



HOUSE OF LORDS

Revised transcript of evidence taken before

The Select Committee on the European Union

Energy and Environment Sub-Committee

Inquiry on

**RESPONDING TO PRICE VOLATILITY: CREATING A MORE
RESILIENT AGRICULTURAL SECTOR**

Evidence Session No. 1

Heard in Public

Questions 1 - 11

WEDNESDAY 9 DECEMBER 2015

10.55 am

Witnesses: Professor Wyn Morgan, Professor Tim Lloyd and Professor Steve McCorriston

Members present

Lord Trees (Chairman)
 Lord Bowness
 Lord Cunningham of Felling
 Lord Curry of Kirkharle
 Viscount Hanworth
 Lord Rooker
 Lord Selkirk of Douglas
 Viscount Ullswater
 Baroness Wilcox

Examination of Witnesses

Professor Wyn Morgan, Pro-Vice Chancellor for Learning and Teaching and Professor of Economics, University of Sheffield, **Professor Tim Lloyd**, Professor of Economics, Bournemouth University, and **Professor Steve McCorriston**, Professor of Agricultural Economics, University of Exeter

Q1 The Chairman: Thank you very much for coming and giving your time to this inquiry on price volatility and agricultural resilience. There are some formalities so that you are aware of what we are going to do. We have about an hour and will stick pretty well to that time. This is a formal evidence-taking session of our Committee. A full shorthand note will be taken, which will be put on the public record in printed form and on the parliamentary website. You will receive a transcript of the proceedings and are welcome to send us any revisions if you have any. The session is on the record. It is being webcast live and will be accessible via the parliamentary website in due course. I think you have been provided with Committee Members' interests. Members will declare any relevant interests when they pose their questions. Would you like to introduce yourselves and make a brief opening statement, and then we will move into questions? Professor McCorriston, would you like to start?

Professor Steve McCorriston: I am Professor Steve McCorriston. I am professor of agricultural economics at the University of Exeter. My professional background is in agricultural economics, commodity markets and trade-related issues. I have published widely in some of the major journals. I am editor of the *European Review of Agricultural Economics*.

The Chairman: Thank you very much. Professor Lloyd?

Professor Tim Lloyd: Good morning. My name is Tim Lloyd. I am from the University of Bournemouth, where I am professor of economics. I was formerly at the University of

Nottingham for about 25 years as agricultural and food economist. My interests are in the UK food sector, as well as agricultural price volatility and price behaviour in general.

The Chairman: Thank you. Professor Morgan?

Professor Wyn Morgan: Good morning. Ostensibly, my title is down as pro vice-chancellor for learning and teaching, which is not why I am here today. I am also a professor of economics at the University of Sheffield. My interests lie in food economics—that is where I have always done my research—in volatility over the years, including futures markets, and the use of those to try and deal with price instability, but also in competition along the food chain and how prices are received by consumers rather than necessarily at the farm gate.

Q2 The Chairman: Your title is very appropriate; we are here to learn. Perhaps I should kick off with some definitions. It would be useful to hear from you all. Questions may be directed to one, but feel free to chip in. If we could start with some definitions and clarity about what we mean, could you define what we mean by price volatility as a concept? Is it equally applicable to prices of farm products as well as inputs? That is an issue that we need to consider carefully. What are the positive and negative aspects on agriculture? We may come back on one or two other sub-questions. We have got quite a lot of mini-questions. That is quite a lot to start with.

Professor Tim Lloyd: I will start off, if I may. Price volatility refers to the variability of prices around their expected level over time. This working definition is most useful as it refers to variability of prices over time around their expected level. One thing to get straight from the start is that we need to make a distinction between the levels of prices at a point in time, whether they are high or low, and the volatility of prices at a point in time, and that is how they are fluctuating between high and low. Clearly, they are related concepts, because, almost by definition, volatility will include some high prices and some low prices, but it is distinct from the state of high prices or low prices. It involve this fluctuation, and that is an important thing to bear in mind.

There are a couple of other things about the definition we need to take into account. It is the variability of prices around the expected level. That is a neat working definition, but, of course, there are many different ways to measure variability and expected level. When we get into the detail, we can find that price volatility is fiendishly complicated, despite that seemingly straightforward definition. A couple of things complicating this idea of fluctuating prices is that the time frequency of your data can affect that fluctuation. Whether you are looking at fluctuations on a daily basis or a monthly or annual basis, or even longer, will affect the definition of your data.

I ought to say that most agricultural and food economists, when they think of price volatility, will refer to something called “realised” price volatility—that is the historical variation that we have observed—rather than something called “implied” volatility, which relates to an output from options and futures prices. When we speak of volatility, we are talking about how variable prices have been around some expected level over a period of time. We are thinking about a specific commodity, perhaps wheat or cocoa, over a period of time, how those prices vary over time, rather than how different qualities of cocoa or wheat change their price over time. It is the price of a homogenous commodity over a period of time.

In terms of the way we measure this, there are many different measures, as I have alluded to, but possibly the most common measure is what we call the coefficient of variation. This is the measure of a variation of price relative to its average value over some sample period. The measure of variation that we use is called the standard deviation. That is a very commonly used measure of variation, but it is not the only one. We could look at the range in prices over a period of time, the difference between the maximum and minimum price, which would give us an idea of variation. It is typical to use this concept called standard deviation, which we can think of as being the typical variation observed in that price series. We measure that relative to the average level over the same period of time. The coefficient of variation gives us an idea of how variable the price series is relative to its mean value. Agricultural prices could have a coefficient of variation of about 20%, or more, indicating that the typical variation is about 20% of the mean value.

The Chairman: I should have warned you that we have a card-carrying statistician on our Committee.

Professor Tim Lloyd: I do apologise.

Viscount Hanworth: I would think of a frequency spectrum and, therefore, I would ask you to de-trend the price series, perhaps after taking logarithms, and so forth. Are we then talking preponderantly of an annual variation, something that is attuned to the harvest, as it would have been back in the 19th century, or is there volatility at other frequencies?

Professor Tim Lloyd: It could be any of those things, but primarily it is the annual variation—possibly the annualised variation. Typically, we use monthly data, so we are looking at the variation between January one year and January in the previous year, and likewise for other months, averaged over a 12-month period.

Viscount Hanworth: I have been asked to question you more about the root causes of this volatility.

The Chairman: Before we move on to that, can we finish this question?

Viscount Hanworth: Sorry, is there more to be said?

The Chairman: I think Professor Morgan and Professor McCorriston wanted to add to this.

Professor Wyn Morgan: The question is whether these are the same and whether you can apply volatility measures to different commodities and to input markets. Yes, you can; you can measure any time series and its volatility, no problem. It does not mean they are all the same, of course. One of the things we have seen is the commodity and food markets' variability changes, so it is not saying all markets are the same. Indeed, input markets have varied differently from output markets.

The Chairman: I might pick up on that. Professor McCorriston?

Professor Steve McCorriston: Just to add to my colleague Tim Lloyd's comments. I would also make reference to asymmetric volatility, which is a particular characteristic of commodity markets where you have the average level and then the variability around that level, which Professor Lloyd mentioned, but you also have these occasional spikes. One of the features of commodity markets is that you might have the variability over time and then you have the occasional spikes, which we have witnessed over the last few years. It is related to volatility, but a different dimension as part of the distribution of prices. When these prices spike, it is a particular characteristic of price movements in agricultural markets. You can separate that out because the responses might be very different from the annualised variability that was referred to, which might be very different from the expected mean price. It is a dimension of variability, but a specific feature of variability and commodity markets.

The Chairman: Before we move on to Viscount Hanworth, this inquiry to some extent has been stimulated by a lot of the publicity around, for example, the dairy industry and we have tended to think about the volatility of the farm gate price to the farmer. Could you say a bit about the input volatility—you did mention it—because that is going on at the same time? Presumably the volatility is not in the same direction of inputs and outputs, and so on. How do they relate?

Professor Wyn Morgan: Absolutely, there is variability in inputs and farmers have very little control over that—their inputs are fertiliser, seeds and so forth, often driven by oil prices. There is a correlation between oil prices and both output and input prices. There is some relation, but they are not necessarily the same. You could get movements in input prices that are not necessarily the same as the movements in output prices. You could get a squeeze at both ends or indeed a benefit at both ends. As Steve was saying, these things are both good and bad.

Q3 Viscount Hanworth: Most of what I was going to ask has already been answered. I have a title “root causes”, and you have probably covered those. Am I right in thinking that the variability in the supply and demand nexus for the ultimate consumables is greater than that of the inputs? You also mentioned the correlation of the input and output variability, and that must be looked at in each and every case. I suppose if one was talking in generalities one might ask: have variabilities changed significantly over time and have futures markets affected the variability by diminishing it? What about the effects of output for storage? Has that changed over time? The real question is: how are things evolving?

Professor Wyn Morgan: There are a number of things there. In relation to the volatility over time, there is no evidence that there is a trend over time that volatility is going up all the time. The evidence is that volatility moves over time. For example, the 1960s were more volatile than the late 1980s. The 1970s were highly volatile, especially in the mid-1970s when we had the oil crisis. Things move over time. There is no evidence to suggest that we are on an upward trend.

Viscount Hanworth: In volatility?

Professor Wyn Morgan: There is no evidence for that. That is the historic piece.

Professor Tim Lloyd: What the evidence does point to is that we have just been through one of the irregular occurrences of a volatile period. Volatility tends to cluster in periods of time and in between each cluster of volatility there is relative stability. If we look at the recent burst of volatility compared to the previous 10 years, which was a relatively stable period, volatility has increased. However, if we go further back and include the 1970s, which was a much more volatile period than we have just been through, we can see the positive trend that we might observe over a short period of time disappears. The consensus is generally that there has not been a trend increase in volatility; we have just been through one of those bursts of volatility that we often see in commodity markets. If I may come back to a previous point about volatility in commodity prices, that is agricultural output prices rather than agricultural input prices; volatility in input prices can be considerably higher than the volatility in agricultural output prices. If we compare the volatility of oil and fertiliser, for example, there is much higher volatility in all time periods compared to agricultural output prices.

Viscount Hanworth: You said “can be”, but in fact you should have said “generally”.

Professor Tim Lloyd: Generally, yes indeed.

Viscount Hanworth: Which is exactly the opposite of what I was presuming. Would you fit a GARCH model or an ARCH model to the price series?

Professor Tim Lloyd: Yes, that is a very standard approach in this literature.

Professor Wyn Morgan: Can I deal with one point? You mentioned futures markets, as I did earlier. There has been a lot of noise around the role of futures markets in price volatility and, indeed, this whole financialisation of agricultural commodities. There has been a lot of work done to see if there is a link between what is going on in the futures markets and what has been happening in world markets in terms of price volatility. The evidence is mixed. There is no real consensus. There appears to be a bit of a chicken and egg, in that where there is volatility in markets people will move in, particularly in a world of low interest rates. If you are looking for a return, you can see how there might be a return in a more volatile market, so you will get a response to it. Part of the speculation in the futures market is a response to volatility, not necessarily the cause, although it could reinforce some of the volatility. The evidence seems to suggest that there is some impact, but it is not the cause.

Viscount Hanworth: Am I right in presuming that the futures markets in the States are proportionately much bigger than the ones in Europe?

Professor Wyn Morgan: Yes, they are.

Viscount Hanworth: Is the volatility that they experience larger?

Professor Wyn Morgan: I do not have direct evidence on that, but, generally speaking, the commodity markets are linked in the sense that there is a response, so you look at world futures markets as much as a specific one and there is generally a relationship. It is not perfect. You would see London responding to some volatility as New York and Chicago would experience some volatility. There are relationships between those markets, but they are different in terms of magnitude. You are absolutely right that the American ones are much larger.

Viscount Hanworth: I think someone is going to ask about globalisation, so I will desist at this point.

The Chairman: Would you like to come in on that?

Professor Steve McCorriston: Can I pick up on storage, which you mentioned, because it is a particular feature of the commodity markets as well that changes the way in which the dynamics of prices works? When stocks are high you have the ability to smooth the volatility over periods of time, but you get the asymmetric volatility and spikes appearing in markets when stocks are low. It is a specific feature of agricultural and commodity markets that you can have storage that covers different production periods, but when stocks are low you have these additional shocks when you get the potential for spikes appearing in markets.

Viscount Hanworth: Statistically, can you see where there have been big stocks and volatility has been staunched?

Professor Steve McCorriston: If you look over the 2000s, stocks were relatively high, prices were low and in world markets were relatively stable. Then there was a decrease in stocks and that was the background for the spikes that occurred, because there was no buffer to smooth out these price shocks that appeared from elsewhere. There is fairly wide debate on whether it was futures markets that contributed to these price spikes, as we have already discussed, whereas others would emphasise that the main background to the price spikes and the particular pattern of price movements was because we had low stocks, so when these events hit us there was no buffer to secure us against that.

Viscount Hanworth: There is an intractable identification problem.

Professor Steve McCorriston: Yes.

The Chairman: Lord Selkirk, we are moving to trends.

Q4 Lord Selkirk of Douglas: I have a general question about trends. You have answered this in part, because you have given evidence that there is not a trend in volatility. Looking at this subject, there may be more details when you look very closely at the commodities in particular. Are there significant differences between sectors or commodities? Which sectors, or commodities, are more exposed to volatility? If the answer is going to be so detailed that you cannot give it today, please feel free to send it in writing, because I think this is quite a detailed issue. What is the likely projected trend, or trends, for the future? What is the evidence base behind these trends? Has work been done on this? As much information on this subject as possible.

Professor Wyn Morgan: The first thing to say is we can certainly supply data. That is not a problem. In general terms, there are differences between the commodities, and these are the globally traded commodities. Indeed, even in the price spike we saw very different levels reached in the different commodities. In wheat, rice, soya, we saw different levels of volatility; they were not the same. Whenever you are looking at a commodity you must look at the specifics of that commodity and the markets in which you are operating. For example, rice was the one where we saw the most volatility, but that was entirely down to policy intervention and panic. There are differences between commodities. We can give you some evidence on that separately. That is not a problem.

Professor Tim Lloyd: One very straightforward reason why there are different volatilities in different commodities is the storability of the product. We tend to observe, other things remaining equal, very high volatility in fruits, simply because they are perishable products that we cannot store. Wheat, on the other hand, is storable and its volatility tends to be less than others.

Lord Selkirk of Douglas: The background to this question is what plans farmers can put in place to minimise any disruption to their future farming proposals. How much can trends help us with that? Is it a little or a lot? Does it depend on what the commodity is?

Professor Steve McCorrison: Agricultural markets always have this characteristic of variability. It is one of the main characteristics of these markets due to the demand and supply not being very responsive, which means that when any shocks hit, the prices are always going to move much more up and down relative to other types of markets—manufacturing or whatever. It is a particular and well-known feature of agricultural markets. In relation to future trends, it is difficult in the evidence because the types of bodies or experts who do these forecasts tend to focus on the trends. It goes back to the issue about discriminating between which aspect of price you are focusing on. It is quite difficult to forecast the volatility. Work that is done by the OECD and FAO will tell you projections of price levels in the future, but not necessarily the variability around those trends in the future. You can identify what big trends might happen and what the drivers are, and you might say there are various issues that might affect variability in the future, but it is difficult to forecast what the variability is as distinct from what the future trend is going to be.

Lord Selkirk of Douglas: Thank you very much.

The Chairman: Could I just come in on that? I was very interested in what you said about other industries. I realise you are agricultural economists and we are focusing on agriculture, but I suspect we might want to give some contextual introduction. To what extent is this a particular problem of the agricultural industry and to what extent is volatility inherent in almost all other industries? Can we plead a special case for agriculture? The travel business is probably pretty volatile. Do you have any general comments about that?

Professor Steve McCorrison: Volatility is a characteristic of all markets and that is the way markets function. Prices change in all markets, because that is the point of markets, and if you try to intervene in the market mechanism and stabilise prices then the market does not function. You tend to get variability in all industries. The issues about agriculture are distinct because the supply and demand functions, the slopes in the way in which consumers and producers respond to this, tend to be relatively steep, if that is not too technical a term, which means that most of the responsiveness in these markets when there is a quantity change happens in prices.

One of the main distinctions between agricultural markets and manufacturing goods markets is that prices tend to be more volatile in agricultural markets, subject to commodities that can also differ. One of the things about agricultural markets is that prices tend to vary more than

in other markets due to the nature of demand and supply. You have these other exogenous events that typically affect agriculture, such as weather, climate, et cetera, which add to that variability. The underlying premise is that agricultural markets would be more volatile in relation to price than other types of markets.

The Chairman: I think it is important we understand that.

Lord Rooker: You mentioned weather and climate as factors, which to me seems self-evident as a layperson. You were talking about storage of products, fruit or wheat. I can remember that in 2006 or 2007, when I was at Defra, an issue came up because of the winters and the summers and I asked the question, “Where are the wheat stocks?” and the answer was, “At sea”. That literally was the answer; they were at sea. There was no world grain storage unit. I do not know whether that helps smoothing out, because there is a transport issue. I do not know whether that is a factor. That was peculiar because there was a potential big shortage at that time due to the weather.

Baroness Wilcox: Can I just come in on what has been said, if you do not mind? The truth of the matter is that exactly. So much of the stuff that comes in and out of this country comes by sea and, therefore, very often they are selling and buying at sea and turning around suddenly in the middle of nowhere because they have got a better price. It is very, very volatile. When things are being transported they are really on the move, are they not?

Professor Wyn Morgan: That is right. There are a couple of responses to that. You are absolutely right: the mid-2000s were very particular in that in the grain markets we had a real problem because Australia had three years of drought, and that is the point you were making. Australia, as one of the world’s major exporters, was not exporting, so the stocks were at sea. Because they were so tight, they were being bid for in a way that ordinarily would not have happened, because you would have had enough grain on the sea to meet demand. That was one of the very specific problems that we had in that period.

Baroness Wilcox: Fascinating.

Professor Steve McCorrison: The issue about storage and supply shocks is you can have supply shocks, but if you have sufficient storage that can smooth it out, in principle. There were fairly large production shocks in the early 2000s that were not reflected in substantial price changes. The issue about stocks is really important. In principle, even though we understand the issue about storage being able to smooth out price changes, one of the outcomes of the commodity crisis over the last few years is the transparency about stocks. One of the things that the FAO and World Food Programme did was set up AMIS, which was to provide transparency, so we would know where the stocks were, who they were being held

with, how much was available, et cetera. The issue about stocks is important and the issue about transparency of stocks is also very important.

The Chairman: We have introduced the globalisation aspect, which brings us nicely to Lord Cunningham.

Q5 Lord Cunningham of Felling: What has been the effect of commoditisation of global agricultural markets on volatility, if any?

Professor Wyn Morgan: In some ways that is the key question in many people's eyes. In response to an earlier question, I mentioned the move into agricultural commodities from financial areas, hedge funds in particular. In seeking a return that they were not getting elsewhere in a world of low inflation and low interest rates, with big amounts of money, where do you put that? At that time commodity markets were starting to rise. There was a sense in which this was a long game; you could play at long hedging and get a return. The evidence suggests that there was a move of money into agricultural markets. The difficulty comes in unpicking whether that drove volatility or was a response to volatility. It was certainly an initial response and, because there was fluctuation there, there was a potential for return, so money was drawn in. Whether it then drove much high volatility is unclear. Most of the evidence suggests it did not, but there was a small impact on volatility. You could argue that, yes, there was an impact on volatility, but that is not the whole story. There was volatility because of the factors we have already talked about—the shortage of stocks, et cetera. Financialisation probably exacerbated at the margin rather than necessarily being the cause.

Lord Cunningham of Felling: So all these huge shedloads of money newly appeared in agricultural global markets and only had minimal impact.

Professor Wyn Morgan: Minimal in relation to the other factors, yes, that is what the evidence tends to suggest.

Lord Cunningham of Felling: What would the other factors be?

Professor Wyn Morgan: The other factors would be things like exchange rates, the rising price of oil, a whole series of external factors, and the supply and demand shocks that Steve was talking about earlier.

Lord Cunningham of Felling: Has this globalisation had any impact on production patterns?

Professor Wyn Morgan: I have looked at the EU and there does not appear to be a huge response in the sense of a huge increase or huge decrease. Output varies over time, as we already know, and that seems to have continued. I suspect the one area where you could say there has been some evidence of this is in the US, where you had a very specific policy around biofuels. That increased the incentive to produce corn/maize, because from that you

could produce biofuels. That had an impact on soya production. Farmers switched from one to the other in response. That was one of the drivers for the volatility that we talked about, because you had this sudden imbalance.

Lord Cunningham of Felling: Did that policy decision, which it was, in the United States of America impact on price volatility in the European Union?

Professor Wyn Morgan: Yes, it did.

Lord Cunningham of Felling: I think you are saying that exposure to global agricultural markets does affect price volatility for us and our European partners.

Professor Wyn Morgan: Yes.

Q6 Lord Rooker: We are charged with looking at the EU, but things are commoditised and therefore are traded across the world. Is there any evidence within the EU that volatility is different in different nation states, irrespective of farming methods? For example, are there areas where the producers have more control over the supply chain? Are there variations within the EU? Is the EU completely different from the rest of the world as a whole, or is it just absorbed into the fact that it is world supply?

Professor Steve McCorriston: An important issue when you think about volatility and price changes is defining what the market is. The events that arise in world markets can be very different from events on domestic markets, which relate to the issue of globalisation. If you look at any country throughout the world, the patterns of price volatility domestically can be very different from the patterns of price volatility in world markets, due to factors such as trade policy, exchange rates, et cetera, and the openness of the economy to world markets. There are very big differences between countries. Even in developing countries they had a very different experience of price variability in the context of the price spikes.

In relation to regional differences, I do not have any particular evidence. What we do know from an EU project that we were working in is that if you look at the patterns of food price inflation, which is different from what you are interested in per se, they were different throughout almost all EU countries. Some countries, such as the UK, had relatively high food inflation over the period of the commodity price spikes, whereas in other countries food inflation was relatively low. That would reflect partly what was happening in the supply chain and the way in which the food industry interacts with the agricultural sector. Also, differences in exchange rates can matter across different European countries. We do not have any evidence in front of us and we can try to supply evidence about agricultural price variability across the EU, but, in principle, across markets you would still expect differences.

Professor Wyn Morgan: I think there has also been a difference in the impact of climate that we mentioned earlier in different parts of Europe. Its impact in south-eastern Europe is different from in northern Europe. There is evidence to suggest there are differences that are local supply conditions as much as these other macro factors that Steve has just mentioned.

Lord Rooker: I saw some slides recently that the Department of Health produced. It was a nutritional exercise related to sugar. One of the factors—I should have checked this—was that the UK, within Europe, is unique in terms of foods sold on promotion, quite distinct from the rest of Europe. It was 40%, the next one was about 12%. There was a massive difference in the UK. Would that impact at all back on the producer in terms of volatility, the fact we have promotion for food that is different from all the others?

Professor Tim Lloyd: That is a very good point. We tend to think of prices being transmitted through the chain from the producer to the consumer, when in reality the causation is probably the other way around; farmers face prices that are determined downstream in the consumer market. You are right to point out that the UK is unusual in the world, let alone in Europe, in that 40% of the food that we purchase is purchased on promotion. As a result, the marketing strategies of the major retailers have a large role to play in the prices faced by farmers. Farmers are not just passing on prices through the chain; price pressures are coming the other way and maybe dominate the price pressures moving through the chain from farmer to consumer.

Lord Rooker: It is even worse than I thought then. I had not appreciated that.

Professor Steve McCorrison: It is important that we do not see agricultural markets in isolation. In undergraduate classes, we like to teach, “Here’s an agricultural market”, assuming that it is consumers who are consuming the agricultural goods, and that is not the case. Agricultural inputs into the food supply chain might be only 20% or 30% of their overall costs. What is important is the impact, structure and competition in the food chain and how that also impacts on agricultural prices and price variability. One of the reasons why that can vary across Europe is because the food chain across Europe also differs across countries. One of the responses by the European Commission to the food price spike was that DG Competition undertook an audit of competition policies that applied across the food sector in the EU, because they were concerned that what was happening in the food sector and agricultural markets was in large part driven by what was happening in the downstream markets, as Professor Lloyd mentioned. Those differences, whether price promotions, competition among retailers or the role of discounters, can have an important impact on how prices behave in the upstream agricultural markets.

Lord Rooker: I have one final point. Notwithstanding the different types of farming within the EU, as I understand it a lot of EU countries have far more co-operation among farmers as co-operatives to control the produce they make further up the food chain. Does that smooth out volatility or, because they have a bigger grip on it, affect competition? It is unique to the rest of Europe; we do not do it in this country. Is that right?

Professor Wyn Morgan: You have characterised it correctly. It is a response to the market position that farmers find themselves in. There are many farmers and far fewer buyers, so they have to think about how they respond to that particular structure. It is also a means of protecting their own interests in protecting the price of their output, because they can negotiate from a stronger position, so it will help to smooth. I know we are going to talk later about how you respond to a world of price volatility. One of the ways is trying to get your price set. One of the ways you can do that is by negotiation, and your position in negotiation is generally stronger if you work co-operatively, that is very true.

The Chairman: I think we had better move on. We can come back if we have time.

Viscount Hanworth: Is it true that in fact there has been a huge consolidation of British farms into agribusinesses, or is this just a myth?

Professor Wyn Morgan: There can be a lot of mythology around this. There is some element of shake-out in farming, and some of the smaller farms have gone, but not to the extent that we are led to believe that everything is industrial.

Viscount Hanworth: That tied in with what had just been said.

The Chairman: That brings us nicely to public policy.

Q7 Lord Cunningham of Felling: In the European Union we have a heavily regulated agricultural set of policies. The CAP still commands 50%—round numbers—of the total EU annual budget. How does this impact on price volatility?

Professor Steve McCorrison: If I can continue from a previous point, the difference between global markets and EU markets is important. One of the important features of the CAP over recent years has been to move away from market intervention. The more you move away from market intervention, the more exposed you become to price variability. That move to, perhaps in some cases, the more liberal trade regimes of the EU has undoubtedly created a stronger link between what happens domestically in the EU and what happens in global markets. Some of the changes that have been occurring in the EU potentially expose us to more price variability, but that is partly a reflection of the way in which the CAP was formed in the past.

Lord Cunningham of Felling: Should public policy try to control price variability?

Professor Steve McCorriston: I would say no.

Professor Wyn Morgan: No.

Lord Cunningham of Felling: Should we try to intervene on price volatility with public policy?

Professor Wyn Morgan: My response would be to say no. You provide the mechanisms to deal with the outcomes of volatility rather than trying to control volatility directly. We have seen those attempts in world markets, and indeed in the EU, if we think about commodity agreements, which were designed to try to maintain a price and to stop volatility. Those were extremely difficult to run and all collapsed because they could not hold together. It is extremely difficult to do. They are expensive to do as well. Even in the EU, we have seen that the impact of trying to intervene on the price is very expensive. As you rightly said, the EU budget in the past has had more than 50% go into agriculture. It is very expensive, has all sorts of distortions, and introduces incentives that are not helpful to agriculture in the round. My suggestion would be that you deal with the outcome of volatility, not try to control it.

Lord Cunningham of Felling: I think you are saying that effects to mitigate price volatility would be more sensible than to tackle volatility itself.

Professor Wyn Morgan: Yes.

Viscount Hanworth: Would you discourage Government-inspired attempts to improve storage? Does that fall within the category of things that the Government should not do?

Professor Wyn Morgan: Should or should not?

Viscount Hanworth: Should or should not. What is your reaction to a marketing board that also encourages storage?

Professor Wyn Morgan: My general response would be that the market will determine how much to store, and there will be a return to storage. The market should come forth with the storage levels that we need. That is generally what you would expect. Once you start to get Government trying to control the amount of food, let us say, then you start to get distortions in markets. If you start storing for one commodity, why are you not doing it for the others? You get skews, because you know there is a storage process there. It is a very slippery slope once you start doing that.

Viscount Hanworth: You said that the market should come forward with the means of storage. Has it come forward adequately with the storage facilities?

Professor Wyn Morgan: Generally, yes. We talked earlier about being on the seas and so forth. That is a very modern way of doing it and that has not been Government inspired; it has been the market responding to where are the demands for these commodities, how we get that

commodity to that place, but in a way that is acting as a store, as we said earlier. Yes, it is doing it. We had particular problems, as Lord Rooker mentioned earlier, around periods when we had not enough supply because we had not grown enough because of droughts, et cetera. Generally speaking, stockholding comes from the market.

Q8 Baroness Wilcox: I am not from things that grow in the ground; I am from fish that swim in the sea, so I am not in on this really. What I am in on is the fact that we are going to have a vote soon as to whether we stay in the European Community or come out. One of the things which over time I have believed, and I am not sure how right it is, is that the common agricultural policy is still letting people grow things that we do not need, storing them and dumping them on the fragile economies of the third world. I hear that a lot. It will affect the way people vote. I wondered if you could be clear for me that you approve of the common agricultural policy as it is being run now. Are they are no longer letting people grow raisins that you do not want and storing them in great mountains? Is that all over?

Professor Wyn Morgan: The common agricultural policy, as it is now, is a very different animal from the one that I grew up with in the 1970s and 1980s, when we did have butter mountains and wine lakes, and 84% of the budget went to agriculture and 50% of that went to milk, because of the way that the market was operated. That was about price intervention; that was about subsidies for prices; that was all about market intervention. The current CAP is very different. It is not about market intervention; it is about support for income. It is not about support for a product; it is support for income. It is a very different thing. It is designed to maintain the wider aspects of agriculture, the stewardship of the countryside, et cetera. It is targeting something quite different from the original ideal of the CAP, which was about supporting price. It is a different common agricultural policy, even though its name has never changed. It has evolved.

Baroness Wilcox: Is it working? I am very interested. If so, if the Chairman allowed, could I ask you to write to me or guide me to where I can see this, because there is a feeling that it is still happening? In some countries in particular they are doing it. I know a wonderful story about friends of mine, who are farmers, and they said they are pulling up their apple trees from one place and growing apple trees in another place, because that was the way it was now working. If you interfere with the market like that, no one is going to love it very much. I wonder if it is possible for me to get some information on that. I would be very grateful.

Professor Wyn Morgan: Absolutely.

The Chairman: I want to ensure we keep our focus, because we could spend days talking about the CAP. In a word, has the revision of the CAP had a positive influence on the subject we are talking about, or a neutral or a negative influence?

Professor Tim Lloyd: I would say a very positive influence, because it has shifted support to what we call decoupled payments. These are payments unrelated to production, so it does not matter what prices are doing in the international market—as a farmer you will be getting part of your income from a payment that remains constant irrespective of prices.

The Chairman: I am anxious that we cover impacts and responses, because they are important. We have about 10 minutes.

Professor Steve McCorriston: I was just going to elaborate on the answer Professor Morgan gave to the role of the private sector. One of the important issues about whether it is the private or public sector, which is a general principle of policy, is whether there is a market failure. Can the private sector provide enough on its own to resolve the issues of variability? If the answer is no, then there is a potential role for an agricultural policy or CAP in some form to deal with that. If it is specifically on the issue of price variability but you are providing income support, I think that becomes a different issue. On the issue about stocks, for example, can the private sector provide that on its own? Can it provide other means of ameliorating the risks that producers face? If that answer is no, then there is a potential for the public sector to fulfil that role.

Q9 The Chairman: We move to impact now, which is important. There are a number of sub-questions. You have the questions. If we cannot cover them all, maybe you could submit some written answers. The initial part of the question is, “To what extent has price volatility had an impact on” and then we have farm income, which leads to viability of farmers and structural change, presumably people going out of business; then impact on production productivity, which is in a national context, and food security and so on. Has it diminished our ability or not in that context? Then we have impact on land use and the environment and, finally, animal welfare. There is a lot there, but could you please try to tackle those?

Professor Wyn Morgan: The question about income is an interesting one. Lord Cunningham asked earlier, “If we control price, is that a good thing?” Potentially, you could control price, but you might cause income to be much more volatile as a consequence. There is an unintended consequence. In relation to incomes, the evidence suggests that incomes have always been variable in farms because prices are variable: price times quantity gives you your income. If prices are variable, then your income will be. There is no evidence from European data to suggest that incomes have plummeted during a period of volatility because, as we said,

volatility has ups as well as downs. There were periods in 2008, for example, when farm incomes rose rapidly, because prices were very high. They fell again in 2009, because they dropped again. Yes, there is a variability in income, and maybe the differences between the peaks and troughs were bigger in those years for the reasons we talked about compared to the early 2000s. There is no evidence to suggest that when we are in a more volatile period incomes are worse in any way. In fact, in many cases they were better.

The Chairman: Are you saying that, provided that farmers are resilient in being able to smooth out year to year, there should not be a huge impact on viability and structural change? That is not what we are seeing happen in dairy farmers going out of business, is it?

Professor Wyn Morgan: There are two responses. When you have a volatile world, it is very difficult for farmers to plan and very difficult to think about investment with any certainty, because you do not know where the prices are going to be necessarily a year or two years down the line. You can get a sense of stasis and that can be problematic. If you are not investing in improving your productivity and price levels drop, then you are not able to meet the new market conditions, which can be a problem. That is some of what we have seen.

Professor Tim Lloyd: One negative consequence of volatility is that it tends to lead to underinvestment. One of the longer-term effects of that is that you are less able to cope with future increases in demand. There is a vicious circle: volatility leads to underinvestment and underinvestment leads to less supply and, as a result, you are more prone to volatility in the future if as demand then rises. This is the longer-term dimension to the investment issue which is very real. It is something that is probably the worst consequence of price volatility, which in itself is not a bad thing. We almost come to the table thinking that volatility is bad and it is not necessarily so, as it can send signals to agents within the market to do different things. Excessive volatility that leads to catastrophic losses is clearly something to be avoided, but volatility in itself may not be such a bad thing.

The Chairman: That is interesting.

Lord Curry of Kirkharle: Apologies, Lord Chairman, for arriving very late. I had a speaking engagement this morning. Can I challenge Professor Morgan's comments about volatility not having an impact on income? I think it depends on the length of the trough. If you have two successive years, when one is high and one is low, the impact average is minimal. What we are now experiencing, particularly in the milk sector, is a very long trough. I often quote the example of the pig sector in the 1990s. We got up to about 700,000 breeding sows in Britain and our prices plummeted. For ever, pigs have gone up and down; we all historically talked about peaks and troughs in pig production. It is easy to turn the tap on when things are good,

but suddenly prices come crashing down. We are experiencing in other commodities now what has been a pattern within the pig industry for ever. In the 1990s, when I chaired the Meat and Livestock Commission, we investigated the experiences of the pig sectors in Holland, Germany and Denmark. When our pig numbers began to shrink and dropped to 450,000—a significant drop in breeding pig numbers in Britain—Denmark increased. This was happening at the same time, in the same cycle of volatility. Our pig numbers declined and Denmark's went up. Why was that? We carried out an investigation, and the truth was that the Danish pig industry was more resilient for a number of reasons than our pig industry. The big factor was five-year tax averaging. In Denmark, the pig guys knew they were going to have good and bad years within their five-year period and they invested, and we did not. It is an interesting example of actions that can be taken to mitigate volatility. I would slightly challenge your answer, because it depends on the length of the trough. If it is a long trough, it will have a significant impact on profitability.

Professor Wyn Morgan: I would agree. I do not think we differ. Once you start talking about a trough, you are talking about a low level of price as opposed to volatility. That is a different problem and will affect income, and indeed that is what we are seeing in the dairy sector. I totally agree with you on that.

Q10 Viscount Hanworth: Are UK banks sufficiently forthcoming with overdraft facilities in lean years to help farmers, or is their stringency liable to drive them out of business? What has been the history of that?

Professor Wyn Morgan: I have to admit that I do not have any evidence to respond to that—I guess in the same way that banks have been under the lens since the financial crisis in relation to what they have been doing with lending since, which was quite tight initially. I do not know whether farming is any different in that regard. I do not have evidence, but we can find that out.

Viscount Hanworth: Would anybody else like to come in?

Professor Tim Lloyd: I do not have any evidence.

Viscount Hanworth: Surely this sort of finance is crucial for the survivability of farmers in lean years.

Professor Tim Lloyd: Yes.

Lord Rooker: The list in question 7, the impact of price volatility on the farm, has an item missing; there ought to be an (f). To what extent is volatility affecting agricultural land prices? My experience is they only go up. Is that correct?

Professor Tim Lloyd: In general it is. Having done my PhD on agricultural land prices, it is of keen interest to me. Indeed, it is one of the very surprising features when you look at agricultural land prices that they have risen very rapidly, even in the last couple of years when agricultural product prices have been in decline or stabilising. That partly reflects how integrated agriculture is with the rest of the economy. Whereas demand for agricultural land used to come solely from farmers for farming purposes, now that land is being demanded by a whole new set of other agents who are not solely interested in its agricultural value necessarily, but as a store of wealth, a hedge against inflation, or indeed for its very profitable tax advantages agricultural land prices are to some extent disconnected from the profitability of farming. There is a whole new set of agents coming into the land market, not just farmers. Economic theory will tell you that, if it is only farmers buying agricultural land to make money from agriculture, agricultural land prices will vary with agricultural product prices. Because that link has been broken, there must be something else driving agricultural land prices and one suspects that it is purchases with other motives than purely agricultural ones.

Lord Rooker: If it is the parking of wealth, a bit like these million-pound flats in London, as a safety bank, what is the effect? Can you measure the effect on the output of the farm, which is farm produce? This is clearly a distortion. Is there anything that can be measured in that respect?

Professor Tim Lloyd: I am not 100% certain what you mean.

Lord Rooker: I am saying that the value of the land is being used for another purpose by non-farmers, although the land is still producing food. Is there an effect from the fact that the land is being bought for non-farm purposes to park money and capital, not necessarily to grow food, although the use of the land is to grow food? Does the use of the land, or their parking the money, have a good or bad effect on the prices of the produce of the land? Is there an effect, or is it just to say, "We ignore the fact, whoever owns the land doesn't matter. We're just looking at the volatility of prices of the products"?

Professor Wyn Morgan: I guess part of it will be what the rent is, because potentially you will get a response in terms of rent. If this is owned by someone else, but farmed by a tenant, for example, there may be an impact in cost of production. That will not necessarily affect the output price, because that is determined by the market.

The Chairman: I need to move on to the last section, but I have to ask whether there is any impact of volatility on animal welfare, presumably due to the expenditure available to ensure proper animal healthcare and welfare?

Professor Wyn Morgan: I do not think we have any evidence to tie to that. To go back to the general point I made about investments, if we are talking about a volatile period limiting investment, there may be implications. I do not think we have any evidence on animal welfare effects of price volatility.

The Chairman: Time is up, but we can take another five minutes to deal with the final question, responding to volatility. Lord Rooker, you were going to lead on this, but others can chip in.

Q11 Lord Rooker: I will be brief. We want to know whether the conventional methods that farmers have used in the past to protect themselves from volatility are still valid. Are the financial instruments they have used still available? What types of farmers are using these?

Professor Wyn Morgan: They are still valid. There are a number of things. One is around what you actually do in your production and the types of things you do to protect yourself against some of the shocks we were talking about earlier—the science around the seeds you use, the fertilisers you use—to try to be more resilient in terms of production. Then there is the diversification of production, so you are spreading the risk, not just being monoculture, but producing lots of things. Finally, there is the engagement in instruments beyond the farm gate. That can take a number of forms. The major one that is used, particularly in the arable sector, is to contract forward. You make contracts with the next stage in the food chain, whether that is a processor, wholesaler, manufacturer, whatever it is, so you are locking in your price through a contract. That is one way of dealing with some of the volatility. The other ways are to deal in parallel, and that is the use of futures markets. That is a means of trying to limit your overall loss by—in crude terms—offsetting potential losses in the physical market with gains in the futures market, so you take the opposite position in the futures market from what you hold in the physical market. Those are all available. The extent to which they are engaged with is quite variable. Forward contracting is quite popular. Futures markets are not popular; the engagement with those is quite limited across the agricultural sector in the UK.

Viscount Hanworth: In the UK, but not elsewhere.

Professor Wyn Morgan: More so. It is still not widespread in the sense that 80% are doing it; it is not like that. Certainly in Europe and the US you see a bit more of this.

The Chairman: Could I raise a question about insurance, which we have heard is very important in the US, for example, as a tool to mitigate the effects of price volatility, but it does not seem to be used in Europe and the UK? Can you comment on that? Is there more

scope to make use of that? We are not only talking about insurance against floods and so on, but basically the price volatility.

Professor Steve McCorriston: There are two ways to think about insurance. One is, in a sense, normal insurance and then there is catastrophe insurance, which is the floods and major events. I find it easier to think about those two things separately, because the nature of the risks and outcomes can be very different. On the experience of looking for other ways to mitigate price volatility, I would refer back to the issue of managing price volatility. One of the ways to mitigate price volatility is not to intervene in the market directly and to control prices but to look for these other instruments. Futures markets are a way of insuring against price volatility. You can take out insurance against other things. One of the experiences is that these are much more widely used in the United States than in Europe and certainly in the UK. The issue about insurance, as practised in the United States, is very controversial, because it depends how you benchmark that insurance and whether the public sector should provide subsidies towards that to get farmers to use it. Then you come back into the domain of what the policy should be, whether we should be subsidising it, whether the private sector is supplying sufficient levels of insurance and whether, if the public sector does provide subsidies, that leads to income support as well. Therefore you are getting into this link between income support and risk management. It is a practice that is used more widely elsewhere, including the use of futures markets, than it is in the UK.

The Chairman: Before we finally wind up, could I give each of you a brief chance to make any final remark you would like to make? Is there any question that we have not asked you that we should have?

Professor Wyn Morgan: There are certainly no questions you have not asked us.

Lord Selkirk of Douglas: Can I ask a very brief question, not for answer now, but for written evidence, which we have not touched upon? Foot and mouth disease introduced enormous volatility into the market. We have a very rigid policy on that, but in the Far East I understand they have vaccination and still manage to sell the beef. There are more problems here. Is it possible to have a note on that? It is a huge subject, which could suddenly irrupt on the scene. It is not for answer immediately, because it would take too long.

Professor Wyn Morgan: Demand shocks are hugely important, and that is a demand shock as much as anything else, because it affects consumer behaviour. We can answer that.

Professor Tim Lloyd: It is somewhat unusual in that with a food scare you do not get the spike upwards in price that you do with other types of volatility; essentially it is down. Typically, things are very bad for producers of livestock products because, in the face of a

food scare affecting their livestock, demand falls because of the food scare, but so does price as well. Very often we get compensation between prices and output, but in a food scare prices and output both fall, leading to very serious effects on incomes.

Lord Selkirk of Douglas: I accept that absolutely. We do not have a very clear view on why Europe should be so different from Asia. There are probably very good answers to that, but I do not know what they are.

The Chairman: We would be very pleased to have any written answers. Thank you very much indeed. That concludes the formal session.