



Garrison America

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The armories that dot the urban landscape of America were constructed in response to the strike wave of 1877, the Haymarket riot and other Gilded Age urban unrest. Most are imposing structures, some are magnificent. They were “designed to intimidate the ‘dangerous classes’” according to their foremost historian, Robert Fogelson. Originally they housed National Guard units thought to be more reliable than local police when upholding urban order might involve firing on strikers. New York had twenty of them, Philadelphia six.

But America’s investment in keeping order during the late 19th century pales by comparison

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to current efforts. By 2012, the Department of Labor predicts, the United States will have more private security guards than high school teachers. But this is just one part of “Garrison America.”

Economists tend to focus on resources devoted to producing the pie rather than those deployed in conflicts over how it is divided. Vilfredo Pareto, whose *Manual of Political Economy* is one of the founding works of neoclassical economics is an exception: “[T]he efforts of men are utilized in two different ways,” he wrote in 1896: “they are directed to the production or transformation of economic goods, or else to the appropriation of goods produced by others.”

We decided to do a rough breakdown of the United States economy using a variant of Pareto’s categories, expanded to include not only the appropriation of goods produced by others, but also the prevention of such appropriation.

We distinguished between those who directly or indirectly produce goods and services that we consume—who Adam Smith called productive labor—and those who we term guard labor: the police, private security guards, military personnel and others who make up the disciplinary apparatus of a society.

The extent of guard labor depends on exactly what you count, of course. But by our preferred estimates (which we explain shortly), roughly one in four in the United States economy is now engaged in guard labor—providing security for people and property and imposing work discipline. Since 1890 the guard labor fraction of the United States labor force has increased four-fold. And in Sweden today the guard labor fraction is less than half that of the United States.

Homeland security is not the reason for the growth in guard labor. Despite recent increases

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in military spending, the international security contribution to the guard labor fraction is down sharply, to less than a third of what it was 40 years ago. Police now considerably outnumber those working directly or indirectly for the Pentagon—a first since our data series begins in 1890.

COUNTING GUARD LABOR

To do our count, we modeled an economy in which the disciplinary apparatus of the society is explicit. (The model and a more detailed account of our calculations appear in a recent article we wrote in the *Journal of Development Economics*.) In this model, setting aside the owners of capital goods and those engaged in rearing the next generation, the adult population consists of employed workers (not otherwise listed here), work monitors, unemployed workers, prisoners, guards, and military personnel. The first (employed workers) are productive in the sense that their effort contributes directly to production. The efforts of the monitors, guards, and military personnel, by contrast, are directed not toward production, but toward the enforcement of claims arising from exchanges and the pursuit or prevention of unilateral transfers of property ownership.

These workers might be called (following Smith) unproductive, a term that is not meant to imply that they are unnecessary. The son-in-law of the first author of this essay is a corrections officer and there is no doubt in our minds that his work is essential to social well being. Prisoners and the unemployed represent a distinct category. They are unproductive not in the classical, but in the everyday sense. But they are not without a function: unemployment (in the title of a classic paper by Carl Shapiro and Nobel Laureate Joseph Stiglitz) is “a labor discipline device.” Similarly, those in prison are thought to be a deterrent to would-be criminals.

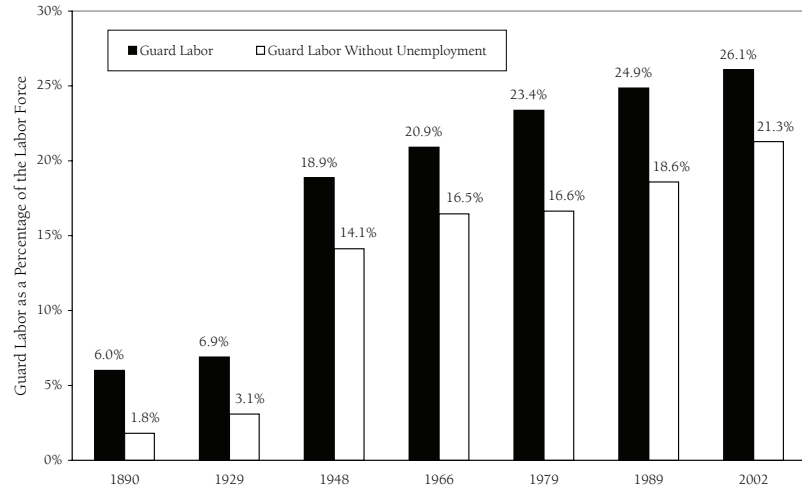
While most of the measurements are straightforward, estimating the number of supervisors in the relevant sense is not. We use the codes in the *Dictionary of Occupational Titles* (DOT) which provides detailed information on the nature of each of over a thousand jobs, distinguishing those in which the individual deals primarily with people (as opposed to things or data) and in which their relationship to people is supervisory. We find that in 1979, for example, by this definition, supervisors constituted 11.7 percent of the labor force. A partial check on this estimate is possible using

detailed information on the types and extent of supervisory tasks undertaken by large samples of United States and other nations’ labor forces. According to these data for the year 1980, 19.7 percent of the United States labor force reported that they exercise task supervision meaning that they have more than one subordinate and they decide one or more of the following: the tasks, the tools or procedures to be used, and the pace of work of their subordinates. A slightly smaller fraction (15.4 percent) reported having more than one subordinate whom they can sanction (or cause to be sanctioned) with respect to pay, promotions, or job termination.

A substantial increase in the guard fraction of the labor force is evident, in Figure 1 (next page). The composition of guard labor (not shown) shifts substantially over this period with supervisory labor and the military growing most rapidly over the period 1890–1948, and the growth of prisoners and guards in the literal sense (police, corrections officials and private security personnel) being more rapid during the latter period. The latter period witnessed a substantial decline in the military fraction, which peaked at 5.4 percent in 1966 and fell to 1.5 percent in 2002. About half of those

Figure 1: Guard Labor United States 1890–2002

Note: Our unemployment number is the excess of measured unemployment over an estimate of frictional levels.



classified as guards in the literal sense (47 percent) were privately employed in 2002, up from 28 percent in 1890.

Our measures of guard labor in the United States are necessarily incomplete and our definitions difficult to implement (Are lawyers guard labor? Lobbyists? Even some economists?). Foremen monitor workers and also solve technical or coordination problems that are clearly

productive in the sense just defined. Teachers instruct the next generation in essential productive skills; and they also socialize them to internalize the norms contributing to conformity to the society’s institutions, and so on. We have been forced to count only those whose main activities conform to our definition (thereby sparing our own profession the label). We have also ignored labor involved in the production of weapons for self protection,

of locks and security cameras, and surveillance devices such as the trackers attached to long haul trucks to monitor their drivers’ speed and routes. We do not think we have overestimated the number of supervisors; we have certainly missed some types of work that could be termed guard labor.

INTERNATIONAL COMPARISONS

Similar calculations of guard labor for 18 Economies (but not including police and private security personnel on which comparable data are not available) appear in figure 2. Differences in the extent of guard labor are substantial, ranging from less than a tenth of the labor force in Switzerland to a fifth or more in Spain, the United States, the U.K., and Greece.

Figure 2: Guard Labor: Cross-National Comparisons

Note: Police and private security personnel are not included due to lack of comparable data.

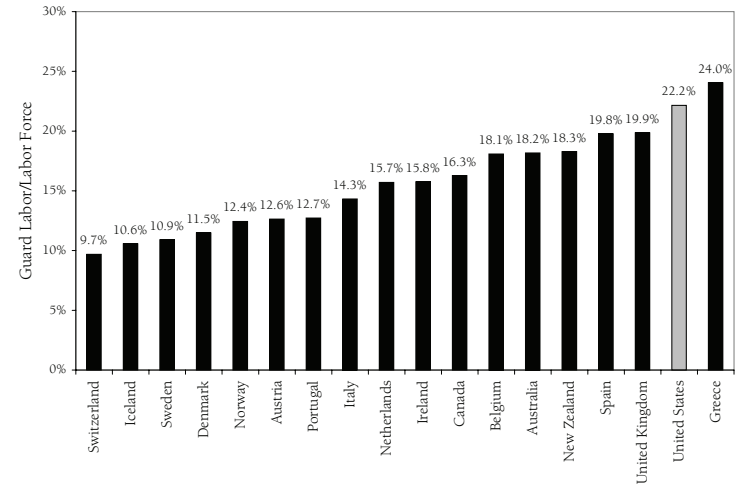
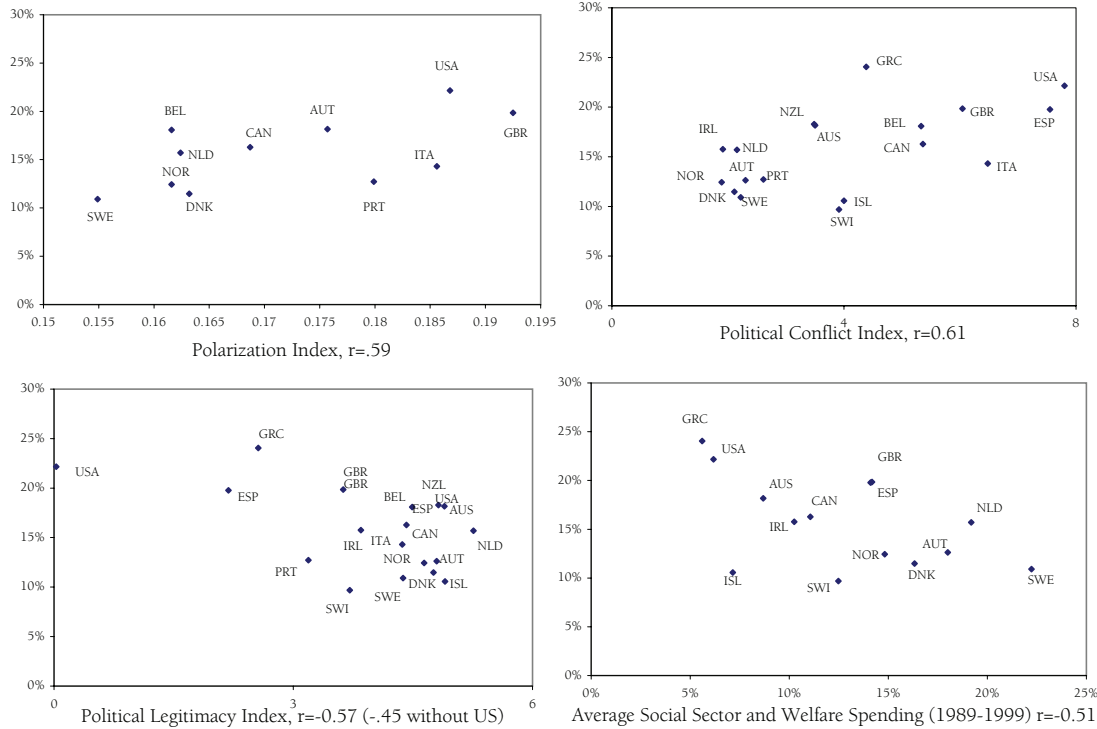


Figure 3: Cross-National Correlates of Guard Labor



Polarization Index: This is a measure of polarization obtained from Ray, Duclos, and Esteban (2004).

Political Conflict Index: the normalized sum of three indices: Ethno-linguistic fragmentation in 1960, average annual general strikes, and average annual riots over the years 1960 to 1998.

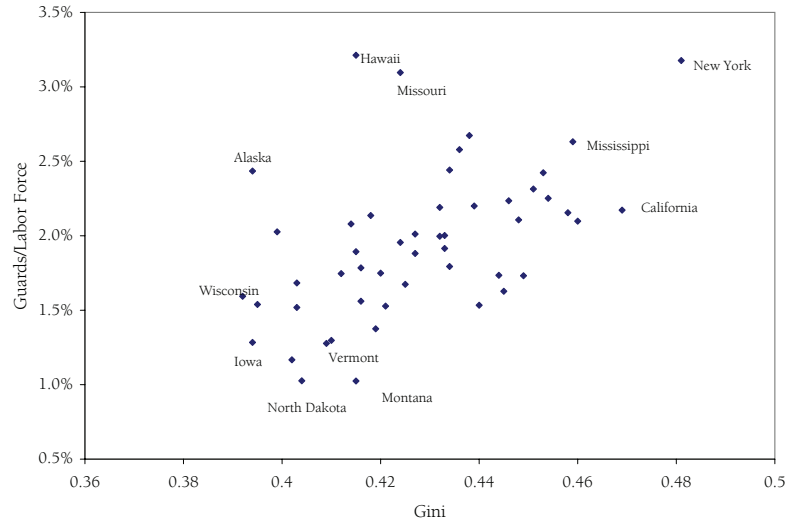
Political Legitimacy Index: sum of normalized average voter participation as a fraction of voting age population in all elections since 1945 and normalized number of consecutive years to the present in which universal male suffrage in competitive elections obtained.

Average social sector and welfare spending as a fraction of GDP from 1989–1999.

Countries in which conflicts between classes, ethnic or racial groups, and political factions are greater may be expected to devote more resources to guard labor. Figure 3 confirms this expectation. Panel 1 shows that economic polarization (a measure highly correlated with income inequality) is strongly associated with the level of guard labor. The correlation of guard labor with income inequality itself, measured by the Gini coefficient, is 0.40. Political conflict is even more highly correlated with guard labor (panel 2). By contrast, measures of political legitimacy (panel 3) and social and welfare spending (panel 4) are strongly inversely correlated with guard labor. Other correlations were less impressive. Technological differences, when measured by investment in knowledge as a percentage of GDP, displayed a low correlation (-0.29). Per capita GDP and a standard measure of corruption (the business international index) yielded low negative correlations (-0.22 and -0.20 respectively).

In constructing the data in figure 3 we have used long time periods as we would like to capture underlying structural characteristics of the nations that are unlikely to be the consequence of the level of guard labor in the 1990s. However, none of the statistical associations we

Figure 4: Protective Service Occupations as a Percentage of Labor Force by State vs. Economic Inequality
(Gini coefficient for family income). $r = 0.51$



have presented are properly identified causal relationships.

While the relationship between inequality and the extent of guard labor cannot be shown to be causal, it is quite robust. For example, we find it in measures of the extent of protective service workers defined by the Department of Labor (police, private security guards and the

like) and income inequality at the state level in the United States, as figure 4 shows.

However, the long term growth in guard labor in the United States cannot be explained by inequality trends, or at least not in any simple way, because income inequality fell over most of the last century before rising during the past three decades. Part of the increase in guard labor in the United States and its prominence here compared to other countries may reflect the fact that the maintenance of order has become a more specialized function over

time, and that this process is more advanced in the United States than elsewhere.

In many countries, the job of getting people to abide by the rules is not left up to the specialists that we have included in guard labor. Anyone who has tried jaywalking in Germany will know what we mean: it's not the police who you have to worry about, but your (equally

formidable) fellow pedestrians. In the United States when the neighbor's boisterous party is disturbing sleep, it's often the police who will get the irate call, not the neighbor. But the social norms associated with the term 'social capital' are not strongly associated with guard labor (in our cross national data set the correlation with a standard measure of trust is negative, but very small: -0.14).

WELFARE IMPLICATIONS AND POLICY OPTIONS

“You have money spent on guarding stuff rather than making stuff,” said Michael Hood, Latin American economist for Barclay's Capital. “There's a large population standing around in blue blazers rather than engaged in more productive activities.” He was talking about Latin America. But, as we have seen, he might have been talking about the United States.

Among the “greats” of economics only John Stuart Mill matched Pareto's concern about the unproductive labor of aggrandizement and its containment. His *Principles of Political Economy*, the “Samuelson” of English language instruction in economics for the second half of the 19th century, concluded: “. . . it is lamentable to think

how a great proportion of all efforts and talents in the world are employed in merely neutralizing one another. It is the proper end of government to reduce this wretched waste to the smallest possible amount, by taking such measures as shall cause the energies now spent by mankind in injuring one another, or in protecting themselves against injury, to be turned to the legitimate employment of the human faculties. . . .”

Accepting Mill’s implicit welfare economics would require a revision in our national accounts, substantially altering the measured wealth of nations. In a welfare sense, the workers producing new machinery to repair that used up in the production process are performing analogous tasks to the much larger number who are engaged in the guard labor activities (excepting prisoners and the unemployed) that sustain the economically relevant institutional stock. They both are producing something that the market or the government has demanded, and both are thereby sustaining the productive capacities of the economy (material capital and institutions respectively). When defining a welfare-based measure of net output, the case for netting out the output produced by those maintaining the stock of capital goods is, of course, uncontroversial.

We wonder if a similar case could be made for netting out the services produced by those who maintain the economically relevant institutional stock. Were such adjustments made, our estimates of guard labor suggest that the impact on growth rates and relative income levels across countries would be substantial. This is especially true for the United States where roughly one in five workers are performing guard labor (not counting prisoners and the unemployed), something like double the number of those producing the investment goods making up the depreciation of the capital stock.

Could the reallocation of guard labor to productive employment, as Mill advocated, promote economic development and enhance the livelihoods of the least well off? We cannot answer this in any definitive way, but the following speculative conclusions may point towards partial answers.

First, guard labor reflects conflicts of interest over things that cannot be specified in complete contracts that are enforceable at low cost—how diligently employees work, for example. Policies that result in more fully and clearly defined property rights, more complete contracts, and attenuated conflicts of interest could reduce guard labor.

Second, conflicts over non-contractible goods and services are exacerbated when many economic actors lack the assets necessary to become residual claimants on the results of their own non-contractible actions or to engage in other efficient contracts.

Third, enforcement strategies adopted by wealthy principals facing wealth-poor agents typically confer a rent on the agent, who is then monitored by the principal. Both the rent and the resources devoted to monitoring are private costs, but only monitoring involves a social cost (the rent is a transfer, not an additional claim on resources that have alternative uses). As a result, private enforcement strategies are inefficient in the technical sense of the term: if a larger rent were paid, the same output could be accomplished with less monitoring inputs and not more of any other input. Private enforcement exhibits an endemic technical inefficiency resulting from “too much stick, not enough carrot.”

Finally, illegitimate inequalities are costly to sustain. While cultures often justify vast differences in power and access to valued resources, the mind is not a blank slate on which such ideas as the divine right of kings or the superiority of the “white race” can be etched at will. Two decades of

behavioral experiments have provided convincing evidence that humans in diverse cultures are inequality-averse, and that violations of fairness or reciprocity norms provoke costly conflicts.

America's urban armories, built over a century ago to contain social unrest, now house such facilities as an indoor track and field arena, a homeless shelter, and a film studio. Is it too much to hope that some of the burden of today's guard labor might also be redirected to more socially productive uses?

Letters commenting on this piece or others may be submitted at <http://www.bepress.com/cgi/submit.cgi?context=ev>.

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Jack Hirshleifer (1925–2005) was among the few economists who followed the lead of Pareto and Mill. We dedicate these pages to his memory. Thanks to Deborah Boehm and Elisabeth Wood for their contributions to this research, and the Behavioral Sciences Program at the Santa Fe Institute and the University of Siena for financial support.

