Rivalry

Wikipedia

Introduction

In economics, a good is said to be **rivalrous** or a **rival** if its consumption by one consumer prevents simultaneous consumption by other consumers,

or if consumption by one party reduces the ability of another party to consume it. A good is considered **non-rivalrous** or **non-rival** if, for any level of production, the cost of providing it to a marginal (additional) individual is zero. A good is "anti-rivalrous" and "inclusive" if each person benefits more when other people consume it.

A good can be placed along a continuum from rivalrous through non-rivalrous to anti-rivalrous. The distinction between rivalrous and non-rivalrous is sometimes referred to as **jointness of supply** or **subtractable** or **non-subtractable**. Economist Paul Samuelson made the distinction between private and public goods in 1954 by introducing the concept of nonrival consumption. Economist Richard Musgrave followed on and added rivalry and excludability as criteria for defining consumption goods in 1959 and 1969.

Rivalry

Most <u>tangible</u> goods - both <u>durable</u> and nondurable - are rival goods. A hammer is a durable rival good. One person's use of the hammer presents a significant barrier to others who desire to use that hammer at the same time. However, the first user does not "use up" the hammer, meaning that some rival goods can still be shared through time. An apple is a nondurable rival good: once an apple is eaten, it is "used up" and can no longer be eaten by others. Non-tangible goods can also be rivalrous. Examples include the ownership of <u>radio spectra</u> and <u>domain names</u>. In more general terms, almost all <u>private goods</u> are rivalrous.

Non-rivalry

In contrast, non-rival goods may be consumed by one consumer without preventing simultaneous consumption by others. Most examples of non-rival goods are intangible. Broadcast television is an example of a non-rival good; when a consumer turns on a TV set, this does not prevent the TV in another consumer's house from working. The television itself is a rival good, but television broadcasts are non-rival goods. Other examples of non-rival goods include a beautiful scenic view, national defense, clean air, street lights, and public safety. More generally, most intellectual property is non-rival. In fact, certain types of intellectual property become more valuable as more people consume them (anti-rival). For example, the more people use a particular language, the more valuable that language becomes.

Non-rivalry does not imply that the total production costs are low, but that the <u>marginal</u> production costs are zero. In reality, few goods are completely non-rival as rivalry can emerge at certain levels. For instance, use of public roads, the

Internet, or police/law courts is non-rival up to a certain capacity, after which congestion means that each additional user decreases speed for others. For that, recent economic theory views rivalry as a continuum, not as a binary category,

where many goods are somewhere between the two extremes of completely rival and completely non-rival. A perfectly non-rival good can be consumed simultaneously by an unlimited number of consumers.

Anti-rivalry

Goods are <u>anti-rivalrous</u> and inclusive if my enjoyment increases with how many others consume the good. The concept was introduced by Steven Weber (2004), saying that when more people use <u>free and open-source software</u>, it becomes easier and more powerful for all users.

Lessig noted that any <u>natural language</u> is anti-rivalrous, because its utility increases with how much it's used by others. Cooper noted that efforts to <u>combat climate change</u> are perversely anti-rivalrous, because the US will benefit from the efforts of others to combat this problem, even if it refuses to do so.

Types of goods based on rivalry in consumption and excludability

There are four types of goods based on the characteristics of rival in consumption and excludability: Public Goods, Private Goods, Common Resources, and Club Goods.

These four types plus examples for anti-rivalry appear in the accompanying table.

	Excludable?	
	yes	no
Rivalrous	Private Good	Common-pool good
Non- rivalrous	Club / toll Good	Public Good
Anti- rivalrous	"network" good, e.g., data on the internet; good that improves public health	"symbiotic" good, e.g., language

Types of goods based on consumption and excludability

Goods that are both non-rival and <u>non-excludable</u> are called <u>public goods</u>. Examples include clean air, national defense, and free-to-air broadcast TV. It is generally accepted by mainstream economists that the market mechanism will underprovide public goods, so these goods have to be produced by other means, including government provision.

On the other hand, <u>private goods</u> are rival and excludable. An example of this could be an apple provided by a fruit store. An individual who consumes an apple denies another individual from consuming the same one. It is excludable because consumption is only offered to those willing to pay the price.

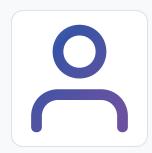
<u>Common resources</u> are rival in consumption and non-excludable. An example is that of fisheries, which harvest fish from a shared common resource pool of fish stock. Fish caught by one group of fishermen are no longer accessible to another group, thus being rivalrous. However, oftentimes, due to an absence of well-defined <u>property rights</u>, it is difficult to restrict access to fishermen who may overfish.

Goods that are both non-rival and excludable are called <u>club goods</u>. Cable television is an example of this. A large television service provider would already have infrastructure in place which would allow for the addition of new customers without infringing on existing customers viewing abilities. This would also mean that marginal cost would be close to zero, which satisfies the criteria for a good to be considered non-rival. However, access to cable TV services are only available to consumers willing to pay the price, demonstrating the excludability aspect.

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