

Bloomberg

Warrants on Bloomberg

Bloomberg offers a great range of Warrant functions to help our clients find, monitor and analyse warrants, both those existing on the system and those created by the users. The users can customise their assumptions - model type, dividends, risk free interest rate curve; can assess the impact of different scenarios on a warrant or even a combination of warrant, stock and options (with the same underlying); and can “create” analysis and save their warrants (standard or exotic).

This Seminar will demonstrate how these functions can help you analyse warrants, in a more efficient and speedy manner.

The note shows how to find and monitor warrants, how to evaluate them both theoretically and historically, how to assess the volatility, how to run “What-if” scenarios, and how to customise the model for your assumptions:

Monitoring and Finding Options:

WCM, WSRC, WEM, PELS, IPRT, ESRC, MRKT

Pricing:

ALLQ, PCS

Monitoring and Analysis:

NW, NPH, PRPT

Evaluation

DES, WRNG, WRNT

What-ifs:

OSA, WHZ

Volatility Information:

HVG, G, TRMS, SKEW, HIVG, HRH

Changing Base Assumptions:

RDFL, WRNT 3 <GO>

Basket Warrants:

CIX, OVB, OV

Appendix: Excel API link

Note this document is for training purposes only, as an aid for the related Conference. Neither the information nor any opinion expressed constitutes a solicitation of the purchase or sale of securities or commodities. Bloomberg L.P. and its suppliers believe the information herein was obtained from reliable sources but they do not guarantee its accuracy.

Finding Warrants

Warrants related to selected stock.

<HELP> for explanation. P203 Equity WCM
 Hit 1 <GO> to CUSTOMIZE. Use the <TAB> & <PAGE> keys for more data or <MENU>
WARRANT CUSTOM REPORT #1 more * 1 / 3
 WARRANTS ON NESTLE SA-REGISTERED 77 found ↑ page ↓ 3 / 5

Ticker	Exch	Exercise Price	Shares Per Warrant	Expiry Date	Bid Price	Ask Price	Theor. Value 90 d Vol	Implied Volat Mid	Warrant Delta
NEXUS	SW	2800	.00200	09/21/01	.01	1	.602	14.642	.592
NESTI	SW	3100	.00500	11/10/00	.91	.93	.495	26.555	.417
NESLY	SW	3000	.00400	06/16/00	.57	.59	.333	26.350	.432
NESKD	SW	3000	.00500	05/19/00	.65	.67	.375	26.323	.420
NESFD	SW	3400	.00200	03/15/00	.02	.03	.004	25.767	.084
NESQ	SW	3100	.00400	06/16/00	.42	.44	.222	25.650	.355
NESZH	SW	3200	.00200	09/15/00	.23	.25	.118	25.631	.334
NESCL	SW	3400	.00200	06/18/00	.08	.1	.027	25.493	.182
NESY	SW	3000	.00500	02/11/00	.23	.25	.115	25.460	.300
NESME	SW	3200	.00200	06/16/00	.15	.17	.071	25.404	.287
NESEL	SW	3200	.00500	06/09/00	.37	.39	.176	24.997	.281
NESV	SW	3150	.01000	03/15/00	.25	.5	.152	24.600	.212
NESZK	SW	3500	.00500	06/16/00	.11	.12	.040	23.126	.114
NESEC	SW	2900	.00500	05/17/00	.63	.64	.553	20.355	.482
NEXUS	SW	2800	.00200	09/21/01	.01	1	.602	14.642	.592
NSA	FP	320.0	.02000	12/18/00	N.A.	N.A.	31.365	N.A.	N.A.
NESCO	SW	2800	1.00000	06/16/00	2594	2600	151.417	N.A.	N.A.

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 1574-414-1 24-Dec-99 11:38:03

WCM

displays all the warrants related to the current equity or index. WCM shows key data for analysing and comparing warrants. This allows the user to select the more attractive warrants for further analysis. The users can tailor the characteristics displayed to their own requirements.

In this case the user can view implied volatility and theoretical price (based on the 90 day volatility) as well as the terms of the warrant. The data is sorted in order of implied volatility. Note that the data expands sideways for more characteristics as well as down for more warrants.

The NESIC SW warrant looks attractive due to its low volatility and narrow bid/ask spread, we can click onto this warrant to select it for further analysis.

By typing 1 <GO> users are taken to a menu where they can Customise the data 2<GO>; or Sort 3<GO>; as well as customise the report look, print, copy, etc. The template that is created is used in other functions, such as OWDF and WEM, so it is well worth while setting up a few templates. Users can have up to 20. WCM2 would use template 2. (WCM displays WCM1).

<HELP> for explanation. P203 Equity WCM
 Choose the number of the desired option or <MENU> to return to your report
WARRANT CUSTOM REPORT #1 more * 1 / 3
 WARRANTS ON NESTLE SA-REGISTERED 77 found ↑ page ↓ 3 / 5

Selections for WCM Report # 2

HINT
 You can choose options #2,3,4,5,6,7,8 or 9 directly from your report page!

- 2) Customize your data selections.
- 3) Customize the format of your report. (change report name and more!)
- 4) Customize your report
- 5) SORT or RANK data on your report.
- 6) List all 20 reports by name with option to PRINT.
- 7) Copy report template.
- 8) PRINT current report
- 9) View NEWS on securities.

█ to return to report.

Ticker	Exch	Exercise Price	Shares Per Warrant	Expiry Date	Bid Price	Ask Price	Theor. Value 90 d Vol	Implied Volat Mid	Warrant Delta
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NESCL	SW	3400	.00200	06/18/00	.08	.1	.027	25.493	.182
NESY	SW	3000	.00500	02/11/00	.23	.25	.115	25.460	.300
NESME	SW	3200	.00200	06/16/00	.15	.17	.071	25.404	.287
NESEL	SW	3200	.00500	06/09/00	.37	.39	.176	24.997	.281
NESV	SW	3150	.01000	03/15/00	.25	.5	.152	24.600	.212
NESZK	SW	3500	.00500	06/16/00	.11	.12	.040	23.126	.114
NESEC	SW	2900	.00500	05/17/00	.63	.64	.553	20.355	.482
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NSA	FP	320.0	.02000	12/18/00	N.A.	N.A.	31.365	N.A.	N.A.
NESCO	SW	2800	1.00000	06/16/00	2594	2600	151.417	N.A.	N.A.

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 1574-414-1 24-Dec-99 11:46:22

Finding Warrants

General Warrant Search

<HELP> for explanation, <MENU> for similar functions. DL17Msg:IAN JOHNSON
 Press 1 <go> to Search

Saved Searches | Run Search | Definitions | Custom Warrant Search - No. 2 | Page 2 / 5

Warrant Information			Underlying Information		
	Minimum	Maximum		Minimum	Maximum
Price			Price		
Strike Price			90d Hst. Volatility		
Expiration Date	1/ 1/01	/ /	Ticker / Yellow Key		
Issue Date	/ /	/ /	Type	EQUITY	Currency
1st Exercise Date	/ /	/ /			
Issue Amount					
Cap Amount					
Shares/Warrant					
Select Vol Field					

Risk Information		
	Minimum	Maximum
Parity		
% Premium		30
Gearing	2	
Implied Volatility		40
Warrant Delta		
Warrant Gamma		
Price/Strike		

Search Sorting	
	Asc / Desc
Primary	
Secondary	Asc / Desc

Risk, Volume, & Price Related Info as of 11/ 9/00

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 1574-414-1 24-Dec-99 12:22:26

WSRC allows the user to find warrants based on their selected criteria. The list of criteria is extensive covering expiration date, issue dates, currency of underlying, currency of warrant, covered or not, type (equity, currency, index, basket, future, bond,...) As well as warrant valuation criteria eg Premium, Gearing, Implied Volatility,... The user can even select the ticker of the underlying.

The above would select all Swiss franc priced warrants expiring after 1/1/2001, with a premium less than 30, a gearing greater than 2 and an implied volatility of 40 or less. Note there are 5 templates to set up (which will be saved) **WSRC1..WSRC5**.

The resulting search comes up with 3 pages of warrants, the last of which is shown. This uses the same template as those set up for **WCM**. As such these are ordered by Implied volatility. The output is designed to show the basics and allow the user to decide whether to investigate further. Warrant EICO SW <Equity> looks attractive, with

<HELP> for explanation. P203 Equity WEM
 Hit 1 <GO> to CUSTOMIZE. Use the <TAB> & <PAGE> keys for more data or <MENU>
WARRANT CUSTOM REPORT #1 more - 1 / 3
 42 found | page 1 3 / 3

Ticker	Exch Code	Exercise Price	Shares Per Warrant	Expiry Date	Bid Price	Ask Price	Theor. Value 90 d Vol	Implied Volatility Mid	Warrant Delta Mid
ROMA	SW	20000	.0005	02/16/01	.89	.9	542	26.890	.493
ABBAG	SW	123.57	.162	10/15/04	12.45	12.65	12.529	26.446	.878
ABBIX	SW	121.84	.082	10/19/01	5.26	5.38	5.318	26.392	.956
AGERN	SW	110	.2000	04/11/01	2.17	2.19	1.956	25.492	.401
ROGON	SW	19000	.0010	12/21/01	2.35	3.15	2.050	24.879	.585
HOLLT	SW	1971	.0025	08/08/01	.75	1.1	.863	21.778	.714
EICO	SW	100	.1000	11/30/02	.85	1.2	2.009	18.291	.526
RODED	SW	19000	.0100	03/20/01	8.34	8.54	N.A.	N.A.	100.000

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a low implied volatility, a delta just over 50% and a reasonable bid/ask spread.

Once set up WEM will automatically run the search going straight to the output (without the need to go to the selection screen).

Finding warrants

Warrants of shares in a portfolio (or Index)

```

<HELP> for explanation.                                dgp Client PELS
Press 1 <GO> to Start Report. Press RPT <GO> to see report status
EQUITY LINKED SECURITY PORTFOLIO CREATION

Current Portfolio Information
Clnt Name SWISS INDICES                               Clid # 55710
Port Name SWISS MARKET INDEX NEW (SMIO)              (SHRS X 1000)  Part # 25

Enter 'X' to choose a security type and enter portfolio name.
Press 1 <GO> to create portfolio containing chosen security type.
Press RPT <GO> to see report status.

Security Type                                Portfolio Name
-----
  Convertible Bonds
  Convertible Preferreds
  X Warrants                                WARRANTS ON SWISS MARKET INDEX

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1574-414-1 29-Dec-99 16:35:47
  
```

PELS will create a portfolio of all warrants relating to all the share in any selected portfolio. Simply select your portfolio and then enter **PELS <GO>**. Left shows **PELS** after selecting the portfolio relating to the Swiss Market Index.

IPRT (portfolio relating to index) and **ESRC** (Equity Search) can be combined well with **PELS**.

IPRT from an index will call up the relevant portfolio of that index or sub-index. Combined with **PELS** it is easy to find all warrants related to all shares in an index. By using a sub-Index one can specify industry.

*Eg We want to find attractive warrant on European Banks: use **WEI <GO>** to call up all indices. We see **BE500** Index calls up the Bloomberg 500 Index, (most large indices would do eg Eurotop 300 **E300 <Index>**). **GRR** then shows the subgroups eg **BEBANKS** Index is the Banking Sub-Index. **IPRT** calls up the portfolio relating to this, (basically a portfolio of all the major European Banks) and then running **PELS** will bring up all the warrants relating to all these Banking shares.*

MRKT is the Contributor Menu and leads to contributor page.

```

Page                                DGB a Equity GSJA
11:31 GOLDMAN CHF STOCK WARRANTS    PAGE 2 / 10
Switzerland
Valoren Security Strike Cur Expires Bid Ask Prem Delta Time
1) 905054 CCIAD C 61 CHF 01/21/00 4.99 4.99 0.1 1.00 11:22
2) 441068 CIBI C 125 CHF 02/11/00 0.14 0.19 8.5 0.23 11:30
3) 594841 CIBA SPECIAL N5 EUR 02/11/00 0.10 0.12 8.5 0.23 11:30
4) 990880 CIBGS C 160 CHF 03/17/00 0.11 0.13 38.1 0.01 10:44
5) 702795 CIBAU C 150 CHF 06/22/00 0.11 0.13 30.1 0.10 10:25
6) 1000239 CIBAK C 130 CHF 12/08/00 0.80 0.82 18.5 0.39 11:31
7) 988718 CLARIANT N 0 CHF 01/06/00 709.00 711.00 0.02 10:52
8) 440911 CLARD C 775 CHF 02/11/00 0.36 0.39 4.5 0.43 11:29
9) 594840 CLARIANT N 775 EUR 02/11/00 0.24 0.27 4.5 0.43 11:29
10) 967894 CLAIM C 750 CHF 10/20/00 1.56 1.59 9.1 0.58 11:29
11) 988296 CSAM C 275 CHF 02/10/00 0.88 0.91 0.7 0.92 11:21
12) 594700 CS GROUP N 275 EUR 02/10/00 0.56 0.59 0.7 0.92 11:19
13) 988297 CSGTE C 300 CHF 06/08/00 0.73 0.76 6.2 0.66 11:19
14) 594701 CS GROUP N 300 EUR 06/08/00 0.47 0.50 6.1 0.66 11:21
15) 844120 CSAGA C 340 CHF 03/13/01 1.72 1.75 18.1 0.49 11:27

GOLDMAN SACHS
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1574-414-1 30-Dec-99 11:31:11
  
```

The page left shows the sort of data provided by the contributors. If a particular warrant appears interesting the user can click on it to call up the security for further analysis.

*Have we got your favourite contributor enter their name followed by **<HELP>** to find out.*

Finding warrants

ESRC/QSRC can also be used directly to find warrants in the desired country/sector...

DL18 Equity ESRC

Security Search / Portfolio Load Complete. Type RPT <GO> to View Report.

EQUITY SEARCH MAIN MENU for SET # 10

Enter name of search criteria set WARRANTS ON INSURANCE COM

1) DISPLAY RESULTS	2) SAVE CRITERIA	3) CLEAR CRITERIA
4) REPORT SET-UP/SORT	5) COPY SEARCH TEMPLATES	6) PRINT RESULTS
7) SEARCH SUMMARY	8) CREATE A PORTFOLIO	9) PORTFOLIO SEARCH

NUMBER OF SECURITIES FOUND 22

10) Security Type	21) Mrkt Val, Shrhldr Eqt, Shrs Out
11) Eqty Linked Secs/Misc Inf	22) Sales
12) SIC CODES	23) Earnings Per Share
13) Index Members	24) Dividends Per Share
14) Industry Groups	
	25) Valuation Measures
15) Exchanges	26) Per Share Data
16) Countries	27) Profitability Measures
17) States & Provinces	28) Debt/Credit Factors
	29) Activity Ratios
18) Price Data	30) Liquidity Measures
19) Technical Data	
20) Options Data	31) Balance Sheet Analysis
	32) Income Analysis

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1574-414-1 30-Dec-99 15:36:09

The user must first select warrants as the security type. The required country, sector, price data etc can then be selected.

(Note not all sections would be relevant eg index members is not relevant because no warrants are members of any major index.)

Warning: Function is under test - Not formally released !! DL17 Equity QSRC

Enter #<GO> or press <MENU> to save security types that have been selected.

SECURITY TYPES

1) Common/Ordinary	16) Swiss Certificate	
2) Unit	17) German Certificate	33) International Funds
3) Right	18) French Certificate	34) Investment Fund
4) REIT	19) Belgian Certificate	35) Closed End Fund
5) Limited Partnerships	20) Austrian Certificate	
		36) United States Funds
6) Receipts	21) Warrants	37) Mutual Fund/Load
7) American Dep Receipt	22) Equity Warrant	38) Mutual Fund/No Load
8) Global Dep Receipt	23) Index Warrant	39) Money Market
9) Intl Dep Receipt	24) Currency Warrant	
10) British Dep Receipt	25) Basket Warrant	
11) Contl Dep Receipt	26) Int Rate Bond Wrnt	
12) NY Registered Share	27) Int Rate Swap Wrnt	
13) Euro Dep Receipt	28) Int Rate Fut Warrant	
	29) Preferred Warrant	
	30) Index Future Warrant	
14) Certificates	31) Commodity Index Wrnt	
15) Dutch Certificate	32) Commodity Fut Wrnt	

<MENU> to save security types selected

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1574-414-1 30-Dec-99 15:39:20

The selected warrants can be set to a portfolio for further analysis. Alternatively they can run a report from the function. In which case the user can specify his output.

This data can include warrant details as well as theoretical valuations

Monitoring Prices

<HELP> for explanation, <MENU> for similar functions. P203 Comdty **ALLQ**

All Price Provider Quotes
533404 SC NGK SPARK PLUG CW-01

ABBR	Firm Name	Bid	Ask	Last Trade	Time Of Last
BB	JAPAN BROKERS BROKER			4	12/31 02:15
KBFP	KBC FINANCIAL	4.5	5.5	4.5	12/30 11:55
NMDP	NOMURA INTERNATIONAL	3.75	4.75	3.75	12/30 10:01
RUDA	R.W. DAY & CO	4	5	4	12/30 07:43

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 Princeton: 609-279-3000 Singapore: 226-3000 Sydney: 2-9777-6686 Tokyo: 3-3201-8900 Sao Paulo: 11-3048-4500
 1574-414-0 30-Dec-99 14:17:37

ALLQ shows all the quotes from different contributors relating to the selected warrant.

This helps the viewer establish the correct price and to select the best pricing source to use in **PCS**.

PCS Pricing Source selection

<HELP> for explanation. P203 Equity **PCS**

PRICE PROVIDER SEARCH LIST Page 1/ 2
EQUITIES - US DOLLAR WARRANTS

1st	KBFP	KBC FINANCIAL	
2nd	EXCH	EXCHANGE TRADED	Price provider search
3rd	BB	JAPAN BROKERS BROKER	list updated.
4th	MDRL	WARBURG DILLON READ	
5th	MURA	NOMURA	

Your current security, priced according to the search list above
 NGK SPARK PLUG CW-01 (533404 SC) PRICE 4.5 \$ KBFP

Possible pricing providers for: EQUITIES - US DOLLAR WARRANTS

PCS	Provider	Pricing	PCS	Provider	Pricing
CLUS	CREDIT LYONNAIS NY	IntraDay	MILA	MILAN EXCH	Some Intdy
HSBT	HSBC BANK PLC	IntraDay	CLAA	CREDIT LYONNAIS SWIS	Daily
BB	JAPAN BROKERS BROKER	IntraDay	HSJC	HSBC	Daily
KBFP	KBC FINANCIAL	IntraDay	ISMA	ISMA	Daily
RUDA	R.W. DAY & CO	IntraDay	MURA	NOMURA	Daily
AABP	ABN-AMRO HOARE GOVET	Some Intdy	BCJP	BARCLAYS CAPITAL-JP	Daily
CSZX	CREDIT SUISSE SWISS	Some Intdy	CLTK	CREDIT LYONNAIS TOKY	Daily

Enter **MRKT <GO>** to view all pricing contributors

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 Princeton: 609-279-3000 Singapore: 226-3000 Sydney: 2-9777-6686 Tokyo: 3-3201-8900 Sao Paulo: 11-3048-4500
 1574-414-0 30-Dec-99 14:36:19

Many warrants are traded off - exchange, it is therefore important that the users can specify their preferred pricing source. This can be done in **PCS**. The price source selected for the warrant will be used through out the Bloomberg.

In this example the price would come from KBC, if they are not making a price it would come from exchange, if there is no exchange quote then it would go to Japanese Brokers Broker, etc. If none of them made a price then the price would be Bloomberg Generic.

Monitoring - Portfolio

Using the Portfolio functionality adds to the ability to monitor and review y stocks at one time. To create a portfolio use **PRTA**, or use the output of the searches earlier (that can be downloaded).

Enter 21 <GO> for Portfolio News Defaults Client **NPH**
 Portfolio Headlines. Enter Story # or <PAGE> For More

1) FORTIS AG-CW 12/20/2000 (AGFBW)

2) BN 11:57 Belgian Stocks Fall; KBC Drops as European Bonds Extend Losses
 3) BN 11:55 Dutch Stocks Decline; Baan Plunges After CEO Coleman Resigns
 4) IBE 9:43 IBES EPS Forecast-Broker Detail-FORTIS B(FORBB)

5) ASSICURAZ GENERALI-UTS 2001(GW)

6) ADX 7:35 ANALYSE--Helaba Trust stuff Generali-Aktie auf «neutral» hoch
 7) BN 6:01 Italian Equity Preview: Insurers, Class, Popolare Milano, Snai
 8) BN 1/03 Italian Equity Preview: Insurers, Class, Popolare Milano, Snai

9) MUENCHENER RUECKVERSICH-C(MUVA)

10) VUD 11:57 MARKT/Versicherer behaupten sich in schwachem Umfeld
 11) IBE 9:42 I/B/E/S Estimates for MUN RUCKVERS 50% (Tkr: MUV28R)
 12) MIXR 9:37 MULTEK:(MSDW)GERMAN TAX PROPOSALS UPGRADING ALLIANZ TO N [5]

13) AGF-ASSUR GEN DE FRANCE-CV(WAF)

14) ADF 8:50 Aurel Leven reste neutre sur AGF
 15) ADF 1/03 SG Securities est positif sur AGF
 16) JIBR 1/03 (SOCGEN) Jan 03 EUROPEAN DAILY FAX ON 03.01.00

17) MERRILL LY-CW2000 WINTER(WINLO)

18) BN 10:52 Swiss Stocks Decline, Led by CS Group and UBS; Sulzer Rises
 19) AFU 9:08 CSFB publiziert neue Fokus-Liste
 20) BN 8:35 Swiss Stocks Decline, Led by CS Group and UBS; Netinvest Rises

Portfolio: ID# 1832 BLOOMBERG LONDON OFFICE
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 Price/fon 609-279-3000 Singapore 226-3000 Sydney 2-9777-8886 Tokyo 3-3201-8900 Sao Paulo 11-3048-4500
 1574-414-1 04-Jan-00 12:00:20

NPH shows the news related to all the stocks in the portfolio. (The default is to show the last 2 days and up to 3 stories however this can be changed eg **NPH TODAY 6 <GO>** would show up to 6 news stories for today only.)

<HELP> for explanation, <MENU> for similar functions. dgp Client **JPM**
 Hit 2 <PAGE> to view column choices
WARRANT PORTFOLIO MONITOR12:03 PAGE 1 OF 4
 Portfolio name: WARRANTS ON INSURANCE COM

CLID: 20472	51 C	53 C	5 C m	68 C m	45 C m	46 C m	91 C	21 C
Port#: 1832	Current	Current	Current	Current	Current	Current	Current	Current
TICKERS	STRIKE	EXPIRATION DATE	LAST TRADE	UNDERLYING BEST PRICE	GEARING	% PREMIUM	90-DAY HISTORICAL VOLATILITY	IMPLIED VOLATILITY BEST
1) AGFBW BB	6.79	12/20/0	250.00	34.16	1.23	1.19	23.36	121.333
2) GW IM	1.71	4/30/1	35.09	30.9	1.06	-0.06	29.48	151.889
3) MUVA GR	163.61	6/30/2	45.00	235.5	2.56	0.54	41.7	n.a.
4) OPNM GR	125.74	12/15/0	22.54	235.5	2.12	-0.47	41.7	n.a.
5) OPNN GR	150.89	12/15/0	17.90	235.5	2.67	1.46	41.7	n.a.
6) OPTA GR	226.03	12/15/0	99.04	315.00	3.24	2.64	33.87	n.a.
7) OPTB GR	251.19	12/15/0	80.58	315.00	3.98	4.86	33.87	20.188
8) RAELY SW	900.00	2/18/0	.30	900.00	.30	3.33	14.1	23.024
9) RUKGO SW	2800.00	5/19/0	1.95	3119	7.17	3.72	15.2	31.483
10) RUKLY SW	3500.00	2/18/0	.03	3119	207.93	12.7	15.2	25.656
11) RUKTO SW	3100.00	3/17/0	1.42	3119	10.57	4.78	15.2	27.441
12) RUKUK SW	2000.00	5/05/0	24.30	3119	2.57	3.08	15.2	75.139
13) SHAZ FP	32.01	2/29/0	2.17	51.95	2.39	3.4	17.45	122.62
14) SGL FP	48.09	8/24/0	3.82	132.1	1.54	1.49	24.97	99.728
15) SOYS GR	950.00	4/28/0	.18	882	30.53	10.98	18.73	26.503

Total number of securities found: 22
 Hit QWDF Go to Change Default Choices. m - monitoring choice
 Copyright 1999 BLOOMBERG L.P. Frankfurt 1:69-920410 Hong Kong 2:977-6000 London 171-330-7500 New York 212-318-2000
 Price/fon 609-279-3000 Singapore 226-3000 Sydney 2-9777-8886 Tokyo 3-3201-8900 Sao Paulo 11-3048-4500
 1574-414-1 04-Jan-00 12:00:34

WPM Warrant monitor will give and quick and easy view of the warrants in the portfolio.

<HELP> for explanation. dgp Client **PRPT**
 Print job sent to printer.
CUSTOM REPORT WRITER

Client: 20472 Name: BLOOMBERG LONDON OFFICE or run on
 Portfolio: 1832 Name: WARRANTS ON INSURANCE COM macro

Print report when you run it? Y Report Currency: SEC
 Your custom reports Ready-made reports

Run Up	Set	Type	Report Name	View / Run Copy
1	21	Both	CONVERTS	Fixed Income
2	22	Both	DIVIDENDS	Duration Sort 1-Way
3	23	Equity	EPS/PE	Industry Sort
4	24	Both	Industry Sort	Duration Rank 0-Way
5	25	Both	CONVERTIBLE REPORT	Currency Sort
6	26	Both	CONVERT	Equity
7	27	Equity	OPTIONS	Rank by Sales/Revenue
8	28	Equity	PE	Equity Tech - RSI Sort
9	29	Equity	INCOME STATEMENT RATIO	Rank by OTD Returns
10	30	Equity	Sector Distribution	Sector Distribution
11	31	Both	PREF	Fixed Income and Equity
12	32	Equity	WARRANTS	Industry Sort
	33		New Report	Currency Sort
				Country Sort

99 <GO> for more ready-made reports.
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 Price/fon 609-279-3000 Singapore 226-3000 Sydney 2-9777-8886 Tokyo 3-3201-8900 Sao Paulo 11-3048-4500
 1574-414-1 04-Jan-00 12:00:01

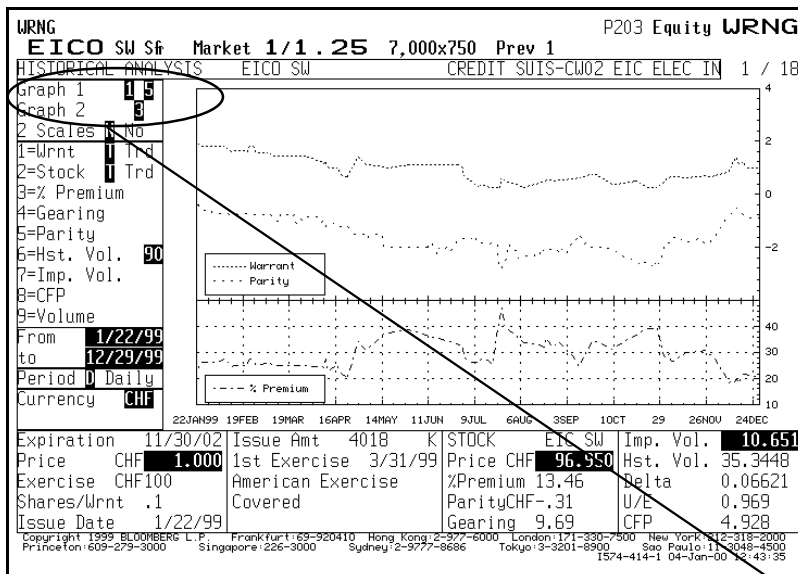
PRPT allows the user to produce portfolio report templates, so that once set up the same report will be produced for each portfolio run. The reports on the left hand side are the users' own reports tailored specifically to their needs; those on the right are pre-set up ones.

Evaluation

Page EICO SW Sfr Market 1/1.25 7,000x750 Prev 1	P203 Equity DES																																																													
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<table border="1"> <thead> <tr> <th colspan="2">WARRANT</th> <th colspan="2">UNDERLYING</th> </tr> </thead> <tbody> <tr> <td>PRICE CHF</td> <td>1</td> <td>TYPE</td> <td>EQUITY</td> </tr> <tr> <td>HIGH 01/22 CHF</td> <td>2.05</td> <td>COVERED AMERICAN CALL</td> <td>PRICE CHF</td> </tr> <tr> <td>LOW 10/28 CHF</td> <td>.15</td> <td>STRIKE CHF</td> <td>100.0000</td> </tr> <tr> <td>YTD CHANGE CHF</td> <td></td> <td>SHARES/WARRANT</td> <td>.10000</td> </tr> <tr> <td>% CHANGE</td> <td></td> <td>EXPIRATION</td> <td>11/30/02</td> </tr> <tr> <td>1) WRNG %PREMIUM</td> <td>13.461</td> <td>1ST EXERCISE</td> <td>3/31/99</td> </tr> <tr> <td>GEARING</td> <td>9.695</td> <td>ISSUE DATE</td> <td>1/22/99</td> </tr> <tr> <td>PARITY CHF</td> <td>-.305</td> <td>ISSUE AMT</td> <td>4018K</td> </tr> <tr> <td>CFP</td> <td>4.928</td> <td>ISSUER</td> <td>Credit Suisse</td> </tr> <tr> <td>UNDER/STRIKE</td> <td>.969</td> <td></td> <td></td> </tr> <tr> <td>2) OVX IMP VOL.</td> <td>10.651</td> <td></td> <td></td> </tr> <tr> <td>DELTA</td> <td>.06621</td> <td></td> <td></td> </tr> <tr> <td>NORMALIZED DELTA</td> <td>.66215</td> <td></td> <td></td> </tr> <tr> <td>GAMMA</td> <td>.00207</td> <td></td> <td></td> </tr> </tbody> </table>			WARRANT		UNDERLYING		PRICE CHF	1	TYPE	EQUITY	HIGH 01/22 CHF	2.05	COVERED AMERICAN CALL	PRICE CHF	LOW 10/28 CHF	.15	STRIKE CHF	100.0000	YTD CHANGE CHF		SHARES/WARRANT	.10000	% CHANGE		EXPIRATION	11/30/02	1) WRNG %PREMIUM	13.461	1ST EXERCISE	3/31/99	GEARING	9.695	ISSUE DATE	1/22/99	PARITY CHF	-.305	ISSUE AMT	4018K	CFP	4.928	ISSUER	Credit Suisse	UNDER/STRIKE	.969			2) OVX IMP VOL.	10.651			DELTA	.06621			NORMALIZED DELTA	.66215			GAMMA	.00207		
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<small>Copyright 1999 BLOOMBERG L.P. Frankfurt: 69-320410 Hong Kong: 2-977-6000 London: 171-330-7500 New York: 212-318-2000 Princeton: 609-279-3000 Singapore: 226-3000 Sydney: 2-9777-8686 Tokyo: 3-3201-8900 Sao Paulo: 11-3048-4500 1574-414-1 04-Jan-00 12:37:00</small>																																																														

DES the main description page displays key details. The left hand side shows valuation measures such as implied volatility, delta and normalised delta. "delta" shows the price move of the warrant price for moving the share price by 1; "normalised delta" normalises this to adjust for currency and shares per warrant etc. The middle section shows the terms of the warrant and the right hand section shows underlying details.

WRNG shows the warrant price and parity in the first graph and premium (or implied



volatility in the lower). It graphically explains how the warrant has acted in the past as the share price moves. This is very useful to assess how the warrant will move in the future, particularly useful for less efficient markets where theoretical models may not explain current price movement.

In this case we can see that the premium has stayed above 20% even at high share prices.

Note the user can specify which characteristics to display, eg "7" would show implied volatility. Note, bottom part incorporates a calculator, giving premium, implied volatility etc.

Evaluation Warrant Calculator

<HELP> for explanation, <MENU> for similar functions. P203 Equity OVX

Warrant Option Valuation Page 1 of 2

EICO SW CREDIT SUIS-CW02 EIC ELEC Currency: CHF

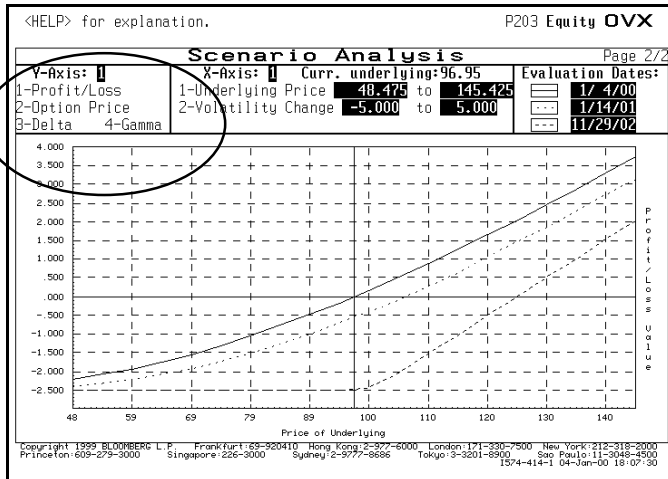
Price of EIC SW Equity 96.95
 Strike: 100 103.146%
 Exercise Type: A American (CHF)Rate: 3.096% Continuous
 Put or Call: C Call
 Shares/Warrant: 0.10000 Dilutive?: N Not Dilutive
 Shares Outstanding: M Warrants Outstanding: K
 Capped?: N Call Cap: 0.00
 Days to Expiration: 1060 Model Type: A Default
 Trade Date: 1/ 4/00 Option Curr: CHF 1-Fixed/2-Float:
 First Exercise: 3/31/99 Reinv. Rate: % CHF/CHF:
 Expiration Date: 11/30/02 Correlation: Volatility: %
 Settlement Date: 1/ 4/00 Warrant Price Type: 0 Absolute
 Exercise Delay: 0 Face Amount: 100

Option Valuation and Risk Parameters			Dividends	
Value	Percent	Time Value	Dividend Yield	Amount
Price: 1	10.315%	1.00000	0.00%	
Volatility: 10.726%		0.00076	Ex-Date	
Delta: 0.06539	Premium: 13.4		No dividends proj.	
Gamma: 0.00206	Parity: -0.30500			
Vega: 0.06075	Gearing: 9.69500			
	Norm. Delta: 0.65985			

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 1574-414-1 04-Jan-00 17:48:39

WRNT the warrant calculator, shows the warrant price implies a volatility well below historic levels. By putting an estimate of what volatility is expected to be, say 35% (based on 90 historic) in the volatility box the theoretical price is shown to be 2.5, suggesting the warrant is cheap.

Note the function pulls in all relevant information – the warrant terms including dilution details (when relevant); the interest rate; the underlying share’s IBES dividend estimates.



To view how the P&L (or value, delta, or gamma) changes over different share prices (or volatilities) simply page forward. The values are given over three dates allowing the user to see the effect of time decay.

Note to construct a warrant for the underlying share as the selected security, again use WRNT. The user can then set up the terms as desired and save the warrant by typing 1<GO>. Note also OVX (instead of WRNT will allow the user to create an exotic option. Use SYNS to find your existing self created warrants and options.

<HELP> for explanation. DL18 Equity OVX

Enter 1 <GO> to save, 2 <GO> to send to another user.

Standard Option Valuation Page 1/2

RUKN SW SCHU RUECKVERSICHERUNG-R Currency: CHF

Price of RUKN SW Equity 40.29
 Strike: 80.29 100.000% (CHF)Rate: 1.498% Continuous
 Exercise Type: A American
 Put or Call: C Call
 Shares/Warrant: 10 Perms: 1 User
 Time to Expiration: 7/ 1/99
 Settlement Date: 7/ 3/00
 Description: SCHU RUECKVERSIC South. Optn

Option Valuation and Risk Parameters			Dividends	
Value	Percent	Time Value	Dividend Yield	Amount
Price: 20.455	50.00%	299.46277	1.58%	
Volatility: 20.455%		0.24551	Ex-Date	
Delta: 0.53541	Premium: 48.000CHF			
Gamma: 0.00950	Parity: 0.00000			
Vega: 14.65082	Gearing: 10.11478			

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 1574-414-1 04-Jan-00 18:07:30

<HELP> for explanation. DL18 Equity OVX

EXOTIC OPTION VALUATION

Enter 1 <GO> to search for a specific option type
 2 <GO> for an expanded menu of all available option models

AVAILABLE OPTION CALCULATORS: Enter # <GO> to select

3) STANDARD	Basic, Vanilla options	11) LOOKBACK	Fixed, floating strike Lookbacks, Ladders
4) AMBIVANT	Dilutive, cross currency	12) SPREAD	Two asset spreads, Exchange Options.
5) CROSS-CURRENCY	Fixed (Quanto) and Flexible (Flexo) exchange rates	13) CHOUSER	Simple, Complex
6) EXECUTIVE	Employee options (dilutive).	14) COMPOUND	Calls on calls, calls on puts
7) FINANCED	Dilutive, cross-currency, caps	15) PIONEER	Options on a multiple, squared power
8) BARRIER	Single, double barriers, Knockouts, Knockins	16) DIGITAL BARRIER	Knockouts, Knockins
9) ASIAN (AVERAGE)	Arithmetic, geometric	17) RATCHET (CLIQUE)	
10) DIGITAL (DOWN)	Average rate and strike	18) RANGE ACCRUAL	Daily Accrual Range Trade
Cash or Nothing, Asset or Nothing	20) LTD COLOR RAINBOW OPTIONS (OVXT)		

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 1574-414-1 04-Jan-00 18:07:30

What Ifs

OSA is an excellent tool to evaluate “What-if” scenarios for a combination of warrants, underlying share and related options. It can incorporate warrants, exchange traded options, user created options and a position in the underlying share.

<HELP> for explanation. dgp Equity OSA

Option Portfolio Scenario Analysis Pg 1 of 1

Underlying: NESN SW Equity NFSTIF SA-REGIS Currency: CHF

Hit # GO to select 1 Graph Scenario Results 3 Update/Create/Import Portfolio 5-9 In Depth Scenario Definition
 2 Add/Update/Delete Positions 4 View Current Positions 10 Change Option Defaults

Portfolio: Client ID: Port.ID:
 Profit/Loss From Market Scale 1.00

Products	Securities	Market Value	Share Equivalent	Total Delta	Total Gamma	Total Vega
Equity	2	-1,818.00	-14,089.79	-5.045	-.007	-65.895

Scenarios: Int. Days Volatility NESN SW Equity Current Price 2793
 #Und. Price Rate Later Call Put Shares: 0 Port. Cost: 2793

M)	Profit/Loss	Percent	Delta	Gamma
5)	-1,152.91	-63.4%	-6.451	-.006
6)	-539.07	-29.7%	-5.810	-.007
7)	+6.38	+4%	-5.090	-.008
8)	+477.23	+26.3%	-4.313	-.008
9)	+868.37	+47.8%	-3.508	-.008

Ticker Symbol	Price/Vol/Cost	Position	Ticker Symbol	Price/Vol/Cost	Position
NESIC SW Equity	P .46	200			
NESN SW 6 C2800 Equity	P 191	-1			

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 1574-414-1 05-Jan-00 13:29:55

In this example, we are looking at a strategy of purchasing a warrant and selling options against this.

The commands (circled at the top) show 2 <GO> to enter Exchange Traded options position This takes the user to a screen to select the relevant options, with quantity and price. Alternatively these can be entered directly, as necessary to enter warrants and user created warrants.

The user can specify 5 different scenarios to try “what-ifs” and view the associated P&L, percentage P&L, delta and gamma. Either tab in and change the individual scenarios or entering a value in the “M” (master) column to change all the columns.

<HELP> for explanation. dgp Equity OSA

Position Detail Page 1 / 1

Underlying	Position	Price	Mkt. Val	Cost	Hist. Volatility
NESN SW Equity	0	2793	.00	2793	19.73
Exp. 5/17/0	Rate 1.82%	Exer.Amer	Cont. Sz. 1.00	Divs. 0.00	
Warrant	Position	Price	Cost	Imp. Volat.	Delta
NWESIC SW	200	.46	19.2241X	.0021	.00001
Exp. 6/16/0	Rate 1.88%	Exer.Amer	Cont. Sz. 10.00	Divs. 39.84	
Option	Position	Price	Cost	Imp. Volat.	Delta
NWESN SW 6 C2800	-1	191	191	25.4145X	.5462
				.00087	7.2396
					2.006

Total Mkt. Val. -1,818.00 Total Delta -5.045 Total Gamma -.007

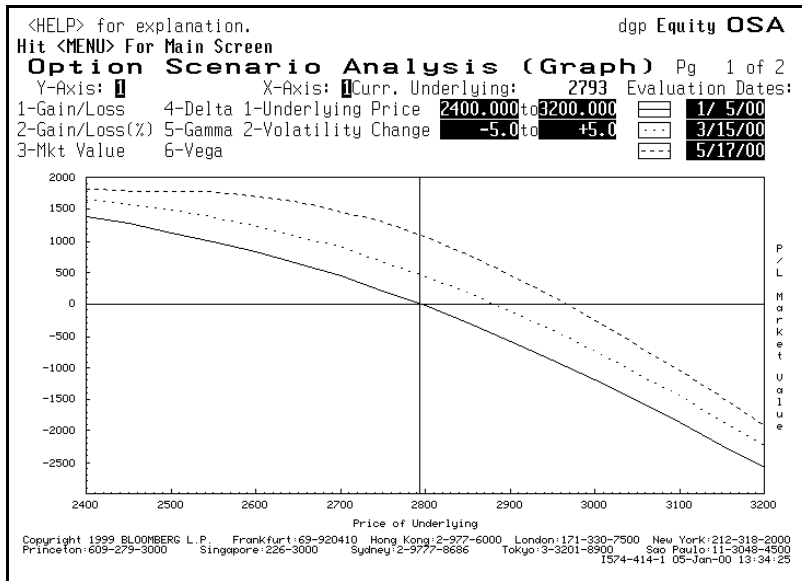
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 Princeton: 609-279-3000 Singapore: 226-3000 Sydney: 2-9777-8686 Tokyo: 3-3201-8900 Sao Paulo: 11-3048-4500
 1574-414-1 05-Jan-00 13:29:55

The current position can be reviewed in more detail by typing 4 <GO> as shown.

Each individual scenario can be analysed by typing the relevant row number (5-9) followed by the <GO> key. This aids understanding the option position and also increases the transparency of the function.

What Ifs

OSA continue:



1 <GO> displays the profit, (or option price, delta, Gamma, and Vega) graphed against a share price or volatility change.

The three lines depict values at three different dates, clearly displaying the impact of time decay..

Again anything highlighted can be changed by the user.

OSA allows the strategy to be saved to a portfolio, or retrieved from a portfolio. The user can display P& L from current Market or from Portfolio cost, by typing "M" or "P" (about quarter of the way down screen on left).

The user can also enter his share position to be included in the analysis (box in middle of main screen).

<HELP> for explanation. P203 Equity WHZ

WARRANT HORIZON ANALYSIS

Description

Warrant Price	CHF	1.000	Warrant Ticker	EICO SW
Underlying Price	CHF	96.950	Underlying Ticker	EIC SW
Strike Price	CHF	100.000	Issue	01/22/99
Shares/Warrant		.100	Expire	11/30/02
F/X Rate	CHF/CHF	(1.0000)	#Wrnts	1
			Cost	CHF 1.000

Horizon Calculations

Warrant Price Calculation Based on: 1- Premium 2- Implied Volatility

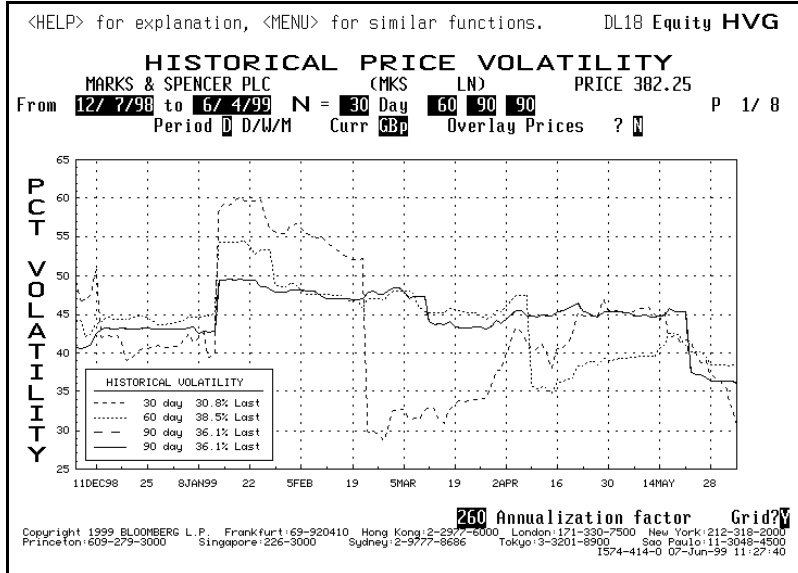
Step	Current	I	II	III	IV	V
EIC SW	96.950	87.255	92.102	101.797	106.649	111.492
% Premium	13.461	13.461	13.461	13.461	13.461	13.461
F/X Rate	1.0000					
Parity	- .305	-1.27	-0.79	0.18	0.66	1.15
EICO SW	1.000	.001	.450	1.550	2.100	2.650
Gearing	9.695	n.a.	20.467	6.568	5.078	4.207
Imp. Vol.	10.691	1.242	6.592	14.298	17.655	20.777
Fin. Rate	.031	.031	.031	.031	.031	.031
Days to Exp.	1060	1060	1060	1060	1060	1060
Warrant Delta	.0661	.0016	.0551	.0713	.0746	.0769
Delta	.6611	.0157	.5511	.7134	.7460	.7691
P & L	-13.050	-11.745	-12.398	-13.703	-14.355	-15.008
Underlying/Strike	.9695	.8725	.9210	1.0180	1.0664	1.1149

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1574-414-2 05-Jan-00 9:33:32

WHZ shows the warrant value as terms vary through 5 different scenarios. The user can specify whether the warrant price should be calculated via the % premium or volatility. The user can specify a step difference between different scenarios. In the example, the volatility is held constant and the share price moves in steps of 5%.

Volatility Information

Analysing historic volatility is an important starting point to estimate what volatility is expected be over the warrant life.



HVG displays historic volatility over a period of time. Changes of volatility over time can be observed to help check for seasonal effects and to assess the consistency (or volatility) of the volatility itself.

The defaults for HVG can be changed in PDF <GO> Graph/Technicals (4).

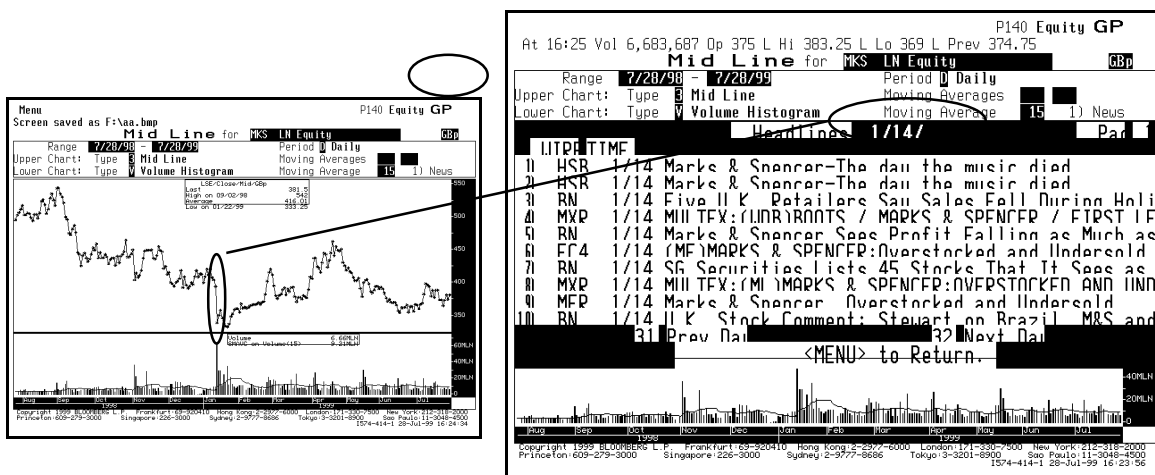
In the example M & S volatility has reduced dramatically. The user may want to do some sensitivity analysis, to assess the probability that the volatility will increase again.

One can use the Bloomberg to find out what caused the volatility to jump so high in the past, to assess whether it may continue or reoccur in the future. GP displays the date associated with the cursor position; type 1 <GO> to call news and enter the associated date.

(Alternatively type CN 01/14/99 <GO> can be used to investigate the news at that date.)

The latest software has a News button to display news relating cursor position.

In this example we see the sharp price move being due to Christmas Sales report – indicating an important seasonal effect – not relevant when viewing July options, but would be if looking at January options.



Volatility Information

<HELP> for explanation, <MENU> for similar functions. DL18 Equity TRMS

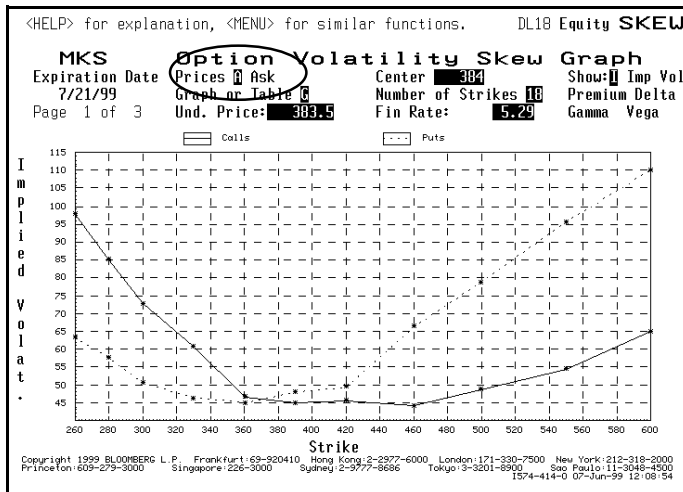
MKS LN	Equity	Term	Defaults			
Days	Exp	Rates	Dvd Flow	Hst Vols	Call Vols	Put Vols
1.5 MO	7/21/99	5.360	0.000	32.193 (32 day)	44.154	43.246
3.0 MO	9/ 6/99	5.360	0.000	37.460 (64 day)	42.871	41.911
4.5 MO	10/20/99	5.366	0.000	35.787 (96 day)	41.670	40.661
6.1 MO	12/ 6/99	5.374	3.830	42.378 (129 day)	40.531	40.523
7.5 MO	1/19/00	5.413	3.830	43.786 (157 day)	39.464	40.394
12.2 MO	6/ 6/00	5.541	14.907	39.523 (252 day)		
1.5 YR	12/ 5/00	5.665	18.821	33.480 (78 wk)		
2.0 YR	6/ 6/01	5.789	30.138	33.885 (104 wk)		
3.0 YR	6/ 6/02	5.989	46.138	29.672 (156 wk)		
4.0 YR	6/ 6/03	6.040	62.910	27.795 (208 wk)		
5.0 YR	6/ 5/04	6.020	80.490	26.172 (260 wk)		
7.0 YR	6/ 5/06	5.980	118.236	18.418 (84 mo)		
10.0 YR	6/ 4/09	5.910	181.960	20.933 (120 mo)		

Orange - actual imp. vols
Amber - interpolated vols

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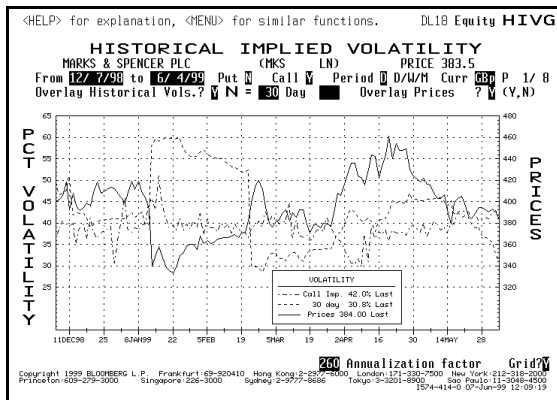
TRMS displays an even longer dated summary of volatility showing up to 10 year volatility. If registered options exist TRMS shows the implied volatility for at the money options.

As warrant tend to be long term this gives further information to help understand and predict volatility over the life of the warrant and complements HVG well.

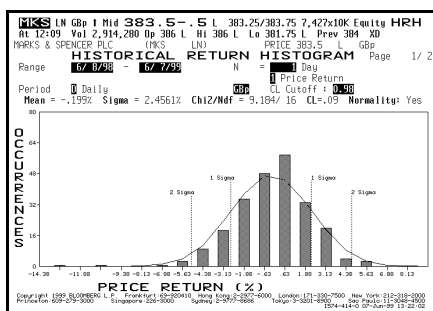


Again when options exist SKEW displays the different implied volatility across the different strikes: displaying the "volatility smile". At a glance one can see what is occurring in the market place and assess how the estimated volatility for our warrant needs to be tweaked for its strike.

The user can specify whether the volatility is calculated from the Bid, Ask, Last, Mid or Best.



HIVG displays the implied volatility (with the historic). The volatility is based on the near month at the money option, (using the weighted average if between strikes). Providing more information to help estimating volatility in the future showing how market expectations have changed and to assess how accurate implied volatility has been historically.



HRH helps determine whether the distribution of the return of the underlying shares follows a normal distribution. If not the user should take care when using any of the option models. For example, if the extreme tails are more likely than predicted by the distribution the user should tweak up the volatility when analysing warrant that is out

Changing Base Assumptions

It is easy within the Bloomberg to change the assumptions used by most of the functions. The most common requirements are to specify the dividends and the interest rate curve.

RDFL

The screenshot shows the Bloomberg terminal window for 'DL18 Equity RDFL'. The main title is 'EQUITY DERIVATIVE INTEREST RATE CURVE DEFAULTS'. Below this, it specifies 'PRODUCT: Equity Options' and 'CURRENCY: CHF SWISS FRAN'. The 'Curve' is set to '157 Swiss Franc Swap'. There are two columns for 'CURVE TITLES' with the following entries:

NUM	CURVE TITLES	NUM	CURVE TITLES
182	Swiss Government		
157	Swiss Franc Swap		

At the bottom, there is a footer with contact information for Bloomberg L.P. in various cities: Frankfurt, Hong Kong, London, New York, Singapore, Sydney, and Tokyo.

RDFL allows the user to specify the yield curve used to determine the relevant interest rate. The user specifies the type of option (index, stock or warrant) and the currency and then selects the relevant yield curve for that selection.

In this example the user has selected to base the interest rates of the Swiss swap curve for Swiss equity options.

The “Buy side” tends to use the government curve as this represents the risk-free return for an alternative investment. The “Sell side” tend to use the Swap curve as it represents their cost of borrowing.

Dividends can be changed and saved within the **WRNT** and **OV** – by typing 3<GO> within the function and filling in the relevant data. Default dividends will be based on IBES estimates.

The screenshot shows the Bloomberg terminal window for 'P203 Equity OVX'. The main title is 'Warrant Option Valuation' and 'OV Dividend Defaults'. It includes several input fields and a table for 'Projected Dividend Stream'.

Key fields include:

- Use: 1 - dividend yield, 2 - discrete dividend points
- Dividend Yield: 0.00%
- Use which dvds:
- 12 Month yield: *****
- Indicated yield: 0.00%
- Hit 3 for growth: 0.00%

There are also checkboxes for 'Save dvd estimates?' and 'Use growth rate in calc?'. Below these is a table for 'Projected Dividend Stream' with columns for 'Date', 'Dividend', and 'Yield'. The table is mostly filled with slashes, indicating missing or zero values.

At the bottom, there is a footer with contact information for Bloomberg L.P. in various cities: Frankfurt, Hong Kong, London, New York, Singapore, Sydney, and Tokyo.

Basket Warrant – Creating the Basket

CIX allows the user to create their own ticker, enabling the evaluation of baskets.

```

<HELP> for explanation, <MENU> for similar functions.      P203 Index CIXU
Enter Data, Hit <GO>
CIXU -- Custom Index eXpression
Permissions: 2 Firm
                2 <GO> to enter notes
                66 <GO> to send to another user

Ticker: .LORRY
Short Name: LOGISTIC STOCK BASKET      GBP
                Record Last Updated on 7/23/1999
Period: Daily      Current price of this index: 118,240
(TBG LN Equity * 4 + NFC LN Equity * 70 + TDG LN Equity * 15) / 211.16

Use + to add, - to subtract, * to multiply, / to divide, ** for an exponent
Use YIELD[*], where * is a security, to get yield, where applicable
Example: 'NKY <Index> / JYS <Crncy>' to view value of Nikkei Index in $
Copyright 2000 BLOOMBERG L.P. Frankfurt:69-320410 Hong Kong:2-977-6000 London:171-330-7500 New York:212-318-2000
Princeton:609-279-3000 Singapore:226-3000 Sydney:2-9777-8686 Tokyo:3-3201-8900 Sao Paulo:11-3048-4500
1574-414-1 10-Feb-00 15:09:35

```

In this example, a basket of logistic (distribution) companies – these are market cap weighted and rebased at creation to 100.

The ticker . **LORRY <Index>** will draw in your new “security” on which functions can then be run, eg **GP, HVG**, etc.

Note for the purposes of Basket Warrants the equity can be translated into the currency of the warrant only, by multiplying by the relevant currency rate (using the currency ticker). This will be done automatically by the Basket Warrant Calculator.

Simply run OV on the basket (or call up an existing basket warrant and call up OV), eg **LERF GR <Equity> OV <GO>**.

Note: to find existing expressions use CIX.

OV (Basket options)

OV

Warning: Function is under test - Not formally released !! P203 Index **OVB**

Basket Option Valuation

.LORRY <Index> LOGISTIC STOCK BASKET GBP

Calculation

Calculate: 1	Warrant Price	Basket Delta: 0.55452
Model: 1	Multi-Security Model	Basket Gamma: 1.99523
Warrant Price: GBP 7.922896		Basket Vega: 0.19857
Basket Value: GBP 96.1001		Basket Rho: 0.11288
Basket Dividend Yield: 3.2517%		Basket Theta: 0.04538
Basket Volatility: 39.6942%		% Premium: 8.24442
		Parity: 0.00000
		Gearing: 12.12942

Warrant Structure

Put or Call: **C** Call
 Exercise Type: **E** European
 Expiration Date: **12/22/99** Days: **90**
 Strike: GBP **96.1001** **100.000%**
 Shares/Warrant: **1.0000**
 Capped?: **N** Cap: **0.0000**

Trade Parameters

Trade Date: **9/23/99**
 Settlement Date: **9/23/99**
 Exercise Delay: **0** days
 Finance Rate: GBP **5.2300%**
 Compounding Frequency: **S** Semiannual

1 <GO> for Basket Details
 2 <GO> for Correlation Matrix
 4 <GO> for Basket Hedge Parameters
 5 <GO> to Update CIX Expression
 6 <GO> for HVT

Copyright 1999 BLOOMBERG L.P. Frankfurt: 69-920410 Hong Kong: 2-977-6000 London: 171-330-7500 New York: 212-318-2000
 Princeton: 609-279-3000 Singapore: 226-3000 Sydney: 2-977-8686 Tokyo: 3-3201-8900 Sao Paulo: 11-3048-4500
 1574-414-0 23-Sep-99 8:49:58

Basket Component Details

Underlying Basket: .LORRY <Index> Page 1 / 1

Security	Weight	Shares	Price	Val	Dividend	Yield
TSG LN Equity	10.3022	0.0189	58.800	1.1092	0.0000	0.0000
MFC LN Equity	71.2332	0.3315	88.000	29.5389	0.0000	0.0000
TSG LN Equity	18.4652	0.0719	65.000	4.6521	0.0000	0.0000

CIX Expression:
 TSG LN Equity * 10 + MFC LN Equity * 70 + TSG LN Equity * 10 = 211.34

Warrant Price: GBP 7.922896
 Basket Value: GBP 96.1001

Basket Correlation Matrix

Basket: .LORRY <Index> Page 1 / 1
 Date Range: 9/23/98 - 9/17/99 Observations: 52
 Period: Weekly Market: Trade
 Values: Close

	GBP	GBP	GBP
TSG			
MFC			
TSG			
GBP TSG LN Equity	1.00000	0.88934	0.14799
GBP MFC LN Equity	0.88934	1.00000	0.26257
GBP TSG LN Equity	0.14799	0.26257	1.00000

Basket Hedge Parameters

Basket: .LORRY <Index> Page 1 / 1

Basket Delta:	Basket Vega:	Basket Gamma:	Basket Rho:	Basket Theta:	Basket % Premium:
0.55452	0.19857	1.99523	0.11288	0.04538	8.24442

OV is now available to value baskets. The client can select Monte Carlo as their model. This enables the user to value the basket using the individual components, allowing the user to enter individual volatilities and correlation and view the delta and gamma of each asset. Users can save their warrants. Either use a basket warrant already existing (eg LERF GR Equity) or create your own via a basket. Use CIX to create your basket (see previous page).

Appendix Introduction to Excel and Bloomberg

Bloomberg can be used in conjunction with Excel, offering the power of Bloomberg with the flexibility of Excel. Below are examples of the type of analysis and reports that the user can create. The choice of characteristic and values one can call up on a convertible is extensive.

Excel uses the assumptions (and desired calculation) specified in **WRNT** and **RDFL** by the client.

In this example, the user can use the Bloomberg Wizard to select warrant and real-time categories.

Description		All Quotes		Historical Analysis		Valuation		Horizon Analysis		Volatility Graph		Impl Volatility Graph		Equity Terms	
DES		ALLQ		WRNG		WRNT		WHZ		HVG		HIVG		TRMS	
TICKER	Short Name	Exer Px	Expire Dt	Undl Px	Bid	Ask	Im Vol Bid	Im Vol Ask	Sh Per	Delta Mid	Val Vol 90d	Day Decay 30	Vega Mid		
SUG FP	SOC GEN-CW4/00	198.184	4/6/2000	199.3	0.1	0.1	32.258	35.988	0.01	0.558	0.098	0.031	0.00317		
BAB FP	BASF AG-CB PW00	32	6/21/2000	41.55	0.1	0.1	44.808	46.426	0.1	-0.16	0.047	0.032	0.00615		
DIA FP	DAIM CHR-CB CW00	100	12/21/2000	67.06	0.3	0.3	44.198	44.693	0.1	0.199	0.053	0.025	0.01724		
MNB FP	MANNES-CB PW00	130	6/21/2000	315.75	0.3	0.3	95.062	96.049	0.1	-0.034	0.013	0.157	0.01369		
SVG FP	LAGARDERE-CW01 A	45.7347	4/17/2001	89	4.5	4.7	52.144	60.248	0.1	0.923	4.633	0.075	0.01276		
BBP FP	BANQ NAT P-W00 B	39.6368	11/17/2000	77.7	3.8	4	#N/A N.A.	59.385	0.1	#N/A N.A.	3.849	0.015	#N/A N.A.		
SPH FP	VOLKS-SG CW7/00	75	7/26/2000	46.5	0	0.1	54.352	57.558	0.05	0.139	0.003	0.018	0.00332		
TAT FP	SCHNEI-SG CW00	55	8/30/2000	74	1.2	1.2	56.469	62.215	0.05	0.826	1.024	0.043	0.00687		
SAC FP	AVENTIS-SG CW01	45	1/31/2001	57.55	1.7	1.7	45.003	48.072	0.1	0.779	1.511	0.04	0.01628		
BTB FP	BOUYGUES-BN CW01	281.9	4/28/2001	800	11	11	#N/A N.A.	71.835	0.0202	0.977	10.752	0.025	0.0078		
CDX FP	AXA-CB CW3/00	102.903	3/20/2000	136.3	3.1	3.1	#N/A N.A.	51.967	0.1	#N/A N.A.	3.377	0.069	#N/A N.A.		
SMS FP	LABINAL-SG CW00	100	7/31/2000	93	0.6	0.6	74.732	75.784	0.04	0.553	0.266	0.014	0.00963		
LOB FP	L'OREAL-CW00	700	3/20/2000	711	0.4	0.5	38.605	40.81	0.01	0.583	0.41	0.188	0.00935		
BTK FP	SIDEL BNP PW00	116	11/7/2000	86	0.7	0.8	57.402	62.644	0.02	-0.605	0.635	0.01	0.0056		
CMF FP	CARRFOUR-CW00	140	9/14/2000	164	3.7	3.8	43.362	46.021	0.1	0.741	3.471	0.181	0.04139		
DAW FP	VIVENDI-DR CW01	115	5/20/2001	119	2.5	2.6	38.849	42.393	0.1	0.64	2.585	0.062	0.04927		
TBS FP	SIEMENS-SG CW01	85	2/16/2001	164.35	4.4	4.4	51.562	52.811	0.05	0.933	4.107	0.055	0.00945		
DBM FP	LAGARDERE-CW00	43	12/29/2000	89	4.4	4.6	#N/A N.A.	51.161	0.1	#N/A N.A.	4.73	0.003	#N/A N.A.		
DBJ FP	CANAL-DB CW01	100	6/8/2001	258	6.1	6.4	#N/A N.A.	33.979	0.04	#N/A N.A.	6.928	0.013	#N/A N.A.		

```
Private Sub CommandButton1_Click()
Dim stnamecomp As String

stnamecomp = ActiveCell.Value
AppActivate ("I-BLOOMBERG")
Application.SendKeys (stnamecomp + " {F8} HIVG ~")

End Sub
```

Note in this example we are using VBA to create a button that will link the excel back to Bloomberg and run the relevant function on the warrant highlighted in Bloomberg, thereby improving speed and ease of use. VBA is not supported by Bloomberg.

The above is just a simple example. More complex spreadsheets are available on the Bloomberg via **DOCS**, particularly for straight options. This allows download of articles, training and Excel worksheets Try **DOCS OPTION API <GO>** this will bring up all excel spreadsheets related to this area.

Please use the **<Help>** key to find your way round the system. Eg Try **Delta <Help>** to find all functions that use or calculate delta. Alternatively hit **<Help> <Help>** and ask the Help Desk.