This project focuses on the modes of providing lighthouse services in history, in relation with their nature as public goods.

**Rationale**

In the history of economic analysis, the lighthouse has often been cited as the classic example of a public good (whereby those who do not pay cannot be excluded from consuming it, and one’s consumption does not reduce the consumption of others), leading to the prescription of a public production financed out of general taxation. The lighthouse is cited as calling for public intervention since, at least, John Stuart Mill (1848), the example being taken up by Sidgwick (1901) then Pigou (1932), Samuelson (1964) and Arrow (1969). It is still cited in main handbooks of economics (e.g. Samuelson and Nordhaus 2010).

This traditional view has been called into question by the economist Ronald H. Coase (1991 “Nobel prize”). In “The lighthouse in economics” (1974), he described a lighthouses system, in England and Wales, from the 16th to the 19th century, in which private individuals embarked on financing, building, and maintaining numerous lighthouses. He will thus retain the lighthouse as an example of the mistaken standard approach of economic policy and, more largely, of the economists’ lack of concern for the real world.

From a symbol of the necessity of State provision and financing of public goods, the lighthouse has become, since the publication of Coase’s article, illustrative of the private sector’s ability to provide public goods, and an archetype of the mistakes of economic policies justified by “market failures.” The lighthouse became the classic example of “the failure of market failure,” as argued by Zerbe and McCurdy (1999), to the point where it is used as a logo by *The Independent Institute*, a think tank close to American neo-conservatism, whose newsletter is titled “The lighthouse.”

Coase’s conclusion has therefore been widely repeated; it had, however, been called into question by the lawyer Van Zandt (1993) then the historian Taylor (2001) and the economist Bertrand (2006). This has renewed the debate over the nature and efficiency of the English lighthouse system among economists (Barnett and Block 2007; 2009; Bertrand 2009; Block 2011; Carnis 2013) and historians (Lindberg 2013), and the studies of other historical systems have flourished (Bertrand 2005; Lai, Davies and Lorne 2008a; 2008b; Lindberg 2012; Poder 2010). This controversy mainly uses history and economics: it deals with the modes of financing and maintaining lighthouses (private, public, or other modalities of public-private partnership) and their relative efficiency in Great Britain, France, Sweden, Estonia or China.

It is completed by the works of historians on lighthouses, such as Guigueno (2001a; 2001b), Dreyer (2008) and Bickers (2013). While the question may seem limited – was the lighthouse a good example of a service that must be produced by the State? – the political issue is important: the economic discourse on market failures is used to justify public intervention. More generally, experts who advise policies draw on research works on public goods, in particular those on lighthouses (see [here](#) for an example).
Aims
This debate implies two main questions. First, there is what will be called here a “Coasean question”: did a private system of lighthouse service exist and was it efficient? The project will thus focus on the actual modes of financing and providing lighthouse services in different times and places. For example, information is lacking on Scotland or on the French system before centralization; even the pre-modern English system is not yet well understood. When private parties contribute to the provision of lighthouse service, the nature of the contracts has to be studied: which kinds of delegation, control or price were chosen? Moreover, to evaluate Coase’s criticism to standard theory, it is necessary to appraise the efficiency of these “private” systems, when they existed. Appraisals of efficiency can only be comparative; and comparisons also allow differentiating general issues on financing from local and period issues. To that end, as well as studying in greater depth the older English system, other systems need exploring: in different places where there were private contributions (Estonia, Sweden), and in later periods, some of which are too quickly assimilated to centralized and public provision, while there was still some outsourcing to private parties. This aspect of the project therefore questions the relationships between private and public in the provision of lighthouse services, and the efficiency of these relationships.

The second aspect of the project takes a more global perspective on the provision of lighthouses, by studying it as a provision of a specific public good in the long term. It aims to explain the choices of the modes of provision – which the answer to the first question will bring to light and take for granted. The aim here is to understand the choices of the lighthouses provision modes in all their dimensions, not just economic ones. The technological dimension is usually well understood, but it is not the only determining factor. Even more, the mode of provision is not the only choice to be made about the provision of lighthouses. Other questions concern the location of lighthouses, their number, the choice of the quality of lights, innovation, etc. This more general history aims at stressing the multiple dimensions influencing all the aspects of lighthouses, proving that economic aspects of the provision of lighthouses are embedded in these other dimensions:

- The lighthouse is part of a larger system of maritime safety and security;
- It serves religious, commercial, military and diplomatic purposes;
- It is an object of science and technology but also of art and culture;
- It is a political monument serving the propaganda of a government and demonstrating its presence in its more remote or contested territories;
- Its provision depends on the organization of industry and government, and particularly of its different layers of administration (local/national; indigenous/colonial);
- It also depends on actors and communities (experts, engineers, entrepreneurs, merchants, lighthouse staff, ship owners, wreckers, local inhabitants);
- It dramatically changed as a result of the development of international commerce in the globalization process, including knowledge diffusion, in the 19th and 20th centuries.
In other words, the lighthouse is the result of economic, political, social, cultural, and scientific history and also produces economic, political, social, cultural, and scientific history.

To answer these two main questions, the project will develop five levels of analyses. First, it will produce comparisons between the different systems of lighthouses provision at different times and places. Each historical system will be characterized in all its institutional dimensions: financing, production, organization, legal ownership, setting (level) of the price, source of revenues (dues or taxation) and their distribution, cost of building and maintenance, profitability, quality of buildings and lights (nature of control), technological innovation, actors and stakeholders, layers of administration, role of the lighthouse in maritime security, processes of choice, role of industries, international role. The aim of these comparisons is to enlighten the diversity of the modes of provision and their path-dependence, and to contribute to answer the Coasean question.

Second, and more specifically, the project will detail and analyze the nature of the contracts when private parties were involved (concessions, delegations, etc.). Some archival work is needed to examine the different parts of these contracts: mode of attribution, nature and definition of the service, duration, price, enforcement. The economic analysis will use the framework of the transaction cost regulation developed by Spiller (2013), which adapts transaction costs economics (private contracts) to public-private contracts.

Third, our economic history of lighthouse-service provisions will study the global market of lighthouses (towers and lights) in the 19th century, dominated by France and Great Britain. The history of French lighthouse firms has been recently written (Dreyer 2008), but that of English firms (in particular Chance Brothers) is still lacking. In both cases, questions arise about the relationships between these private firms and their governments and about the nature of the public support to this private industry. For example, in France, the public command helped two firms to develop an international monopsonic position.

The fourth level of analysis will concern norms and standards. The 19th century, in particular, is a period of standardization of the norms relating to maritime security and lighthouse construction, linked to globalization. How did some nations impose their own norms to others – and thereby reinforce their technical and economic domination? Why did some refuse to apply the norms agreed upon? The study of the proceedings of international debates about maritime safety and international standards, as well as about modes and levels of “civilization” is necessary to answer this kind of questions.

Lastly, this project will contribute to the history of economic and political thought and ideas. On the one hand, it will examine the political debates on lighthouses in the countries studied (debate about the mode of provision, the level of dues, the decisions to build new lighthouses or to impose new technologies, etc.). Two dimensions of these debates will be investigated: the strategic and rhetorical role of the arguments put to the fore by the different parties, and the interaction between these debates and the contemporaneous economic debates (on “public goods” and “natural monopoly”). On the other hand, we will review the use of the lighthouse example in political economy literature (John Stuart Mill, Henry Sidgwick, Arthur Cecil Pigou, Kenneth Arrow; and other economists in relation with risk and insurance).
Methods
The countries concerned by the research are: China, England and Wales, Estonia, France (and New Caledonia), Sweden and the Mediterranean world. We are looking to extend the project to other countries, such as Turkey, Scotland, Spain, Norway, United States, and others from South America. Our research will mainly focus on modern lighthouses (from the 17th century), but will also investigate the provision of lighthouse services in the Antiquity and Middle Ages.

This project is interdisciplinary and unites:
1° Economics: history of economic thought; institutional economics (economics of contracts, law and economics of property rights), transport economics and public economics, applied to past periods
2° History: economic history; business history; history of architecture; history of sciences and techniques; maritime history; global and colonial history; social and cultural history
3° Law: history of law (concessions); trade law
4° Geography: maritime geography

The approach is mainly historical, in its object (past periods) or the (sub-)disciplines that are used. In most cases, the relevant historic archives – state, commercial, or other public (e.g. Trinity House) – have never systematically been analyzed by scholars (and some have only recently become available – Chance Brothers, China). The project will undertake primary research and the development of these historic case studies, which will be shaped by the theoretical objectives and research questions posed, and which will in turn deliver empirical and comparative data (geographical, historical) to underpin the reassessment of the Coasean paradigm and wider related issues.

Insights
By not focusing only on the 18th century (at the center of the debate initiated by Coase), and by both contextualizing the problem of public good provision and providing a history of lighthouses that is also global and social, this project should contribute to a genuine maritime history and an institutional understanding of the provision of public goods in practice.

Furthermore, envisaging the history of the lighthouse as a public good brings some light on two contemporaneous problems:
First, even if some lighthouses are now no longer useful for navigation, they still pose a problem of public good since they enter into the cultural heritage of nations. Now belonging to the world of culture and heritage, the question remains: what is the best way of providing a lighthouse cultural service?
Second, while lighthouses are no longer the central part of the system of maritime security, the problems they posed are the same as those posed today by maritime security and safety, itself an international public good. There is evidence that control of maritime security and safety and sea rescue, financed by charity, government expenses, and private organizations has reached a level that may be insufficient to prevent shipping accidents. What can be done to enhance the provision of this essential public good?
List of references


