



building  
shock resistant  
portfolios

EXCHANGE TRADED FUNDS  
PRICING, PERFORMANCE & PRICE  
DISCOVERY



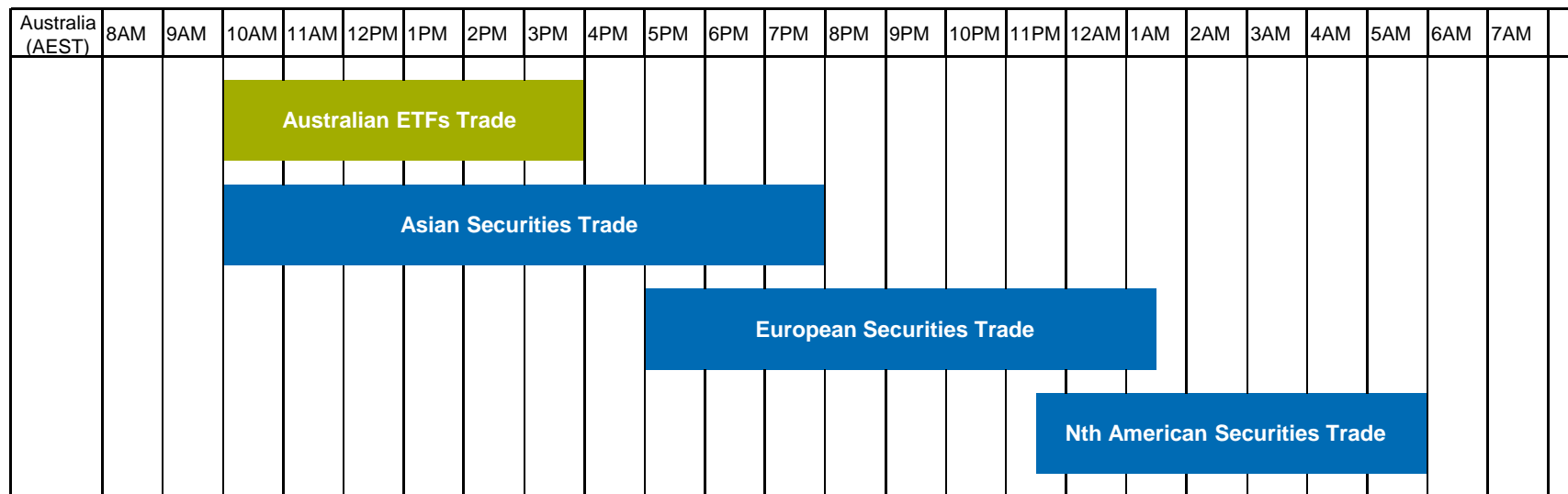
# Benefits of ETFs



# Agenda

- Examine the differences between the two ETF pricing methodologies
  - Net asset value (NAV)
  - Daily closing price on exchange
- Discuss the appropriate metric to calculate the performance of an ETF
- ETF price discovery

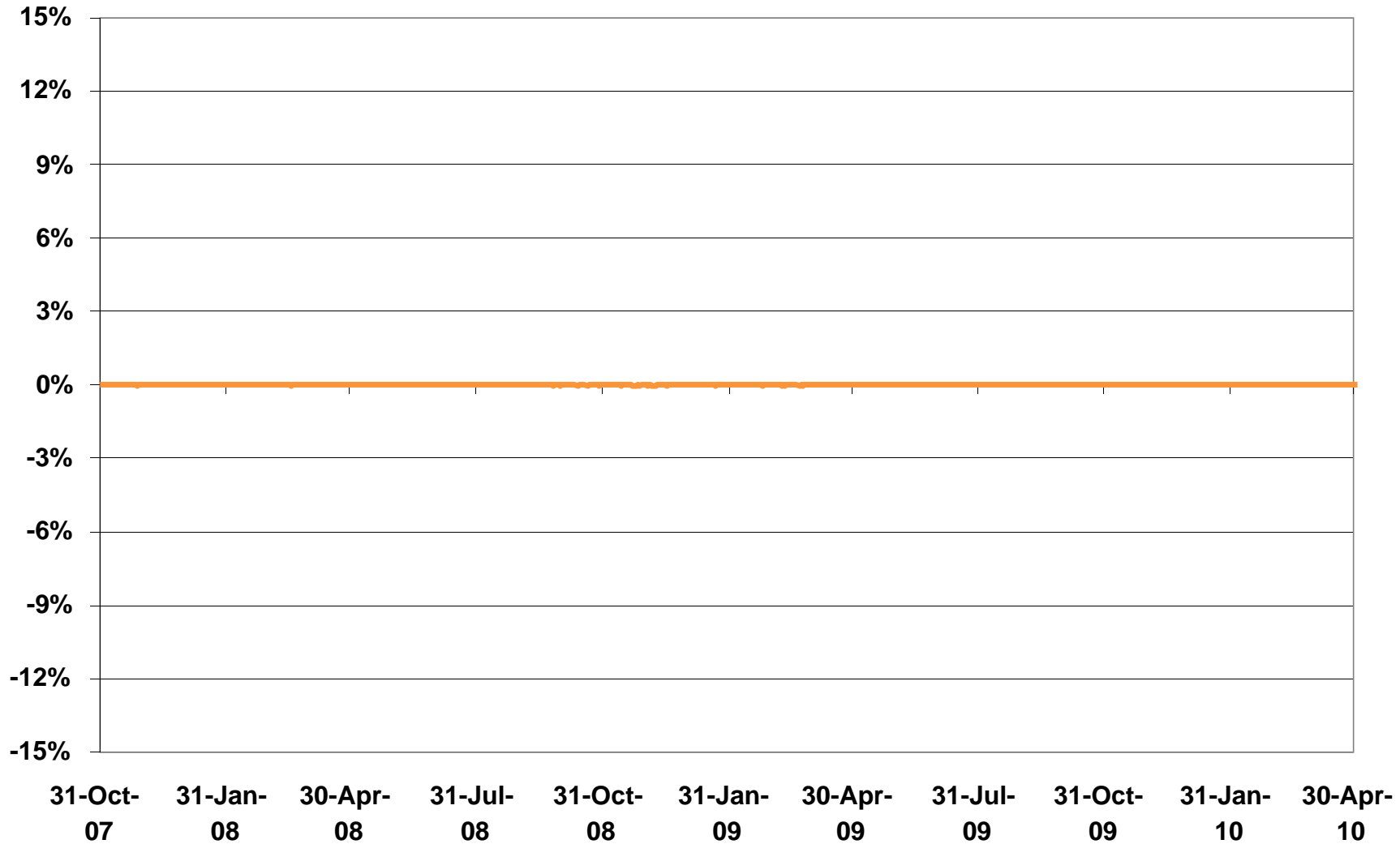
# Market hours of the underlying securities of international ETFs (AEST)



Source: BlackRock & Bloomberg



# NAV return difference versus index (in AUD) for iShares S&P 500 (IVV.AU)

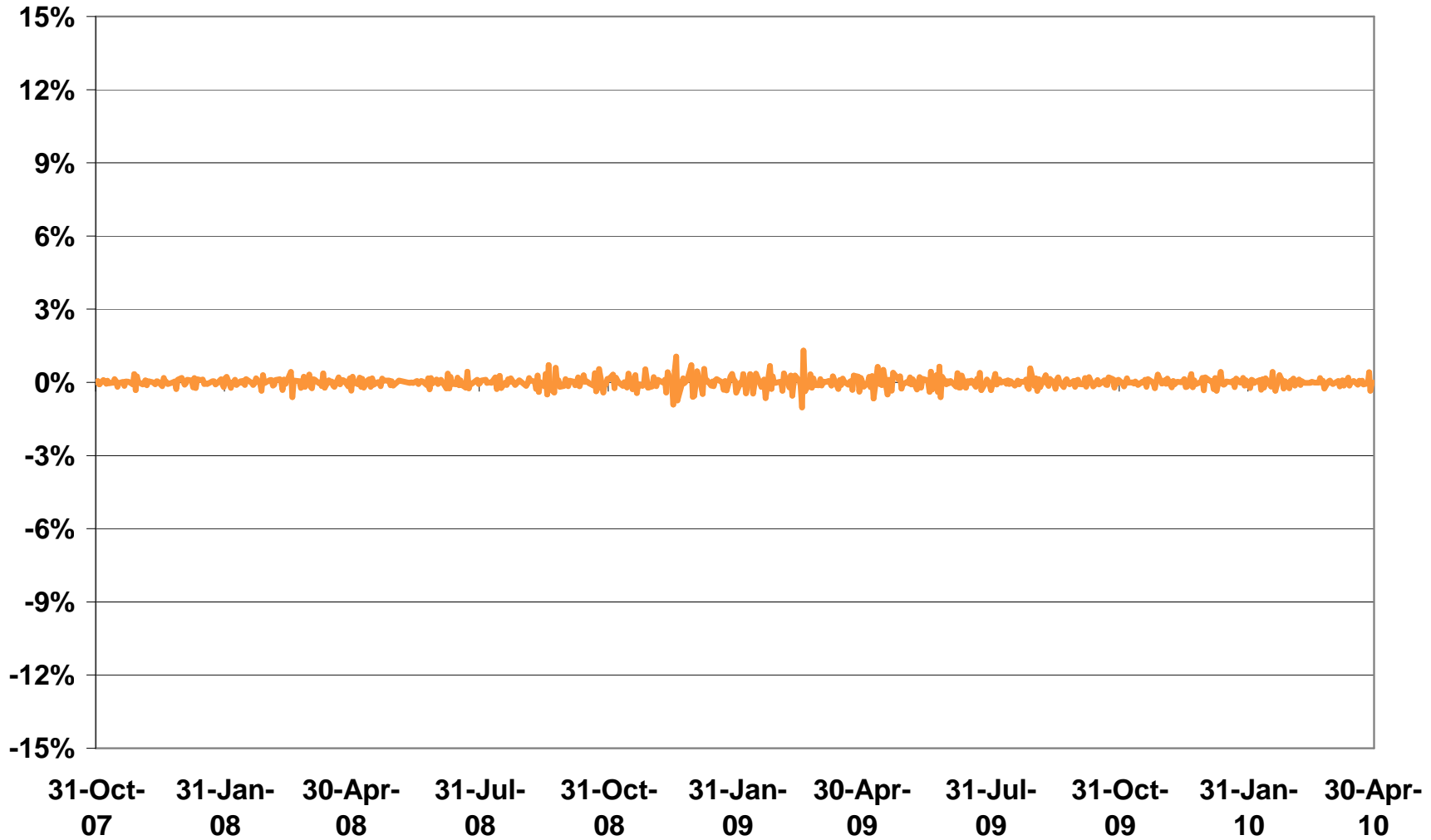


Source BlackRock & Bloomberg

— NAV return difference



# NAV return difference versus index (in AUD) for iShares S&P Global 100 (IOO.AU)



Source: BlackRock & Bloomberg

— NAV return difference

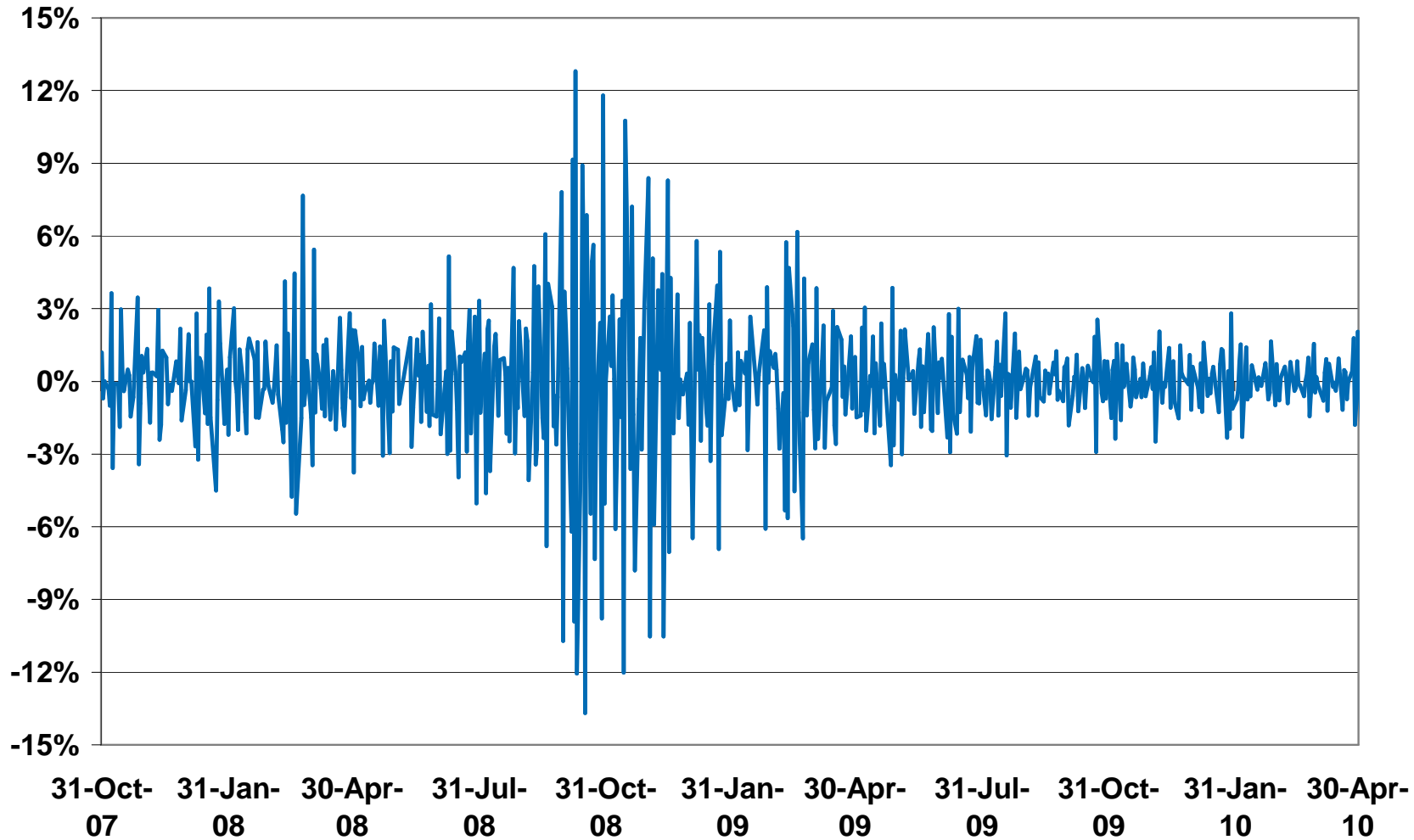


# The NAV pricing comparison

- The daily NAV performance of these ETFs is almost identical to that of their indices
- These ETFs have performed in line with expectations, replicating the daily returns of their stated benchmarks through time
- This is the best way to compare ETF performance v the index



# Daily closing price return difference versus index (in AUD) for iShares S&P 500 (IVV.AU)

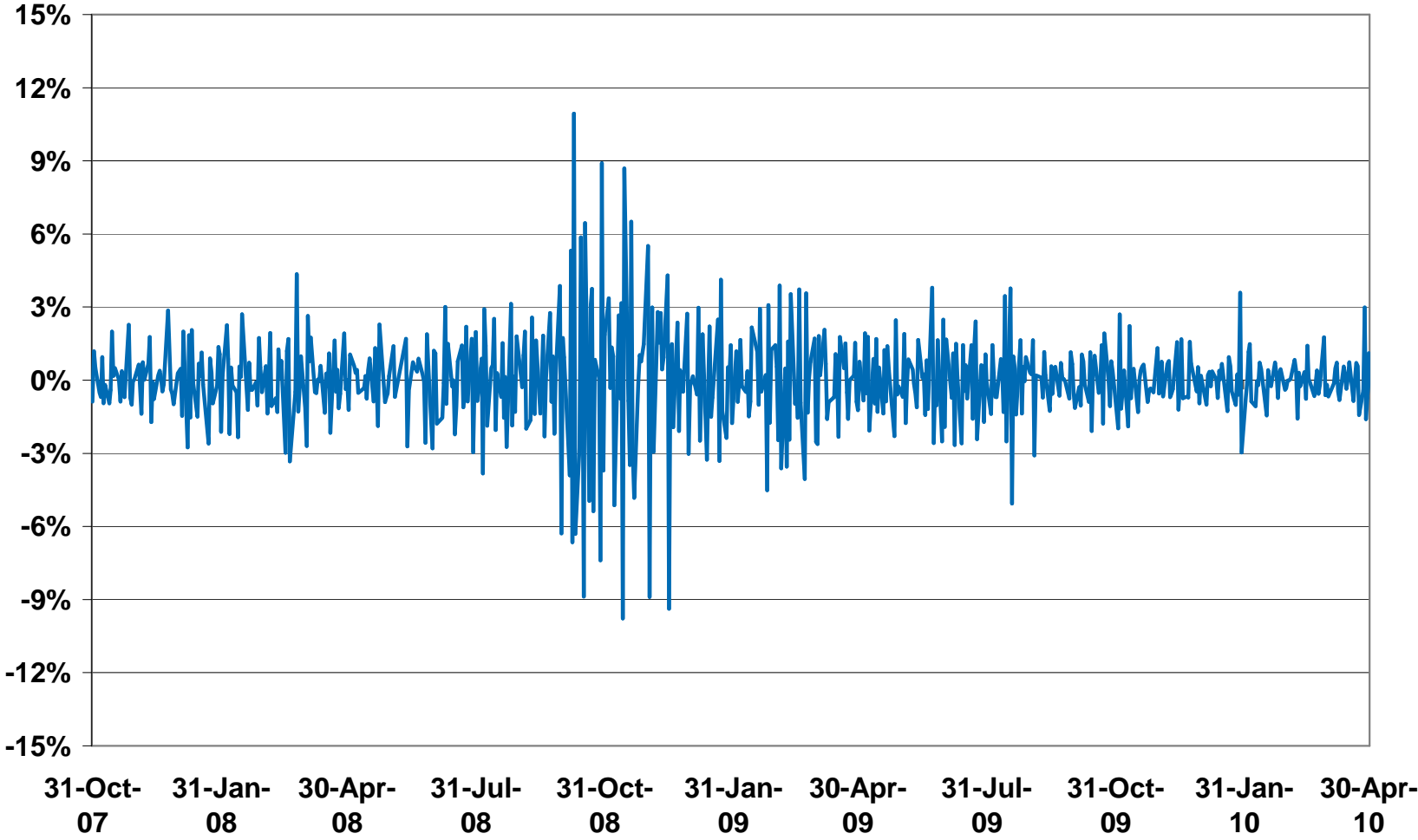


Source: BlackRock & Bloomberg

— Closing price return difference



# Daily closing price return difference versus index (in AUD) for iShares S&P Global 100 (IOO.AU)



— Closing price return difference

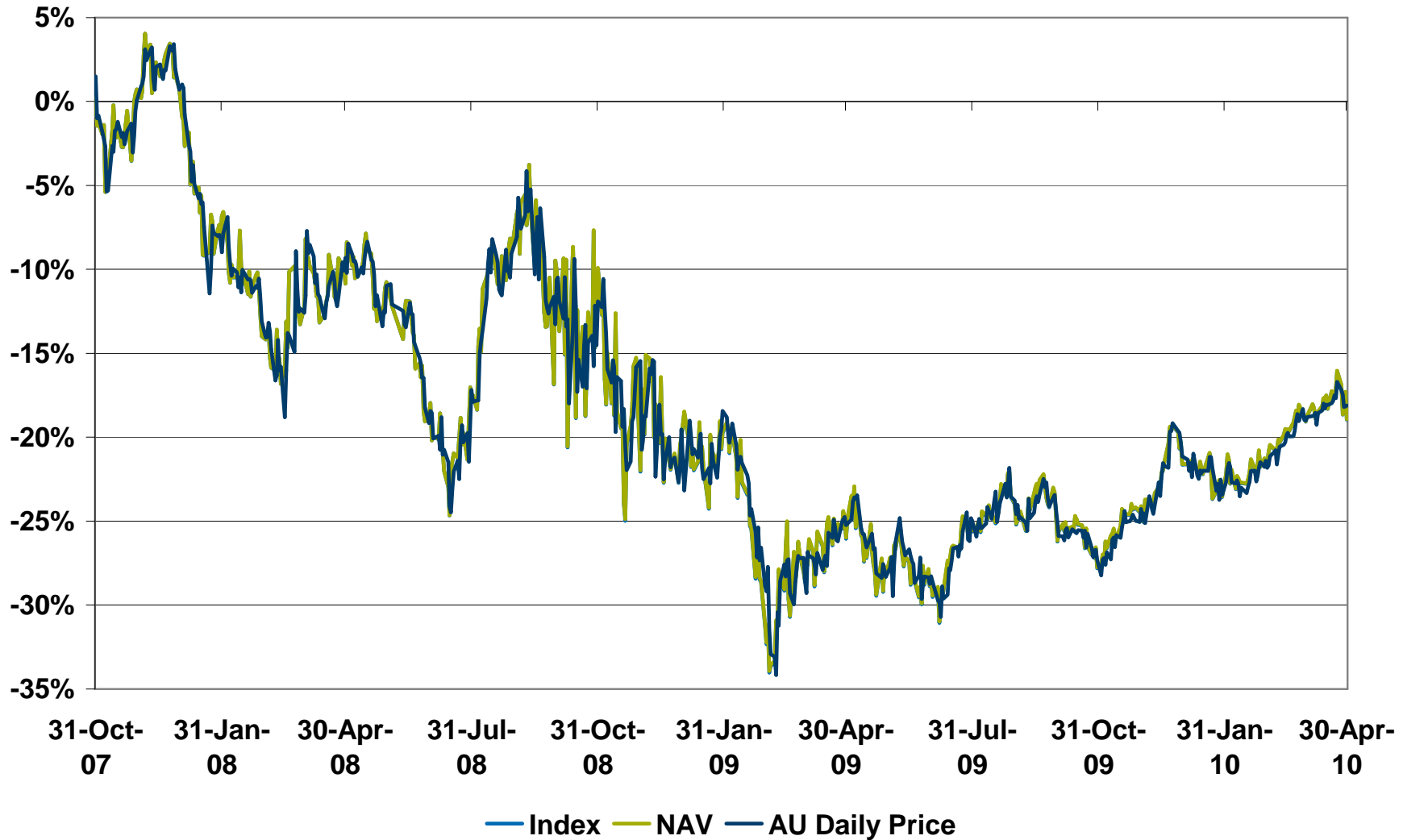
Source: BlackRock & Bloomberg



# Do the short term price differences impact long term performance?

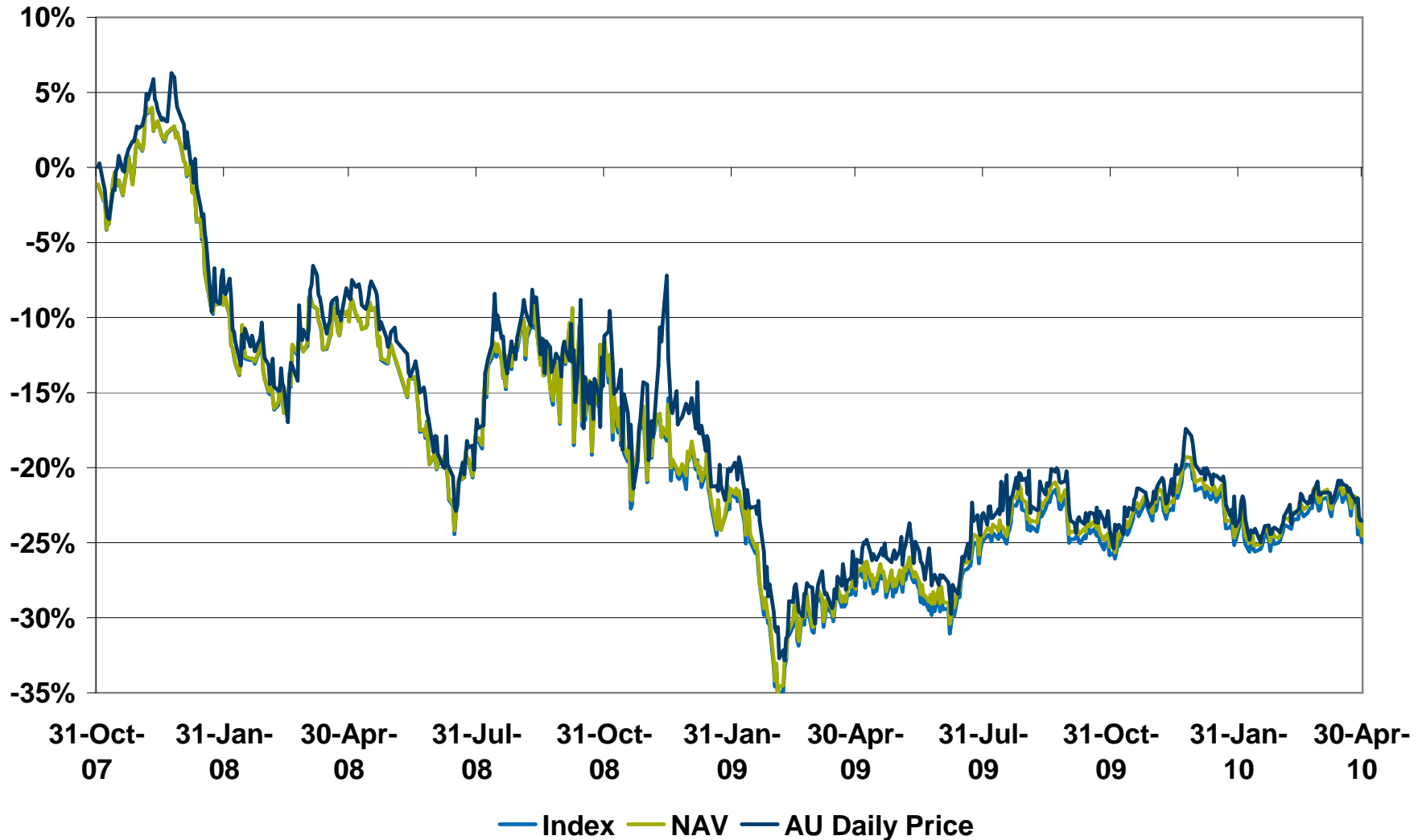
- Differences in value might appear to be a source of tracking error
- These ETFs have historically tracked their benchmarks very closely since inception
- This is regardless of the valuation methodology used

# IVV has historically tracked its benchmark very closely since inception



Source: BlackRock & Bloomberg

# IOO has historically tracked its benchmark very closely since inception

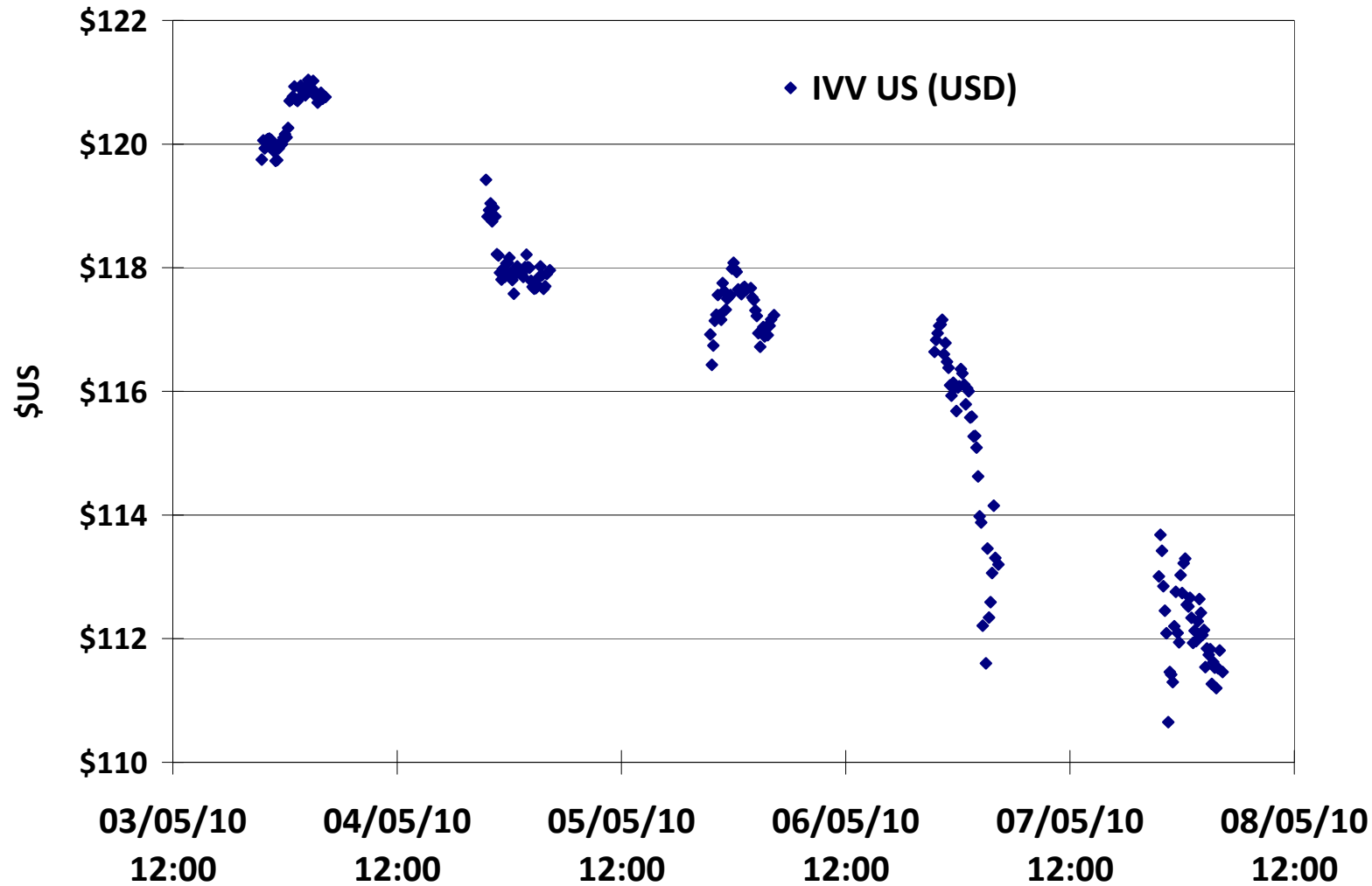


Source: BlackRock & Bloomberg

# EXCHANGE TRADED FUNDS PRICE DISCOVERY

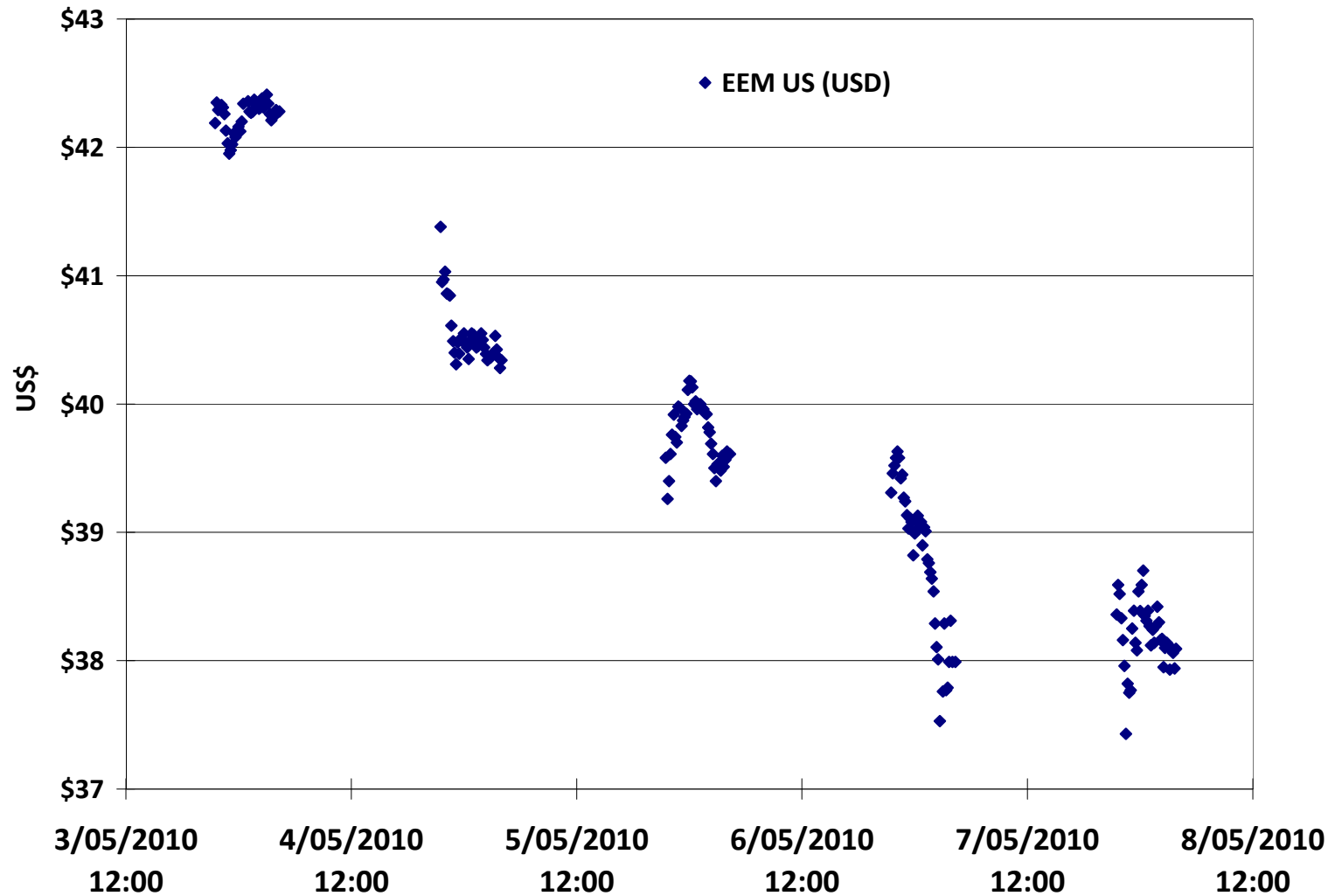


# Price behaviour of IVV.US - 3rd May 2010 to 7th May 2010



Source: BlackRock & Bloomberg

# Price behaviour of EEM.US - 3rd May 2010 to 7th May 2010



Source: BlackRock & Bloomberg



# ETFs allow (almost) continuous market access

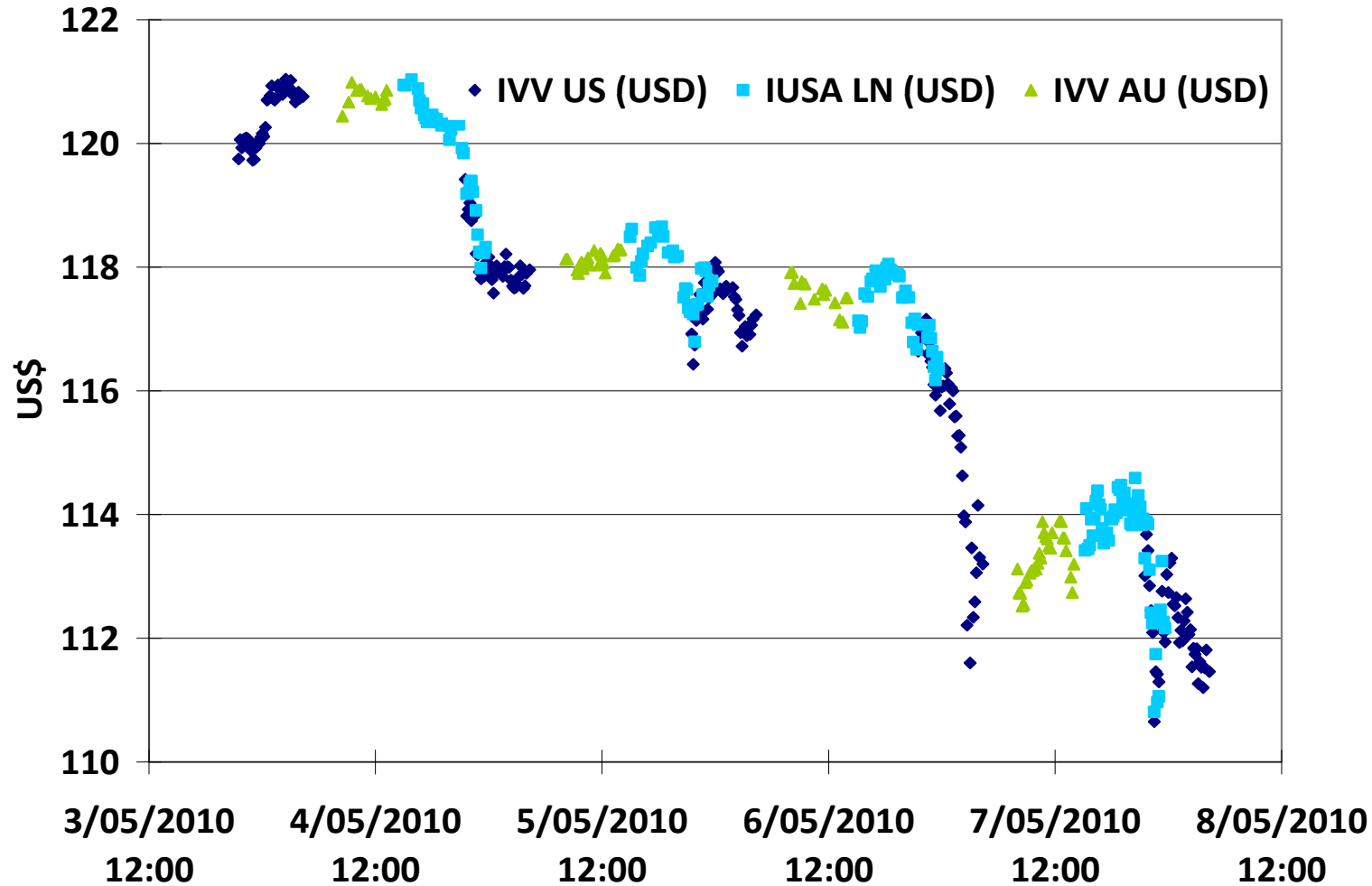
## iShares S&P 500

Australia (AEST)	8AM	9AM	10AM	11AM	12PM	1PM	2PM	3PM	4PM	5PM	6PM	7PM	8PM	9PM	10PM	11PM	12AM	1AM	2AM	3AM	4AM	5AM	6AM	7AM			
			IVV.AU								IUSA.LN																
																					IVV.US						

## iShares MSCI Emerging Markets

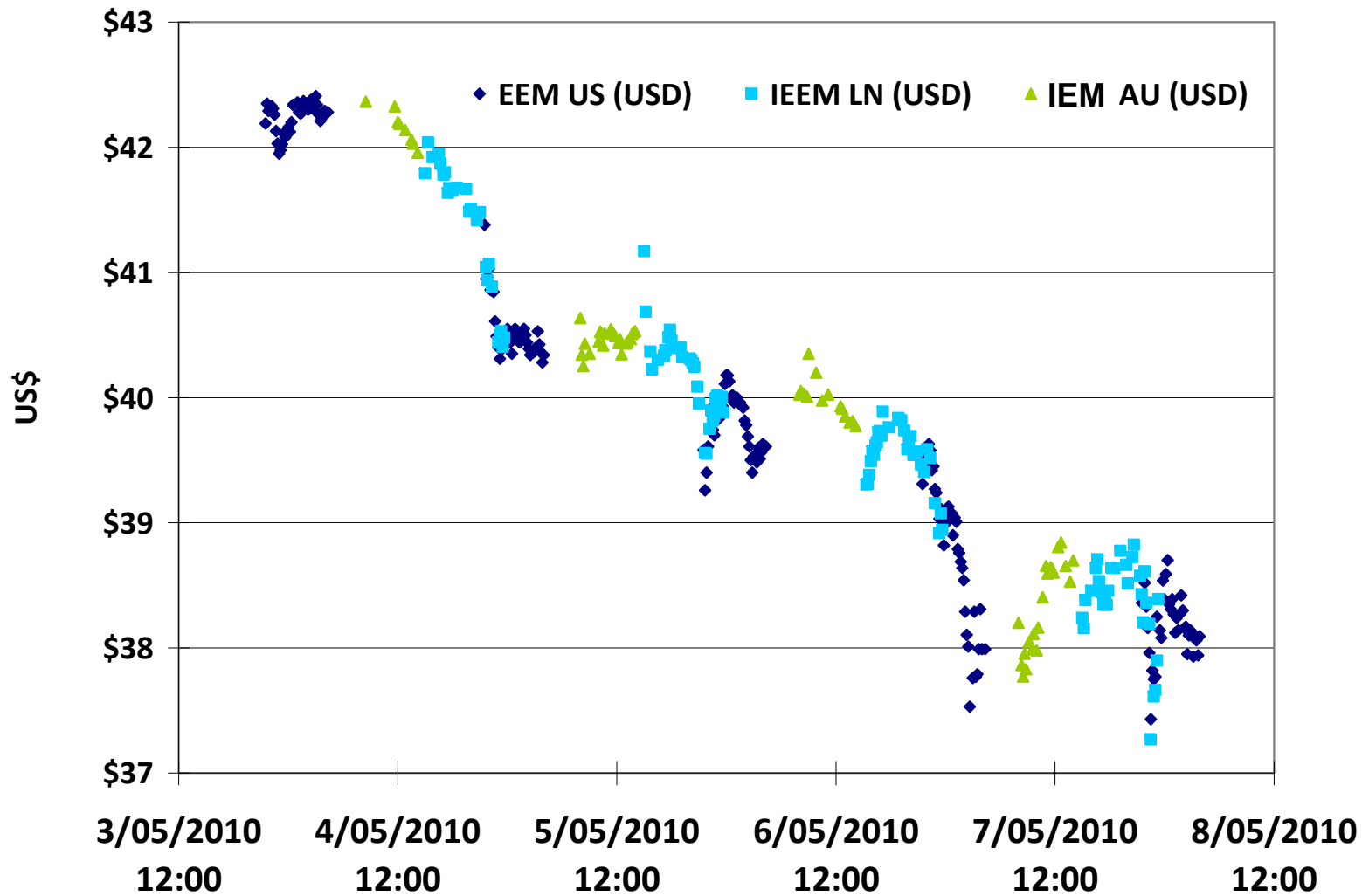
Australia (AEST)	8AM	9AM	10AM	11AM	12PM	1PM	2PM	3PM	4PM	5PM	6PM	7PM	8PM	9PM	10PM	11PM	12AM	1AM	2AM	3AM	4AM	5AM	6AM	7AM			
			IEM.AU								IEEM.LN																
																					EEM.US						

# Price behaviour of IVV.US, IUSA.LN & IVV.AU - 3rd May 2010 to 7th May 2010



Source: BlackRock & Bloomberg

# Price behaviour of EEM.US, IEEM.LN & IEM.AU - 3rd May 2010 to 7th May 2010

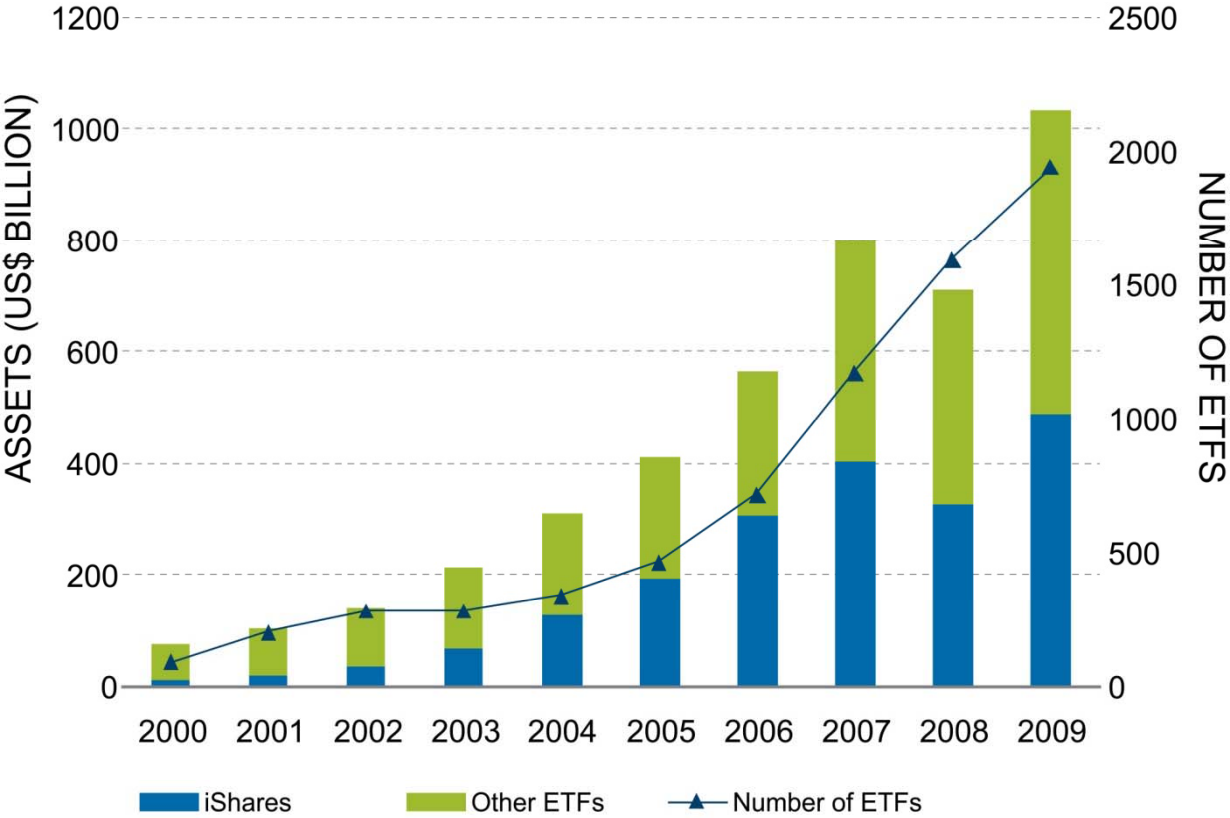


Source: BlackRock & Bloomberg

# Conclusion

- Over the long term, all ASX listed iShares ETFs studied all track index performance very closely since inception
- Over shorter periods differences between daily ETF price return on exchange relative to the underlying index were often exhibited
- These differences derive from price discovery and market access when the underlying securities are not trading

# Phenomenal global growth



**Global ETF assets hit US\$1,032.3 bn at the end of Q4 2009**  
**Over 1,900 ETFs with over 3,700 listings 109 providers on 40 exchanges**  
**throughout the world**

Source: Global ETF Research & Implementation Strategy Team, Blackrock, Bloomberg. Data as at end December 2009.



# 2009 US ETF trading highlights \*

- 7 of the top 10 most actively traded US equities were ETFs
- ETFs represented approx. 30% of the total US equity dollar volume
- iShares represented 7% of total US equity market volume
- iShares ETF trading volume in 2009 was 98.4 billion shares / \$3.7 trillion

\* Source: US iShares Trading Strategy Report as of 31 December, 2009

# SMSFs have clear preferences for...

- Listed exposures which are much more easily accessed, bought and sold
- Inexpensive products in terms of entry, exit and ongoing costs
- Transparent products which do what they say on the tin
- No or low commissions
- Limited scope of disappointment relative to the promise

# Reasons for such phenomenal growth





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