V2 Chapter 12 Sidebar

Titanium in Motion

Though a fairly common element, titanium did not become a significant part of industrial production until the last century. This is because it is both difficult and expensive to extract and refine. It does, however, have some important properties. It is as strong as steel, but significantly lighter. It can also endure extremely high temperatures and is unusually resistant to corrosion. These properties became critical in the post-WWII period with the advent of jet and rocket technologies. Indeed, it is rather difficult to make jet aircraft or rockets without titanium. If you want to move really fast, well, then you need titanium to help you do it. For example, the SR-71 Blackbird, still the fastest jet aircraft ever made, featured a body made almost completely out of titanium.

Blessed with large and relatively easily accessible quantities of titanium ore in the region of the Ukraine, the Soviet Union had plenty to work with during the Cold War. The United States, on the other hand, sourced much of its titanium (along with chromium and vanadium, which are also crucial for jet and rocket technology) from southern Africa—one of the key reasons why the US government supported the racist minority government of South Africa during the period. Otherwise, the United States would have been hard-pressed to threaten the Soviet Union with ballistic missiles and B-52 bombers. Access to titanium also made the space race possible. Astronauts such as Yuri Gagarin and John Glenn rode into space thanks to titanium. Cold War competition made titanium so expensive and so important that it was used almost exclusively for military purposes and spacecraft throughout the era, though some was allocated to the

construction of such commercial aircraft as the Boeing 747.

The end of the Cold War, combined with expanded mining and production in regions such as India and China, freed up significant amounts of titanium for commercial use. Nowadays products such as titanium golf clubs help even amateur golfers hit longer drives. Titanium guides on fishing rods help those who fish cast farther. Where once titanium was something governments declared a “strategic ore” and built their foreign policy around its acquisition, it has now become a common part of the consumer economy. The mere fact that you can buy titanium forks and spoons highlights just how radically the world has changed in the past fifty odd years.

Question for Discussion:

1. How does the growing availability of titanium inform our understandings of scarcity and global markets?