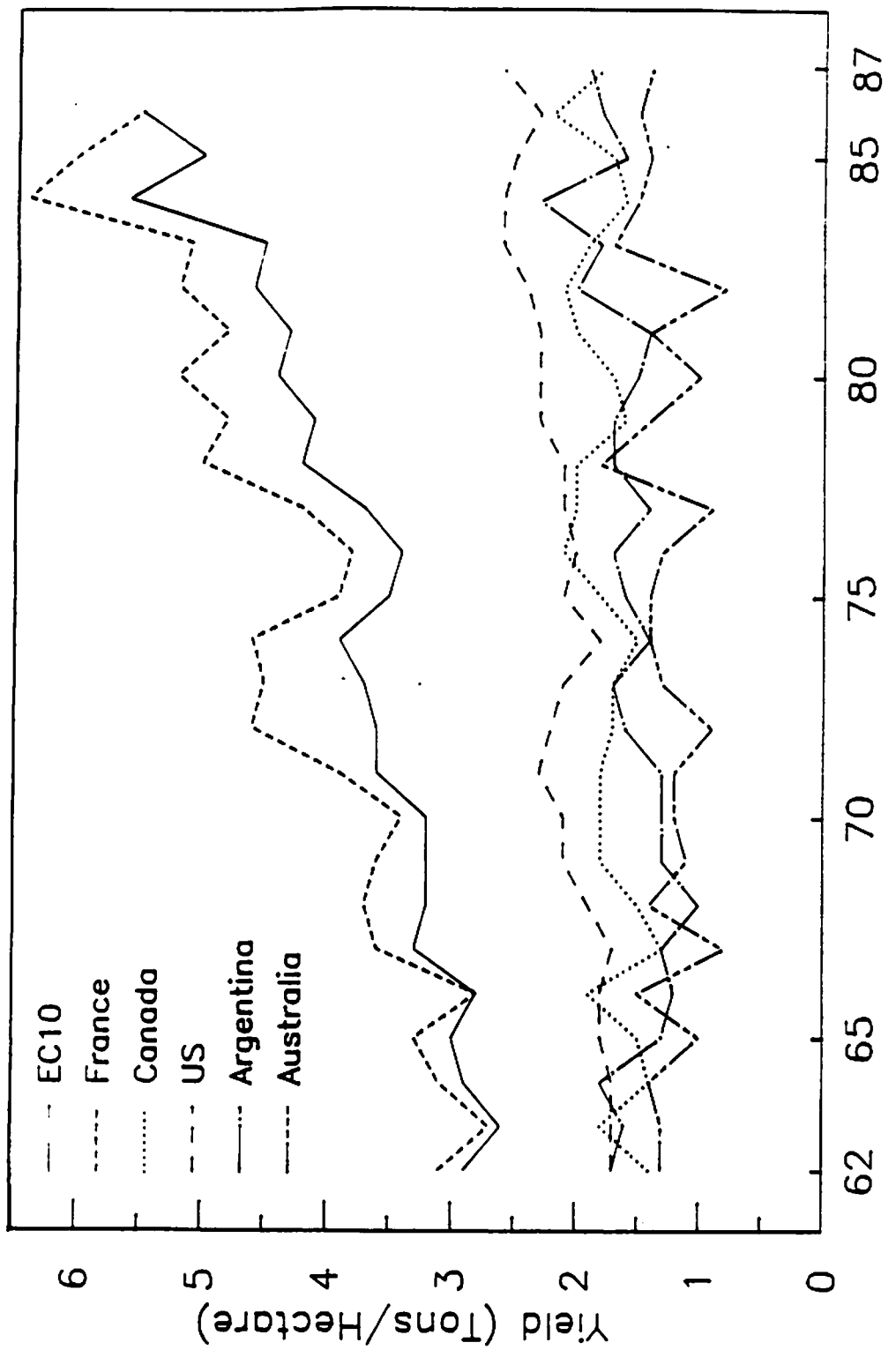

Figure 2. Yield by Major Exporters in Tons/Hectare

TABLE 4.* GROWTH RATES IN YIELDS FOR MAJOR EXPORTERS, 1962-86

	τ	β	R^2	Growth Rate %/Year
France	1.45 (88.46)	0.0133* (11.60)	.86	1.32
Canada	1.18* (56.24)	0.0043* (2.90)	.28	0.42
U.S.	1.22* (109.28)	0.0075* (9.54)	.81	0.75
Argentina	1.11* (37.05)	0.0055* (2.60)	.23	0.55
Australia	1.07* (25.97)	0.0019 (0.65)	.02	0.19
World	1.07* (131.56	0.01146* (20.15)	.95	1.14

NOTE: These are regression results of our estimated equation: log (y) = τ + βT, where y = yield and T trend from 1962-86. Figures in ( ) are t-ratios.

*Adapted from Wilson and Orr.

(who do not take ownership) and the fact that the AWB is the only owner of grain. Thus, only one transaction takes place within the marketing system, thereby diminishing the role of grade standards to facilitate trade.

In Australia the grading systems is called a "receival standard". The idea is that if grading criteria are rigorously applied at the point of origin, then problems would not develop at export. For some factors the same tolerance is applied for all grades except feed (e.g., unmillable material is 7% for all APH, Hard, and ASW grades, and discretely increases to 15% for GP). Associated with each of these is a price differential which induces striving for the top grades. Similar limit relationships exist with other factors (e.g., heat damage is 1% and discretely increases to 10% for GP).

Farm policy plays a limited role in the Australian wheat economy, but does have an important impact on quality. There is essentially no on-farm storage, the idea is that commercial handlers are better capable of maintaining quality. Another important aspect of the policy is the price differentials in the GMP which are established to provide incentives or disincentives for enhancing quality. For example the spread between feed and ASW is 32$/mt. This and the other spreads have a tremendous impact on incentives regarding cleanliness, hygiene etc. Cleaning therefore is normally done at the farm level, usually by fine tuning of the combine and/or using second screens. Spreads for certain

varieties can be up to 5$/mt which is a mechanism that can virtually eliminate planting of undesired varieties.

Canada

Varieties are regulated in Canada by the Canadian Grain Commission. Criteria are established which must be met for each class of wheat. Essentially a variety is released for marketing in a particular class. In addition, because varieties play an important role in Canadian wheat marketing, all varieties must be visually distinguishable. The agronomic conditions and practices are very similar to those of the northern Great plains.

The Canadian Wheat Board (CWB) is the sole buyer and seller of wheat for domestic food use and exports and is structured very similar to the AWB discussed above. The CWB plays a key role regarding quality by setting price differentials. Allegedly they are established to not distort choices (i.e., they are intended to be neutral). However, there is little difference in prices within a grade or protein level. Larger differences exist between grades (e.g., CWRS and CPS). The CWB has been criticized in recent years, which were characterized by high protein premiums, for not transmitting signals for protein over 13.5%, but have recently changed their policies. Through their sales operations they have the ability to sell at higher quality than a contract allows and likely does so intentionally to create "reputation", something not easily executed in a system such as in the United States. The grading system in Canada is similar to others. However, an important subtle difference is that the factor limits are tighter. Dockage is cleaned at the point of export because of both regulations and incentives for shippers. The incentives for cleaning include tariffs for cleaning of $2.63/mt (about 7c/b) plus the value of screenings sold (pelletized) for feed purposes. In a sense this may be termed as a policy for the grain trade since terminal cleaning is profitable part of grain company operations.

The regulatory aspect relates to the factor limits within the grain standards which are: No. 1 is .4, No. 2 is .75, No. 3 is 1.25 and feed is 5%. Thus, like in Australia, there is minimal difference in factor limits between at least the top grades, there is the analogy of a "feed grade" for lots which exceed these fairly tight limits, and significant price differentials are established between these classes. This is distinctly different from in the United States but is crucial to the incentive mechanisms which develop in these countries.

France

The French grain marketing system is perhaps more commercially oriented than any of the others, including the United States. There is a multi-tiered committee structure administered at the national level which licenses varieties for release. The criteria used includes: 1) distinguishability; 2) homogenous; and 3) stability. An important end-use quality criteria included is alveograph (a measure of strength). The criteria takes the form of a tableau which allows for a tradeoff

between yield and quality for licencing purposes. Formally a variety is licensed by being placed in a catalogue, which being on is a prerequisite for planting. Despite the fact that a rigid licencing mechanism exists, about 95% of the varieties released are private. In addition, the growth rate in productivity has been greater in France than in any other exporting country (see Table 4). This growth rate has been achieved without sacrifices in quality (see Wilson and Hill for details).

Trading practices in France are dominated by a highly commercial relationship between buyers and sellers. Contracts have quality criteria and discounts for deviations. It is not uncommon for variety to be specified (or excluded variety) in a contract. The integrity of this is assured in part due to a "variety declaration" by the producer at the point of first sale, and periodic checks by the buyer(s) using electrophoresis. Other end-use criteria used in purchase contracts include limits on zeleny and alveograph values.

The grading system does not make use of " official" grades. In fact, an attempt was made in the early 1980's to institute a system of "official" grades, but they have rarely been used. Instead, all potential factors of importance become part of a contract. In addition, there is not an official agency for conducting inspections. Instead commercial firms provide this service and competitive pressures assure the integrity of these private agencies who not only provide inspection services, but also supervise origination and ship loading.

Farm policies in the EC (which prevails over France) play a crucial role in providing signals regarding quality. In 1985 the grading system for farm policy purposes was instituted which includes 3 types of wheats. These are called quality, bread and feed and significant price differentials exist between each. Criteria which distinguishes between these is fairly restrictive and includes chemical (e.g., falling number, sedimentation, protein, dough test) as well as physical tests. Prior to 1985, wheat prices differed substantially from feed grains. In 1985, the price of what was defined as feed wheat was equated to that of feed grains, with a price differential for non-feed quality characteristics. In 1987/88 these were: feed 170 ECU/mt; bread 179 ECU/mt; and quality 183 ECU/mt.[3] The important point is that a type of wheat was defined as feed and its price was equated to that of feed grains (e.g., barley) and significant price differentials were then established for non-feed use. These do not include the developments in durum which is relatively recent phenomena.[4]

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[3]ECU is the European Currency Unit used in administering the Common Agricultural policy.

[4]Through the use of differentials in both the farm price (i.e., intervention price) and the export restitution, the EC has grown to become an important exporter of durum to selected countries.

United States

In light of the paradigm above and the cross country comparisons, salient features of the grain marketing system in the United States are explained with respect to quality. The United States is the only major wheat producer without regulations at the national level for variety release. However, individual universities and private firms exert some control over variety release. The United States is essentially completely dependent on the market to determine success of varieties. The effect of this policy is for less uniformity in end-use performance.[5]

Protein is the only measurable characteristic which at best is an imprecise indicator of quality. Part of purpose of any licencing or release mechanism in some countries is as a means of categorization -- the analogy in the United States is the Class system. Indeed the current problems associated with wheat classification is a symptom of this problem.[6] The United States has been dependent on Classes for segregation but increasingly this has become a less reliable indicator of quality. In the United States, the market for quality characteristics plays a crucial role in allocation. In this market premiums and discounts are determined for measurable quality characteristics and participants throughout the system (breeder, producer, traders, handlers and end-users) respond. The dependence of market determined premiums and discounts is of greater importance in the United States than perhaps any of the competitor countries described above. However, this market does work and is very reflective of the fundamentals of the characteristics market. The data in Figures 3-6 illustrate the behavior of market determined premiums and discounts in selected wheat markets. In each case there have been important increasing trends in discounts/premiums in past 5 years--i.e., the market is transmitting important signals. Our results show that discounts for damage have increased 5 fold in past 5 years (Clow and Wilson, July 1988). These factor discounts are not easily monitored because they are in fact from individual transactions. However, the behavior of protein premiums (a high profile measurable characteristic) of the past few years is an indication of how well the market does work.

An important point in making comparisons to other countries is that the market only works well for those criteria which are easily measured (e.g., dockage, protein etc.). There are important problems for non-measurable items (e.g., end-use criteria) for most grains. Other countries have resolved this through some form of regulations over variety release and/or licensing. The United States has traditionally

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[5]Heilman has compared the end-use performance of US and Canadian red spring wheats using cargo data. To support this point the standard deviation (calculated across samples) for extraction rate was .74 and 2.7 for CWRS and HRS respectively, and for farinograph absorption was 1.2 and 2.4 respectively.

[6]The problem is that in recent years it has been increasingly more difficult to visually distinguish between wheat of different classes, and visual distinguishability is required for classification in our grading system.

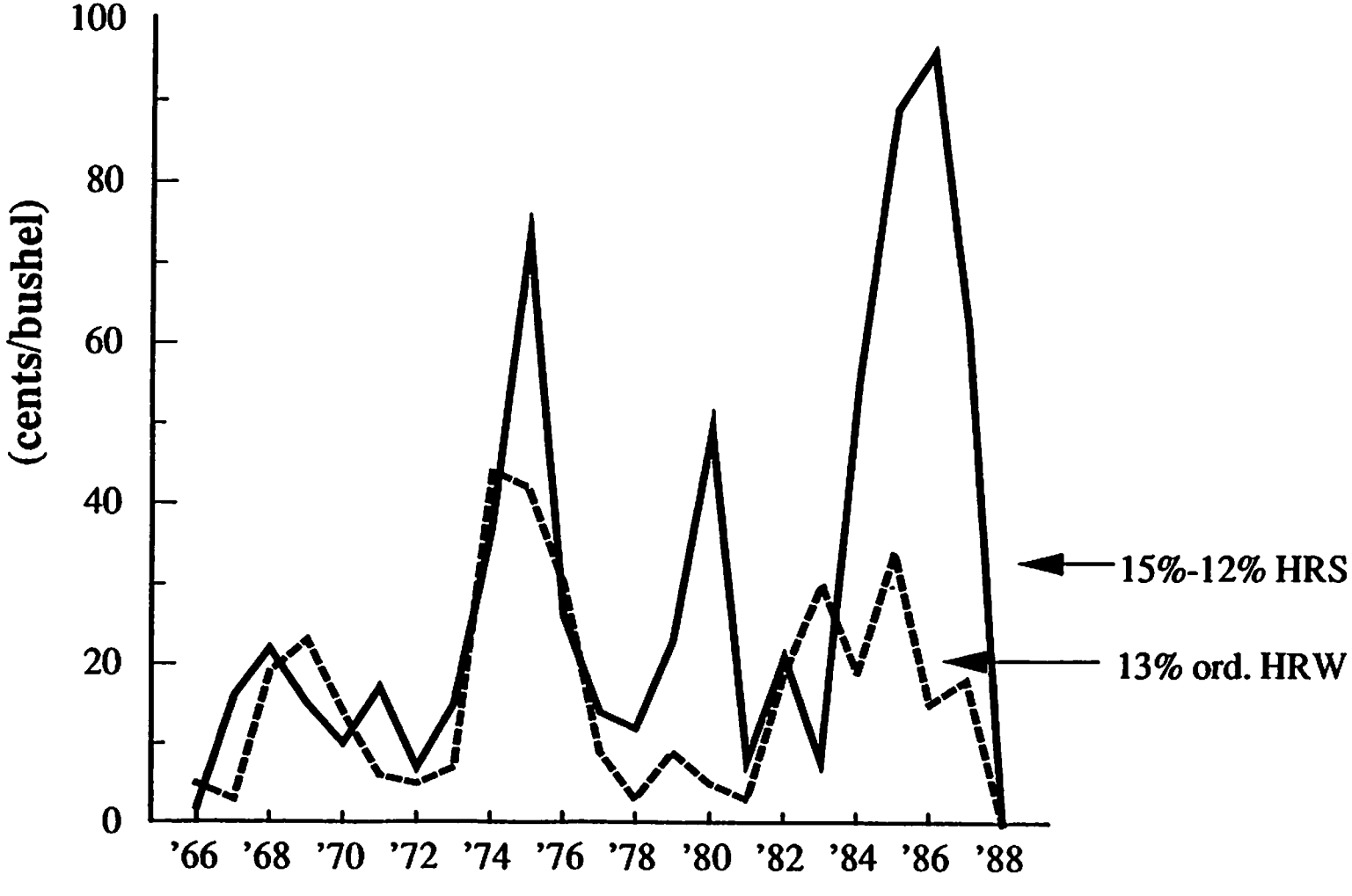

Figure 3. HRS and HRW Market Protein Premium

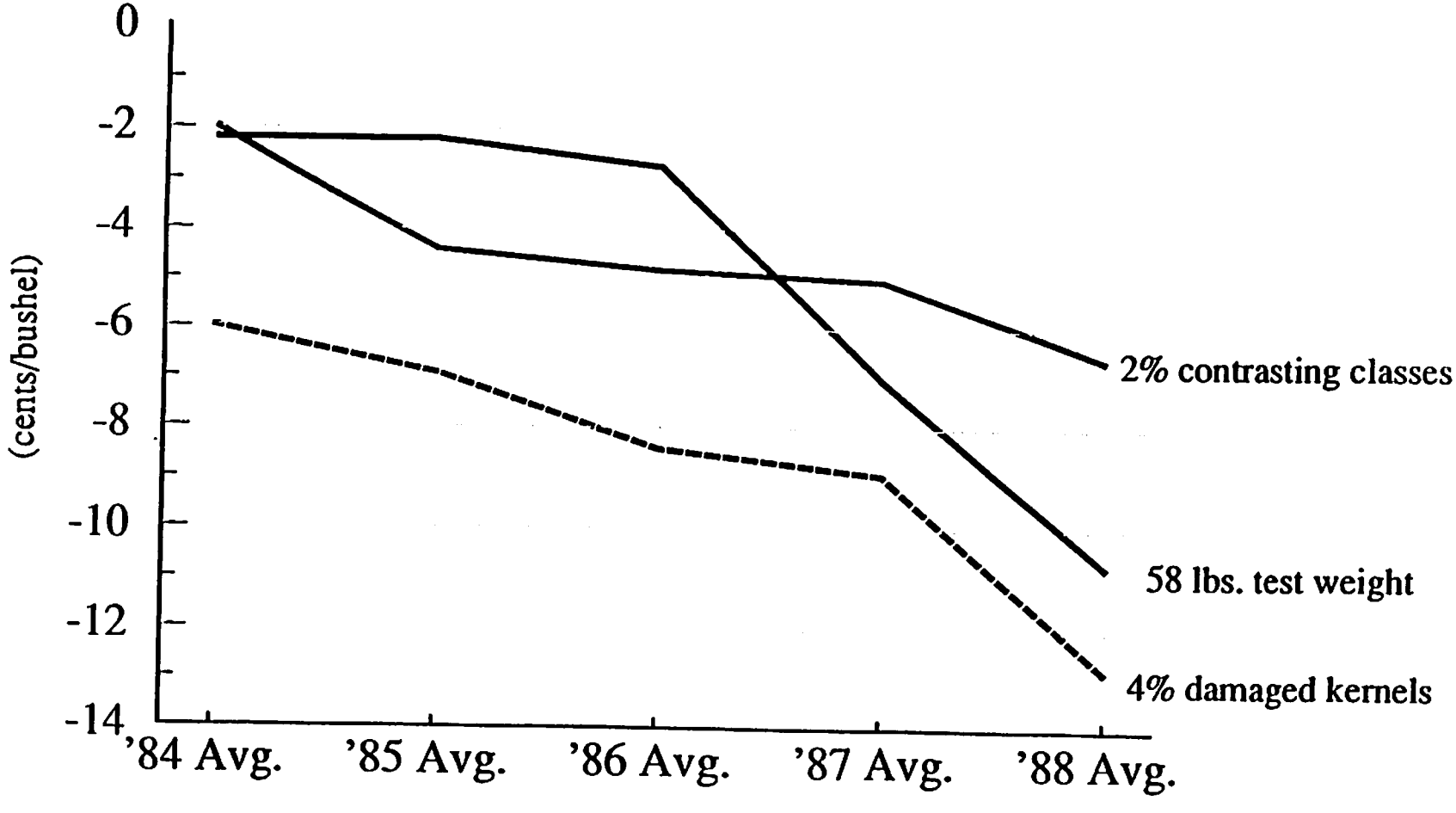

Figure 4. Average Price Adjustment Among North Dakota Country Elevators Durum (#1 HAD)

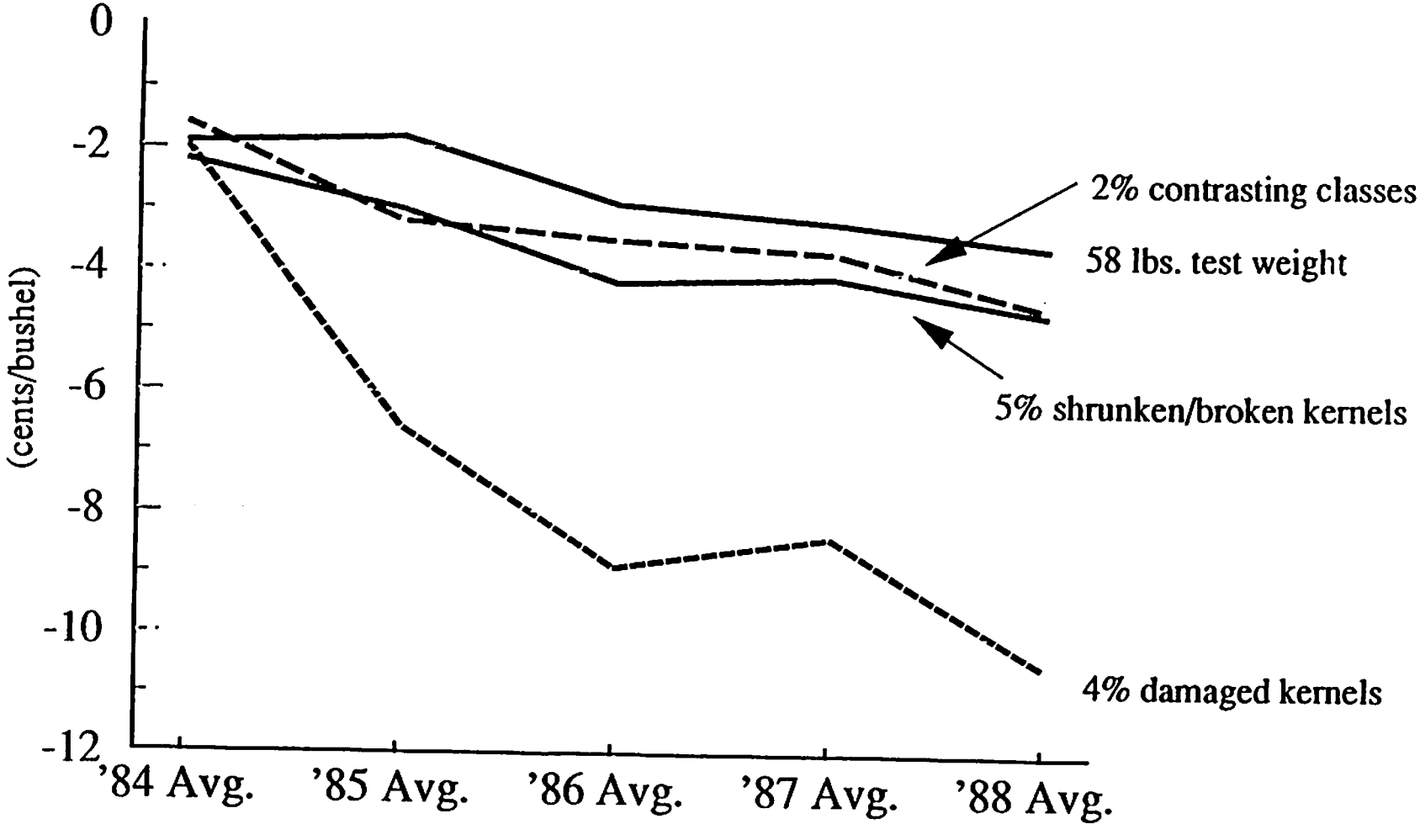

Figure 5. Average Price Adjustments Among North Dakota Country Elevators
HRS (#1 DSN) 14% Protein

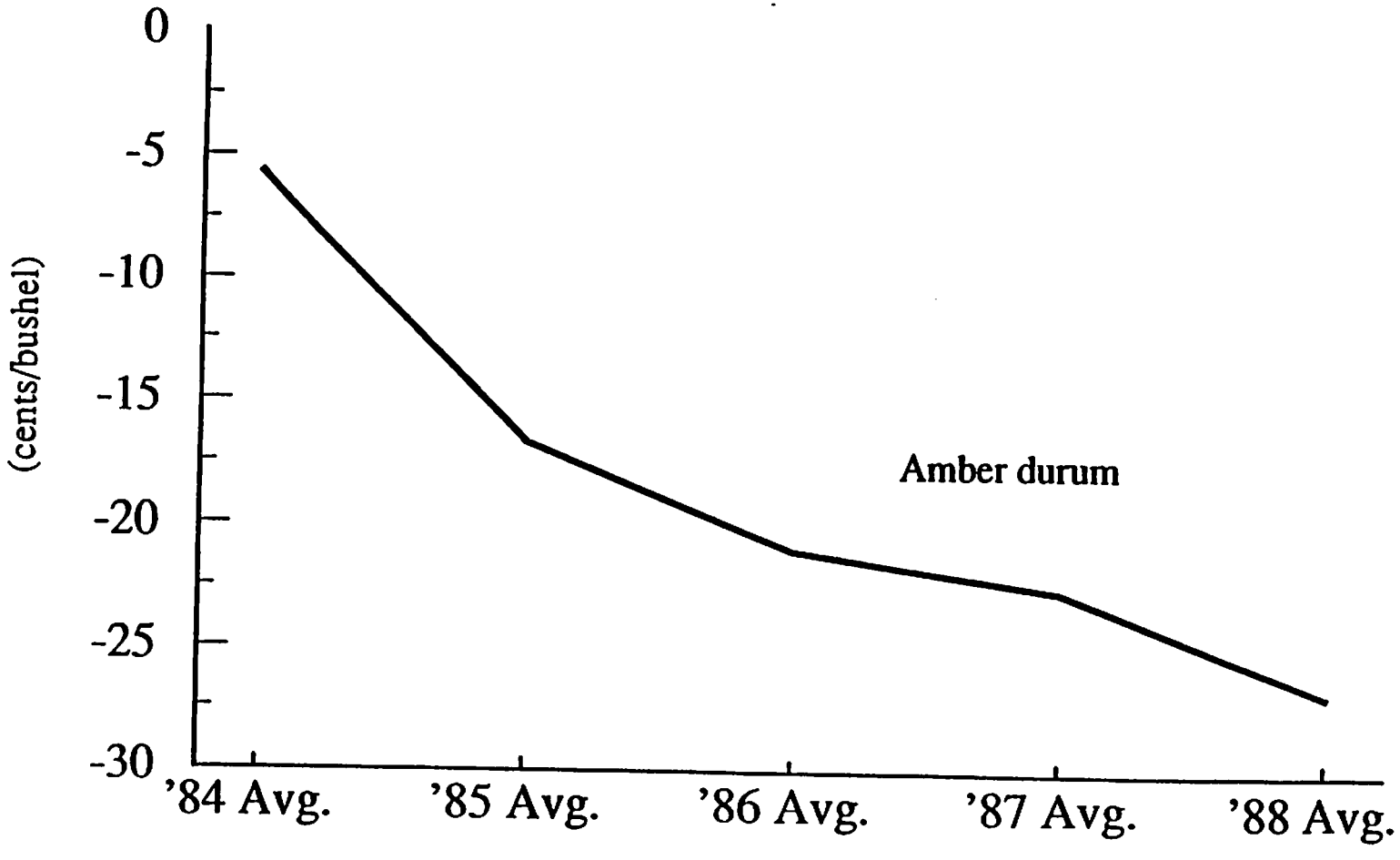

Figure 6. Average Price Adjustments Among North Dakota Country Elevators Durum (#1 HAD)

relied on premiums and discounts for wheat class and protein quantity for purposes of regulating the supply and demand for these characteristics. Due to inherent problems in use of these, and the apparent inability to develop technology for ease of measurement, there will likely be increased pressure for some form of variety licencing mechanisms and/or use of variety in the market system. This could be implemented in numerous forms, but should generally be viewed as classification by variety, or by excluded variety.

The grading system in the United States generally does not reflect end-use characteristics due to the lack of technology and/or difficulty in implementing technology in the marketing system (i.e., ease of measurement, repeatability, timely etc). As such there has been increased use of private firms for end-use tests not performed by FGIS.

In general farm policy in the United States has been yield inducing as administered since the mid-1970's. This is true for any commodity in which there exists a tradeoff between yield and quality (e.g., yield and protein in wheat). So long as target prices are based on yields, irrespective of end-use quality, this will continue to be the case. A second way in which farm policies in the United States impact quality is through storage. Extended storage especially at the farm level seems to be incompatible with preserving quality. The United States is one of the few exporting countries that makes use of such extended on-farm storage. A third indirect impact of farm policies on quality is through farm program premiums and discounts. These are substantially less than premiums and discounts established by the market, are not responsive to market conditions, and generally do not recognize end-use differences.[7] As an example, the discount for No. 2 wheat in the loan program is 2c/b, but the market discount could easily be up to 10c/b for damage (4%) alone. The effects of this policy is that the loan becomes the market for poorer quality grains. As a result the market for characteristics becomes distorted (e.g., feed-use of wheat is distorted relative to feed grains). In particular the premiums and discounts as determined by the market are not as great as they would be in absence of the loan program. Changes in this policy would result in more poorer quality wheat being forced onto the market at harvest, resulting in discounts sufficient to find its most-valued use.[8]

In a competitive environment, firms and producers must compete both on price and quality. In comparison to the United States, other countries generally have been more progressive regarding quality. Recall that the OTA survey described above indicated the least preferred wheat is that of United States. The short run implication of this from

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[7]However at one time a loan rate premium and discount schedule existed for sedimentation values in wheat as well as varieties. See Wilson, Gallagher, and Anderson.

[8]An interesting comparison is that during the period 1955-63 the wheat loan was 152% of corn, in 1964-79 it was 120, and this ratio has increased in 1980's. The point is that through administration of the loan program wheat has diverged in price from feed-grains. It was during years with the lower ratios of wheat to corn loan values in which wheat stocks were depleted.

a United States perspective, is that prices (or discounts) are used to move US wheat relative to competitors.[9]

Many of the issues described above are now beginning to surface at the national policy level. Past policy debates in the United States have generally been on fairly mechanical topics such as dockage, measuring protein on a constant moisture basis etc, and have pitted farm groups against the grain trade. Though in the future these mechanical topics will continue to be of importance there are two additional issues which will likely comprise significant attention in the quality debate in the future. One of these relates to variety release or identification mechanisms. Each of the principal competitor countries in wheat have mechanisms for variety release (not necessarily restrictive), and/or use variety extensively at some point in the marketing system. The reason for this is surely due to inability to measure relevant end-use characteristics in grain standards. The alternative is to somehow incorporate these end-use characteristics someplace in grain standards.[10] The second topic of debate relates to using farm-policy mechanism to provide incentives that otherwise do not develop. This would basically be similar to policies existing in virtually all other countries. At minimum, the current distortions could be eliminated.[11] More extreme would be to incorporate incentives for cleaning and other extraneous and indigenous quality improvements within the farm program.

Value Added Exports--Facts and Issues

An important emerging issue to US export policy, farm policy and to rural economies is that of exports of value-added commodities. In the case of grain and oilseed commodities the United States has been a relatively minor exporter, compared to competitor countries. For these commodities the United States has gradually evolved to being primarily an exporter of bulk commodities, with most processing occurring in the importing country. In this section the relative market shares of some processed commodities are presented. Following will be a brief discussion of the issues involved in exporter competition in value-added commodities.

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[9]As an example, Heilman analyzed the role of price and quality in the UK wheat market. Using an "inputs characteristics model" US wheats had to sell at up to an 8% discount relative to competitor wheats prior to being purchased.

[10]In a recent address to the Millers National Federation Mr Varnedoe, Chairman of the American Baker's Association said "We need to be able to tell the seed companies what varietal characteristics we are seeking to produce the end products that our flour is going into. And we need to tell the farmers what varieties we want or do not want," Milling and Baking News, May 16, 1989.

[11]To pick only one example, wheat loan rates in the past were based on a gross weight basis (i.e., wheat plus dockage received the full loan value.

To set the stage Figure 7 shows the export market shares for wheat flour for both the EC and the United States. The EC has always dominated this market, at least in recent years. EC market shares of the world flour market are about 70% whereas those of the United States are about 30%. This varies substantially across countries, but for the two important growth markets in flour (North Africa and Sub Sahara Africa) the EC clearly dominates. Similar relationships exist in the world malt markets where the EC has close to 70-80% market share. The largest country exporter of malt is France, followed by Belgium, UK, Canada, Czechoslovakia, and distantly the United States (See Figure 8). Similar relations also exist in the oilseed sectors. As an example, the United States has only a very minor market share of the world sunflower seed oil market. That market is dominated by Argentina which has about 50% of the market (Figure 9).[12]

The point of the above is to suggest that the United States has largely been an exporter of bulk grains and oilseeds. The reasons for this divergence is due in large part to policies in other exporting countries which are administered in such a way to favor the export of processed commodities versus bulk commodities. For example, the EC uses a differential export subsidy scheme which in general favors exports of processed grains such as flour and malt and more than likely oils will be treated similarly in the future. Other policies are fairly intricate but in general have favored domestic processing and export of products. The policy mechanisms used in South America have largely been taxes applied on exports. These normally contain a differential tax on the export of bulk versus the processed commodity. As an example, in 1985 export taxes in Argentina were: 34% for sunflower seeds; 24.5% for sunflower oil; and 25% for sunflower meal (Fay). Notwithstanding extraction rates these clearly favor the export of products over the bulk commodity. Similar schemes are used in other countries. The impact of these policies is to stimulate the development of a processing industry for purposes of exporting value-added commodities.[13] The impact on the United States is that these policies make it very difficult for United States processors to be competitive in most markets. As a result the United States has evolved to become primarily an exporter of bulk commodities.

This evolution is fairly important for a number of reasons. First, there have been some suggestions (Milling and Baking News, May 16, 1989) that the growth rate for bulk commodities will be 2% per year, whereas that for processed commodities will be about 10% per year. One of the ways the United States addresses this competitiveness problem is through export pricing policy. The most recent application is that of the

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[12]Though not presented, there is similar dominance by competitor countries in soybean products. In the case of soybeans, Brazil and Argentina dominate.

[13]An interesting side effect of these policies applied in each of these countries is that a very strong coalition is formed between agricultural producers and processors, both being impacted by the policy. This is a very important coalition for political support of policies and is one which has yet to form in the United States.

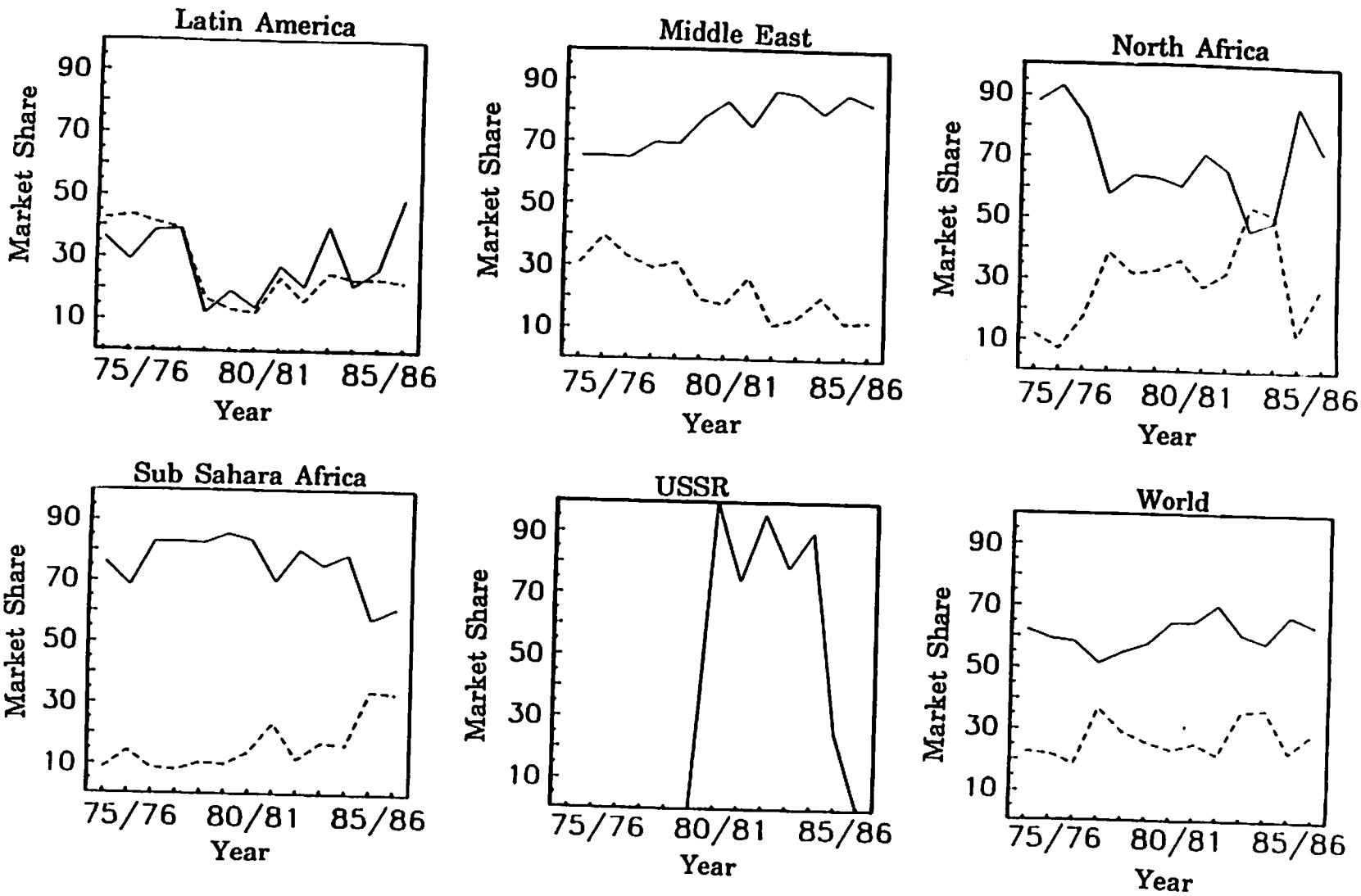

Figure 7. Flour Market Share for EC (-) and US (--) to Selected Countries

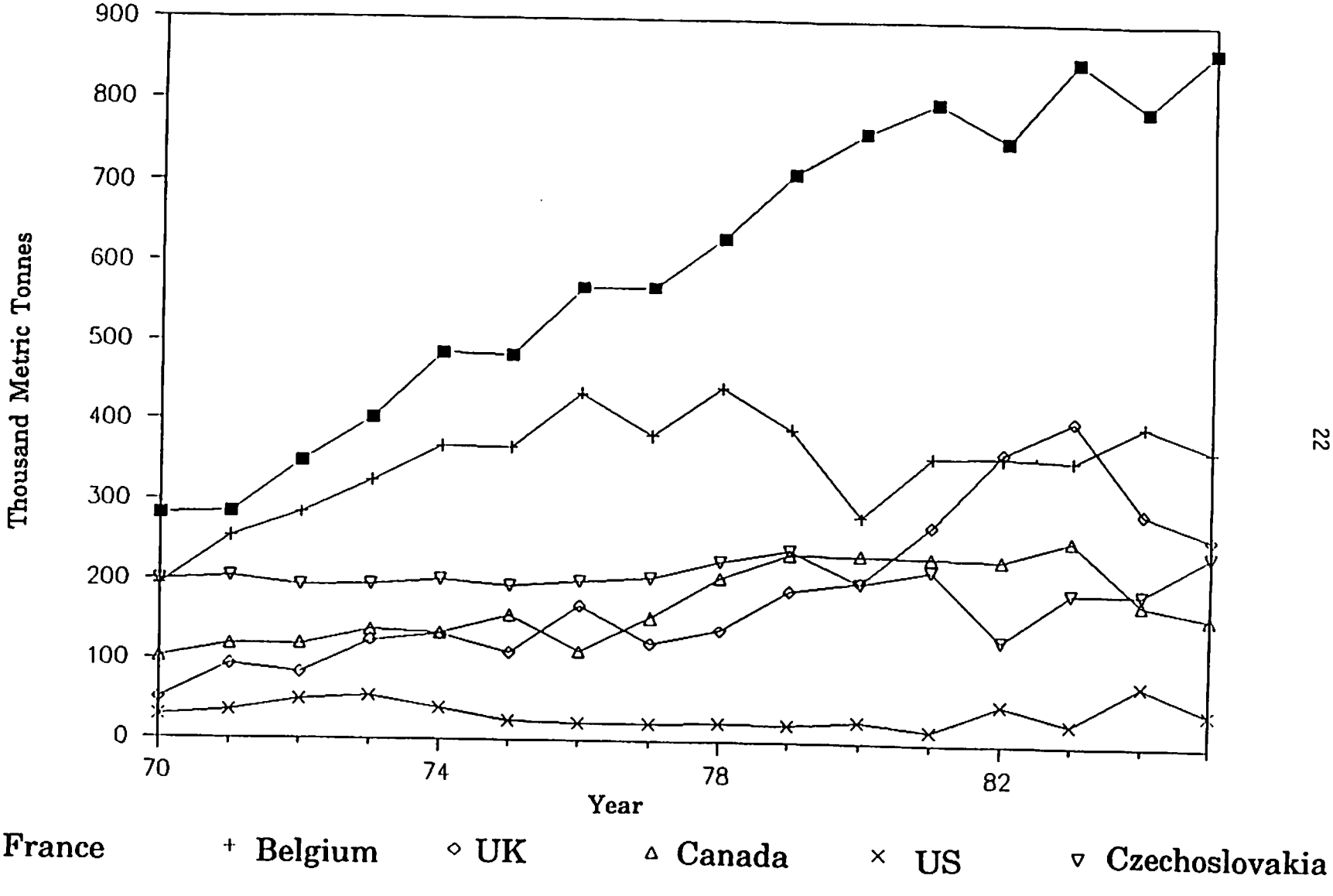

Figure 8. Exports of Malt

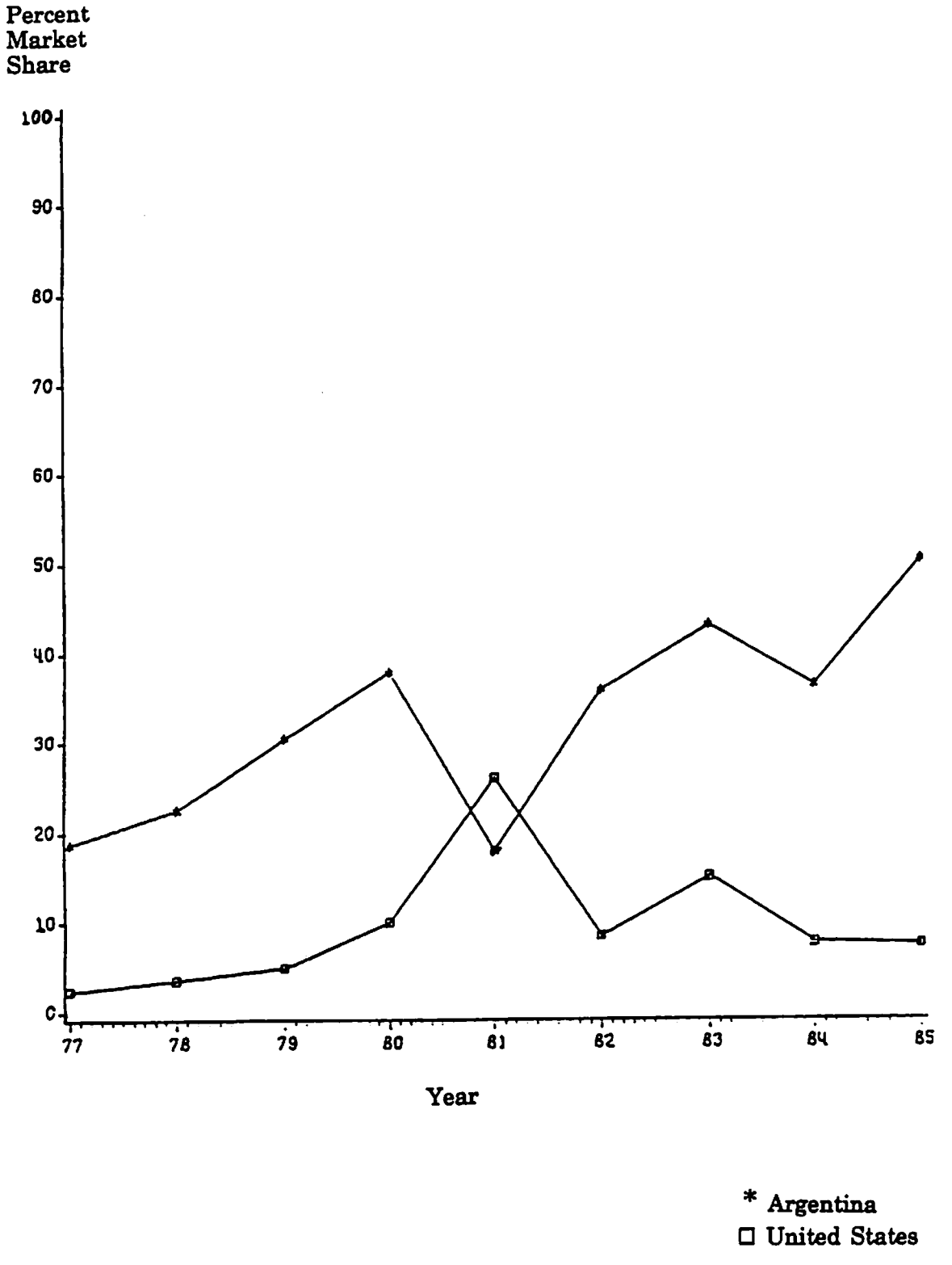

Figure 9. United States and Argentina Market Share of Total World Sunflower Seed Oil Exports

Export Enhancement Program which was initiated in 1985. The original intent of that policy was to use subsidies to combat unfair pricing practices of competitors in both bulk and processed commodities. Early in its administration processed grain commodities received allocations which would suggest the intent was being carried out. There are at least four issues involved with implementation of export subsidies on processed versus bulk commodities: 1) it is more difficult to know competitor prices of processed commodities; 2) some of the processing industries rapidly approached capacity limits (e.g., flour and malt) as exports increased, but firms would be reluctant to expand in light of the uncertain nature of the funding; 3) quality issues are much more pervasive in the export of processed commodities than bulk; and 4) implicit subsidies by competitor countries to their processing sectors are fairly large giving them greater political support, thereby making it more difficult to effectuate a change in their pricing policies. For these reasons and perhaps for others, in the recent years it would appear that increasingly in the United States more funds are being funneled to subsidies on bulk commodity exports versus the export of processed commodities.[14]

The evolution of US policies toward these industries will be crucial for their further development as well as the competitive environment within each industry. At the extreme, elimination of the subsidy on processed products would adversely impact the trade balance, and would have devastating impacts on capacity utilization, and therefore the competitive structure, of some of these industries.

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[14]Of course the processing industries have formed a media campaign to support their claim to greater shares of the export subsidy funds. This was formed under the auspices of the "Export Processing Industry Coalition".

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