

Spillover Effects Of Foreign Direct Investment And Human Capital Formation On Labor Markets In Mongolia

Nyamdoljin.A¹

Foreign Direct Investment (FDI) and human capital formation's interaction has strong implications for labor demand and supply factors in developing economies. FDI is an important source of direct capital inputs and knowledge spillovers. FDI has positive spillover effects, creates new workplaces, increases wages, productivity, and competitiveness in host country. Human capital also has significant long run impact on an economy's income and employment. Human capital formation takes place through on the job training, schooling, and other knowledge gained through experience and learning by labor force. This stock of human capital determines the technological absorptive capacity of country. Human capital creates positive spillovers to economy.

Key Features of FDI Inflows in Mongolia

Mongolia is a vast, land-locked and sparsely populated nation. Its territory is larger than that of Britain, France, Italy and Germany combined, but it is home to only 3 million people, of whom about one-third live in Ulaanbaatar, the capital. Distant from major markets, most of Mongolia's foreign trade must pass through Russia or China, the two powerful neighbors that surround it.

Mongolia has been successful in attracting foreign direct investment since transferring from centrally planned economic system into market economy in the beginning of the 1990s. Mongolia is sitting next to two of

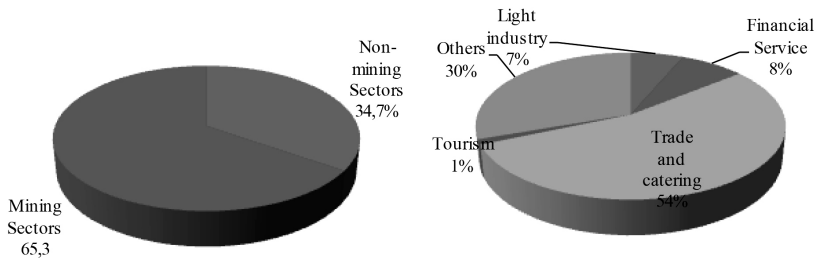
¹ Senior Research Fellow, Ph.D, Institute of International Relations, Mongolian Academy of Sciences

the largest economies in the world, Russia and China. Mongolia's resources - 6000 deposits of 80 minerals (including copper, gold, fluorspar and 150 billion tons of coal) are rich, and mining and mineral processing are a large part of Mongolia's industrial activity. On the back of large stock of resources and immense FDI inflows to the mining sector, Mongolia has been one of the fastest growing economies in the past decade. Real GDP growth averaged 9 per cent over the past decade, and per capita income has more than quadrupled, to more than \$4,000. Mining accounts directly for 20 percent of the economy, while the total share, including indirect impacts, is likely much higher mineral exports account for over 40 percent of GDP.

Since 1990, as the end of 2010, over 10 000 foreign invested companies have been registered from over 100 countries with the total direct investment of 4.8 million USD. Only in 2010 FDI inflow has been reached 1,011million USD which is roughly 10 times more than registered FDI amount in 2000 and it is roughly the same compared to the FDI amount registered in Mongolia within 14 years from 1990-2004.

Investment or gross fixed capital formation data by industry/sector are not publicly available for Mongolia, in accordance with the national statistical law (according to the National Statistical Office). Indeed, given the data gap, Information on sector structure and distribution of FDI inflows are the only indications of the distribution of investment across and within different sectors in the economy.

Figure 1. Sectorial structure of FDI flows into Mongolia
(FDI 1990 to mid-2011 by sector in per cent)



FDI in the mining and minerals sector now represents about more than half of total FDI, while trade and catering compromises 54 per cent, light

industry 7 percent, banking and financial services 8 per cent, construction 3.9 per cent, and tourism 1 per cent. Over the 1990-2011 period two thirds of FDI was into the mining sector (figure 1), a level of domination which has increased in recent years, e.g. more than 80 per cent of flows in 2011. FDI inflows by country of origin, China is by far the largest source of FDI inflows with 49 percent share in 1990-2012, followed by Canada, Netherlands Luxemburg. About 140 Singaporean and just over 100 Canadian companies are registered in Mongolia. Canadian enterprises are mostly concentrated in mining and related industries.

Companies in banking, textiles, construction, telecommunications and tourism follow mining companies. The construction sector is on the rise, primarily due to the implementation of The Land Ownership Law of Mongolia, which allows for private ownership of land. The Program on 40 thousand houses has also had a positive impact on the construction sector. FDI in the banking and financial services sector increased to above 5 percent of total FDI. Since then banking has been an important sector for FDI because of the privatization of The Trade and Development Bank and the Agricultural Bank of Mongolia, and further liberalization in the banking system. Today, FDI in the tourism sector comprises around 1.1 percent of total FDI and 10 percent of the country's GDP. There has, however, been declining FDI in the textile and garment sector due to expiration of the WTO multilateral fiber agreement, and China becoming a member of WTO.

Labour market effects of FDI

FDI may not only bring new technology and knowledge to the host countries, but also contribute to human capital accumulation by increasing the demand for skilled labour and thus, creating an incentive to participate into higher education. An important relation between FDI and human capital, which can be defined as “the knowledge and skills embodied in humans that are acquired through schooling, training and experience, and are useful in the production of goods, services and further knowledge.

Alongside the economic growth attributed to the minerals sector, Mongolia has witnessed social and environmental changes associated to rapid minerals development. These changes have been positive,

bringing economic benefits through employment and increased business opportunities and infrastructure development. With the entrance of more foreign companies the demand for skilled labour seems to be outpacing supply. There is evidence that the large mining companies for example are absorbing most of the English-speaking talent in the labour market by offering higher wages.

FDI has also been an important source of employment in the country. The rapid development of Mongolia's mining industry over the past decade has resulted in an acute and persistent shortage of qualified workers in the industry. The mining industry has also been an important source of employment in the country. In 2011, roughly 45.1 thousand people were directly employed in mining industry activities in Mongolia, with the industry adding approximately 30,000 jobs between 2000 and 2011. Mining industry employment has been rising steadily since 2005, both in level terms and as a share of total mining employment. In 2011, mining industry represented approximately 5% of total Mongolian mining employment compared to approximately 2% in 2000. Some of the factors contributing to the labor shortage in mining include an aging workforce, competing labor demands from other industries, and the rural and remote location of mines. In light of history high mineral prices, mining companies have responded to these labor shortages by offering relatively high salaries and wages to their employees. Between 2000 and 2011, average monthly wage (including overtime) in Mongolia's mining industry rose 31% to \$1445, more than doubling the average monthly wage in Mongolia's overall industrial sector. In the mining sector the increase has been even higher. The Statistical Mongolia publishes average monthly wages for mining industry to 2011. The represents a 37% increase from the levels recorded in 2000, and slightly higher than the average for the mining sector. In terms of employment generation, by the end 2012, the foreign investment companies have created more than 67,000 new jobs from domestic workforce and 2,500 foreign employers are working at the professional, technical and management levels, or roughly 7.7 percent of total employment in the country.

The Mongolian labour pool is generally educated, young, and adaptable, but shortages exist in most professional categories requiring advanced degrees or vocational training. These shortages include all types

of engineers and professional trades in the construction field. Unskilled labor is sufficiently available. Foreign-invested companies deal with these shortages by providing in-country training to their staffs, raising salaries to retain employees, or hiring expatriate workers to provide skills and expertise unavailable in Mongolia.

Human capital base in Mongolia

The changes in the structure of the economy, greater openness and competition, as well as greater use of technology have all resulted in increased demand for skilled and educated labour. But these changes occur from a low base—Mongolia is far from being a high skill-intensive economy. The skills that are in increasing demand include analytical skills, behavioral skills, practical knowledge (English and IT) and technical skills. In today's complex and changing environment, the challenge is to build skills that allow young people to think critically and creatively, to process information, to make decisions, to manage conflict, and to work in teams. The Mongolian economy is changing and so is the demand for skills. The changes in the structure of the economy, greater openness and competition, as well as greater use of technology have all resulted in increased demand for skilled labour, although from a low base—Mongolia is far from being a high skill-intensive economy. But so (and more importantly) has the nature of the skills demanded changed towards more general skills that allow workers (and firms) to 'survive' and quickly adapt to changes in demand. The skills that are in increasing demand include thinking skills, behavioral skills, practical knowledge (English and IT) and technical skills. In today's complex and changing environment, the challenge is to build skills that allow young people to think critically and creatively, to process information, to make decisions, to manage conflict, and to work in teams.

But the supply of skills has not responded to these changes in demand, resulting in a mismatch between the skills that workers bring to the labor market and those demanded by the labour market. About 30 percent of firms in the ICS report the supply of skilled and educated workers as a major or severe concern. Firms have a hard time filling vacancies for skilled workers, which is mainly due to the lack of required basic skills of applicants,

particularly among vocational education graduates. Most workers feel they lack the skills to make the most of their jobs, particularly 'general' skills-93 percent of workers report critical and creative thinking and behavioral skills (communication skills, work discipline, leadership and team work) among the three types of skills they lack the most in doing their jobs.

CONCLUSION

Generally FDI has been sought to bring into a country not only capital but also, new technology, marketing techniques, know-how and managerial skills; has positive influence on trade balance and balance of payment and creates new workplaces thus addresses the critical issues in developing countries. Furthermore, it is believed that it has positive spillover effects and increases wages, productivity, and competitiveness in a host country.

Mongolia for more than a two decade has been in the process of radical transformation and has taken significant steps to build a market-based economic structure. Mongolia has been intensively implementing open door policy to establish close economic and social relationship with foreign countries. Various reforms and strategies have been implemented to improve investment environment to attract foreign direct investment from year to year. A positive relation between relative wages and interaction term of foreign share and human capital implies supply of skills by foreign firms, is lesser than the demand for skills which is denoted by relative wages of skilled to unskilled laborers. The result is disequilibrium in skills market and increased wage inequality. Interaction term of technological change and foreign shares also represents the possible spillover effects of foreign technology on relative wages. Mining companies have much experience on manufacture operation with the mean of nearly 20 years while their average education is more than 8 years. The total value of manufacture industry that profit is averagely \$233 million. The result reveals that mining industry in Mongolia have high education level and small-scale, but with much experience in mining operation. Today foreign investment and financial security market development is important and contribute significantly for improving capacity of Mongolian mining companies. On the other hand, employee skills and experience are useful through motivation of

goals, increases of management and using a new technology. Training and learning is important part of mining industry by companies and government. Possible explanation could be that companies has to some specific people, for instance, the poor who might operate manufacture less technically efficiently or that education quality is not strong enough to help mining companies improve their manufacture performance and more technical efficiency (TE) in mining industry. Employee who has high knowledge is more efficient than those in primary and secondary school education. The third important factor is intensive labor is contributing the company increase the efficiency in obtaining higher TE.

Therefore, to gain the TE score of mining industry, the company or government should invest on education and training the skills of employees to operate more efficiently in terms of the ability. In addition, the government should consider the experienced workforce, increase the level of quality about new technology 30 applications and restructure the management. Moreover, company should focus on encouraging employees to produce more efficiently in terms of the utility of labor. These activities are also needed to be reform and developed more effectively. Furthermore, all members currently should contribute to study more or attend short training and improve the quality of experience. Also, company should save their electricity cost by renewing the technology. However the study revealed there was no positive relationship between TE and age. The reason is currently the mining industry is based on labor intensive and less dependence from technology. Therefore, government should support to equip by technology for mining companies and improve the level of experience through new technology and science. Moreover, the primary and secondary school education have no positive relationship with TE. Therefore, government should consider the quality of University and training centers of specialists. Also, the private companies should to invest their employee education and training of skills. An in-depth study is needed to discover the current quality of education; and research and science on the technical efficiency of mining industry, and determine the reasons of and solutions of these research and development field.

REFERENCES

1. Xiangcai Meng, Azhong Ye. Human Capital Externality, Knowledge Spillover, and Sustainable Economic Growth. *Annals of Economics and Finance*. 10-1, 155-198, 2009
2. Davaadorjiin Delgertsogt. Foreign Direct Investment in Mongolia, Focusing on Japan's Role. Working paper. No.63, 1998
3. Ariunzul Javzandorj, Lu Dehong. Factors Contributing to Foreign Direct Investment in Mongolia. *European Researcher*, Vol. (30), № 9-3, 2012
4. Leonid Melnyk, Oleksandr Kubatko, Serhiy Pysarenko. The impact of foreign direct investment on economic growth: case of post communism transition economies. *Problems and Perspectives in Management*, Volume 12, Issue 1, 2014
5. Francesco Pastore. School-to-Work Transitions in Mongolia. *The European Journal of Comparative Economics* Vol. 6, n. 2, pp. 245-264. 2009