The Evolution of Land Rights: Public Farmers and Privatization in Roman Egypt

Andrew Monson Stanford University

Institutions: Economic, Political and Social Behavior 10th Annual Conference of the International Society of the NIE Boulder CO, September 21-24, 2006

1. Introduction

In his classic book, *Structure and Change in Economic History*, Douglass North sums up the nature of the ancient Egyptian state. As religious ruler, the pharaoh was the ultimate owner of land, which was controlled mainly by temples and state officials. But when the Romans conquered Egypt in 30 BC, agrarian property rights were at a turning point. Private landowners became politically dominant and demanded secure rights.¹ The New Institutional Economics has developed two models to explain land privatization. According to the interest-group model, property rights are the product of political negotiation and therefore they tend to benefit whatever interest group holds power.² Others use a demographic model of agrarian change. Communal institutions evolve in under-populated regions as an adaptation to environmental risk.³ Private property rights evolve as the population grows and land becomes more scarce.⁴

North elaborates the interest-group model in his economic history but population growth still plays a crucial role, especially for the transformation of ancient economies. Since then a growing literature in the New Institutional Economics has debated the influence of political and demographic factors on agrarian property rights in modern Africa.⁵ What we need is historical evidence that allows us to study long-term economic change. Egypt is a good case study because its dry climate has preserved tens of thousands of papyrus documents from the Hellenistic, Roman, and later periods, including land surveys, tax accounts, census lists, and private contracts.

My argument is that the interest-group model provides an explanation only for the proximate causes of Roman land reform in Egypt. It fails to explain the counter-trend in the under-populated Fayyum region toward communal ownership of public land. The Roman privatization of land was most successful in areas where population pressure was already high. A demographic model better explains the regional variation. This suggests that the two models work at different levels of analysis. Social and political relations better explain the immediate impetus of land reform but ecological conditions constitute basic parameters that influence long-term economic change. To make this argument I will first test the hypothesis that population growth leads to privatization by looking at the pre-Roman period. Second, I will discuss the political impetus behind Roman land reform. Third, I will consider the persistence of communal ownership in the Fayyum region and how this relates to shortages of manpower and problems with irrigation.

¹ North 1981.

² Eggertsson 1990; Firmin-Sellers 1996.

³ Park 1992; 1993.

⁴ North and Thomas 1976; Anderson and Hill 1975; Hayami and Kirkuchi 1982.

⁵ Shipton 1988; Firmin-Sellers 1996; Platteau 1996.

2. Pre-Roman Privatization

Before the Roman conquest, Egypt was ruled by the Ptolemaic dynasty that was established by one of Alexander the Great's generals. The new kings adopted the Egyptian tradition and claimed absolute ownership of the land. The system was similar to what has prevailed recently in some West African countries, where the state claimed theoretical ownership of the land while local traditions of communal administration or private rights evolved at the village level.⁶ Ancient land registers and private archives from Ptolemaic Egypt suggest that the prevalence of communal and private property rights correlates to the density of population.

An illustration of this trend is the high proportion of communal property in the Favyum region. In the early Ptolemaic dynasty, around 300-250 BC, there was a major irrigation project that tripled the amount of arable land, encouraging farmers from the more densely populated Nile Valley to immigrate and cultivate public land. A survey from one Fayyum village from 240 BC, shows that farm sizes averaged about 66 ha. and the farmers collectively redistributed 38% of their land each year. That means they gave land back to the village or other farmers and received new land in response to flood conditions. Similar redistribution practices were developed to spread the risk of bad harvests on the Senegal River in West Africa where agriculture was also based on annual river floods.⁷ The demographic model predicts that as population grows such redistributions should become less common. Indeed, land surveys from a nearby village in the Favyum 130 years later shows smaller farms on public land, averaging just 23 ha., where only 9% of the village land is redistributed. The reluctance to relinquish land is also evident in the inequality of holdings as the Gini coefficient rose from .310 to .337.⁸ This level of concentration for public land is still low when compared with private land ownership in villages of the Roman period, which ranges from .431 to .518.⁹

	240 BC	115 BC	
Average farm size	66 ha.	23 ha.	
Total land redistributed	38%	9%	Fayyu
Gini coefficient	.310	.337	
Estimated population density	67 p/km ²	129 p/km ²	



Based on evidence from these two villages and ancient census records we can estimate that rural population density in the Fayyum grew from about 67 people per sq

- ⁷ Park 1992.
- ⁸ Monson 2006.

⁶ Park 1993.

⁹ Bagnall 1992.

km of arable land to about 129 per sq km.¹⁰ However, this was still relatively low. Estimates for the early 19th century, when the population was probably similar in size, suggest about 350 people per sq km of arable land in Egypt with most of the density probably concentrated in the Nile Valley rather than in the Fayyum.¹¹

The evolution of property rights in the Nile Valley before the Roman period was considerably more advanced than in the Fayyum. We have numerous examples of land sale contracts and records of inheritance from villages in southern Egypt that are lacking from the Fayyum.¹² A land survey from Edfu in southern Egypt shows that about 80% of the region was regarded as "private land" even though an earlier text refers to the same land as public land belonging to the king.¹³ It is now generally accepted that *de facto* property rights had already evolved at least in southern Egypt even though the king claimed to be the ultimate owner of land. This trend is consistent with the demographic model.

3. Roman Reforms

I now move on to the Roman land reforms in Egypt. The demographic model fits into the neo-classical tradition of institutional analysis. Critics call this approach the "naïve model of property rights" because it neglects the social and political dynamics of institutional change.¹⁴ This criticism is basically correct. It would indeed be naïve to explain the Roman reforms simply as a continuous evolution from the Ptolemaic period.

The correlation between land reform and political reform in Roman Egypt supports the interest-group model. The Roman conquest in 30 BC suddenly diminished the power of the old bureaucracy and temples. In the reign of Augustus the Romans created a new system of local administration that handed responsibility over to secular landowning elites.¹⁵ The protection of property rights gave them an incentive to provide civil services. Three characteristics make the new ownership laws different from the *de facto* property rights under the old regime. First, restrictions were removed on who could buy private land. Soldiers, officials, and priests who had hereditary claims to land through their office now became full owners. Second, private land had to be declared and registered in state archives, which would serve to prevent land disputes. Third, taxes on private land were reduced to a low flat rate, which was about one quarter of what was often paid under the former regime and on public land.

Urban elites in Egypt flourished as they benefited from secure rights to their rural estates and from their access to the integrated markets of the Roman empire. The result was agricultural intensification, investment in water-lifting technologies, urbanization, and probably even per capital economic growth.¹⁶ It is hard to imagine the same path of development if the Ptolemaic dynasty and its institutions had not been overthrown. This discontinuity speaks in favor of the interest-group model.

¹⁰ Clarysse and Thompson 2006; Crawford 1971: 124.

¹¹ Scheidel 2001: 212, 221.

¹² Manning 2002; Cadell 1994.

¹³ Christensen 2002.

¹⁴ Eggertsson 1990; Firmin-Sellers 1996.

¹⁵ Bowman and Rathbone 1991; Rowlandson 1996; Rathbone forthcoming a.

¹⁶ Rathbone forthcoming a; forthcoming b.

4. Regional Development

I now come to my third and final point, which is regional variation after the Roman reforms. The Fayyum is unique for its high proportion of public land and for the tendency for public land to remain under communal ownership. These pie charts show the proportion of public to private land in Egyptian villages based on ancient land survey data. As you can seen, the villages located in the Nile Valley consistently have about 80% private land while the Fayyum villages have less than 50%. We have little evidence for the Delta region, but one village is known with a higher proportion of private land than in the Fayyum and a lower proportion than in the Nile Valley.

Chart 1: The Proportion of Public to Private Land in Villages of Roman Egypt



I suggested earlier that access to public land became more exclusive as population increased. During the Roman period this trend is much more pronounced in the Nile Valley than in the Fayyum. In the Fayyum the public land remained under the authority of villages and local elders. Unlike private land, having rights to public land usually required continuous occupation and cultivation, otherwise it could be redistributed. The public farmers in the Fayyum formed associations for collective farming. The desire to spread risk was probably a powerful incentive for public farmers to maintain communal ownership.

Evidence the Nile Valley suggests that *de facto* privatization of public land was another possible outcome. One land survey from southern Egypt shows that women often became the owners of public land through inheritance, which they probably leased out to male farmers. This is in strong contrast to the Fayyum where public land was always distributed among male farmers. It shows that public land was not only less common in the Nile Valley, it was also inherited and treated more like private property. The main difference was that public land usually had higher taxes than private land.

The question is, why wasn't public land in the Fayyum converted into private property? Given their political influence, we should expect the landowners' incentives for investment to take precedent over the peasants' desire to spread risk. But the Fayyum was not a typical region. After reclamation and initial population growth in the early Ptolemaic period, the Fayyum remained relatively stagnant under Roman rule. Taxation lists allow us to estimate population densities at about 124 and 106 people per sq km of arable land in two Roman period villages.¹⁷ This is similar to the 129 people per sq km attested in one village of the late Ptolemaic period.¹⁸ It is also consistent with estimates for the late nineteenth century, which indicate about 166 people per sq km in the Fayyum and about three times that amount in the rest of Egypt.¹⁹ Even if we cannot project the numbers into past, nineteenth century data suggest major differences in population density between the Fayyum from the Nile Valley.

The population dynamics are linked with productivity and disease. Large areas of standing water, including lakes, swamps, and irrigation basins, put the Fayyum at high risk for malaria and other infectious diseases.²⁰ The expanded Fayyum also required a labor-intensive irrigation system. Reports of labor shortages for dike work and field reclamation were common in both the Ptolemaic and Roman periods. Areas of public land were leased to farmers in neighboring villages due to insufficient manpower. In the late second century AD the region was hit by the plague. In the third century AD there was a sharp decline of arable land as canals were not maintained. Only in the early fourth century AD, as many villages became dry and unproductive, was public land integrated into private estates.²¹ Before that time the persistence of communal ownership probably owes to the high land-to-labor ratio and the labor-intensive irrigation system.

5. Conclusion

The Fayyum's trajectory illustrates the ecological parameters to institutional change. I have argued that the evolution of property rights before the Roman reforms was linked to population pressure. The political influence of landowning elites in the new regime was the proximate cause that accelerated the process of privatization. However, regional variation in land tenure illustrates the underlying environmental constraints. The impact of political reform was strongest in areas with high population density and high demand for exclusive rights. It made the least impact in the Fayyum where established customs and ecological conditions favored communal ownership. The models based on political bargaining and those based on population growth are complementary rather than conflicting. I take this to be the essence of Douglass North's explanation for ancient economic change. The Roman reforms were the culmination of a long-term process of

¹⁷ Rathbone 1990: 108-9, 134.

¹⁸ Crawford 1971: 124.

¹⁹ Assuming 1,200 km² and rounding the 1887 figure given by Boak 1926; For total Egyptian population densities in the 19th century, see Scheidel 2001: 212, 221.

²⁰ Scheidel 2001: 75-91.

²¹ Bagnall 1985.

agrarian change that undermined the traditional Egyptian state and introduced an economy based on private ownership.

Bibliography

- Anderson, T.L. and P.J. Hill (1975), "The Evolution of Property Rights: A Study of the American West," *Journal of Law and Economics* 18: 163-179.
- Bagnall, R.S. (1992), "Landholding in Late Roman Egypt: The Distribution of Wealth," *Journal of Roman Studies* 82: 128-49.

—— (1985), "Agricultural Productivity and Taxation in Later Roman Egypt." Transactions of the American Philological Association 115: 289-308.

- Bowman, A. and D.W. Rathbone (1992), "Cities and Administration in Roman Egypt," *Journal of Roman Studies* 82: 107-127
- Cadell, H. (1994), "Le prix de vente des terres dans l'Égypte ptolémaïque d'après les papyrus grecs," in S. Allam (ed.), *Grund und Boden im Altägypten* (Tübingen: self published), 289-306.
- Christensen, T. (2002), *The Edfu Nome Surveyed*, PhD Thesis, Faculty of Classics, Cambridge University.
- Clarysse, W. and D.J. Thompson (2006), *Counting the People in Ptolemaic Egypt*, vol. 1 *Census Registers*, vol. 2 *Historical Studies* (Cambridge: Cambridge University Press).
- Crawford, D.J. (1971), *Kerkeosiris: An Egyptian Village in the Ptolemaic Period* (Cambridge: Cambridge University Press).
- Eggertsson, T. (1990), *Economic Behavior and Institutions* (Cambridge: Cambridge University Press).
- Firmin-Sellers, K. (1996), *The Transformation of Property Rights in the Gold Coast: An empirical analysis applying rational choice theory* (Cambridge: Cambridge University Press).
- Hayami, Y. and M. Kikuchi (1982), Asian Village Economy at the Crossroads: An Economic Approach to Institutional Change (Baltimore: Johns Hopkins University Press).
- Manning, J.G. (2002), Land and Power in Ptolemaic Egypt: The Structure of Land Tenure (Cambridge: Cambridge University Press).

Monson, A.P. (2006), "Royal Land in Ptolemaic Egypt: A Demographic Model,"

working paper, Version 1.0 May, *Princeton/Stanford Working Papers in Classics*, www.princeton.edu/~pswpc.

North, D.C. (1981), Structure and Change in Economic History (New York: Norton).

- North, D.C. and R.P. Thomas (1976), *The Rise of the Western World: A New Economic History*, Cambridge: Cambridge University Press.
- Oates, J. et al. (2005), Checklist of Editions of Greek, Latin, Demotic and Coptic Papyri, Ostraca and Tablets, Web Edition, http://scriptorium.lib.duke.edu/papyrus/texts/ clist.html.
- Park, T.K., ed. (1993), *Risk and Tenure in Arid Lands: the Political Ecology of* Development in the Senegal River Basin (Tuscon: University of Arizona Press).
- —— (1992), "Early Trends toward Class Stratification: Chaos, Common Property, and Flood Recession Agriculture," *American Anthropologist*, 94,1: 90-117.
- Platteau, J.-P. (1996), "The Evolutionary Theory of Land Rights as Applied to Sub-Saharan Africa: A Critical Assessment," *Development and Change*, 21,1: 29-85.
- Rathbone, D.W. (forthcoming a), "Roman Egypt," in I. Morris, R. Saller, and W. Scheidel (eds.), *The Cambridge Economic History of the Greco-Roman World* (Cambridge: Cambridge University Press).
- —— (forthcoming b), "The mechane (water-wheel) in Roman Egypt," in M. Capasso and P. Davoli (eds.), Egyptological and Papyrological Researches in the Fayyum (Lecce: Papyrologica Lupiensa).
- ——(1990), "Villages, Land and Population in Graeco-Roman Egypt," Proceedings of the Cambridge Philological Society n.s. 36: 103-42.
- Rowlandson, J. (1996), *Landowners and Tenants in Roman Egypt* (Oxford: Oxford University Press).
- Scheidel, W. (2002), Death on the Nile: Disease and the Demography of Roman Egypt (Leiden: Brill).
- Shipton, P. (1988), "The Kenyan Land Tenure Reform: Misunderstandings in the Public Creation of Private Property," in R.E. Downs and S.P. Reyna (eds.), Land and Society in Contemporary Africa (Hanover: University Press of New England), 91-135.
- Tacoma, L.E. (2006), *Fragile Hierarchies: Urban Elites in Third Century AD Egypt* (Leiden: Brill)