

DONNING THE CAP:  
THE ECONOMIC CONSEQUENCES OF THE EUROPEAN  
COMMUNITY'S COMMON AGRICULTURAL POLICY IN SPAIN

by  
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## I. INTRODUCTION

The theories expounded by international economics are primarily concerned with the efficient use of resources that can be achieved through free trade with other countries, but politicians rarely see the most efficient situation as one which is politically viable. The reason for the policy-makers' reluctance is clear: free trade, for all of its benefits to the society as a whole, is potentially devastating to certain segments of that society. If the segments that stand to lose due to the increased trade are organized enough to wield political pressure, they may have the ability to influence policy decisions that will work to their advantage. The European Community's Common Agricultural Policy is a perfect example of how a unified minority has protected itself through political lobbying at the expense of society as a whole.

In this paper, I examine the effect that the Common Agricultural Policy has had in a single country over a short time span using some of the theories of international economics. I begin by explaining what the European Community is, and how the Common Agricultural Policy came into existence. I then move into some detail about the mechanics of the Common Agricultural Policy, using economic theories to explain how it works and the effect that it has on producers, consumers and the European Community's budget. This puts into place the background needed to examine the actual effect that the Common Agricultural Policy has on an individual sector of the Spanish agricultural industry, specifically, the cereals market. Next, I tally the gains and losses to the Spanish and the EC farmers, consumers and governments to see if what



has happened in Spain is congruent with the economic theory. I conclude by looking at some proposed reforms for the Common Agricultural Policy, and the theoretical effect they would have on the Spanish situation.

## II. THE EUROPEAN COMMUNITY

Formed on January 1, 1958 by the Treaty of Rome, the European Community (EC) originally consisted of six countries. It has expanded three times, most recently in 1986 by the addition of Spain and Portugal to double its original size. It now consists of the twelve countries of Germany, Denmark, The Netherlands, Belgium, Italy, Greece, Luxembourg, United Kingdom, Ireland, France, Portugal, and Spain.

The EC was formed with the intention of linking the economies of the countries of western Europe, thereby increasing their interdependence and reducing the risk of war. This melding was accomplished through the formation of a customs union, a level of economic integration whereby the member countries eliminate trade barriers between themselves and then all agree to impose identical trade barriers on countries outside the customs union. A trade barrier is any governmental policy which restricts the free flow of goods and services into or out of a country. Countries outside of the customs union may also be referred to as "non-members," "third countries," or "the world."

In order to accomplish the goals of economic integration, the Treaty of Rome created a supra-national governmental body headquartered in Brussels, Belgium. These bureaucratic headquarters are commonly referred to as the "EC," although this is something of a misnomer. The EC is actually the entire group of nations, not just the building that issues the policy directives. The "Eurocrats" in Brussels work for the betterment of all of Europe, at times putting them at odds with their own national interests. The complete workings of the EC

decision-making process are too complex to be dealt with here, but an overview of the bodies and their purposes will be useful.

The three main branches of the EC are the Commission, the Council of Ministers, and the Parliament. Policy directives are formulated, proposed and enforced by the Commission, whose 17 members are appointed by unanimous approval of the member countries to 4-year terms in Brussels.

The Council of Ministers consists of the ministers of each member nation whose jurisdiction includes the proposed policy. For example, policy proposals dealing with agriculture will be taken up by the Council composed of the Agricultural ministers of each country. Each minister's vote is weighed according to the proportion of population and gross domestic product their country contributes to the EC total. Any legislation the Commission proposes must pass in the Council by a qualified majority (seventy percent) for it to become EC law (Thompson 1989).

The 518 members of the European Parliament are directly elected from their individual nations, but their powers are limited to making recommendations to the other two bodies about proposed legislation and approving the annual budget (Colchester 1990).

The EC is a large and ponderous institution. There are over 10,000 people working for the Commission in Brussels and it may take more than two years for the Commission's proposals to be passed by the Council (Thompson 1989). Once one sees how slowly the EC moves, it is easier to understand why the EC's first unified political action, the Common Agricultural Policy, or CAP, is both impressively adaptable to change and frustratingly difficult to modify.

### III. WHAT'S IN THE CAP?

Agricultural policy may be defined as ". . .that set of measures taken by central governments which are aimed at influencing, directly or indirectly, agricultural factor and product markets" (Hill 1987 cit. Josling 1974). Simply put, agricultural policy is a set of laws that tries to manipulate the prices of farming inputs (land, fertilizer, etc.) and the price of the output, or harvest.

Agricultural policies may have a variety of worthy goals. A policy may be formulated to attempt to increase economic efficiency. This may mean trying to smooth out the wide variations in supply (and price) that agriculture is prone to because of climatic vagaries and the fact that usually all of a harvest matures in a relatively short time period. Alternately, efficiency may be increased by facilitating structural changes, such as the agglomeration of small farms into larger, more efficient, units.

Agricultural policy may try to protect domestic production so that food will be available if the international supply is interrupted, as in the case of war. Some policies win public support by aiming to keep food prices low; for obvious reasons, these policies are usually the easiest for society to swallow.

A more difficult goal of policy is to attempt to redress the income disparity between those who work in the low-paying agricultural sector and those who do not. The European Community sought to accomplish all of these goals when it formulated its Common Agricultural Policy.

Upon its creation, one of the first policy areas the EC sought to unify was that of agriculture. In fact, agriculture was so important to the member nations that they felt it warranted its own section in the Treaty of Rome. Prior to joining the EC, each nation had its own agricultural policy designed to serve its own interests, which usually meant restricting imports so that domestic farmers would not have to face competitive pressures from abroad. When they dismantled the cobweb of individual national policies, the members of the EC attempted to create a common market that would increase welfare by guarding the income of farm laborers, augmenting productivity, and maintaining reasonable consumer prices. The Common Agricultural Policy was the result.

The exact goals of the CAP are spelled out in Article 39 of the Treaty of Rome, which states:

The Common agricultural policy shall have as its objectives:

- (a) to increase agricultural productivity by promoting technical progress and by ensuring the rational development of agricultural production and the optimal utilization of the factors of production, in particular, labour;
- (b) thus to ensure a fair standard of living for the agricultural community, in particular by increasing the individual earnings of persons engaged in agriculture;
- (c) to stabilize markets;
- (d) to assure the availability of supplies;
- (e) to ensure that supplies reach consumers at reasonable prices.

It is important to note that the Article does not lay down specific policies to achieve its goals. Moreover, some of the goals of the CAP can lead directly to conflicting policy decisions. In order for any policy to be put in place, a judgment must be made as to which goals will be

emphasized and which will be ignored. The CAP turned out to be a policy that emphasizes the first two goals of Article 39, achieves the second two objectives, and virtually ignores the last.

As it stands now, the primary goal of the CAP is to raise farmers' incomes. It does this by artificially raising the prices of agricultural products above the free market level, eliminating the competitive pressure of imports from third countries, and intervening to buy any surpluses off the market in order to keep the price from falling. The specific mechanics of this system are a marvel of bureaucratic complexity.

The process begins when the Council of Ministers sets a "target" price for each agricultural product at the beginning of the year. This is the price that they decide strikes a balance between consumer and producer interests, although in reality "consumer interests, as is usual in Community agricultural contexts, are virtually ignored" (Hill 1984). The target price is (supposedly) a common, i.e., Community-wide, price and is set in European Currency Units (ECU's). The ECU is a hypothetical basket currency with a value equal to a fixed proportion of each of the member countries' currencies (See Table #1).

The target price is set at the region of the EC that has the highest consumption and is then computed in other areas by deducting the transportation costs involved in getting the goods from their place of production to the target area (Coffey 1988). For example, Duisburg, Germany has the highest consumption of wheat in the EC. The target price in Spain, therefore, will be lower than that in France due to the higher transportation costs incurred when shipping from Spain to Germany. This system prevents all of the EC's production from going to

the area that has the highest demand, where it would be able to garner a higher price, thus circumventing the EC's desire to maintain a single, Community-wide, price.

After the target price is set, a variety of other prices are calculated from it (See Table #2). The derived target price at the nearest port is known as the threshold price. The threshold price is the lowest price that a good can be imported in to the EC from the rest of the world. Any difference between the world market price and the threshold price is made up for by a variable levy. A variable levy is a tax on imports that fluctuates inversely with the world price, ensuring that inexpensive imports cannot be brought into the EC and sold for less than the target price.

When farmers cannot sell all of their harvest on the market at the target price, the CAP has created a system of compulsory intervention by control authorities. Compulsory intervention means that these control authorities (EC representatives) will purchase all of a farmer's production offered to them at the intervention price. The Council usually sets this intervention, or guarantee, price slightly below the target price in order to encourage farmers to sell to the market first. The intervention authorities acting in each nation pay the farmers from a section of the EC budget called the European Agricultural Guidance and Guarantee Fund. Expenditures from this fund account for nearly *two-thirds* of the EC's entire annual budget.

#### IV. MCA'S AND GREEN RATES

As already mentioned, the Council sets the prices in a common currency, the ECU, and the ECU value is then converted into a nation's currency to set the domestic price in each country. This system worked smoothly when the CAP was established in 1962, because the currencies of Europe had fixed exchange rates. The value of any particular currency against any other was always a fixed amount. Values were also fixed against the ECU, which made conversion from the common ECU price into the national currency prices a truly common price. This simple situation came to an end in 1969, when the French franc and the German mark underwent parity changes (changes in the value of their currencies). The franc was devalued (depreciated) and the mark was revalued (appreciated), which means that the franc was worth less and the mark was worth more relative to other currencies, including the ECU. The result, as Colchester (1990) states, was that,

". . .with the ECU worth more in franc terms, French food prices should have risen. But the French government decided it could do without such an additional boost to inflation, and its Community partners decided they could do without French farmers getting a bigger apparent price rise than their own. So, the dreaded Monetary Compensatory Amounts came into the world."

An Monetary Compensatory Amount (MCA) is the intra-EC equivalent to the EC's external variable levy. The MCA's take the form of a tax or a refund on exports from a particular country. The purpose of the MCA is to eliminate any advantage that farmers may gain from currency devaluation and keep products at the same price in terms of the domestic currency (Coffey 1988). The MCA's prevent trade patterns



from changing in favor of the country that has devalued, which would encourage further devaluation and lead to monetary instability.

In the French case the MCA's meant that imports would be subsidized and exports would be taxed, which came to be known as the imposition of a "negative" MCA. Other countries in the EC were thus protected from being flooded with relatively cheap French products. Simultaneously, "positive" MCA's were imposed in Germany that had the opposite effect, i.e., imports were taxed and exports were subsidized, so that German farmers would not be adversely effected by the relative price increase of their products (See Table #3).

With the invention of the MCA, the "green" rate of exchange also emerged. The green rate is the value of the national currency in ECU's before revaluation and is used exclusively for converting the EC agricultural prices into domestic prices. The effect of green rates and MCA's is to recreate, and maintain, disparate prices in each country.

An example of how green rates of exchange and MCA's are used may help to clarify the matter. Say the common support price for one bushel of wheat is equal to one ECU.

The original and the "green" exchange rates are such that  
 $10 \text{ FF} = 1 \text{ ECU} = 6 \text{ DM}$ . The new rate after parity changes is  
 $15 \text{ FF} = 1 \text{ ECU} = 3 \text{ DM}$ .

If the new exchange rates were used to convert the ECU prices into domestic prices, French farmers would now be receiving 5 additional francs for every bushel of wheat that they produce, while the Germans would be outraged that the price they get would be cut in half. To avoid both of these problems, the old exchange rate, now called the green rate, must be used.

But the green rate alone is not enough, for the French, seeing an opportunity still exists, will start to export their wheat to Germany, where it can be sold to the German intervention agency for the green rate of 6 DM. The French farmers then take their six German marks to any bank where they can be exchanged for the new market rate of 30 French francs.

To prevent all of the French wheat from ending up in Germany, two MCA's are introduced, one into France that taxes their wheat exports and the other into Germany that will levy taxes on wheat imports. Any French advantage created by the parity change is destroyed and German farmers are protected from falling prices.

By means of this complex system, the common agricultural market maintains the appearance of being common, but, in reality, it has as many different prices as there are countries. Although the exact effects of the CAP are difficult to quantify, by using some of the theories of international economics it is possible to model the effects that the CAP has had on producers, consumers and governmental agencies.

## V. THE ECONOMICS OF THE CAP

To examine how the CAP affects producers, consumers and governments, I will first look at the effects of a customs union according to the theories of international economics and trade. After I explain how integration affects the countries involved, I will move to the individual case of the Spanish cereal market and use historical data to determine if it behaved in accordance with the model's predictions or if incongruous events took place.

As a first step, I will explain the economic reasoning behind supply and demand using a simple model of supply/demand price determination. This is a graphical model of the workings of a market, where providers of a good come to an agreement with those consumers who would like to purchase a specified amount of the good at a specified price. The horizontal axis of the graph measures the quantity of the good, while the vertical axis measures the good's price (See Graph #1).

The supply curve represents the amount of product that producers will be willing to bring to market at any given price. It is upward-sloping to reflect the increasing costs of producing additional units of a good as more and more is produced (See Graph #1). This phenomenon is the result of what is known in economics as the law of diminishing returns. As resources that are less adaptable to production (such as hilly fields, in the case of agriculture) are forced to produce the good, it becomes increasingly difficult to boost the quantity produced without a large increase in cost. These marginal resources will only be used for production if the price is raised sufficiently to cover their higher cost.

The demand curve reflects the value that society places on consumption of one additional unit of output. From the demand curve we can discern the amount of a product that consumers will be willing to purchase at any given price. This curve is downward-sloping to reflect the decreasing perceived benefits that each additional consumer receives from consumption of the product (See Graph #1 again). The lower the value the consumer places on a product, the lower its price will have to be in order to motivate the consumer to purchase the product.

The market is said to be in equilibrium when the price of the product and the quantity produced coincide at the point where the demand curve crosses the supply curve. At this point, an efficient market "clears," that is, every unit of production is sold on the market because just enough consumers are willing and able to purchase that amount at the market price.

If the market is not in equilibrium, the "invisible hand" (Adam Smith's famous theory) will push the market towards that point. A price that is set too low will result in a problem of excess demand, and, as many people compete over few goods, the price will rise. A price that is too high will have the opposite effect, resulting in an oversupply of the product, and a resultant fall in price in order to clear the market. If the quantity being produced is below equilibrium, consumers will be paying a premium for the scarce product, new producers will see a profit opportunity and enter the market, increasing the quantity supplied and exerting downward pressure on prices.

The most relevant condition for purposes of this paper is when producers who find themselves in a situation of oversupply are unable to sell their product for a price that covers the cost of production. The

inefficient producers will then drop out of the market and devote their resources to other, more highly valued uses. The supply will fall until the more efficient producers can sell all of their product at a price that will cover their costs. Later, we will see how the CAP interferes with this aspect of the invisible hand, but first we must develop the rest of the model.

Prices in a free market system act as signals to both the consumer and the producer. When consumers decide how much they will pay for various products, they are determining prices that allow society to place relative values on different goods. Producers interpret these prices as signals to direct resources to the production of those goods that society values most. Changes in societal values or the cost of resources have a different effect on the demand/supply model, causing shifts of the entire curves, rather than just movements along stationary curves.

A supply curve will shift when there is a relative change in production costs. Technological advancements, e.g., better fertilizer and harvesting machinery, or favorable weather conditions will decrease the production costs and will shift the supply curve out (See Graph #2). The new supply curve reflects the fact that now more product can be produced (at any given price) than before the innovation. If demand is held constant, price will fall until it reaches the intersection of the new supply curve. Society benefits from the innovation by consuming more goods at a lower price. Rising costs or difficulty in production will be accompanied by an inward shift of the supply curve, and a corresponding increase in price and decrease in the quantity consumed. As mentioned before, in the case of agriculture large shifts in the supply

curve are not uncommon due to a capricious climate nurturing bumper crops one year and creating drought-starved fields the next.

A demand curve will shift when consumers preferences change, i.e. the value derived from the consumption of one product relative to another product increases or decreases, or when the number of consumers changes. For example, reports of favorable health benefits of oat bran would increase peoples' desire for oats, the demand curve for oats would shift outward, and the price of oats would rise (See Graph #3). To the extent that oat consumption displaced consumption of other products, say, for example, wheat, the demand curve for wheat would shift inward, and wheat's price would fall, along with the quantity of wheat produced.

In addition to price and quantity, there are two measurements of welfare that can be discerned from this model. The first, *consumer surplus*, is defined as the area that lies below the demand curve and above the price line. This area represents the sum of the amounts that consumers would have been willing to pay for the product minus the actual price they had to pay (See Graph #4). Up until the very last, or marginal, consumer, every consumer receives more value from the good than he was required to pay for it. All but the last person would have been willing to pay a higher price for the good because their benefits from purchasing that good are greater than the price (Nicholson 1990).

*Producer surplus* is the area above the supply curve and below the price line. Almost every supplier will receive the market price, which is higher than the price for which they would have been willing to supply their product to the market. The last (marginal) supplier will not accrue any producer surplus, but the price of the good will be just enough to

cover the cost of production. The amount represented by the area of the graph between the price received and the price required to induce production is the producer surplus (See Graph #4 again).

## VI. SQUEEZE ON THAT CAP!

By superimposing the pricing system of the CAP over the demand/supply model that has been developed, it is possible to see the effects that the CAP has on world trade and the EC's internal production and welfare.

For this example, the world supply curve is assumed to be perfectly elastic at the price at which the good trades internationally. Any exporter may sell goods on the international market at this price, but will not be able to sell any at a higher price, as the importers in other countries will simply purchase from those countries willing to sell at the going world price instead. Likewise, there is no incentive for exporters to sell goods at a lower price, as they will forgo any surplus and, as a relatively infinitesimal part of the global market, not be able to alter world supply enough to influence the world price. The supply curve for a single country or group of countries, however, will still maintain its upward slope, for the reasons already mentioned.

It is assumed also that a country may import any quantity at the world price, and, as a relatively small part of the global consumption, have no discernable affect on the overall global demand, and also the price, of the commodity. There is a slight problem in this case because the size of the EC trading block means that the volume of EC production or imports may have some influence on world prices. For the purposes of this paper, though, it will suffice to assume that the world price is independent of EC influence, and constant at some set level.



The Council of Ministers will generally set the CAP support price at the national price of the highest-cost producer. This decision is the most politically palatable, because it benefits the lower cost EC producers and does not penalize the inefficient ones. Unfortunately, this price is usually significantly higher than the world price.

Before the imposition of the variable levy, the price of wheat in the EC is the world price (See Graph #5). This price is below the domestic equilibrium point, so demand will exceed supply. With free trade, the difference between the quantity demanded and the quantity supplied will be imported at the world price. In the example, the world price is set at  $P_1$ . At this price, the EC will produce quantity  $Q_1$  and demand quantity  $Q_4$ . The difference,  $Q_4 - Q_1$ , will be imported from the rest of the world.

Now say as part of the CAP the EC imposes a support price at  $P_2$  and raises the minimum import price (the threshold price) to  $P_2$  as well, through the use of a variable levy (See Graph #5 again). The domestic effect of this price increase will be an increase in production from  $Q_1$  to  $Q_2$ . Less efficient farmers who previously found it unprofitable to devote their resources to agriculture will now be able to sell their production at the supported price. Demand, meanwhile, will decrease from  $Q_4$  to  $Q_3$  as consumers react to the higher prices being charged for the good. Exports will be reduced as well, and will equal the amount  $Q_3 - Q_2$ .

Consumer surplus under the new system will be reduced by the area  $P_1P_2bf$ . Part of this loss will accrue to producers as an increase in their producer surplus of area  $P_1P_2ac$ . Area  $abed$  will be revenue for the EC coffers from the variable levy tax placed on imports to bring their price up to the domestic support price.

Thus far, it appears that the import levy was beneficial, raising the price received by the farmers and generating revenue for the government. The problem is the two triangles that have not yet been accounted for out of the lost consumer surplus. These two areas are known as the *deadweight loss* because the loss in consumer surplus that they represent does not accrue to any second party. Area *acd* is the *protective effect* of the levy on imports. This area represents a loss of productive efficiency caused by diverting national resources that are less easily adapted to production of this good, and therefore more costly to convert to this use. The *consumption effect* of the levy is area *bef*, representing the cost to society that occurs because of the increased price and lower consumption of the product (Carbaugh 1992).

Under the CAP's pricing system, a shift of the supply curve will not only exacerbate the current problems, but also create new ones. Suppose that a technological innovation causes the supply curve to shift out, as is shown in Graph #6. If the price were free to move, it would slide down the demand curve until its intersection with the new supply curve. Welfare would increase because society would be able to purchase more for less. But the Common Agricultural Policy freezes the price that farmers receive and consumers pay. Farmers will therefore increase their production until they reach the point where the new supply curve crosses the price line at quantity Q5. The new dilemma is that consumers, facing the same prices for the CAP-protected goods, have no incentive to increase their purchases and will continue to buy quantity Q3. Imports will disappear as the EC finds itself in a state of oversupply equal to the amount Q5-Q3.

The EC's intervention agents will buy any oversupply at the support price, so the producers have no reason to decrease production. Any benefits of increased productivity will accrue to the producers; consumer surplus under the variable-levy scheme of the CAP will not change. Producers' will respond by trying to realize further productivity gains, increasing both their income and the costs of the CAP. Hill (1984) explains why production has snowballed so rapidly under the CAP in the following manner:

"the pace of productivity increases has been faster in this than in any previous century and has accelerated dramatically since the introduction of the CAP. . .at the time when the application of scientific advances was raising output at unprecedented rates, the CAP guaranteed high prices for all the food which European farmers could produce--without limit."

The EC must store the surplus, hoping that due to poor harvests or an increase in world price they will be able to sell it at a later time. Unfortunately, the more common situation is that the EC finds it has created a state of chronic surplus, and it will have to pay export subsidies to exporters in order for them to be able to sell the surplus on the world market. An export subsidy is a payment from the EC to domestic exporters equal to the difference between the intervention price and the world price (See Table #2).

Complaints from the rest of the world against the EC's practice of "dumping" goods on the world market (selling them for less than the cost of production) occur when these export subsidies become greater than the difference between EC and world prices, allowing exporters to undersell the world price and let the EC pay the tab.

In order to understand exactly how the policies of the CAP affect both consumers and producers, it is necessary to familiarize oneself with

some of the peculiarities of the agricultural sector and the role that agriculture plays in the workings of an economy.

Hill (1984) builds an interesting model of economic development that explains the dynamic nature of agriculture in an economy. He states that societies begin with low incomes and the majority of their people employed in agriculture. As an economy moves from being agricultural to industrial, innovations (such as tractors or fertilizer) are applied to agriculture which increase agricultural production. The increase in the food supply causes the price of food to fall, which has the dual effect of increasing consumers' incomes (a smaller proportion of their wages are spent on food) while depressing the incomes of farm laborers (due to low prices and labor-saving innovations). The disparity in wages will cause a migration out of agriculture into other, higher paying, areas of the economy. The cycles of innovation, increased production, wage disparity, and exodus may continue indefinitely, if the market prices, and the laborers, are free to move.

The implications of this process are that farmers will face declining prices for their products and relatively low wages, while agriculture's proportion of the economy will shrink relative to other sectors (Ibid. 1984). Economically, these effects are beneficial, as they foster the growth of efficiency in production, that is, rewarding those who can provide more food for a lower cost, while encouraging marginal producers (those who are not efficient enough to provide their goods at the market price and make a profit) to move their labor and capital into areas of the economy where they would be more highly valued.

The CAP plays havoc with this cycle. By not allowing agricultural prices to fall as productivity increases, the CAP keeps wages and revenue

from farming deceptively high, and forces society to bear the cost both in terms of direct cash outlays to farmers and, more seriously, by slowing the growth of the overall standard of living by keeping resources in agriculture that would be more productively employed in other areas of the economy. This stagnating effect is amplified when the EC is in a recession, where growth in all areas of the economy is weak, and the unemployed see the guaranteed income of agriculture as a profitable career move.

Estimates of the cost of the CAP to consumers are hard to come by. At least one researcher has estimated that the transfer from consumers to farmers is equal to 2.3 percent of national income (Coffey 1988). This number, however, is unrepresentative of costs that are directly related to the CAP because, were the CAP not in place, there would be similar national agricultural policies that would also transfer income. There is no sure way of knowing what these policies would be, let alone how much they would cost, so any savings or additional expenses due to the CAP can only be roughly estimated.

With consumers bearing the greatest losses from the imposition of the CAP, it may seem curious that they have not formed their own influential interest groups to plead their case for lower prices. There are some consumer lobbies, but seldom have they been able to gain even a fraction of the political influence of the farmers' organizations. Hill (1987) points out that it is the broad and heterogeneous nature of consumers that leads to their downfall. There are many more consumers than producers, and each individual consumer stands to gain little from the lowering of food prices. In contrast, farmers are a small, relatively homogeneous group with clearly defined goals and a strong sense of

identity. Each individual farmer stands to gain greatly by the increase, or at least the maintenance, of agricultural support, giving them ample incentive to intensely lobby politicians (Devinney and Hightower 1991). Politicians are prone to listening to their most vocal constituents and the fact that farming organizations represent large blocks of voters is augmented in that, by their nature, "farmers tend to be rather vociferous" (Hill 1984).

It is curious that for all this concern over farmers incomes, only some EC countries have initiated the process of carefully tracking the details of their agricultural communities' incomes. Using somewhat sketchy evidence, some researchers have proposed that even though the number of farms has remained steady, the proportion of a farmer's income that is actually derived from the farm has decreased (Hill, 1989). Apparently there is an invisible migration occurring whereby farmers hold jobs in other sectors of the economy and moonlight on their farms during their "off" hours. Coffey (1988) calculated that the agricultural labor force in the EC has been decreasing by around 4% per year, and assumes that this number would be even higher were it not for the protection of the CAP.

This sort of labor pattern is not helpful when the Council of Ministers is trying to ascertain if the prices it is setting for agricultural products are allowing farmers to achieve the "fair standard of living" the Treaty of Rome desires. "Farmers'" income from agricultural sources will be drastically unrepresentative of their actual income. The Council may go so far as to recommend an increase of support prices in order to keep these "poor farmers" from starving!

In summary, the costs of the CAP occur in four main areas. The first is the misallocation of Community resources that could have been more profitably employed in other areas of the economy had agricultural protection been lower or nonexistent (the protective effect). The second cost is the global misallocation that occurs when protected EC farmers overproduce, and expensive EC goods displace goods that could have been imported at the lower world price. Third, there is the budgetary drain from the sale of surplus production at a loss (the cost of the export subsidies). Finally, there is the transfer of surplus from consumers to producers and the decrease in consumption caused by artificially high prices (the deadweight loss).

## VII. THE SPANISH SITUATION

In this section, I will explore the workings of the Spanish agricultural system. I will explain some of the peculiarities of agriculture in the Iberian peninsula before and after adhesion to the CAP. Using the model of the CAP and its effects that I have developed, I will be able to predict the effect that the CAP will have on a specific market. I will then compare the predictions to the actual results.

Agricultural production in Spain accounts for five to eight percent of the total annual output of the economy, depending upon yearly weather conditions (Salmon 1991). By comparison, for most of the other large EC members, this figure hovers around four percent. In 1989, 16 percent of the labor force in Spain was employed in the agricultural sector, the third highest percentage in the EC, behind only Greece and Portugal (Euromonitor 1990).

Other members of the EC view Spain as a "sleeping giant" because its potentially large harvests are hampered by its low agricultural productivity. Mykolenko, et al., (1987) calculated that Spain's labor productivity (the amount of output per labor hour) was only 50 percent of the Community average, and its land productivity (the amount of output per acre) was not much better, measuring in at 60 percent of the EC mean. This low productivity was due in part to undercapitalization, meaning that Spain's agricultural producers were relatively unmechanized and unfertilized because they lacked the wealth to purchase new products and machinery.



Another reason for the low productivity of Spanish agriculture is the composition of the labor force. Salmon (1991) describes this labor force as "elderly, . . .with a low level of education and lack of agricultural training." Obviously, this is not the type of work force that will be readily adaptable to employment in other areas of the economy. This is especially true for those sectors that require educated employees, such as high-tech industries.

Pre-EC Spain appears to have been following Hill's model of economic development. As the cost of labor rose, farmers substituted what capital they had for labor, increasing per capita productivity. The increasing productivity did not manifest itself in the form of increased agricultural incomes, however, so there was a drain of labor away from agriculture (Salmon 1991). As Spain began to integrate into the EC, however, this cycle was disrupted.

Spanish integration problems started early on in the process of application for EC membership. The negotiations over Spanish entry were drawn out due to the large size and poor structure of the Spanish market. For example, Spain's inclusion into the EC increased the number of farmers, farms and farmed area by about one-third. The costs involved in bringing this market under the support programs of the CAP were daunting, even by EC standards.

The Spanish government was cognizant of the productivity gap between Spain and the EC long before membership was granted. In order to try to pull itself onto a par with its northern-European brethren, it undertook a national agricultural policy aimed at the modernization of agricultural structures and the increase of efficiency. The government

hoped that such a policy would first lead to domestic self-sufficiency and, later, a growing export market.

Some of the methods of modernization that were undertaken included rural development, especially infrastructure improvements, irrigation programs, training of farmers, and research and development to maximize crop yields (Salmon 1991). The programs were effective, as witnessed by the rise in the self-sufficiency ratios before adhesion (See Table #6). The self-sufficiency ratio is equal to the amount of a commodity that a country produces divided by the amount it consumes. In Spain's case, these ratios were also augmented by the fact that while agricultural policy was increasing output (by using some of the same methods the CAP would later employ to maintain incomes) there was sluggish growth of demand.

As Spain's non-agricultural economy developed in the later half of this century, "incomes rose, [and] those products with low or negative income elasticities of demand (such as cereals and field vegetables) faced declining or stagnant markets. . ." (Salmon 1991). This means that the domestic demand curve for cereal products was shifting inward because people's preferences were moving away from cereal products as their incomes increased. Consequently, the movement towards self-sufficiency (and surplus) in cereals was more rapid than it would have been had production alone increased.

The Spanish government's intervention in the agricultural market was extensive. Almost every aspect of production and marketing was controlled by the state. Farmers were told how much land should be planted to what crops, and what the price for that crop would be. Protection of the wheat market in Spain has been present, off and on,

since 1820. From 1937, the price of wheat had been supported by the National Wheat Service (Servicio Nacional del Trigo), a branch of the bureaucracy which later grew to encompass most areas of Spanish agriculture. Since integration with the EC, this branch has metamorphosed into the body responsible for the domestic administration of the CAP.

Euromonitor (1990) predicts that some "traumatic" structural changes will have to take place in Spain in a very short time span if farmers are to be able to compete with the rest of the EC. The EC has recognized this and has increased the amount of regional development funds for Spain, doubling the amount of aid in 1989 alone. Much of this funding is being invested in rural infrastructure.

It was foreseen by the EC's own studies that ". . . those regions on the Iberian peninsula that have cereals and livestock as their major products will progressively have to vie with the more competitive northern countries in the context of an enlarged market." (Mykolenko 1987). It was precisely for this reason that the final agreement of Spain's EC bid provided for a 10 year transition period, extending until 1996. Under this plan, some trade barriers, creatively called Supplementary Trade Mechanisms, may be temporarily reinstated, with the approval of the EC Commission, in order to restrict imports and protect both the EC and Spanish producers from any price differentials that are large enough to disrupt the market.

When the EC attempted to reign in the cost of the CAP in the 1987/1988 harvest year, the support prices agreed upon were generally lower, but they were not in Spain. By the time Spain had become a member, the EC was seriously considering the damaging effects that

MCA's have on free trade within their common market. In an effort to position themselves for a future without MCA's, the EC decided that these border taxes would be kept to an absolute minimum in Spain. In fact, soon after entering the EC, all MCA's in Spain were phased out. Instead, whenever the agricultural lobbyists from Spain started to grumble, the green exchange rate was devalued, raising the price farmers receive and protecting them from increasing competition from their neighbors. For example, when the EC finally decided to toe the line on prices in 1987/1988 harvest year, the nominal Spanish producer price actually rose due to devaluation of the green peseta.

The protectionist policies used in Spain before it joined the EC resulted in domestic agricultural prices being higher than in other member countries. Some crop prices had to be reduced to EC levels during the transition, with the hope that while they moved down, the EC support price would be rising, and they would meet somewhere in the middle. Unfortunately, as previously mentioned, the EC had entered a period where it was trying to hold the line on increasing costs, and the support prices for some products, including cereals, were supposed to have fallen. The hope was that EC farm aid would continue to flow into the country in forms other than price supports, permitting the productivity of Spanish farmers to continue to catch up with the other member nations.

## VIII. THE GRAIN IN SPAIN

The specific agricultural market I have chosen to work with in this paper is the Spanish cereals market. The cereals market is generally defined as the group of grains consisting of wheat, rice, maize, barley, millet, and any other "niche" cereals that are produced in the country, such as malting barley.

There are three main reasons for selecting the cereals market as the one to be examined. First, the cereals market was one of the first markets to come under CAP protection, when in 1964 the EC set the first common prices for agricultural goods on cereals. The length of time the cereals market has been regulated implies the market has had time to "settle" into the CAP, as opposed to a market that has recently come under CAP protection and is still in a state of adjustment.

Second, the prices of cereals impact prices in other agricultural markets because cereals are closely linked to many other markets. Specifically, cereals are influential products in that other products are converted from cereals (pigs and poultry eat a largely cereal diet) or because cereals compete with other products in terms of land use (Hill 1984). By using the first product in the production chain, I hope to avoid market fluctuations that are not a direct result of the CAP being imposed on other industries. For example, discerning the effects that the CAP had on the beef market would require tracking not only that market, but also the feed grain markets.

Third, cereal production forms a large proportion of agricultural output in both the EC and in Spain. The large size of the market will

facilitate finding statistics on supply, consumption, imports and exports to see if the CAP had any significant effects.

Using such a broad market sector may have both positive and negative aspects. Treating all of the cereals as a single commodity will avoid the potentially wide annual fluctuations that an individual component of the market may experience. However, the aggregation of cereals will also mean that it is difficult to find changes in the composition of the harvest. Such an effect would be important if Spanish farmers started planting different cereals in order to take advantage of incentives created by the CAP. A shift of production to, say, barley, because its support price is twice that of wheat, will only affect the overall cereal supply if the barley harvest more than displaces the reduction of the wheat crop. Therefore, even though the cereals market has undergone change, it is not reflected in an examination of the broad market sector.

The period I will be examining is the decade of the 1980's. Spain officially became a member of the EC on January 1, 1986, so this span of time allows trends both before and after the adhesion to be visible.

Salmon (1991) believes that the introduction of the CAP into Spain has caused the greatest problems for producers of cereal products. Although the potential competition from the more efficient producers from the northern countries is a continual threat, Spanish farmers stand to gain in the long run from a myriad of EC programs. Until Spain realizes the structural and productivity gains it is aiming for, though, the damaging consequences of free trade with the EC will remain very real.

Both the nominal and the real prices of cereals in Spain have been falling in recent years (See Table #5), an attempt at price alignment

between Spain and the EC that will have a detrimental effect on poor Spanish farmers. The average income of agricultural workers is roughly one-third the income in other sectors of the economy and a decline of producer prices would make this income disparity even greater. By examining the breakdown of real and nominal producer price increases, one can see how the government has quietly encouraged inefficient farmers to leave the market without appearing to drastically cut support prices.

It must be emphasized that the data used here to examine price changes will not be reflective of the effects that the CAP, in and of itself, has had on prices. The producer price indices data is polluted by productivity gains and other external factors that shift the supply curve and, hence, influence price. In order to discern the effects of the CAP *centeris paribus*, one would have to analyze a much more complex data series using multiple regression techniques. For purposes of this paper, it will serve to keep in mind that observed price changes are not solely due to the implementation of the CAP.

The first column of Table #4 is an index of nominal producer prices, that is, the prices producers received in pesetas as a percentage of the 1985 price. Although the nominal cereals producer prices rose steadily before adhesion, and experienced their largest jump in 1986, since that time they have been gently declining. The reasons for this decline are based on the EC's desire to start controlling the costs of the CAP, a goal that continues to gain in urgency as Spanish production comes on line.

While the nominal prices first rose and then leveled out during the decade, there was a steady decline in the deflated price index. The

deflated, or real, price index measures the same prices as the nominal index, but it is adjusted for inflation. Deflated prices allow one to see if the price of cereals rose as rapidly as the general inflation rate during the period. Column two of Table #4 shows that cereal prices indeed were not rising as quickly as other costs. Producers were seeing larger prices per bushel (at least up through 1987) because the nominal price was increasing, but, after inflation was taken into account, farmers actually experienced decreasing prices. Further analysis would be necessary to see if the CAP has kept real cereal prices from falling as rapidly as they otherwise would have.

Increasing cereal prices at less than the rate of inflation caused farmers' profit margins to shrink. These relatively small price increases were apparently a politically palatable method of quietly squeezing the inefficient farmers out of business, without actually having to take the political heat that would accompany relatively large nominal price cuts.

Production changes in response to price fluctuations would be expected to manifest themselves either in the 1985 season or in 1986. Production may start to rise before the date of actual membership because producers will start increasing their output in anticipation of the coming higher prices. Additionally, under the Spanish government's modernization, restructuralization, and domestic agricultural support programs, output should be increasing steadily both before and after adhesion.

Domestic production, as expected, soared during the 1984/1985 harvest year (See Table #6, "Production"). The amount of cereals produced jumped from 13.5 million tons to 20.6 million tons in a single year alone. Production has remained relatively stable since that time,



but these figures are deceptive because weather conditions have had adverse impacts on the harvests in recent years.

Spain experienced a "severe" drought in 1988/1989 and 1989/1990, hampering production growth (OECD 1991). The future outlook is not much better, as water tables have continued to shrink, although the government has recently announced plans to build a huge water diversion facility to bring water from the wet north to the dry central region, where most of the cereal crop is grown. If this plan is successful, the harvests should resume their pattern of growth.

Imports under the CAP are expected to decline as domestic production increases and consumers react to the higher prices. As Table #6 shows, Spanish cereal imports have indeed tumbled steadily throughout the decade, from a 1982/1983 high of 7.5 million tons to only 2.5 million tons in the 1988/1989 harvest year.

In addition to the imports that were displaced, when the actual source of imports is examined, there was a redirection of trade. Imports came to be sourced from EC suppliers, instead of countries that were historically Spain's predominant (and presumably low-cost) trading partners, such as the United States. This growing redirection of trade towards Spain's EC partners was predicted by the model: As third country trading partners become subject to the CAP's variable import levy, they lose any price advantages they may have.

Consumption during the period, although predicted to decline, actually remained relatively steady throughout the period (See Table #6). I believe that consumption did not fall in this case because the real price of cereals was decreasing during the examined decade. The cost of cereal

products was not increasing as rapidly as the cost of other goods, so there was little incentive to decrease consumption.

In conclusion, it appears that nearly all of the effects predicted by the model of the CAP were realized in the case of the Spanish cereals market. Although consumption remained steady due to real price decreases, the nominal cereals prices rose, domestic production increased, and imports, especially those from third countries, decreased.

## IX. REFORM WOES

As Arroyo Ilera (1988) notes, it would be incorrect to compare the situation in Spain today with the situation before adherence to the EC. Instead, one should compare the outlook today with what it would have been had Spain not joined the EC and maintained its own national policy. Growing trade barriers and no EC monetary benefits of any kind would have been the result of Spain staying out of the EC, and would surely have been detrimental to Spanish economic development. The other countries of the EC have instead become Spain's best trading partners, accounting for nearly eighty percent of Spanish exports. Also, Spain has been receiving more from the EC than it has been required to pay to Brussels every year since 1986. Unfortunately for Spanish farmers, however, this situation will not last indefinitely. The EC is growing weary of the budgetary weight of the CAP, and is looking for ways the policy can be revised.

The latest reform of the CAP tried to discourage surpluses by instituting price "stabilizers." The term stabilizers is a bit of a misnomer, as the actual purpose was to automatically reduce the support price after a specified quantity has been purchased by the intervention agents, thereby discouraging further overproduction. Stabilizers have proven to be ineffective because they can only persuade farmers to produce less, not mandate so, and the EC is still obligated to purchase any production offered to it at the new support price (Colchester and Buchan 1990).

What if the EC were to try to reform the CAP by dropping the price supports and just limiting imports instead? A policy of import quotas

would have the desired effect of keeping domestic prices higher than the world price, but it is too late to implement it effectively. Restricting imports would only raise domestic prices if a country starts out with a significant number of imports. Most of the countries of the EC are now more than self-sufficient in the products that are under CAP protection. There are not enough imports left to displace after price and quantity supplied have surpassed the domestic equilibrium point. In the case of most agricultural products, including cereals, this is where both Spain and the EC find themselves.

Direct income payments to small farmers, along with reductions in the support prices, could be a viable option. A direct income payment system would compensate farmers for lost income when prices are lowered. When politicians consider this option, however, they encounter a difficult situation. If they decrease agricultural support in any way, farmers will cry foul. But if the transfer of income to farmers changes from an implicit, nearly invisible expense paid by consumers into a very visible welfare program financed by taxpayers, a much larger constituency will be aggravated.

Direct income payments will only be feasible if they are limited in some manner, protecting government from a perpetual drain on the budget. At the same time, in order to avoid striking or rioting farmers, the payments must be sufficient to maintain farmers' incomes, if not their vocation. For example, income payments may be limited by specifying a time limit at the outset and then retraining those workers who will still be too young to retire by the end of the period.

Alternatively, the EC could pursue a "set-aside" program whereby farmers would be paid cash for leaving land fallow. The set-aside

program would reduce supply, but would most likely have high administrative costs, as it would be very difficult to determine the exact value of the crop that was not harvested. Financing of set-aside plans would also be questionable. If the EC shoulders the burden of compensating farmers, it will definitely not free up funds, but if the Community continues to finance the CAP support prices and pushes the burden of set-aside payments onto the member states, the states' incentive to encourage farmers to decrease production will be nil.

Well thought out supply limitation measures like the set-aside proposal, while still not the best solution in the long run, would at least reduce the cost of the CAP. Restricting supply is not a permanent solution because it avoids the natural tendency of agriculture to increase supply as innovations are applied to production. To make supply limitation work, the method of financing the CAP will have to be revised. As it stands now, each country pays a fixed amount plus a certain percentage of their value-added tax receipts to the EC. In return, the member countries get to draw from the EC fund in order to pay for the CAP. The EC, as a whole, realizes the need to reduce supplies, but each individual country still benefits from increasing its own production and selling the surplus to the EC to bring the money paid to Brussels back into the country. As long as each country has incentives to increase their supplies due to the fact that they can externalize the costs of doing so, policy measures aiming to reduce supplies will be ineffectual. At some point, the number of people employed in agriculture will have to be allowed to decline at its natural rate. The consequences of not allowing this freedom will be the progressive enrichment of large efficient producers concurrent with the impoverishment of the small-scale

farmers. The high prices of the CAP have already benefited the most efficient producers, who have been able to reinvest profits in their farms to modernize their already profitable operations.

Further gains in productivity could easily be achieved by increasing the proportion of the EC budget spent on structural modernization. Even if the support prices were abolished, productivity growth would not be a priority because modernization, by farm agglomeration or infrastructure improvement, would shift the supply curve out some more, cause a fall in prices and displace labor (Coffey 1988). The displaced workers would drain national budgets by drawing unemployment benefits until they found another job, if they ever did. The neglected brother of the CAP's (Price) Guarantee Fund, the Guidance Fund, should be expanded to include the creation of jobs outside of agriculture for displaced workers.

As an example of just how disproportionate spending has become, in 1987 the total European Fund Budget was 36,247 million ECU's. Of this amount, 23,003 million ECU's went to the Guarantee Section and only 995 million ECU's were spent by the Guidance Section (Coffey 1988). Price guarantees have obviously grown to monster proportions, crowding out newer, more worthwhile, programs. The Guarantee section of the CAP has become a sinkhole of both time and money, diverting resources away from areas where they are more needed, such as rural economic development programs.

The structural arm of the CAP is now only needed in the relatively poor, predominantly agricultural members of the EC, specifically, Greece, Ireland, Portugal, and, for the time being, Spain. The other member countries no longer have need to modernize their agricultural sectors any

more rapidly than the natural developmental progress allows. Instead, the huge amounts being spent supporting prices and the relatively small sum earmarked for guidance would be better spent improving employment opportunities for displaced farmers. In Spain, developmental monies could be used to develop small-scale rural industry and nurture an underdeveloped service sector.

Agriculture is predominantly a rural industry and it is the low productivity of the labor in the outlying rural areas that causes the rural workers' incomes to suffer. Additionally, country dwellers will be hurt by the fact that their alternate employment opportunities are few, so more labor will tend to be retained in agriculture in these areas. The law of diminishing returns takes effect again, due to the fact that increasing the number of people that work a given plot of land will, after a certain point, not increase the value of output by as much as it increases labor costs. Put another way, the value (and hence the wage) of all the laborers will decline as the value added by the last worker hired (or retained) declines. Incomes will fall as more people divide up the profits from basically the same size of harvest. Due to the fact that there are few other jobs to be found in these rural areas, the entire population will tend to suffer a lower income. A solution to this problem is to create economic development programs that emphasize the restructuring of small rural farms while at the same time fostering the creation of new rural industries to absorb the labor freed up by the restructuring process. With higher productivity and a smaller labor force to support, rural agricultural incomes will rise.

A system of price supports is detrimental to the income of small producers because it leads to higher prices of land and higher rents,

both of which are derived from the value of the production the land offers. Paradoxically, lowering support prices and other forms of agricultural protection will cause the value of land to fall, and encourage the consolidation of smaller plots into large tracts by those who can afford to pay, that is, the large producers.

The challenge to policy reformers will be devising a system that helps support small farmers who are important both in and of themselves and because they are closely linked to a sense of history and national identity while at the same time creating opportunities for those *campesinos* who are dislocated. Small farmers will never be as productive as larger ones; they lack the productive capacity to take advantage of scale economies, and the wealth to invest in the most modern means of production. But if society deems the small farmer's mere presence to be valuable, it must call for a system of support that does not continually add to the wealth of those who are already rich.



## X. CONCLUDING THOUGHTS

The political process is a faulty mirror to use to try to reflect the values of an entire society. The preferences of an individual can be surveyed, quantified and mapped, but the preferences of an entire nation are usually filtered through politicians in the form of policy decisions. Politicians, as we well know, are not perfect representatives of society's wishes, and they are constantly being swayed by the intensive lobbying of specific segments of society that gives them a distorted perspective of their constituents' desires.

My original intention when I undertook this project was to approach the subject of agricultural protection from the perspective of the farmers themselves. I wanted to look at the plight of the marginal producers who are so easily written off in the analytical world of graphs and equations as having to leave their farms and move into employment in other sectors of the economy. In short, I wanted to take a humanistic/economic approach to the problem. Unfortunately, the body of work on the situation of farmers is practically nonexistent. A further study, perhaps going so far as to interview farmers directly, would be invaluable if one wished to see how significant an impact the CAP and its reforms have actually had on the situation of the individual farmer and what other opportunities exist outside of agriculture. The dilemma goes beyond questions of production and efficiency, encompassing the value that a society places on a way of life that is intrinsic to national identity and crucial to the livelihood of not a few farmers.

APPENDIX A  
TABLES

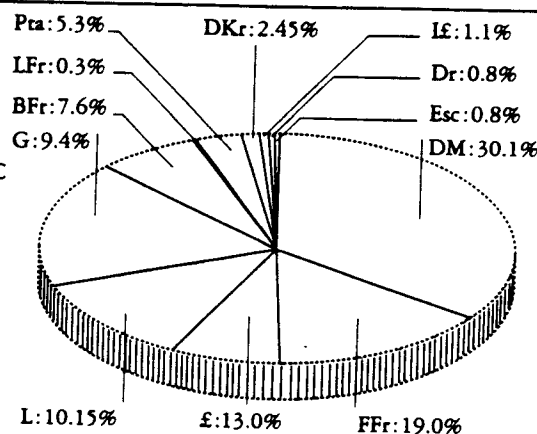
TABLE #1

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**What is in an ecu**


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One ecu comprises defined percentages of national currencies. The pie chart shows the composition of the ecu (including for the first time the peseta and escudo) agreed by EC finance ministers in June 1989 and effective from September 21st 1989.



The ecu is equal to the sum of defined amounts of national currencies. The values opposite were calculated on the basis of the percentages in the pie chart and the exchange rates recorded in the European markets at 2.15pm on September 20th 1989.

Germany, West	DM	0.6242
France	FFr	1.332
United Kingdom	£	0.08784
Italy	L	151.8
Netherlands	G	0.2198
Belgium	BFr	3.301
Luxembourg	LFr	0.130
Spain	Pta	6.885
Denmark	DKr	0.1976
Ireland	IFr	0.008552
Greece	Dr	1.440
Portugal	Esc	1.393

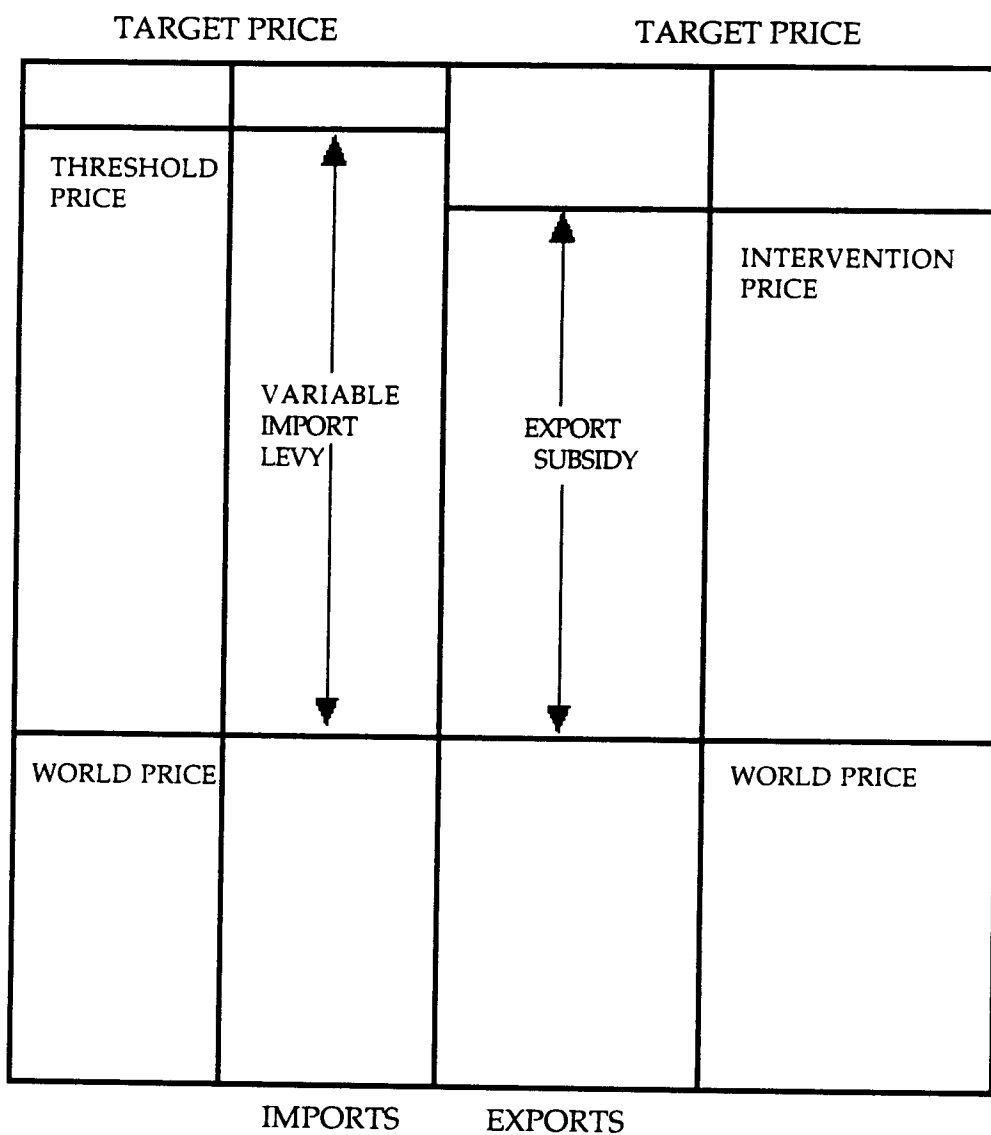
The central rates of national currencies against the ecu are for the purpose of maintaining the money-market rates of the currencies within an agreed range. The rates opposite entered into force on January 12th 1987 and were still in force when the composition of the ecu was revised in September 1989. The rates for sterling, the drachma and escudo are theoretical because the UK, Greece and Portugal were not part of the Exchange Rate Mechanism

Germany, West	DM	2.05853
France	FFr	6.90403
United Kingdom	£	0.739615
Italy	L	1483.58
Netherlands	G	2.31943
Belgium	BFr	42.4582
Luxembourg	LFr	42.4582
Spain	Pta	133.804
Denmark	DKr	7.85212
Ireland	IFr	0.768411
Greece	Dr	150.792
Portugal	Esc	172.085

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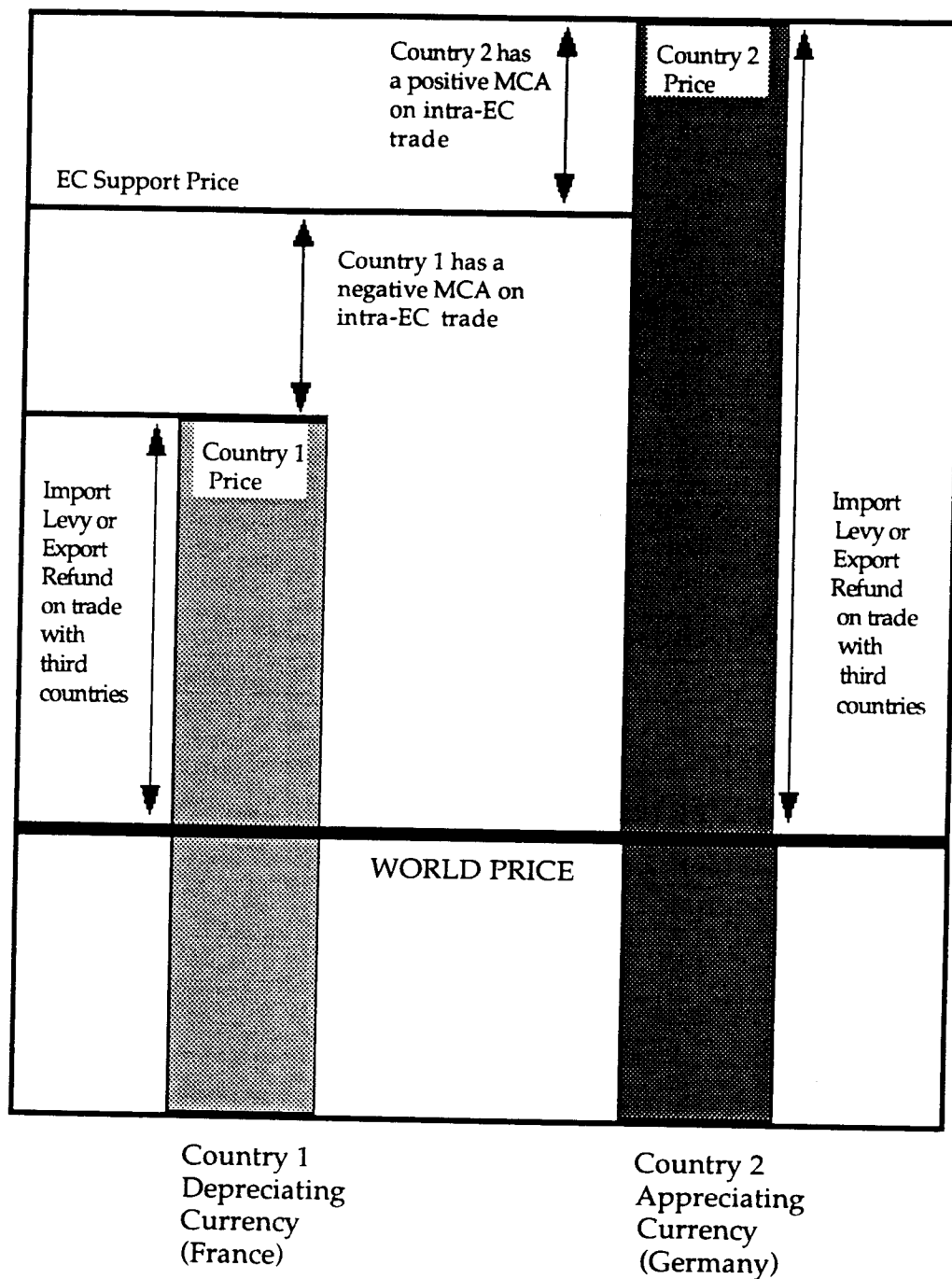
Source: *Europower*. New York: Times Books, 1990, p. 165.

**TABLE #2**  
**MODEL OF CAP SUPPORT PRICES**



Source: *The Common Agricultural Policy and the World Economy*.  
Wallingford: CAB International, 1991. p. 5.

**TABLE #3**  
**MONETARY COMPENSATORY AMOUNTS**



Source: *The Common Agricultural Policy and the World Economy*.  
 Wallingford: CAB International, 1991. p. 8.

**Table 4**

<b>EC Index of Producer Prices of Agricultural Products</b>		
<b>Year</b>	<b>Nominal P Index Cereals and Rice 1985 = 100</b>	<b>Deflated P Index Cereals and Rice 1985 = 100</b>
1980	61.2	107.9
1981	68.9	106.1
1982	77.2	103.8
1983	86.9	104.2
1984	94.8	102.2
1985	100.0	100.0
1986	110.3	101.4
1987	105.5	92.1
1988	104.5	87.0
1989	102.5	80.0
1990	102.0	74.5

Source: *Eurostat: Price Indices and Absolute Prices 1981-1990*  
 Luxembourg: Office de Publications officielles des Communautés  
 Européennes 1991

**Table 5**

Selling Prices of Crop Products (in pesetas) Prices per 100 kg -- excluding VAT											
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	
Soft Wheat	1836	2027	2200	2376	2595	2853	2786	2706	2591	2555	
Durum Wheat	2116	2340	2483	2616	2760	3031	3036	3053	3061	2952	
Rye	1510	1777	2042	2210	2332	2522	2449	2377	2363	2254	
Barley	1446	1702	1929	2209	2174	2400	2230	2242	2243	2236	
Malting Barley	1465	1729	1952	2236	2224	2473	2303	2294	2297	2258	
Oats	1441	1690	1975	2116	2025	2260	2226	2283	2338	2084	
Malze	1773	1956	2416	2570	2619	2978	2760	2654	2585	2735	
Rice	2599	2856	3532	4006	3755	3592	4103	4503	4531	4259	
<b>Average</b>	<b>1773</b>	<b>2010</b>	<b>2316</b>	<b>2542</b>	<b>2560</b>	<b>2764</b>	<b>2736</b>	<b>2764</b>	<b>2751</b>	<b>2667</b>	

Source: Eurostat: Price Indices and Absolute Prices 1981-1990 Luxembourg: Office de Publications Officelles des Communautés Européennes 1991.

**Table 6**

<b>SPAIN</b>									
<b>Cereals Supply and Consumption</b>									
( x 1000 Tons)									
	<b>81/82</b>	<b>82/83</b>	<b>83/84</b>	<b>84/85</b>	<b>85/86</b>	<b>86/87</b>	<b>87/88</b>	<b>88/89</b>	
Production	11,132	12,745	13,535	20,592	20,511	16,015	20,210	23,312	
Imports	6,011	7,566	5,111	3,750	3,120	2,813	2,865	2,479	
Available Supply	17,143	20,311	18,646	24,342	23,631	18,828	23,075	25,791	
Self-Sufficiency Ratio	56.6	64.4	65.5	92.9	91.8	82.2	99.2	112.8	
Consumption	19,665	19,799	20,633	22,171	22,350	19,482	20,375	20,658	

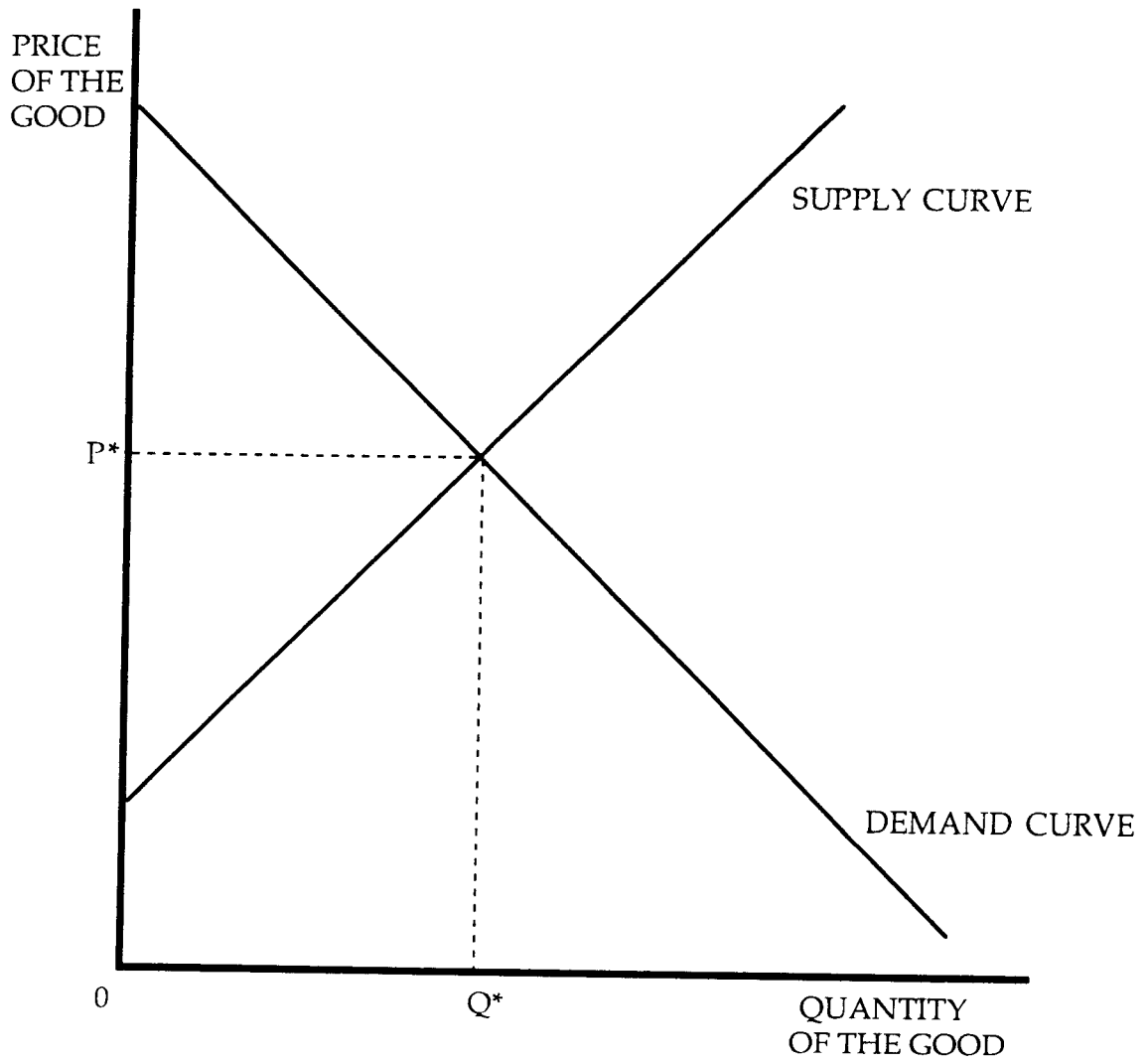
Sources: *Eurostat Crop Production: Quarterly Statistics 4-1986*. Luxembourg: Office de Publications Officielles des Communautés Européennes, 1987.  
*Eurostat Crop Production: Quarterly Statistics 4-1990*. Luxembourg: Office de Publications Officielles des Communautés Européennes, 1991.



APPENDIX B  
GRAPHS

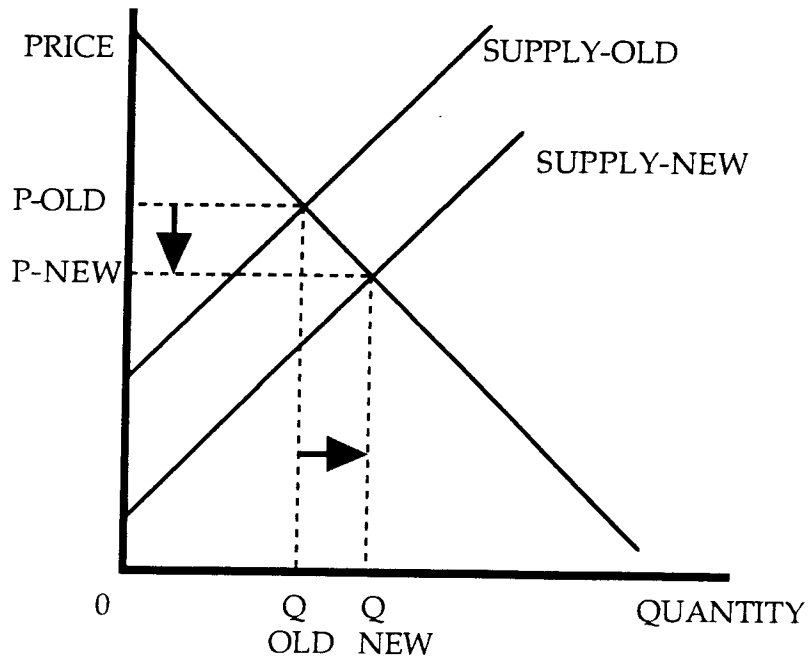
## GRAPH #1

## SUPPLY AND DEMAND MODEL



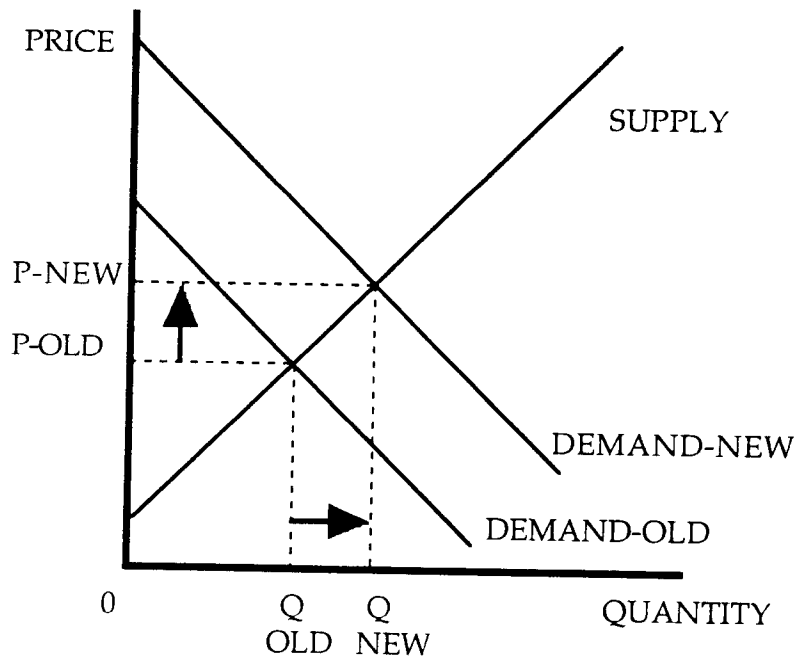
## GRAPH #2

### SUPPLY CURVE SHIFT

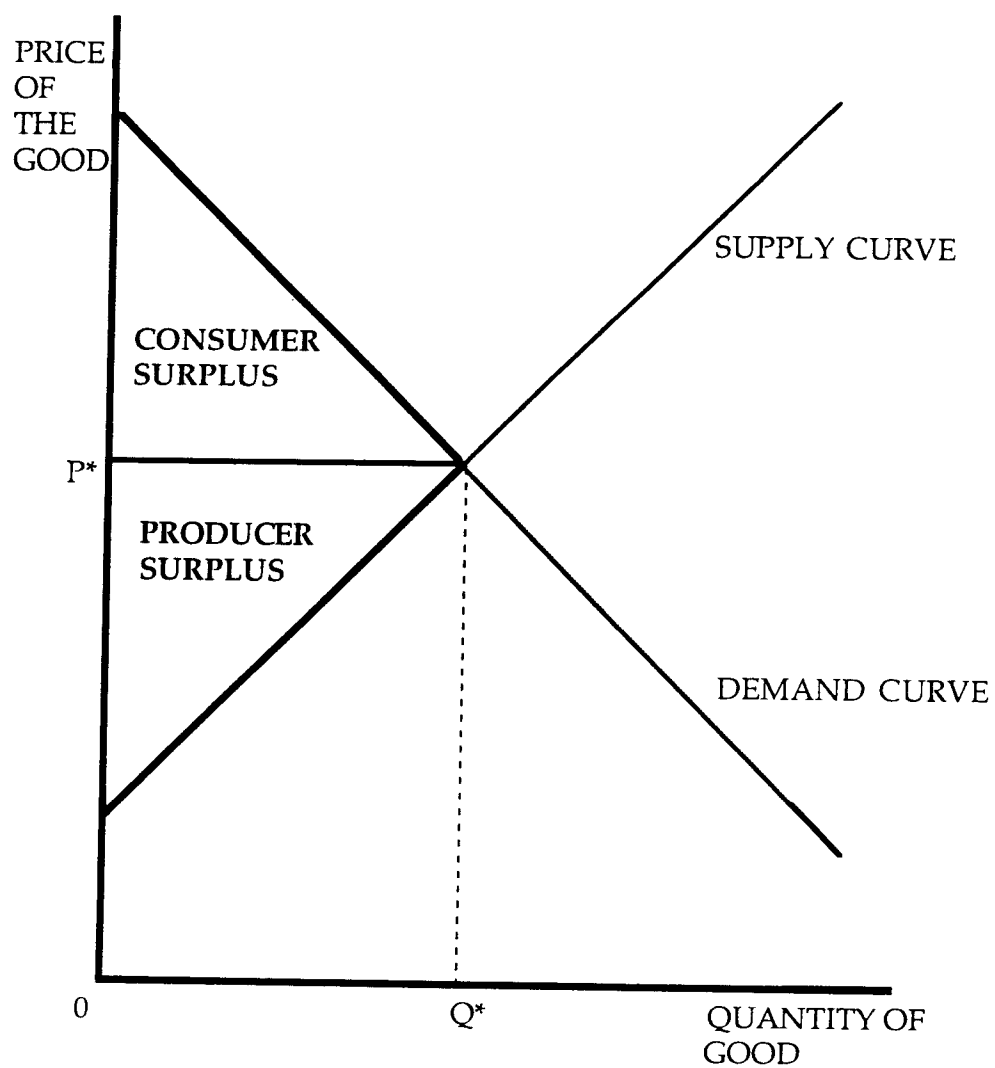


## GRAPH #3

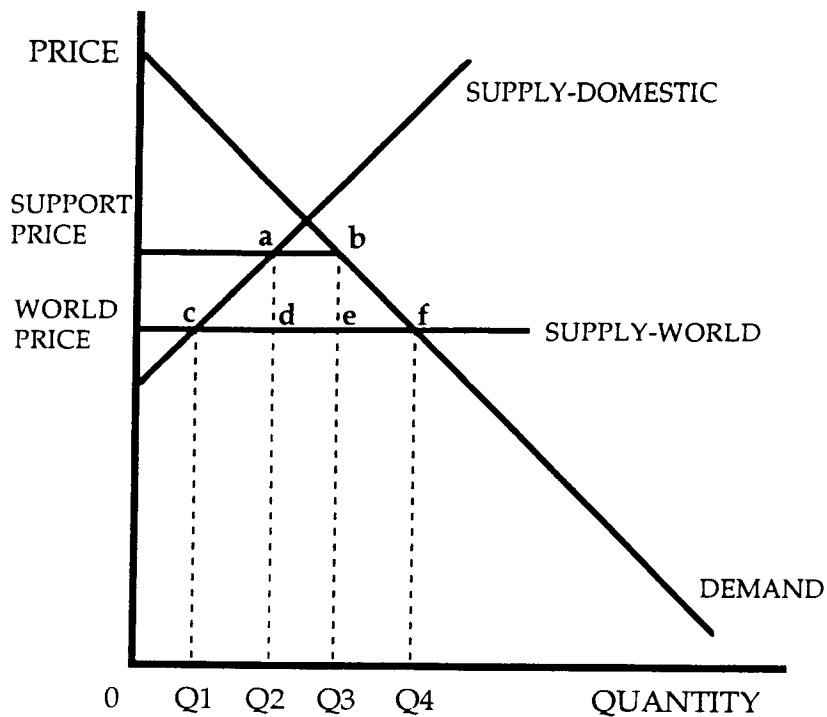
### DEMAND CURVE SHIFT



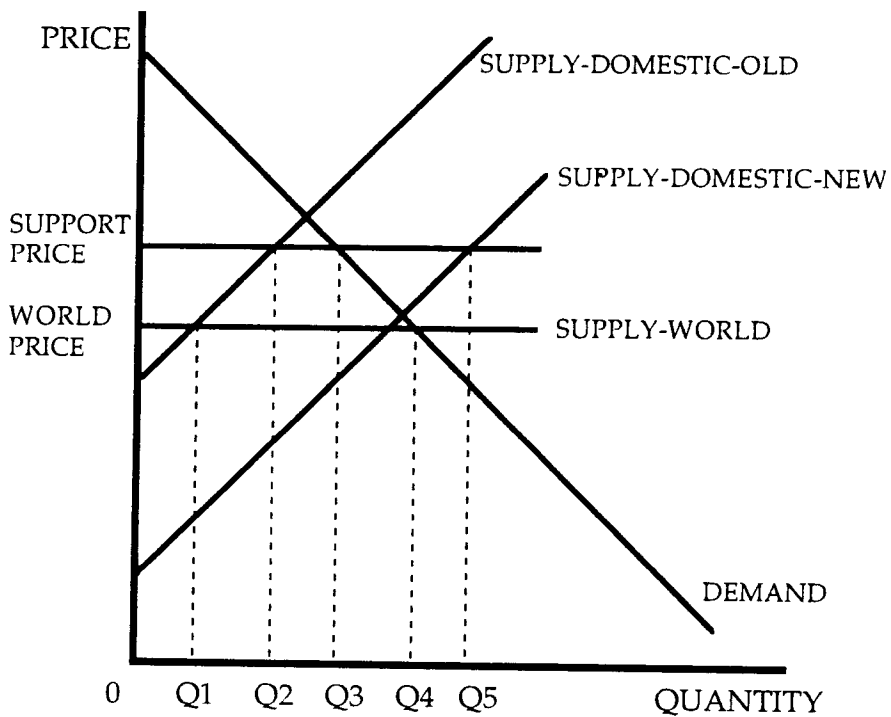
**GRAPH #4**  
**CONSUMER AND PRODUCER SURPLUS**



**GRAPH #5  
IMPOSING THE CAP**



**GRAPH #6  
SUPPLY CURVE SHIFT UNDER THE CAP**



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