ECONOMIC IMPACT OF EARTHQUAKES IN TURKEY

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Abstract: This article provides information about the earthquakes that occurred in Turkey and their impact on the economy.

Key words: Turkey, earthquake, economy, casualties, magnitude earthquake, shopping centers, marketing.

Turkey-Syria Earthquake - An earthquake struck southern and central Turkey and western Syria on February 6, 2023. It struck 34 km (21 mi) west of Gaziantep at 04:17 Turkish time (UTC 01:17). the magnitude of the earthquake is at least 7.8 and the maximum Mercalli intensity is XI (extreme). An unusually strong 7.7-magnitude second earthquake struck nine hours after the main tremor. The epicenter was located 95 km (59 mi) north-northeast of Kahramanmarash province. The earthquake caused widespread destruction and thousands of deaths in the region. The main earthquake was the worst earthquake in Turkish history in terms of casualties, surpassing even the 1939 Erzincan earthquake. An earthquake of similar magnitude was the North Anatolia earthquake of 1668. The earthquake is also the deadliest earthquake in Syria since 1822. This earthquake is the deadliest earthquake in the world since the Haiti earthquake in 2010, and also recorded in the Levant. is considered one of the strongest earthquakes. The force of the earthquake was felt as far as the Black Sea coast of Israel, Lebanon, Cyprus and Turkey, causing systemic damage. More than 2,109 aftershocks were observed after the earthquake. The seismic sequence was caused by shallow thrusting of faults. As of February 18, a total of more than 47,100 deaths have been reported. 40,600 people died in Turkey and 6,400 in Syria. The winter storm prevented the rescue work. Snow fell on the ruins, and the temperature dropped sharply. Because of the cold temperatures in the areas, the risk of hypothermia is high for survivors, especially those trapped under the rubble. The earthquake caused an estimated US$84.1 billion in damage, making it one of the costliest natural disasters on record. The original location of the earthquake was near the triple junction between the Anatolian, Arabian and African plates. The earthquake mechanism and location are consistent with an earthquake occurring on the East Anatolian Fault Zone or the Dead Sea Transform Zone. The East Anatolian Fault is moving westward from the Aegean Sea in Turkey, and the Dead Sea Convergence is moving the Arabian Peninsula northward relative to the African and Eurasian plates.[1]

The East Anatolian Fault is a 700-kilometer-long (430 mi) sinistral fault that forms the boundary between the Anatolian and Arabian plates. Plate displacement decreases from east to west by 10 mm (0.39 in) per year to 1–4 mm (0.039–0.157 in) per year. Rift 1789 (7.2 mag.), 1795 (7.0 mag.), 1872 (7.2 mag.), 1874 (7.1 mag.), 1875 (6.7 mag.), 1893 (7, 1 mag.) and 2020 (6.8 mag.) caused large earthquakes. As a result of these earthquakes, cracks were observed in separate parts of the fault. The seismically active Palu and Pütürge segments to the east show a recurrence interval of approximately 150 years for magnitude 6.8–7.0 earthquakes. The Pazarjik and Amanos segments in the west have recurrence intervals of 237-772 and 414-917 years, respectively, for magnitude 7.0-7.4 earthquakes. This intracontinental transform fault is the largest transform fault in Turkey.[2]

Unlike the North Anatolia Fault, which has experienced 11 major earthquakes in the 20th century, the East Anatolia Fault has been seismically quiet. Palu-Sincik and Çelikhan-Türkoğlu segments were found to be seismic gaps. The major earthquakes were followed by slips of up to 1.5 m (4 ft 11 in) and 5.2 m (17 ft) in the Palu-Sincik and Çelikhan-Türkoğlu segments, respectively. These segments have accumulated enough stress to produce 7.4 and 7.7 magnitude earthquakes. The Palu-Sincik segment is 135 km (84 mi) long and consists of the Palu-Sivrice (50 km (31 mi)) and Sivrice-Sincik (85 km (53 mi)) segments. This segment is located between Palu and Sincik. The earthquakes of 1874 and 1875 occurred in the Palu-Sincik segment. The Çelikhan-Türkoğlu segment is 140 km (87 mi) long. This segment includes the Çelikhan - Golboş (50 km (31 mi)) and Golbas - Türkoğlu (90 km (56 mi)) segments. The last strong earthquake known in the Çelikhan-Türkoğlu segment was the 7.4 magnitude earthquake that occurred in 1513.[3]

The East Anatolian fault merges with the North Anatolian fault at the Karliova triple junction in the Karliova district of Bingol region. About 60 km (37 mi) to the southwest was the site of the 2003 Bingöl earthquake, a magnitude 6.4 earthquake. This earthquake did not occur on the Eastern Anatolian Fault. The earthquake ruptured a right-lateral fault perpendicular to the East Anatolian fault. In 1971, a magnitude 7.1 earthquake northeast of Bingöl ruptured 30 km (19 mi) of the East Anatolian Fault, creating a surface fault.[4]

The Dead Sea transform boundary extends from north to south across the Red Sea to the Marash triple junction, where it joins the Eastern Anatolian fault. The northern part of the left lateral slip fault in southern Turkey has been the source of at least 14 major historical earthquakes. It produced two major earthquakes in 1822 and 1872. The 1822 earthquake killed at least 1,800 people. Earthquakes in 115, 526 or 525, 587, 1169 or 1170 and 1822 caused deaths from several tens of thousands to several hundred thousand, respectively. Since 1905, five earthquakes of magnitude 6 or greater (1905, 1945, 1986, 1998) have occurred within 250 km (160 mi) of the February 6 earthquake.

The largest of them was a 6.7-magnitude earthquake that occurred on January 24, 2020, northeast of the February 6 earthquake. All of these earthquakes occurred along or near the East Anatolian Fault. Despite the relative seismicity of the February 6 epicenter zone, significant and destructive earthquakes have long occurred in southern Turkey and northern Syria. The city of Aleppo, Syria, has historically been devastated by large earthquakes several times, but the exact locations and magnitudes of these earthquakes can only be guessed at. An earthquake of 7.1 magnitude occurred in 1138 and 7.0 magnitude earthquake in 1822. The 1822 earthquake killed between 20,000 and 60,000. In 1114, an earthquake occurred in Marash, killing 40,000 people. In 856, 1033, and 1754, strong earthquakes in the Middle East killed 200,000, 70,000, and 40,000 people, respectively.[5]

Earthquakes in Turkey caused more than 84 billion dollars in damage. This was reported by "Bloomberg" based on the calculations of the country's confederation of entrepreneurs and representatives of the republic's business circles. According to the confederation's calculations, two strong earthquakes caused damage to the national economy of more than 84 billion dollars or about ten percent of the gross domestic product. 70.8 billion dollars of them is the damage caused to residential buildings. In addition, the country's budget revenues will decrease by 10.4 billion dollars, and the loss of labor force will fall to 2.9 billion dollars. - in the east (at 04:17 local time - 7.7 points and at 13:24 - 7.6 points) two earthquakes with a magnitude of more than seven points occurred. The devastating earthquake was also felt in neighboring countries, including Syria, Lebanon, the Turkish Republic of Northern Cyprus, the Republic of Cyprus, and Iraq. did Turkish state flags were lowered to half-mast across the country.

Also, Uzbekistan is actively participating in the elimination of the consequences of the earthquake that occurred in Turkey. At the request of President Shavkat Mirziyoyev, a search and rescue team of 100 people was sent to Turkey on February 9 of this year. In addition, Uzbekistan sent humanitarian aid to Turkey, which suffered from a strong earthquake on February 6 of this year. Over the past three years, the economy of Uzbekistan has been under the influence of continuous unexpected tests - the pandemic in 2020, the aggravation of the regional geopolitical situation in 2022, the anomalous cold in the first month of 2023 (of course, the economic losses caused by the anomalous cold are the previous shocks The natural disaster observed in Turkey and the scale of its losses are extremely large, which raises the possibility that the year 2023 will be a test for the economy of Uzbekistan. The reason is that Turkey is one of the main trade partners of Uzbekistan. Naturally, the serious loss or reduction of the Turkish economy will not fail to affect the economy of Uzbekistan.So, how and to what extent can Turkey's economic losses as a result of the earthquake have a negative impact on the economy of Uzbekistan? To answer this question, first of all, the scale of the earthquake that occurred in Turkey and its impact on the economy It is necessary

to have more complete information about the total damage (or expected to cause). However, there is no clear, reliable and sufficient information about this at the moment. Nevertheless, it is possible to give some preliminary estimates. The share of regions severely damaged by natural disasters in Turkey's economy (gross domestic product) is approximately 9.3 percent. Based on this, if it is assumed that the volume of GDP in these regions will decrease by 30%, this may cause the country's economy to decrease by 2.8%. 'sang. In its January forecasts, the bank presented a 2.7 percent growth for 2023, while the country's government forecasts were relatively optimistic - 5 percent growth. Of course, these forecasts do not take into account the damage caused by the earthquake. Based on the above estimates and preliminary forecasts of economic growth in Turkey in 2023, it is unlikely that the Turkish economy will experience a crisis this year. Undoubtedly, economic growth may slow down significantly. However, it is worth noting another aspect that a significant amount of capital (wealth) was lost in the areas affected by the natural disaster. The restoration of these areas requires a large-scale expansion (incentive) policy. This can lead to a sharp acceleration of growth in some sectors, especially in the construction sector. In the affected areas, for a certain period of time - until the previous level of capital is restored - the rate of economic growth will be higher than in the pre-earthquake period. This aspect, in turn, serves as a factor mitigating the expected negative economic consequences.

Conclusion:

As mentioned above, it is difficult to make a clear conclusion about the extent to which a natural disaster affects economic growth. Undoubtedly, the damage caused by the earthquake caused serious damage to the economic activity in the country: tens of thousands of people (labor resources) died, it is still unknown when the damaged areas will start to recover and how much money the government will allocate for the reconstruction of these areas. Nevertheless, if it is assumed that economic growth in Turkey will slow down by 2.8%, based on the above estimates, it is possible to estimate the level of potential negative impact on the economy of Uzbekistan.

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