



Nasdaq OMX Valueguard-KTH Housing Index (HOX™) *Potential Financial Products*

The financial market provides a number of products on different asset classes that are used by investors to gain a certain exposure. When it comes to indices on houses or properties, *Futures*, *Swaps* and *House Index Linked Notes* have been identified.

Futures / Forwards

A future is an agreement to deliver an asset at a certain price at a future date. It can either have a physical delivery upon expiration or be cash settled. A future based on HOX index should be cash settled upon expiration.hhhjh

Futures / Forwards Benefits

A future construction is very intuitive and an accepted product in the financial markets. It is easy to explain the product and the exposure that is achieved by trading a future based on the HOX index. It is also suitable for order book trading due to the high degree of standardization when it comes to tick size, maturity and contract size.

Futures / Forwards Drawbacks

In order for a clearinghouse to accept the contract for clearing, there needs to be sufficient liquidity in the market and committed market makers that can provide prices and liquidity in the case of a default. The problem is that the underlying market is non-standardized and not very liquid.

Swaps

A swap is an agreement to exchange future cash flows based on pre-defined indices. The usual swap structure is an interest rate swap where one party pays a fixed rate and receives a floating rate, usually determined against a LIBOR rate.

Swaps Benefits

Swaps are, in the same way as futures, highly leveraged instruments that provide the potential to achieve large exposures at low capital cost. A swap can be standardized to the extent that it is possible to clear the instrument and provide netting on cash flows. Swaps are interesting for their flexibility with regard to fixed/floating rate and maturity date and that they actually create a synthetic funded position in the asset.

The aim of this document is to describe the different products that could be created with the NASDAQ OMX Valueguard-KTH Housing Index (HOX™) as an underlying.

More information regarding Valueguard is available at: <http://www.valueguard.se>

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Swaps Drawbacks

Swaps are not used to a large extent by retail investors and they will also create an accumulated profit or loss that is not realized until the trade is terminated or the swap has expired. For swaps the need and problems to get commitment from market makers is the same as for futures. However an OTC based market for swaps should be possible where institutions with different needs could trade swaps through intermediaries.

House Index Linked Notes

Index-linked bonds are an established product in the fixed-income market where the typical issuer is a government or a utility company that issues debts where the return is linked to the consumer price index.

House Index Linked Notes Benefits

Looking for an issuer of bonds at the housing markets, the natural issuer would be property constructors or similar companies, where the return is linked to the development of the housing market. Usually the period from when production is started to when it is finished is too short for being interesting for hedging. But developers have an exposure to the land and the future prices on flats for a long period of time, making such a bond interesting.

The basic construction would be similar to the CPI-linked bonds that are issued by the Swedish National Debt Office. Instead of the CPI the return would be decided by the HOX development between two points in time. The basic construction moves the risk of a price fall from the issuer to the investor, creating a long position in the market for the investor and a short position for the issuer. Depending on the relevance of the index the issuer would be hedged against a fall in prices and have a known return on the investment made. The investor would face the risk of a downturn but also reap the benefits from an increase in prices.

House Index Linked Notes Drawbacks

Transferring the full downside to the investor is equal to an equity, making it less attractive for asset management compared to a regular bond issuance. The difference between the actual price the construction company will meet and the index value that determines the cost of financing is another crucial factor that needs to be investigated. Still another factor is the risk that there is no development and sale of the land before the maturity of the bond, creating a re-financing risk for the issuer.



Valueguard is a company founded in 2007 that provides insurance solutions to the private house market. The insurance solution is based on a transaction-based index that has been developed together with The Royal Institute of Technology (KTH). In order to disseminate the index values on a high level Valueguard and NASDAQ OMX have entered into a co-operation where NASDAQ OMX provides for monthly index values through existing market data feeds to members and information vendors. Valueguard Index provides the market with analytical tools about the Swedish market for privately owned flats and houses. www.valueguard.se