

## Prime Movers of Globalization

by [DianeC](#) on Tue 31 Aug 2010 09:51 BST | [Permanent Link](#) | [Cosmos](#)

Vaclav Smil's book [Prime Movers of Globalization](#) has taught me more than I ever thought possible about engines. I must confess that my understanding remains extremely hazy, but I learnt a lot from the non-technical parts of this book about the importance of two types of engine - diesel engines and gas turbines - in shaping the world economy. A central plank of Smil's argument is that these two pieces of technology have made a far more important contribution to the growth of international production chains and trade than the microchip and ICTs, the reason being that they power the large ocean-going ships and aircraft carrying goods and people around the globe on a massive scale, the trucks that ship goods on land, and also in generating electricity and energizing the compressors used in oil and gas pipelines.

What's more, he argues, the important technical improvements have been small and incremental rather than revolutionary new innovations - an argument that fits with Will Baumol's careful distinction (in [The Free Market Innovation Machine](#)) between the revolutionary and the incremental innovations and the kinds of business that deliver each type. Smil writes:

"A lengthy process of machine development, commercialization and diffusion of diesel engines provides a perfect example of gradual technical advances that have received little public attention, that may not be ranked among pivotal modern inventions... but that have led to epochal shifts in world affairs by creating the indispensable driving forces of the global economy." (pp17-18)

He calls the diesel engine and gas turbine, in fact, "the indispensable, iconic artifacts of modern civilization." (p43)

In fact, Smil obviously thinks the digital revolution has been greatly over-hyped. He argues that the importance of the steady decline in transportation costs in increasing international trade is underestimated, compared to the impact of ever-cheaper and better telecommunications and computing. I think he makes a strong case, and ends the book with some reflections about the likely impact of higher oil prices and environmental concerns. This sober assessment of costs and benefits is ultimately more persuasive than the breathless hype about globalization in books like *Who Moved My Olive?* and *The World is My Oyster*. (OK, [The Lexus and the Olive Tree](#) and [The World is Flat](#) - and to be fair, Thomas Friedman is not the most breathless.)

He concludes:

"We simply do not have a suitable all-encompassing metric that we can use to weigh

these multitudes of tangible advantages and gains and intangible losses and regrets to arrive at a satisfactory net valuation of the economic globalization energized by the two remarkable prime movers." (p233)

Smil also points out that almost all large diesel engines, although they have European brands, are made in Asia - food for thought. (p125)

It has to be said that Smil's book isn't as accessible as Marc Levinson's [The Box](#), a terrific read about containerization, which was followed up by the [BBC's Box](#), still less those mass market non-fiction books launched by the success of [Longitude](#). The technical, engine-related parts really need their own sub-sections with a non-technical summary paragraph for engineering idiots like me. Professor Smil's writing style also tends to the long-winded. However, it has pictures, which I feel improve any book, and is a really interesting perspective on globalization.