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# Land Rents and Ecological Crisis: *The Case of the Oder River Valley*

By DR. JÜRGEN G. BACKHAUS\*

ABSTRACT. In the summer of 1997, the Oder Valley experienced an almost unprecedented flood. By calling in the army, the German government prevented the dykes from bursting, yet massive floods occurred in neighboring Poland, as the River Oder is now the border between Germany and Poland. Similar floods occurred in the Czech Republic and Romania. In October of 1997, a seemingly unrelated event occurred: The Nobel Prize in economics was awarded to Myron S. Scholes and Robert C. Merton for their pioneering contributions to the theory of how options are priced in financial markets. Ironically, the options contract model provides a solution to the Oder Valley crisis. This article ties the two events together and also draws on insights from the radical reformer, Henry George.

## I

### Introduction

IMMEDIATELY AFTER THE CONCLUSION of the peace of Hubertusburg between Austria and Prussia in 1763, Frederick II of Prussia set on to resume a task which he had already started as a crown prince and for which he had been scolded by his father: claiming wetlands by building dykes and dams along the River Oder, later also along the rivers Warthe, Netze, and Plöne, and draining these marshes along with Lake Madue. Similarly, a system of canals connecting most of these rivers with the rivers Spree and Havel was being put in place.

The peace of Hubertusburg, of course, had concluded the war between Prussia and Austria, which gave Prussia most of Silesia, in particular the mountaintops. This point is relevant, since the country that controls the mountaintops also controls the lowlands downstream from an ecological

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point of view, which was very well understood by Frederick and his civil engineers and foresters. The Silesian and Moravian mountaintops need to be forested, as the occasional heavy summer rains will let the rivers swell and flood the lower marshes right before harvest time. Hence, in order to control the river, not only are dykes, dams, and ditches and canals needed in the lowlands, but heavy and well-maintained forestation is needed in the mountains, because the forests act like a sponge absorbing large amounts of rainfall while in full foliage.

## II

### **An Unprecedented Emergency**

IN THE SUMMER OF 1997, the Oder Valley experienced an almost unprecedented flood. By calling in the army, the German government prevented the dykes from bursting, yet massive floods occurred in neighboring Poland, as the River Oder is now the border between Germany and Poland. Similar floods occurred in the Czech Republic, Romania, etc. The flooding had all characteristics of a national emergency: a special stamp was issued, a special decoration invented for volunteers, and a staggering amount—in excess of 120 million German marks—was collected in private donations from German citizens, at least 50 million of those marks were handed over to Polish charities.

The emergency occurred not only due to poor maintenance of dykes and dams under state socialism, nor only due toluvial rainfall, but in particular due to the neglect of forestation in the Silesian and Moravian mountains. Hence, preventing future floods will involve not only repairing and improving dykes and dams as well as the irrigation systems, but also and most importantly re-foresting and properly maintaining the forest in the Silesian and Moravian mountains.

As a consequence of drawing border lines during and after World War II, both the mountaintops and the rivers Oder and Neisse have become frontier lines, which implies that ecological entities have been dissected. Hence, what as a consequence of the Silesian war had become both an ecological and a political entity—the Kingdom of Prussia enclosing the relevant parts of the River Oder and most of its tributaries as well as the relevant mountaintops—has now lost its concomitant political authority to enforce the proper ecological management. Likewise, since the relevant

jurisdiction has been lost, the tax base has likewise been lost that could allow for the clean-up effort of rebuilding dykes and the re-forestation of the mountains needed to repair the damage and prevent future flooding.

## III

**A Solution from Modern Finance Theory**

A SOLUTION TO THIS PROBLEM can be found in the writings of Henry George (George, 1880). The funds required for the repair of damage; improvements of dykes, dams, and ditches; and the re-forestation of the mountaintops are available in the value of the improvements of lands thereby achieved. These improvements would accrue to the owners of land as an increase in the land rent without their own labor, and hence, according to the precepts of Henry George's "remedy," they would be subject to his single tax.

Since no political authority presently exists that could levy the tax, a substitute solution is called for. Through an international treaty, an Oder Authority can be set up, with very much the same statutes as the German-Polish Foundation. The Oder Authority's purpose would be the ecological management of the mountain ridge. To this end, it would have to acquire land and manage it, generating proceeds from the exploitation of woodlands and river sites. It could reclaim the land rent increase due to its activities through a scheme of options propagated in modern finance theory.

A call option gives its owner the right to buy stock at a specified exercise or striking price. Similarly, a put option gives the owner the right to sell at (an obviously lower) exercise price. The present owner of lowlands faces the prospect of either owning land that is going to be flooded frequently or owning land that will be protected from flooding, and the difference in the value of these two types of land is attributable to the activities that the Oder Authority envisioned. Hence, the authority can issue put and call options. It should actually have the exclusive right to do so. Farmers will be interested in selling land subject to frequent flooding and buying land protected from such peril. The authority itself controls the risk, and the value of the improvements must be at least as high if not in excess of the cost of making the improvements. Hence, the revenue source lies in selling the insurance (through put and call options) so as to assume the risk the landowners would like to discharge or transfer. Obviously, the authority will also buy up land at present market value,

mortgaging it at close to 100 percent. In conclusion, we can note that the award of the Nobel Prizes in 1997 to Myron S. Scholes and Robert C. Merton provides the solution to one of the bigger natural disasters that befell Europe during the same year that the prize was won.

#### **Reference**

George, Henry. [1879] 1980. *Progress and Poverty*. New York: Appleton.