

# Competitiveness, Sustainability and the Environment

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## Introduction

How might domestic firms enjoy profitability and international competitiveness with fewer harmful environmental impacts? Private firms that either produce material goods or use physical inputs in supplying services can improve their profitability by increasing their resource productivity. Not only does a positive change in resource productivity mean increased profitability for the individual firm, but it also means a dramatic improvement in the impact of business on the environment, particularly with regards to climate change and the depletion of natural resources.

There is also an important role for government in promoting resource productivity through its regulatory toolkit, particularly tax policy. Income taxes, by adopting a certain kind of tax credit – the [Business Sustainability Credit](#) – might help promote increased resource productivity and firm profitability.



## Sustainability

There is genuine concern about the medium- to long-term viability of our current system of production and consumption. The size of the global population and the use of physical/material resources (renewable or otherwise) is unsustainable both in terms of the depletion of our world's natural resources and the pollution associated with the way in which we consume (or otherwise waste) those resources.

It is possible to have firm profitability and international competitiveness within environmental limits:

- (i) **safeguarding** the earth's capacity to support life in all its diversity,
- (ii) **respecting** the limits of the planet's natural resources,
- (iii) **protecting** and improving the quality of the environment,
- (iv) **preventing and reducing** pollution; and
- (v) **decoupling** economic growth from resource consumption and environmental degradation

## Firm Competitiveness

Corporate competitive advantage is determined not only by the global strategy of a particular firm, but also by its activities at a local level. Both global strategy and local activity have internal and external drivers. Internal drivers are unique to a particular firm. These drivers emerge because of strategies that seek cheaper or differentiated (value-added) production. Thus, on one level, corporate competitive advantage can be understood as a process that produces globally competitive domestic firms. External drivers concern the quality of the microeconomic business environment in which the firm operates, as well as the stage of development of any regional or local clusters of which it forms a part. The functions served by clusters are manifold: they reduce transaction costs; they boost efficiency; they improve incentives; they create collective assets in the form of information, specialised institutions and reputation; they enable innovation; they increase productivity; and they ease the formation of new businesses. External factors might be understood to reflect the role of governments or supranational institutions in encouraging firm competitiveness.

It is the rate and efficiency with which an economic agent creates, upgrades and deploys its specialised production factors that determines global competitiveness. Thus, skilled labour, innovative and value-enhancing intellectual property and the sophistication of public and private infrastructure are much more important than an abundance of unskilled labour or raw materials. It is the **skill** of the worker, the **innovation** of technology and the **sophistication** of the infrastructure that matter.

## Productivity

Improving productivity is at the very heart of competitiveness, irrespective of whether we are considering the competitiveness of a firm, a nation or even a regional bloc. The *internal* drivers of productivity change in any given firm from positive changes in:

- **allocative efficiency**, which refers to the input-output combination being profit-maximising;
- **technical efficiency**, which refers to the maximum possible output of a production process being achieved
- **technological innovation**, which refers to new inputs, production processes, outputs or business strategies, based upon new scientific knowledge.

Unlike knowledge that is "bought and paid for", costless knowledge (or disembodied technological change), such as "learning-by-doing" and imitation, cannot be captured as an input by any measure of productivity.

### Resource Productivity

Resource productivity seeks to measure the effectiveness and efficiency of the use of natural resources. It concerns minimising the cost of resource-based production inputs, as well as maximising the value of all production outputs: the idea is that we need to create more and better things from less "stuff".

Resource productivity it is as much about maximising profit at the firm level as it is about limiting negative environmental impacts. Secondly, most often it is the knowledge used in combining resource-based inputs that generates higher revenue streams, as well as lower input costs.

### Knowledge Production

It is human knowledge that directs the combination of natural assets (arrangements of things) and the changing of natural assets (rearrangements within things) to produce goods and services of economic value. Within a particular firm, it is this knowledge that will ultimately dictate international competitiveness. However, knowledge that increases productivity must be distinguished from increases in productivity caused by an increase in the volume or purity of resources used in production.

### Policy Recommendation: A Tax Credit

The best policy tool to promote increased resource productivity is a variable, non-repayable, volume tax credit. Tax credits have advantages over other forms of tax incentive. Non-repayable credits reduce the amount of tax due, the main consequence of which is the provision of greater certainty about the after-tax benefit of the incentive. Thus, they are a subsidy whose applicability and value are not tax base or tax rate dependent. Along with ease of implementation, this makes tax credits generally an attractive policy option. Independence of the tax base also means a tax credit can "happily" co-exist alongside other tax incentives.

#### The Government's Role

Governments should focus their efforts on rewarding endogenous improvements in resource productivity (i.e. rewarding those "internal drivers" that are both unique to particular firms and effective at increasing resource productivity). There are arguably two approaches: (1) for government to have a view on to what it takes for firms to be creative and innovative, or (2) government might seek to reward profitability that results from whatever kind of knowledge a particular firm, during a particular period, brings to its advantage. Profitability is the right concept in this context, particularly as it is an excellent proxy for productivity.

The objective of such a generic credit – **the Business Sustainability Credit** – is to promote higher resource productivity in the specific economic activities of individual firms arising other than as a result of an increased use of raw materials, non-renewable energy and intermediate goods. Resource Productivity Ratio (RPR) is a measure of profitability based on resource productivity. Business inputs can be categorised as labour, resource-based and knowledge-based inputs. Resource-based inputs are physical assets (or in the case of non-renewable energy, inputs derived from physical assets) and all resource-based inputs carry a market price. Knowledge-based inputs are intangible assets. With regards the pricing of knowledge-based inputs, while the acquisition of some types of knowledge represents a direct business cost, as with R&D expenditure, there are many other kinds of knowledge-based inputs that are costless (for example, learning-by-doing, imitation, management effort and organisational change). The Business Sustainability Credit should therefore promote increases in productivity that reflect improvements in knowledge-based inputs rather than increases in resource-based inputs. An Activity Index (AI) of every eligible (i.e. voluntarily registered) firm would make clear those firms with higher resource productivity. Firms at the bottom of the AI would not receive a credit. Those at the top of the AI would be awarded a tax credit in accordance with their ranking for that Specified Economic Activity. The firm at the top would get the highest credit in percentage terms.



Unlike so many of the incentive regimes found in domestic tax systems around the world, the Business Sustainability Credit does not require an acceptable theory of the creative process in order to promote innovation. The Business Sustainability Credit also has a number of practical advantages. First, like all tax credits, it is an extremely versatile and flexible policy instrument. It can be targeted at particular sectors, including fledgling, productive, supporting and, even, failing sectors. Second, it can be implemented quickly. Third, it is "road testable": it need only be introduced one sector at a time. Accordingly, the New Zealand government can try it out and see if it works on the ground, incurring little financial cost and limited reputational risk in so doing.

Ultimately, though, what is of primary importance is that the Business Sustainability Credit promotes sustainability and productivity. This goes to the heart of what is needed for the health of the New Zealand economy, and its people, in the medium and longer term.

To find out more about this research, please visit: [\(2017\) 23 NZBLQ 276](#)

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