

Secrets of Investment Evaluation

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Introduction

If you operate or manage portfolios of securities, you are not simply faced with the problem of assessing the impact of your investment. You could of course seek advice in the books on the theory of investment and financial management which describes various approaches to evaluating investments, the calculation of profits / losses and various types of returns. However, one can hardly find ANY practical guidance on how to apply this knowledge in major financial institutions and no advice is given on how to take the peculiarities of the Russian capital market into account.



The problem

The realities of today's market are such that the internal accounting of institutional investors is constructed in such a way as to primarily address issues of accountability to regulatory authorities. In general, this fact has a logical explanation - the area of statutory reporting is completely settled abroad and has a fairly-developed methodology, which cannot be said about the issues of managerial accountability. Often these issues are centered around "rescue of drowning - the handiwork of drowning", and how portfolio managers (with managers themselves) should address emerging issues around analytical calculations and accounting intricacies.

Some of the most common causes are poor automation of back office and accounting systems using constructed accounting principles. Such schemes are generally coping well with the issues of so-called official accounting and reporting, but are often completely 'unarmed' in terms of addressing the evaluation of the effectiveness of the investment process from the perspective of the portfolio managers of the securities. In addition, the problem is compounded by the lack of clear and elaborated methodology of overall management accounting.

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Solving Problems

When addressing the management of portfolios of securities it is advisable to start with the problem of determining the financial outcome. Achieving a solution is only possible when applying a sufficiently high degree of automation of accounting, whilst not basing the method on systems based on accounting principles. This in itself is of course a contraction. The reason is that the architecture of these systems is designed to meet the challenges of accounting and taxation, and they're therefore not designed to adequately reflect the profit sharing component of foreign currency assets and foreign currency portfolio. Neither, are such systems designed to reflect the decomposition rate of sales revenue with an indication of how much money was obtained from the change and what the exchange rate was. Moreover, it is important to be able to classify - by various criteria - specified parameters, thereby obtaining the ability to track the dynamics of profit in the context of arbitrary classifications.

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Among the many ways of calculating the yield deem it is necessary to identify the following: MDm (Modified Dietz method)¹ and TWR (Time Weighted Return)², as they are most common, and methodologically worked out. Both methods have both advantages and disadvantages, which are offset in the sharing of both calculations. It is also important to note that the calculation of yield is a highly non-trivial task and, as a consequence, the mechanism of its determination must have a flexible configuration. For example, MDm can be calculated on the total profit or on 'sold only' for its part. The basis for calculating the average value of the assets may not include the value of profits (without calculating the reinvestment of profits) hence, you can base the calculation on an arbitrary grouping of assets for the parameter that gives the user the ability to assess profitability. I.e. all Government securities held in all the portfolios within his/her administration.

When we discuss the pros and cons of individual calculations of profitability, it should be noted that MDm is ideally suited for the calculation of a single item or a group of positions in view of the simplicity and speed of calculation. Thus, to calculate the yield in the context of the entire portfolio of products with more than - for example - 5000 transactions a year can take up to 30 seconds. This calculation is also good to use when assessing the profitability of a portfolio with a large number of external movements of assets, which is not the case of TWR, if you look at this problem from the perspective of the founder of trust management. Paradoxical situations occur when the general manager of the portfolio shows a loss, but the TWR³ calculation may report a positive return.

¹ Carl Bacon. Practical Portfolio Performance Measurement and Attribution – 2nd ed. West Sussex: Wiley, 2008., c. 13

² Bruce J. Feibel. Investment Performance Measurement. New York: Wiley, 2003, c. 45

³ Philip Lawton, Todd Jankowski. Investment performance measurement: evaluating and presenting results: New York: Wiley., c. 18

At first glance it might then seem that using the TWR calculation is of no use, but experts in the field of asset valuation claims otherwise, noticing that the estimate of TWR – as a method of estimating the yield, is the most appropriate in those cases where the portfolio manager cannot influence the structure of the inputs and outputs of the trust management of assets⁴. The procedure for calculating Time-Weighted Return is therefore the most comprehensive way as it repeats the calculation of return on the index, and hence makes it possible to use it as benchmark to compare not only the relative growth rates over the period, but also to calculate the analytical parameters, such as the Sharpe ratio, Sortino, alpha, beta and others. This becomes even more important if the company decides to report in accordance with the standards of GIPS, because GIPS standards require calculation of a return⁵. An example of the modules and assessment of TWR is shown below.

Findings

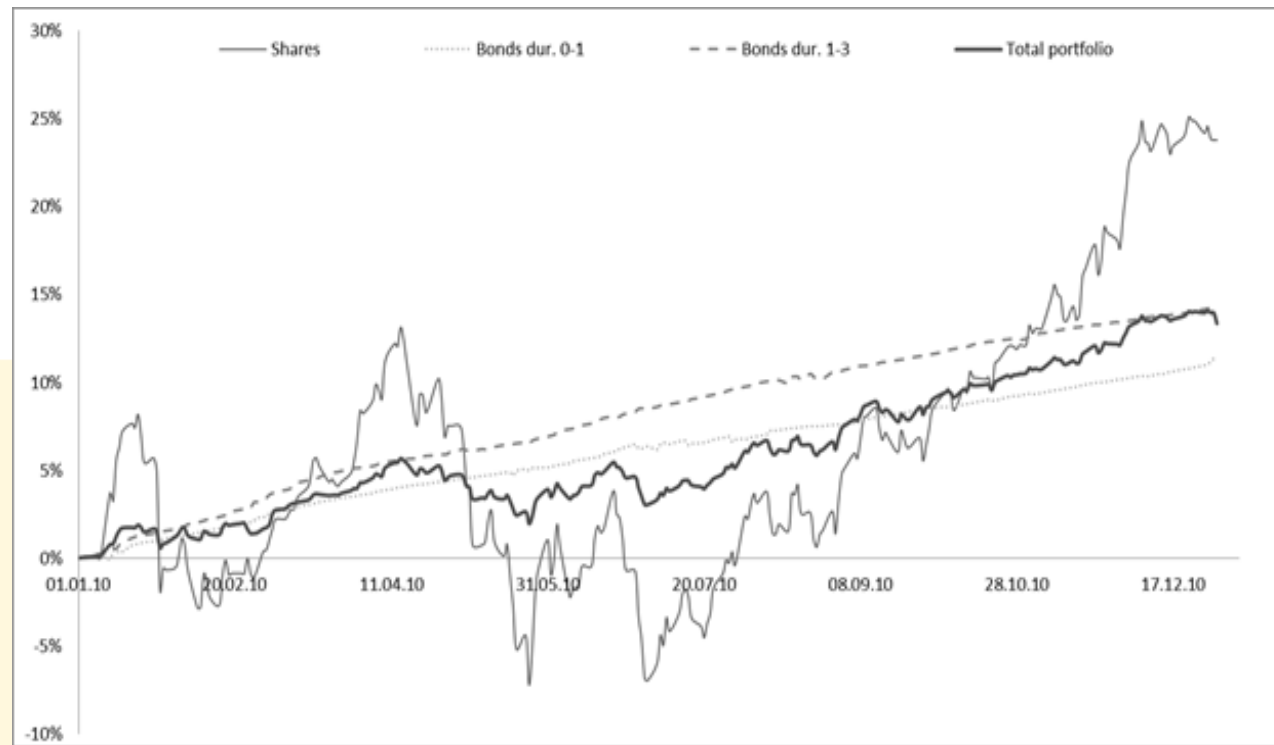
The solution to the problem described above can be found in GAMA, the leading portfolio accounting system and analysis solution on the Russian market today. GAMA offers a fundamentally different approach to recording and evaluation of investments, thereby helping to fully automate back-office operations, whilst simultaneously helping you to manage and achieve your goals!

⁴ Bruce J. Feibel. Investment Performance Measurement. New York: Wiley, 2003, c. 46

⁵ GIPS standards, 10th edition, пункт 2.A.2.

Example calculation of Time-Weighted Return

As an example, a partition of the portfolio was produced in three groups of assets: stocks, bonds with a duration of up to one year (including cash in settlement and trading accounts), and bonds with a duration of up to three years. Revision of the assets is based on the duration on a daily basis. The benchmark for the portfolio is a selected index consisting of 30% of the MICEX index and 70% of MICEX CO 1-3.



Comparative table of indicators:

Parameter Name	Benchmark	Portfolio	MICEX CB1-3 Bonds 1-3	
α	4.1		6.71	
β	0.28		0.24	
Information ratio	-0.03		0.09	
Coefficient of determination	0.43		0.12	
Correlation coefficient	0.65		0.34	
Sharpe Ratio	0.95	1.54	7.7	3.15
Treynor Ratio	9.77	24.10	4.49	32.07
Sortino Ratio	1.35	2.25	3.32	10.31
Yield	16.26	13.34	10.99	14.31
Standard deviation	10.26	4.45	1.43	1.01