

## News and Highlights

### China's Geological Work is Facing a Major Transformation

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At present, China's economic development is in a period of great transformation and revolution. China's gross domestic product (GDP) has dropped from the former 10% to about 6.5%, and the economy has entered a new steady development stage. In addition, China's large-scale infrastructure construction, such as railway, highway, airport, wharf, urban transportation and residential housing, has been basically completed. The demand for mineral resources in the whole society has been flat and declining, and geological work has entered a major transition period, which is mainly manifested in the following four aspects:

**(1) China's demand for large-scale mineral resources shows a fluctuating decline trend.** Statistics of domestic and foreign data show that China consumed about 1.157 billion tons of iron ores in 2015, 1.121 billion tons in 2016 and 1.161 billion tons in 2017. In a letter to investors dated October 1st, 2018, Morgan Stanley proposed that China's demand for iron ore would reach a peak at 1.28 billion tons in 2018 and gradually fall to 1.1 billion tons by 2023, with an annual decline of 3%. Since 2013, China's total coal consumption has reached a peak of 3.968 billion tons, which has been in a declining trend. In 2016, it was about 3.868 billion tons, and in 2017, it was about 3.87 billion tons (Fig. 1). Since 1985, China's cement production has been ranked the first in the world. China's cement production was about 2.09 billion tons in 2011, 2.354 billion tons in 2015, 2.41 billion tons in 2016 and 2.32 billion tons in 2017. According to the prediction of China's cement industry, China's cement consumption will decline year by year after 2020, and enter a stable period in 2030, with an annual consumption of about 0.8 billion tons. Other mineral products also show a similar trend.

**(2) The decline of global mineral prices has led to a sharp increase in mineral exploration funds and the closure or transfer of small mining enterprises.** In recent years, in addition to oil and gas, the global investment in metallic and non-metallic mineral exploration has declined sharply. In 2017, China invested 19.836 billion yuan in non-oil and gas mineral

exploration, compared with 51.115 billion yuan in 2012, with a decline of 61.12%. Moreover, as iron ore prices continue to fall (Fig. 3), fixed asset investment also began to decline (Fig. 4). Since 2015, the total number of China's licensed small non-oil and gas mines has begun to show negative growth. In 2017, China's large mines increased by 3.75%, medium mines decreased by 0.96%, small mines decreased by 26.27%, and the total number of small mines decreased by 37.53% compared with those in 2014.

**(3) China has basically completed large-scale basic geological survey, and traditional geological work needs to find new ways to transform and develop.** Till 2018, China's 1:250,000 regional geological survey has completed an area of 6.1662 million km<sup>2</sup>, accounting for 64% of the land area (covering 99.8% of Tibet). Among those, the central government has invested 6.07 million square km<sup>2</sup> and the local finance has invested 0.0923 million km<sup>2</sup>. Regional geological surveys at a scale of 1:50,000 have covered 4.2466 million km<sup>2</sup>, accounting for 44.16% of the land area, of which 3.67 million km<sup>2</sup> was

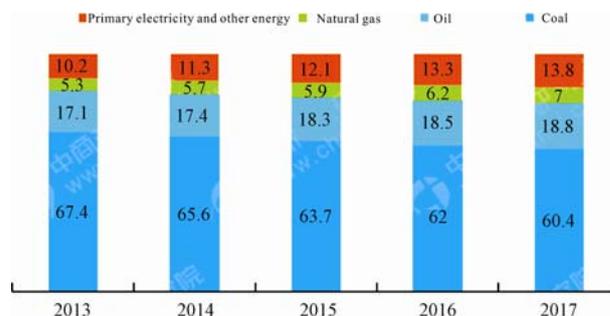


Fig. 1. Proportion (%) of energy consumption in total consumption in China during 2013–2017.

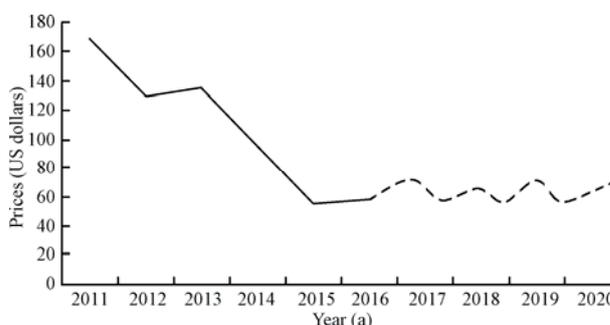


Fig. 2. Iron ore prices and anticipated prices (US dollars) in recent years.

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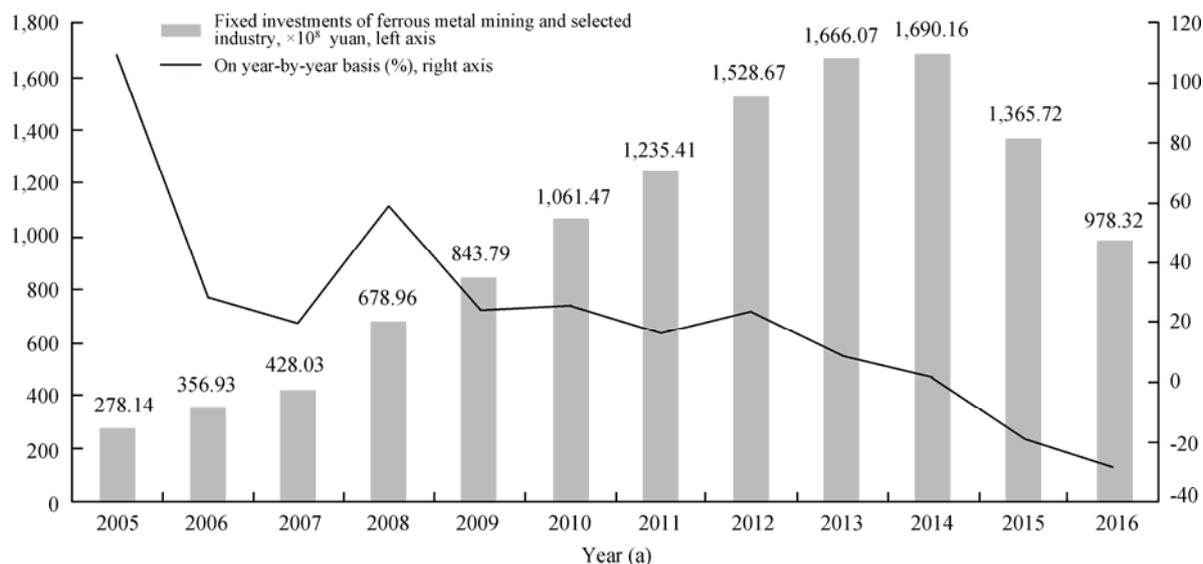


Fig. 3. Variation diagram of fixed investments for China's ferrous metal ores.

invested by the central government and 0.576 million km<sup>2</sup> was invested by local finance. China's basic geological conditions have been ascertained, which has basically met the needs of China's economic construction. Traditional geological work urgently needs to find new ways to transform and develop.

**(4) The Chinese government advocates the transformation development of geological work in order to curb global warming and reduce carbon emissions.** Faced with the significant changes in China's geological and mining situation, the Chinese government promptly proposed that the traditional geological survey work should change to systematic geology, from single and single factor geological survey to comprehensive survey of resources, environment, space and disasters, and from traditional rock, structure, mineral resources,

hydrology, engineering and environment to systematic geosciences of mountain, water, forest, field, lake and grass. Traditional solid mineral survey should be transformed to clean energy minerals, emerging minerals and large-scale scarce minerals, from mineral potential assessment to "trinity" comprehensive evaluation of geological potential, development conditions and environmental impact, from focusing on quantity to focusing on comprehensive protection of quantity, quality and ecology in order to create a new situation of harmonious development between humans and nature.

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