The Flow of Capital (Part II)
By Dr. Mason Gaffney

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THE FLOW OF CAPITAL (PART II)

By Dr. Mason Gaffney, Riverside, CA

(This is the conclusion of The Flow of Capital, of which was Part I published in the Sept.-Oct. 2013 issue of GroundSwell.)

F. Allegories

1. Pipelines. A standard metaphor in macroeconomics is to picture the economy as a pipeline filled with goods in process. They go in the receiving end and, after some time, out the delivery end. The goods in the pipeline are capital, and the amount of capital required is the transit time multiplied by the rate of flow. Transit time is the "period," and rate of flow is "throughput" (In the simple model, these correspond to the input-output ratio.). Say, for example, the period is 36 mos. and the flow is $100/mo., then the capital required is $3600. The turnover of the capital is 1/36 per mo., or 1/3 per year. Turnover is always the reciprocal of the period.

To get more throughput with the same capital, cut the pipeline in half and make two, each half as long but with the same flow. Now the flow is $200; the period is 18 mos.; and turnover is 1/18 per mo., or 2/3 per year; and the capital is the same as before, $3600. But each month you hire twice as many workers and supply them with twice as much subsistence delivered from the output end of the pipes.

Of course life is not that simple, and the model doesn't show that we lose some productivity by doing this. We'll see later how to handle that trade-off. But we'll also see that when there is a surplus of unemployed labor needing jobs, and a shortage of capital, wages and interest rates (and land rents, too) adjust so as to home in on full employment by shortening pipelines.

2. Paper, kindling, and logs. Wood burns at the surface, so when you light paper or excelsior you get a lot of action, whoosh, because they are all surface; and the flame dies fast because there is little reserve below the action surface. So you throw on some kindling next, which has a higher ratio of volume/surface, but still not so much but what you have to keep feeding more. Last you put on a big log with a very high ratio of volume/surface, and it burns a long time while you are unemployed.

The log requires a larger fireplace, and is bulky to store, hard to come by, hard to handle, hard to start, and hard to put out when you've had enough, so why burn logs? To save labor. Comparing logs to kindling, logs are a way of substituting capital for labor.

3. Tires and roads. Tire treads are consumed "where the rubber meets the road," at the surface. The deeper the tread, the more life. So why not make all treads extra deep? Because the extra capital stored in the deeper tread can be used to make another, cheaper tire, and you can run two cars at once on cheap tires rather than one on expensive tires. Of course you have to replace the cheap tires more often, and that takes labor, but that's the point, isn't it? Instead of one set of tires needing replacing every three years, you have two sets needing replacing every two years, and a lot more jobs.

Paving, too, is consumed where the road meets the rubber, at the surface, and thicker paving lasts longer. But it also freezes up a lot of capital idly waiting for years before it reaches the surface and becomes useful. That idle capital could be used instead to build other roads right now. Instead of one road needing little maintenance you can have two roads each needing a lot of maintenance, and making a lot of jobs.

4. Tree farms vs. hamburger joints. The ordinary fast-food joint enjoys little prestige in this world, but it sure makes a lot of jobs, more than most of our "major industries." Say you have just $100 of capital to run a business, how can you generate enough volume to keep busy? By turning it over fast. If you turn it over once a day, there is a yearly volume of $36,500 with just $100 of capital. Suppose instead you put that into planting Douglas-fir trees, to be harvested in 80 years. Now your annual volume is $1.25. That is how different things can be. Think about it—I'll use this example again, and dot the i's and cross the t's.

5. More examples. Once you get the idea, you can think of a hundred examples, for they are all around you and the principle is universal. That is why it is worth mastering. Try making up a few examples from your experience and observation. You can think of things that would never occur to me.

I think of it this way. All capital consists of an "action edge" where it gives service and wears out; and a reservoir of value in storage for future use. Capital makes jobs when it is made, and again, usually, when its action edge gives service. In between it is out of use—hors de combat, as Quesnay would have said—and might as well not exist so far as present needs are concerned.

6. Principles and their abuses. The point is that factor proportions are adjustable. If labor is cheap and surplus, and capital is scarce and dear, it makes sense to spread the capital thin by building cheaply and often. But if labor is scarce and dear, and capital abundant, then the reverse makes sense.

Neither option is inherently good or bad, moral or immoral. But both principles get abused, and therefore misunderstood. Abuse of the early replacement principle is called bad names like planned obsolescence, jerry-building, el cheapo, shoddy, and throwaway. Abuse of capital-intensity is called gold-plating, monument-building, padding, ego-tripping, conspicuous consumption, etc. All these epithets can be colorful and expressive of real abuses, but don't let them blind you to the real economic principles at work from day to day in all human affairs.

7. Knut Wicksell and the grape juice. Knut Wicksell, an uncommonly smart Swede, worked this all out pretty well in his Lectures on Political Economy, 1901. He built an excellent little model there of a macro-economy. Like all model-builders he simplified reality to make a point. In his model all the capital consists of grape-juice maturing into wine. (OK, give him a break, there were no computers in 1901, they used their imaginations.) (continued on pg. 8)

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stops new long investments, but it does not speed recovery of capital already committed to old ones. It often slows or stops it, when it cuts off capital needed to complete unfinished works, or to operate finished ones. You can't burn logs without kindling, and you can't plant without seeds. That is how shortage of liquid capital can choke the macro-economy. It can happen with a bang or a whimper, but it has happened and might happen again.

H. How to summarize it all: the fund/flow ratio

Turn back to the pipeline allegory, F.-1. above. The fund of capital (K) is the period (P) times the flow (F).

$$K = PF \qquad (1)$$

Several relationships are restatements of that. First, the period is the fund/flow ratio:

$$P = K/F \qquad (2)$$

Second, the flow is the fund/period ratio:

$$F = K/P \qquad (3)$$

Third, turnover is the flow/fund ratio:

$$T = 1/P = F/K \qquad (4)$$

Last, flow is the product of the fund and the turnover:

$$F = KT \qquad (5)$$

(5) is the bottom line for macro-economics. Business volume is the product of capital times turnover. GNP and employment vary directly with business volume.

What is the value of K in America today? No one knows very accurately because those who measure it get it all mixed up with land values, which are not funds and never turn over. But it is in the ballpark somewhere near 3 times national income, indicating a mean period of about 3 years. Raising that to 3.5 equals misery; lowering it to 2.5 means full employment.

I. ("eye"). Real flows and money flows

Faster turnover increases supply-side volume and spending volume in sync. More ripe goods come to market, that is, supply. But these must be replaced, so investors spend money to replace them, that creates income and therefore demand.

Is that circular? Simultaneous and continuing is more like it, and so is the whole macro-economy. What primes the pump is anticipation. Grocers spend today to replace produce they expect to sell tomorrow, and that spending circulates the cash with which groceries are bought. That's how the system works and has always worked. Tree farm owners don't spend today because they don't expect to sell tomorrow. But make the capital flow and money flows with it.

(Economics Professor Dr. Mason Gaffney may be emailed at m.gaffney@dslextreme.com. GroundSwell does not have room for reference footnotes but they are available from Dr. Gaffney.) <<

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BLOG RESPONSE TO ...HYPERLOOP

(from page 10)

Formulas aside, the point is that landowners are the ones who win when a new rail line goes through, particularly near stops (this only works if it's not a train to nowhere). Here in NYC, for example, billions in new property development is already springing up, seemingly overnight, along the projected 2014 #7 line extension from 8th Avenue and 42 street to 11th Avenue and 34 street. Speculators build because of their correct perception that value will be added to the new "corridor" even in an already bustling city like New York.

Read Fred Harrison's book, "Wheels of Fortune" to understand this better: (http://www.amazon.com/Wheels-Fortune-Self-funding-Infrastructure Market/dp/0255365896/ref=sr_1_1?s=books&ie=UTF8&qid=1384760077&sr=1-&keywords=wheels+of+fortune+harrison)

"It is often assumed that government intervention is required to bring to fruition large scale infrastructure projects because the large initial capital outlays such projects require must be funded from the public purse. In "Wheels of Fortune", Fred Harrison shows that large scale infrastructure projects can be made self-funding. Infrastructure projects almost always bring about a large increase in the value of adjoining land. For example, it is estimated that the London Underground Jubilee Line extension increased adjoining land values by close to GBP3 billion. When such infrastructure projects are funded by government, they therefore involve a substantial transfer of wealth from a large number of taxpayers to a small number of property owners. Harrison argues that a fairer and more efficient means to fund infrastructure projects is to capture and use the increases in land values that they bring....

There were actually MASSIVE subsidies and outright giveways for the railroad companies to get the transcontinental lines built. It was the checkerboard policy - giving away alternating miles of land on either side of the track to the railroad companies so they would build. See here: http://www.blm.gov/wy/st/en/pr...

"The transcontinental railroad, completed in 1869, passes through southern Wyoming. It was financed in part by land grants to the railroad under the Union Pacific Act of 1862. In that Act, Congress granted every other section (one square mile) of land within ten miles of the railroad to the Union Pacific, which tried to sell it to raise capital for the venture. When sales proved less than brisk, Congress doubled the area to 20 miles on each side of the railroad. Congress believed that the coming of the railroad would greatly increase the value of the land retained by the government. The land could then be sold at a profit at a later date. This scheme, used successfully in the East, was not practical in the vast semi-arid rangelands of the West. Many sections in remote areas remained unsold and in government possession. When homesteading and government sales of land ceased, many areas were left in a permanent checkerboard pattern of alternating public and private land.

To change the zeitgeist regarding Land Value Taxation, we need to reach beyond the usual audience and introduce the concept in novel ways. There are opportunities to do so almost everywhere. <<