



# In Praise of Idleness: Further Reflections on Knowledge, Capital and Growth

By David Ndi



*“Modern technic has made it possible to diminish enormously the amount of labor necessary to produce the necessaries of life for every one. Let us take an illustration. Suppose that at a given moment a certain number of people are engaged in the manufacture of pins. They make as many pins as the world needs, working (say) eight hours a day. Someone makes an invention by which the same number of men can make twice as many pins as before. But the world does not need twice as many pins: pins are already so cheap that hardly any more will be bought at a lower price. In a sensible world everybody concerned in the manufacture of pins would take to working four hours instead of eight, and everything else would go on as before. But in the actual world this would be thought demoralizing. The men still work eight hours, there are too many pins, some employers go bankrupt, and half the men previously concerned in making pins are thrown out of work. There is, in the end, just as much leisure as on the other plan, but half the men are totally idle while half are still overworked. In this way it is insured that the unavoidable leisure shall cause misery all round instead of being a universal source of happiness. Can anything more insane be imagined?”*

Bertrand Russell *In Praise of Idleness*

In economics, we are concerned primarily with three things, productivity, efficiency and welfare. Productivity is simply output per unit of input. We measure productivity in terms of output per worker. Economic efficiency is a question of optimality, that is, whether the resources have been put to the best possible use. Economics is in fact known as the study of resource allocation. Welfare is a question of whether the way production and distribution are organized is good for society. We can summarize the three questions: are we good at it, are we doing it right, and what good does it do. In short, it boils down to purpose. What is it all in aid of? This is Russell's beef with the industrious society. To what end?

In economics, we are concerned primarily with three things, productivity, efficiency and welfare.

Ms Agronomy and Mr. Capital are two young farmers. Both have inherited fifty acres of land on which their parents practice traditional farming, growing maize, beans, yams and livestock. Mr. Capital is an ambitious guy. He studied finance. He wants to modernize and mechanize. Business plan, bank loan, buys tractors, harrows and ploughs and puts the whole 50 acres under maize. He is able to double his yield to 20 bags an acre. Next year he leases another 50 acres. Soon he is farming 500 acres. He has a fleet of tractors, sprayers, irrigation system, a combine harvester grain driers, silo—the works. He is producing 30 bags per acre.

Ms Agronomy went to agricultural college. She has small plots set aside on her farm where she experiments with different agronomic techniques such as zero-till farming, crop rotation, inter-cropping, organic farming, mulching and so on. She is still farming her fifty acres. For ease of analysis we translate all her different products into "maize equivalent." Her production also works out to the equivalent of 30 bags of maize per acre.

Ms Agronomy and Mr. Capital's economic accounts are summarized in the table below. Although both obtain the same yield, 30 bags per acre, Mr. Capital's operation is evidently much more productive. Its total output translates to 750 bags per worker, two and a half times more than Ms Agronomy's 300 bags per worker. It is not difficult to see how this difference has come about. Mr. Capital's workers have more tools to work with, Sh. 3 million per worker against Ms Agronomy's Sh. 600,000 per worker—five times as much. They are also working more land, 25 acres worker compared to 10 acres per worker in Ms Agronomy's operation, obviously because they are mechanized.

	<b>Ms Agronomy</b>	<b>Mr. Capital</b>
<b>Output per Acre (bags)</b>	30	30
<b>Land (acres)</b>	50	500
<b>Land rent/acre</b>	600	600
<b>Workers (No.)</b>	5	20
<b>Capital</b>	3,000,000	60,000,000
<b>Total Output (bags)</b>	1,500	15,000
<b>Total Output</b>	1,500,000	15,000,000
<b>Output/worker (bags)</b>	300	750
<b>Output/worker</b>	300,000	750,000
<b>Capital/worker</b>	600,000	3,000,000
<b>Capital cost/worker</b>	90,000	600,000
<b>Land rent/worker</b>	6,000	24,000
<b>Intermediate inputs/worker</b>	7,500	37,500
<b>Total cost/worker</b>	103,500	661,500
<b>Labour surplus/worker</b>	196,500	88,500

But capital is not free. In economics we think of the cost of capital in terms of depreciation, wear and tear if you like, which is the rate of its consumption. Because Mr. Capital has all manner of equipment that need spare parts and replacement that Ms Agronomy does not have, his consumption of capital will be higher. Let us put it at 20 percent and Ms Agronomy's at 15 percent. This translates to a capital costs of KSh. 600,000 and Sh. 90,000 per worker respectively.

To complete the accounts, we need cost of land and other inputs (fertilizers, diesel, electricity etc) which we call intermediate inputs in economic accounting jargon. The land rent is assumed at 500 per acre, Ms Agronomy has 10 acres per worker and Mr. Capital has 25, which works out to Sh. 6,000 and 24,000 per worker respectively. For intermediate inputs Mr. Capital uses more inputs including diesel, electricity fertilizer pesticides and so on. We assume that his input costs work out to Sh.80 per bag and Ms Agronomy's are half as much, which adds up to Sh. 37,500 and Sh.6,000 per worker respectively. The price of maize is Sh. 1000 a bag.

What more do they tell us?

Although Mr. Capital's operation has higher output per worker, Miss Agronomy's operation has a labour surplus of Sh.196,500 against Mr. Capital's Sh. 88,500 per worker, that is Sh.108,500 more. The labour surplus is what is available for consumption. If Miss Agronomy were to farm Mr. Capital's land, she would create 50 jobs, two and half times more than Mr. Capital, and generate afford the society Sh. 5.4 million more consumption. With the same financing her operation would employ five times more workers (100 compared to 20) and six times the labour surplus (Sh.10.8 million compared to Sh.1.77 million) OF Mr. Capital's operation, but it would require twice as much land—and that would be a problem wouldn't it. As this columnist has remonstrated for the better part of three decades, if society entrusts landlords with the allocation of its resources, it ought not be befuddled that they seek to maximize rents

Mr. Capital's workers produce Sh. 450,000 more, but the capital stock consumes more than the additional output. In economics we say that Mr. Capital's operation has over-accumulated capital or

if you want to be esoteric, it is “dynamically inefficient.” The idea that economy can over-accumulate capital runs counter to conventional wisdom, which maintains that consumption is bad, and investment is good. A particularly irksome variant of this conventional wisdom maintains that the more government spends on “development” by which we mean brick and mortar stuff, and the less it spends on recurrent, especially the wage bill, the better.

Suppose an economy starts out with a GDP per capita of \$1000 and no physical capital stock. You can think of this as a pastoralist economy where the GDP is simply the value of each pastoralist’s annual off-take— for example, that each family sells four steers per person at \$250 each. GDP is also equal to consumption.

Now, this economy decides to develop by “adding value” —feedlots, abattoirs, meat processing plants the works. It also needs infrastructure— electricity for the cold rooms, water etc. To finance this, it needs to save and invest. The table shows how the economy would evolve under four different investment rates 10, 20, 30 and 40 percent, and the associated economic growth rate, output (GDP per capita), the capital stock (obtained by depreciating investment at 20 percent per year), and consumption per person. At a 10 percent investment rate, GDP per person grows by one percent per year.

Ten years on, the GDP is just about 10 percent higher - the economy has accumulated \$460 of capital stock per person - but people are still consuming \$6 less than before development started. The elderly who die during this period would have been better off without development. They will have to be satisfied with bequeathing their children a better future—hopefully. At an investment rate of 20 percent, the economy would be breaking even after ten years, with consumption \$75 higher than in year zero. Thirty percent investment rate consumption rises by another \$12. But at 40 percent investment, the per capita consumption in year ten is \$62 less than at an investment rate of 30 percent. What’s driving this?

[An] economy decides to develop by “adding value” ...At a 10 percent investment rate, GDP per person grows by one percent per year. Ten years on, the GDP is just about 10 percent higher...but people are still consuming \$6 less than before development started. But at 40 percent investment, the per capita consumption in year ten is \$62 less than at an investment rate of 30 percent. The elderly who die during this period would have been better off without development...What’s driving this?

Mathematically, it is the relationship between the investment rate and the growth rate. A 10 percent investment rate increases growth by 1 percent. From 10 to 20 percent it increases by two percentage points. The increase declines to 1.5 percentage points between 20 percent and 30 percent, and to one percentage point between 30 and 40 percent investment rate. This is not a sleight of hand. It reflects two things. First the returns to capital decreases with the amount of capital—the law of diminishing returns. Secondly the more capital an economy accumulates the more resources are consumed by maintaining and replacing it. In the 40 percent investment scenario the replacement cost of capital amounts to a good 30 percent of GDP— three quarters of the 40 percent investment rate is simply maintaining the level of capital stock.

This economy has violated the Golden Rule saving rate. The Golden Rule saving rate is the rate of capital accumulation required to maintain a stable rate of consumption growth. It is called the golden rule because it requires each generation to do what it would have other generations do. Save too little, the capital stock declines and the next generation’s consumption will fall. Saving too much deprives the current generation only to burden future ones with maintaining a bigger capital stock

than they need. The Golden Rule saving rate for this economy is somewhere between 30 and 40 percent. The economy ought to shed some capital. The question is, what will it shut down? No capitalist will volunteer to close down their plant for the good of the country. Since none will, recessions come every so often and sorts them out.

Investment Rate,%	Growth Rate,% p.a	GDP per Capita,\$	Capital/Worker, \$	Consumption/Person,\$
0%	0%	\$1,000	\$0	\$1000
10%	1%	\$1,105	\$479	\$994
20%	3%	\$1,344	\$1,107	\$1075
30%	4.5%	\$1,553	\$1,848	\$1087
40%	5.5%	\$1,708	\$2,646	\$1025

It should also be evident that capital on its own cannot deliver the kind of growth in prosperity that we observe in reality. I gather that my smartphone has millions of times more computing power than the Apollo Guidance Computer (AGC) aboard the spacecraft that took Man to the moon. The AGC was the first computer to use integrated circuits (ICs), the now ubiquitous microchips. It cost \$150,000 (about US\$ 1.1 million in today's value). My smartphone cost \$1000 dollars and you can get a good one for a quarter of that. One very big difference is that the AGC was crash-proof. That aside, fifty years down the road, the cost of AGC will buy you 5,000 infinitely more powerful handheld computers to do the most frivolous things.

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It is science, not capital that enables us to waste computing power on selfies and fake news. The reason we can afford to consume knowledge, frivolously or otherwise, is first, not subject to diminishing returns. Secondly, knowledge can be used by many people over and over again at no additional cost.

Suppose Ms Agronomy were to acquire another 50 acres of land. She would with very little capital, simply replicate her knowhow and be producing at peak output in no time. And of course, Ms Agronomy would be continuing with her experiments. So by this time, she would be up to 35 bags per acre, or 40. In fact, every one of Ms Agronomy's workers could go off and replicate her methods at no extra cost. Mr. Capital's workers cannot walk into the bank and walk out with a tractor. Mr. Capital would be back to the bankers who would in turn deploy more of society's savings to equip his operation. More of societies savings would have to be mobilized. New equipment would need to be manufactured. Producing more equipment needs more workers. So instead of producing food, Ms Agronomy's workers will now be hired to produce the equipment to produce food.

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Why then is society, even those countries in which more capital could not possibly appreciably improve standards of living —think Japan— still obsessed with hard work, thrift and accumulation of

capital?

Why are Africa's leaders forever trooping to the West and East, fawning, groveling and whoring for capital?

Bertrand Russell: *'From the beginning of civilization until the industrial revolution a man could, as a rule, produce by hard work little more than was required for the subsistence of himself and his family, although his wife worked at least as hard and his children added their labour as soon as they were old enough to do so. The small surplus above bare necessities was not left to those who produced it, but was appropriated by priests and warriors. In times of famine there was no surplus; the warriors and priests, however, still secured as much as at other times, with the result that many of the workers died of hunger. At first sheer force compelled them to produce and part with the surplus. Gradually, however, it was found possible to induce many of them to accept an ethic according to which it was their duty to work hard, although part of their work went to support others in idleness. [But] a system which lasted so long and ended so recently has naturally left a profound impression upon men's thoughts and opinions. Much that we take for granted about the desirability of work is derived from this system and, being pre-industrial, is not adapted to the modern world.'*

Says Bertrand Russell: *"Gradually, however, it was found possible to induce many of them to accept an ethic according to which it was their duty to work hard, although part of their work went to support others in idleness."*

Warriors, priests, chiefs, bureaucrats. And bankers.

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