

Objective - oriented financial analysis introduction

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Abstract: The practice of financial analysis has been immeasurably strengthened in recent years thanks to the ongoing evolution of computerized approaches in the form of spreadsheets and computer-based financial models of different types. These devices not only relieved the analyst's computing task, but also opened up a wide range of analyzes and research into alternative sensitivity, which so far has not been possible. The main potential for object-oriented financial analysis consists in enormously expanding the analyst's capabilities through an online knowledge and information interface that has not yet been achieved through existing methods and software packages.

Keywords: financial analysis, computer-based financial models, software packages

The practice of financial analysis has been immeasurably strengthened in recent years thanks to the ongoing evolution of computerized approaches in the form of spreadsheets and computer-based financial models of different types. These devices not only relieved the analyst's computing task but also opened up a wide range of analyzes and research into alternative sensitivity, which so far has not been possible.

At the same time, however, with the help of a computer, the financial analysis in its current form remains essentially a passive, powerful, processing tool that leaves much of the formatting, data selection, link specification, and computational instructions to the analyst - that is, she relies on the individual's professional knowledge to control the whole process. In addition, significant changes in a large number of variables can become so severe for the tracking analyst that creating a completely new analysis may be preferable but at the cost of denying valuable continuity.

The emergence of cost-effective PCs and workstations with massive improved computing speeds and internal memory has made it possible to develop entirely new approaches to computer financial analysis, support and decision-making. One of the most promising is the system of object-oriented financial analysis. Managing and supporting decision-making is being developed by Modem soft, Inc. The framework of software that is used is called Financial Workbench TM (FWb TM), which embodies interactive, knowledge-based, object-oriented design concepts.

Once the financial sites have been created and classified, the FWB TM system allows the analyst to perform, in an interactive way, consistent financial analyzes of this "model" with several constraints, all during the construction and maintenance of the interconnected database underlying of the situation. So FWb TM extends beyond the simple. Computerization is an active exchange of knowledge and experience between the analyst and the system. Its basis is the concept of using financial items as permanent carriers of the relevant financial or other knowledge, which is the basis of information that is expandable to any amount of detailed wishes.

Financial objects and their inherent knowledge can support a significant part of the analyst's active analytical activity. Not only is the knowledge base of the individual interactively integrated with the database already included in the financial software but this combined knowledge base used to solve the problem remains freely available at any time as the analysis progresses. The various active financial assets are active parts of interrelated financial systems models that can be viewed, accessed and analyzed as a living entity that responds to the moment and is consistent in its assumptions about any changes in data. This interactive capability is especially important in very complex analytical situations where tracking links within existing spreadsheet constraints will prove to be inappropriate. Testing results of object-oriented financial analysis enable analysts to perform far more comprehensive, innovative, and in-depth analytical tasks than they did before.

Financial projects - main concept

Because financial objects and their classes are the main feature of this analytical approach, it would be useful to illustrate the nature of financial objects on the basis of a simple example. Most real-world situations are so complex that complete financial analysis is not practical, as the number of interacting elements is often enormous. It is possible, however, to abstractly illustrate the basic elements and their interactions and thus to model the basic situation by gradually adding the complexity necessary for significant results. For illustration purposes, a highly simplistic reconciliation analysis has been selected to focus on the essence of financial objects. It turned out that this is a matter of much more complex and complex situations.

PotCo manufactures and sells pots at a cost of \$ 10 per unit. Each pot requires \$ 5 direct production costs. All other PotCo costs are \$ 100,000 per year. The PotCo president wants to know how many pots to sell annually to break the break-even point. A possible collection of objects that can be used to model this exemplary situation is shown in Figure-1.

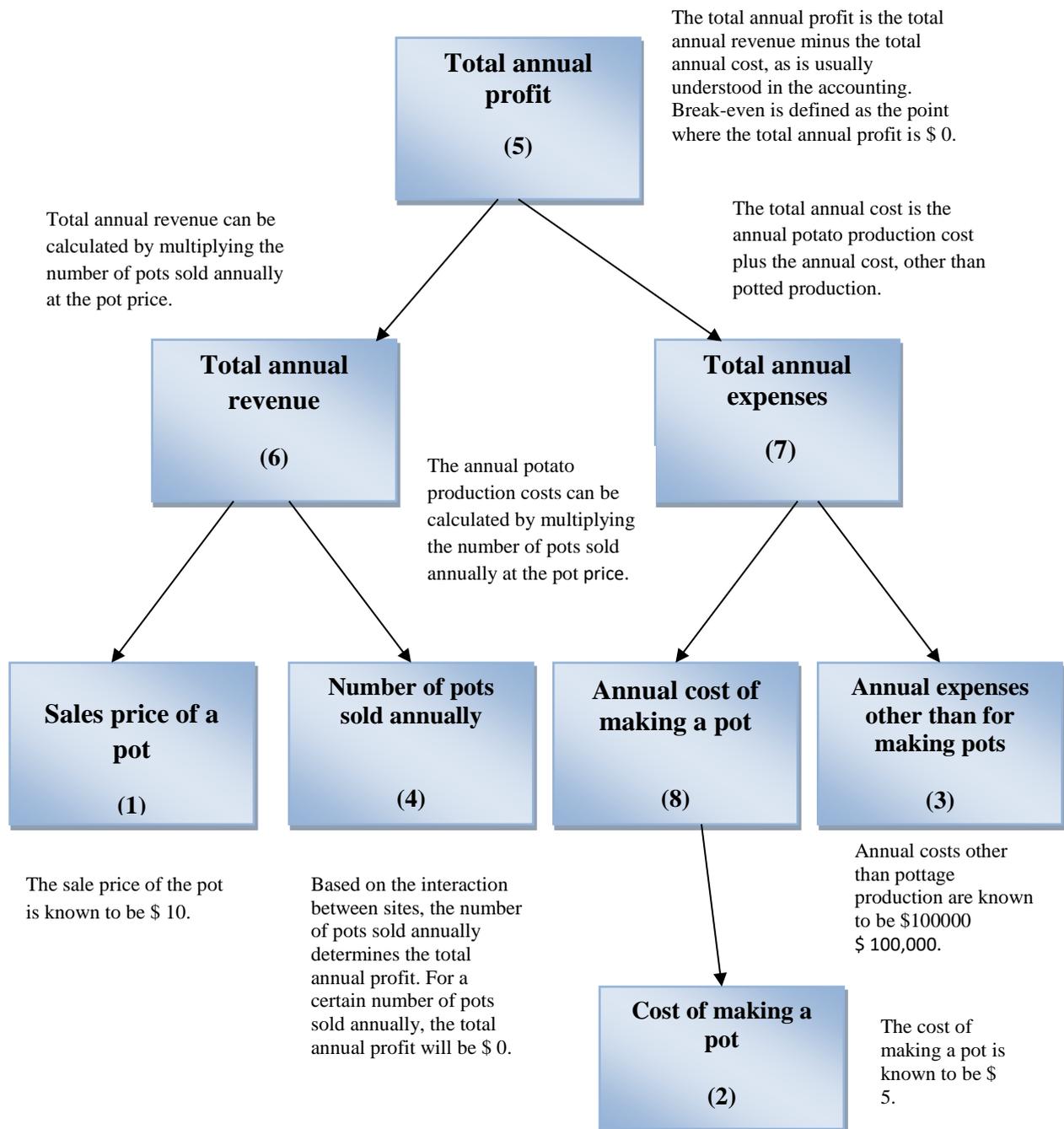


Figure1. Basic Objects for Break-Even Analysis

Once with this basic set of objects, the interaction between individual objects can be shown as follows in Figure -2. Different relationships, of course, are not limited to zero profitability, the analysis itself, and the analyst can use this, the created knowledge base for other analytical tasks. Once relationships have been established, they become readily available and proven within the system, but they can also be modified for any purpose.

The simple model presented here can be used to calculate the annual equalization volume, with an annual profit of \$ 0 when the analytical study and the analyst change the key variables that know the sensitivity of the results of the different assumptions.

FWb provides for the creation of any number of objects with properties corresponding to the accounting point of view (for example, revenue, assets, liability) and physical objects (e.g., product unit, bank credit) arising in the broad spectrum of real financial situations. This is possible in order to provide knowledge and data to support the different types of financial solutions that describe each situation from the point of view of the respective group of objects, to create the different interactions between these objects, and with the help of a wide range of analytical techniques built into the system to manipulate them.

Total annual profit

Although the objects created in the FWb may be quite common, all objects should have an aspect that is financial in nature. This is necessary because FWb uses the financial knowledge to organize and understand the reason for this and to construct user-created objects. It is known that now strictly financially can be added to the sites to provide additional dimensions, which can be carried out analyzes and engineering. Because all objects have at least one financial dimension, the objects used in the FWb are usually referred to as financial objects.

With the help of a set of specific classes provided by FWb, building blocks for analysis, the user continues to choose the right classes for each financial site. Once an object has been classified, it automatically inherits a number of properties that are embedded in its class as the existing database in the system. Special training contained in one class allows the system to recognize an object. For revenue for financial purposes, the individual revenue subcategories and the preferred sequence and companion require aggregation of individual earnings appropriate for specific reports. Thus, by the individual knowledge and experience, the analyst is based on the choice in the class and remains included in each financial site and stays there for use from now on for any purpose, together with any additional aspects identified by the analyst.

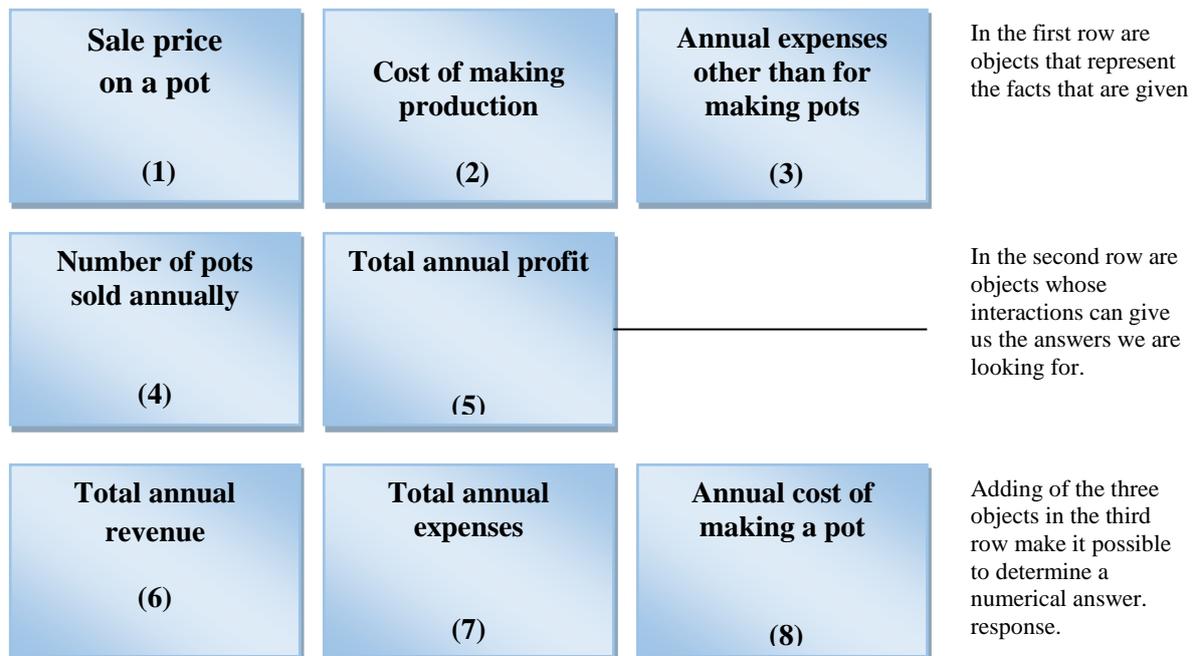


Figure 2. Interaction between objects

Each of these objects interacts directly with one or more other objects. Note that object 4 is physical, namely the number of pots that are sold for one year, while all other objects are abstract financial concepts.

As the user works by analysis, FWb automatically generates a significant amount of information about the financial state, which then remains available to both the analyst and the system as part of the database. In many cases, this new knowledge will be automatically applied by calculations or checks according to the progress of the analysis, thus enabling the analyst to complete the tasks that he has started, more efficiently and with greater in-house consistency.

The main potential for object-oriented financial analysis consists in enormously expanding the analyst's capabilities through an online knowledge and information interface that has not been achieved so far only through existing methods and software packages. This methodology releases the analyst from repetitive input actions, instruction formulation and attempts to track the assumptions and results of a set of analyzes. In a broader sense, object-oriented financial analysis brings about the realization of live financial modeling - freed from massive internal system development tasks, usually related to everything else, but is elementary based on spreadsheet techniques. The scope of financial concepts and techniques will thus be used to create analysts in a way that major efforts can concentrate on carefully structuring decision-making on issues and points of view from which they need to be resolved - which is Validating the key message for guidance on financial analysis.

REFERENCES

- Jonson, H. Thomas, and Robert S. Kaplan, 1997. *Relevance Lost: The Rise and Fall of Management Accounting*. Boston.
- Ross, Stephen; Randolph Wester field; and Jeffrey Jaffe, 1990. *Corporate Finance*. 2d ed. Homewood, 111.: Richard D. Irwin.
- Van Horne, James C. *Financial Management and Policy*. 8th ed.