

STRICTLY CONFIDENTIAL



Dubai: Just Being *Mean*

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Executive Summary

- Mean reversion is a theory that suggests that trends and prices eventually revert towards their historical averages. This phenomena has been widely used as a statistical tool to analyze market conditions and predict price movements. A historical look into US and UAE equity market reveals that prices have reverted to their 12 month rolling averages over the last 10 years. Using the tool of mean reversion we can witness that in the US market current prices have deviated upwards from their 12 month rolling averages indicating that a correction is on the horizon. Whereas in the Dubai Financial Markets, recently prices have risen close to their 12 month rolling average signaling a buy.
- Similar dynamics are witnessed within the real estate market when analyzed through the lens of mean reversion. A look in the price movement of the New York market reveals that for the last three years prices were rising above their 12 month rolling averages, however in the last few months we have seen prices reverting to their mean. If prices fall below their moving averages, using mean reversion as a stand alone technical indicator, we can expect prices to trend downwards. In Dubai, similar to the equity market, real estate prices are close to rising above their 12 month rolling averages; signaling an inflection point has been reached and price rises (already being witnessed in certain communities) is underway.
- Launch prices and ready prices also have a mean reverting relationship, where the latter is a leading indicator of the former. This can be witnessed across various communities such as Downtown and Arabian Ranches. In both cases there were launches above and below the price index depending on the market condition, but eventually prices converged.
- We opine that mean reversion implies that a price rise in the real estate markets is underway. The nature of the two moving variables is symbiotic and iterative in nature, and the nature of any price rise will always be different from cycle to cycle and will be different across communities. However, the high order relationship that has historically held across markets implies that a price rise will continue to be witnessed.



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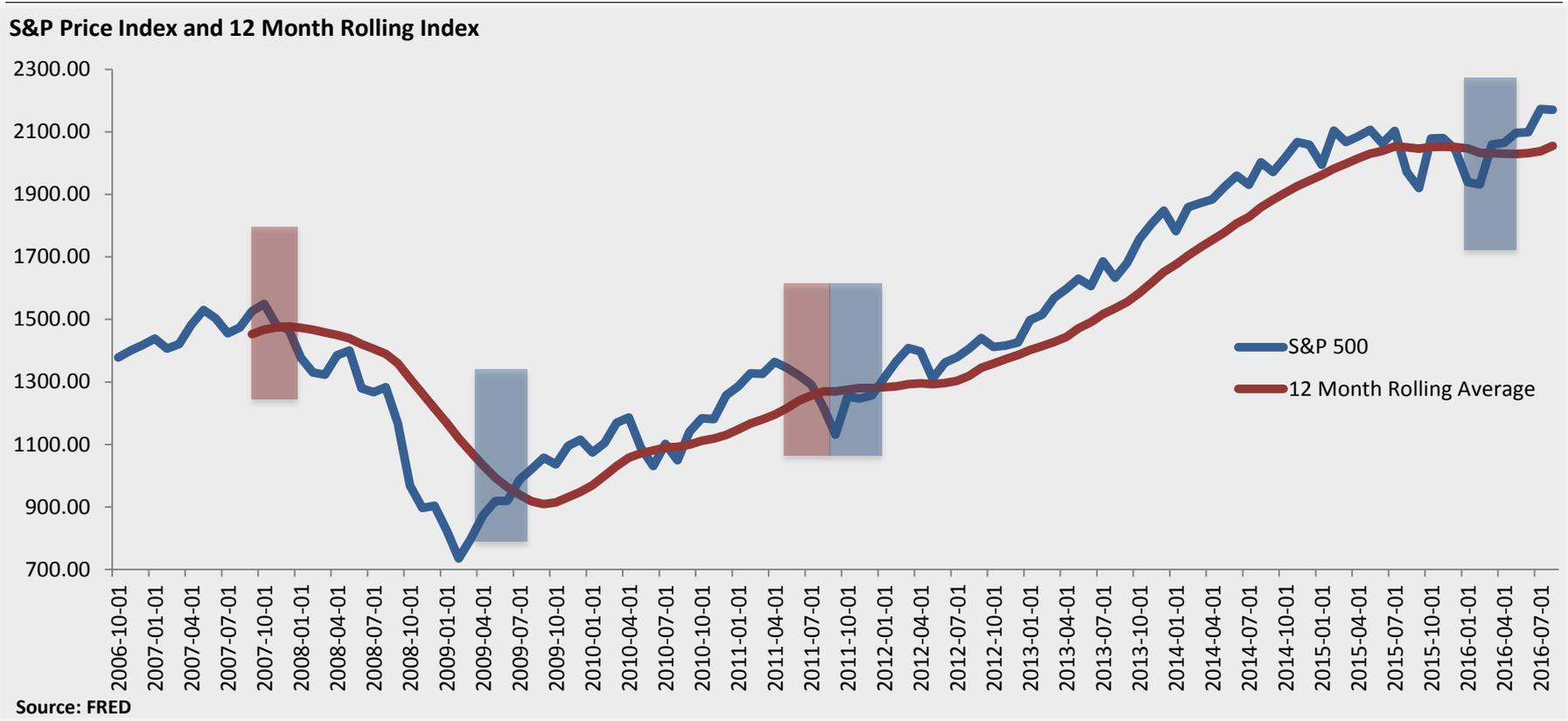
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Mean Reversion in Equities



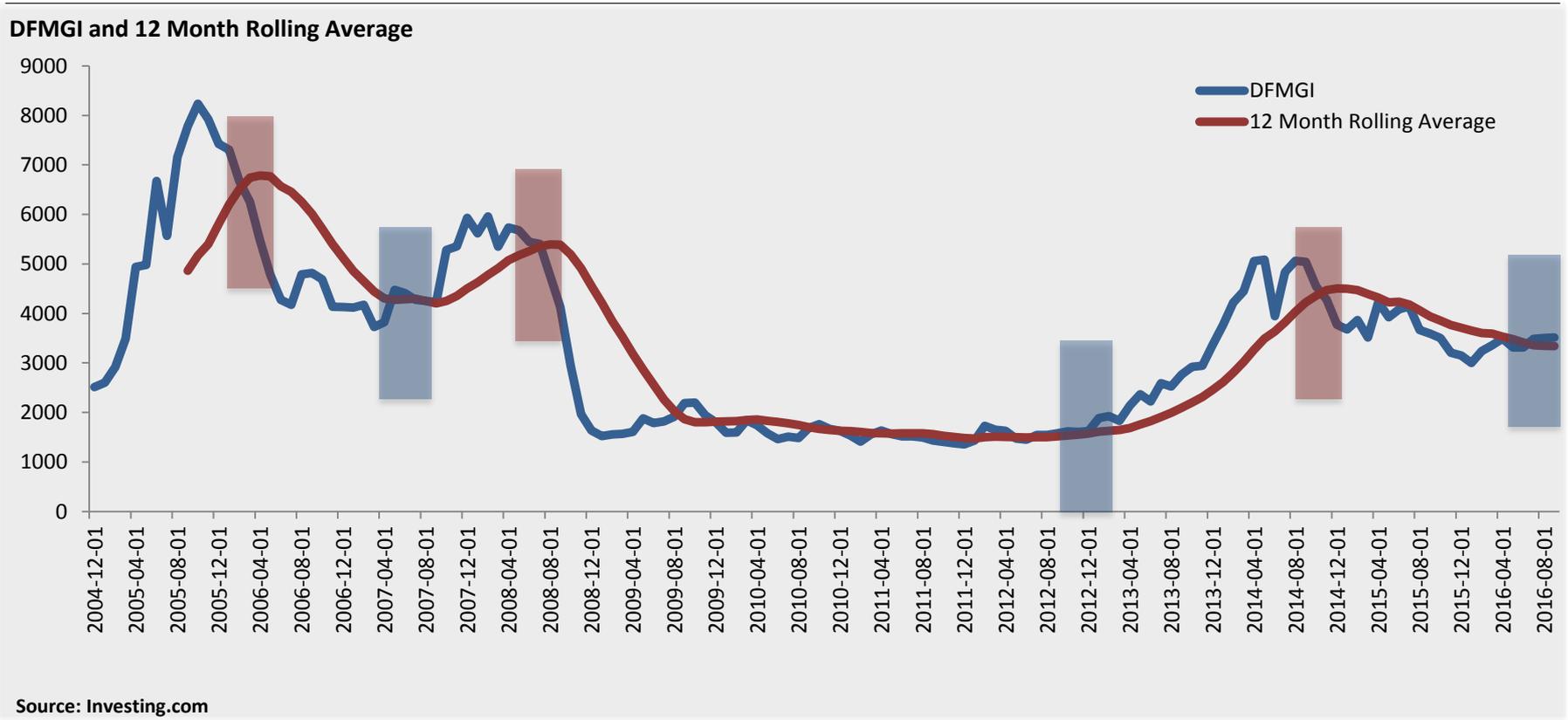
The boom and the bust were normal—just two more swings in stock returns over the past century. Reversion to the mean is the iron rule of the financial markets. – John Bogle

Mean Reversion in US Equities



An analysis of the S&P over the last decade illustrates the relationship of mean reversion in the equity market. Prices tend to gravitate towards their mean (rolling 12 month average) over time after prices have deviated from their historical averages. Using the sole metric of mean reversion we can conclude that the S&P in its current state is due for a correction as prices trend downwards towards their mean levels.

Mean Reversion in the Dubai Financial Markets



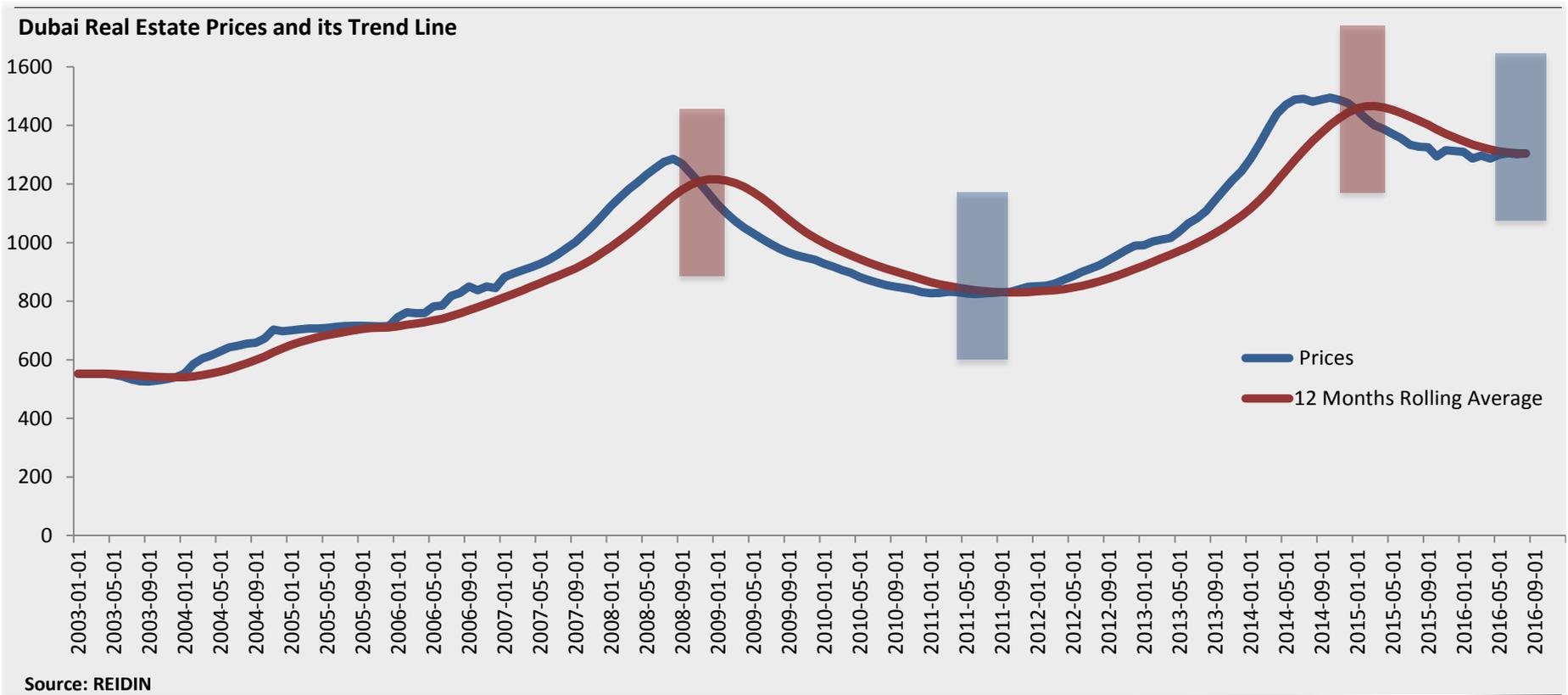
In the Dubai Financial Markets, we witness that mean reversion has played over the last 10 years. In the last half we witness that prices have risen above their 12 month rolling average signaling a bull rally is on the horizon.

Mean Reversion in Real Estate Price Action



“Yes, our tree has an interesting shape. The center branches reflect the shape of the zero curve. When extreme parts of the tree are reached the branching pattern changes to accommodate the mean reversion.” - John Hull

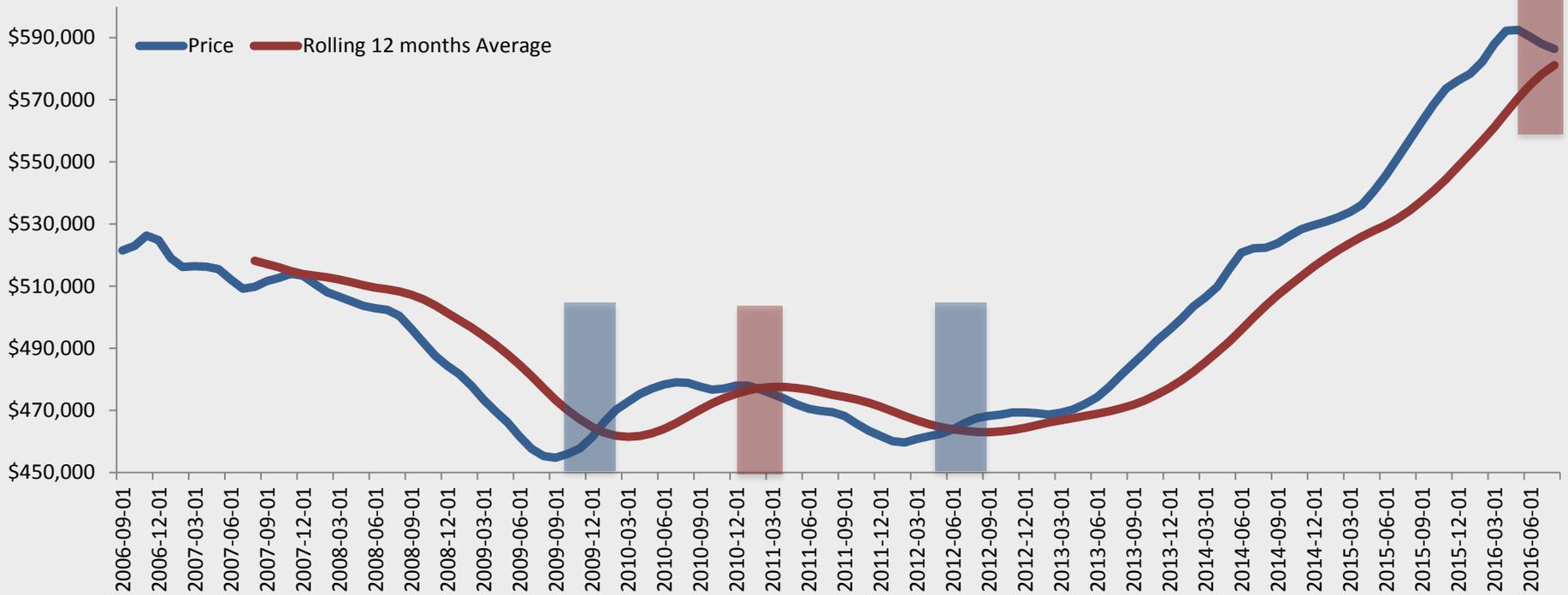
Technical Inflection Point reached in Dubai Real Estate Prices



When prices fall below their moving average it signals a sell, but when it rises above it is a buy signal. The above graph illustrates the times in the Dubai real estate market when prices have crossed over their rolling averages. In both instances (2008 and 2014) when the correction began, prices fell below their rolling averages. In the current cycle we can witness that prices have risen close to its rolling average indicating that an upward trend is on the horizon.

Mean Reversion Implies New York Prices may be on the Fall

New York Prices and its Trend Line

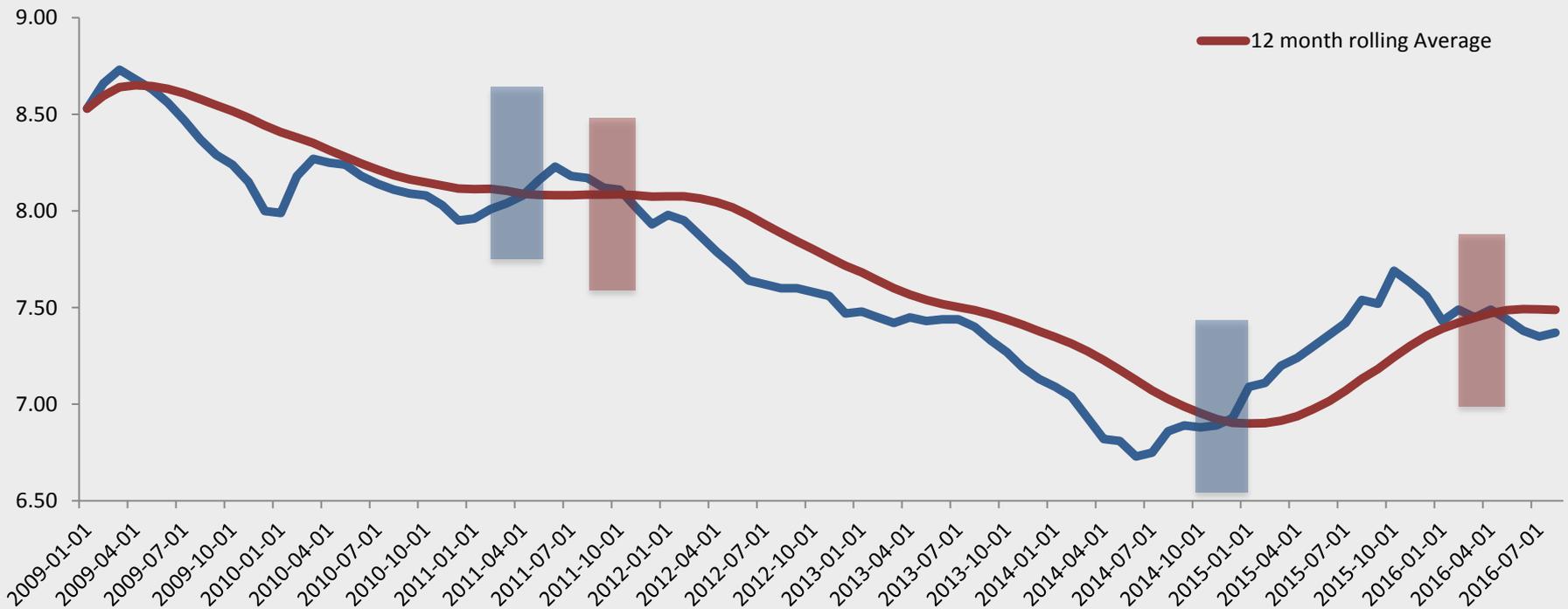


Source: Zillow

The same patterns can be witnessed in other major markets such as New York. The above graph reveals that every time prices move above or below their moving average an inflection point occurs. Recent prices in New York have begun to taper towards their mean.

Mean Reversion on Yields Signal Rents on the Rise

Dubai Real Estate Yields and 12 Month Rolling Average



Source: REIDIN

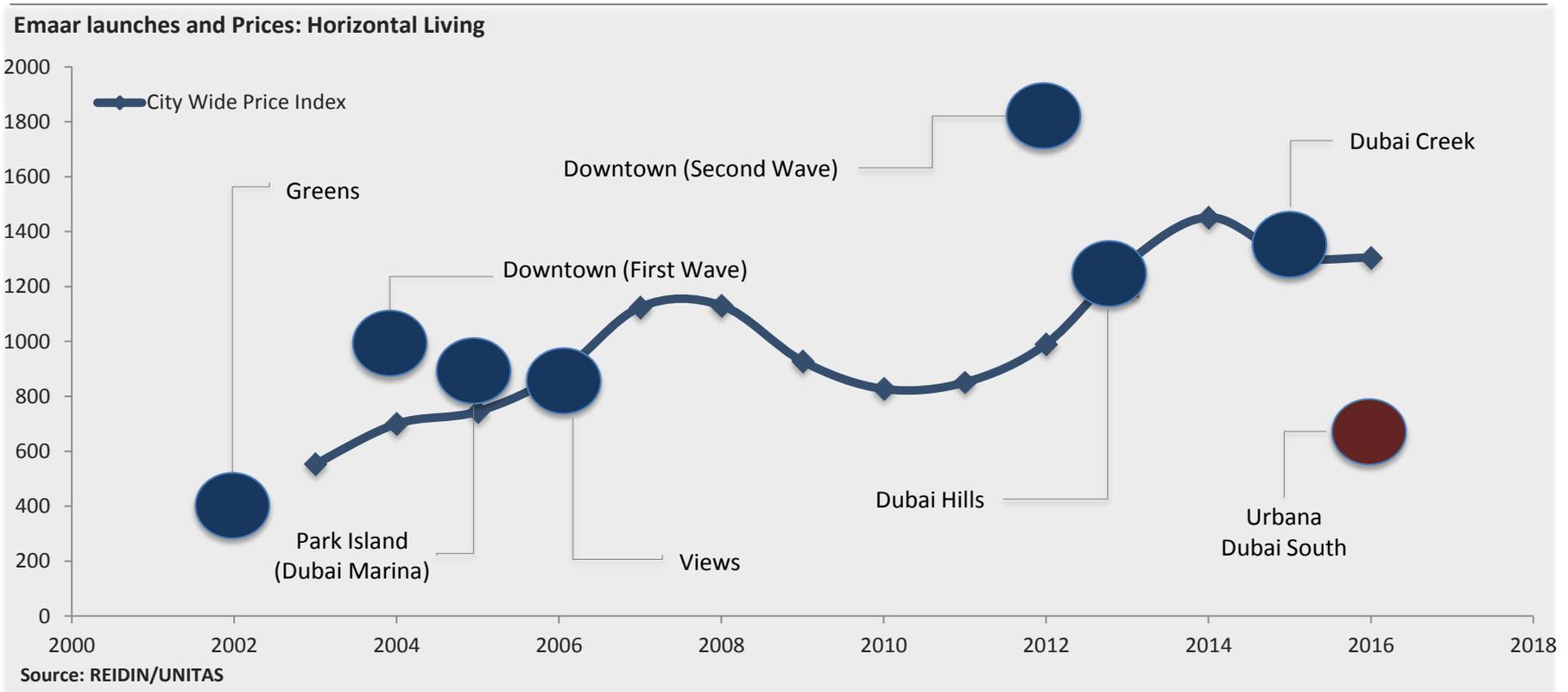
An analysis of rental yields in Dubai using the lens of mean reversion implies that the current rental cycle is in the midst of a “long term” secular downtrend of a gradually lower rental yield. Given the bivariate nature of the relationship in this case, this implies that either prices rise and/or rental rates continue to fall. Historically, the relationship has implied that price rises (not only in Dubai but globally) accounts for a greater weightage in determining the fall in yields than movements in rents; a trend that we opine will continue.

Prices, Launches, and Mean Reversion



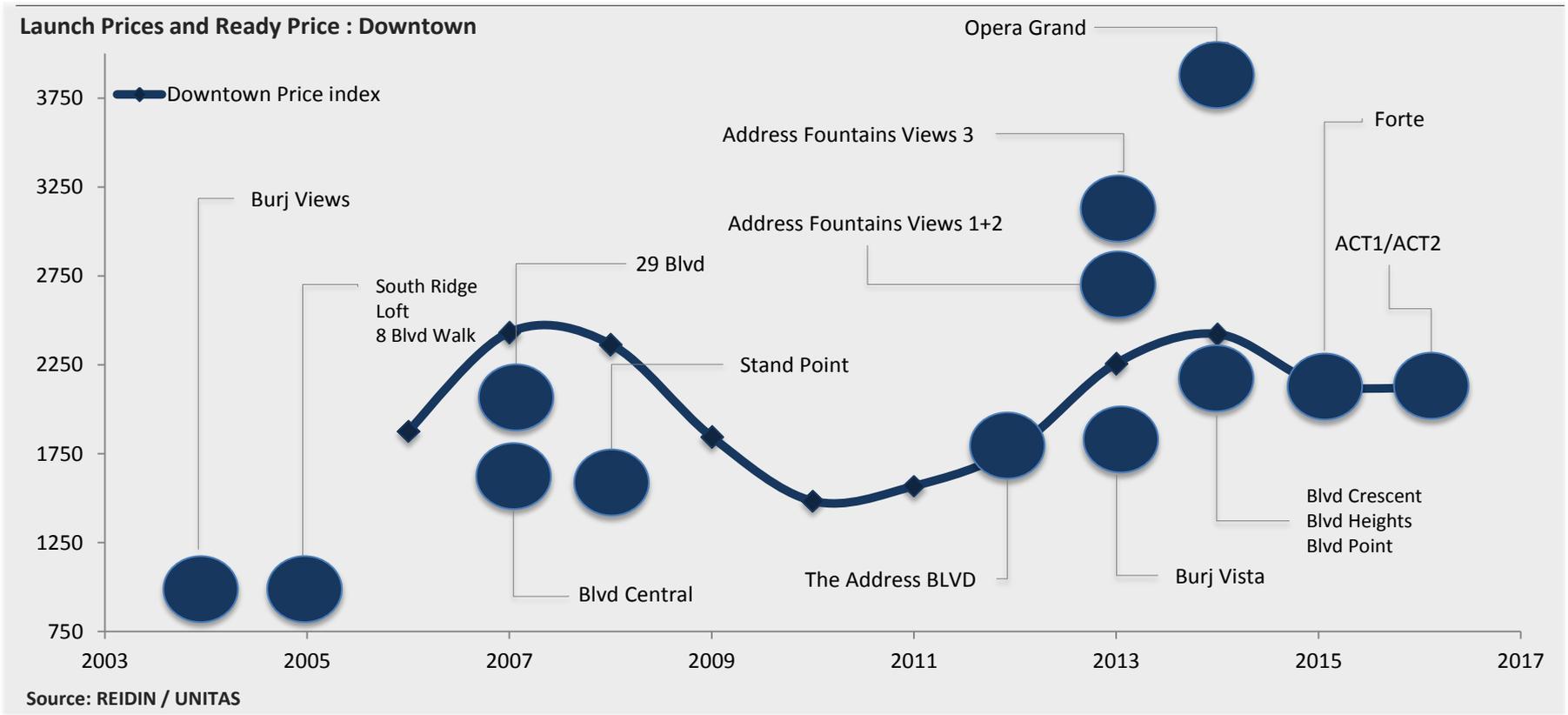
“Seven years of great abundance are coming throughout the land of Egypt, but seven years of famine will follow them” – Genesis

Major Vertical Living Launches From Emaar



When we look at major launches of Emaar in the apartment space since the inception of freehold, a steady upward relationship can be discerned; however the more recent launches indicate a diversion of the strategy from high community launches and a return to first principles similar to what was in place in 2002-4. This change in strategy has also been mean reverting, where a major developer has recalibrated or “reset” prices; we expect other developers to follow suit.

Price Action and Launches: Downtown



The above graph illustrates the launch prices of projects against the price index in Downtown. The scatter gram for the downtown area indicates prices launches both above and below the price line; what we do observe is that in the last few years the relationship has become tighter; in other words the gap between launch prices and the price index has narrowed considerably, again illustrating the concept of hugging the mean.

Conclusions

Mean reversion is a theory that suggests that trends and prices eventually revert towards their historical averages

When prices fall below their moving average it signals a sell, but when it rises above it is a buy signal

Mean Reversion and Equities

Equity markets have a mean reverting relationship. Prices tend to gravitate towards their mean (rolling 12 month average) over time after prices have deviated from their historical averages.

A closer look in to the S&P and DFM reveals that over the last decade both indices have exhibited behavior of mean reversion.

Using the sole metric of mean reversion we can conclude that the S&P in its current state is due for a correction as prices trend downwards towards their mean levels. Whereas in the DFM prices have risen above their 12 month rolling average signaling a bull rally is on the horizon.

Prices, Launches, and Mean Reversion

An analysis of launches of major communities by Emaar reveals a steady upward relationship. However the more recent launches (ala Emaar South) indicate a diversion of the strategy from high community launches and a return to first principles similar to what was in place in 2002-4.

There is a strong element of mean reversion in the strategy. We opine that other developers follow suit.

Mean Reversion and Real Estate

Real Estate prices, similarly to equities, demonstrate a mean reverting behavior. A technical analysis of the Dubai real estate market reveals that a bull rally is on the horizon as prices rise above their historical 12 month average.

An analysis of another major real estate market, New York, shows a different outcome. The price movement of the New York market reveals that for the last three years prices were rising above their 12 month rolling averages, however in the last few months we have seen prices reverting to their mean. If prices fall below their moving averages, using mean reversion as a stand alone technical indicator, we can expect prices to trend downwards.

Conclusions

Macro economic factors (oil price reduction, Brexit, etc) alongside endogenous variables (supply pipeline) ultimately get baked into the data.

These data patterns have exhibited a universal trend of mean reversion; where we are at the current stage of the cycle implies strongly that the price trend is to drift upwards. This trend is already underway across communities, and is a trend that we opine will continue.



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