

C++ programs for Finance

I have made some programs for common uses in finance. They may be of interest to others, so I have made them public under the [GNU Public Licence](#).

C++ Financial Algorithms (Financial Numerical Recipes)

In finance, there are areas where formulas tend to get involved. Sometimes it may be easier to follow an exact computer routine. I have made some C++ subroutines that implements common algorithms in finance. Typical examples are option/derivatives pricing, term structure calculations, mean variance analysis. These routines are presented together with a good deal of explanations and examples of use, but it is by no means a complete "book" with all the answers and explanations. I'm hoping to turn it into a book, but even in its incomplete state it should provide a good deal of useful algorithms for people working within the field of finance. The manuscript and codes will be added to as I get the time. All the code should conform to the current ANSI C++ standard.

- [PDF](#) (Adobe PDF format) (for viewing)
- [zip](#) file with C++ code.
- [gzipped tar](#) file with C++ code.

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Current pagecount: 250+.

C++ Classes for empirical financial data

I am using C++ for most of my econometric work, and have made a number of general utilities for that purpose, mainly for dealing with time series observations. The classes for empirical financial data is documented and collected in this

- Document: [pdf](#) file
- Source code: [zip](#) / [\(gzipped tar\)](#)

The classes for financial data contains the following components:

- **Date** class: Useful in a number of contexts to abstractly define a date as an object. This is a very crude date class, and is by no means general. I use it for empirical financial data, and it works fine for that purpose. Other purposes needs some work. There are some more general date classes in public domain which I would recommend if your purpose is anything else than keeping track of dated observations.
 - [pdf](#)
- **Dated observations** class: Work with time series data in a general way. Link a date with an observation, and then write general routines that work on this. This is a fully templated version

- [pdf](#)
- **Dated observations**: spesifically for financial time series. A specialization of the previous, where we use the particular example of dated observations of double (dated), with additional functions related to this. I use it for empirical financial data.
 - [pdf](#)
- **Security Price History** : Similar to the dated observations class, but now the data is assumed to be histories of security prices, where the data can be all of bid/trade/ask.
 - [pdf](#)
- **Stock Price History** : A specialization of the above to stocks. The difference is the need to keep track of dividends and price adjustments.
 - [pdf](#)

Last updated: Apr 2007,

Links

- [newmat](#) a matrix class used in the above.