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Social & Spatial Analysis, and Economic Indicators of Mongolia

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Abstract

This paper aims to investigate Mongolia's economic indicators, including social and spatial analysis such as international relations, population, infrastructure, and other analysis of economic indicators. There are not enough scientific papers that addressed about Mongolian economy thus, data are collected and analyzed based on United Nations Development Programme reports, Asian Development Bank reports, Wikipedia, and other open-resource materials. Data are drawn from the official National Statistics Office of Mongolia from 1995 to 2020 by quantitative technique such as document screening.

Keywords

Population, Inflation, GDP, Infrastructure, International Relations, Mongolia

1. Introduction

Mongolia is a lower-middle-income, resource-rich defined as country of coal, copper, gold, oil, and other rare minerals, landlocked between China and Russia, and open economy in transition. As for renewable energy including solar power and wind are potential in here. It is a long-running challenging task to use this natural resources effectively. The high concentration of exports is caused by Mongolia's small size, geography, and natural resource endowments. These features, together with the country's rich history, have defined its development trajectory in the recent past and are shaping its economic future (Matthias Helble, 2020).

The country has semi-presidential multi-party representative democracy and executive power is exercised by the Prime minister; elections are held every 4 years. The country is the 18th largest land by its territory with only around 3.3 million population and the land varies from desert to grassy steppe, with moun-

tains (Wikipedia, n.d.).

Extreme winter conditions make arable land about only 0.8 percent of the country (UNDP Mongolia, n.d.). The average temperature goes between almost −40˚C to +40˚C in some Gobi areas. Approximately 30% of the population is still nomadic or semi-nomadic, literacy rate is 98% and majority of people are Buddhists. The official language is Mongolian, and the capital city is Ulaanbaatar where 1.5 million people live in. In fact, Ulaanbaatar city was designed for only 300,000 residents and it is unable to cope with this large migration. 80% of the households use the coal-fired power. By these reasons, Mongolia is an emissions-intensive economy due to fossil fuels and mining industry (National Statistical Information Service, n.d.).

From the historical perspective, there are three most important revolutions that have happened in Mongolian history. The first one is that the Genghis Khan founded the Mongol Empire in 1206, the second is in 1921 took its independence from China and the third is democratic revolution in the early 1990's (Wikipedia, n.d.). After 1990's democratic evolution, Mongolia has been tripled its GDP per capita. GDP has reached US $13.19 billion and US $4584 for GDP per capita as of 2019. The main economics sectors are mining and agriculture.

The country has one of the world's highest export concentrations (in products and market destination) outside the Middle East. According to the Invest Mongolia Agency, since 1993 more than 73% of the investment directed toward the mining sector which means the economy is highly dependent upon mining sector. Top 3 international trade partners are China, Russia, and Japan where oil, mineral fuels, ores, and wool are the main exported goods.

More than 90% of Mongolian exports are delivered to China only and 90% of energy supplies are from Russia by National Statistics office of Mongolia. Mining industry accounts for 25% of GDP, 72% of agricultural production and 90% of total exports as 2019 by world. An agriculture-based as 0.365% arable area, livestock-dominated economy as 66.46 million, with a high-dependency on natural resources, Mongolia's primary, extractive-sector dominant economy is not resilient to external shocks from global commodity price fluctuations according to Mongolian National Statistical Office.

2. Material and Methods

This paper is based on combination of primary and secondary data collection reviews. There are around 330,000 research papers and books published, under the name of Economy of Mongolia, in internet by Google Scholar. Majority of them are about the economy before 1990 such as socialism, before democracy etc, and rest of them are more related to mining, livestock economy or nomadic lifestyle. Even though, there plenty of economic indicators about Mongolia in all the economic webpages. The necessary data used in this paper was picked from these research papers and books.

As for the introduction part, the main background information was based on Wikipedia, Asian Development Bank reports and United Nations, general knowl-

edge which taught in Universities based on empirical data and some data were conducted from Mongolian Economic Forum and some open-source materials.

Since there are a very few scientific papers about the economy of Mongolia, all the economic related indicators were collected and selected from World Bank and Asian Development Bank reports. From there, important indicators such as GPD, inflation rate, population data were examined and compared. Other indicators were carried out based on the national statistical information service which is www.1212.mn. The primary resource is taken from World Bank and its world development indicators.

Besides, the webpage named "CEIC Data", is a trusted partner for navigating the world of macroeconomic data. It includes all the countries data and analysis and economic indicators based on World Bank data. CEIC Data provides the most accurate and easy access data insights in to more than 200 economies. Therefore, some graphs and analysis were taken from it.

3. Analysis

3.1. Economic Indicators

The Gross Domestic Product (GDP) in Mongolia consists of Agriculture—12.1% by means farming, fishing and forestry, Industry—38.2% includes mining, manufacturing and construction, Service—49.7% that covers government activities, communications, transportation, finance, and other private economic activities which does not produce goods or materials (Central Intelligence Agency, 2020).

In 2011, GDP hit its peak at 21.6% in 2011 when the Rio Tinto, global mining group, invested in Mongolia. Due to those 5 years of this Rio Tinto investment, the GDP increased dramatically. In contrast, negative influence of COVID 19, GDP declined as −10.7% in March 2020. Nominal GDP of Mongolia achieved $3.4B in September 2020. For Nominal GDP contributions, Investment accounted for 20.4% in September 2020. Public Consumption accounted for 11.6% in Sep 2020. Private Consumption accounted for 55.5% in September 2020. As shown in **Figure 1**, graph illustrates the volume of GDP in Mongolia from 1981 to 2020 where it increased to $13.85B in 2019, the minimum was $0.77B (CEIC Data, n.d.).

Mongolia Foreign Exchange Reserves approximated 8.6 Months of Import in February 2021. The huge amount of mining investment also influenced the growth of foreign exchange which reached as 11.6 in February 2013 while the lowest was 1.0 in December 1999. The table demonstrates the macroeconomic indicators from 1995 to 2019 (**Table 1**).

In 2020, M2 growth rate continued to slow down, because of production activity and pressure of coronavirus. Due to coronavirus, massive financial support was given by organizations such as European Union (€16 million) (EEAS, 2021), World bank ($26.9 million) (World Bank, n.d.), World Health Organization and Asian Development banks ($1 million) (ADB.org, n.d.) Money Supply M2 of Mongolia increased 19.6% in February 2021. Domestic Credit of Mongolia contacted $6.5 billion in February 2021.

Government Balance was stated at −96,272.812 MNT in last March. This record shown an increase of −112,769.845 MNT as comparing to previous month. Mongolia Trade Balance recorded a surplus of 231.2 USD in February 2021, compared with an excess of 181.1 USD in the previous month. Last July, it reached its peak at 478.6 USD and lowest as −369.8 USD in July 2012. Mongolia Total Exports was 721.2 USD in December 2020, an increase of 122.9%. Below graph illustrates the last years trade balance by USD (CEIC Data, n.d.) (**Figure 2**).

Total Exports from Mongolia recorded, and the top 3 export destinations were China (88%), United Kingdom (3.82%) and Singapore (2.02%) total of $6.1 billion. As export structures were mineral fuels, oils (45%), ores and ash (35%) and metals,

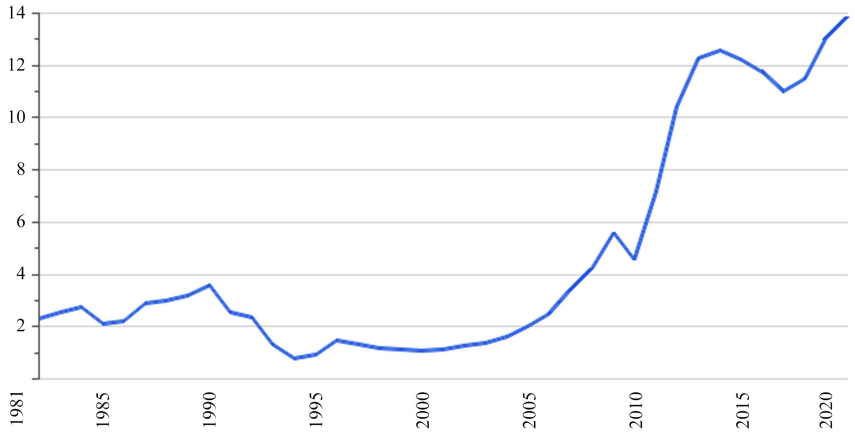

Figure 1. The graph of GDP volume in Mongolia from 1981 to 2020.

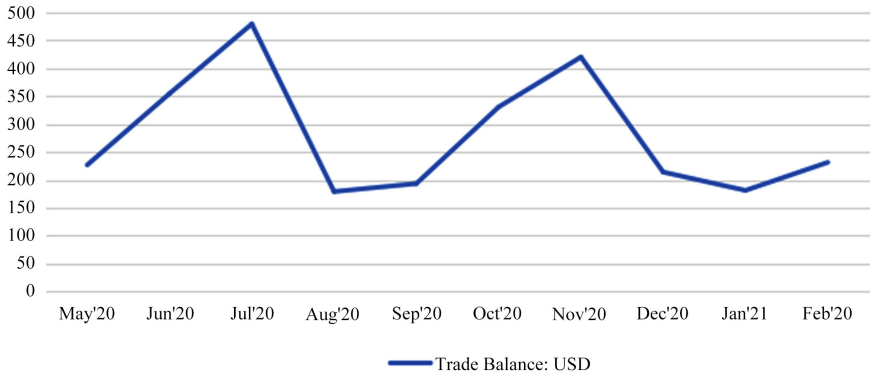

Figure 2. Trade balance by USD from May 2020 to February 2021.

Table 1. Population, employment, and unemployment indicators between 1995 and 2019.

Indicator	1995	2000	2005	2010	2015	2016	2017	2018	2019
Population (‘000)	2243	2403	2551	2761	3058	3120	3178	3179	3225
Working-age population (‘000)	1305	1506	1629	1899	2038	2065	2087	2127	2170
Employed (‘000)	767	809	968	1033	1151	1148	1238	1256	1188
Unemployment rate (%)	5.5	4.6	3.3	9.9	7.5	10.0	8.8	6.25	6.01

natural pearls, stones (5.49%). Merchandise exports from Mongolia increased by 8.67% compared to 2018. Goods exports reached by $607 million in 2019 while it was $7.01 billion in 2018 (Trend Economy, 2020).

The total value of imports to Mongolia equalled $6.12 billion in 2019 and the top 3 import partners in 2019 were China (33%), Russia (28%) and Japan (9.55%) total of $3.1 billion. As for import structure consisted of 22% of mineral fuels, 16.1% of vehicles, railways and 14.2% of machinery and mechanical appliances. Goods imports reached by $252 million in 2019 while $5.87 billion in 2018 (Trend Economy, 2020).

As in all the transition economies, Mongolia faced a hyperinflation during the transition from socialism to democracy with inflation more than 300% in 1992. The main reasons behind the hyperinflation were that state-owned enterprises operating with soft budget constraints and the government started to maintain its public spending in a collapsing economy (Statista, n.d.).

Although inflation confounded again and hit 22% in 2008 and has been above the level of its major trading partners, the BOM has never completely lost control of monetary aggregates (National Statistical Information Service, n.d.). Its relatively restrained monetary policy is conveyed by the ratio of M1 to GDP generally ranging from 10% to 15% since the late 1990s. The sharpest declines were during the economic crisis of 2009 and particularly 2016 and 2017, necessitating the IMF programs (ADB.org, n.d.).

Until 2015 there was a persistent tendency toward appreciation: that is, a loss of competitiveness because of Mongolia's higher inflation and periodic mining booms, most notably in 2008 and after 2010. It took the economic crises of 2009 and the economic difficulties in 2016 to reverse this trend through large nominal depreciations. By 2017, the real rate had reverted to approximately what it was a decade earlier, although it was still significantly higher than in 2000. Below graph illustrates the inflation of Mongolia from 2009 to 2017 (Take-profit.org, n.d.). The last year, the inflation rate amounted as 5% (**Figure 3**).

3.2. International Trade and International Relations

Mongolia has diplomatic relations with 188 states /187 UN states/. Of the states

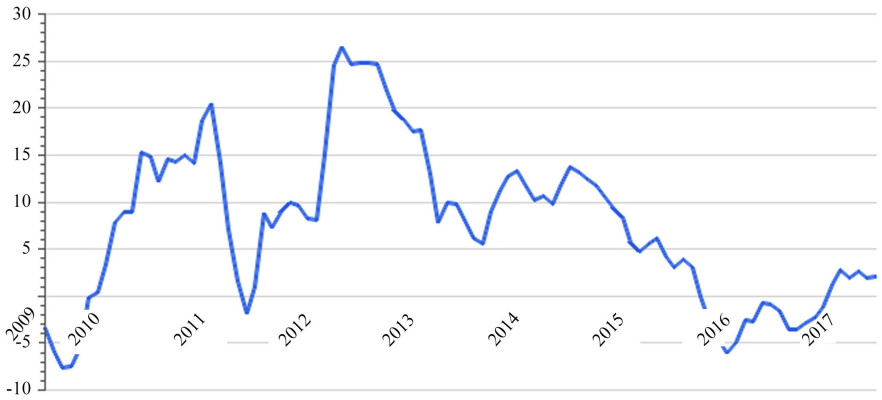

Figure 3. Inflation rate of Mongolia from 2009 to 2017.

with limited recognition it has relations only with the State of Palestine. Mongolia joined the World Trade Organization (WTO) in 1997, which opened the door to equal rights to trade with many countries worldwide and, in addition, has enabled Mongolia to contribute to decision-making in the rules of global trade and economic cooperation.

Since the development of political pluralism and transition to democracy and market economy, Mongolia pursues peaceful, open, independent, and multi-pillared foreign policy. Today Mongolia maintains diplomatic relations with 163 countries. Mongolia is successfully developing friendly relations and cooperation with our two neighbours, third neighbours and many western and eastern countries. Relations with UN organizations and other international and regional organizations deepened, and Mongolia's participation increased in multilateral regional activities, which led to strengthened reputation of our country in international arena (Mongolia Foreign Policy and Government Guide, n.d.).

There are existing Bilateral Investment Treaties (BITs) between Mongolia and the 37 countries all around the world (HKTDC, 2020). Mongolia, the EU, and Argentina initiated the Alliance for Torture-Free Trade, on September 18, 2017, which aims to end the trade in goods used for capital punishment and torture. Mongolia has double taxation agreements with 25 countries (**Figure 4**). On September 20, 2018, Mongolia and the United States declared they had agreed an expanded comprehensive partnership. The two reiterated their commitment to implementing their obligations under the WTO agreement on Trade Facilitation and reaffirmed their interest in regional economic cooperation and bilateral trade and investment, and to closely cooperating in future in the areas of agriculture, water, energy, mining, financial services, infrastructure, development cooperation and supporting private businesses (World Trade Organization, 2021).

Mongolia concluded its first two free trade agreements: An Economic Partnership Agreement (EPA) with Japan, which entered into force in 2016; and the Asia-Pacific Trade Agreement (APTA), which is expected to come into force for

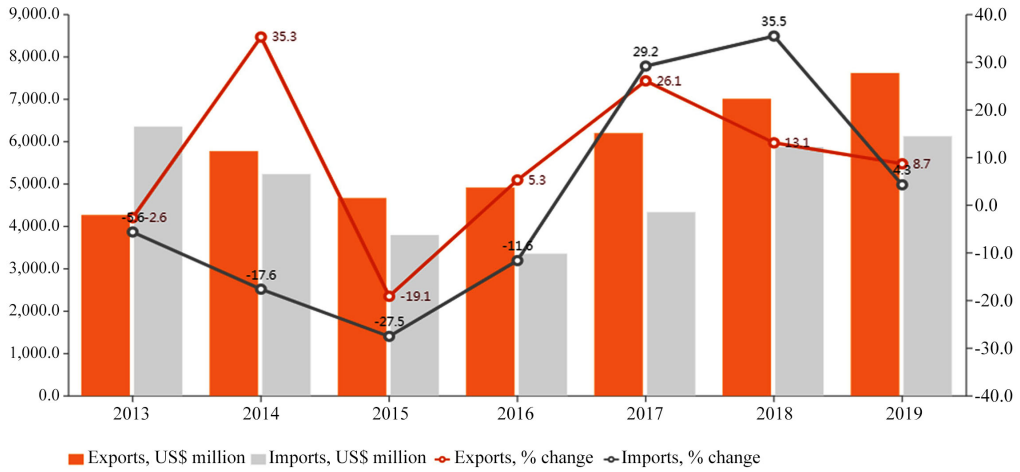

Figure 4. Merchandise Trade compared as exports and imports between 2013 and 2019.

Mongolia in January 2021. These agreements represent a departure from Mongolia's previous policy, whereby the WTO multilateral agreement was essentially its only trade agreement. The EPA is comprehensive, with a long implementation period until 2036. The APTA is expected to reduce tariff barriers by 30% on some 10,000 products for export, while Mongolia reduced import tariffs on 366 HS 6-digit tariff lines (**Figure 5**). Mongolia also concluded the US-Mongolia Agreement on Transparency in Matters Related to International Trade and Investment, which entered into force in March 2017 (World Trade Organization, 2021).

3.3. Infrastructure and Connectivity

The north south railway was the main transport of Mongolia which was part of Beijing-Moscow main line in 20th century. Mongolia's rail system from the PRC's border to the border of the Russian Federation spans 1811 km and carries passengers and freight. In the 21st century, investment in infrastructure increased from 2005. Mongolian mining sector heavily rely on the railway (Matthias Helble, 2020). In 2010 there were only 3016 km paved roads and 1647 km was improved, after 8 years, in 2018 this number increased to 9023 km as paved and 605 km was improved. As of 2020, a new 60 km expressway from new airport to Ulaanbaatar, are building by ADB and European Bank support.

Chinggis Khan International Airport increased its passenger handling capacity from 610,000 a year in 2008 to 1,100,000 in 2013, but even this increase has not kept pace with demand. A new international airport is being constructed 60 km south of Ulaanbaatar. The new airport can handle 3 million passengers a year and, with further expansion, 12 million a year (Matthias Helble, 2020). There are only 4 foreign airlines, Korean Air, Air China, Aeroflot, and Turkish Airlines, serve Ulaanbaatar but services are not frequent, and prices are high.

Since 2000, Mongolia's energy demand has increased faster than its economic growth. Peak electricity demand doubled from 570 megawatts (MW) in 2005 to 1099 MW in 2014. The country's electricity supply capacity of 901 MW is generated

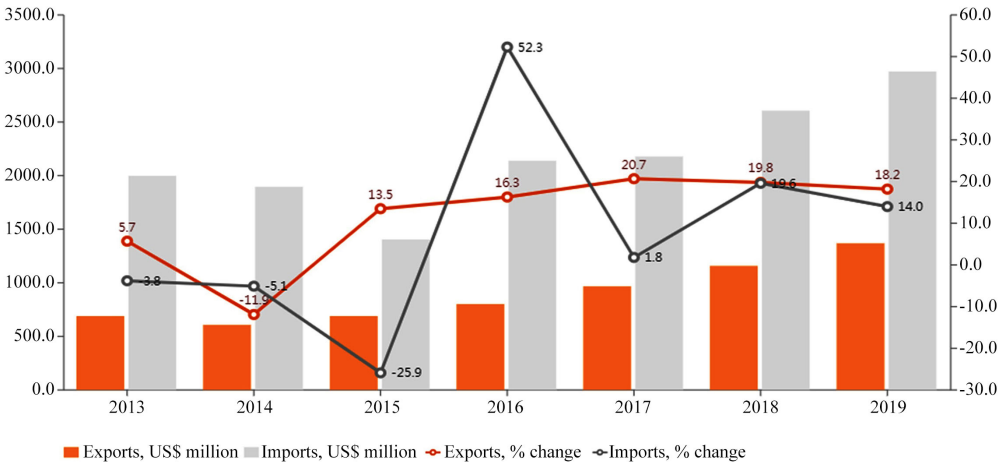

Figure 5. Trade in services comparing as exports and imports between 2013 and 2019.

by five power systems. 14 Power generated by thermal power plants accounts for 90% of total domestic generation, almost all from Soviet era coalfired plants; diesel (2%), hydropower (2%), and renewables (6%) comprise the rest (Ministry of Energy, n.d.).

Public access internet centres were established from 1998, 17 Mobile phone usage grew rapidly in the decade after 1995 in a competitive environment, and e-banking and e-commerce started to catch on from around 2000. In 2005, the government introduced the One Home One PC Program, providing computers to households for about $250 a unit; by 2009 over half of households had laptops. Mobile phone use is very high, with more accounts than people, and 85% of the population is connected to the internet. Mongolia is expected to have 95% coverage for fixed and mobile networks by 2021.

Mongolia's energy infrastructure is also unsatisfactory that the coal is the main source of heating system and electricity. Around 30% of the population has connected to central heating system and rest use coal-fired heater which produces the air pollution during the winter. About 90% of the population has access to electricity. Nevertheless, renewable energy is an increasingly used from 1% to 7% by 2018 (Organisation for Economic Cooperation and Development (OECD), n.d.).

4. Conclusion

Since there is no other paper analysed the last 20 or 10 years of Mongolian economic indicators, this paper tried to provide a major economic data analysis of Mongolia. Mongolian economic indicators were examined such as GDP growth comparison between 1981 to 2020 (**Figure 1**), inflation from 2009 to 2017 (**Figure 3**), and some demographic data from 1995 to 2019 (**Table 1**). From these analyses, Mongolia has had one of the fastest-growing economies in the world during the last decade. Since Mongolia has a mineral rich country, the economy is high-dependent on mining, the global price of copper and coal, which accumulate more than 80% of GDP (**Figure 2**).

One of the positive changes that happened during this economic boom was that the poverty rate dropped from 38% to 27% during the booming years. It is evident that the living standard had improved, and ICT had developed. On the other hand, some are getting more benefits than others by means that it increased the inequality and loosened the social classes. Due to the lack of good infrastructure in rural areas, migration to the capital city is still high. Currently about half of the country's population live in Ulaanbaatar which worsening sustainability. It shows that Mongolia has service-based economy and classified as lower-middle-income, ranked 14th among the 40 countries in the Asia-Pacific regions. Even though it conveyed some collapse in some years, a bright future waits for Mongolia.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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