Economics research in progress seminars

Date: 16 June 2014
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Title: Kinship networks and technology adoption: Evidence from colonial Kazakhstan

Abstract
Technology diffusion represents a key channel for economic development. Recent contributions to the analysis of the determinants of adoption stress the importance of networks in the diffusion of information and learning about the technology (Bandiera and Rasul 2006, Conley and Udry 2010, Banerjee et al. 2013). The networks analyzed are typically composed by local acquaintances. However, while kin/clan networks that extend beyond immediate geographical proximity potential play a big role, data limitations constitute the main obstacle to the analysis of such larger kin networks.

In this paper, we exploit data from a historical episode that led to a discontinuous change in the availability and access to a new technology and in the relative costs and benefits of adopting it. From the second half of the 19th century until 1917, Kazakhstan experienced a sharp increase of Russian migrants. This had two fundamental effects on the Kazakhs: (i) (partial) sedentarization of Kazakh population caused by higher land pressure, and (ii) the availability of more advanced agricultural technology brought by Russians. Exploiting this natural experiment with a unique dataset, we measure the importance kin effects in technology adoption and discuss the nature of this effect. Specifically, we construct the measures of agricultural technology use at the family level from the records of the Russian Imperial statistical expeditions and use the information on the kin group to which each household belongs. We show that kin relationships matter for technology adoption, after controlling for geographical confounding factors.

Next, we identify three potential channels to explain the role of kin in the choice to adopt agriculture and shorten the duration of seasonal migration: knowledge diffusion, kin-based coordination in the organization of seasonal migration and kin-level resources (such as relative kin power) that influence the return from seasonal migration. By exploiting regional differences in the knowledge available about the
new technology, we argue that information sharing cannot solely explain the observed kin effect. The literature on network and technology adoption that on focuses solely on information diffusion may thus underestimate the role of networks.