

THE PROGRESS REPORT

The Margin of Production

By Fred E. Foldvary

The "margin of production" is a key concept in economics, yet you won't find it in "principles of economics" textbooks, and most economists get master and doctor degrees without ever having heard of it. What gives? This "margin" is a concept of classical economics, and it was buried when neoclassical economics took hold during the late 1800s.

In classical economics, the margin sets the general wage level of an economy, and it also sets rents, since rent is production above the wage level. The neoclassical turn also buried land itself, mixing it into capital goods, and switched "economic rent" from a return on land to any income from a fixed input. Neoclassicals then claim that land is not really "fixed," so land does not even have an "economic rent" any more!

In goofing up land, the neoclassicalists also contort capital goods. Sometimes "capital" is treated like land, as a fixed input, and other times, it grows and depreciates like true capital goods.

Neoclassical economics then has a little problem with labor: if there is no margin of production, how is the wage level determined? Their answer is supply and demand curves. There is a supply of labor, where at various wages, the quantity of labor or employment will be determined by how many hours workers wish to work. There is then a demand curve, where at various wages, employers will seek to hire workers. Where the supply and demand curves meet, there the general wage level is set.

That is correct, but incomplete. If there are few workers, why do employers offer a high wage? Why would a self-employed worker have a high wage? It is not just that the productivity is high. It is also that most of that productivity is going to wages. The land is also very productive, yet neoclassical economists say the marginal product of land is low, since the rent is low.

The neoclassical economists have the cart before the horse. They say a low rent means a low marginal product. But the land is very productive, so how can it have a low marginal product? What's missing is the concept of the margin of production. The fact that neoclassicals talk about the "marginal product" shows that the margin is there, but it's camouflaged, so you can't see it.

The easiest way to understand the margin of production is to imagine an agricultural example, where it becomes the margin of cultivation. Land has different degrees of productivity because of the soil, sunlight, temperature, and rain. We grow corn up to that borderland where we either run out of labor or it's no longer worth growing. That border is the margin of cultivation. Land beyond the margin is submarginal, not having any cultivation value. Land just at the margin, the least productive land in use, is free, and its rent is zero. So all the product goes to wages.

We are, for the time being, lumping capital goods - tools - in with the labor and wages. The lands of higher quality than the margin produce more, and after paying wages, the leftover product is

rent, which is paid to the owner of the land. The more productive the land, the higher the rent. That's because all workers in this model earn the same wage - being all rather alike and very mobile. Workers have legs and can move, while land is stuck in place.

What happens if we get more workers and they go to the lands that were formerly submarginal? The margin of cultivation gets extended to a less productive border. The wage at the margin falls. Since wages are the same everywhere, the whole wage level falls. Rents then rise, since rent is the product minus the wage. As the margin gets pushed to less productive lands, rent rises and wages fall.

Now let's bring in capital goods - the tools that the workers use. Tools increase productivity. The self-employed worker has to buy the tools, which reduces somewhat the gain from using tools. But still, his wage goes up. The landlord need not buy any tools, and he keeps all the rental increase. The worker gains some from better technology, but much of the gain goes to increased rent.

Land speculation makes the process go further and faster. Land is held waiting for higher rents and land values, so workers who would have worked in the more productive lands have to go to the margin, pushing the margin even further out, and thus depressing wages even more. Then the tax man comes and takes away a large chunk of that low wage, making the least able worker that much poorer.

This corn model can be generalized to all kinds of production. There are various margins for different activities that ultimately end up in the least productive land in use. In urban land, the margin becomes the edge of urban sprawl as the inner city land is inefficiently used as the owners wait for higher rents before building. The margin sets the wage level and determines rent.

Sound economic policy should avoid inefficient and wasteful land use that extends the margin to lower wages, and it should avoid depressing the take-home wage even further by taxing it. We can see that rents rise as the margin extends, through no effort of the landowner. The conclusion should be obvious: get the public revenue from the rent, and don't tax wages or tools at all.

This conclusion is lost in neoclassical economics, which just shows the supply and demand curves, hiding the relationship between wages and rent. Neoclassicals then say we should tax everything, since the curves all look alike to them. If you understand the margin of production, you have a clearer grasp of economics than many Ph.D. economists, who never learned what the margin of production means.