

# Natural Resource Economics

2020-21

**Gerhard Toews**  
New Economic School  
gtoews@nes.ru

## Course information

---

**Course Website:** <https://my.nes.ru>

**Instructor's Office Hours:** By appointment.

**Room Number:**

**TAs:**

## Course description

---

It is hard to imagine how the global economy would have developed if mankind would not have access to natural resources. Non-renewable resources have been used as tools, weapons, jewelry and money for thousand of years. This course is designed to familiarize students with the role of natural resources in the global economy. To do that, students will first be exposed to a historical overview of the critical role exhaustible resources played in economic development over the last centuries. In the second part of the course students will be familiarized with the main determinants of demand and supply of exhaustible resources and, thus, commodity price fluctuations. In the third part of the course we will explore the interaction between natural resource wealth and economic development by focusing on the main issues facing resource rich economics. This will allow students to understand why some countries succeed while other countries fail to benefit from their resource wealth. Throughout the course we will use theoretical and empirical tools from a variety of subfields in economics such as international economics, development economics, labor economics, economic history and political economy. Due to Russia's role as an important player in global commodity markets and the importance of natural resources for Russia's economy, Russia will be employed as a case study whenever possible. Throughout the course, the main goal will be that after successfully completing the course students will be able to make informed decisions on economic issues related to natural resources. This will prepare students for advising firms in the private sector, international organizations and policy makers on issues such as the optimal timing of resource extraction, the local impacts of industrial and artisanal resource extraction, on the macro-management of resource wealth as well many others.

---

## **Course requirements, grading, and attendance policies**

---

A successful completion of Microeconomics, Macroeconomics as well as Econometrics is necessary. The grade will be a combination of the final multiple choice exam (40%), an essay on self-selected topic related to natural resources using data which I may help to get (40%) and a short presentation (executive summary with discussion) of an academic paper (20%). Attendance is compulsory during the presentation, but voluntary otherwise.

## **Course outline**

---

### **Historical Overview (Lecture 1 - 2)**

Main reference:

Diamond, Jared. *Collapse: How societies choose to fail or succeed*. Penguin, 2005.

Yergin, Daniel. *The prize: The epic quest for oil, money & power*. Simon and Schuster, 2011.

### **Classical Economics of Natural Resources (Lecture 3 - 5)**

Main reference:

Hotelling, Harold. "The economics of exhaustible resources." *Journal of Political Economy* 39, no. 2 (1931): 137-175.

Krautkraemer, Jeffrey A. "Nonrenewable resource scarcity." *Journal of Economic Literature* 36, no. 4 (1998): 2065-2107.

Kilian, Lutz. "Not all oil price shocks are alike: Disentangling demand and supply shocks in the crude oil market." *American Economic Review* 99, no. 3 (2009): 1053-69.

Perman, R., Ma, Y., Common, M., Maddison, D., & McGilvray, J. (2011). *Natural resource and environmental economics* (No. 333.7 N285n). Pearson.

### **Natural Resources and Economic Growth (Lecture 6)**

Main reference:

Mehlum, Halvor, Karl Moene, and Ragnar Torvik. "Institutions and the resource curse." *The economic journal* 116, no. 508 (2006): 1-20.

Sachs, Jeffrey D., and Andrew M. Warner. "The curse of natural resources." *European Economic Review* 45, no. 4-6 (2001): 827-838.

Smith, Brock. "The resource curse exorcised: Evidence from a panel of countries." *Journal of Development Economics* 116 (2015): 57-73.

### **Micro and Macro Issues of Resource Booms and Busts (Lectures 7 - 9)**

Main reference:

Aragón, Fernando M., and Juan Pablo Rud. "Natural resources and local communities: evidence from a Peruvian gold mine." *American Economic Journal: Economic Policy* 5, no. 2 (2013): 1-25.

Arezki, Rabah, Valerie A. Ramey, and Liugang Sheng. "News shocks in open economies: Evidence from giant oil discoveries." *The Quarterly Journal of Economics* 132, no. 1 (2017): 103-155.

Corden, W. Max, and J. Peter Neary. "Booming sector and de-industrialisation in a small open economy." *The Economic Journal* 92, no. 368 (1982): 825-848.

**NEW ECONOMIC SCHOOL**  
**Master of Arts in Economics**

Harding, Torfinn, Radoslaw Radek Stefanski, and Gerhard Toews. "Boom goes the price: Giant resource discoveries and real exchange rate appreciation." forthcoming in the *The Economic Journal* (2020).

**Rent Management** (Lectures 10 - 11)

Main reference:

Hartwick, John M. [1977] "Intergenerational Equity and the Investment of Rents from Exhaustible Resources" *American Economic Review*, 67, December, pp. 972-74.

Van der Ploeg, Frederick, and Anthony J. Venables. "Natural resource wealth: The challenge of managing a windfall." (2011).

**Political Economy Issues** (Lectures 12- 13)

Main reference:

Berman, Nicolas, Mathieu Couttenier, Dominic Rohner, and Mathias Thoenig. "This mine is mine! How minerals fuel conflicts in Africa." *American Economic Review* 107, no. 6 (2017): 1564-1610.

Caselli, Francesco, and Guy Michaels. "Do oil windfalls improve living standards? Evidence from Brazil." *American Economic Journal: Applied Economics* 5, no. 1 (2013): 208-38.

Asher, Sam, and Paul Novosad. "Rent-seeking and criminal politicians: Evidence from mining booms." forthcoming in the *Review of Economics and Statistics* (2020).

**Long-Run Consequences** (Lectures 14)

Main reference:

Jacobsen, Grant D., and Dominic P. Parker. "The economic aftermath of resource booms: evidence from boomtowns in the American West." *The Economic Journal* 126, no. 593 (2016): 1092-1128.

Michaels, Guy. "The long term consequences of resource-based specialisation." *The Economic Journal* 121, no. 551 (2011): 31-57.

**Course materials**

---

**Required textbooks and materials**

*Neither of the books is compulsory, but if you do not like these books, well, maybe you are picking the wrong option.*

[1] Ross, Michael L. *The oil curse: how petroleum wealth shapes the development of nations*. Princeton University Press, 2012.

[2] Yergin, Daniel. *The prize: The epic quest for oil, money & power*. Simon and Schuster, 2011.

Renewable natural resource: A resource from nature useful to human economies that exhibit growth, maintenance, and recovery from exploitation over an economic planning horizon Resilience: The ability to maintain a given state when subject to disturbance.

Summary. The economics of such resources has traditionally considered stocks of fish, forests, or freshwater, much like a banker would tally interest on cash deposits. Natural Resource Economics. The long-term viability of the food supply depends upon the sustainable use of natural resources. Unlike most agricultural inputs, such as fertilizer or animal feed, most natural resources do not have prices determined in the market. The field of Natural Resource Economics seeks to value natural resources to aid in the optimization of the production of goods and services from agricultural lands while protecting the environment. Importance of Natural Resource Economics. 'Natural Resource Economics presents the theory behind resource economics with an elegant mathematical presentation that should be very appealing to advanced students. Their handling of dynamic modeling and application of that theory to several different resource topics is particularly impressive.' Robert Mendelsohn - Yale University. Natural resource economics focuses on the supply, demand, and allocation of the Earth's natural resources. Its goal is to gain a better understanding of the role of natural resources in the economy. Learning about the role of natural resources allows for the development of more sustainable methods to manage resources and make sure that they are maintained for future generations. The goal of natural resource economics is to develop an efficient economy that is sustainable in the long-run.