Does LOWERING TAX RATES cause ECONOMIC GROWTH?

It's often argued that higher taxation reduces economic growth. In fact, the theory is ambiguous. So what does the evidence say? LUCY MINFORD explains

Can government policy generate economic growth?

By growth we mean more resources to put to any use society might choose, net of harmful bi-products such as pollution. Defined this way, growth is good and so the question is important.

Aggregate growth is the rate of change of total output. Technological progress is the key to sustainable growth per head of population.

This cannot be achieved by simply increasing other inputs such as labour and capital: adding people boosts population at the same time as output and adding capital leads to diminishing returns if the population is limited.

Therefore growth theories now tend to focus on understanding how technology evolves, and the role that government policy plays in that process.

Exciting new theories of so-called 'endogenous growth' have proliferated. But the more different theories we have – often prescribing very different policy solutions – the more we want an answer to the question: "does that theory actually explain how this economy works?"

In other words, we wish to test theories convincingly using data, so we can have confidence that we are choosing the right policy. This article focuses on the role of tax policy in growth, in particular on the empirical evidence.

Why might the level of taxation affect growth?

Theoretical reasons to suspect a negative impact of tax rates on growth centre on incentive effects.

Higher rates may lower incentives to supply labour and invest in new capital, since the worker or investor retains less of the proceeds. This means less output growth due to lower labour and capital input growth.

For a profit-motivated innovator, higher tax rates lower expected take-home profits and so discourage innovation, reducing growth via lower increases

in productivity.

Higher taxes on earnings deter managers from spending extra time and effort employing inputs efficiently and imitating industry leaders, so the gap widens between the technological frontier (defined by leaders) and the average productivity in the economy.

There are some theories, however, that predict a positive relationship between taxation and growth.

This is especially so if tax revenues are spent by governments in ways that enhance productivity. Subsidies to research and development (R&D), the provision of education, or transport networks and broadband might be examples here.

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What does the evidence say?

Given that theories can point in different directions, these are questions that we should seek to settle empirically.

Various studies have been done in recent decades that attempt to shed light on this subject. They tend to use what are known as 'panel regressions'. This involves the statistical analysis of data on growth rates, tax policy, and various 'control variables' for a number of countries over time.

The control variables capture other factors affecting growth, allowing us to ask the question: "holding those factors constant, what is the effect on growth of changing tax policy?"

This work seems to suggest that, as a "rule of thumb", a 10 percentage point fall in the average tax rate (the ratio of tax revenues to GDP) is associated with a roughly 1 percentage point increase in the growth rate. Results of this magnitude seem to recur in different investigations.

The problem with this sort of approach is that it can only uncover an association between two variables.

As is well known, that does not mean that changes in one variable cause changes in the other. Higher growth may allow a country to reduce its tax burden whilst its government provides the same level of services and transfers – so the causality might work in the other direction.

Or there may be third factors that affect both taxation and economic growth such as the rule of law. A country's governance. Improvements in the rule of law, for example, may lead to higher economic growth and people paying a greater share of the taxes they owe (less tax evasion), thus allowing tax rates and tax receipts as a percentage of national income to fall.

Such factors can be difficult to measure. It is difficult to untangle everything that is going on using this style of model.

New work on tax and economic growth

Economic modelling has become complex in recent decades. However, a promising route for modelling tax and growth has been developed that can be easily explained, without referring to the underlying maths.

It is possible to build and test a model of the economy in which lower taxes work in a well-defined way to raise productivity. The idea is that high tax (and also regulation) form barriers to entrepreneurship.

Why emphasise entrepreneurship as a channel by which tax and regulation affect growth?

Many theories of growth focus on "innovation" and, when they are tested, innovation is equated to formal R&D. This is dominated in the data by large firms and so excludes the effect of start-ups and smaller firms. However, small and new businesses are often the engine of growth and the aim is to capture their contribution.

Here, tax is treated as one part of the broader phenomenon of "barriers to entrepreneurship". Labour market regulation is another.

Such regulation is intended to protect worker rights, a social objective which is not about promoting economic growth. However, if such regulations introduce frictions

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in labour markets which have an impact on growth, we would like to know.

The UK was an early starter among OECD countries in the deregulation of labour markets, which has been linked to the reversal of its relative economic decline within Europe since the 1970s, and the extent to which we should regulate labour markets is an important debate within the EU and also within the current government.

Although labour market regulation could improve investment in skills and productivity, it is also possible that less workforce flexibility causes firms to resist new technologies.

When the labour market is not functioning well, it is difficult for workers to find the firms where they will be best (most productively) employed, given their skillset.

Regulations tend to hit small firms hardest because they are a fixed cost and so a higher proportion of revenues. As such, they act as a barrier to entry, reducing competition.

The testing of the model is designed to work out whether these barriers to entrepreneurship really did reduce growth. There is more detail about the testing in the box.

In the model, barriers to entrepreneurship are measured by an index constructed from top marginal income tax rates and a labour market regulation indicator.

This labour market indicator reflects the extent of collective bargaining and union power as well as the costs imposed by government on hiring staff. The study's goal is to see whether movements in tax and regulation caused long-lasting changes in productivity growth. The results show that they do.

This study finds that a 10 per cent fall in the tax and regulation index relative to the trend in the index generates growth over a 30-year period, leaving output 24 per cent higher at the end of the period than it would have been be with policy unchanged. This is equivalent to a higher average annual growth rate over that period of 0.8 percentage points.

As it happens, this result – though not directly comparable – is similar in magnitude to the earlier research work on tax and growth•

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Testing the model to find whether tax and regulation affects economic growth

So, to reiterate, I have tested the role of these policies in UK growth using a method which allows an interpretation of the results in terms of cause and effect. How is this done?

The first step is to develop a model of the UK economy in which productivity is driven by entrepreneurship, which in turn is discouraged by tax and regulation.

The next step is to simulate this model many times. It is subjected to different random shocks. We observe the behaviour the model produces if these random shocks (including changes in policy barriers to entrepreneurship) follow different patterns. The simulations can be thought of as different "parallel histories" of the period.

When you take two different models of this type and repeatedly simulate them like this, the average economic behaviour produced by each is actually very different.

A model in which growth causes policy changes will produce very different results from a model which specifies the opposite, for example. Therefore this process allows us to test the hypothesis that these policy 'barriers' to entrepreneurship (tax and regulation) actually cause changes in growth.

A so-called 'indirect inference' test finds the probability that the actual history could have been produced by this particular model. If that probability is below a certain level, the model is rejected.

The test tends to reject false models very firmly, so we can be confident in a model that passes.