

# Zach's Facts



To subscribe to my blogs, send an email to [rutledge@primal.ucdavis.edu](mailto:rutledge@primal.ucdavis.edu) with "Subscribe Zach's Facts" in the subject line.

## To Complete the Agricultural Transformation, China Needs More Inclusive Property Rights, Better Market Institutions, and Investments in Education

Agriculture is the largest employer in Asia but is not the largest sector by GDP in any country there. Agricultural labor and land productivity is rising fast, and agriculture is shifting to labor-intensive, high-value, crops. Due to rapid population growth and the inability of industry to absorb surplus labor, in the short to medium run, a large proportion of the new employment opportunities will have to be generated in the agricultural sector (Briones and Felipe, 2013). In the long run, investments in human capital will have to be made to enable workers to transition into non-farm work.

Throughout Asia, urban markets are becoming increasingly important for poor farmers because they serve as a place to sell goods and labor and purchase a variety of foods, allowing for a more diversified diet (Reardon et al., 2015), but rural nonfarm work will also play an increasingly important role in countries where urban employment growth is weak. In terms of value, most food is consumed in urban areas where incomes are substantially higher while foreign direct investment in Asian food processing has ushered in the rise of supermarkets, which have diffused into urban areas (and to a lesser extent in rural areas). The transformation of mid and downstream agri-food systems has been successful in Asian countries that have liberalized markets and gone through rapid urbanization. Developments in infrastructure that lower transportation costs, provide electrification, and promote markets could help rural sellers reach more buyers and generate new income diversification opportunities.

China has about 20% of the world's population but only 7% of the arable land. Although the share of agricultural employment has been declining, 25% of the workforce (200 million people) remains employed in the agricultural sector (Lohmar et al., 2009; World Bank, 2020). Most Chinese farming is done by households that cultivate small plots of land, which are less than 0.5 acres on average. Prior to 1978, all labor and production decisions, as well as wages, were determined by the government. In 1978, China made major reforms to its socialist policies by initiating the Household Responsibility System (HRS), which legalized the formation of private entities, transferred time-allocation decisions over to households, and provided the right to use and rent, but not sell, community-owned agricultural land (Kimle and Guo, 2012; Wang et al., 2007). In the 1980's, China started a pay incentive program, which allowed profitable state-owned enterprises to increase wages and give bonuses to productive workers (Li et al., 2010). The legalization of private entities and the formation of markets opened up new off-farm employment opportunities for rural communities by allowing individuals to profit from their own labor, which promoted a more efficient allocation of resources and increased agricultural productivity. However, there still remain significant bureaucratic hurdles to starting a private enterprise, and intellectual property rights remain weak. Although the HRS promoted equality and stability, it has not provided the adjustments necessary to commercialize the agricultural sector and generate the growth in farm income necessary to pull rural households out of poverty. As a result, hunger is still prevalent among China's poor, and farmers continue to struggle to make a decent living (Si and Scott, 2019). China has the potential to achieve large efficiency gains, but new reforms are necessary to make it happen. Developing infrastructure to lower transportation costs and investing in public markets could go a long way towards pulling rural farmers out of poverty.

Wage growth remained relatively low until the second half of the 1990's and then increased as a result of the privatization of state-owned firms that were previously unprofitable. This led to the expansion of China's industrial sector, which became reliant upon an abundant supply of low wage labor. But the real cost of labor is increasing (Li et al., 2012), which means that Chinese industries will have to become more technologically advanced, and the workforce will have to become more educated and skilled if the country is to remain globally competitive (Li et al, 2010).

Depending on the location of birth and family lineage, individuals are assigned rural or urban residency according to the Hukou system, which designates where (and implicitly the quality of) social services are available to each person. Restrictions in the Hukou system have been gradually relaxed over time, permitting large-scale rural to urban migration (as many as 140 million). Although those with rural Hukou designation have limited access to public services in

in urban areas, they are able to engage in low-skilled wage labor, which generally provides a higher-paying alternative to rural farm and non-farm work. However, the vast majority of rural to urban migrants have been young male adults, which has left behind an aging, uneducated, supply of workers in rural areas. The transition out of agricultural work is basically complete for the younger generation, but hundreds of millions of people (mostly women, children, and the elderly) remain in rural communities. The contraction of the able-bodied rural labor supply has generated some rural wage growth, but it has not matched the growth in urban areas (Li et al., 2013). Rising farm wages are, perhaps, an indication that China has passed the Lewis Turning Point (Zhang et al., 2017), but without significant modernization of the agricultural sector, growth in farm incomes will remain highly constrained.

One way to increase farm income is to switch production into high-value specialty crops. Some Chinese farmers have diversified into livestock, aquaculture, and fruit and vegetable crops (mainly for urban consumption), but China has struggled to develop modern market institutions, which has slowed rural income growth and stunted agricultural technology adoption. The Chinese grocery sector, which generates \$1.5 trillion in revenue annually, has surpassed the U.S., but it faces challenges due to a lack of scaled production to meet its ongoing demand. Supermarkets want standardized quality and safety, and some argue that grower cooperatives offer a solution to this problem by coordinating the production decisions of many small farmers, allowing them produce large quantities of high-quality specialty crops (Kimle and Guo, 2012). While recent laws have been established to provide support for these types of firms in the form of start-up capital, grants, and tax breaks, the lack of ability to buy and sell agricultural land, coupled with the fact that there are so many small farms that need to be coordinated, make widespread use of cooperatives a suboptimal solution from a management standpoint.

For those who continue to grow staple crops, such as rice, increased rural wages have induced some farmers to rely upon mechanical harvesting service providers, who travel throughout the countryside in caravans of trucks carrying small combines. The use of mechanical services allows for a more efficient division of labor because it enables urban migrants to continue working off the farm without having to come home during harvest season (Zhang et al., 2017). But agricultural productivity growth in grains has slowed down in recent years, and the majority of small farms still largely rely on hand-held tools (Lohmar et al., 2009). Although increased adoption of harvesting services suggests that agricultural mechanization can play an important role despite the absence of scaled production, long term agricultural productivity gains (both in grains and in specialty crops) will almost certainly have to come from land consolidation to scale up production, which means that the adoption of mechanized harvest services for grain crops will continue to lag behind until land can be

agglomerated by private entities. The transition will ultimately require new reforms that provide property rights to rural households that enable them to buy and sell agricultural land, but systems should also be put in place to make sure that the rural poor are protected during the process.

Ultimately the transition out of agriculture will require higher human capital accumulation, which means that China will need to invest in educational attainment, which could be aided by providing financial aid opportunities.

## References

- Briones, Roehlano, and Felipe, Jesus. (2013). "Agriculture and Structural Transformation in Developing Asia: Review and Outlook." *ADP Economics Working Paper Series*, No. 363.
- Kimle, Kevin, and Guo, Hongdong. (2012). "Scaling up from Smallholder Agriculture in China, North Branch River Vegetable Cooperative." *Iowa State University Economics Working Papers (2002-2016)*.
- Lohmar, Bryan, Gale, Fred, Tuan, Francis, and Hansen, Jim. (2009). "China's Ongoing Agricultural Modernization: Challenges Remain After 30 Years." *USDA ERS Economic Information Bulletin*, No. 51.
- Reardon, Thomas, Boughton, Duncan, Tschirley, David, Hagblade, Steve, Dolislager, Michael, Minten, Bart, and Hernandez, Ricardo. (2015). "Urbanization, Diet Change, and Transformation of the Downstream and Midstream of the Agrifood System: Effects on the Poor in Africa and Asia." *Faith in Economics*, No. 66: 43-63.
- Wang, Xiaobing, Hertzfield, Thomas, and Glauben, Thomas. (2007). "Labor Allocation in Transition: Evidence from Chinese Rural Households." *China Economic Review*, No. 67: 287-308.
- World Bank. (2020). World Bank Open Data [website]. <https://data.worldbank.org>.
- Zhang, Xiaobo, Yang, Jin, and Reardon, Thomas. (2017). "Mechanization Outsourcing Clusters and Division of Labor in Chinese Agriculture." *China Economic Review*, No. 43: 184-95.