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Brown
Georgist
pamphlets

THE THEORY OF INTEREST

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At Faculty Meeting of Henry George School of Social Science
New York, June 28, 1948

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(Professor Brown teaches the basic Georgist principles in his economics classes at University of Missouri. His course in General Economics, however, covers more of the field than does George's "Progress and Poverty." Professor Brown believes that the 10-week course in "Progress and Poverty" at the Henry George School should not go too deeply into these other points, but that instructors ought to be conversant with them. He points out that George's handling of interest, for instance, is weak, and instructors should know it better, even though the subject is not probed too deeply in the basic course. To this end, he addressed the New York faculty of the Henry George School on June 28th. A condensation of his talk is presented herewith.)

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The hardest thing that there is in the course in General Economics as we give it at the University of Missouri, is the theory of interest on capital. We devote five days a week for three weeks to it. In teaching it, I use a problem which I am going to give to you tonight, as I think it is very important.

Suppose a man is able to catch 100 fish per year. Instead of catching 100 fish per year he might make a net. Constructing capital is an alternative to making things for immediate use. We need not assume he has no equipment at all, but he is catching 100 fish per year with such equipment as he has, and he can make in a year one fishing net. Don't quarrel with the unreality of my illustration - it makes the problem simpler. The man spends one entire year (1948) making the net instead of catching 100 fish. Suppose this net will wear out in one year. During that second year he must be able to get more than 200 fish, to make the production of the net worthwhile. We will suppose he gets 210 fish in 1949 - then the net will be worn out.

This is an example of capital aiding industry. If the man spends a year making the net he will, with its aid, catch more fish than if he had never used it at all. The investment is 100 fish. While he was making that net he could have caught 100 fish. My class always has a long discussion on what is the cost of production - what the man could have made in some other line. If it took a year during which he could have caught 100 fish to make this net, the net represents a cost of production of 100 fish. If the fish sold for $5 each, the net would be worth $500, or 100 fish. He would have caught 100 fish the second year without it. Instead, he caught 210 fish, so what he got the second year is the 100 fish he would have caught anyway, plus 110 fish - so the net gain is 10. By using the net he gets enough to pay the cost of replacing it and 10 more fish. In other words, capital has added to the output of industry 10% over its cost. Under these circumstances a borrower could afford to pay anything up to 10%. This is an important aspect of the problem.

The man can construct that net in the time he caught the fish, or he can borrow some fish from somebody else to live on. If he doesn't have anything to live on he either has to construct the net after hours (he has to have that 100 fish to live on, or have some other source of income, or someone else would have to stake him), whereas the way it works in our economic society, the individual may not construct the net himself; he may catch more fish than he needs and give to someone else the job of constructing that net.

The point I want to emphasize is this; anybody who produces more than he needs and makes it available to somebody else - food, clothing, or the necessities of life - with the understanding that the other person will then construct capital, is not exploiting the other person at all. He is giving him the full value of his product. If my family requires all I can produce, I can't construct capital. The result of my labor must go to them now - something that yields a quick result. Somebody has to save to get capital. If you save and give me all the fish I can possibly catch and tell me to make a net for you and I make the net for you, the net then costs 100 fish - here's 110, you get the other 10% - the capital has added to the output of industry and the capital would not come into existence except for that. That increase does not depend upon the reproductive force of nature, as George claims. The net doesn't grow like a tree or calves and cows, but it adds to the output of industry and like the growth of animals and plants, it is a step by which we engage in what we call round-about production. That is, you refrain from producing goods for immediate consumption in order to produce goods which will in the future increase your output. I can construct this capital myself, if I have access to means to live on, or I can save and pay somebody else to construct it. Or I can save and lend to somebody else to construct and pay me interest. Somebody's saving has made round-about production possible; and that person is reasonably entitled to interest. We couldn't get along without capital. We can do practically nothing without tools.

We come now to the principle of diminishing returns, which is very important. This principle can be illustrated as follows: Just as a person naturally goes first to a better piece of land, so will he also use savings to construct the capital which is most important, most needed. If more savings are available, he will then construct the next most important thing, and so on. After the net, the next thing I would want might be a boat. Suppose the boat also costs, as did the net, 100 fish. It takes as long to build it as it does to catch 100 fish, or to make a net. It is not as important as the net. Suppose the boat also wears out in a year, but adds enough to the output of industry to replace itself. You get back 109 for it instead of 110. Additional units of capital add less and less. The gain of the net was 10%, that of the boat 9%, further capital would gain 8%, 7%, 6%, and so on down.

The fact that additional capital yields diminishing returns is well established. It has an important part in fixing the rate of interest. Let us illustrate: Assume there is $5000 worth of capital. Beginning with the 5th $1000, assume that it adds $84 to the output in addition to replacing itself. The 6th $1000 adds $75 net per year. A farmer with a 300-acre farm can't do well without capital, but that farmer would not dream of borrowing a million dollars to improve his farm. According to the principle of

diminishing returns, the last $1000 of capital he borrowed would add so little to the capital it wouldn't be worthwhile to continue borrowing. Of course, for the country as a whole we never reach that point. Let us continue with our table of diminishing returns:

5th	$1000	adds	$84	net	gain	per	year
6th	"	"	75	"	"	"	"
7th	"	"	70	"	"	"	"
8th	"	"	66	"	"	"	"
9th	"	"	63	"	"	"	"
10th	"	"	60	"	"	"	"
11th	"	"	57	"	"	"	"
12th	"	"	55	"	"	"	"
13th	"	"	53	"	"	"	"
14th	"	"	51	"	"	"	"

If the interest rate is 8%, the farmer will borrow up to $5,000 to improve his farm because the 5th $1000 worth of capital would increase his output by enough to replace the capital, pay the interest, and still have a net gain. He will not borrow the 6th $1000 because with his diminishing returns it will increase his output only 7½%, so if the interest rate is 8% he will stop with the 5th. If the interest rate were 5½% he will still borrow the 6th, still borrow the 7th, the 8th, 9th, 10th, 11th, if he can get 57 and only pay 55. For the 12th you can flip a coin as it is just even, he won't gain. This crude picture can be refined and refined until it approaches real life.

Now let us assume there are 100 establishments in a given community. There is a given amount of land, a given number of workers, and a total of $980,000 worth of trucks, locomotives, reaping machines, nets, boats - all the things we use to carry on our production. What will the interest rate be? The total capital comes somewhere between $9000 and $10000 per establishment. Of course, one farm might want to use only $2000 worth of capital; another $15000 worth. A big mine might want $350000, another little mind $5000 worth of capital. In real life you don't have all establishments alike, but for simplicity let us assume that all the establishments are alike and can use the same amount of capital.

I shall start with 6.6% as the rate of interest. Nobody would borrow the 9th $1000 worth if you have to pay 6.6% - $66 per year on every $1000 used, and the 9th $1000 would only increase your output above depreciation by 63. Would you pay $66 for $63 every year? Answer, no. If the rate were 6.6% nobody would borrow beyond the 8th $1000. The rest of the trucks, reaping machines, looms, etc. would be lying idle and the owners will then offer it for less. Owners wouldn't want capital lying around depreciating all the time, so the interest rate could not remain 6.6%. Similarly the interest rate could not be 5%. The establishments would then be ready to borrow up to the point where they would be using the 14th $1000 at 5% if they only had to pay 5%. 100 establishments would then be using $1,400,000 worth of looms, trucks, reaping machines, farms, orchards, etc., but there isn't that much capital in the community now. At 6% everybody would use the 9th $1000. It couldn't be above 6% because if it were nobody would use the 10th $1000. You won't pay 61 to get 60. The interest rate must come down low

enough to get the 10th $1000. The equalizing process will continue between borrower and lender, and the interest rate will come out near 6%.

There is something else not generally understood. That is the effect of a tax on capital. Let us say that the total amount of capital remains the same, and a tax of 2% is levied on all capital - that is, $20 on every $1000. Let us say that I operate a store worth $10000 but only $3000 is mine. I borrow the other $7000, or I am contemplating borrowing the last $1000 to make the $10000 story mine. That last $1000 would increase my output $60 per year, but the 2% tax, $20, is going to be taken away from me. I won't borrow at more than 4%. Thus the tax of 2% will reduce interest from 6% to 4%. It may also reduce the amount of savings.

Now let us say that New York adopted a system of abolishing taxes on improvements, and decided to tax land values instead. In New York people could get 6% on capital, whereas in New Jersey they could only get 4%. What would you do if you lived in New Jersey? You would send savings to New York. But the rate of interest wouldn't remain 6% in New York. Capital would increase and the rate of interest would begin to go down in New York. But capital flowing into New York would mean workers better equipped with tools, and since capital wouldn't be taxed, new capital could be constructed. There would also be a greater demand for capital, which would equalize the interest rate.

When interest is explained in this way, it can be seen that capital does not exploit labor and that a free capitalist economy increases production and improves the lot of the worker.

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(Further development of Professor Brown's approach to interest is to be found in his pamphlet, "Objectives, Prejudice and Techniques in the Teaching of Economics," available from the Robert Schalkenbach Foundation for 50¢.)