



The University of
Nottingham



The DelPHE International Co-operative Project

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Futures and Options for Risk Management

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Outline

1. Introduction
2. What are Futures Markets?
3. How can Futures Markets help Manage Risk?
4. Options Markets
5. Conclusions

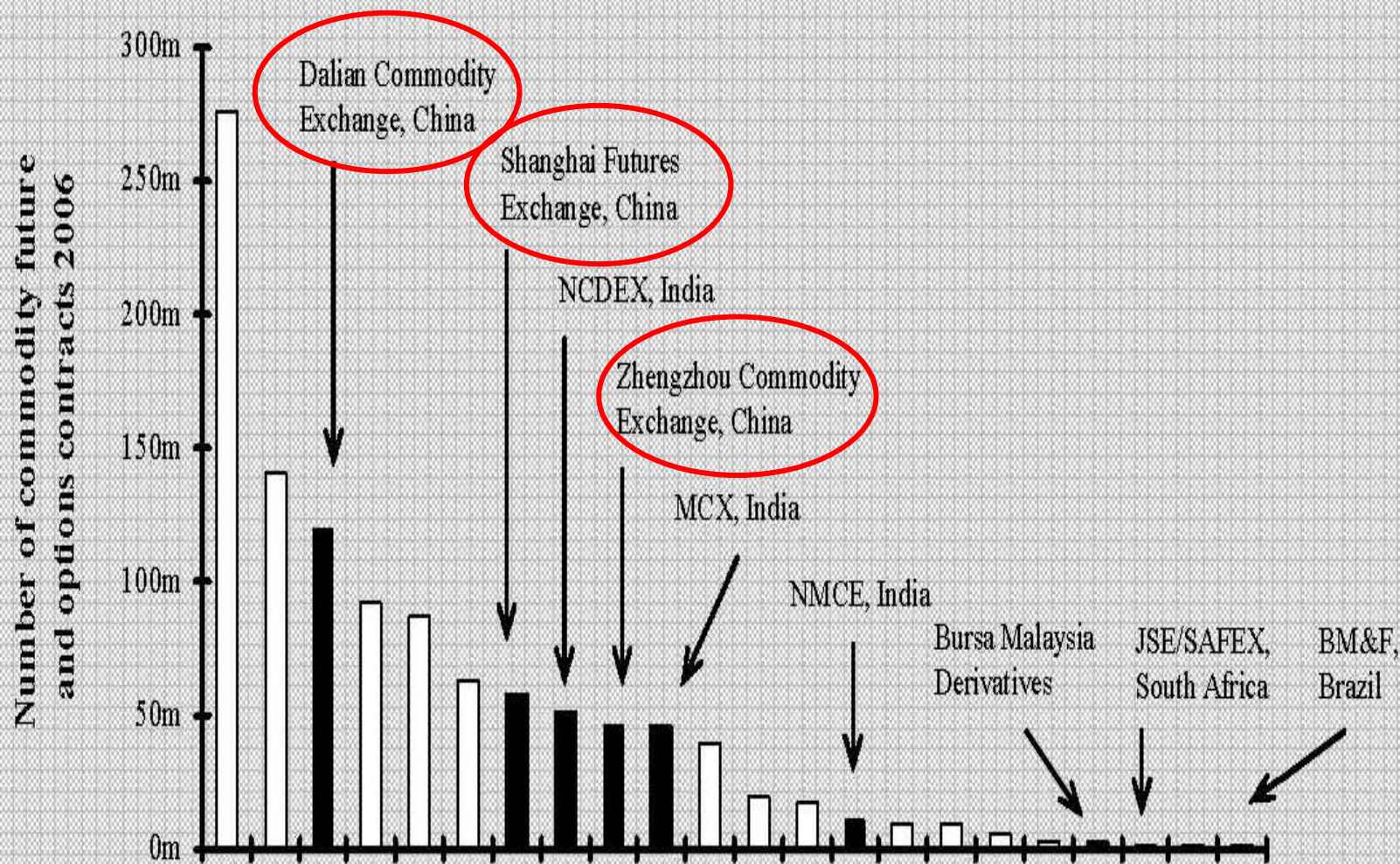
1. Introduction

- Futures markets offer a means of risk management without altering traditional/normal routes for selling a farmer's output
- Recent large growth in commodity futures across the world

Question: how can futures markets help producers deal with the problems of commodity price volatility?

The world's leading commodity exchanges, 2006

(Developing country exchanges highlighted in black)



Source: UNCTAD

2. What are Futures Markets?

Define by the channels that exist for physical trade and the risks associated with them:

Spot Markets

- Day to day trading

- Great price variability

Forward Markets

- Buyer and seller meet to form contract

- Sets date, quantity, quality etc

- Price is agreed and thus certain

Rationale for futures markets - *may* provide a channel for trade but more likely to be used as a **secondary market** to reduce risk (insurance role)

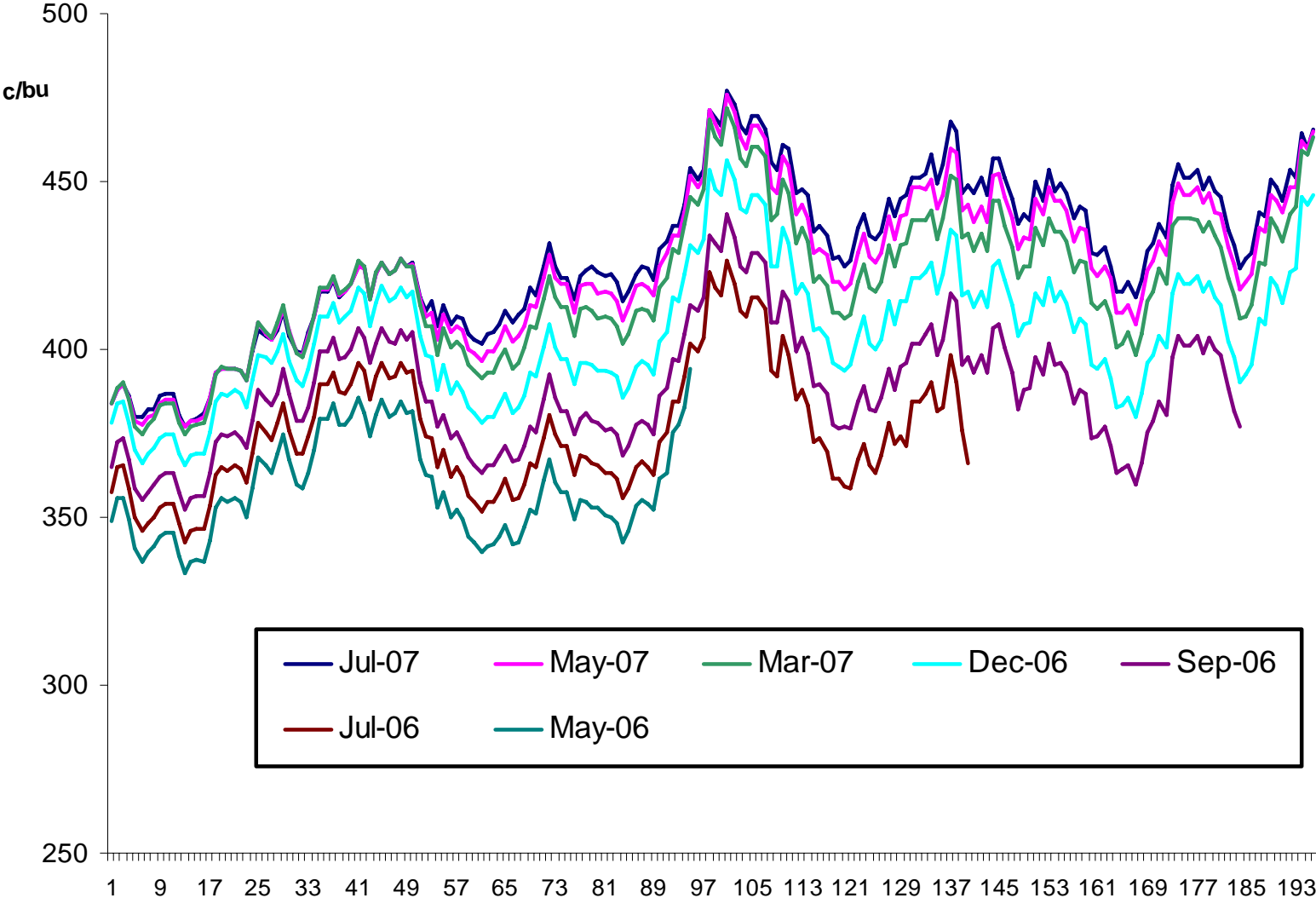
Futures Markets

“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**”

Standardisation of contract is crucial as:

- Medium of exchange (note, there are costs of trading)
- No disputes over details
- Organisation means centralisation of traders and information
- Trade over several months so trader can choose

CBOT Wheat Futures Jan -Oct 06



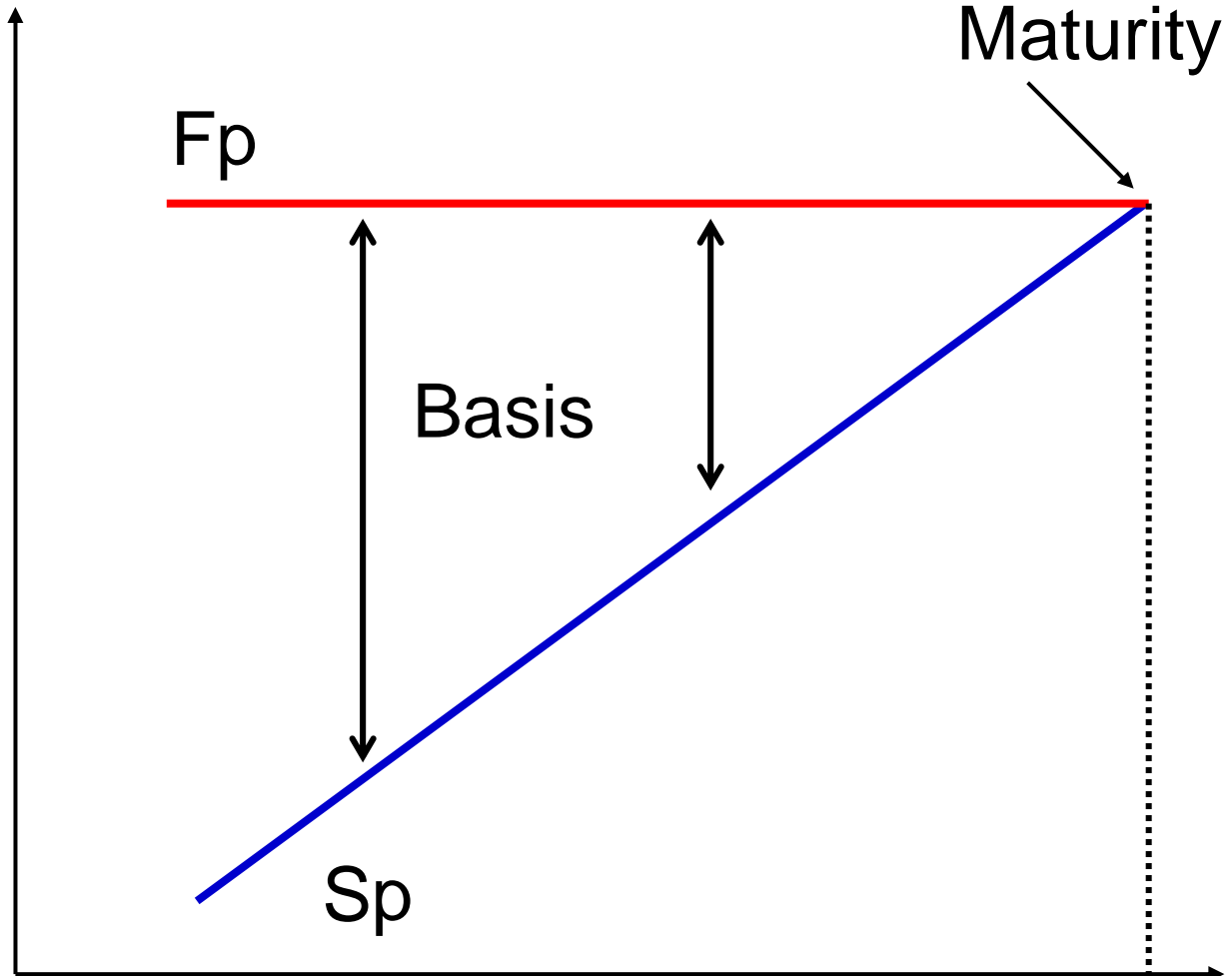
3. How can Futures Markets help Risk Management?

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

F_p

Basis

S_p

Start of
season

Time

End of
season

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

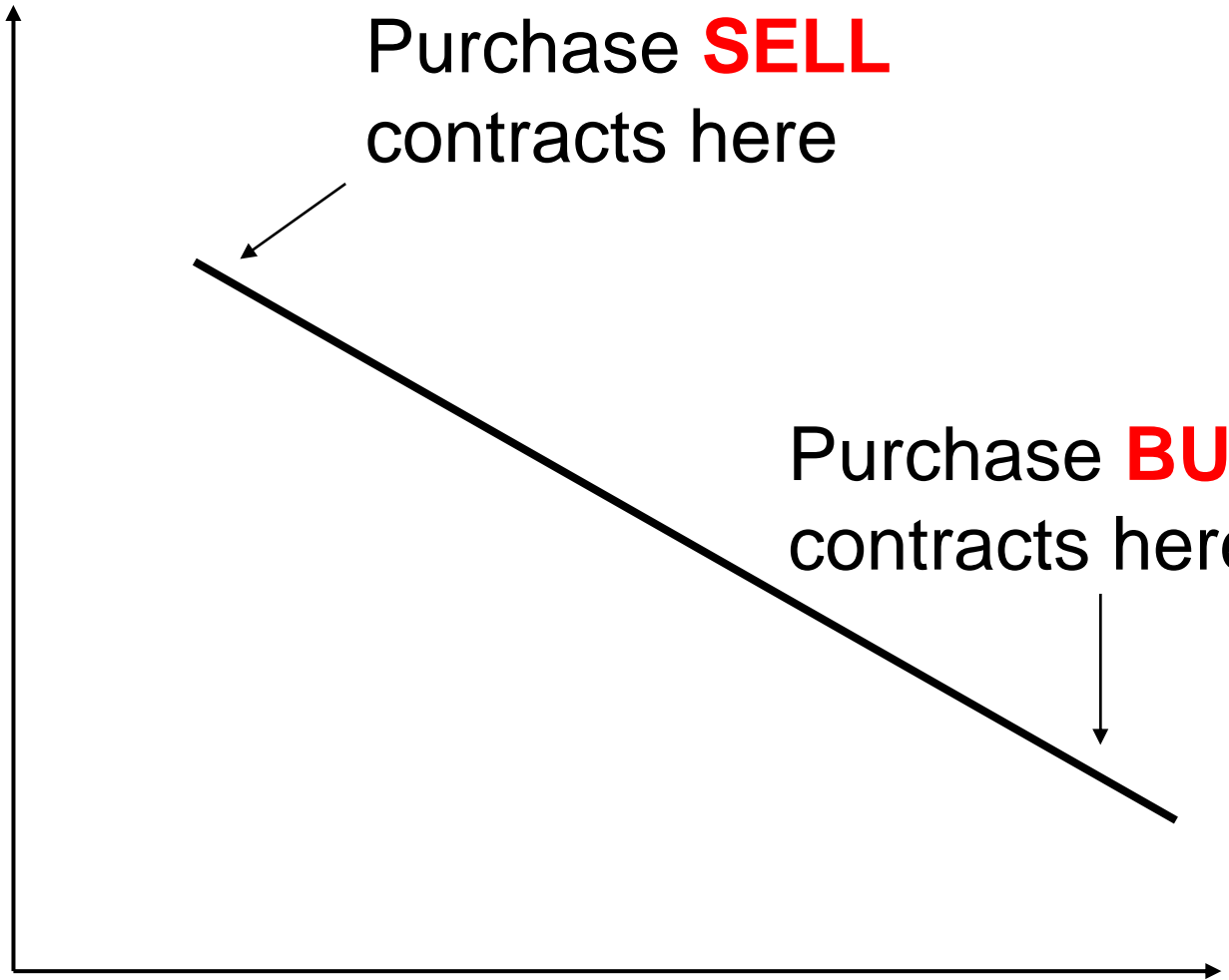
Example Two - An agent holding stocks that are unsold fears prices will fall

Solution:

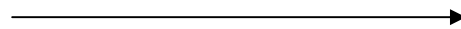
The agent will hedge in the futures market by purchasing **SELL** contracts so he is **LONG** in the spot and **SHORT** in the futures.

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

Price



Now

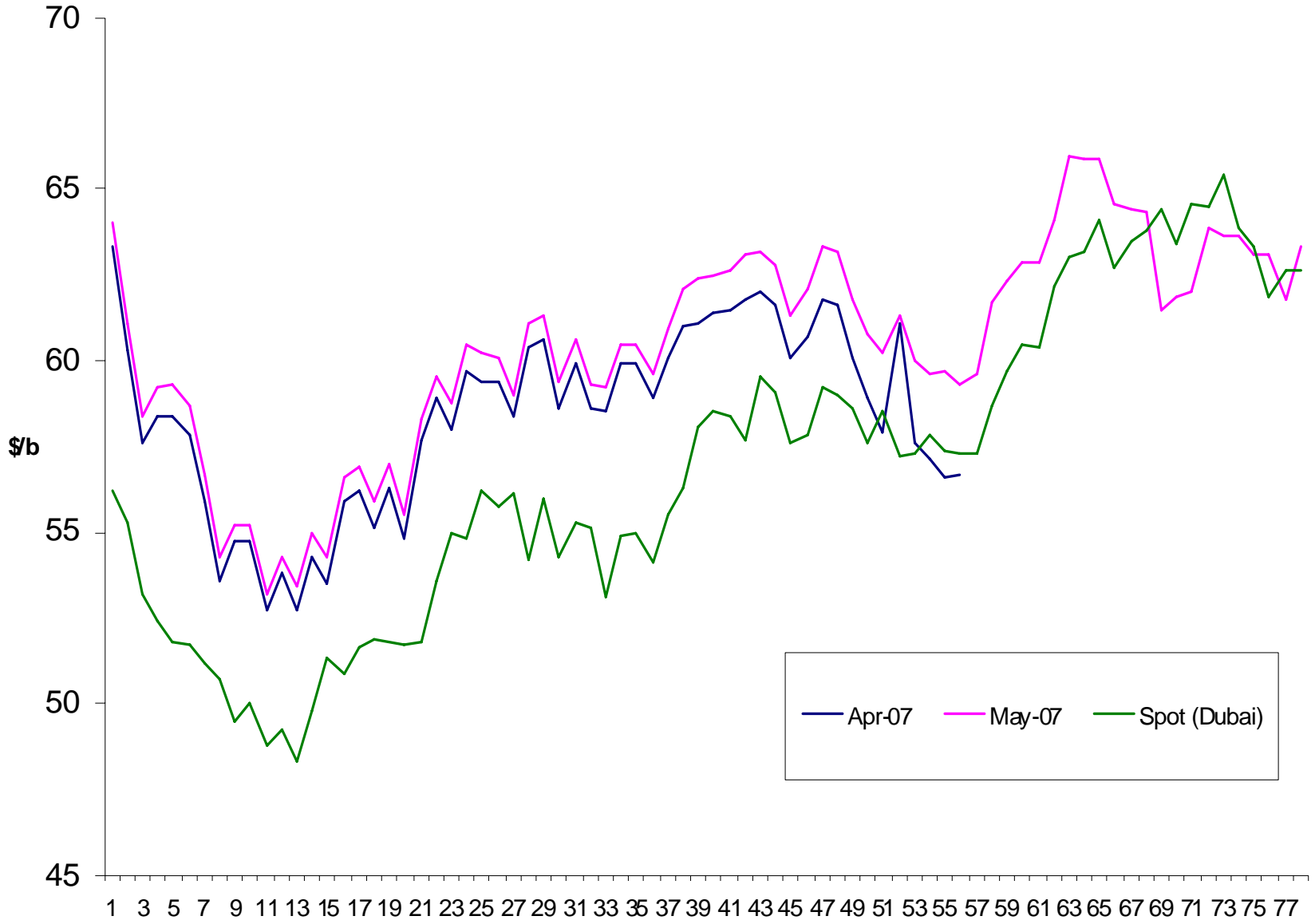


Future

Time

Oil Prices Jan -April 07

Nymex Futures and Dubai Spot



6. Options Markets

- Options allow more flexibility than futures
- Futures prices can move against the hedger

Call option: the **buyer** of the option has the right but not the obligation to **buy** the underlying futures contract at a specified price (the **strike** or **exercise** price) for a limited period of time.

Put option: the **buyer** of the option has the right but not the obligation to **sell** the underlying futures contract at a specified price (the **strike** or **exercise** price) for a limited period of time.

Advantages

- Hedger minimises futures losses while keeping the chance of maximising spot gains
- Losses limited to the price of option premium

Disadvantages

- Can be difficult to price
- Need futures prices to be volatile for buyer to gain

7. Conclusions

- Commodities can be traded via spot or forward markets but they are risky/costly
- Futures markets are organised, centralised and standardised
- Offer hedging ability through closing out
- Requires good relationship between futures and spot prices
- Options provide more flexibility than futures