

Is Private Provision of Lighthouse Efficient? : A Simple Comparison

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The first version: March 1, 2012 This version: April 21, 2013

Abstract

This paper theoretically examines performance of private provision of lighthouse service, taking into account its "quality" (probability of safe voyage). The private provision of lighthouse service in the 18th century Britain discussed by Coase (1974) can be regarded as a situation of anti-Commons or complementary monopolies a la Cournot. The effect of anti-Commons reduces a volume of voyage so much that profits of private lighthouses and the corresponding total surplus become much smaller, which makes investments into quality lower. It is shown that, in symmetric equilibrium, quality (total surplus) of the private provision is lower than quality (total surplus) of the King's monopoly, which is lower than social optimum. It is also shown that total surplus under the private provision is less than half of the social optimum when the number of private lighthouse is more than two. Our simulation results demonstrate that total surplus under the private provision is so small to allow the government with about 2.7 times higher cost to generate higher surplus in almost all cases. This may explain why lighthouses (and other services such as roads that would lead to the anti-Commons situation under private ownership) are, except for some cases, not "privatized" but provided by government in the modern society.

Key Words: Public Goods, Lighthouse, Anti-Commons, Complementary Monopolies

JEL Classification Numbers: H41, L13