
Backtesting

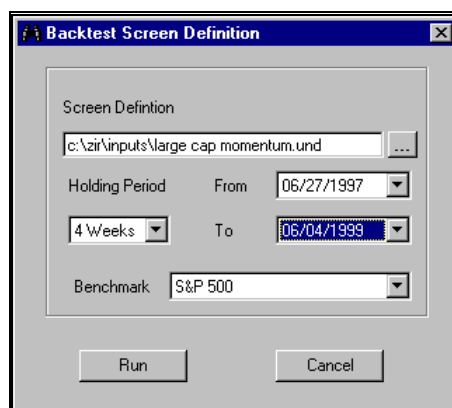
Overview

With the Research Wizard you can produce reports showing the performance of your screens (based on DBCM data items only). The Backtest option in the Research Wizard enables you to select a saved screen definition (DBCM items only) and to test it historically and view the screen's performance relative to a benchmark over time.

Running Backtest

To run a Backtest, follow these steps:

1. From the Research Wizard menu, select the Backtest option. The *Backtest Screen Definition* dialog box will appear.



Backtest Screen Definition dialog box.



2. At the *Backtest Screen Definition* dialog box, select a saved screen by clicking the **Browse** button and selecting a saved screen definition.
3. Select a time period using the **From** and **To** pull-down menus (dates are displayed at the week ends; Backtest ALWAYS shows one week BEFORE the last completed week as the first period for backtesting).
4. Select a Holding Period (in weeks).
5. Select the benchmark: S&P 500 or an Equal Weighted index (DBCM Universe; Eq Wt Index Return = Mean(PriceChg) + Mean(DivYeald)*(nWk/52)).
6. Click the **Run** button to view the results.

If the time frame specified in your backtest is outside the holding period span, you will see the results only for the completed holding periods. For example, if on July 6, 1999, you specified a 24-week holding period (with the time period set from 7/11/1997 to 6/25/1999), you will see 5 period returns, with the period five dated 5/14/1999 - the last complete 24 -week period up to the current date.

DBCM Items Not Suitable for Backtesting (Error 1001)

There are some DBCM items that are not suitable for backtesting. If these items are included in the screen definition, the Research Wizard will produce an Error message 1001 - Backtest Failed, followed by the Query Error message.

The Research Wizard does not allow to backtest screens that include the following DBCM items:

- Est. One Year EPS Growth F(1)/F(0) – item 529
- Est. Two Year EPS Growth F(2)/F(0) – item 531
- 12 Mo. Forward Estimate/12 Mo. Actual – item 645
- Est.YTD EPS Gr.Q(1)/YTD Year ago – item 636
- Est.YTD EPS Gr.Q(2)/YTD Year ago – item 637
- Est.YTD EPS Gr.Q(3)/YTD Year ago – item 638
- Est.YTD EPS Gr.Q(4)/YTD Year ago – item 639
- Est.12 mo. EPS Gr.Q(1)/Year ago – item 533
- Est.12 mo. EPS Gr.Q(2)/Year ago – item 534
- Est.12 mo. EPS Gr.Q(3)/Year ago – item 535
- Est.12 mo. EPS Gr.Q(4)/Year ago – item 536
- Est. EPS Gr. Q(1)/Q(0) – item 547
- Est. EPS Gr. Q(2)/Q(1) – item 548
- Est. EPS Gr. Q(3)/Q(2) – item 549
- Est. EPS Gr. Q(4)/Q(3) – item 550
- Est. EPS Gr. Q(1)/Q(-3) – item 537
- Est. EPS Gr. Q(2)/Q(-2) – item 538
- Est. EPS Gr. Q(3)/Q(-1) – item 539
- Est. EPS Gr. Q(4)/Q(0) – item 540

Screening Criteria Not Suitable for Backtesting (Error 1004)

Screen Definitions that contain expressions “EVERY” or “ANY” cannot be backtested. If the screen contains any of these expressions, the Research Wizard will produce an Error message 1004, Bactest Failed, followed by the Query Error message.

Data Limitations and Biases

- The are two years of data available for the backtest.
- The backtest calculates the Total Return as $\% \text{ Price Change} + \text{Yield} * (52 / \text{Holding Period})$ in weeks. Since we are using 1,4, 12, or 24 week holding periods, the above Total Return is only an approximation, but we think it is very close to the actual total return.
- The database used for Backtest has not been adjusted for splits. However, the backtest results are calculated using the Percent Change in Price item that is split adjusted.

- The database used for Backtest contains only survivor companies, it is created using the DBCM universe, so all backtests using it have survivor bias.
- On the plus side, the database used for Backtest is the only estimate database in existence that does not have a look ahead bias. For example, in other databases, the Current Fiscal Year (F1) estimates on a specific date t include estimates that were received on dates t +1 , t +2, etc., that were dated before t by the broker but which had not yet been received on date t. The (F1) estimates in the backtest database are what was known on date t.

Understanding Backtest Output Report

The *Historical Performance of the Screen* report shows a summary of the strategy and compares it with the specified benchmark. It shows statistics such as portfolio return, benchmark return and excess returns for entire time span and for individual periods. It also displays how the investment strategy performed in up and down markets.

The *Historical Performance of the Screen* report contains the following data:

Historical Performance of Screen LG_GR from 04/11/1997 to 11/20/1998 12 week holding periods						
Period	Date	Companies in Portfolio	Tot Return of Portfolio %	S&P 500 Tot Return %	Excess Ret of Screen %	
1	04/11/97	78	22.8	24.8	-1.9	
2	07/04/97	94	6.6	3.5	3.2	
3	09/26/97	112	-5.6	0.5	-6.1	
4	12/19/97	102	20.4	13.3	7.1	
5	03/13/98	111	3.0	4.6	-1.6	
6	06/05/98	99	-8.2	-7.5	-0.7	
7	08/28/98	95	15.2	13.6	1.6	
8	11/20/98	100	11.0	6.1	5.0	
Average		99	8.2	7.4	0.8	
Up Markets		7	99	10.5	9.5	1.0
Down Markets		1	99	-8.2	-7.5	-0.7
Annualized			40.5	36.0	3.5	

Backtest Report.

Period – displays the number of holding periods in your backtest. This number will depend on the time span and the number of weeks in your holding period specifications.

Date – identifies holding period end dates.

Companies In Portfolio – number of companies passed the screen in each period.

Total Return of Portfolio % – the return of the portfolio comprised of stocks that passed the screening criteria for the period. The returns are "forward - looking" - that is the return value for the week 6/11/1999 represents the return that would be earned during the week from 6/11/1999 to 6/18/1999. These returns are unweighted - in other words, the return for the portfolio is the arithmetic mean of the returns for individual companies in the portfolio.

Calculation: Total Return of Portfolio%: $TotRet = PrChMean + DivYldMean * nWeekBt / 52$; where PrChMean = Average of i120 (1 wk) or i11(4 wk) or i13(12 wk) or i15(24 wk) for active universe (DBCMHIST), and DivYldMean = Average i26 for active universe.

Benchmark Total Return % – the return of the benchmark for the period shown.

Excess Return of Screen % – the return of the portfolio less the return for the benchmark return for the period shown.

Average – average value of each of the columns.

Up Markets – average for those rank dates where the benchmark return was positive. Displays number of periods.

Down Markets – average for those rank dates where the benchmark return was negative. Displays number of periods.

Annualized Return – calculated as the average return raised to the power (52 / Holding Period in Weeks).

Calculation: $((1+(Average\ of\ TotRet)/100)^{(52/nWeekBt)-1}) * 100$.