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# The arsenal of democracy: Production and politics during WWII\*



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#### ABSTRACT

We study the geographic distribution of military supply contracts during World War II. This is a unique case, where \$3 trillion current day dollars was spent. We find robust evidence consistent with the hypothesis that economic factors dominated the allocation of supply contracts, and that political factors—or at least winning the 1944 presidential election—were at best of secondary importance. General industrial capacity in 1939, as well as specialized industrial capacity for aircraft production, are strong predictors of contract spending across states. Electoral college pivot probabilities are weak predictors of contract (and new facilities) spending, and under the most plausible assumptions they are essentially unrelated to spending. This is true over the entire period 1940–1944, and also for shorter periods leading up to the election in November 1944. That is, we find no evidence of an electoral cycle in the distribution of funds.

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#### 1. Introduction

During the Second World War, the federal government assumed an unprecedented degree of control over the U.S. economy. At the peak, the share of federal government expenditures in GNP soared to 44%, a level never attained before or since—see Fig. 1.¹ In addition to enrolling 16.4 million Americans in the armed forces (about one-eighth of the 1940 population), the federal government spent \$196 billion between June 1940 and June 1945 on military supply contracts and \$31 billion on investments in new production facilities. In 2018 dollars, this is equivalent to roughly \$3.2 trillion. Although this war effort—coined the "Arsenal of Democracy" by President Roosevelt—probably represented the largest single economic intervention by the federal government in U.S. history, the political economy of these spending flows has been subject to relatively little systematic scholarly investigation.

This paper uses state-level economic and political data to investigate the relative importance of political and economic factors in accounting for the geographic allocation of World War II-era military spending, both for major war supply contracts and for new facility projects. Following an extensive empirical and theoretical literature on distributive politics in the U.S., we focus on one of the incumbent party's main goals—winning the next presidential election.<sup>2</sup>

To measure the electoral importance of each state we employ a model similar to that in Strömberg (2008). The model incorporates pre-war voting data, and accounts for the size, closeness and variability of state votes as well as correlation between state vote outcomes. Simulations based on this model yield estimates of the relative probability that each state would be pivotal (some level of spending will change both the state and electoral college winner) in the 1944 presidential election. We provide evidence that this pivot probability measure reflects the relative electoral value of different states, and that it is superior to alternative measures from the literature.

To measure the economic importance of each state we use estimates of industrial capacity at the beginning of the war. States such as Connecticut, Michigan, and New Jersey already had large factories producing automobiles, trucks, airplanes, ships, and steel, and thousands of trained and experienced factory workers. Converting this physical and human capital to wartime production was generally

<sup>☆</sup> We thank participants at the 2016 PECA conference at the Northwestern University, 2017 Wallis Conference at the University of Rochester, University of Bath, Sanford Gordon, and Anthony Fowler for comments. Price Fishback generously provided New Deal spending data. A supplemental appendix is available on the webpage of the corresponding author. Declarations of interest: none. We also thank the editor and two anonymous referees for their valuable suggestions.

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 $<sup>^{\,1}\,</sup>$  Source: Federal Reserve Bank of St. Louis, U.S. Office of Management and Budget, https://fred.stlouisfed.org/series/FYONGDA188S.

<sup>&</sup>lt;sup>2</sup> We also consider other electoral goals, discussed below.



Fig. 1. Federal net outlays as percent of GDP.

much cheaper than starting from scratch. Perhaps even more importantly, conversion was typically the fastest way to get production up and running, which was crucial for the war effort.

Our empirical findings provide robust evidence consistent with the hypothesis that economic factors strongly influenced the allocation of supply contracts, and that distributional political factors—or at least winning the 1944 presidential election—were at best of secondary importance. General industrial capacity in 1939, as well as specialized industrial capacity for aircraft production, are strong predictors of contract spending across states. For example, pre-existing manufacturing capacity alone can explain over 60% of the inter-state variation in contract spending over the war. Electoral college pivot probabilities are at best weak predictors of contract spending, and under the most plausible assumptions they are essentially unrelated to spending.<sup>3</sup> This is true over the entire period 1940–1944, and for shorter periods leading up to the election in November 1944. Thus, in addition to finding no overall effect of pivot probabilities, we also find no evidence of an electoral cycle in the distribution of funds.

There is additional evidence of the limited scope of political targeting. We find no evidence that spending on *new* military and industrial facilities was targeted towards politically pivotal states. New facilities also constituted a much smaller share of federal war spending than supply contracts. If political allocation was the driving factor, this share would be higher since it was easier to place new facilities in any location (such as electorally valuable areas) while supply contracts generally required using pre-existing manufacturing plants. With respect to congressional considerations, we find no significant relationship between the distribution of spending and states' representation on key military or appropriations committees. Nor do we find evidence that war spending is directed to states with closely contested senate or gubernatorial elections.

A potential concern is that the 1944 presidential election was a foregone conclusion, and so there was little need for politically-motivated allocation of war funds. However, there was significant uncertainty about the outcome. Based on contemporaneous prediction market odds (Rhode and Strumpf, 2004), even in the weeks before the election there was a 25% chance that Dewey would win the presidency. Roosevelt's Gallup Poll voter approval numbers also dropped steadily by ten percentage points over 1943, and the substantial Republican victories in 1942 (when they gained 46 House seats and 9 Senate seats) were viewed as a lack of confidence in the president. Nor were wartime leaders ensured of re-election, as Churchill's loss in 1945, just two months after VE Day, illustrates.

This should have provided strong incentives to allocate war funds for political gains. Dewey also had better odds than FDR's opponents did in 1936, when there was evidence (discussed below) Roosevelt allocated New Deal spending in part to increase his electoral chances.

What are we to conclude from these results? Consider first the classic literature on distributive politics. In a series of influential papers, Lindbeck and Weibull (1987), Dixit and Londregan (1995, 1996), and others develop models where electoral competition drives political parties to target divisible resources towards groups or regions with relatively large numbers of "swing" voters. Colantoni et al. (1975), Snyder (1989), Strömberg (2008), and others develop related models in the context of allocating campaign resources.

The evidence on campaign resource allocation tends to strongly support the swing-voter models. In particular, a number of papers find that battleground states—that is, those with an expected Democratic vote share near 50%—receive a disproportionate share of the advertising in U.S. presidential campaigns (Colantoni et al., 1975; Nagler and Leighley, 1992; Shaw, 2006; Strömberg, 2008; Huang and Shaw, 2009).

The evidence for government expenditures is more mixed. Studies of New Deal spending, federal grants, and federal employment typically find that states with presidential vote shares nearer to one-half, or more volatile presidential vote swings, or states that are more "productive" in terms of electoral votes, receive more federal aid—for example, Wright (1974), Wallis (1987, 1991, 1996, 1998), and Fleck (1999). Studies of spending in more recent time periods, however, such as Larcinese et al. (2006) and Larcinese and Snyder (2013), find no evidence that states receive more federal funds if they have closer presidential races, more frequent presidential partisan swings, or a larger percentage of self-identified independent or moderate voters.

<sup>&</sup>lt;sup>3</sup> A key free parameter in our model is how responsive votes are to spending—we use values based on estimates which relate voting preferences in Gallup polls to both World War II and New Deal spending.

<sup>&</sup>lt;sup>4</sup> While most papers on the New Deal find some role for politics, there is some debate on its magnitude and the role of other factors. Strömberg (2004) shows that the statistical significance of these estimates vanish when state fixed effects are included, suggesting that the results might be spurious and the result of omitted-variable bias. Wallis (1998) finds that the results depend on the specification used and the set of states included. Fishback et al. (2003) study New Deal spending at the county level and find mixed evidence for pivotal politics—for some programs the distribution of spending appears to be related to electoral volatility or turnout at the county level, while for other programs it is not.

<sup>&</sup>lt;sup>5</sup> The literature on distributive politics is vast, and includes several other branches, including studies of the distribution of spending across districts or counties rather than states; the hypothesis that government expenditures flow disproportionately to areas with more "core" or "loyal" party voters; and institutional factors such as committee structure, the distribution of party and committee leadership positions, legislative seniority, majority party membership, malapportionment, and universalism norms. Finally, there are many studies of distributive politics outside the U.S.

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