

1. Introduction

This text was originally written as a chapter in a textbook for Polish university students, as an introduction and explanation of the behaviour and meaning of world markets in agriculture. Thus the examples are framed from a Polish perspective. Nevertheless, the explanation serves as a useful and coherent account of the economics of international markets for all students.

The world market is more important to the marketing of agri-food products than it has ever been. This is for two major reasons. First, 1994 saw the completion of the Uruguay Round of multilateral negotiations under the General Agreement on Tariffs and Trade (GATT) - see Box 1. This agreement included comprehensive agreement on inclusion agricultural trade within the general rules and formulae governing international trade for the first time. The process, though not the completion, of liberalising world agricultural markets is now a fact. Second, the collapse of central planning systems in the former Soviet Union in favour of market-based systems re-introduces a substantial area of the globe to the world market place. This makes the world market more complete and more important for all.

This chapter concentrates on the analytical frameworks necessary to understand world markets and trade. These frameworks are explained through their application to world trade issues and problems, which also provides an appreciation of the development of world agricultural trade systems. Particular applications have been selected to illustrate key points relevant to the future development of Polish agri-food marketing. The historical development of, especially, the European Union's Common Agricultural Policy (CAP) and the world grain trade are taken as being of major importance here. The CAP is of particular importance to Poland since its future descendants will heavily influence Polish agri-food markets, and the future development of the policy will be strongly conditioned by its past history. The critical importance of grain trade stems from the fact that cereal production and use is central to agricultural systems and associated government policies - cereal production both competes with and provides an input to most other forms of agricultural production. This concentration necessarily means that particular aspects of world markets in other commodities (fruit and vegetables, sugar, dairy products) are not dealt with in detail here. However, the analytic principles explained here are also applicable to these commodities, while students are expected to develop their understanding of these sectors using additional sources and information.

This chapter is structured as follows. Section 2 deals with the economic analysis of trade, illustrating the primary characteristics of world markets, showing how they operate, and how world commodity prices are determined. Since exchange of currencies is a necessary and important part of international trade and world market behaviour, the mechanisms of Foreign Exchange markets are explained in Section 3. Section 4 shows how countries have reacted to these world market effects in the past, illustrated by the development of European Community's Common Agricultural policy. This section also indicates the consequences of these international responses, and in particular, details the roles and use of international agreements, negotiations and institutions. Section 5 highlights the major trends that are occurring in world agricultural markets, and discusses the major implications of this analysis for the Polish agri-food sector.

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Box 1: The Marakesh Declaration of 15th. April, 1994

1. Ministers salute the historic achievement represented by the conclusion of the Round, which they believe will strengthen the world economy and lead to more trade, investment, employment and income growth throughout the world. In particular, they welcome:
 - the stronger and clearer legal framework they have adopted for the conduct of international trade, including a more effective and reliable dispute settlement mechanism,
 - the global reduction by 40% of tariffs and wider market- opening agreements on goods, and the increased predictability and security represented by a major expansion in the scope of tariff commitments, and
 - the establishment of a multilateral framework of disciplines for trade in services and for the protection of trade-related intellectual property rights, as well as the reinforced multilateral trade provisions in agriculture and in textiles and clothing.
2. Ministers affirm that the establishment of the World Trade Organisation (WTO) ushers in a new era of global economic cooperation, reflecting the widespread desire to operate in a fairer and more open multilateral trading system for the benefit and welfare of their peoples. Ministers express their determination to resist protectionist pressures of all kinds. They believe that the trade liberalisation and strengthened rules achieved in the Uruguay Round will lead to a progressively more open world trading environment. Ministers undertake, with immediate effect and until the entry into force of the WTO, not to take any trade measures that would undermine or adversely affect the results of the Uruguay Round negotiations or their implementation.
3. Ministers confirm their resolution to strive for greater global coherence of policies in the fields of trade, money and finance, including cooperation between the WTO, the IMF and the World Bank for that purpose.
4. Ministers welcome the fact that participation in the Uruguay Round was considerably wider than in any previous multilateral trade negotiation and, in particular, that developing countries played a notably active role in it. This has marked a historic step towards a more balanced and integrated global trade partnership. Ministers note that during the period these negotiations were underway, significant measures of economic reform and autonomous trade liberalisation were implemented in many developing countries and formerly centrally planned economies.
5. Ministers recall that the results of the negotiations embody provisions conferring differential and more favourable treatment for developing economies, including special attention to the particular situation of least-developed countries. Ministers recognise the importance of the implementation of these provisions for the least-developed countries and declare their intention to continue to assist and facilitate the expansion of their trade and investment opportunities. They agree to keep under regular review by the Ministerial Conference and the appropriate organs of the WTO the impact of the results of the Round on the least-developed countries as well as on the net-food importing developing countries, with a view to fostering positive measures to enable them to achieve their development objectives. Ministers recognise the need for strengthening the capability of the GATT and the WTO to provide increased technical assistance in their areas of competence, and in particular to substantially expand its provision to the least-developed countries.
6. Ministers declare that their signature of the "Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations" and their adoption of associated Ministerial Decisions initiates the transition from the GATT to the WTO. They have in particular established a Preparatory Committee to lay the ground for the entry into force of the WTO Agreement and commit themselves to seek to complete all steps necessary to ratify the WTO Agreement so that it can enter into force by 1 January 1995 or as early as possible thereafter. Ministers have furthermore adopted a Decision on Trade and Environment.
7. Ministers express their sincere gratitude to His Majesty King Hassan II for his personal contribution to the success of this Ministerial Meeting, and to his Government and the people of Morocco for their warm hospitality and the excellent organisation they have provided. The fact that this final Ministerial Meeting of the Uruguay Round has been held at Marrakesh is an additional manifestation of Morocco's commitment to an open world trading system and to its fullest integration to the global economy.
8. With the adoption and signature of the Final Act and the opening for acceptance of the WTO Agreement, Ministers declare the work of the Trade Negotiations Committee to be complete and the Uruguay Round formally concluded.

Adopted by the Ministers of the GATT signatory states at the conclusion of the GATT Uruguay Round, Marakesh, Morocco, April 15th., 1994

2. Basic Economics of Trade

Introduction

Students are expected to be familiar with the basic economic analysis of supply and demand. This section extends this analysis to apply to international trade. International trade and world markets are no different *in principle* from local or regional trade and markets. Economic arguments in favour of free trade, based on comparative advantage and specialisation, apply at the personal/household, local, regional and national levels, and also at the international level. There are, however, two major *practical* differences between local or regional trade and international (cross national border) trade:

- trade between different countries is more difficult, more uncertain and more expensive than local or regional trade: distances are greater; languages, customs, laws and commercial practices differ; information about possible buyers and other competing sellers is more difficult to obtain; trading contacts and contracts are more difficult to make. In other words, the marketing (or trading) costs - all those associated with buying and selling - are higher;
- trade between countries involves exchanging currencies which requires consideration of foreign exchange (Forex) markets (section 3, below).

Economic analysis of world trade and world price determination

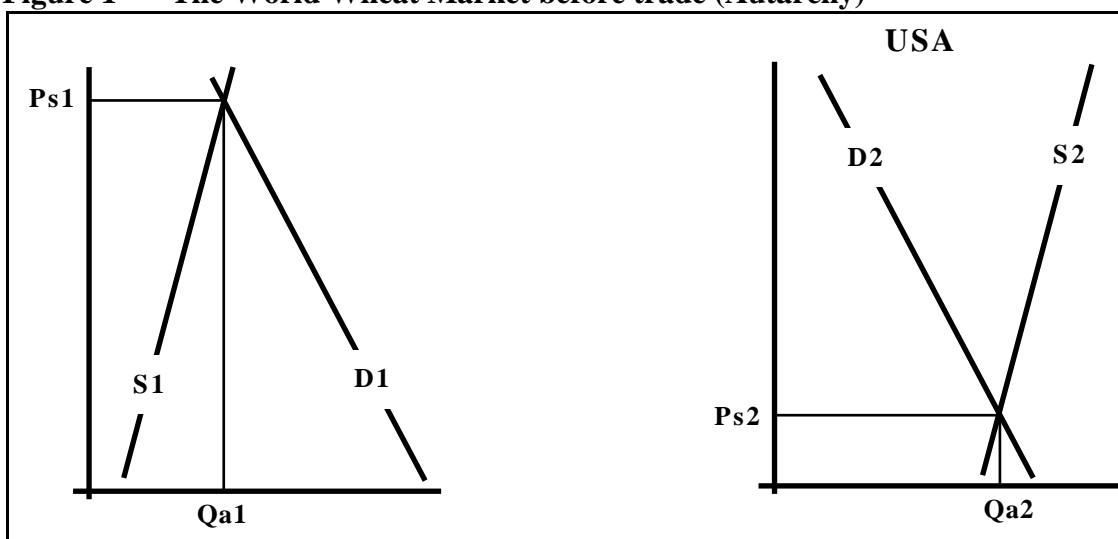
The basic economic analysis of trade relies on the *spatial equilibrium* concept - that related markets will interact through trade to tend towards an equilibrium or balance between supplies and demands in different locations. This analysis takes as read the arguments in favour of trade according to comparative advantage and specialisation, which need not concern us here, and concentrates on the fundamental market mechanisms and their consequences.

For simplicity, consider the 'world market' to consist of just two countries (or regions). Country 1 (Europe) has a large population engaged in industry and not very much good quality wheat land, so demand is strong relative to supply, and prices are high. Country 2 (the USA) has a smaller population relative to its wheat growing land, and demand is less strong relative to the available supply, so prices are lower.

Trade between Countries - Spatial Equilibrium Analysis:

The right hand side of Figure 1 shows the economic diagram of the US market.

Figure 1 The World Wheat Market before trade (Autarchy)



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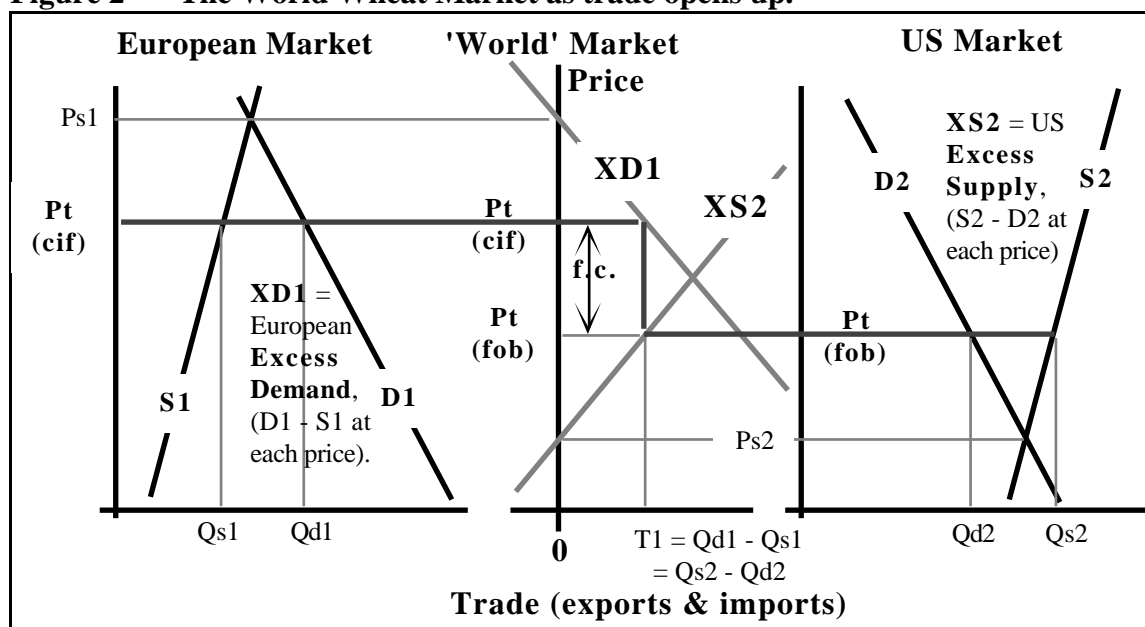
Prior to the opening up of trade, the market clearing (equilibrium) price in the US is P_{s2} . At this price, the US is producing and consuming Q_{a2} tonnes of grain, and is thus *self-sufficient*. Similarly, the left hand side of Figure 1 shows the European market, at a self-sufficient equilibrium of Q_{a1} tonnes produced and consumed at a local price of P_{s1} . This no-trade situation is known as *autarchy*.

So long as it costs less than the difference between P_{s1} and P_{s2} to move this product from the US to Europe, then traders can make money by buying in the US and selling in Europe. Historically, as the costs of transport within America and shipping across the Atlantic fell with the introduction of railways and steamships, Europe began to buy grain from the US. What would be the market consequences? How might the world market be represented in diagrammatic form? Think before you read on.

As traders buy US grain for export, so US production must be greater than US consumption and the US market price must rise. Similarly, as grain is sold in the European market, so European consumption will be greater than European production and the European price will fall. These tendencies will continue until the price difference between the two markets is no longer sufficient to cover the costs of trade. This is the essence of spatial equilibrium.

To represent our world market as trade between these two countries, it is useful to use the concepts of *excess demand* and *excess supply*. As the market price in Europe falls from P_{s1} , so quantities demanded will be greater than (exceed) quantities supplied. The European **excess demand** ($XD1$) is defined as European demand minus European supply ($D1 - S1$), which is zero at price P_{s1} , and positive at all lower prices. This excess demand relationship is, in effect, the European *demand for imports*. Similarly, the US **excess supply** ($XS2$) is defined as US supply minus US demand ($S2 - D2$), which is zero at price P_{s2} and positive at all higher prices. $XS2$ forms the US *supply of exports*. **The world market can now be represented as the interaction between the excess demand and excess supply curves.** This is shown in Figure 2.

Figure 2 The World Wheat Market as trade opens up.



In the absence of any marketing (trading) costs, the equilibrium in this world market would be determined by the intersection of the excess demand and excess supply curves, as typically shown in textbook representations of local or domestic markets. However, as already been pointed out, international trade is characterised by significant marketing (trading) costs which cannot be ignored.

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These marketing costs (transport, insurance, information and storage costs) will need to be covered by the gap between the initial buying price paid to US farmers and the final selling price paid by European buyers. Export supplies still have to equal import demand for the market to be in equilibrium.

In Figure 2, the importing price is labelled **Pt (c.i.f.)**, standing for “*cost, insurance, freight*,” meaning that this price covers the initial purchase cost and all the transport and marketing costs involved in moving the product from the US to Europe. The exporting price is labelled **Pt (f.o.b.)**, standing for “*free on board*”, meaning that this price includes the cost of purchase and of primary movement from the farm to the export port (New Orleans), including loading onto the ship, but not the costs of freight and insurance for the ocean crossing. The difference between these two prices for the same commodity (labelled f.c. in Figure 2) is the full cost of ocean freight between these two locations. Thus, the import (cif) price must be above the export (fob) price by enough to cover the marketing costs. Diagrammatically, this is achieved by imposing these costs as a vertical difference between the import demand curve (XD1) and the export supply curve (XS2), as shown in Figure 2.

Exercise 1: Suppose that the *elasticities* of supply and demand (see Chapter 2) in the US and Europe are known as follows:

Es(Eu)	=	+0.6	Ed(Eu)	=	-0.6
Es(US)	=	+0.5	Ed(US)	=	-1.0

Suppose the prices and quantities in each market before trade is opened up are:

Ps1 (EU)	=	3000	Ps2 (US)	=	1000
Qa1 (EU)	=	1250	Qa2 (US)	=	500

Insurance and freight costs are estimated to be 40/tonne

Imagine you are a trader. What quantity would you expect to be traded and what would be the cif and fob prices for this trade?

There are, of course, marketing costs associated with getting a product into an ‘fob’ position, which are included in the fob price. Similarly, there will be marketing costs associated with moving the product onwards (‘downstream’) from the ‘cif’ position to the final user or consumer. These will have to be added to the cif price to find the final selling price at any given point in the downstream marketing chain.

The “Law of One Price”

The analysis of Figure 2 suggests that trade between countries will equalise prices between these countries. This proposition is frequently encapsulated as the **law of one price** - trade, in the absence of transport and marketing costs, leads to the establishment of a **single world price**.

More realistically, world markets establish a whole set of inter-related prices for the same commodity at different stages and places in the marketing chain. Each price is related to the next by the costs of moving, marketing and transforming the product. Hence, the world grain market is characterised by a whole series of prices for each grain and grade, some ‘fob’, some ‘cif’, at different locations. Two of the more important of these prices are: (i) the ‘Chicago spot price’, referring to the current price of wheat (of specific grade) fob, export position in the US, typically the Bay Ports - New Orleans; (ii) the Rotterdam cif wheat price.

Exercise 2: Identify the price ‘chain’ or ‘web’ (series of prices) connecting the Kansas wheat farmer to the Polish flour mill in Poznan

Competition and market price differences

The logic of the *competitive market place* makes sure that price differences between places are close reflections of the real costs of marketing the commodity. There will be

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competition amongst traders to take advantage of profitable trades and discontinue unprofitable trades. This competitive process is known as *arbitrage* - trade to take advantage of profit opportunities between different markets or 'market positions'. Arbitrage ensures that *inefficiency* will be penalised - returns to inefficient firms and individuals will be too low to provide acceptable incomes. It also ensures that margins will generally be no larger than is necessary to cover the full costs of the marketing movement.

The example used here is for the world grain market. However, the same analytical framework can also be applied to other commodities. Costs of transport and storage can often result in substantial differences between prices at different locations and in different time periods. Sometimes (as for fresh fruit and vegetables, or fresh milk) these costs are sufficiently high to prevent trade between places (or storage between time periods). In these cases, processed substitutes (dried, frozen, tinned) form the major traded and stored commodities rather than their fresh counterparts. It should also be noted that an exactly similar diagrammatic analysis (Figure 2) can be applied to storage markets - the exporting market being the surplus period during which stocks are built up, and the importing market being the deficit period during which stocks are run down.

Application of Spatial Equilibrium Model

Suppose that you are examining the world market opportunities for an expansion of Polish dairy production. The framework outlined above suggests that an expansion of Polish exports might be expected to reduce the price of dairy products on the world market. If this price fall was large, the prospects for Polish expansion would be considerably reduced. How can we make some reasonable estimate of this effect? Think, before you read on.

Competitive expansion of the Polish dairy sector implies a rightward shift of the Polish supply curve - simply increasing the price for milk products in Poland might generate an excess supply, but at a price too high to be competitive in the world market. This shift in the supply curve will also shift the Polish excess supply curve in the relevant world market diagram. This shift will result in a fall in the world dairy product price, depending on the slope (elasticity) of the excess demand curve in the world market for dairy products - depending in turn on the elasticities of supply and demand for dairy products in other countries.

To explore the determinants of the elasticity of the Rest of the World excess demand curve, we need to employ some elementary algebra, beginning from the definition of excess demand in the rest of the world (X_d) as the difference between demand in the rest of the world (D_r) and Supply in the rest of the world (S_r) at each and every price:

$X_d = D_r - S_r$, by definition.

So: $X_d / P = D_r / P - S_r / P$; as the response of each side of the equation to a change () in the (world) price;

Then, multiplying the LHS by P/X_d to turn it into an elasticity, which in turn means multiplying each term on the RHS by the same term (P/X_d), to preserve the equality, gives the **Elasticity of RoW X_d , (E_{xd})** as:

$$X_d / P * P/X_d = D_r / P * P/X_d - S_r / P * P/X_d$$

Now multiplying the first RHS term by D_r/D_r (i.e. 1) and the second term by S_r/S_r , and re-arranging terms gives an expression in terms of elasticities on the RHS as well. So:

$$\begin{aligned} E_{xd} &= [D_r / P * P/X_d * D_r/D_r] - [S_r / P * P/X_d * S_r/S_r] \\ &= [D_r / P * P/D_r * D_r/X_d] - [S_r / P * P/S_r * S_r/X_d]; \\ &= [ED(row)] * D_r/X_d - [ES(row)] * S_r/X_d \end{aligned}$$

What this expression means is that the elasticity of the Excess Demand curve for the rest of the world (Exd) is the **weighted sum of the elasticities of demand ($ED(row)$) and supply ($ES(row)$) with respect to the world price** in the rest of the world, the weights being the ratios of demand and supply (i.e. consumption and production) in the rest of the world to Polish exports (which equals X_d in order for world markets to clear). Typical values of domestic elasticities lie between 0 and 1 for farm products, while Polish exports are typically rather small compared with production and consumption levels in the rest of the world, which makes the elasticity of excess demand facing Poland rather large (the excess demand curve in Figure 2 is relatively 'flat'). In turn, this means that the effect of Polish exports on world prices is likely to be small so long as Poland remains a small supplier relative to the world market. This result justifies what is often known as the *small country assumption* - that changes in one country's supplies have an insignificant effect on world prices.

However, the elasticities above are with respect to the world price, not to the ruling domestic prices in the rest of the world. Many countries have **protected** and **insulated** their domestic agricultural industries from the effects of world prices (see section 4 below). If domestic prices do not change as world prices change, i.e. the domestic policies *insulate* the domestic markets, then the elasticities of supply and demand in the above expression are zero, since perfect insulation prevents domestic supply and demand responding to world price changes. In this case, the elasticity of excess demand will also be zero, i.e. the excess demand curve will be vertical.

The '**flexibility**'¹ of world prices to changes in Polish exports will be infinite in this case, with any increase in Polish exports depressing world prices to zero, or any decrease driving world prices up without limit. However, few countries can afford to totally insulate their domestic markets from the world price (e.g., the bigger the gap between domestic and world prices, the more costly in one way or another are domestic policies). Hence there is some logic for movements in world prices to be translated, at least partially, into movements in domestic prices. There is also some empirical evidence of this, through correlations between world and domestic price changes. **Protection**, i.e. a "wedge" between the domestic price and the world price, with domestic and world prices tending to move together, will make the elasticities more inelastic but will not reduce them to zero. The more *insulative* and *protective* are domestic support policies around the world with respect to the world price, the more inelastic (the less flexible) the X_d facing the home country, with obvious consequences for domestic policies and traders at home.

We can see this as follows:

go back to the expression for the elasticity of world excess demand(Exd):

$$\begin{aligned} Exd &= ED(row) * Dr/X_d - ES(row) * Sr/X_d \\ &= (Dr/P * P/Dr) * Dr/X_d - (Sr/P * P/Sr) * Sr/X_d; \end{aligned}$$

However, the 'true' *domestic elasticities* (about which we usually feel fairly comfortable and confident) are with respect to domestic prices (P_d):

$Exd = Dr/P_d * P_d/Dr$, where P_d is the domestic price in the RoW, rather than the world price.

Similarly: $ES(row) = Sr/P_d * P_d/Sr$

Now, to retrieve the expression for the Exd , we need to 'transform' these domestic elasticities so that they reflect responses to the world price. We need the **elasticities of domestic prices with respect to world prices** [$E(P_d/P)$]:

¹ The flexibility is defined here as simply the inverse of the elasticity of rest of the world demand - the proportional change in world price following a unit proportional change in quantity traded (exported).

$$E(Pd/P) = [(Pd/P) * (P/Pd)]$$

Now multiply each term in the RHS by this elasticity:

$$Dr/P * P/Dr * [(Pd/P) * (P/Pd)] * Dr/Xd - Sr/P * [(Pd/P) * (P/Pd)] * P/Sr * Sr/Xd$$

{The terms in Pd cancel out, leaving the expression as before, so we haven't changed the expression, merely expanded it.}

Now we have the complete expression:

$$Exd = ED(row) * E(Pd/P) * Dr/Xd - ES(row) * E(Pd/P) * Sr/Xd$$

where $E(Pd/P) = [(Pd/P) * (P/Pd)]$

The first term in the RHS of $E(Pd/P)$ is: (Pd/P) - the “insulation” of the policies in the rest of the world, since this measures the rate of change of domestic prices in response to world price changes. The second term (P/Pd) reflects the extent to which domestic prices are different from world prices (usually above in developed economies), i.e. the “protection” offered by other countries policies². The consequences of insulative $(Pd/P < 1)$ and protective $(P/Pd < 1)$ policies is thus to reduce the elasticity of excess demand compared with free-trade, and in so doing make the world market price flexibility greater - that is world prices are more volatile in the face of either demand or supply changes.

While the algebra in the above analysis might appear daunting at first sight, it repays a little work to understand. Reasonable approximations for elasticities of demand and supply in other countries are available in the literature (see, for example, Tyers and Anderson, footnote 3 below). Estimates of the insulation and protection of policies in these countries can also be found in the literature, or can be roughly estimated from available data on domestic and world prices. Given these estimates, it is relatively straightforward to construct a numerical model of the world market, using a computer spreadsheet, to examine the world market potential for Polish products. Such spreadsheet models allow the user to explore the consequences of market changes (as shifts in supply and demand curves) and also policy changes (as changes in insulation and protection) for different products and countries, and are thus enormously useful for a wide variety of both commercial and policy analysis purposes.

This basic spatial equilibrium framework is widely used in models of world agricultural markets. Two of the most well known examples of such models are Tyers and Anderson (1992)³, which formed the basis for the World Bank (see below) assessment of the potential gains to be made from liberalisation of world agricultural trade under GATT, and the Organisation for Economic Cooperation and Development (OECD) model of agricultural trade, used in the preparation of annual forecasts of world agricultural market developments (see, e.g.. OECD, 1995)⁴.

Section 4 of this Chapter explores the consequences of insulative and protective policies for agricultural products on world markets in a little more depth, using the European Union's Common Agricultural Policy as an instructive example. However, before turning to this topic, the second major difference between regional (national) and international trade and markets - foreign exchange - needs explanation.

² **Rates of Protection** are actually formally defined as $(Pd-P)/P$ - the difference between the domestic or internal price and the world price expressed as a proportion of the world price.

³ Tyers, R. and Anderson, K., 1992, *Disarray in World Food Markets: a Quantitative Assessment*, Cambridge University Press, Cambridge

⁴ OECD, 1995, *The Agricultural Outlook, 1995 - 2000*, Paris.

3. The Foreign Exchange (Forex) Market.

Case Study 1: The Great Grain Robbery

A succession of good harvests, coupled with substantial support for cereal producers in the US, had resulted in large stocks of grain in North America in the early 1970s. The US government had introduced *export subsidies* to encourage traders to export, and thus reduce stock levels. However, world grain prices were severely depressed because of the surplus grain in store relative to demand.

Up to 1971, the US\$ was fixed in value against gold, and other major currencies were in turn fixed in value relative to the \$. This value had proved too expensive for the US - the \$ was *overvalued*. But *devaluation* of the \$ meant all other major currencies also had to change in value. In 1971, an international decision was taken to '*float*' the dollar by letting foreign exchange markets determine the appropriate value of the \$ and the relative values of other currencies. As a consequence, the value of gold (a form of currency) increased as the value of the \$ against gold decreased.

The Soviet Union suffered a series of poor grain harvests at this time, culminating in a major failure in 1972. In previous poor harvests, Moscow had reduced Soviet consumption of grain, mainly by killing livestock. The world grain trade expected the Soviets to do the same thing again this time. The predictions were that the USSR would be buying 5 million tonnes of grain from the world market.

Imagine that you were in charge of the grain import desk in the Kremlin in 1972. What would you do? You might remember the food riots in Gdansk and Szczecin in late 1970, when the Polish Government of the time sought to raise food prices. Killing livestock to reduce demand for grain in the USSR is likely to raise food prices again, which will prove extremely unpopular. The market situation facing the Russian policy makers (acting as traders) prompted a rather different reaction. The Russians had gold; gold was expensive. They didn't have grain; grain was very cheap, and being subsidised by the US. The USSR decided to fill its grain deficit with imports, and continue to expand its cattle herds.

The Russian buyers went to the world grain market (mostly in Chicago and Winnipeg) with orders to buy 25 million tonnes of grain. The main world grain traders at that time were the 'big five' private international companies: Cargill, Continental, Dreyfus, Cook and Bunge. The Canadian and Australian Wheat Boards were also (and still are) major players.

In July, 1972, each of these trading houses were offered the chance to sell the Russians 5 million tonnes of grain. Naturally each of the trading houses was delighted, thinking they had secured the whole of the Russian order. They each went back to their suppliers in the mid-west of the US to buy the grain. They then discovered that they were in competition with each other for 25 million tonnes, not on their own buying 5 million tonnes. The price soared.

Between 1971 and 1975, US grain exports grew from 34 m. tonnes to 84m. US earnings from farm exports grew from \$7.7 bn. to \$21.3bn. The world price of grain rose sufficiently that the European Community's import levies were no longer necessary. Instead, the EC imposed export taxes to prevent European grain being exported for the higher world price. If this had been allowed, EC prices would have been increased to the high world levels.

Imagine that you were a grain trader in Kansas in 1972, buying grain from farmers and selling it to multinational grain exporting companies. Write your diary for the year explaining your experiences during this period.

Now imagine you are the manager of a bulk shipping company operating from New Orleans. Write an account of the 1972/3 shipping season.

The relationship between trade and foreign exchange

International trade is like all other forms of trade: a two way process. A key distinguishing feature of international trade, however, is that it happens across national frontiers. The interactions between *imports* (as international purchases) and *exports* (as international sales) happen in the *foreign exchange* market, shortened to the *forex* market. It is in this market that traders exchange one currency for another. Importers need to exchange local domestic currency for a foreign currency (for example US\$) in order to pay for the imports - they therefore *supply* local currency and *demand* US\$ (or other foreign currencies) in the forex market. Exporters are paid in US\$ which they

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need to change into local currency - they therefore *demand* local currency and *supply* US\$ in the forex market. As in any other market, a balance between supply and demand in the forex market is achieved by adjustments of price. The price of the local currency in the forex market is the *exchange rate* - the rate at which US\$ (or other foreign currency) can be exchanged for the local currency (zloty).

Exercise 3: Suppose you are an importer of Cola drinks from the US. The cost of these drinks is US\$0.5 per can cif, Warsaw. If the exchange rate is 0.5 Zloties per US\$, what is the lowest price you can afford to sell these drinks for in Warsaw? If the exchange rate falls (*depreciates*) to 0.4 Zloties per US\$, what happens to your minimum selling price?

In the light of your answer, would you expect imports to increase or decrease if the exchange rate depreciates?

Here we view the forex market from the local currency point of view, with **Polish importers supplying Zloties and exporters demanding Zloties in the Zloty forex market**⁵. At high exchange rates, imports (originally priced in dollars) are cheap, so we would expect more imports than at lower exchange rates. Thus we would generally expect more zloties to be supplied to the forex market at higher exchange rates than at lower ones, so the **supply curve for zloties (from imports) in the forex market will generally slope upwards**⁶.

Exercise 4: Suppose, now, you are an exporter of Polish new potatoes to the United States. You have to pay 5 Zloties per kilogram to your local suppliers to obtain the quality products for sale to the US buyers. If the exchange rate is 0.4 Zloties per US\$, what is the minimum \$ price you can afford to accept from your US buyer for your potatoes? What happens to your minimum selling price in \$ if the exchange rate rises (*appreciates*) to 0.5 Zloties per US\$? Would you expect to sell more or less to the US than before if the exchange rate appreciates?

On the other hand, at high exchange rates Polish exports are expensive in foreign markets, so we would expect to sell less abroad than at lower exchange rates. The **demand for zloties (from exports) will thus generally slope downwards** - more zloties being demanded in the forex market at lower exchange rates than higher ones.

Other reasons for exchanging currencies

Importers and exporters are not the only people needing to exchange currencies. Tourists and visitors and international transactions of insurance and financial services will also involve exchange of currencies. The balance of these flows of currency has been called the *invisible trade account*, since these flows result from 'unseen' trade rather than the *visible* product and commodity trade.

Capital flows between countries create an important additional source of currency demand and supply. At high exchange rates, zloties are expensive in terms of foreign exchange, so we would expect *capital inflows* to be lower at higher exchange rates than at lower rates - **that is the demand for Zloties generated by capital inflows will be**

⁵ We need not worry that there is an alternative view of this forex market - with importers demanding \$ and exporters supplying \$, since the market clearing price will be the same exchange rate whichever way we look at the market.

⁶ Alert students will notice that more imports, caused by lower zloty prices because of the exchange rate strength, does not necessarily mean a greater total spending on imports. The increase in quantity of imports may be more than offset by the fall in the zloty price. Total spending (and thus total supply of zloties to the forex market) may actually fall as the exchange rate rises. For most traded commodities and products, however, there are *close substitutes* available on the domestic market. In these cases we would expect the increase in import quantities purchased to more than offset the fall in the import price, and for total spending on imports to increase.

downward sloping. On the other hand, Polish investment or debt repayment abroad will generate *capital outflows* from Poland and thus create a supply of zloties to the forex market. The higher is the exchange rate, the more foreign currency can be bought with the zloty, so the greater we would expect the capital outflows to be - **the supply of Zloties from capital outflows will be upward sloping.**

A country's official *Balance of Payments* statistics record these balances of imports and capital inflows and exports and capital outflows. Exports and imports are recorded as *visible trade*. Forex transactions associated with travel, services, tourism etc. are termed *invisible trade*, since it is difficult to 'see' these imports and exports at the border points. The visible and invisible trade accounts together form the *Current Account* of the Balance of Payments. In 1994, the officially recorded Polish balance of visible trade was in deficit by some 9 bn. Zl., while the current account was in deficit by 2.2bn Zl., implying a *surplus* on the invisible account of 6.8bn. Zl.⁷ The second major part of the Balance of Payments is the *Capital Account*. This section records capital inflows and outflows. It is said to be in *deficit* if outflows are greater than inflows, and in *surplus* if inflows exceed outflows.

The consequences: the foreign exchange market

Imports and capital outflows generate supplies of zloties to the forex market. The supply of zloties increases as the exchange rate increases (or, as it is known - *appreciates*). **Exports and capital inflows generate a demand for zloties in the forex market, which will decrease as the exchange rate appreciates**, and increase as the exchange rate falls or *depreciates*.

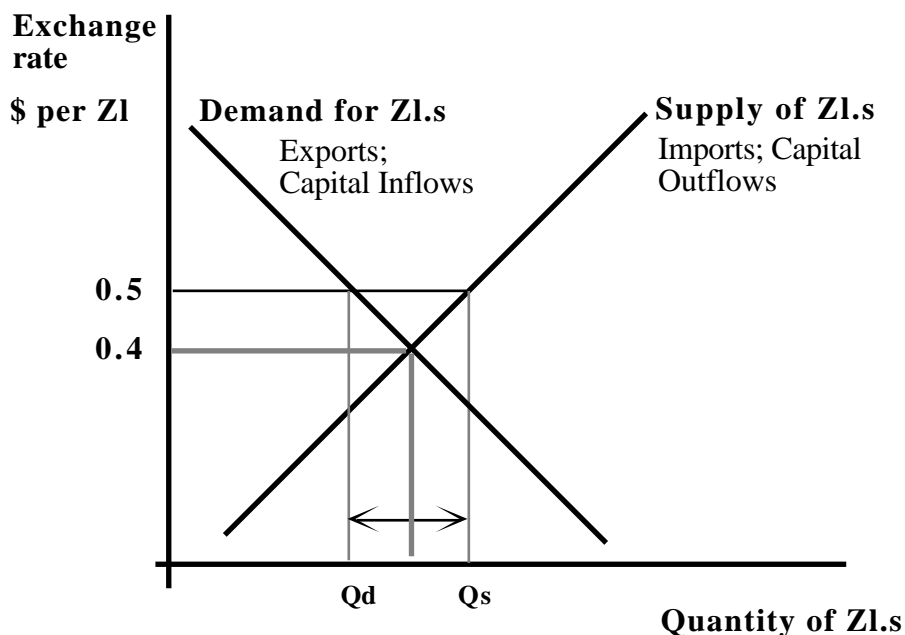
This general diagram of the forex market is shown in Figure 3., with an appreciation of the currency being shown as a movement up the vertical axis⁸. Here, the equilibrium exchange rate is illustrated as 0.4\$/Zl. (2.5Zl to the \$). This is the only exchange rate at which the demand for zloties (and hence supply of foreign currency) is exactly balanced by the supply of zloties (and hence the demand for foreign currency) in the forex market.

Suppose, for example, the current exchange rate is 0.5 rather than 0.4US\$/Zl. Figure 3 shows that at this exchange rate, the supply of zloties in the forex market will be greater than the demand for zloties. Forex traders will therefore bid the price of zloties (the exchange rate) downwards - the zloty will *depreciate*. You should try repeating this argument for an exchange rate below 0.4US\$/Zl. It should be clear that in this case we would expect the zloty to *appreciate*.

⁷ These figures relate to officially recorded transactions, which are recognised to exclude a huge amount of unregistered trade, especially in border areas, estimated to be some US\$4 - 8 bn. in total, of which about one quarter consisted of unofficial exports of food and food products, mostly to Germany (Organisation for Economic Cooperation and Development (OECD), *Agricultural Policies, Markets and Trade in Central and Eastern European Countries, Monitoring and Outlook*, 1995, p57.) Even more than many other economic statistics, trade and forex statistics are difficult to record precisely, and are subject to frequent revision and adjustment.

⁸ The reader should beware that other textbooks frequently present this diagram of the foreign exchange market in *foreign exchange terms* rather than in domestic currency terms as shown here. Thus, a frequent representation of this diagram would show Zloties per US\$ on the vertical axis and US\$ on the horizontal axis. The basic analysis is not changed by this alternative representation. The former representation is used here since a) appreciation in this chapter's diagram means an increase or upwards movement of the price (exchange rate in \$/Zl); b) the quantities of currency traded appear in Zloties rather than \$, which is the way in which most countries record their *Balance of Payments* statistics (see below).

Figure 3. The Foreign Exchange (Forex) Market



Other factors influencing the exchange rate

As with any other economic diagram of markets, there are other important factors which determine the supply and demand for zloties in the forex market. In the diagram, these other factors are considered fixed, so that their effects on the exchange rate can be ignored. In practice, however, these factors are frequently very important. Among the most important factors are:

- the quality and value of Polish goods in comparison with foreign products, reflecting the productivity of the Polish businesses;
- the general state of the economy - government budgetary position, interest rates, inflation rate, growth rate.

In our analysis of the forex market, changes in these factors will shift the forex demand and supply curves. If Polish products become more competitive relative to foreign supplies, then exports will be greater and imports lower than before. So, improvements in Polish productivity will shift the demand curve for Zloties to right and shift the supply curve to the left. This will tend to lead to *appreciation* of the currency. Hence, Japan and Germany have typically had *strong* currencies, reflecting productive economies producing good value products.

Similarly, if the economy is 'well managed' - low inflation, reliable growth, attractive interest rates - then there is likely to be a strong attraction for inward investment (shifting the demand curve to the right, leading to an appreciating currency). An economy suffering low growth and rapid inflation (often associated with unattractive interest rates) will encourage businesses try to invest elsewhere rather than in Poland. In this case, the forex demand curve is shifted left and the supply curve shifted right, and we would expect the exchange rate to *depreciate*.

The Exchange rate and the Balance of (foreign) Payments

Returning to Figure 3, so long as exports plus capital inflows equal imports plus capital outflows, then the supply of zloties to the forex market will balance the demand for zloties and the exchange rate will be stable. According to the analysis of Figure 3,

therefore, we would not expect to see either Balance of Payments surpluses or deficits if the exchange rate is freely determined by the Forex market - that is, if the exchange rate is *freely floating*. However, any balance of payments account must always be a 'snapshot' of a continually moving and changing situation. Furthermore, these accounts are generally based on the recorded movements of the goods, services, and capital, rather than on the actual exchanges of currency made necessary by these movements. Currency exchanges may not happen simultaneously with the trade or investment transactions. Thus, we frequently observe recorded Balance of Payments deficits or surpluses, even in situations where the exchange rate is mostly determined by free market trading in the forex market.

Exercise 5: Suppose you need to change Zloties into US\$ sometime in the next six months. The current exchange rate is 0.5 Zloties/US\$. You have examined the Polish Balance of Payments position to try and judge whether this exchange rate is likely to change in the near future. You have discovered that there is a substantial *deficit* in this Balance of Payments. Should you change your Zloties now, or wait to see if the exchange rate will move in your favour?

Now suppose you hear on the city grapevine that there is about to be a major international investment package announced for Poland next week. Would you change your mind about when to change your Zloties into US\$?

Prior to 1991, the zloty could not be freely converted into other currencies, making trade with other countries difficult and subject to strict government control over necessary foreign exchange transactions. Since being made *convertible* in 1991, the zloty has generally *depreciated* against the major (*hard*) currencies (US\$, ECU, DM, Sterling, French and Swiss francs). This depreciation of the zloty (supply exceeding demand in the forex market) implies that the Polish Balance of Payments has tended to be in deficit over this period.

Government Management of the Exchange Rate

As with most other currencies, the zloty exchange rate is *managed* by the government, rather than being allowed to freely float in a liberal forex market. When governments allow a managed currency to depreciate, this is termed a *devaluation*. Since 1991, the maximum monthly devaluation allowed by the Polish government has been between 1.2% and 1.8% per month. Despite these successive devaluations (depreciations), the zloty is generally considered to be *overvalued* - that is it remains at a higher exchange rate than the free market rate⁹. How can the Polish government manage (control) the exchange rate?

Overvaluation implies that the supply of zloties to the market must exceed the demand for zloties. Thus, in Figure 3, we must be at a position such as an exchange rate of 0.5\$/Zl. rather than 0.4\$/Zl. The supply of zloties would be Q_s and the demand would be Q_d . This means that the combined sum of imports and capital outflows would exceed the sum of exports and capital inflows by the amount $(Q_s - Q_d)$ Zl. The Balance of Payments would be in deficit by this amount.

To keep the exchange rate at 0.5 rather than 0.4\$/Zl., the government has to increase the demand for zloties in the forex market (or reduce the supply) by the amount of the Balance of Payments deficit. It does this in two main ways:

- by selling *foreign exchange reserves*, in exchange for zloties, thus demanding zloties and supplying forex. All *Central Banks* maintain some foreign exchange reserves for this purpose;

⁹ European Commission, DGVI Working Document, 1995, Agricultural Situation and Prospects in the CEECs: Poland, p.5.; OECD & CCET, Review of Agricultural Policies, Poland, 1995, p 39.

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- by arranging additional loans from abroad (capital inflows) to cover the BoP deficit. The *Paris Club* is an organisation of national central banks and international banks established to organise official government loans and credits. The *London Club* is a similar group of commercial banks dealing with private (non government) credit and loans.

Either of these actions would increase the demand for zloties, thus raising the exchange rate and offsetting the Balance of Payments deficit. However, there are limits to the amount of this management that governments can do. Foreign exchange reserves are limited and cannot be used indefinitely. There are also rather strict limits on the amount of external borrowing a government can arrange to 'prop up' an exchange rate.

When these sources of credit or reserves run out, it becomes obvious that the currency can no longer be supported at its high level - a *devaluation* (managed depreciation) becomes inevitable. Anyone holding zloties in these circumstances would make money by selling them for another currency at the high rate, before the devaluation happens, and then re-purchasing their zloties at the new and lower exchange rate. Thus, overvalued currencies can easily suffer 'runs' on their forex markets, as people rush to sell the currency. This, in turn, re-inforces the pressure to devalue. Alternatively, resisting this pressure requires strong currency controls by the government, effectively preventing private or commercial sales of the domestic currency, in addition to establishing further credit lines with foreign banks or governments.

A country's exchange rate, in conjunction with its balance of payments, is like a barometer of the country's economic condition. A strong exchange rate (associated with a balance of payments equilibrium or small surplus) is an indication of a healthy economy. It is not possible to create such a healthy economy by manipulating the exchange rate, any more than it is possible to control the weather by manipulating a barometer. Nevertheless, as watching the barometer can be a useful way of understanding and predicting the weather, the exchange rate can be a useful barometer of economic climates. More importantly from a commercial point of view, knowledge of general economic climates and trends can provide valuable information on expected future movements in exchange rates.

Exercise 6: Suppose you expect Polish trading partners' growth rates to be significantly lower than Polish growth over the next five years, while inflation rates elsewhere in the world tend to increase relative to Poland. What would you expect to be the consequence for the Polish exchange rate?

International Institutions and the Forex Market

One of the sources of international borrowing available to the government is the *International Monetary Fund*, based in Geneva, which operates as a bank for national governments. Another source of capital inflow is the *International Bank for Reconstruction and Development* (IBRD), more usually known as the *World Bank*, based in Washington, which provides both loans and grants for development projects. Both of these international institutions were established in 1947 to assist in the development of economies and trade in the post war period. Another international bank/development fund is the *European Development Bank*. These institutions require borrowing governments to manage their economies 'properly' in order to qualify for additional loans and grants.

Governments (in conjunction with the IMF and international banks) seek to *stabilise* currency fluctuations by managing exchange rates through temporary accumulation of BoP surpluses or deficits. Frequently, this is done by *tying* a currency's value to that of more stable and 'reliable' world currencies. Thus, the value of the Polish Zloty has been linked to a 'basket' of 5 international currencies since May 1992. The 5

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currencies and their weights in the 'basket' are: US\$, 45%; DM 35%, Sterling, 5%; French Franc, 5%; Swiss Franc, 5%.

For such stabilisation to be successful, however, the country's economic and trade performance must also be maintained relative to other countries. If these underlying *fundamentals* change, then the stabilised or fixed exchange rate must also be changed (as with the US in 1971). Hence, stabilising exchange rates requires stability in both the management and performance of the national economy.

Exercise 7: Suppose that the overseas investment package of the last exercise has happened and that, as a result, the productivity of the agri-business sector has improved considerably. This is shown by an increase in exports from Poland and a reduction in imports. It has also encouraged a series of further investments from both domestic and foreign sources.

- What would you expect to happen to the exchange rate as a consequence?
- What would be the effect of this exchange rate change on the marketability of Polish goods versus their foreign competitors in both the home and foreign markets?
- Would you rather live in a country which avoided these changes or one which took advantage of these changes?

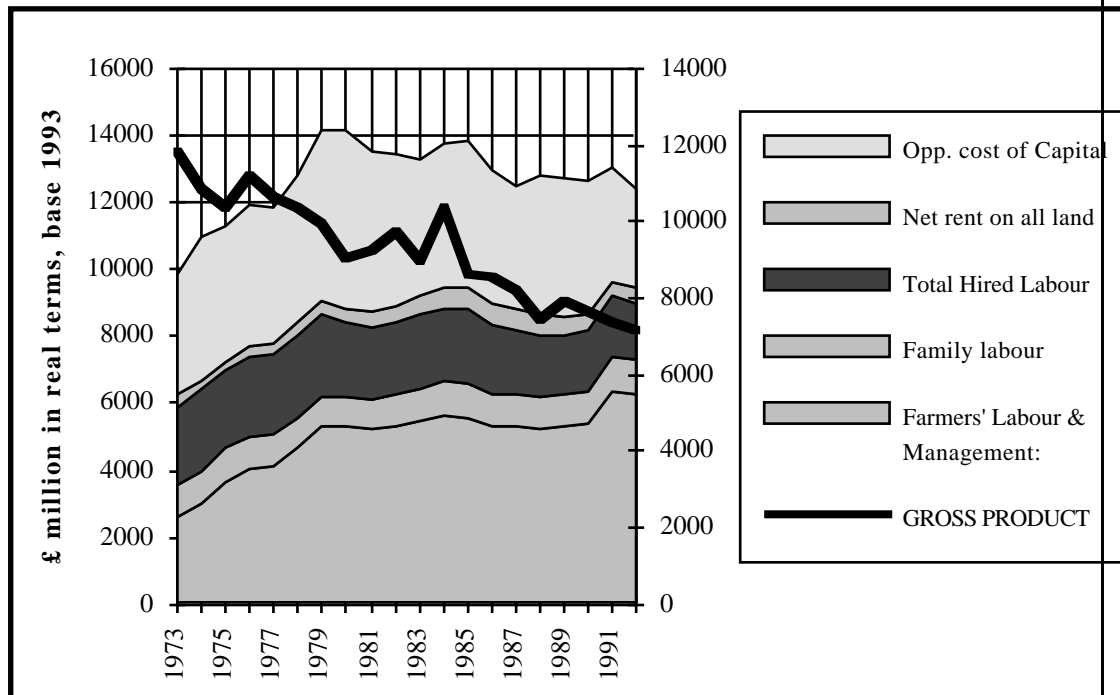
4. National & International Responses to World Markets.

Case Study 2: British Agriculture's "Prosperity"

under the European Union's Common Agricultural Policy

It is commonly supposed that the European Common Agricultural Policy has been a "good thing" for European farming. Is this true? The Figure below tells a rather different story. The *Gross Product* line is the margin (or difference) between British agriculture's total revenues (sales receipts) and its input costs. This margin is measured in *real* (purchasing power) terms - that is: the effects of inflation have been removed from the figures.

This margin represents the returns to capital, land, management and labour in agriculture - the returns to the *factors of production*. employed in the industry.



However, the *opportunity costs* of these factors - the returns they could be expected to earn from the market place - are considerably greater than the returns actually being earned in farming. These costs are shown by the "mountains" behind the black returns line, also adjusted to remove the effects of inflation. These costs are estimated on the basis of the actual market costs of: land (rents charged); capital (interest and repayment costs on all fixed plant, machinery, equipment, buildings and breeding livestock); hired labour (actual wages paid); family labour and farmers' own labour and management (charged as if they were also earning the agricultural wage rate). The real returns have not been great enough to meet these costs of the factors of production - the industry has been operating at a loss. Why, and what are the consequences?

Britain joined the European Community and the CAP in 1973. The debate about British entry had concentrated on the costs to the consumer and the benefits to the farmers of the CAP. Everyone knew that farm and food prices would be higher under the CAP. In 1973, farm and food prices were certainly high (see Case Study 1). British Agriculture invested heavily in response to these high prices, which were assumed to be lasting. Capital costs, especially, increased dramatically as the industry invested in additional plant and equipment. But high world prices could not last forever, and returns and margins fell.

British agriculture is still making a substantial loss - it cannot afford the present level of factors of production. We would expect to see these factors leaving the industry for better returns elsewhere. This is already happening, especially with capital and hired labour. Farmers and their families are also finding other things to do than farm, though often staying on their farms to do them. This 'decline' in agriculture in Britain has happened in spite of the high levels of support and protection provided by the CAP.

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Imagine you are an advisor to a Polish Farmers Federation. Suppose that there is a majority in this Federation arguing for greater support and protection for Polish farming. You are asked to explain to the Board of the Federation why a CAP type policy would not be a good thing for Polish agriculture. What would you say?

4a. Agricultural Policies

As we saw in Section 2, opening up trade between national markets will increase prices of products in exporting countries and reduce them in importing countries. Importing countries have tended to react to these world trade effects by *protecting* their national domestic industries. They have done this for two major reasons:

- imports of food have been viewed as unreliable (subject to interruption in wartime or economic depression) and as costly to the nation in terms of foreign exchange;
- trade depresses prices for the local domestic industry (farmers) who have argued the need for protection against foreign competition.

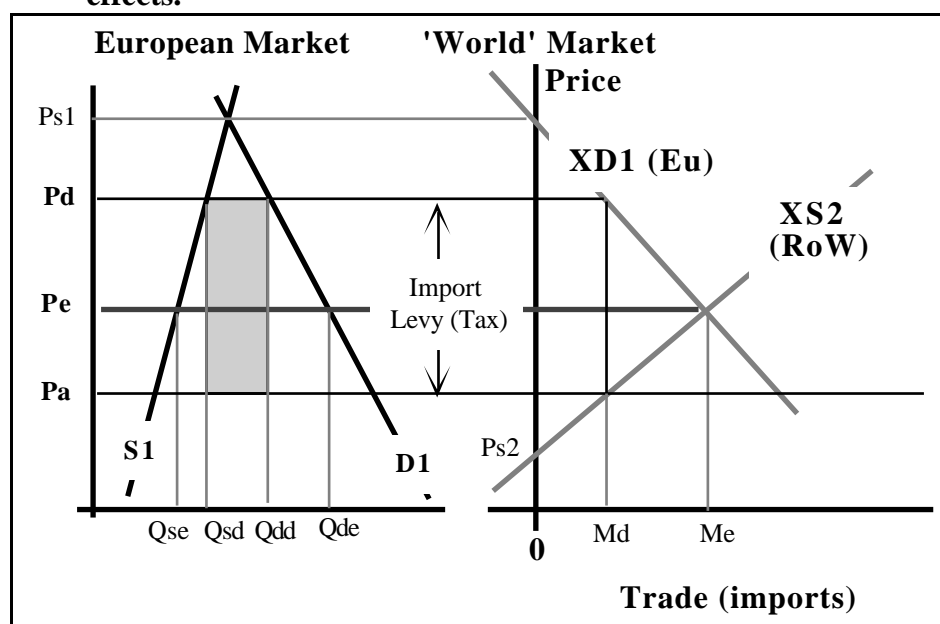
The case of the CAP

In the European Community, the agricultural industry has been protected by *import taxes* (import levies) on imports from outside the Community under the *Common Agricultural Policy*. These levies were set to increase the cif import price to a 'target' domestic price. The levies therefore varied as world prices fluctuated to maintain the internal European price. As a result, they are called *variable import levies* rather than import taxes, which are commonly called *tariffs*, applied as either proportional to import value (*ad valorem*) or constant *specific* \$/unit taxes on imports. In effect, the intent of the variable import levies was to completely *insulate* the European market from world price effects, as well as to *protect* the market - which could also have been achieved through specific or *ad valorem* tariffs.

The Effects of Protection: the importing country case

As Figure 4 shows, raising the domestic European price from P_e to P_d (the target price) reduces imports from M_e to M_d tonnes. Domestic production is encouraged and farm revenues are increased. However, the effective costs of production in Europe rise from P_e to P_d , as more farmers try to take advantage of the higher price. Farm incomes, as the difference between revenues and costs, do not necessarily increase.

Figure 4. European Protection of Domestic market and world market effects.



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In fact, in Europe under the CAP, farm incomes did not improve, although more people were able to earn a living from farming than otherwise. The encouragement of European agriculture may help reduce food and farm product imports. But it also diverts resources (especially labour and capital) from other sectors of the economy, which reduces exports or encourages imports of non-food products. Furthermore, the additional agricultural output also requires more inputs - fertilisers and machinery - which may have to be imported. As a result, protecting agriculture need not improve the European Balance of Payments at all. The economic effects of protection typically lead to a worse, rather than better, economic performance of the economy, with adverse consequences for the Balance of Payments.

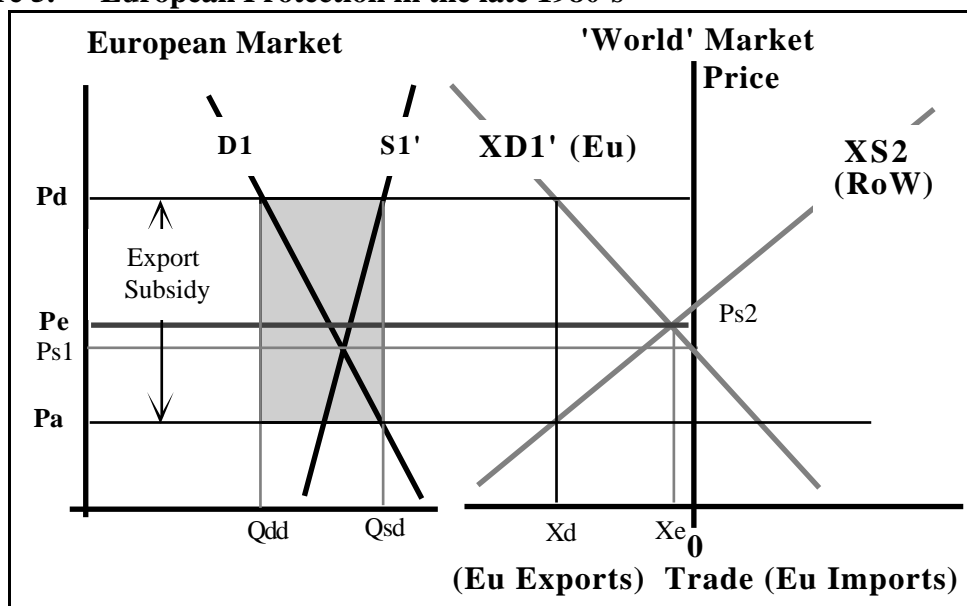
European consumers are made worse off as a consequence of the protection, now having to pay P_d rather than P_e for food products. Those on lower levels of income typically spend a greater proportion of their income on food than the better off. As a consequence, the protection policy taxes the poor more heavily than the rich. Farmers, however, gain from the protection policy according to their shares of total production - the larger farmers gaining more than the smaller. There is, therefore, little to commend the policy of protection as an *equitable* policy.

European protection and import restriction reduces the world price, from P_e to P_a in Figure 4. The import levy necessary to protect the European price at P_d is now P_d minus P_a , rather than P_d minus P_e . The European taxpayer, therefore, gains as a result of the policy, which raises money from the effective tax on food. The European budget raises a total of $[(P_d - P_a) * (Q_{dd} - Q_{sd})]$ as import levy revenues, shown as the shaded area in Figure 4. In addition, as demonstrated in section 2 above, the EU's protection and insulation of its domestic market has made the world market more volatile - world prices fluctuate much more violently in response to changes (shocks) in demand and supplies in the rest of the world.

The Effects of Protection: the exporting country case

By the mid 1980's the European market position had shifted from that shown in Figure 4 to the situation shown in Figure 5.

Figure 5. European Protection in the late 1980's



The European supply curve has shifted to the right, reflecting its increased efficiency - producing more at the same price (or the same quantity at a lower price). Although some argue that this improvement in efficiency was a result of the protection, the evidence for this is limited. Protection can just as easily encourage inefficiency. In any

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event, now that the European Union is an exporter, it has to persuade the rest of the world to buy its surplus. The selling price on the world market must now be P_a , determined from the rest of the world's excess supply curve ($XS_2(RoW)$). The EU must now pay exporters a *subsidy* of $(P_d - P_a)$ so that exporters are able to sell this surplus on the world market. Instead of the policy raising money for the budget, it is now costing taxpayers money - a total of $(P_d - P_a) \times X_d$, shown by the shaded area in Figure 5.

The Consequences of Protection in the Rest of the World.

European trading partners are severely disadvantaged by this protectionist policy, since both their price and volume have been reduced. Now that the EU is an exporter, their position appears even worse - not only can they not sell in the European market, but the EU is now *dumping* surplus products in their other markets around the world.

The fall in other countries exports makes their Balance of Payments worse. This leads to depreciations in their exchange rates, which make their exports even more competitive and imports (from Europe and elsewhere) more expensive and less competitive. The protection of the European market also raises the likelihood that foreign governments will seek to *retaliate* and protect their own industries and sectors from European competition. Protectionism is thus a popular, but misplaced, reaction to foreign competition - it leads to a progressive reduction in trade and living standards throughout the world. The effects of the EU's CAP is a classic example of protection doing nobody any real good.

International action to reduce protection & encourage liberal trade - GATT

In addition to the establishment of the IMF and the World Bank in 1947 (see above), the Post-World War II reconstruction of the international order included an Agreement on international trade - The *General Agreement on Tariffs and Trade*, GATT. This agreement was reached precisely because of the dangers recognised as following from national protectionism. The Great Depression of the 1930s was, in part, a consequence of countries seeking to protect their domestic markets and ensure domestic employment. But the collapse in trade made their domestic situations worse rather than better.

A problem with free trade, however, is that providing all other countries follow the practice, there may be some short term gains to any individual country protecting its own markets. Unless all countries agree to an enforceable agreement to liberal trade, there will always be a temptation for any one country to break the rules to its own (perceived) advantage - hence the need for an international agreement.

Under GATT, tariffs and trade restrictions on the majority of traded products were very substantially reduced throughout the post-war period. In addition, rules and regulations were agreed to limit the use of protectionist measures and provide compensation to countries damaged by others' restrictions on trade. It is generally accepted that these agreements were a substantial factor in the growth of world trade and the associated economic growth and development of, especially, the western world.

Agriculture, however, was largely and specifically excluded from these agreements. In particular, the major countries, including the US, argued that domestic food supplies were so important that policies concerning food should be kept separate from free trade agreements. It took until the 1980s for the major countries (especially the EU and the US) to realise that freer trade might also be a good thing for farming and the agri-food sectors. Good reasons for this is evident from Figure 5. Protectionist agricultural policies around the western world had resulted in substantial depression and destabilising of world prices. These world market effects were finally making themselves felt on national taxpayer costs of farm support. In particular, although the variable levy/export subsidy system might seem to completely insulate the European market from world price effects, lower world prices mean larger budgetary spending on

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export subsidies. This increased budget spending on farm programmes, in turn, leads to political pressure to reduce European farm (target) prices. The consequence is that world prices do affect European prices, and the policy cannot succeed in completely insulating the European market from world effects.

The US farm support policies, based on government subsidies to farmers (*deficiency payments*) making up the difference between world market prices and their target prices, were also proving very expensive because of the depressed state of world prices. The EU and the US were thus finally persuaded to agree with the world's 'natural' agricultural exporters (the Cairns Group¹⁰) that world agricultural markets should be subject to international regulation through the GATT. The *Uruguay Round* of GATT (UR) negotiations began in 1986 with agricultural trade as a major item for agreement. The negotiating agenda also included trade in services (entertainment, financial etc.) for the first time.

The GATT 'rounds' of negotiations are *multilateral* - they cover many countries and many commodities, products and sectors. The considerable advantage of multilateral trade negotiations (MTNs) is that potential losses through reduced protection in one sector can be offset by gains to be made on others. Hence countries can more easily and are more likely to reach agreement over a comprehensive package than if they tackled each sector one by one in *bilateral* (country to country) negotiations.

The GATT Uruguay Round and the World Trade Organisation (WTO)

In spite of these advantages, it took until April, 1994 to reach a final agreement, formalised in the GATT *Final Act*. This agreement finally brings agricultural trade under the general provisions of the GATT, *binding* countries to provisions for reduced protection. It includes a provision to review the agricultural part of the Final Act in 1999, when it is expected that negotiations on further reductions on agricultural protection will be opened. The Final Act also established the *World Trade Organisation* (WTO) which is now the international authority for trade related issues, including all the provisions and agreements of the GATT.

The WTO¹¹ is the legal and institutional foundation of the multilateral trading system. It includes all the previous GATT agreements. It thus provides the principal contractual obligations governing national domestic trade legislation and regulations. It is the platform on which trade relations among countries evolve through collective debate, negotiation and adjudication.

The WTO, based in Geneva, Switzerland, has a potentially larger membership than GATT (128 countries by the end of 1994). It also has a much broader scope than GATT in the commercial activity and trade policies to which it applies. The GATT applied only to trade in merchandise goods. In addition, the WTO covers trade in services and "trade in ideas" or intellectual property.

The WTO has the essential functions of:

- administering and implementing multilateral trade agreements;
- acting as a forum for multilateral trade negotiations;
- a mechanism for resolving trade disputes;
- overseeing national trade policies;

¹⁰ So called after the city of Cairns, Australia, where these countries first met to form an international pressure group for the GATT negotiations. The group comprises 14 small and medium sized developed and developing agricultural exporters, including Australia, Argentina, Brazil, Canada, Hungary, and New Zealand.

¹¹ More information on the World Trade Organisation and its activities can be found on the World Wide Web, site: <http://www.unicc.org/wto/> which is well laid out and extremely informative. The following paragraphs are taken from this document.

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- cooperating with other international institutions (especially the IMF and World Bank) involved in global economic policy-making.

The Agricultural Trade Provisions of the GATT Uruguay Round (UR)

The major elements of the UR *Agreement on Agriculture* fall into three major areas: *market access*; *export competition*; *domestic subsidies*. The structure of the agreement is identified in Table 1, which shows these three major areas of agreement and the three major actions which have been agreed: the definition of *new trade rules*; the agreed general *rates of reduction* in trade protection measures over the period of the agreement - the specifics of which are detailed in the country schedules attached to the Agreement; the 'wrinkles' (*safeguards, accommodations and guarantees*) which proved necessary to achieve the final agreement.

The rules establish that the only form of admissible protection is now the (fixed or *ad valorem*) tariff. All other forms of import protection, including the EU's variable import levies, have to be converted to these tariffs - thus improving the responsiveness of domestic prices to world price changes. Furthermore, these new tariffs are *bound* under the agreement - that is they cannot be exceeded. In fact, the agreement is that they should be reduced by 36% over the six year period of the agreement. To ensure at least a minimum access to domestic markets for imports, special *tariff rate quotas* are introduced, allowing a certain level of imports (the quota) into a country at reduced or zero tariffs. Under the agreement, no new export subsidies are allowed to be used by any of the signatory countries (which includes Poland), while all existing export subsidies, including those of the EU, are subject to specific reduction over the period of the agreement - by 36% in expenditure terms and 21% in terms of the volume of subsidised exports.

The rules also establish a uniform measure of domestic market support for agriculture (which includes the wide variety of support measures used around the world to support and protect farmers). This measure is called the *Aggregate Measure of Support (AMS)*. The analysis under section 2 above makes it clear that such support (if it shifts the domestic supply curve for farm products) will increase excess supplies and thus *distort* world markets. Hence the agreement is that this AMS should be reduced by 20% over the agreement period. However, in order to reach this agreement, it was necessary for countries to agree to exempt certain specific policies from the AMS. These exemptions are placed in one of two 'boxes'. **Green box** policy instruments are those which are agreed as being *non trade distorting*, including R&D and farm extension services. **Blue box** policies are those which are accepted as being minimally trade distorting only for the duration of the UR agreement period of six years. These policies include the new EU area and headage compensation payments made under the CAP post the reform of 1992 and the US deficiency payments (subsequently the *transition contract payments* under the US Federal and Agricultural Improvement and Reform (FAIR) Act, 1996).

In spite of first appearances, this agreement only makes limited progress towards reducing agricultural protectionism. Existing export subsidies are only to be reduced by 36% in expenditure terms and only by 21% in volume terms, so 79% of previously subsidised exports can remain subsidised under this agreement. Countries have been able to limit the immediate effects of the agreement on import restrictions too, through careful choice of base periods and judicious selection of products to which the new *bound tariffs* will apply. Nevertheless, the process of the GATT negotiations itself was a major factor in encouraging the EU to reform its CAP in 1992, leading to the substantial reduction in target prices for cereals to close to the free trade world price, and the substitution of direct 'compensation' payments to farmers based on their areas of cereals. Similar changes were also made to the policies for beef and sheepmeat. However, the EU retains substantial import tariffs for most of its agricultural products, albeit that these are to be reduced over the agreement period.

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Table 1: The Main Structure of the GATT Agriculture Agreement, 1994

	RULES	LIBERALISATION	SAFEGUARDS, ACCOMMODATIONS AND GUARANTEES
MARKET ACCESS	<ul style="list-style-type: none"> • Change trade measures to tariffs • Establish tariff quotas • Bind all tariffs 	<ul style="list-style-type: none"> • reduce existing & new tariffs by 36% on average over 6 years • reduce tariffs for each item by at least 15% 	<ul style="list-style-type: none"> • Guaranteed access opportunities to exporters through tariff rate quotas (Min of 5% of domestic markets by end of 6 yrs.) • Special safeguards for importers
EXPORT COMPETITION	<ul style="list-style-type: none"> • Defined limits on existing export subsidies • No new export subsidies 	<ul style="list-style-type: none"> • Reduce expenditure by 36% over 6 years • Reduce subsidised export volume by 21% over 6 years 	<ul style="list-style-type: none"> • Adherence to food aid rules • Negotiate later on export credits (granted to importing countries to assist exports)
DOMESTIC SUBSIDIES	<ul style="list-style-type: none"> • “Green Box” defined for allowable subsidies 	<ul style="list-style-type: none"> • Aggregate Measure of Support (including all trade-distorting measures) to be reduced by 20% over 6 years. 	<ul style="list-style-type: none"> • Many LDC subsidies exempted • payments under “blue box” production limiting programmes exempted

Source: IATRC, 1994, *The Uruguay Round Agreement on Agriculture: an Evaluation*, Commissioned Paper No. 9, The International Trade Research Consortium, (Chairman, Prof. A. McCalla, University of California, Davis).p7

However, the fact of the agreement means that increases in protection are outlawed. It means that all present policies are now *regulated* by the WTO. It also means that future negotiations will concentrate on further reductions in protection. It is no longer possible to design domestic farm policies on the presumption that border protection will be allowed. Particularly for countries which did not use such protection prior to the UR, such as the Central and Eastern European Countries (CEECs), such policies are now effectively outlawed. This has important implications for Poland as it adjusts its domestic policies, regardless of any anticipation of joining an enlarged European Union.

4b Free Trade Agreements, Customs Unions and Economic Unions

In addition to world governance of trade under the WTO, there are other important multilateral country agreements affecting trade. The most important of these are: Free Trade Agreements (or Areas); Customs Unions; Economic Unions.

In Free Trade Agreements (FTA), member countries agree to remove all trade restrictions, barriers and tariffs between each other. This should encourage trade within the FTA, and hence promote economic development and growth. Free trade agreements (or areas) can *create* trade - encouraging trade between countries which did not occur before because of the border protection and hence higher marketing costs. However, FTAs can also *divert* trade - trade which used to occur between member countries and third countries (those outside the FTA) is replaced by (diverted to) trade between the member countries. This effect of FTAs is already emerging as a major issue for the WTO to address, as there seems to be a considerable growth in FTAs and the formation of *trading blocs*.

One of the more well-known free trade agreements was the *European Free Trade Agreement* (EFTA). This can be seen as a precursor to the European Union, with many countries being part of EFTA and subsequently joining the EU, culminating in the accession of Sweden, Finland and Austria to the EU in 1995. As with the pre-UR world situation, agricultural trade was treated as an exception in EFTA, and was subject to

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separate bilateral (country to country) agreements. Another major FTA is the North American Free Trade Agreement (NAFTA) between the US, Canada and Mexico. There are further FTAs on the Pacific Rim, in South America, and (in outline form) in Southern Africa. There is a danger that these agreements will lead to concentration of trade and its associated advantages within these agreements, and deterioration of trade between the FTAs. This observation has two important consequences: first, that membership of such a large group could prove important for countries in the medium term; second, that the WTO is justified in taking an interest in the operations and policies of such FTAs.

The *Central European Free Trade Agreement* (CEFTA) between the four Visegrad countries (Czech and Slovak Republics, Poland and Hungary) came into effect in 1993. Under this agreement, all tariffs on industrial goods are to be eliminated by 1997. For agricultural trade, however, separate bilateral arrangements have been made. A related set of agreements are the *Europe Agreements* (EAs) between the EU and the six “associated countries” - the Visegrad countries plus Bulgaria and Romania. The EAs are bilateral agreements between the EU and each of the associated countries. They are intended to result in free trade for most goods and services between the countries by the end of the ten year agreement period. Once again, however, agriculture is treated as a special case. These agreements do not provide for agricultural free trade. Instead, they include provision for limited *concessionary* or *preferential* access by the associated countries to EU markets. Limited quantities (*tariff rate quotas*) of imports are to be allowed into the EU at low tariff rates.

Case Study 3: Under-filling of tariff quotas

Concessionary access to European Union markets by Central and Eastern European Countries (CEECs) is supposed to be encouraged by the *tariff-rate quota* provisions of the European Agreements. These tariff-rate quotas allow a limited volume (quota) of imports into the EU at concessionary tariff rates, above which quota the full tariff applies. While the limited volumes are not generous to the CEECs, the tariff concessions are considerable, especially since 1994.

However, it is common that these quotas are not filled - less is being exported to the EU than is allowed for under these quotas. There are several possible reasons for this:

- shortage of supplies in the CEECs;
- lack of marketing and trading experience and skill in the CEECs;
- problems in meeting EU quality and health standards;
- unfamiliar and cumbersome administrative procedures (for those products covered by the EU's variable import levy system, import licences are required; for others (e.g. fruit and vegetables), the process is handled by border customs offices and posts on a first come, first served basis.
- procedures for allocating preferential import licences, which are issued to EU importers rather than CEEC exporters. Application typically requires an obligatory security deposit while the issue and use of the licence is frequently considerably delayed.

The last of these reasons is supported by the fact that eligible CEEC exports are occurring outside the preferential quota provisions - companies are finding that the procedures are too costly to bother with and are trading without taking advantage of the potential benefits of the concessions. From an economic point of view, allocation of licences to importers within the EU rather than exporters in the CEECs raises the possibility that the benefits of the concessions will be captured by the importers inside the EU rather than the CEEC exporters. This is particularly true if information about which EU importers hold the licences is difficult to obtain. The European Union is aware of these difficulties and is seeking to improve the system.

Suppose you are an advisor to a Polish exporting agency. Your Chairman has an appointment with the European Council of Ministers next week. Write a brief for your Chairman explaining the difficulties with the present European Agreements and suggesting how things might be improved. Use your imagination and local knowledge to illustrate your arguments with examples of the difficulties your member companies are experiencing.

A Customs Union is the next step towards international integration from the FTA. In a Customs Union, the member countries not only agree to free trade within the union, but

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also to apply common tariffs (*customs duties*) on any imports into the union from outside. The European Economic Community was formed as a customs union. It has changed its name to the European Union as it seeks to become an economic union (as defined and outlined below).

The logic of development of a customs union is as follows. If the separate national customs duties of countries in an FTA are widely different, traders will try to import into the FTA through the country with the lowest customs duties or tariffs. By doing this they will be able to sell these imports at lower prices in the other FTA countries than if they imported them directly. This 'artificial' trade (a form of *trade diversion*) may well become important as trade flows increase. There is, therefore, often pressure to develop an FTA into a Customs Union. Once a union has been formed, there is further pressure to develop into an Economic Union, as exhibited in the European Union.

The European Union is an Economic Union. It has common policies applying in all member countries. Two of the more important of these are the Common Agricultural Policy and the *Single European Market* (SEM - ensuring freedom of movement of goods, labour and capital between countries). The European Union is seeking to cement economic harmonisation through *currency union* - the common currency, due to be introduced in 1999, though probably not throughout the present Union. Our consideration of exchange rates above suggests that those countries which do join the currency union will experience more harmonised economic performance (for good or ill) than previously. It also suggests that the adjustment of differing national (regional) economic performance can no longer be achieved through exchange rate changes. Such adjustments will then have to occur through changes in economic growth rates, through differing levels of economic activity and employment.

The logic supporting the development of such unions is essentially threefold:

- i) elimination of trade barriers between countries within the union promotes trade, economic development and growth;
- ii) common economic policies further reduce the costs and increase trade within the internal market, by making it more stable and consistent, and hence less risky and costly.
- iii) as a collection of countries, the union is a more powerful and influential *bloc* in world trade and international relations.

These advantages, however, presume that other important elements in economic management - especially monetary, fiscal, competition and welfare policies, are managed in an effective fashion. The formation of an economic union does not necessarily guarantee that such policies will be followed. Diversity of cultures and conditions may actually make the design and exercise of successful policies under these headings more difficult. While the theory suggests that Economic Unions can be more prosperous, it does not deny that they could also prove both difficult to manage and thus less successful. Formation of a successful union appears to require *convergent* economic conditions and mechanisms, and, according to the previous outline arguments, considerable harmony and agreement about economic and social priorities. It should be clear from this brief discussion that there are likely to be some problems in *widening* the current European Union to include more countries, especially if these countries are at markedly different stages in their economic development and performance.

A logic of progression should be evident from the above - economic union (especially if accompanied by currency union) requires both economic and social consensus and harmony. The next step, once this is achieved, follows 'naturally' as a *deepening* of the Union to a Political Union. Economic unions are, thus, the penultimate step in a

progression of international integration. The final step is political union, which some countries in the European Union aspire to, but which others are currently resisting. However, it is also clear that for many practical purposes, political pressures and common directions are already dictating the progress of the European Union. In particular, these pressures seem to guarantee accession of the CEECs to the European Union in time, notwithstanding any economic problems that this may cause on either side of the bargain.

5. Implications for Poland

The more *liberal* and *open* economies are to trade and free market policies, the faster they tend to grow and develop. This proposition is strongly supported by both economic logic and historical evidence. Although history is full of examples of trade protection, especially in agriculture, there is no reliable support for the argument that this has led to either agricultural or national economic growth. All the reliable evidence is that protectionist policies, however well intentioned, have the opposite effect.

Economic development of agriculture is encouraged by economic growth and development in the rest of the economy. Without this growth, both the economy and the agricultural industry will stagnate. The case studies in this chapter illustrate the importance of world market conditions for the development of agri-food businesses and the economy in general.

By the time Poland joins the European Union, the world will have moved on. All the signs are that world agricultural trade will become more liberalised than in the past. The European Union's Common Agricultural Policy will also have changed towards freer trade at prices closer to the free trade world level. It would therefore be a serious mistake for Polish governments and industries, including the agri-food sector, to plan their own policies and strategies on the basis of continued protection.

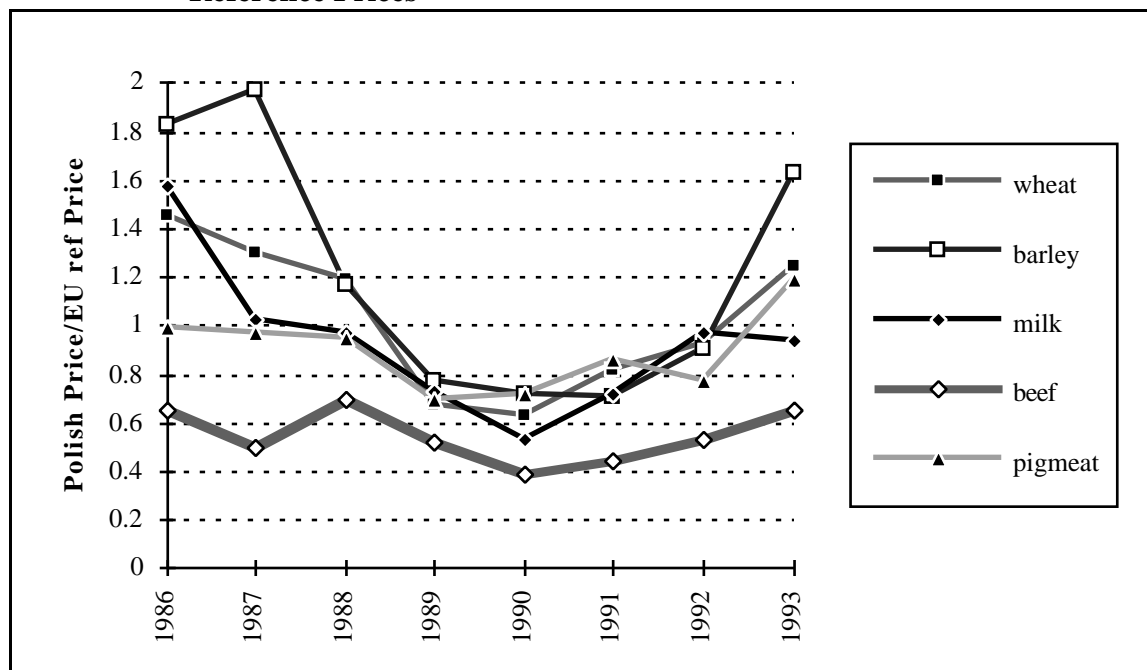
Poland is currently operating a variety of market protection policies. The *Agricultural Market Agency* (AMA) purchases grains, milk products and meats at *intervention prices*, set towards the lower limits of market price fluctuations. These prices act as *minimum guaranteed prices* for farmers. In the event that market prices rise too much, the AMA sells products from its stocks (or, as in 1993) provides *credit guarantees* to importers to increase supplies.

In response to strong import competition from subsidised products from the West, and cheaper products from the Former Soviet Union, Poland applies *variable import levies* for a number of farm products, on top of *ad valorem* and *specific rate* tariffs. These have all to be converted into a single tariff under the GATT UR agreement, of which Poland is a signatory. Polish protection of agriculture is not high by historic European standards, but agriculture is still the third most highly protected sector in Poland, after the armaments and car industries. This protection has been described as 'temporary', to offset subsidised exports from elsewhere. It is vitally important for the sustainable development of Polish agri-food sector that this protection is removed as the flow of subsidised imports from elsewhere falls.

The European Union presents a very attractive market for Poland with a total population of almost 400 million people with high levels of purchasing power. However EU membership will also mean that farmers and agri-businesses will face increased competition from Western European companies and farmers. It may be tempting to suppose that accession to the European Union, or even free trade agreements with the EU, will mean higher prices for Polish agribusiness. But such expectations are dangerous. Previously high European farm product prices are unsustainable, even for relatively rich countries currently comprising the Union. Rather than comparing Polish prices with current European domestic prices, a more realistic and reliable comparison is with the world prices facing the European Union.

A good indication of these 'world' prices is provided by the Organisation for Economic Cooperation and Development (OECD). The OECD produce annual estimates of agricultural support and protection - the Producer Subsidy Equivalent (PSE)¹². The PSE is essentially a measure of the difference between world prices and the effective domestic farm price (including allowance for input and other support policies). The world prices used by the OECD are termed *reference prices*. Figure 6 shows the ratio of Polish prices to the European Union reference prices for five major commodities over the recent past. To arrive at this Figure, Polish farm prices have been converted to ecu per tonne prices at market exchange rates, and expressed as a proportion of the OECD's reference prices for the European Union, also in ecu per tonne.

Figure 6. Polish Farm Product Prices as a proportion of European Union Reference Prices



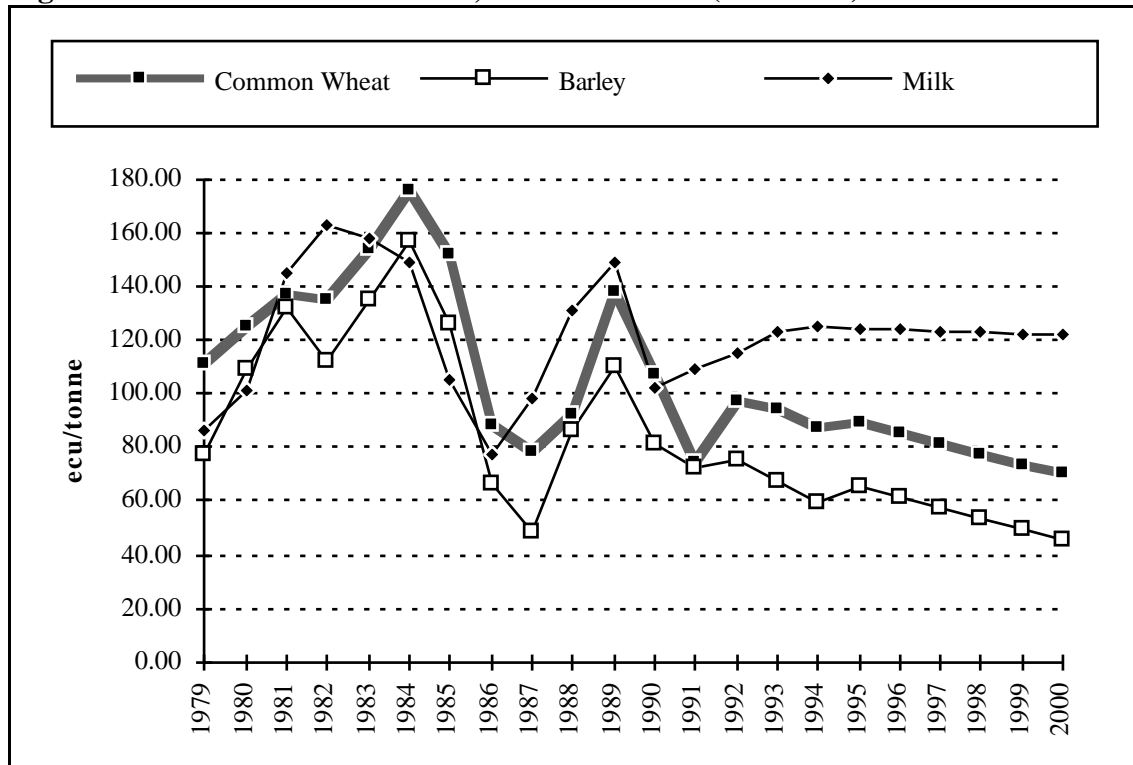
Source: Calculated from data reported in publications noted in footnote 7.

The implication of this figure is that, as of 1993, wheat, barley and pigmeat were all overpriced in Poland compared with the world competitive price. Milk was generally competitively priced, while beef appears considerably underpriced.

As this chapter illustrates, however, neither world prices nor exchange rates can be expected to remain static. The recent trends in European Union reference prices for these same commodities are shown (in ecu terms) in Figures 7 and 8, showing actual data up to 1994 and simple linear trends of these data from 1995 to 2000. These figures do not include the recent (1995/6) increase in world prices, especially for cereals. Apart from these recent increases, the general trend of world prices has been downwards, especially for cereals. A key question facing both policy makers and agribusiness in Poland is whether we should expect such downward trends to continue.

¹² OECD, and Centre for Cooperation with Economies in Transition: Review of Agricultural Policies: Poland, 1995 provides such estimates, as well as a wealth of information and analysis of the Polish agricultural sector, for Poland. OECD's annual publication: Agricultural Policies, Markets and Trade, provides estimates of PSEs for the major OECD countries on ongoing basis. These PSEs are similar to, but not identical with, the GATT/WTO Aggregate Measure of Support (AMS).

Figure 7 E.U. Reference Prices, Cereals & Milk (ecu tonne)



Source: OECD PSE/CSE data base, 1995.

This chapter has provided an analytical framework which can be used to sketch answers to this question. The answers, for any particular country, depend on three fundamental relationships:

- the relationship between world supply and demand;
- the effect of national and international policies;
- the effect of exchange rates.

Past trends in world prices for farm products have reflected these three factors.

World Supply and Demand

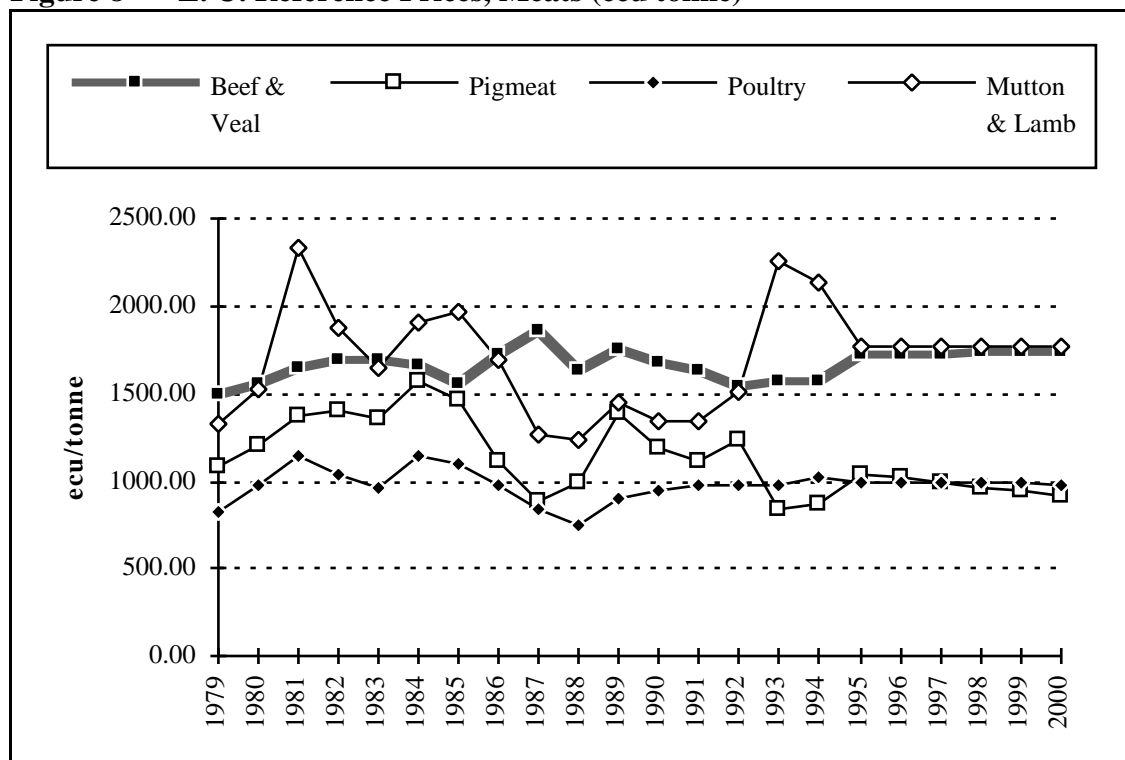
As a consequence of both productivity (yield) improvements and the exploitation of new lands, world supply has tended to increase faster than demand. Although there are still large numbers of people without enough to eat, the problem is more one of lack of income than of lack of the world's ability to grow food. However, the future may not repeat the past. New lands are increasingly scarce. Yield improvements are frequently heavily dependent on water, which is both unreliable and expensive to provide in the right places. Global climate change may make future harvests and yields more variable and unpredictable than in the past. As incomes of the poor increase, they tend to switch consumption from cereals and plant products towards meat and animal products. Hence, we might expect that demand growth for animal products to increase faster than for plant products at the world level. Greater concern over protection of natural resources may also increase the costs of supplying food. All of these arguments can be translated into shifts of the world's excess supply and excess demand curves of Figure 2 above, with consequences for the free trade world price.

National and International Policies

The GATT UR agreement and the establishment of the WTO seems certain to ensure that future policies will be closer to free trade than those of the past. In the terms of the analysis above, this will mean that western protection is reduced and that world prices will tend to improve, by perhaps 5% for cereals and 30% for milk. However, the liberalisation of former centrally planned economies is expected to increase the

productivity and output of the farm sectors of these economies in time. This potential increase in supply will tend to depress world prices, unless it is matched by an equivalent increase in demand in these countries as their incomes improve. Recent estimates of the effects of liberalisation among centrally planned economies coupled with trade liberalisation in the rest of the world suggest that the overall effects may be rather small - current average or trend world prices may actually be a reasonable estimate of free trade prices.

Figure 8 E. U. Reference Prices, Meats (ecu tonne)



Source: OECD PSE/CSE data base, 1995.

Exchange Rates

Figures 7 and 8 report world prices in ecu terms. However, the exchange rate between the ecu and, for instance, the US\$ have not been constant over this time period. Figure 9 shows the variation.

The trend between 1986 and 1993 has been for the ecu to *appreciate* versus the US\$, which has tended to *depress* world prices in ecu terms versus their \$ value. The outline analysis of section 3 above indicates that the exchange rate will reflect the relative economic performance of the countries or blocs concerned, here indicating that the European economy is perceived as having outperformed the US economy over this time period. If this is to continue, then the effective world price facing the European Union will continue to decline. In effect, this will provide a strong signal to the European agribusiness sector that it needs to improve its relative or competitive performance in line with the rest of the economy, or suffer the consequences.

These short paragraphs do not provide an answer to the fundamental question of what will happen to world market prices in the future. However, they do indicate the basic understanding necessary to form sensible and logical judgements about how world prices can be expected to change in the future. Any guess about future world prices is essentially a guess about how these factors and influences will change in the future. This chapter provides a framework for understanding these interactions and effects.

Figure 9 ecu exchange rate versus the US\$



World Price Stability and Commodity Agreements

The increasing importance of world markets and world prices for agri-businesses everywhere, and the difficulty of forecasting world markets, raises the issue of world market stability to the top of the agenda in future multilateral negotiations. The objective of stabilising agricultural markets is typically high on national priorities. Although world market liberalisation is expected to result in more stable world markets than under high levels of protection (see above), liberalised domestic markets may prove less stable than under protectionist policies. Hence we may expect countries to be concerned about market stability.

Historically, international commodity agreements have been attempted to stabilise otherwise volatile world markets. The sugar and tin agreements of 1954 were the first to become operational in the post-war period, followed by coffee (1962) and cocoa (1972). There have also been a succession of international grains agreements. The main instruments used under these agreements have been: *supply management*, typically through export controls; *buffer stocks*. The central idea is that supplies are removed (into the buffer stock) or withheld from the market (through limits on exports) in times of surplus and low prices, and released in times of shortage and high prices.

Supply management agreements tend to break down (e.g. sugar in 1962) because the national export limits (quotas) are fixed in terms of historical production and export levels and are difficult to re-negotiate in the face of changing production and export competitiveness. In those cases where they have appeared successful, they have often relied on individual major producing countries managing their own supplies, rather than on the strength of the international agreement - the classic example is the succession of international grains agreements which relied on the US grain area set-aside programme to regulate world grain supplies. Buffer stock agreements typically result in a decline in private commercial stock holding, and may simply prove a (poor) substitute for competitive market stockholding and hence market stabilisation.

The major difficulties with these agreements arise from: i) the difficulty of setting the 'normal' price range, outside which stocks or exports are either accumulated or released; ii) the problem of restraining high prices with insufficient buffer stock or production; iii) the difficulty of policing and enforcing the agreement on countries

outside the agreement. In setting the normal price range, the conflicting interests of producing and consuming countries are difficult to reconcile. In addition, any attempt to stabilise the market runs the risk of speculative attack, as with defence of an over-valued exchange rate. Cooperative public attempts to prevent prices rising may encourage speculators to withhold stocks until the price *ceiling* is broken, while defence of a price *floor* may lead speculators to increase production and supplies in response to the 'fixed' floor price.

In the face of these difficulties, it is not surprising that the historical performance of international stabilisation agreements has not been impressive. There are more fundamental questions about the use of such agreements.

- Is price stability necessarily a good thing? From the producers' point of view, high prices are some compensation for a shortage of production (supply), resulting in less revenue loss than would be the case if prices were held down. From the consumers' point of view, gains to be had from periods of low prices may more than offset losses incurred under periods of high prices.
- How much stability would be provided by the market place in the absence of public (international) intervention? There is both a strong logic and empirical evidence to suggest that public intervention simply replaces private market activity to stabilise markets. Since it is good business to buy cheap and sell dear, the market itself can be expected to provide considerable stability if left to itself. Furthermore, through forward contracts, futures markets, insurance schemes and production diversification, free market behaviour and practice can be expected to find ways of spreading risks and stabilising returns.
- Will the market place provide 'enough' stabilisation? There are arguments that: i) private markets may not assess risk in the public or social interest; ii) private costs of capital necessary to hold stocks are higher than is in the public interest; iii) that the costs of information and of transactions in futures and insurance markets are too high to provide optimal stability. Full exploration of these difficult issues is beyond the scope of this chapter. However, their resolution depends on three major judgements:
 - i) economic judgements about the efficiency and effectiveness of cooperative (public) action rather than competitive behaviour in providing information and establishing risk-spreading contracts and agreements;
 - ii) social judgements about the equity of relying on markets' willingness to pay, and hence on the preferences of the rich at the expense of the poor, versus democratic choice on the basis of equal weight to all peoples' preferences;
 - iii) political judgements about what is 'enough', which leads to the final fundamental question on stability.
- What can any system (private or public) actually do to reduce instability? It does not make sense to comparing the actual and unstable world with one of perfect stability. All any system can do is: i) seek to understand the systematic interactions between markets better so as to take advantage of better foresight (rather than forecasts); ii) spread the risks associated with uncertainty wider and more appropriately over those willing to bear these risks.

This brief discussion suggests that effective international action to improve free-market stability should be restricted to a) the provision and wide dissemination of better *market intelligence*; b) the possible provision of public assistance and encouragement for private stock-holding and development of futures markets and forward contracts.

Domestic (national) margin or income stabilisation policies may also be judged legitimate and effective. However, it should be clear from the discussion in this chapter that such schemes will need to be accepted by the WTO as non trade distorting or green box measures. In turn, this means that these schemes need to be *de-coupled* from current production decisions if publicly funded (that is, they should not result in any substantial effect on supply decision), or else they should be paid for by producers.

Polish Farm Policy and the Future

Economists and policy makers are presently debating possibly changes in the CAP that may be necessary before countries from Central and Eastern Europe join the EU. The size of the Polish farm sector would mean that the cost of paying Polish farmers the subsidies associated with CAP in its present form would be very high. However it is important to recognise that CAP is continually adjusting. The policy to which Poland will ultimately succeed will be considerably different from today's CAP. The CAP cannot continue to provide subsidies to support inefficient farmers. Instead, it is likely to be simplified, place more emphasis on improving the competitiveness of Europe's agriculture without subsidies, while providing limited compensation. In place of this traditional but now outdated support system, the EU is likely to place much greater emphasis on measures to assist rural and market development, and on those towards conserving the environment.

It is not sensible for the Polish government to adopt the protectionist policies of the CAP, or put into place alternative additional subsidies. Increased levels of subsidies and protectionism will hinder, not help, the quest for the Polish agricultural sector to be competitive in international markets. It would run against the global trend towards more market oriented agriculture and the GATT agreement which Poland is part of. Instead, there is a need to focus on strategies for improving the overall competitiveness of the agri-food industry - which means producing quality products at prices reflecting value for money compared with the alternatives. Present policies directed towards modernisation of agricultural facilities and restructuring of inefficient farms are much more sensible than seeking to protect outmoded and obsolete production patterns and structures.

The Polish agricultural sector can certainly adapt to meet the challenges of freer agricultural trade, reduced protectionism and EU entry in the 21st century. The new trading environment provides tremendous opportunities for Polish companies who are able to compete with international rivals. To perform successfully in an international environment, Polish agri-businesses need to compete on the world market - either in competition with imports in the home market, or directly in export markets. Poland has good agricultural land, a reliable climate compared with much of the planet, and is close to rich and discriminating markets. It is important that the Polish agri-food sector, from farmers to retailers, capitalise on these advantages, and respond to the rapidly changing market environment. They need to become *market oriented*, and *add value* to their products. Many enterprises within the Polish agricultural sectors have only limited experience of active marketing and free market economies in a liberalised economy. The remainder of this book explains how a marketing approach can improve business performance.

Outline Answers to Exercises and Case Studies

Exercise 1 Answer: Supply and demand curves are here assumed to be linear, as a convenient simplification.

Elasticities are defined as the proportional changes in quantities demanded or supplied per proportion change in price. ('change in' abbreviated to below)

$$\begin{aligned} Es(Eu) &= +0.6 = (\% Qs) / (\% Price) \\ &= [(Q/Q) * 100] / [(P/P) * 100] \\ &= (Q/P) * (P/Q) \text{ where the first term } (Q/P) \text{ is the slope of the} \\ &\text{relationship between quantity and price.} \end{aligned}$$

$$\text{So: } Es(EU) = 0.6 = Q/P * 3000/1250$$

$$\text{so } Q/P = 0.6/2.4 = 0.25 \text{ (slope of the EU supply curve)}$$

The intercept (where the supply curve or line crosses the axis) is given by the quantity which would be produced if price were zero.

So, at Price = zero, Qs in the EU would be: $1250 - 750 = 500$.

So, EU supply curve is:

$$Qs1 (EU) = 500 + 0.25 * Ps1$$

Similarly:

$$Qs2 (US) = 250 + 0.25 * Ps1$$

$$Qd1 (EU) = 2000 - 0.25 * Ps1$$

$$Qd2 (US) = 1000 - 0.5 * Ps1$$

Given these expressions, world price is determined as follows:

$XD1 = XS2$ for a world market equilibrium;

$$\text{so } [Qd1 - Qs1] = [Qs2 - Qd2];$$

$$\text{or } 1500 - 0.5 * P_{cif} = -750 + 0.75 * (P_{cif} - 40);$$

$$\text{so: } 2,280 = 1.25 * P_{cif}; \quad P_{cif} = 2,280/1.25 = 1,824; \text{ so } P_{t \text{ fob}} = 1,784 \text{ (40 lower than the cif price, since transport etc. costs are 40)}$$

$$\text{from which: } XD1 = 1500 - 0.5 * 1,824 = 750 + 0.75 * 1,784 = 588.$$

Quantity traded (T1) is 588.

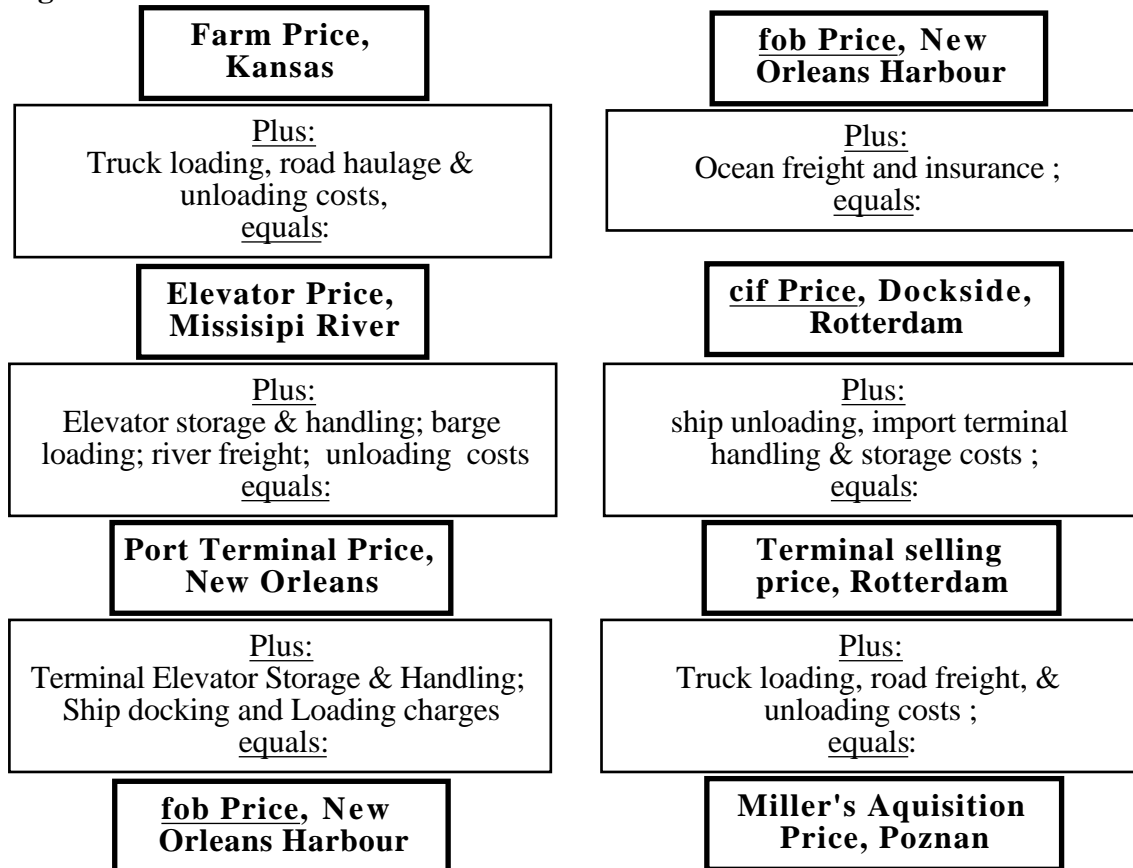
NOTE: This analysis can easily be entered into a computer spreadsheet, set up to automatically calculate the notional supply and demand curves (*approximated* as straight lines) corresponding to any given set of elasticities (estimates of supply and demand responsiveness to price) and any current information about supply and demand quantities and prices. We can then shift these supply and demand curves (by changing the intercepts) to reflect changes in productivity, consumer tastes etc., and calculate the effects on prices and quantities. Similarly, we can incorporate marketing costs to find the buying (cif) and selling (fob) prices.

More sophisticated supply and demand relationships (curved, rather than straight lines) can also be computed in the same fashion, though the initial algebra might be a little more difficult. Notice, however, that so long as we are interested in market equilibria which are not too far distant from current prices and quantities, the *linear approximation* of supply and demand curves is likely to be 'near enough right' to be useful.

Exercise 2: Price 'chains' or 'webs'

Figure A1 shows an illustration of the "chain" or "web" of prices one might expect to observe in the marketing chain from Kansas to (for example) Poznan, Poland for milling wheat.

Figure A1 Illustrative Price “web” for US Wheat to Poland



Case Study 1 Outline Answer:

Kansas Grain trader: Trade was very slow at the beginning of the year. Stocks of grain were high, but there were few buyers. The government was offering export subsidies and the \$ devaluation had made US wheat prices more competitive on the world market. But this seemed to make little difference to the trade.

My wife's cousin in the Ukraine wrote to us in late April saying that the rains hadn't come yet again, and that the spring was very late. I began to wonder what the Russian harvest would look like and to pray that they did not have a good one. A bad harvest there might be good for my trade. I decided to try and buy a little grain *forward* on my own account, just in case. My farmer suppliers were very interested in my offer to buy their grain at harvest time (August) at a pre-fixed price a bit above the present market price. If I had more capital, and was sure enough of my hunch to take the risk, I could have bought almost half the Kansas crop. With hindsight, I wish I had. But, as the proverb says, if wishes were horses, beggars could ride. Anyway, by the end of June, I had bought 100,000 tonnes for delivery in mid August, and was holding my breath - we could easily go bankrupt on this - I've mortgaged the house to provide the down-payments to the farmers and to guarantee the purchases in August.

Nothing moved till the end of July. I was getting desperate. Then, on 31st July, the 'phone began ringing off the hook. I had calls from all my main buyers wanting loads and loads of grain and offering pretty reasonable prices. I smelt something big, and told them to hold on while I checked my suppliers. I rang round some of my colleagues in the trade. They all had the same story. The Chicago spot price was already up the full day limit by 9.30am. according to the local wire service.

By the end of the day, I had sold on 25,000 tonnes for my buying price plus 0.5\$/bushel - nearly enough profit to cover my risk already, and promise of plenty more to come. My farmer suppliers were pretty mad at me, until pointed out to them that they were happy enough to make the deals back in June. At least they had bankable contracts with me - I was still out on a limb with the bank and could still lose everything if the market broke.

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It didn't though. It kept rising. I made money on that 100,000 tonnes *speculation*, but after that, trading margins soon had to come back down to normal. I made a good living though, working hard at buying and selling grain all that autumn. My farmer suppliers were happy as pigs in muck.

New Orleans Shipper: I worked my fingers to the bone through the late winter and spring that year trying to find orders for our ships (or 'bottoms' as they are called. By the end of May, I had orders for only 1/3 of the fleet, and they would only be working till September. And we had to cut our rates to the bare bones to get those orders. It was going to be a real lean year. Then, quite out of the blue in early June, the shipping market seemed to pick up. We began to land orders from our *tenders* for work, when previously we couldn't get near the jobs. Someone was obviously needing ocean freight and was willing to pay. I talked with some friends I have in the *Baltic Exchange* (the world's most famous shipping contract exchange in London) on the 'phone. They told me that the Russians seemed to want a lot of 'bottoms' for the US/Baltic run, for 'dry' cargoes, from July onwards. By August, we all began to know why. Business has been booming ever since. God bless the Russians, but don't tell the CIA I said that.

Exercise 3 Answer:

US\$0.5	@	0.5Zl/\$=	1Zl/can
US\$0.5	@	0.4Zl/\$=	1.25Zl/can

We would expect to sell less US Cola after the depreciation of the Zloty. Imports become more expensive as the exchange rate depreciates.

Exercise 4 Answer:

5Zl	@ 0.4Zl/\$	=	\$2/kg
5Zl	@ 0.5Zl/\$	=	\$2.5/kg

We would expect to sell fewer potatoes to the US following the appreciation of the exchange rate.

Exercise 5 Answer:

- a deficit in the BoP suggests that the Zloty is being supported above its market rate. Market pressures are for the Zloty to *depreciate*. If and when it does, it will cost us more Zloties to buy a \$ than it does now. We would be better to exchange our zloties now, rather than wait. [Notice that this will put even more pressure on the zloty exchange rate, and encourage depreciation, since people will be encouraged to supply more zloties to the Forex market if they expect a depreciation in the near future].
- News of foreign investments means capital inflows to Poland, which will lead to an increased demand for zloties in the forex market (shifting the demand curve to the right), and the exchange rate would be expected to *appreciate*. This news, therefore, would encourage us to think again about changing our zloties now. If the exchange rate may appreciate (or at least remain stable), there is nothing to lose by waiting.

Exercise 6 Answer:

Under these conditions, the Polish exchange rate would not be expected to depreciate as quickly as in the past and may even begin to appreciate.

Exercise 7 Answer:

- a) We would expect the exchange rate to *appreciate* - productivity improvements have shifted the demand curve for zloties (from exports) to the right, and the supply curve (from imports) to the left, both shifts leading to an appreciation of the exchange rate.
- b) The appreciation will reduce the competitiveness of Polish exports somewhat, and increase the competitiveness of imports in the Polish markets. Polish businesses will need to work harder to find their markets both at home and abroad.

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- c) I would rather live in a country whose productivity is improving - since this leads to higher incomes. Producing more per unit of labour and management, or land and capital, provides a greater return per unit employed and thus higher wages, salaries, rents and capital returns. We will have to continue to work to sustain this improvement, though. There is no such thing as a free lunch.

Case Study 2 Outline Answer:

1. History and economic logic both strongly suggest that support for agriculture might increase returns to farming, but it also increases costs, as more people try to take advantage of the support. Farm incomes do not increase as a result.
2. Support tends to make an industry uncompetitive with other suppliers, because it raises costs and discourages innovation and active marketing. Thus there tend to be demands for increasing support through time.
3. Increasing support generates increasing resistance and antagonism from within the country (taxpayers, other sectors needing investment funds, and consumers)
4. Increasing support is contrary to International agreements, especially the GATT/WTO, and will generate considerable international pressure to reduce and eliminate it, as well as *retaliation*.
5. Support is, therefore, unsustainable for any length of time. When (not if) it is reduced, the industry will be left poorer and less competitive than before the support is introduced.

Case Study 3 Outline Answer

- If we are not part of the 'old boy' network, we cannot find information on who (which European companies) have the necessary import concession licences. The location of these should be made public and easily available through local Polish offices;
- Polish companies should be allocated at least a proportion of the import licences directly, rather than allocation to EU Companies;
- There should be a European office in Poland able to provide assistance with the administrative procedures for these import concessions;
- We need more assistance in training and education on marketing;
- We need credit support (possibly through the *European Development Bank* for security deposits for import licences.