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FVC Datapricer system overview

1 Aims of the system:

The FVC Datapricer is intended to provide indicative pricing information and product analysis on a variety of derivative backed structured products. The system will either price and analyse a product defined by the user or try to find suitable products given starting conditions.

This system enables comprehensive analysis to be done and has extensive searching capabilities. It has been designed to be easy to use and accessible to product designers and marketing staff as well as research analysts and actuaries. It will be populated with up-to-date pricing and historical data and keep abreast of all important market product types making it an indispensable tool for all those involved in designing and analysing structured products.

Subscription is available on a corporate basis enabling users from the same company to share information and data. Data, analyses and searches can be saved for future use.

2 System set-up: underlyings and products

For most uses of the DataPricer it is necessary to define or identify underlyings and products. For the purposes of DataPricer, structured product solutions are made up of the underlying asset (with its pricing and historical and simulated data definitions) and a product definition (with cash flows and underlying linked returns). We specify this below:

Underlyings

The DataPricer requires an underlying asset on which the derivative product will be based. This will usually be an equity index, single stock or basket. The underlying can contain any combination of implied parameter information, historical data and simulated data.

Implied parameter information (interest rates, volatility information and dividend yields) can be supplied by either FVC or the user. FVC will populate on regular basis approximate pricing information for selected indices.

FVC data is to be taken as indicative and for use of the system only. The user can also define and save their own implied information.

FVC will store and update historical data for several popular underlyings made up of the major equity indices and other regular choices. It is not possible for users to use or store their own historical data.

Simulated parameters, which specify predicted growth rate and volatility can be used to enable theoretical return profiles of the products to be calculated.

Products

- Product builder. You choose from a menu for one of several standard product types and input product details such as maturity, income and capital return profile. The different variations allowed mean that virtually all current market products can be analysed on this system. As new product types come to market, or at the request of its users, FVC will endeavour to add them to the system in order to ensure the widest possible product coverage.
- Named current market offering (as seen on FVC Research website or currently available in the market). FVC will set up major important products and users can access and analyse them quickly and easily.
- FVC examples of standard products. We will keep standard benchmark products on the system for users to see how their pricing changes over time.

3 Using the system

The final component of the DataPricer is its analytic capabilities. This completes the three main concepts of **underlyings**, **products** and **analyses**. There are three principal **routes** to the system, which we list in order of likely usage.

1. If you have selected or specified details of an underlying, and you know the product you wish to analyse then you can immediately price and obtain historical and/or simulated analyses. This is most useful for examining products and variations.
2. If you have an underlying, broad idea of product type together with a target price or price range, then the system can find the closest solutions for you.
3. If you have a real structure price for a given product then an underlying can be set up from the pricing information that it gives. This enables you to analyse other products and get prices that are consistent with your observed real price in the market.

The Datapricer has been designed to be tightly integrated between the various system components allowing rapid analysis of many products. It is easy to switch between the main pages and to store or update information as you go.

3.1 (Completing route 1) Analysing a product

Once a product has been set up, the system converts the product into component cashflows and options, and displays these. This helps a user to see how their product breaks down into constituent parts and to appreciate in more detail how the pricing process works.

If implied pricing parameters are present for the underlying that the product is associated with, the price of the product will be calculated and shown.

Historical and simulated analysis can also be performed if the underlying has the required information, showing the details and probabilities of various outcomes and best and worst performances for either real historical data or assumed rates of growth and volatilities.

3.2 (Completing route 2) Product Finder

The user can choose from some of the standard product types. The idea is to provide a target price or price range and let the system search for products which are in or near the desired price target. The page you are presented with is very similar to that for completing a product definition, except that you supply ranges for up to three of the product's parameters in order to allow the system to search for possible products.

The system then solves for solutions [if any exist] and displays them. These can be then be analysed as products above.

3.3 (Completing route 3) Price Inverter

Another use of the system is to take a real (quoted) price for a product that you have defined in the system and then solve for the volatility level or volatility skew. This can then be converted into an underlying and this underlying used to price other products. Provided these products are sufficiently close in risk profile to the original product it is reasonable to assume that the prices obtained are good estimates of the prices that would be actually be obtained on these structures. Thus a product designer could find the price of many products very quickly and be quite confident that these prices would be close to dealing prices that would be expected consistent with the initial price.

All enquiries to FVC: 020 8334 1146 : ask for the Datapricer team.

Alternatively email enquiries@datapricer.com.

Click for: [System named products](#) [System example products](#) [Colleague products](#)

CREATE NEW PRODUCT

My products - (total 16 products)

[click here for details of my available underlyings](#)

Product name	Description	Type	Underlying	Date/time last modified	Start date	Maturity	Status	Actions
Cliquet Product 1 [summary] [details]	Product created 18 Sep 20...	cliquetgrowth	Index 1	08 Oct 2003 15:06	15 Sep 2003	5y	ANALYSE	delete duplicate
Cliquet Product 2 [summary] [details]	Product created 18 Sep 20...	cliquetgrowth	Index 1	02 Oct 2003 12:50	15 Sep 2003	5y	ANALYSE	delete duplicate
Growth no barrier [summary] [details]	Product created 17 Sep 20...	standardgrowth	Index 1	09 Oct 2003 17:22	15 Sep 2003	5y	ANALYSE	delete duplicate
Growth one barrier [summary] [details]	Product created 16 Sep 20...	standardgrowth	Index 1	08 Oct 2003 11:23	15 Sep 2003	5y	ANALYSE	delete duplicate
Income no barrier [summary] [details]	Product created 15 Sep 20...	income	Index 1	31 Oct 2003 14:30	15 Sep 2003	3y	ANALYSE	delete duplicate
Income one barrier [summary] [details]	Product created 17 Sep 20...	income	Index 1	17 Oct 2003 18:13	15 Sep 2003	3y	ANALYSE	delete duplicate
Income two barrier [summary] [details]	Product created 17 Sep 20...	income	Index 1	08 Oct 2003 15:03	15 Sep 2003	3y	ANALYSE	delete duplicate

Build/edit product - to see summary details for this product [click here](#)

Income no barrier - product type income

income amounts

income times

income unit

maximum capital return

minimum capital return

strike

gearing(s)

barriers

end period type

end period

end period unit

end period frequency

barrier start time

barrier start time unit

barrier sampling frequency

BUILD & ANALYSE



BUILD & RETURN TO PRODUCT PAGE



BUILD & RETURN TO HOME



Product name - Income no barrier. To view product definitions click [summary](#) or [details](#). Start product finder [based on this product](#).

Underlying name - Index 1. To view underlying definitions click [here](#)

Implied data is available so prices will be calculated (including price breakdown)

Product maturity 3 years.

Component no	Type	Maturity (years)	Interest Rate	Price	Details	Unit price
1	cashflow	3	5 %	86.0708	amount=100;	0.8607
2	cashflow	1	5 %	5.7074	amount=6;	0.9512
3	cashflow	2	5 %	5.429	amount=6;	0.9048
4	cashflow	3	5 %	5.1642	amount=6;	0.8607
5	vanilla option	3	5 %	-17.3609	put : gearing=-2; strike=100	8.6805
6	vanilla option	3	5 %	0.1683	put : gearing=2; strike=50	0.0842

Approximate equivalent swap rates: 5.06% (semi-annual) 5.13% (annual)

Total price

85.1788

[Change parameters or view sensitivities](#)

[Show possible outcomes by barrier and spot](#)

Historical analysis available [source: .FTSE]. Simulated analysis available.

Assumed capital growth rate	<input type="text" value="5"/> %
Assumed realised volatility	<input type="text" value="20"/> %
Deposit rate	<input type="text" value="0"/> %
Compounding rate for early cashflows	<input type="text" value="0"/> %
First date to use for data analysis (date shown is earliest date available)	<input type="text" value="03 Jan 1984"/>
Last date to use for data analysis (date shown is latest date available)	<input type="text" value="30 Sep 2003"/>
Direction to move for valid data	<input type="text" value="next"/>
Lowest bucket performance (% p.a.)	<input type="text" value="-5"/> %

Analysis for product Income no barrier (maturity 3 years)



















Bucket number	1	2	3	4	5
Annualised value	95	100	105	110	115
Maturity value	85.7375	100	115.7625	133.1	152.0875

Simulated analysis

Summary statistics

Average return for product	101.7616
Average return for underlying	115.5273
Average return for deposit	100.

Probability distributions

lower value	upper value	prob. product in bucket	prob. (product - underlying) in rel. bucket	prob. (product - deposit) > rel. bucket
Less than	85.74	 21.46	 37.26	 21.46
85.74	100	 8.08	 23.65	 8.08
100	115.76	 9.25	 34.18	 9.25
115.76	133.1	 61.2	 4.92	 61.2
133.1	152.09	 0	 0	 0
152.09	or higher	 0	 0	 0