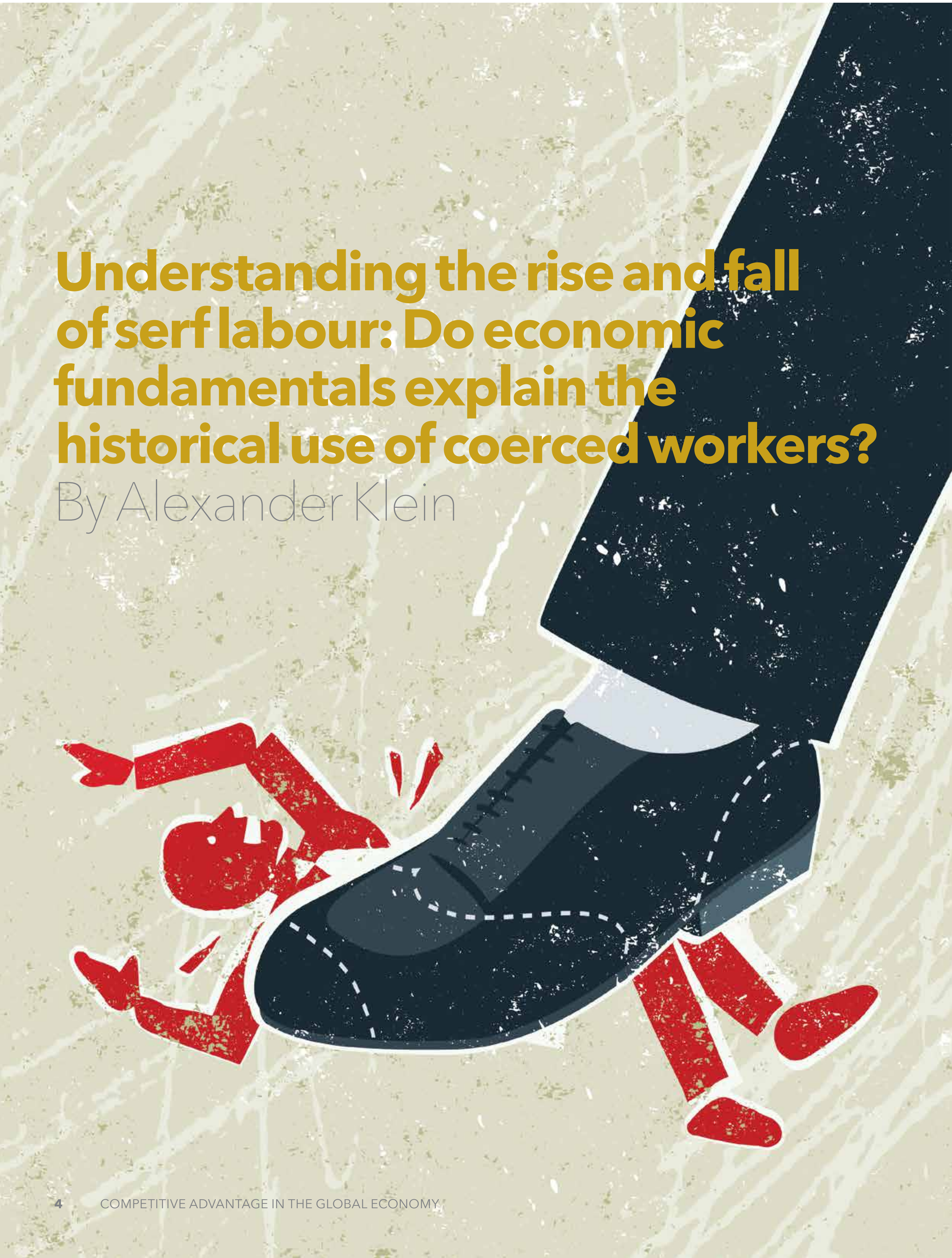
Understanding the rise and fall of serf labour: Do economic fundamentals explain the historical use of coerced workers?

By Alexander Klein



Why did slavery and serfdom dominate historical societies? Both played major roles in societies throughout the world and throughout history. Forced labour took place in ancient Greece and Rome, in Asian empires, in Central and Eastern Europe, the Caribbean and the United States. Indeed, most of labour transactions in history were coercive in that the threat of force was used to "convince" workers to accept employment.

FOR DECADES, RESEARCHERS have struggled to understand why slavery and serfdom dominated certain historical societies, and why they lasted so long, through the nineteenth century. Research thus far has largely been theoretical, relying on qualitative and descriptive approaches. Recent advancements in digitisation of historical data sources, however, now make it possible to address these questions from a new perspective: a quantitative one.

In recent research, Sheilagh Ogilvie and I quantitatively examine serfdom in Bohemia (part of what is now the Czech Republic) by taking advantage of enormously rich eighteenth century censuses, unique not only for a society in Eastern Europe but for any society at that time. Our research allows us for the first time to empirically investigate a leading and controversial hypothesis that suggests that the land-labour ratio of the time affected labour coercion.

Landowners created serfdom in economies in which labour was scarce relative to land.

We rely on a comprehensive tax register that provides data on all the 11,349 serf villages in Bohemia in 1757. This register, known as the Theresian Cadaster (*Tereziánský katastr*), recorded serfs' coerced labour obligations at the level of each village in Bohemia. The Cadastre provides information on the number of serf households that were required to provide coerced labour and the number of days they had to do it.

Bohemia experienced classical medieval serfdom, in which peasants were obliged to deliver coerced labour along with other payments to their landlords in return for being allowed to occupy land. To enforce the delivery of coerced labour, as well as other rents and taxes, Bohemian landlords imposed restrictions on geographical mobility, marriage, household formation, settlement, inheritance, and land transfers. In most of Western Europe these obligations petered out by early modern times, but in Bohemia and most of Eastern Europe, they survived and intensified in a development known as the "second serfdom" lasting all the way to the early nineteenth century. During this time, many landlords began increasing the coerced labour they extracted from serfs, demanding it from previously exempt groups, and using it not just for farm work but also for many other non-agricultural activities such textile manufacturing, ironworking, glassmaking, brewing, fish-farming, or transportation, just to name a few. What were the causes of it?

To answer this question, we tested one of the most well-known, and most vigorously criticised explanations. ▶

Domar (1970) speculated that coerced labour systems were caused by high land-labour ratios. Under his theory, landowners devised serfdom and slavery in economies where labour was scarce relative to land; thus, these institutions ensured they could get labour to work their land at a lower cost. This hypothesis, however, stirred a long-lasting debate. It was largely dismissed because it did not accurately reflect historical reality; for example, increases in land-labour ratios after the Black Death, in the middle of the fourteenth century, were followed by a decline of serfdom in some societies and an intensification in others.

Acemoglu and Wolitzky (2011) breathed new life into the Domar theory by putting forward an explanation of why land-labour ratios might affect labour coercion differently in different contexts. In line with theories advanced by Postan (1966) and North and Thomas (1971), they argued that an "outside option" played a role. That is, labour scarcity increased the wage that serfs could earn in outside activities, such those in the urban sector. The presence of alternative work options would discourage coercion. So, a rise in the land-labour ratio could increase the use of coerced labour in some contexts, but it could also decrease its use via its effects on serfs' other work opportunities. The relative size of these two effects will vary, so that the same rise in land-labour ratios can result in different outcomes.

Despite the theoretical work, quantitative empirical evidence on this issue has been practically non-existent. Thus, our research with data from the Theresian Cadaster provides what we believe to be the first quantitative analysis of labour coercion under serfdom.

We use two alternative measure of labour coercion. One focuses on human time only and comprises the total number of days of human labour the village was obliged to provide to its landlord each week. The other is the total work energy extracted from serf households: animal energy was combined with human labour to yield the total number of "serf-equivalent" days of work the village had to provide each week.

We find that where the land-labour ratio was higher, labour coercion was also higher, implying that the Domar effect outweighed any countervailing outside options effect. The effect has two additional features, both arising from the technology of coercion under serfdom: the effect of the land-labour ratio on labour coercion was much larger for human-animal than for human-only labour, and it declined as the land-labour ratio rose. Indeed, our findings show an inverted U-shape effect on land-labour ratio of labour coercion, meaning that in the villages with only a few serfs, coerced labour obligations were not very severe.

The comparative value of labour and land affected institutions, such as slavery and serfdom.

We also present evidence that supports Acemoglu and Wolitzky's conjecture that serfdom was strong in Eastern Europe partly because the urban sector was too weak to generate outside labour options for serfs. Indeed, our econometric results show that urban potential exercised little statistically or economically significant effects on labour coercion. Towns' lack of impact on labour coercion reflects evidence that in Bohemia and other parts of Eastern-Central Europe towns were too few and too weak to have any serious impact on serfdom.

It has long been believed that serfdom arose from class struggle, royal strength, urban power, or other society-specific variables. Our findings, by contrast, show that even when such issues are considered, economic fundamentals prove paramount. A very important implication of our results is that factor proportions – the comparative value of labour and land – do indeed affect institutions. Even though political economy and a number of other variables can impact the labour coercion, our results show that economic fundamentals help shape the institution of serfdom. ◀

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Domar, E. D. (1970). "The Causes of Slavery or Serfdom: a Hypothesis." *Journal of Economic History* 30(1): 18-32.

Acemoglu, D. and A. Wolitzky (2011). "The Economics of Labour Coercion." *Econometrica* 79(2): 555-600.

Postan, M. M. (1966). "Medieval Agrarian Society in its Prime: England." In M. M. Postan, ed., *The Cambridge Economic History of Europe, Volume 1: The Agrarian Life of the Middle Ages*. Cambridge, Cambridge University Press: 548-632.

North, D. C. and R. P. Thomas (1971). "The Rise and Fall of the Manorial System: a Theoretical Model." *Journal of Economic History* 31(4): 777-803.

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