The DelPHE International Co-operative Project

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Risk Management using Futures Markets

Dr Wyn Morgan

University of Nottingham

Outline

1. What Risks Do Farmers Face?
2. What are Futures Markets?
3. How can Futures Markets help Manage Risk?
4. Conclusions

1. What Risks Do Farmers Face?

Farmers sell their output to merchants/processors to earn income but they face quantity and price risks

Quantity risk arises due to weather and disease effects (e.g. drought, swine fever) and can solve by:

- using good farming techniques
- taking out crop insurance

Price risk arises from how they sell their goods and can be solved using futures markets

Why does price risk arise? It comes from the channel the farmer uses to sell their goods:

Spot Markets

Day to day trading

E.g. taking cattle to the nearby market to sell them to a butcher; taking grain to a nearby miller for grinding

Problem Will buyers be there?
What price will they pay?
Will it be enough?

Forward Markets

Buyer and seller meet and set a date in the future for contract to be met

Sets quantity, quality and **price** of the goods

Problems:

- No central market means search
- Imbalance of buyers/sellers
- No information traded
- No central regulation
- Speculators are excluded

Thus spot markets are risky and forward markets are not easy to use. Solution – use **futures market**

2. What are Futures Markets?

Futures Markets

“An **organised** market where the sale and purchase of a good/commodity is co-ordinated through the medium of **highly standardised contracts** which allow for the delivery of a **defined product** at a **defined future date**”

Futures markets help by allowing agents to **reduce risk** while still being able to trade in spot or forward markets at the same time

Futures markets are special forms of forward markets but have **standardised** contracts and **centralised** trading

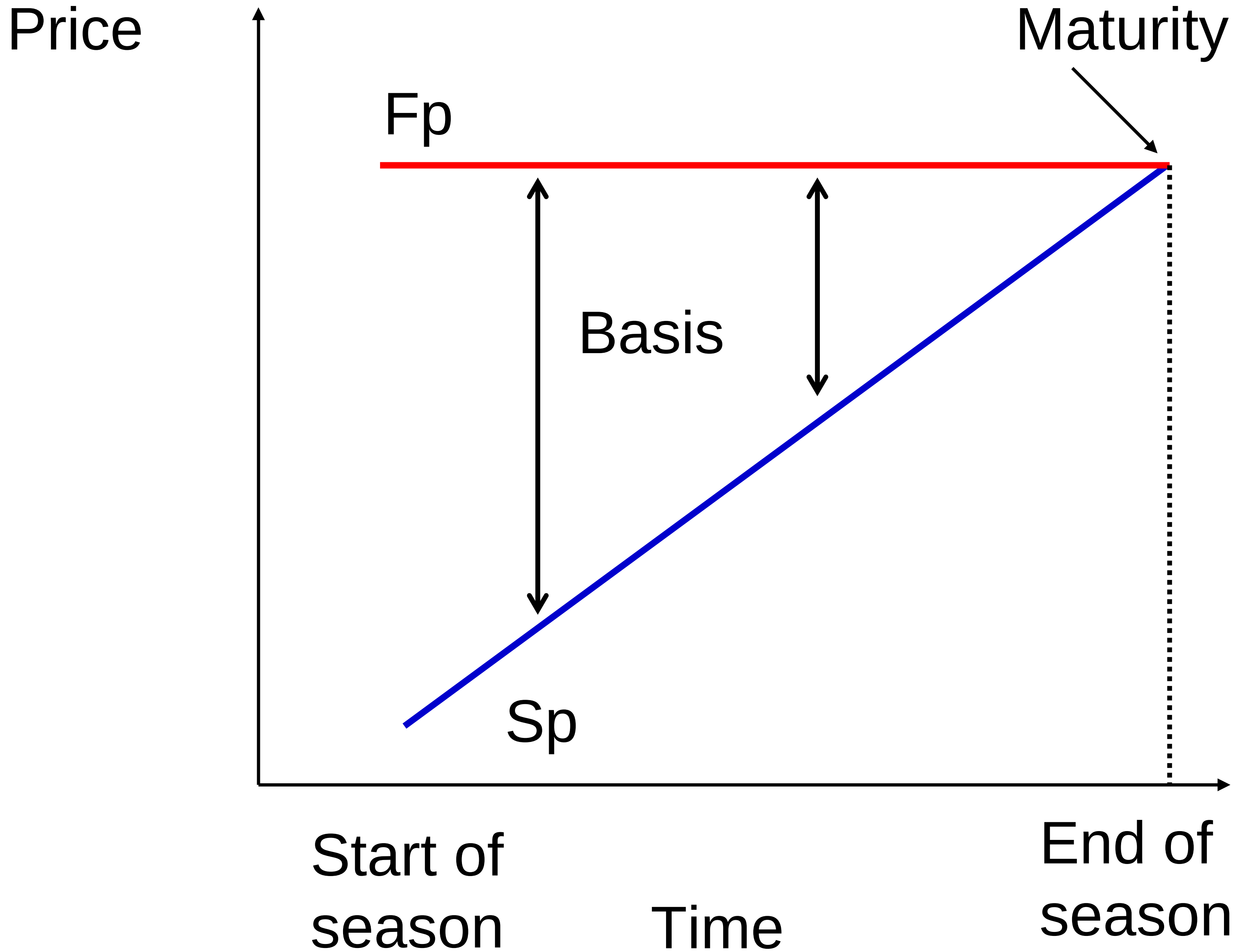
Because the contract is standardised it can be bought and sold very easily and this makes it very attractive as a risk management tool

3. How can Futures Markets help Risk Management?

Agents aim to reduce/eliminate risk by **“hedging”** - taking a position in futures market that is **exactly opposite** to that held in spot/forward market

Balancing risk in one market with risk in another but still trade in spot/forward market. Requires a close relationship between spot & futures prices (the **basis**)

Can do so as contracts are standard and thus can **close out** (buy/sell back original contract).


Price
Maturity
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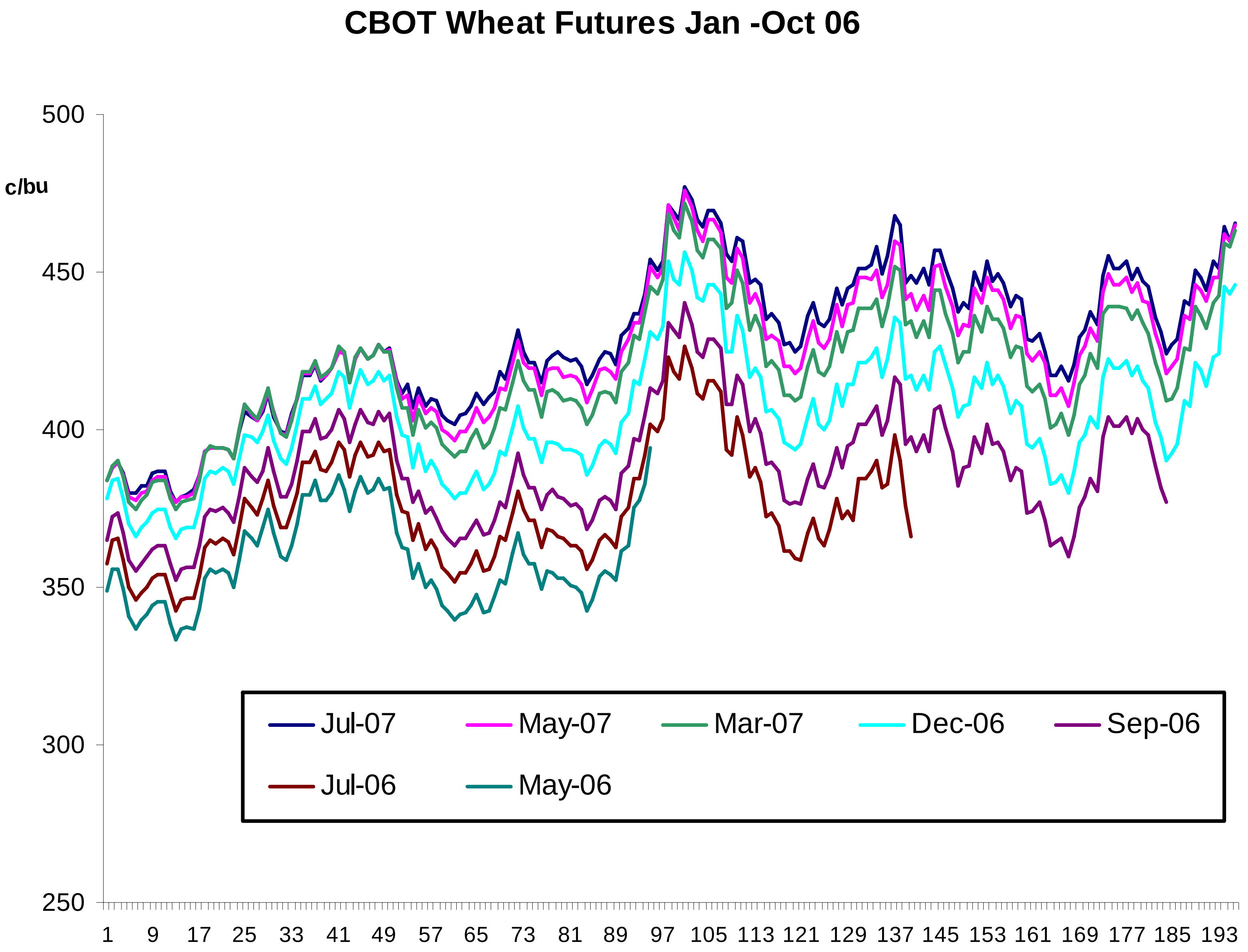
End of season


CBOT Wheat Futures Jan -Oct 06
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Jul-07
May-07
Mar-07
Dec-06
Sep-06
Jul-06
May-06

Example One – a farmer planting a crop faces a possible fall in spot prices between planting in April and harvesting in October and that his output might not be good.

So faces **price and quantity risk**

Futures trading allows the price risk to be offset

He is **LONG** in the spot market (i.e. he owns the commodity – the crop in the ground)

Hedging means he goes **SHORT** in the futures market (i.e. he owes the commodity at some point in the future)

At planting (April):

Purchases → **SELL** contracts for harvest month (October)

Between April and October spot prices fall

Before harvest (September):

Purchases → **BUY** contracts for harvest month (October) and **CLOSES OUT**

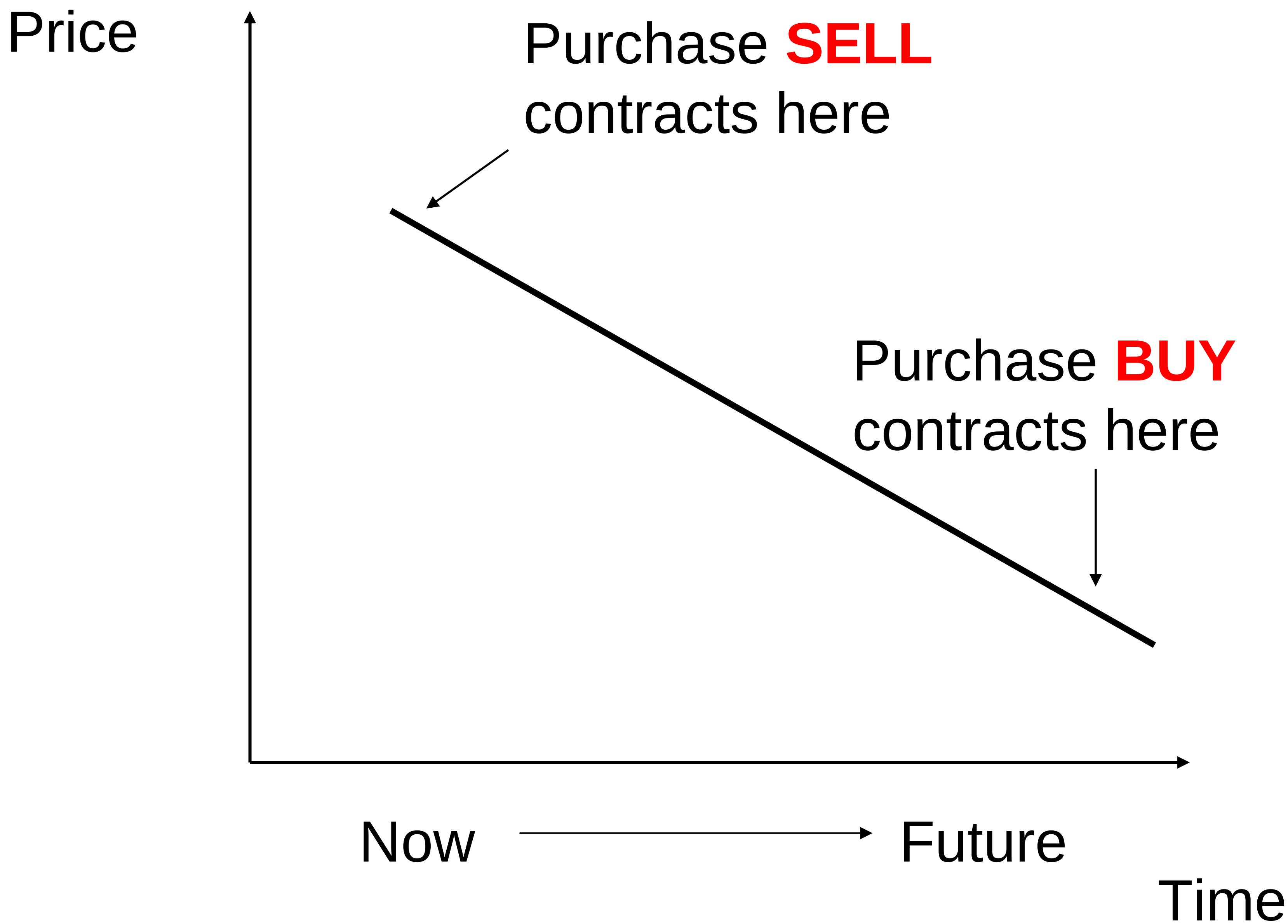
Loss in spot is offset by gain in futures

Example Two - An agent holding stocks that are unsold fears prices will fall

Solution:

The agent will hedge in the futures market by purchasing **SELL** contracts so he is **LONG** in the spot and **SHORT** in the futures.

Thus if spot prices fall, loses in spot but gains in futures by closing out



Williams and Schroder (2001)

4. Conclusions

- Farmers face quantity and price risks
- Price risks cannot be insured against but futures markets offer a potential solution to risk
- Futures markets are organised, centralised and standardised
- Offer hedging ability through closing out
- Requires good relationship between futures and spot prices