**AmiBroker Plugin for Pascal Willain's Effective Volume™**
**Installation and Release Notes**

Thanassis Stathopoulos
thstath@nodalpoint.com
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## 1. Introduction

The plugin is an implementation of Pascal Willain's Effective Volume indicator for AmiBroker. It was developed independently along the lines that Pascal lays out in his book "Value in Time: Better Trading through Effective Volume", Wiley, 2008.

## 2. Target Environment

The target environment for this software is the 32-bit version of AmiBroker, both Standard and Professional versions, beginning from AmiBroker version 4.80 onwards.

Using the latest stable AmiBroker version (5.20, as of this writing) is highly recommended.

## 3. Data source requirements

The software calculates and displays Effective Volume using your underlying AmiBroker data. All calculations are done on the fly and are sufficiently fast for unimpeded operation of the program even in realtime using long datasets (one to two years of 1-minute history).

It is up to you to determine which data source or data provider to use. The software was developed using AmiBroker together with DTN.IQ's IQFeed subscription service (http://www.iqfeed.net).

You have to set up and maintain an AmiBroker database and populate it with 1-min (one minute) resolution. This is important as the Effective Volume concept relies on having a correct, uninterrupted series of 1-minute price and volume data for the calculations to be accurate. The following pictures show the database setup for a DTN.IQ data source.

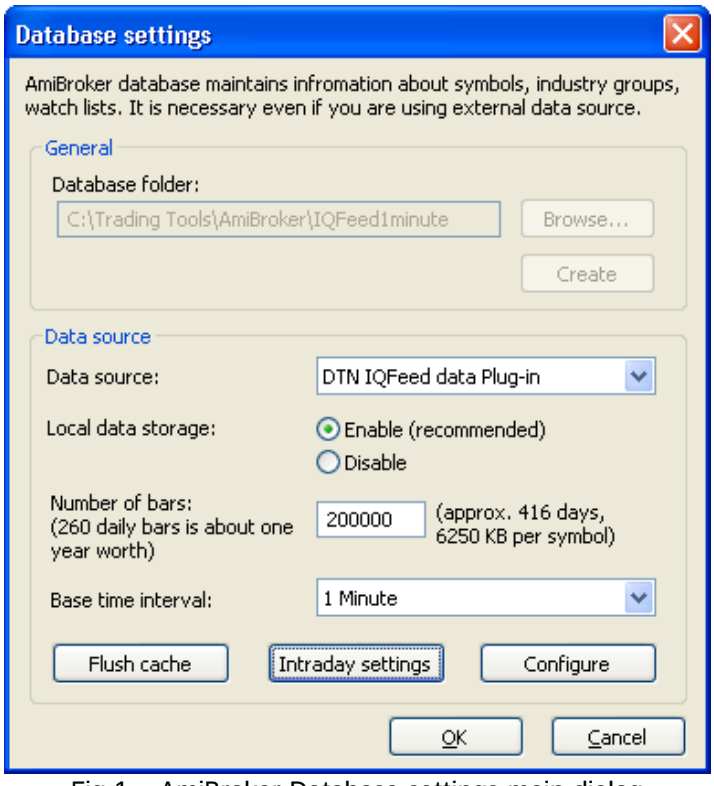

Fig.1 – AmiBroker Database settings main dialog

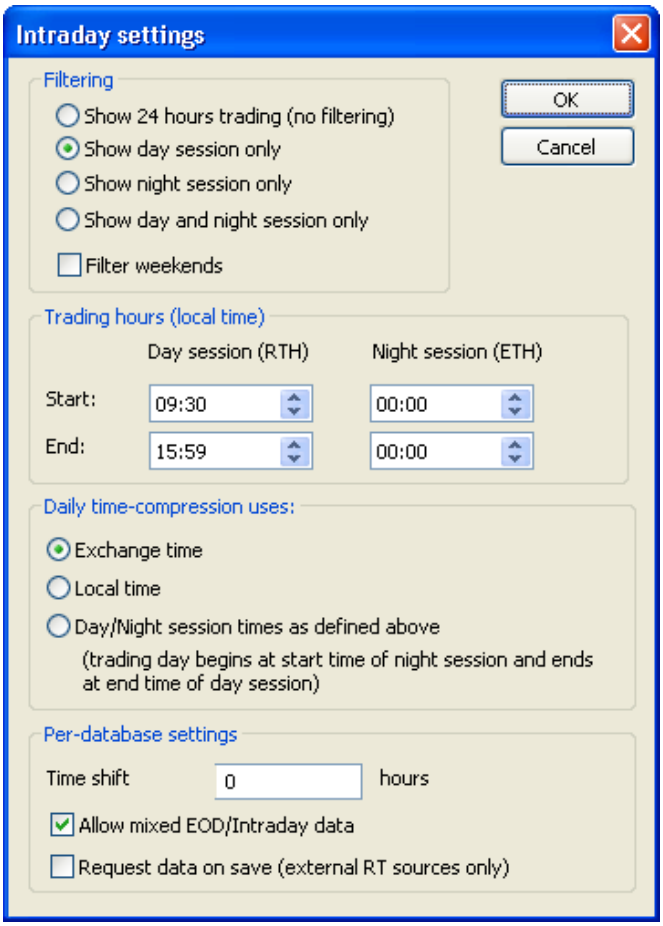

Fig.2 –AmiBroker Database - Intraday settings sub-dialog

***The Intraday settings*** dialog is especially important, as it implicitly controls the market session duration, i.e. the intraday time period for which the Effective Volume calculations are carried out for each day. You have to make sure that AmiBroker is configured for the full, regular trading session for the exchange(s) and instruments that you track.

The above screenshot (Fig.2) shows how to set up a DTN.IQ-driven AmiBroker database for the U.S. stock markets. We see that the database is set up to display only the "regular" session data; not that filtering is set to "Show day session only".

Furthermore, to avoid confusion between local and exchange time, we have set up the database without a time offset (Time shift = 0 hours), i.e. we are exclusively running on "exchange time" (U.S. Eastern Time, in this case).

Note that if you wish to track Effective Volume for futures contracts, you need to set up a different AmiBroker database, as the futures exchanges follow a different session schedule. Actually, futures calculation is further complicated by the fact that you need to manually rollover contracts - among other things.

## 4. Structure and Installation

The package contains two AmiBroker AFL™ (AmiBroker Formula Language) indicators, implementing most of the Effective Volume calculations. These are:

- The Total Effective Volume display – File "NP Total Effective Volume.afl"
- The Large Effective Volume display – File "NP Effective Volume Window.afl"

These two files should be copied under the AmiBroker custom indicators directory (by default C:\Program Files\AmiBroker\Formulas\Custom) and then included in your display of choice like any other indicator.

The third file in the package, NP.dll is a C++ .DLL AmiBroker plugin that contains fast native methods for performing Large/Small Effective Volume separation. This file is used by the second indicator, "NP Effective Volume Window.afl". To install it, copy the file in the AmiBroker plugins directory (default C:\Program Files\AmiBroker\Plugins). Remember that if AmiBroker is already running, it must be restarted for the plugin to load automatically. Alternatively, you may load it manually without restarting via the **Tools/Plug-ins** menu option.

## 5. Indicator use and caveats

Once the installation is complete, the Effective Volume indicators can be combined with the rest of your charts and used to detect interesting patterns.

Please pay attention to the following points when using these indicators:

- **The time base of the charts must be set to 1 minute using the View/Intraday/1-minute menu choice** (otherwise effectively you would be applying the Effective Volume algorithm to larger intraday timeframes, which is not correct).

- **The program's intraday filter is set to only display "normal trading session data"** – if you follow the DTN.IQ setup example described in the previous section, **View/Intraday/Show daily session only (RTH)** must be selected. This is auto-selected automatically if you set up the database as per the description in section "Data source requirements" above.

## 6. Indicator description

As the major portion of the indicators is coded in AFL, you can easily tweak them to your liking assuming you are familiar with the language.

### 6.1 Total Effective Volume

This indicator displays the continuous Total Effective Volume, together with two EMAs calculated on it.
Its parameter screen is as follows:

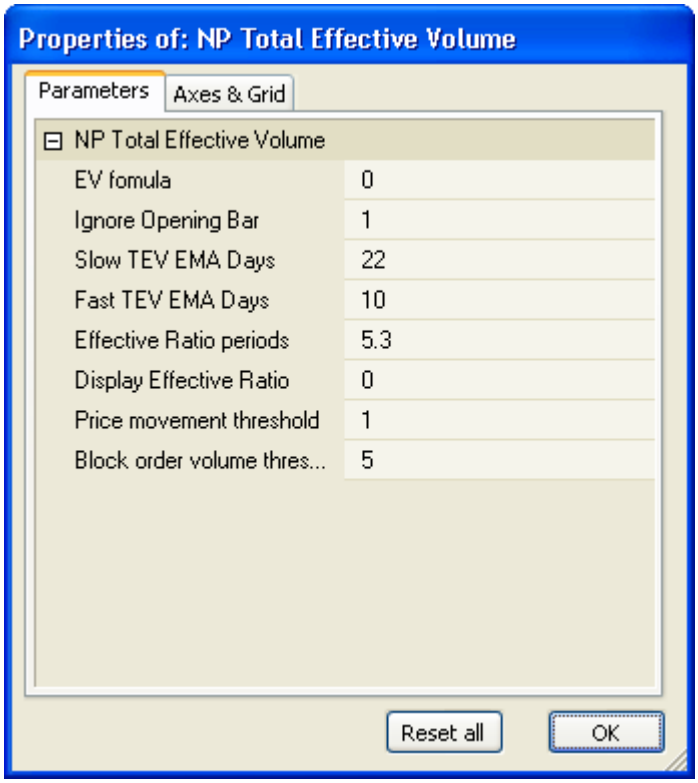

Fig.3 – Total Effective Volume indicator parameters

- **EV formula** – Use “0” for Pascal’s method, “1” for a variant that avoids adding 0.01 (i.e. the minimum market move) to the EV numerator and denominator when the market has not moved at all during one minute. The variant is really an experiment that gave essentially similar results to Pascal’s approach. I suggest that you use “0” (i.e. the formal definition by Pascal) so that your figures are comparable to the data displayed on www.effectivevolume.com

- **Ignore Opening Bar** – Keep to “1” to ignore the opening bar of each trading session when calculating EV (the default), “0” to take it into account

- **Slow TEV EMA days** – the number of days for which to calculate a “slow” Total Effective Volume exponential moving average. Default 22.

- **Slow TEV EMA days** – the number of days for which to calculate a “fast” Total Effective Volume exponential moving average. Default 10.

- **Display Effective Ratio –** Set to “1” if you want the Total Effective Ratio overlaid on the Total Effective Volume graph (scaled independently)

- **Price Movement Threshold** – the price movement threshold used to detect and ignore block orders in the intraday data, specified as a price percentage move from the previous minute. Default 1 (1%).

- **Block order volume Threshold** – the volume threshold above which 1-minute bars are deemed to contain “block orders” and are ignored. Specified as a percentage of the total daily volume. Used in conjunction with the price movement threshold to detect “block order-heavy” 1-minute bars that are excluded from the calculation, based on the premise that the large operator, if active in the stock, tries to stay “below the radar”. Default 5 (5%).

A screenshot of the indicator is shown below. The stock is Silver Wheaton (SLW) on TSE (Toronto Stock Exchange).


Fig.4 Total Effective Volume indicator (lower section; top section is price)

### 6.2 Effective Volume Window

This is the Large Effective Volume separation indicator that displays the composition of Large, Small and Total Effective Volume for a sliding window of X trading days. The parameter dialog is shown below:

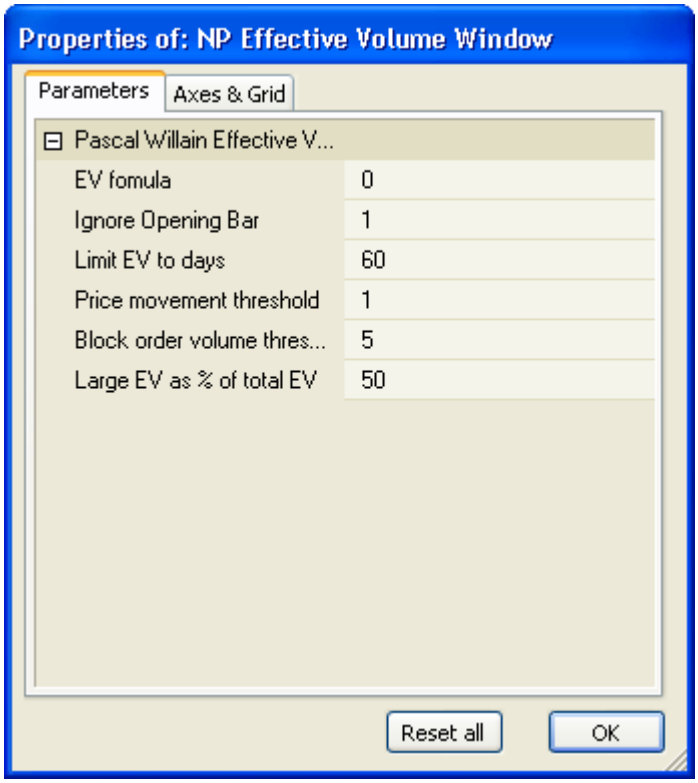


Fig. 5 Effective Volume Window indicator parameters

The parameters are as follows:

- **EV formula, Ignore Opening Bar, Price Movement Threshold** and **Block Order Volume** threshold have the exact same meanings as in the Total Effective Volume indicator; See descriptions in Section 6.1 above.

- **Limit EV to days –** This is the number of days for which you want to examine the LEV/SEV separation. Default 88. Most of examples in the VIT book are for 40 or 60 days.

- **Large EV as % of total EV –** The Large Effective Voluime to Total Effective Volume separation threshold. Leave to 50% to separate via the "equi-power" criterion (i.e. equal number of shares) as described in the book. Can be tweaked, but in fact 50% is the only reasonable choice in the face of the unkown, as it splits the odds of detecting large-operator activity as fairly as possible.

A snapshot of the indicator, again for Silver Wheaton (SLW) on the Toronto Stock Exchange, is given in the next page.

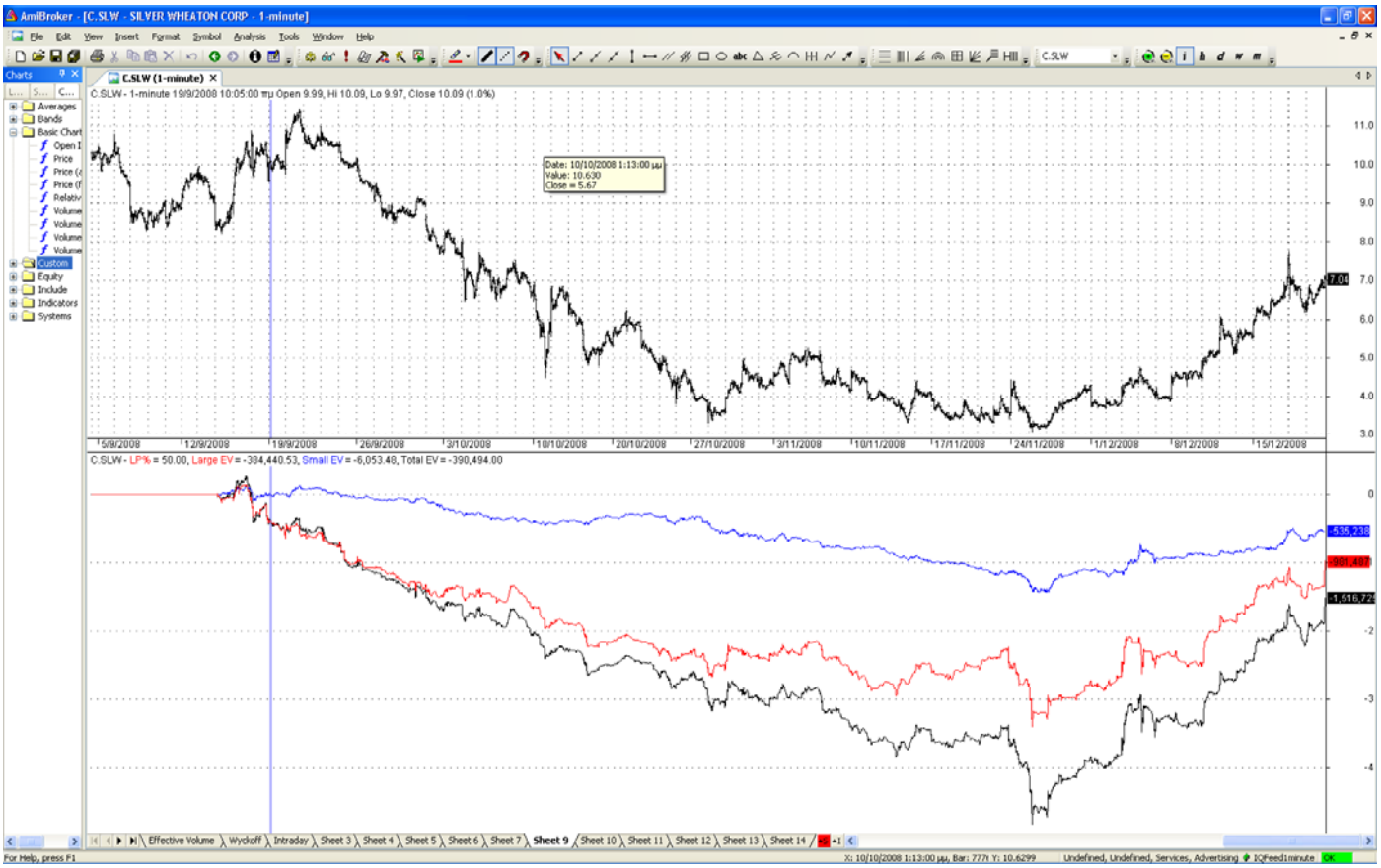


Fig.6 Effective Volume Window