By increasing their military expenditures, states with rapidly industrializing economies have the potential to develop significant military capabilities. Whether or not they choose to do so is of considerable policy relevance to the United States. In this monograph report, we look at the relationship between military expenditures and economic growth in five “great power” states—Germany, France, Russia, Japan, and the United States—each of which experienced rapid economic growth and industrialization in the decades following 1870. We choose these states for our examination because their military spending choices may provide useful insights into the choices of other potential powers that are either on the cusp of, or already undergoing, a similar economic takeoff.

In the report, we address the following research questions:

1. To what extent did movements in military expenditures match movements in output levels and rates of growth in each of the relevant countries during the period 1870–1939?
2. What are the most plausible explanations for the increases in military expenditures that took place in each country?

Our approach to the first question consists of a descriptive data analysis together with statistical tests of the military expenditures–output relationship. We find that, for France, Germany, and the United States, none devoted a dramatically increasing share of their growing national resources to their militaries as they experienced profound economic transformations in nonwar years between 1870 and 1913. The share of Japanese output devoted to military expenditures, in
contrast, more than doubled over the same period. In the tumultuous period between the two world wars, military expenditures in all countries except the United States shot up dramatically. This occurred despite the global economic recession that prevailed during the first part of the period.

In statistical terms, for any given country during any given year in the sample period, the best predictor of military expenditures is the level of military expenditures in the previous year. The statistical evidence does not support generalizations about a positive relationship between output levels or output growth and military expenditures. This is still the case when we allow for lags of several years between changes in output and military spending decisions. Further, other measures we use to proxy for other factors that might influence military decisionmakers—such as the number of military personnel in rival states—also do not appear to be consistently related to changes in military expenditures over time.

Thus, the states in our sample appear to have made their military spending decisions in response to changes in political and economic circumstances that are not adequately captured by the measures available to us. Given the limits imposed on statistical models by the historical data, a case study approach may offer a richer menu of possible explanations for the military expenditures that took place in each country. To address the second question, therefore, we conduct historical case studies of the five great powers, sorting our 1870–1940 sample into three time periods: Post-Bismarck, 1870–1890; pre–World War I, 1890–1913; and pre–World War II, 1919–1939. We propose three alternative hypotheses to explain the pattern of military expenditures we observe.

The first of our alternatives, the “ambition” hypothesis, posits that states experiencing economic growth develop foreign policy ambitions that motivate them to increase their military expenditures. The second alternative, the “fear” hypothesis, argues that states increase their military spending when they perceive heightened threats to their security. The third alternative, the “legitimacy” hypothesis, argues that governments faced with domestic threats to their political legitimacy increase their military spending in support of aggressive foreign policies that garner support at home. Of the three, only the ambition hypothesis suggests that economic growth is in itself a suf-
cient condition for increasing the share of resources devoted to military spending.

Our results are summarized in Table S.1. We find some support for all three hypotheses, but the fear hypothesis most consistently appears to explain the historical record. In fact, we believe that fear was a driving factor behind accelerating military spending in 12 out of 15 of the historical episodes we examine. In contrast, we find relatively little evidence for the legitimacy hypothesis: although domestic politics certainly played some role in all of the foreign policy and procurement decisions we examine, only two episodes (Germany, 1891–1913, and Japan, 1919–1939) seem to exhibit the dynamics associated with securing domestic political legitimacy.

Economic growth through modernization seems to have been key to achieving ambitious foreign policies for certain states at certain times—e.g., France, Russia, and the United States in 1870–1890 and Germany, Japan, Russia, and the United States in 1891–1913—but in the later periods ambition is always accompanied by fear. This observation is important because policies that might be successful at deterring foreign military expansions motivated by aggression might have the opposite effect if such expansions are motivated by fear. In the modern context, this means that U.S. attempts to counter the perceived military ambitions of a newly rising power through force modernization and expansion in some cases have the potential to trigger an arms race.

### Table S.1
Which Hypotheses Explain Great-Power Military Spending?

<table>
<thead>
<tr>
<th>Period</th>
<th>France</th>
<th>Germany</th>
<th>Japan</th>
<th>Russia</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>1870–1890</td>
<td>Ambition</td>
<td>Fear</td>
<td>Fear</td>
<td>Ambition</td>
<td>Ambition</td>
</tr>
<tr>
<td>1891–1913</td>
<td>Fear</td>
<td>Ambition, fear</td>
<td>Ambition, fear</td>
<td>Ambition, fear</td>
<td>Ambition, fear</td>
</tr>
<tr>
<td>1919–1939</td>
<td>Fear</td>
<td>Ambition, fear</td>
<td>Ambition, fear</td>
<td>Fear</td>
<td>Fear</td>
</tr>
</tbody>
</table>
To understand fully why the five great powers we examine did or did not increase their militaries’ share of national resources requires a finer-grained analysis than has been carried out in this study. However, their motives probably included complex combinations of ambition, fear, and, to a lesser extent, legitimacy. Unfortunately, a quantitative examination of the exact mix of these motives for these five countries is outside the scope of this report because of, among other factors, the paucity of good and detailed historical data. However, for extensions of the analysis to would-be great powers of today, such data may well be available, offering the potential for a more considered response based on deeper judgments about why any individual country’s military expenditures are growing and how they are being allocated. In the last chapter of the report, we identify variables that, constructed from adequate data, would allow us to better discriminate among the three hypotheses.