

TAXES, CAPITAL AND JOBS

By Mason Gaffney

A paper delivered to the National Tax Association, Chicago, August, 1978.

Adapted for use in a course in Macro-economics, Winter, 1996.

INTRODUCTION

We hear a lot these days about the need for more capital to make jobs. Some of what we hear and read we may discount as self-serving, lobbying for more preferential tax treatment of profits. Yet there is a case argued by sincere and public-minded people on objective grounds which we must take seriously.

It had better be a good case, because it goes far toward destroying the progressivity case, the one on which the American public has bought the income tax concept. Preferential income tax treatment of property income cuts off the top brackets of income receivers from tax liability, especially when we exempt capital gains. Preferential treatment exempts or favors the unearned increment to land values, especially again when we favor capital gains. The thrust of proposals being seriously advanced today is to convert the income tax into simply another payroll tax, socializing a large share of personal effort while eliminating the public equity in the land and capital resources of the nation.

Preferential tax treatment for property also destroys the neutrality or uniformity argument for income taxation. It encourages substituting capital and land for labor. It forces higher rates on personal effort, thus weakening the incentive to work while maximizing the incentive to lobby in legislatures and the Congress for public works and other federal outlays which create unearned increments to land values.

Are these hardships necessary to stir investors to make jobs? This paper outlines an alternative thesis that the misuse of capital, rather than simple shortage, is to blame for lack of jobs. The key to making jobs is changing the use and form of capital we already have. Tax preferences for property income, in their present and proposed forms, bias investors against using capital to make jobs, doing more harm than good.

I. MAKING MORE JOBS WITH THE SAME CAPITAL

Adam Smith stated the present thesis clearly:

The number of... laborers is...in proportion to the quantity of capital stock which is employed in setting them to work, and to the particular way in which it is so employed."

"The quantity of labor which equal capitals are capable of putting in motion, varies extremely according to their employment." ... "A capital employed in the home trade will sometimes make 12 operations, or be sent out and returned 12 times, before a capital employed in the foreign trade...has made one" ¹

¹ Adam Smith, *Wealth of Nations*, pp.. 338, 341, 349.

Adam Smith here refers to capital as stock in trade. For making jobs, fixed capital frozen in buildings or turnpikes is so slow returning that Smith does not bother mentioning it.

Smith was following François Quesnay, who had written a little earlier that capital stored up in advance is an indispensable precondition for capitalists to make jobs.

After Smith, Ricardo developed the theme further. He asks what would happen if a big fraction of our capital is diverted from circulating (fast- turning) forms to "fixed" (slow-turning) forms, exemplified by "machinery." He paints a grim scenario of the answer:

"the gross produce will have fallen from a value of 15,000 to a value of 7500; and as the power of supporting a population, and employing labour, depends always on the gross produce of a nation, and not on its net produce, there will necessarily be a diminution in the demand for labour, population will become redundant, and the situation of the labouring classes will be that of distress and poverty".²

John Stuart Mill makes Ricardo's point a little sharper. Like Ricardo, he distinguishes fixed from circulating capital:

"capital may be temporarily unemployed, as in the case of unsold goods ... during this interval it does not set in motion any industry ... Capital is kept in existence from age to age not by preservation, but by perpetual reproduction. ... To set free a capital which would otherwise be locked up in a form useless for the support of labor, is, no doubt, the same thing to the interests of laborers as the creation of a new capital.

Capital ...in unsold goods does not set in motion any industry. Capital may be so employed as not to support laborers, being fixed in machinery, buildings,... locked up in the form useless for the support of labor.

Suppose half (one's capital) effects a permanent improvement. ... He will employ next...year only half the number of laborers"³

That is, he doesn't get his money back from the permanent improvement next year; it is like "unsold goods." Therefore, he has no liquid funds to meet another payroll. The "permanent improvement," however useful over its full life, remains "unsold goods" next year. The effect is the same as though he were left with a warehouse full of togs or toys that would not sell.

A monetarist economist might object that the money could be printed by a friendly central bank. Mill would answer that this funny money would not deliver any final goods to consumers, and therefore only drive up prices. He had not learned to accept inflation with the same facility as we have today (1978), or to regard it as anything but a fraud. Monetarists and Keynesians have mocked Mill for this fun-spoiling attitude, but the

² David Ricardo, *Principles of Political Economy and Taxation* (1817), p.272.

³ John Stuart Mill, *Principles of Political Economy*, (1872), pp. 41-63, passim. See also J. S. Mill, *Essays on Some Unsettled Issues of Political Economy* (1874), pp. 55-59.

present "stagflation" - the outcome of unlimited demand-side economic policy - makes one realize they might still learn from Mill.

W. Stanley Jevons resented the authority accorded to Mill and Ricardo, and attacked them. The drama of personal vendetta, and the neo-classical compulsion to cast out Ricardo and Mill, have spawned a false view that Jevons departed from them. Here, however, is what Jevons actually wrote in his Chapter VII, "Theory of Capital":

"The views which I shall endeavour to establish on this subject are in fundamental agreement with those adopted by Ricardo; ... The same capital will serve for twice as much industry if it be absorbed or invested for only half the time"⁴.

Jevons develops the last sentence at some length, in a simple mathematical model centered on the concept of a period of investment. Before his premature death, he was trying to turn this into a full explanation of boom-bust cycles. Jevons is the channel between English and Austrian economists. It was a two-way channel: modern Austrians still express one of their major concepts as "Ricardo Effect."

Karl Marx, a student of classical political economy, expressed what seems like the same idea in different words. He wrote of the "organic composition of capital," meaning the degree to which it is fixed rather than circulating. He devotes all of Book II of *Das Kapital* to treating the turnover of capital. He gets so wound up in it, however, it is hard for this reader, at least, to be sure where he comes out. Modern Marxist writers, not reviewed here, have taken up his views at length. These include Shaikh, Yaffe, Fine and Harris, Bell, and Weisskopf. Sherman (1995) remarks the common themes in Marx and the Austrians. This commonality did not abate the Austrians' militant anti-Marxism.

Knut Wicksell, who developed these ideas more fully and formally, is cited near the end of this essay.

Ludwig Von Mises and Friedrich Hayek, second-generation Austrian-school economists, advanced ideas derived from those cited, and were prominent in the 1920s and early 1930s, before Keynes. However, their variations on the theme modified it and, in my view, muddied it considerably, and I will not cite them here.

Smith, Ricardo, Mill, Jevons and Wicksell make enough sense, and represent enough collective wisdom, to attract our attention. In their model, a shortage of job-making capital has two causes, pointing to two different solutions. They direct our attention away from the cause we hear most about today, a simple shortfall in quantity of capital. Let's identify and remember this idea of simple quantity shortage as "Theorem A." If we buy Theorem A, the obvious solution is to get more capital, in whatever form.

The classical economists' ideas point, rather, to a "Theorem B." Theorem B says that unsold goods return no capital to meet the next payroll. It says more: the reason goods are unsold is because they are not ready to sell, being fixed in machinery and buildings. They are "unripe." Inadequate demand is not the problem, at least not initially. Unripeness of supply is the initiating problem.

⁴ William Stanley Jevons, *The Theory of Political Economy* (1871), Chp. 7, par VII.2 (pp. 222, 229 1st Ed.)

The solution proposed most vocally now in Washington is based on Theorem A. It is to exempt property income from taxation, with the promise that this will boost capital formation, and this in turn will make jobs. Less is said about the necessary counterpart, to shift taxes to wages and salaries and other compensation for personal service and effort, and to employers as their share of the payroll tax. This implied-but-unadvertised counterpart would, of course, directly destroy jobs.

This method would seem to give away more to property than is needed to accomplish the goal of making jobs. It exempts land income, especially when preferential treatment of capital gains is emphasized. (The investment tax credit, and accelerated depreciation for new construction are free of this last criticism, however.) This method in practice also exempts capital overseas, which really should be called home if the purpose is to make jobs in our own country. Exporting capital makes one-shot American jobs producing the capital; but to operate capital makes jobs where the plants are located.

This method - preferential tax treatment of capital - perpetuates and gives another twist to structural distortions that misallocate capital and tie it up in labor-saving forms in highly capital-intensive industries and activities. Some examples of this are premature streets and water supply systems financed by tax-free municipal bonds. Tax-sheltered exploration for oil and gas is another example: this ties up capital for decades before recovery. In time this capital flows back to us as usable energy; but cheap energy substitutes for labor, and complements capital (like farm tractors and pumps) in downstream uses. Yet another example is timber allowed to regenerate naturally, i.e. without the labor of planting: this ties up land for 80 to 150 years under each crop, with minimal use of labor.

Worse yet, this method shifts the tax burden to payrolls, driving a deeper tax-wedge between the payroll and the dinner-table. This wedge induces employers to substitute capital for labor, and causes many potential workers to prefer untaxed welfare, crime, or the pursuit of charity and unearned income to productive labor.

The second cause of a capital shortage -- Theorem B -- is relatively neglected today. Theorem B follows the lead of François Quesnay, Adam Smith, David Ricardo, John Stuart Mill, Stanley Jevons, Knut Wicksell, Ludwig von Mises, Friedrich Hayek, Gottfried Haberler, and others, and looks at the misuse and misallocation of the capital we already have.

Misuse and misallocation have much the same effects as lowering the total supply. There is a lot of fat in the capital structure, where capital is locked up in less productive uses to which it is attracted by tax shelters, subsidies in the form of low-interest loans, public works, and other warping factors. "Fat" also suggests that the locked-up capital is torpid; it combines less with labor, thereby making few jobs.

The solution under Theorem B is to identify the warping factors, then to right them. As to tax policy, we need to tax capital uniformly in neutral and nondistorting ways. Different investments should be taxed at the same effective rate. Even more important, the rate on property income in general should be no lower than, and probably higher than the rate on wages. The rate on both wages and capital income could be lower than the rate on land income, for the last is neutral or better, and taps economic rent.

Professor Henry Simons and others have long noted that an increase in one's wealth is current income. This says that a tax on capital gains would, to be neutral and uniform, have to tax gains at the time they accrue, rather than (as now) waiting for a sale. Simons and the others then despaired of taxing unrealized gains in practice. Note, however, that the property tax, when based on speculative land values, does take a bite of unrealized unearned increments (euphemistically, "capital gains") each year. It is easy to show mathematically that the U.S. property tax is exactly a tax on unrealized unearned increments, provided that assessed valuations are kept current.

The property tax also takes a bite of another kind of invisible income the income tax misses. This is the imputed income of owner-occupied residential and recreational property. This imputed income is invisible because it is consumed as it is received, without any cash transaction. Most of this consumed income generates no jobs whatever. Yet, neither income taxation nor "consumer" taxation touches it, in contrast to job-making income which is taxed twice: once as income, then as consumption.

Ergo, a nondistorting way to tax capital income under the income tax law is to make the income tax resemble the property tax as much as possible. Over at the other extreme, it is easy to show mathematically, or with numerical examples, the necessary corollary: our present income tax on realized capital gains grows less and less effective as the asset is held longer. Better yet for the taxpayer (worse for the Treasury) there is no tax at all when the asset is held until death. This of course favors slow-turning capital over fast-turning capital.

As we learned from Adam Smith and the others, the labor the favored slow-turning capital "sets in motion" is much less than the same capital puts to work when it is turning fast.

The solution implied by Theorem B therefore is to make the income tax uniform in its treatment of different kinds of capital - to remove the present preference for slow-turning capital of deferred paybacks. This is not the place for technical details of a comprehensive tax base with intertemporal neutrality. There is a substantial literature by William Vickrey, Joseph Pechman, Paul Samuelson, Richard Musgrave, Henry Simons, Robert Murray Haig, Emil Sunley and others.⁵⁶ Suffice it here that this line of reasoning does not imply preferential treatment of capital gains, but if anything the reverse. Neither does it support revenue sharing, for this simply replaces the more neutral property tax with the less neutral income tax.

What about "phantom income"? Inflation has the effect of creating phantom taxable profits for capital. We could perhaps, in the name of neutrality, justify lower nominal rates on property income than labor income in order to compensate for the taxation of

⁵ Richard Musgrave, *The Theory of Public Finance*, 1959, p. 165, and works there cited. Richard Musgrave, B.I. Bittker, C.O. Galvin, and J.A. Pechman, *A Comprehensive Tax Base?* (1968), and works there cited.

⁶ Mason Gaffney, "Tax-induced Slow Turnover of Capital," *Western Economic Journal*, 5(4):308-23 September, 1967.)

Mason Gaffney, "Tax-induced Slow Turnover of Capital," (unabridged), *AJES* January, 1970 through January, 1971.

phantom inflationary profits on property income. Unfortunately, in politics today this argument is made most strenuously where it is least appropriate, that is with respect to long term capital gains.

How do I reason that? The phantom profit realized on working capital is taxed continuously from year to year as the phantom profits are realized. The phantom profit on long term gains, on the other hand, is not taxed until the capital asset is sold. Thus the profit on year one is not taxed as it accrues but the taxation is deferred, as with all capital gains. The effect of inflation therefore is to increase the tax system's intertemporal bias in favor of slower yielding capital.⁷ If we do grant a lower nominal tax rate to capital income we should not do the same for land income, because there is no phantom income in land rents.⁸ (That is because land does not depreciate, so its cash flow is pure income.) Neither is the cause of full employment served by artificially inducing the substitution of land for capital or labor. Substituting capital for labor is bad enough, but at least capital is produced by labor, tempering the damage. Land, however, is not even produced; it is given by Nature without human labor, saving, or investing.

If we should adjust taxes to compensate for phantom profits, we should also do something for phantom salaries caused by withholding. Income taxes are based on a mythical gross salary before withholding of income taxes, FICA, FUTA, involuntary pension exactions, and perhaps other items. This puts a large added tax burden on payrolls compared to sheltered property income (see Appendix I on using disposable income as the tax base).

II. Two Syntaxes for Organizing Economic Analysis

Part of Theorem A is the premise that capital, whatever its use, always complements labor. To evaluate the premise we must first organize our minds to receive, store, integrate and interpret assertions about the relations between capital and labor. We need a "Syntax" (a connected, orderly system, with harmonious arrangement of parts or elements). A Syntax is a set of rules for how the parts of a system fit together, and interact.

One person in a thousand will create his or her own system and syntax. I welcome these rare students. For most of us, though, there are ready-made syntaxes to borrow. They help organize our thoughts. Better yet, they help us hear and speak to the world, for they are a lingua franca in the world of economic analysis. Some of those ready-made syntaxes contain deep insights. Some very clever minds have been at work and solved many technical riddles.

As we proceed, though, bear in mind these syntaxes were not created in a vacuum. Their creators and patrons aimed not just to organize and clarify, but to bend our minds in support of certain policy conclusions. They are "tendentious" - i.e. with built-in

⁷ M. Gaffney, "Toward Full Employment with Limited Land and Capital," in A. Lynn, Jr. (ed.) *Property Taxation, Land Use and Public Policy*, 1976 App. 4.

Nicolaus Tideman and Donald Tucker, "The Tax Treatment of Business Profits under Inflationary Conditions," in Henry Aaron (ed.) *Inflation and the Income Tax*, 1976 pp. 38-41.

⁸ Gaffney, 1991 pp. 49-53.

tendencies pushing us to act in the interests of parties other than ourselves. Putting it in the worst light, they are methods of thought-control, or brain-washing. When we borrow them, they shape and control us. Be wary, therefore. I will flash warnings from time to time, to remind you. As I do, some will ask "Why are we learning this if it is imperfect?" The answer is in the preceding paragraph - reread it.

The trick with economics is to learn the orthodox syntax as you would a foreign language. Familiarize yourself with its idioms, but without entirely "suspending disbelief," without denying or abandoning or distrusting your own instincts, your own natural sense of fair and foul. Neo-classical economics (the kind we live with today) too often seems to make role models of people like Ebenezer Scrooge, The Grinch, and Mr. Potter. As you learn it, don't let it dehumanize you.

There are actually two economic syntaxes in common use. Let's call one "Alpha" and the other "Beta." Remember, a "Syntax" is a way of connecting and showing the relations of the elements of the system. In Syntax Alpha, the economy is horizontally integrated; in Beta, it is vertically integrated. Each syntax provides useful insights, but beware of those who switch from one to the other without warning. Switching premises, definitions, and syntaxes are basic tools of sophistry - the art of bamboozling you.

"Horizontally integrated" (Alpha Syntax) means you see the relations among factors of production at one point in time, as in a still snapshot. It is the method or syntax you learn in Micro-economics. It deals with relations of "co-existence," ignoring or papering over relations of "sequence." Cause-and-effect are simultaneous. Capital makes jobs by providing workers with tools and plants.

"Vertically integrated" (Beta Syntax) means you see the same relations in sequence, over time. (In this metaphor, time is the third dimension.) "Consequence" means sequence with causation. Cause-and-effect is a relationship in time: cause precedes effect. This is the method most used in Macro-economics. Production is seen as a flow through time, from "upstream" (raw materials) to "downstream" (processing, retailing). Labor relates to capital by producing it, and also by living off existing capital while replacing it. Investing makes jobs by employing workers.

Now let us express each of Theorems A and B in both syntaxes, Alpha and Beta, taking care not to muddy the waters by swapping the premises of one syntax with the other in the mid-stream of thought. Table I summarizes the distinctive features of each syntax.

Table I: Features of Syntaxes Alpha and Beta		
SYNTAX	Alpha	Beta
How integrated	Horizontally, at a point in time	Vertically over time
Where used	Micro	Macro
Relations of	Coexistence	Sequence
Similes and Characteristics	Snapshot Balance sheet Funds Statics	Cinema Income statement Flows Dynamics

Now we can treat Theorem A and Theorem B in each syntax, making four Sections below, related as in Table II.

Table II: Matrix of Theorems and Syntaxes		
SYNTAX	Alpha	Beta
Theorem A	A-Alpha	A-Beta
Theorem B	B-Alpha	B-Beta
Relations of	Coexistence	Sequence
Similes and Characteristics	Snapshot Balance sheet Funds Statics	Cinema Income statement Flows Dynamics

III. Theorem A: Capital Shortage as Cause of Unemployment

A-Alpha (Theorem A, in Alpha Syntax)

Alpha syntax is represented by the Cobb-Douglas Function. In this much- abused function, output equals a constant times the product of labor and capital, each raised to a power (usually less than one). "Capital" in Alpha Syntax is just a quantity of useful stuff, at a single point in time, co- existing with a quantity of labor. Differentiating output with respect to labor we get the marginal product of labor, a constant times the quantity of

capital raised to a power (and divided by labor to a power less than one.)⁹ In the Cobb-Douglas approach, therefore, more capital necessarily increases not just the average product of labor, but the marginal product of labor as well.

Implicit assumptions like this one are sneaky. Those who make them indeed are often as unaware as anyone of what they are doing. Calling it a mathematical function makes the implicit assumption easier to detect, but the use of mathematics in general discussions, where half the listeners or readers are not really following, makes it harder to detect in fact.

Once the implicit assumption of complementarity is put across, then you may rest your case on the law of diminishing returns.¹⁰ Alternatively you can take engineering "requirements" as your approach and say that one job "requires," say, \$50,000 of capital. A third method is to buy the models of Professors Harrod and Domar. These growth models are supposedly dynamic, but they postulate fixed ratios of capital to output.

This line of reasoning, using Syntax Alpha, leaves unsatisfied many of the unconverted. Common observation tells us that much capital substitutes for labor, and disemploys workers. Sheep, cattle and timber -- forms of capital -- are obvious examples. There is a third factor of production: this is land. Sheep, cattle and timber have high "valence" (to borrow a chemical term) for land, but a low valence for labor. They have long historical records as depopulators of the countryside.

An equally obvious example is farm machinery; and farm machinery is one species of a large genus of machines that substitute for labor. (Ricardo, in a less mechanized age, used the example of draft horses displacing men.¹¹ In industrial plants we may add automation and cybernation. Some other examples are power generation and distribution, which are very capital-intensive; mineral extraction and refining, which may be even more so; and so on. Every local public finance officer knows that some plants are much more capital-intensive than others, because (unfortunately for national employment) localities now have stronger incentives to attract capital-intensive plants than labor-intensive ones. It is the local finance officer's job to know the difference.

A-Beta (Theorem A in Beta Syntax)

To meet these obvious objections to Theorem A in the Alpha Syntax, champions of Theorem A turn to a second syntax, Beta, which is vertically integrated. Farm machines may displace farm workers, but it is labor that produces the farm machines. Rather than impersonal machines displacing labor, it is factory labor that is displacing on-farm labor. To be sure, it is a smaller number of workers displacing a larger number via the medium of capital, but at least they are workers. If there is a net gain of productivity, there is the

$$^9 P = C H^\alpha K^\beta \quad (1)$$

$$\delta P / \delta H = C \alpha \times K^\beta / (H^{1-\alpha}) \quad (2)$$

where P = Product; C, α and β are constants; H = Human effort; and K = Capital.

¹⁰ See the use of Cobb-Douglas by Norman Ture, *Tax Policy, Capital Formation, and Productivity*, 1973 p. 14. Presumably this assumption has become embedded deep in the current Ture Tax Impact Project (TIP) for N.A.M.

¹¹ Ricardo, (1817), p. 275.

chance that (in some unspecified way) all workers will gain from it. Thus, the resolute apologist can hold forth hope that downsizing work forces will redound to the gain of all, when we view the whole system.

Turning this around, we have the Keynesian, demand-side variation of Beta syntax. In this variation, one stresses not the labor producing capital, but the capitalist hiring workers by investing in capital. Here, investors make jobs in making farm machines, rather than directly producing crops in the field. Projects that are even more capital-intensive, like building roads and dams, are a boon because they are outlets for investment: outlets needed to dispose of surplus savings, and keep money circulating.

This Keynesian form of Syntax Beta is quite Marxian. In Marx the economic universe is always tending to run down like an old spring-driven clock; it has to be wound up repeatedly by fabricating investment outlets to move along excess savings that got stuck. Keynesian macroeconomics, in spite of its variations, elaborations, and intricacies, is ultimately based on this run-down clock concept. This is ironic, because advocates of Theorem A are mostly lobbyists for property owners, trying to lower taxes on property and its income, while Marx wanted to socialize property. History makes strange bedfellows, but don't let this confuse you. Rather, let it alert you against stereotyping people and ideas.

There are many troubles with this "unwinding clock" concept, such that it is now (1978) reaching a crisis, called "Stagflation." It is based for one thing on the implicit assumption of declining velocity or turnover of money, and pervasive deflationary pressures. It is based for much of its impact on the trauma of the 1933 banking collapse which is getting to be old news. Now we have had several decades of increasing velocity and increasing money supplies.

The old Keynesian concept is based on the idea that supply fails to create its own demand. Today, rather, it is demand that is not creating its own supply, creating inflation of product prices. Incomes which are created today by paying people to produce capital which will not be ready for consumption for 30 years are clearly inflationary in the short run. In the long run they are inflationary (perhaps a little less clearly) because they reduce the number of real transactions that any given money supply must finance.

In Keynes, one solution to oversaving is simply waste. However, to satisfy what Keynes called the puritan prejudice, we store up capital for the remote future as a more culturally and politically acceptable alternative to more obvious forms of waste. Any sort of spending would be equally good, but the promise of "pie in the sky in the sweet bye and bye" is offered as a sop to convince crusty Presbyterians to spend money. (Keynes was evidently bitten at an impressionable age by a Presbyterian - his attack on Woodrow Wilson is marked by blatant religious bigotry.)

Whatever we may think of Keynesian economics today, Theorem A in its Beta Syntax (vertically integrated) is based on the Keynesian ethic that the sources of capital are excessive, and the solution is to hide away capital in forms that will contribute as little as possible to the overproduction problem of the near future. The checkmate for the followers of Theorem A today is that this Keynesian ethic flatly contradicts a Theorem of capital shortage. It poses an insoluble problem for those who would hold Theorem A.

IV. Theorem B: SLUGGISH CAPITAL AS CAUSE OF UNEMPLOYMENT

Theorem B has it that capital may either complement labor or substitute for it, and which kind of capital investors create depends on relative prices. Thus the capital structure may adjust so that the existing supplies of capital and labor will match each other. In addition to relative prices, however, the capital structure is warped by institutional bias, including tax bias; such bias interferes with the market's homing in on full employment.

B-Alpha (Theorem B in Alpha Syntax)

We approach Theorem B first of all from the horizontally integrated viewpoint of Syntax Alpha. An investor who is contemplating substituting machinery for labor observes that the machinery gets him an investment tax credit, while the employment of labor costs him a payroll tax. The minimum wage, welfare, the high cost of commuting, and unemployment compensation keep wage rates from falling; the combination makes entrepreneurs substitute capital for labor. Similarly, the deductibility of interest and property taxes, and the capital gains preferences, move him to substitute land for labor.

Replacement of persons by machines is the most dramatic, visible, and self-evident example of substitution, but probably not the most important. Some other examples are the substitution of capital-intensive and resource-intensive materials (like aluminum) for more labor-intensive materials (like cloth). Processes as well as products are malleable. We can substitute capital for labor in all durable goods by building in more durability at the front end to reduce maintenance and repair later. Every student who has nursed an old auto to save buying a new one knows this trade-off. We can adapt to variability of demand by having excess capacity on standby, in preference to utilizing more labor. We can shift the stage of production at which value is added: for example, letting timber add more value on the stump so that less labor is required in the mills. We can substitute land for labor by using fewer men per acre on farms and shifting land to less laborious kinds of crops, e.g. from berries to barley. The possibilities are limited only by the imagination, and observing actual practice.

B-Beta (Theorem B in Beta Syntax)

Critics of Theorem B, faced with such examples, shift silently into Beta Syntax. (Remember that shifting syntaxes is a basic tool of sophistry, the art of bamboozling you.) Then they can say, "Ah-ha! Capital "locked-up" in power plants and hydro-electric dams and premature highways and excess capacity is not a bad thing. Neither does it keep capital from employing labor. Rather, these represent "investment opportunities," exactly what Dr. Keynes said we need more of. Investment is what draws money out of hoards, keeps it circulating, and keeps the big clock from running down."

In answering that, Theorem B gets really interesting and I think terribly useful, giving important insight into where modern macroeconomics has gone wrong. Austrian economics, following classical Political Economists like Quesnay, Smith, Ricardo, Mill, Jevons and Wicksell have anticipated this objection by looking at factor proportions in a vertically integrated syntax: Syntax Beta. When we look at the relations of capital and labor in sequence instead of in parallel, the capital content of value-added depends on how long capital is tied up before its recovery.

For example if we finance a house over thirty years we pay, over life, twice as much in interest as in principal. The service flow over life is highly capital-intensive, because 2/3 of the payments go as interest to pay for the use of capital. In the first few years, in fact, the payments are over 95% interest.

Accordingly, production of houses is very sensitive to the cost of capital, as we know. It is much less sensitive to wage rates, so observation has it that if interest rates are low this pushes investors into housing, and other investments of long life. High wage rates push them out of short investments like textiles or vegetable farming, but have small relative effect on housing. Wages in construction are a minor fraction of the life-time cost of housing.

Using this Syntax Beta, we allow for the facts that labor produces capital, and investing creates jobs, and still find that the economic process of supplying housing is capital-intensive. The capital in housing only creates jobs once every 35 years or so on the average (assuming it is half recovered and reinvested after 35 years).

Let's compare this with a farmer's investment in growing some humble, ordinary carrots. Yes, a growing crop is capital, and has to be financed until sold. The farmer recovers and reinvests his capital at least once a year. Carrots are to be compared to Adam Smith's capital in the "home trade" making twelve operations while the same capital in foreign trade makes only one. Foreign trade here is comparable to housing. In a word, a given sum of capital keeps more people busy over the years if it turns over faster. Each turnover is a reinvesting, initiating a new operation that creates a new payroll. On the demand side, this raises demand; on the supply side, it produces consumer goods. As turnover rises, supply and demand grow together and are "leveled upwards."

At the same time, each year's output of carrots feeds us. The house, to be sure, also serves us, but the value of its service flow is only interest on the value plus a small recovery of principal. The value of the carrots is interest on the capital plus the whole principal. The house serves us only with a year's time-slot; the carrot gives its all.

It is common for champions of Theorem A, speaking in Beta Syntax, to justify tax shelters for housing (or municipal bonds or oil exploration or other capital-intensive investing) by pointing to the jobs created. But all this capital is switched away from other investing, like growing carrots. The true comparison is not between something and nothing, but between capital-intensive and labor-intensive investing. If we are to use Syntax Beta, the comparison has to be made over the whole life cycle of the slower capital, wherein the fast capital, as Adam Smith said, may make 12 operations while the slow capital makes but one. Smith was understating his point, actually. Carrot-capital probably makes 100 operations while housing capital makes but one.

It follows that in any one year, in a balanced economy where retirements are matched by new investments, a given capital in (things like) carrots generates a regular flow of gross investment 12 times greater than an equal capital invested in (things like) trees of 12-year life.¹² The reasoning by which this follows is analogous to that by which one "stacks" the echo effects of the Keynesian horizontal multiplier into the vertical or

¹² This is not limited to examples that resemble trees. It includes any other capital, e.g. a commercial jet airframe, whose average recovery period is 12 years.

simultaneous multiplier. Such stacking gives another true comparison of the employment effects of switching investment from fast capital to slow.

One may wonder, though, are carrots an efficient use of capital? The margin of profit is much less. Here we hark back to another paragon of the Age of Reason, Benjamin Franklin, who told us in his terse way that "little and often makes much." It is not just the margin of profit that makes capital efficient, it is margin times turnover.

This has been one of the leading principles of rational business management at least since Alfred Sloan reorganized General Motors in the 1920's. Sloan benefited from the advice of Donaldson Brown, who came in from Dupont to straighten out the cash-flow crisis created by Sloan's predecessor, the over-expansive, insolvent Will Durant. Sloan and Brown took great pains to require each division to earn a minimum return on capital. The return was defined as margin times turnover, divided (of course) by capital.¹³

Elementary as this may sound (and oversimplified besides), it played a leading role in the rational management of that enormously successful mass of capital at General Motors. If a concept this elementary and obvious turned failure and insolvency into one of the greatest success stories in business history, imagine how capital must have been misused before, and elsewhere! And it is not so elementary that we can assume it to be incorporated in the management of the nation's capital as influenced by its tax system. Our tax system (excepting the property tax) is based on the working principle, "shoot anything that moves." It militates against turnover, because each turnover creates one or more taxable events.

When a manager seeks to raise turnover in addition to profit margin, this pushes his capital into faster-turning forms. These have smaller profits, but more of them. So the use of capital is just as efficient.

What, then, is the difference? A given capital, rolling over faster, creates more jobs and produces more ripe goods for consumers. It "sets in motion," as Adam Smith would say, more workers; and it sets them in motion productively, so their employment does not just generate inflation.

I would not recommend that all our investing go into working capital like carrots, and none into fixed capital like roadbeds, harbors, telephone poles, plant and equipment. There is an equilibrating market mechanism that finds, or at least seeks, an optimal balance. If capital is scarce, and labor surplus, this should lead to higher interest rates and lower wage rates. The combination leads investors into working capital, and away from fixed capital, until the "valence" of capital for labor shall have risen, soaking up the surplus labor.

The problem is that this equilibrating mechanism is jammed by institutional bias. Minimum wage laws, union pressures, and welfare as an alternative to work, keep labor from cheapening more. Conservatives may applaud that statement, but are they consistent enough then also to allow that payroll taxes (including most of the personal income tax of today) has the same effect? Crime as an alternative, and commuting costs, may be even more potent.

¹³Thomas J. McNichols, *Executive Policy and Strategic Planning*, 1977, p. 44.

The great illusion of macroeconomic policy is that the way to make work for labor is to make work for capital by making capital cheap. This is Theorem A-Beta. Some of its policy manifestations are the investment tax credit, with sliding scale to avoid giving preference to fast turnaround investments; the 20% additional first-year depreciation for capital with life over 6 years; preferential tax treatment of long-term capital gains; property tax relief in the guise of revenue sharing financed by increasing state and federal "income" taxes which hit payrolls harder than property income; guaranteeing loans to pump cheap capital into housing and many other capital-intensive products; direct investment by government force-feeding capital into highways, public works and so on; non-taxation of state and local bonds, making cheap capital available to state and local governments; accelerated depreciation granted to durable capital; multiple depreciation of buildings; expensing of certain durable investments; and underpricing energy in lieu of taxation (the last point fits the bias because energy complements capital, substitutes for labor and is capital-intensive to produce).

Where the objective is really to make jobs, Theorem A-Beta policies defeat themselves. An unrecognized self-defeating policy is most dangerous, because its failure is taken as a sign that more is needed, in a vicious spiral to disaster.

Theorem B-Beta was particularly well worked out by Knut Wicksell, the "Swedish Austrian". Quesnay, Smith, Ricardo, Mill, and Jevons are quotable but casual, and sometimes self-contradictory. Von Mises and Hayek are a bit muddy. Wicksell, however, had the mathematical mind and tools to get the whole act together better. He dealt with the relationships of capital, turnover, employment, and land rent, too - all in one package.

Wicksell showed that the flow from the "wages fund" -- today we would call it "income creating spending" -- depends on how capital is used, and specifically on how fast it turns over. It is only the part of capital, as he said, "set free" -- i.e. recovered -- each year that can hire labor and rent land. He preferred calling this the "wages flow" - not "fund" - to emphasize its dynamism and elasticity. "Capital in its free form is employed to advance both wages and rent. ... The wage-fund may undergo considerable changes, in so far as the average period of turnover of capital is lengthened or shortened. ... it is only the part (of capital) annually set free which can purchase labor (or land)." "If more labor is available than can be employed ... a shorter period of production ... is adopted, and the capital which was before insufficient is now able to give employment to all workers".¹⁴

Thus, social capital is a Great Revolving Fund. The flow of investing depends both on the size of the fund and the speed of turnover: it is their product. Turnover speeds up whenever stimulated either by cheaper labor, or dearer capital (higher interest rates), thus matching any fund of capital with all the labor seeking work.

One firm can invest in excess of depreciation by tapping others. The whole economy cannot, except by new saving. It is a closed system. For a whole economy to increase the capital "set free" each year it must increase turnover. Turnover delivers goods to hold

¹⁴ Knut Wicksell, *Lectures on Political Economy*, 1938, pp. 194-96. *Value, Capital and Rent*, 1954, pp. 127, 160.

down prices at the same time that it gives business free capital to invest in payrolls. Full employment and price stability are the joint products of an optimal rate of turnover.

The later history of Theorem B-Beta is curiously frustrating. Every few years it has been rediscovered or rearticulated, but the words "like silent raindrops fell, and echoed in a well of silence." The times are simply not hospitable to B-Beta. Its spokesmen, thus far, have declined to play the martyr, or lonely crusader. Rudolf Blitz, Robert Dorfman, Hans Brems, myself, and others have "run it up the flagpole," but few saluted, and we went our way.

Theorem A-Beta is more chic; yet it is a delusion and a trap. It makes us believe we improve the condition of labor indirectly, by improving the condition of (lowering taxes on) capital, and raising taxes on labor. We intuitively doubt that, and our intuition is right. Policies mandated by Theorem A-Beta have the effect, rather, of inducing entrepreneurs to substitute capital for labor. Worse yet, they induce substituting land for labor (using fewer workers per square foot of land). Land is totally fixed in supply, so fewer workers per unit of land means fewer workers, period.

To make jobs the needed policies are lower taxes on labor, higher taxes on land, and intertemporal uniformity in the taxation of capital. The shortfall is not so much of the stock of capital, but of the flow of income-creating, job-creating investing and reinvesting of capital. To remedy this, public policy needs to make it cheaper to use labor, and dearer to hold torpid capital and inert land. ed, in a vicious spiral to disaster.

APPENDIX I: Basing the Income Tax on Disposable Income

In the present mood of tax reduction it is timely to consider this reform. Let us base income taxes on disposable income, D , rather than, as now, on gross income, G . If T =Tax, and t =tax rate, then under this method $T=t(G-T)$ from which follows $T = Gt/(1+t)$. Thus, for example, a tax rate of 100% on D is just 50% on G . This change would allay the existing bias against payrolls caused by withholding against them while at the same time deferring the taxation of wealth accruals until they are realized in cash. This would devalue many basic tax loopholes for property income. At the same time, it would increase after-tax work incentives by reducing the basic progressivity of the rate structure. One easy way to implement would be simply to let people deduct Federal tax payments from Federal tax base each year as they made out their returns. The effects of this one simple change would be quite profound and almost entirely for the better.

APPENDIX II: Merging Syntaxes Alpha and Beta

In any one year, in a balanced economy where retirements are matched by new investments, a given capital in (things like) carrots generates a regular flow of gross investment 12 times greater than an equal capital invested in (things like) trees of 12-year life (including any other capital whose average recovery period is 12 years). The reasoning is analogous to that by which one "stacks" the echo effects of the Keynesian horizontal multiplier into the vertical or simultaneous multiplier. Such stacking gives a true comparison of the job effects of switching investment from fast capital to slow.

In forestry, a "stacked" forest is called "normalized." Each year one harvests one acre with mature trees, and restocks it. The number of stocked acres equals the harvest age of

the trees: the longer the rotation period, the more capital and land is tied up at any one time.

By extending such reasoning to all kinds of assets, one can integrate Syntaxes Alpha and Beta, and thus also integrate and reconcile macro-economics with micro-economics.¹⁵

¹⁵ The math is worked out in Gaffney, 1976, pp. 153-158.

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