Cash Flow and K Outlay: Effect and Cause
By [Dr. Mason Gaffney]

Article citation:
[Gaffney, Mason]. "Cash Flow and K Outlay: Effect and Cause." N.d. Study guide.

Fair Use Disclaimer
The Robert Schalkenbach Foundation, a non profit private foundation, is publishing this article, at no cost, pursuant to the Fair Use provisions of Section 107 of the Copyright Act which states that under certain circumstances, the fair use of a copyrighted material for purposes of criticism, comment, teaching, scholarship and research is not an infringement of copyright. If you have any concerns about the publication of this article, please contact us at **info@schalkenbach.org.**

The Robert Schalkenbach Foundation's Digital Collections and Archives is an extension of the Robert Schalkenbach Foundation's Engel Georgist Library. It collects, organizes, preserves, and provides free online access to researchers and the general public of Georgist literature including books, newspapers, pamphlets, scholarly articles and archival materials.

RSF is particularly proud to offer free online access to the works of the late Georgist scholar Mason Gaffney, made possible through the generosity of the Danica Foundation and with the consent of the Mason and Letitia Gaffney Trust.

Robert Schalkenbach Foundation: https://schalkenbach.org/
Engel Georgist Library: https://www.librarycat.org/lib/EngelGeorgistLibrary
RSF Digital Collections and Archives: https://schalkenbach.starter1ua.preservica.com/

Cash flow and K outlay: effect and cause

Here are some reasons why "Cash flow" is so important a concept.

The concept of cash flow lets you juggle more variables than you may realize. Say you are sizing a building on a fixed site. When you increase building size, you may figure that operating and maintenance expenses will also increase in future years ("o&m" for short). Those are "complementary" or "associated" future costs. You automatically deduct those from gross rents to find cash flow.

If I called this "net revenues after complementary costs and appropriate adjustments *mutatis mutandis*" you would think that an impossible notion to grasp; but that is just what cash flow means. Every successful investor uses this concept routinely in linking big investments to the resulting income which he can credit to them. Cash flow is the <u>net</u> product resulting from and credited to a capital (K_o) outlay which causes it.

K_o is the <u>explicit</u> variable. Cash flow contains the <u>implicit</u> assumption that you adjust operating expenses, in quantity and in kind, so as to maximize the net return to any given K_o, whatever its quantity and kind. This covers a huge variety of possible combinations. To model which formally would cover reams of paper with curves and tables. It is tedious and unnecessary to go through all that; instead, finesse it by premising that you will operate any facility at a reasonable level of efficiency and rationality, to maximize its net cash flow.

All economic modeling depends on this kind of assumption: the implicit variables are handled rationally and reasonably, with at least an average level of skill and care. This is the same assumption that judges make in damage suits. If you are damaged, you are expected to have exercised reasonable care and judgement to minimize the effects of damages imposed by others - you cannot damage yourself more than necessary, and then sue someone else for it.

We don't have to assume that future expenses are complementary with capital outlays, either. Some K_o increments substitute for future expenses. E.g., fuel use tomorrow declines with insulation applied today; future electrical repairs decline with better wiring today; etc. Here, the increased net cash flow results from reduced future O&M rather than increased gross revenues.

If cash flow is net revenue, then marginal cash flow is marginal net revenue. In sizing a building, you determine the marginal net revenue for each ΔK_o (i.e., each increment to K_o). You also discount these future cash flows. The result is "marginal discounted cash flow," MDCF. This concept is in common use in business, so that you may recognize it by its initials. Yet, MDCF is the end result of a long series of calculations. You

should understand every step; but, once you understand what it is all about, you can take the end product as a single, unitary number to weigh in the balance with ΔK_o.

DCF net of K = Land Value

Having these ideas in hand, we can go back another step to value the land itself. Before the building comes the land. To find the value of land, deduct the K_o of the optimal improvement ("highest and best use") from its DCF. This is how people determine how much they can pay for building lots. (We will omit here the future salvage value of the land, which will add more or less to the present value, depending on how far in the future it lies.)

In sizing your land parcel, you will want to balance the marginal cost of extra land against the marginal increment to (DCF - K_o).

Before the land in the form of a "finished lot" (as opposed to "raw land") come the public and quasi-public "street improvements," and macro-infrastucture needed to make land usable. When can we justify extending water supply to desert lands? The water planners and engineers do not need to forecast all the details of what people will do there. They only need look at land values, and how their work will raise them. Higher land values are the proximate (i.e. immediate) product of extending water service. Will the water supply raise land values by a sum equal to its cost?

If so, will the landowners be willing and able to pay, or will someone else? Here we get into some fancy public and distributive questions which we will finesse for now. It just shows you that the bottom line of one set of calculations becomes the top line for the next stage of calculations.

For a problem, let's look at a person sizing a land parcel. You have a 20 acre site. Another 5 acres are available at $200,000. Should you add them to your parcel? Line up in sequence the steps needed to put it all together. I'll get you started.

Step 1: Gross revenues less expenses = cash flow.

Step 2: ?

ANSWER #36.

Step 1. GR - E = CF

2. $\Delta GR - \Delta E = \Delta CF$ from the larger building(s) enabled by the added 5 acres.

3. $\Sigma_o^m[\Delta CF_n I^{-n}] = \Delta DCF \equiv MDCF$ ($\underline{m}$ is total life; $\underline{n}$ is any year)

4. MDCF - $\Delta K_o = T_o$ (T ≡ Terra, or Site value. Keep aware, though, that in this problem we have limited our purview to G_1. See Comment (b), below.)

Comments:

a. ΔK_o is $[K_{25}-K_{20}]$, where K_{20} is the capital cost of the building fitted to 20 acres. K_{25} is not simply $[25/20]\cdot K_{20}$, because there are scale effects.

Hence you must get specific data on ΔK. There may also be changes in factor proportions. Added land sometimes goes for landscaping or parking or open storage, or hoarding, adding little to current revenues.

b. "T_o" here is really only the portion of total site value from G_1, the first generation building. You can estimate total T_o from G_1 as follows:

$$T_o/G_1 = 1/[1-(1+i-g)^{-m}]$$

Where m is small, i is small, and/or g is large, total T_o will be much larger than G_1 You have to pay for T_o when you buy the land title.

When public works are extended, and justified by the T_o which they create, it is not uncommon for T_o to be more than twice G_1. That is frequent when farm water lines are extended in California, e.g.: the new water goes to pasture or alfalfa for 20 years, but the project is justified by olives, almonds, avocados, malls and dwellings.

c. I have omitted all tax considerations, for simplicity. In practice they are a large factor.

d. Inflation is handled by using a lower or "real" interest rate. Know how to explain this. I may ask you; later, though, life will ask you, and charge you plenty for wrong answers.

e. If you were buying a quarry to feed a planned cement plant to produce sewer pipes for a planned extension of sewer mains with excess capacity out to a new development to be built out over many years with durable buildings, note how extremely sensitive the quarry value is to the rate of interest.