Chapter 4
World Energy Outlook and Impact of Oil Prices on Financial Crisis

Altan Kolbay
PETFORM, Turkey

ABSTRACT
In this chapter, the correlation of growth in population, economic welfare, and increase in the energy demand is evaluated with examples. The biggest concern of mankind is which sources cover the immense energy demand. It is obvious that fossil fuels are the base energy source, and in order to supply developing energy needs, serious investments are needed in the energy sector. That is why the results of monetary aspects in energy prices and the conditions in leading supplier countries are also evaluated.

INTRODUCTION
The world population is growing rapidly especially in developing countries and concordantly the welfare of nations are also increasing. These inescapable developments create challenges for human kind about energy demand. Which sources will cover the immense energy demand is also important question and biggest concern. It cannot be denied that the fossil fuels still be the number one energy source for many years, despite the investments in renewables or alternative energy resources. In order to provide these growing energy needs, investments should be done to energy sector; however, this brings another aspect in to the agenda, which is a monetary aspect. There are lots of important researches about these issues in the literature and in the light of these researches it will be evaluated in this chapter.

THE RELATIONSHIP BETWEEN WORLD POPULATION AND ENERGY DEMAND
The population of mankind increases rapidly. As of October 31, 2011, it is estimated by the UNFPA, the United Nations Population Fund, that the world population exceeded 7th milestones by billion, whereas it was only 2.52 billion in 1950.
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Table 1. World population milestones

<table>
<thead>
<tr>
<th>World Population (in billions)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years Elapsed</td>
<td>---</td>
<td>123</td>
<td>32</td>
<td>15</td>
<td>13</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>

(United Nations Population Division, 1999) The rapid growth of the world population is a recent phenomenon. About 2,000 years ago, the population of the world was about 300 million. It took more than 1,600 years for the world population to double to 600 million. The rapid growth of the world population started in 1950, with reductions in mortality in the less developed regions, resulting in an estimated population of 6.1 billion in the year 2000, nearly two-and-a-half times the population in 1950. (United Nations Population Fund, 2011)

With the declines in fertility in most of the world, the global growth rate of population has been decreasing since its peak of 2.0 per cent in 1965 - 1970. On the other hand, due to the massive number reached so far, it still keeps its growth rate. Table 1 clearly shows that the years elapsed to add another 1 billion people dropped to only 12. According to the projections, the world population will reach to 9 billion in year 2050 which means roughly 2 billion more people than today.

In the sense of energy sector, population of two countries is significantly relevant: China and India. China, with a population of 1.35 billion, and India, with a population of 1.24 billion, jointly has already had 37% share in whole population of the earth. In 2025, India, with 1.46 billion people, will have overtaken China, with 1.39 billion, as the world’s most populous nation. China’s population will then, based on a medium variant, decline to about 1.3 billion by 2050. India will continue to grow to about 1.7 billion by 2060 before beginning to decline.

According to the estimations of the IEA, the International Energy Agency, the Gross Domestic Product (GDP) growth rate of the world between 2005 and 2050 will by 3.4% per annum. This enormous growth will be mostly driven by China and the countries in the group of ‘Developing Asia’, with 5.8% and 5.0% growth rate respectively. The non-OECD club, including China and India, has been leading the GDP growth worldwide. Contrary to this, the OECD club, the most developed countries, are losing their share in contribution to world GDP growth. This means that the only region in the world keeping the highest population and also the fertility rate will also experience the fastest economic growth by 2050.

Enormous growth in population and economic welfare is strongly correlated with increase in the energy demand. As shown on the Figure 1, the

Figure 1. Comparison of the human development index to the energy development index (IEA, 2010)
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