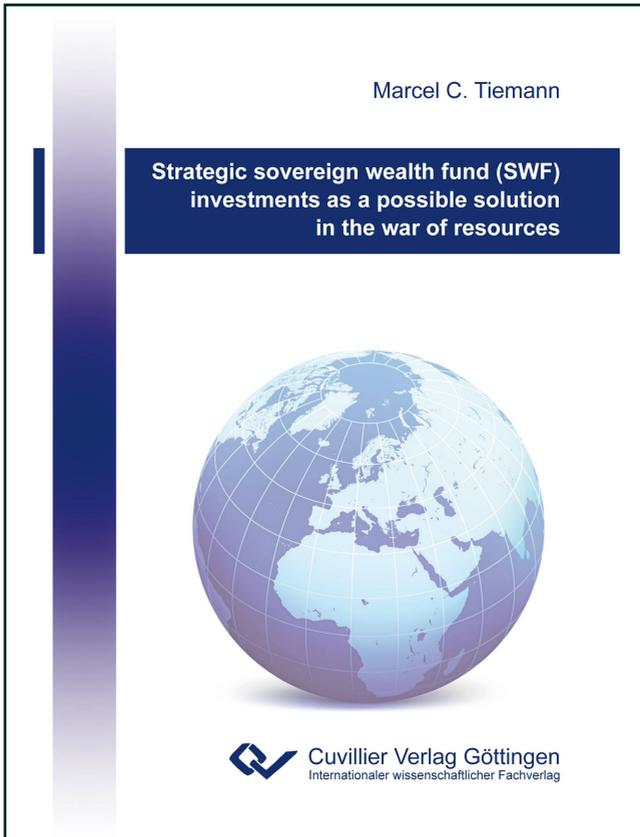




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**Strategic sovereign wealth funds (SWF) investments  
as a possible solution in the war of resources**

Is a strategic SWF investment an adequate instrument for  
national governments to secure access to critical raw  
material and energy inputs?



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## 1 Introduction

Global demographic developments are one of the greatest challenges of our century. In the twentieth century, the earth's population grew more quickly than ever before (Robert Bosch 2011). Regarding the Robert Bosch Global Megatrends study (2011) demographic change is one of the three major global megatrends. Other challenges for the future are accelerated globalization and scarcity of natural resources based on increasing demand for those resources through economic and population growth (Hajkowicz and Moody 2010). The publication will carve out how these challenges are interrelated and what national governments and the European Union (EU) should do to manage the challenges of scarcity of natural resources. This becomes obvious especially in a rough environment where certain governments use their geopolitical power to control access to raw materials. This was for example the case when China imposed export restrictions on various rare earths and other raw materials which were not in line with the World Trade Organization (WTO) rules (World Trade Organization 2011). In this context the phenomenon of Sovereign Wealth Funds (SWF) will be discussed and how SWFs lead to global challenges through long-term investing and how they could be a possible solution for the EU to overcome the scarcity of natural resources.

### 1.1 The world's need for energy and the war of natural raw material

During the past fifty years a plethora of natural resources crisis has attracted public, political and academic attention (Rees 1990, p. XIV). Natural resources should be considered as a gift of nature — a product of biological, ecological or geological processing. Natural resources are classified as non-renewable (stock) and renewable (flow). Figure 1 provides an overview of existing natural resources.

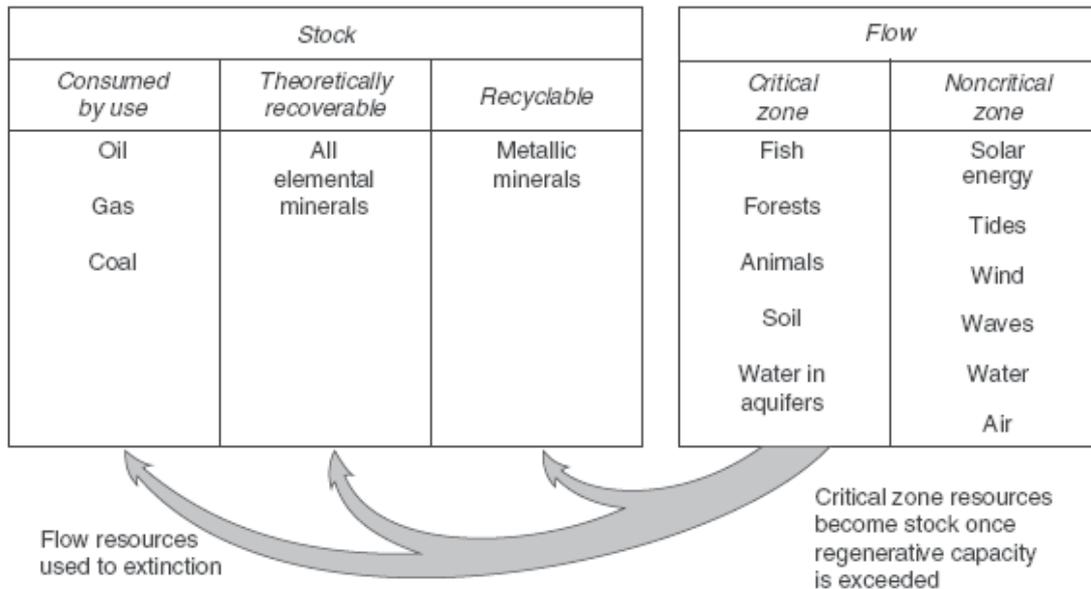


Figure 1: A basic classification of resources: Stock vs. Flow  
[Generic deductive approach (Rees 1990)]

“Natural resources are not restricted to direct material inputs to economic life. They include a vast range of economic system services that are not directly consumed by use, but which are necessary for economic production and/or the maintenance of life” (Bridge 2009, p. 261). The focus of this publication is based on stock resources, specifically minerals and metals. Both natural resources are measured by their scarcity.

In explaining the matter of scarcity Bridge (2009) refers to the relational approach of the human geographers. This approach describes the scarcity of natural resources not only as a limitation due to a physical limit but also due to economic conditions. Two different versions of the relational approach can be distinguished: a ‘weak’ and a ‘strong’ version. The weak version states that there is hardly a physical limit to the availability of natural resources and therefore it is understood as a function of price and knowledge. The latter version refers to the technological changes which might reduce costs for recovering those resources. The strong version considers the societal inequality and reasons that scarcity is “an economic rather than a physical condition” (Bridge 2009, p. 264). Therefore, the availability is coordinated by wealth and power. Nevertheless, both versions coincide on the underlying assumption that the supply and demand for natural resources determines the price.



Regarding the United Nations' (UN) World Urbanization Prospects (United Nations 2010b) the world population will increase by 2.3 billion within the next four decades, from 6.8 billion in 2009 to 9.1 billion in 2050. This demographic change results among others in growing urbanization (United Nations 2010b, p. 1). This constant growth in urbanization is expected to result in a stronger demand for natural resources (Huang, Yeh and Chang 2010, p. 136). Developing countries play a critical role in these extensive discussions on population growth and urbanization (Huang, Yeh and Chang 2010, p. 136). Particularly Asia is of crucial importance due to the fact that most of the emerging markets are located in the Asian region, such as China, India and Vietnam. Their impact on the world is analysed in chapter 2.1.

Country-level analysis for the world's two population-richest countries China and India figure out that the demand for natural resources is outstripping the supply. Shen (2005, p. 287) mentioned that "China will inevitably face a long shortage of resources." China cannot meet its supply and demand for major natural resources to satisfy its growing industrialization and modernization. Gupta, Tuli and Verma (2005) mentioned India's growing need for energy. Today, India ranks as worldwide number five in terms of energy consumption. Economic growth and increasing incomes are pushing the demand and lead to the point that India will pass Japan as the world's number four. This leads to increasing and variable prices for natural resources (Gupta, Tuli and Verma 2005). Figure 2 illustrates the increasing demand for China and India.

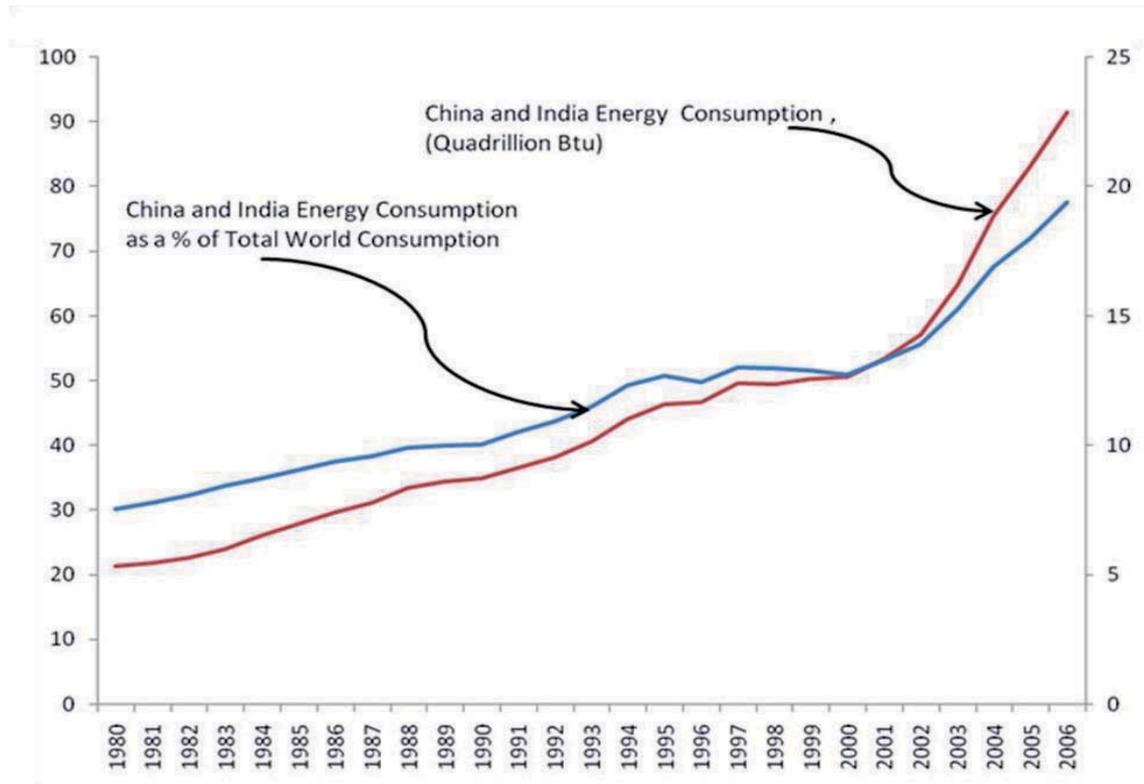


Figure 2: China and India are the world's leading energy consumers  
(Bressand et al. 2007, p. 73)

This development leads to increasing stock prices induced by the imbalance of buyer (demand) and seller (supply) behaviour. It might occur that buyers are more anxious to buy than sellers are to sell, and vice versa (Frazier, Coyne and Witter 2002). There is a positive correlation between the increasing demand for natural resources especially for metals and minerals and the stock prices over the last years. Figure 3 demonstrates this development based on the World Bank Commodity Index.

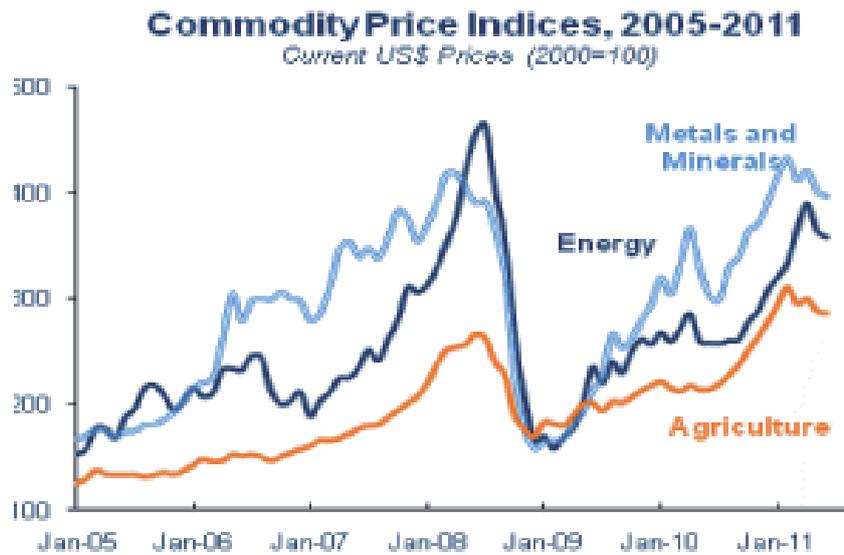


Figure 3: Commodity Price Indices, 2005 – 2011 (World Bank 2011)

As mentioned above, the demographic development which results in increased demand for natural resources has “significantly tightened the links between the world growth and commodity prices because growth has become more commodity-intensive, and the world commodity supply curve is becoming increasingly less elastic” (López 2010). Figure 4 illustrates these links and the effect for the price elastic.

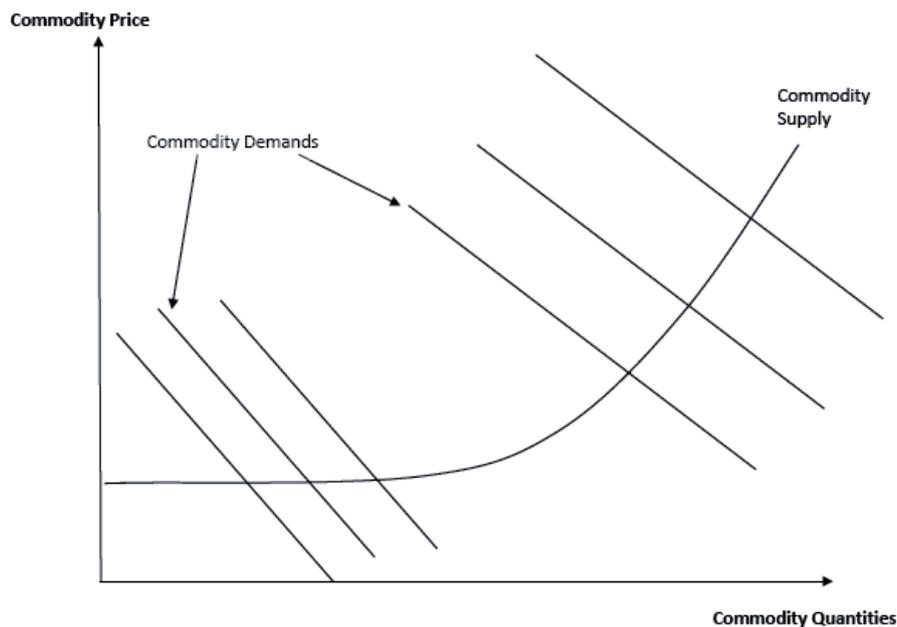


Figure 4: Commodity price elastic in past and present (López 2010)