



SCARCITY AND FRONTIERS

HOW ECONOMIES HAVE DEVELOPED THROUGH
NATURAL RESOURCE EXPLOITATION

EDWARD B. BARBIER

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Preface

The genesis of this book began with another volume, *Natural Resources and Economic Development*, which was published in 2005 by Cambridge University Press.¹ The purpose of the latter book was to explore a key paradox in the contemporary world economy: why is natural resource exploitation not yielding greater benefits to the poor economies of Africa, Asia and Latin America? To better understand this paradox, I thought that it might be important to contrast the less successful resource-based development of present times with past epochs of economic development in which the exploitation of natural resources clearly played an important, and more successful, role. Thus, in my 2005 book, I included a chapter entitled “Natural resource-based economic development in history.” I published subsequently an article based on this chapter in *World Economics*.²

However, it soon became apparent that a chapter or journal article was not sufficient to explore the contribution of natural resource exploitation in influencing processes of economic development in key eras of world history. Nor would it be possible through any short historical review to shed light on the many parallels between these past epochs and the current era of global economic development and patterns of resource use.

But what finally convinced me to write this book was the realization that the role of natural resources in shaping economic development has been somewhat of a neglected topic in the study of history. This omission seems surprising, given that the exploitation of land and other natural resources has clearly been an important feature of economic development for most of global history. A study focusing on how economies have developed through exploiting natural resources might therefore be a useful contribution to the existing literature.

I also felt that such a contribution might be warranted, given two important developments in the study of history. First, environmental history – the study of humans and nature and their past interrelationships – has become an important subdiscipline within history. Thanks

to this growing subject area, there are now more studies of how past environmental conditions and events have influenced human history and, as a result, a strong interest in understanding this linkage further from an economic perspective.³

Second, economic history – the study of how economic phenomena evolved from a historical perspective – has experienced a renaissance in recent years. One reason, as cited by the economic historian Nathan Nunn, is the emergence of an exciting new literature that is examining whether historic events and epochs are important determinants of economic development today.⁴ Perhaps it was time to show how the lessons from successful resource-based development in the past might inform our current efforts to grapple with environmental problems and their influence on present-day economies.

The focus of this book on how economies have developed through natural resource exploitation, especially by exploiting new frontiers of land and natural resources, has received even less attention in contemporary economics. The economists Ron Findlay and Mats Lundahl assert that the analysis of frontier-based development “has been used extensively by historians and geographers for a wide variety of times and places, but has been neglected by economists.”⁵ As explained in Chapter 1, the book’s title, *Scarcity and Frontiers*, was chosen to emphasize the economic importance of such a pattern of development. Throughout much of history, a critical driving force behind global economic development has been the response of society to key natural resources. Increasing scarcity raises the cost of exploiting existing natural resources, and will induce incentives in all economies to innovate and conserve more of these resources. However, human society has also responded to natural resource scarcity not just through conserving scarce resources but also by obtaining and developing more of them. Since the Agricultural Transition over 12,000 years ago, exploiting new sources, or “frontiers,” of natural resources has often proved to be a pivotal human response to natural resource scarcity.

This long process of history in which finding and exploiting new sources of land and natural resources has been fundamental to economic development may hold some lessons for the environmental and resource challenges facing the world economy currently. Thus, a key aim of this book is to demonstrate that examining how economies have developed historically through natural resource exploitation may help us understand better the role of scarcity and frontiers in today’s economies. If the following book succeeds in this aim,

then perhaps the study of how natural resource use influences economic development, both past and present, will not be such an overlooked topic.

Notes

- 1 Barbier (2005a).
- 2 Barbier (2005b).
- 3 For example, some of the broad surveys in environmental history that have influenced this book include Chew (2001); Diamond (1997, 2005); Marks (2007); McNeill (2000); McNeill and McNeill (2003); Ponting (1991); and Richards (2003).
- 4 Nunn (2009). As we shall see in this book, some of this “exciting new literature” identified by Nunn, such as Engerman and Sokoloff (1997, 2002) and Acemoglu *et al.* (2001, 2002), has raised important issues concerning the historical relationship between natural resource use and economic development.
- 5 Findlay and Lundahl (1994, p. 70).

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1 | *Introduction: scarcity and frontiers*

Resource development is a neglected topic in economic history. To be sure, no economist would be surprised to learn that resource abundance is a function of extraction and transportation cost as well as of physical availability, and the role of substitution in mitigating resource scarcity is widely appreciated ... But natural resources still are viewed as the last of the exogenous factors, governed by the principle of diminishing returns in an economic growth process whose other constituents have come to be treated both as endogenous and subject to increasing returns.

(David and Wright 1997, p. 204)

Introduction

For an early Spring day in Washington, DC in 1913, the weather was overcast but mild. The large crowd milling about the Capitol were jubilant and expectant. After all, their presidential candidate, Woodrow Wilson, had swept to victory the previous November, ousting the incumbent William Taft and soundly beating the third party candidate Theodore Roosevelt.

To the average American, Woodrow Wilson embodied the spirit and success of his times. His life and career spanned the US Civil War of the 1860s, the hard post-war years of reconstruction and reconciliation, and, from 1870 onwards, the rapid expansion of the US economy across the North American continent. Woodrow Wilson also typified the American Dream. The son of a southern Presbyterian minister, Wilson grew up in the South but eventually became a professor at Princeton University and then its President. He entered politics and was Governor of New Jersey from 1911 to 1913. He ran for President for the first time and won. Just like the United States itself, there seemed to be no limits to what this mild-mannered, devout and hard-working American could accomplish.

The crowd waiting for Wilson's first inaugural address on March 4, 1913 therefore anticipated a rousing affirmation of all that was good and great about the United States. But when he finally gave his speech, it was different to what his audience had expected.

At first, Wilson told the crowd what they wanted to hear. He outlined briefly the remarkable achievements of rapid US industrialization over recent decades. Soon, though, he launched into his main message: the need for economic and social reform. The human and environmental costs of recent US economic growth had been too high.

In particular, Wilson asserted, "We have squandered a great part of what we might have used, and have not stopped to conserve the exceeding bounty of nature, without which our genius for enterprise would have been worthless and impotent."¹

The inaugural audience was stunned by this sober pronouncement. Hadn't the United States, through exploiting its bounteous land and natural resources, become the leading industrial power of the world, overtaking even the mighty British Empire? Didn't the United States still have plenty of land and natural resources left to keep its economy growing? Why was the new President so concerned that US economic development may have "squandered" its "exceeding bounty of nature"?

Woodrow Wilson's remarks turned out to be prescient, however. The period from 1870 to 1914 had been unique in world economic history, which scholars now refer to as the "Golden Age" of Resource-Based Development.² The transport revolution and trade booms of the era were primarily responsible for unprecedented land conversion and natural resource exploitation across many resource-rich regions of the world. The result was a long period of global economic growth, in which many countries and regions benefited from this pattern of resource use and development. The United States was the prime example of such success; in only a few decades the US had exploited its vast natural wealth to transform its economy into an industrial powerhouse. But with the advent of World War I, followed by the Depression years and World War II, the Golden Age came to an end. Although the United States continued to rely on its abundant natural resources to spur industrial expansion, by the 1950s the US economy had also become dependent on foreign sources of raw materials, fossil fuels, minerals and ores to support this expansion. In the post-war world, possessing an abundant endowment of natural resources no