# Economic Voting during the Great Depression*

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**Abstract**

We measure the magnitude of economic voting during the great depression. We use the heterogeneity across counties in the exposure to exchange rate changes driven by the departure from the gold standard of US trading partners in 1931 and the US in 1933. We control for the aggregate effects these events trigger using time-fixed effects. We estimate significant changes in local voting behavior in response to local economic shocks. The response of electoral outcomes in both episodes is similar in magnitude, although only the depreciation of 1933 was a direct consequence of the actions of the US government.

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# 1 Introduction

The strength of economic voting, defined as the effect of shifts in economic conditions on electoral outcomes, is an important object of interest in political economy. The feedback from economic outcomes to voting is an important factor in democratic accountability and the joint determination of economic and political variables. Leading evidence on the strength of economic voting has used shifts of national (Erikson, 1989) and local economic conditions (de Benedictis-Kessner and Warshaw, 2020). However, a persisting empirical concern in estimating the strength of economic voting is the presence of unobserved factors that simultaneously affect the economy and popular support. On top of that, reverse causality concerns, in which incumbents, expecting a close election, have incentives to boost the economy temporarily, complicate inference (e.g., see Abrams, 2006, on the case of President Nixon and the conduct of monetary policy).

In this paper, we make progress in solving these empirical challenges by using two large and sudden economic events that impacted the US economy during the 1930s with unequal effects across geographies. First is the abandonment of the gold standard by several US trading partners, most notably the United Kingdom in 1931, which generated a significant appreciation of the US dollar relative to some of its trading partners, creating a deterioration in the economic conditions of the exporting sector of counties exporting to those trading partners. Second is the abandonment of the gold standard by the US in 1933, which generated a significant depreciation for counties exposed to countries that let their currency appreciate against the US dollar.

We exploit the variation in local economic conditions induced by exchange rate shocks across counties due to their pre-existing exposure to trade to treated destinations, as in Candia and Pedemonte (2021). Heterogeneous exposure to large and sudden events is ideal for providing better estimates to answer the old question of whether local economic activity affects electoral outcomes. Importantly, our estimation *does not* rely on a particular stance on whether the exit from the gold standard was an electorally or economically savvy measure at the national level; time fixed-effects will soak this variation. Our identification strategy requires that unobserved factors apart from economic performance through which the economic measures we analyze affect electoral outcomes be uncorrelated with the exposure to trade we use in our regression

analysis.

Furthermore, the different nature of both exchange rate shocks allows us to test whether voters react differently to shocks with similar consequences (albeit of opposite signs) but starkly different causes on an equal footing. In particular, we can test whether voters reward or punish incumbents for the consequences of events caused by their actions and those not. Since the abandonment of the gold standard by US trading partners was out of the scope of action of the incumbent president, Herbert Hoover, we will test if the first shock had small consequences relative to the abandonment of the gold standard by the US, a policy action decided by President Franklin D. Roosevelt (FDR). This sequence of events allows us to test whether the view in Fiorina (1978) -according to which voters hold the government accountable regardless of whether it is responsible for events- finds support in the data of the interwar period in the United States.

Our identification strategy compares the voting patterns of counties differentially exposed to exchange rate fluctuations. To do so, we merge census employment data and detailed administrative records on exports by sector and destination to determine each county's exposure to different destinations worldwide. We weight bilateral exchange rates by these exposure shares to compute the extent to which a particular county was affected by exchange rate fluctuations. This measure of exposure to trade varies across counties and over time and captures county-specific depreciations or appreciations of the US dollar relative to its trade partners.

The dataset we build allows us to include a time-fixed effect to tease out two simultaneous consequences generated by abandoning the gold standard (first by US trading partners and then by the US). First was expenditure switching (i.e., the change in the composition of the basket of foreign and domestic goods consumed by each country), which differentially affected counties exporting to countries where the bilateral exchange rate changed. Second was monetary easing due to a lower real interest rate (Bouscasse, 2022), affecting every US region.

The identifying assumption behind our research design weakens the assumptions required previously in the literature. In the case of foreign devaluations, like that of the United Kingdom in 1931, we need to assume that the United Kingdom did not de-

value its currency because it wanted to affect some US counties relative to others as a function of the electoral potential of Hoover or FDR. We do not need to take a particular stance on how beneficial it was for the United Kingdom to devalue its currency, whether the UK had strategic considerations to devalue with regards to the US, or the strength of spillover effects of any particular sign that UK policies generated in the national American economy. In 1933, we do not assume whether the devaluation of the US dollar was beneficial for the economy; we only need to assume that the US government could not, with perfect foresight, have anticipated which trading partners would react to the dollar depreciation. In other words, we need to assume that the effective depreciation faced by a county that exported goods to the UK relative to one that exported goods to France could not have been anticipated by the US government.[1] The key to our research design is to use a source of variation in economic outcomes generated by national policy and the inclusion of time fixed effects to absorb the effect of those reforms on the national economy.

Our results indicate that local economic activity affected county-level election outcomes during our study period (which included both presidential and congressional elections). Under President Hoover's administration (election years 1930 and 1932), during which a large appreciation took place, we find that, at the county level, a one standard deviation increase in our measure of appreciation induced an average increase in the Democratic Party's vote share of 1.474 percentage points. Then, under President Roosevelt's administration (election years 1934 and 1936), during which an even more significant depreciation occurred, a one standard deviation depreciation increased the Democratic Party's vote share by 2.665 percentage points. Importantly, these results imply that voters reacted to economic outcomes regardless of whether local politicians' actions caused them.

In order to obtain a direct measure of the effect of changes in economic activity on electoral outcomes, we use retail sales per capita from Fishback (2017) available for the years 1930, 1934, and 1936. We use the county-specific depreciations as an instrument

[1]The US did not control the reaction of other trading partners. Cuba remained tied to the US dollar, the UK stayed flexible, and France did not abandon the gold standard. The exchange rate is a bilateral price, and the US cannot control its trading partners' reactions. Eggertsson (2008) discusses the policy motivation for the regime changes in monetary policy in the United States.

for local economic activity, assuming that national and international policies were not motivated by the economic conditions of some US counties relative to others after controlling for time fixed effects. We find that a $1 increase in retail sales per capita, caused by an exogenous depreciation, increases the incumbent's vote share by 0.14 percentage points. This effect is economically meaningful given that national real retail sales per capita fell from $541 in 1929 to $339 in 1933. We also find very similar effects when we separate regressions by president. In the case of Hoover, the coefficient is 0.18. In the case of FDR, it is 0.12, similar magnitudes suggesting that, if anything, Hoover was more damaged by policies that originated abroad.

If voters reward or punish incumbents regardless of their role in determining economic outcomes, the feedback from economic to electoral performance weakens. Extensive literature has found that voters respond to events out of incumbents' control, most famously popularized by shark attacks (Achen and Bartels, 2012). Ashworth, Bueno de Mesquita, and Friedenberg (2018) argues that events such as natural disasters allow voters to learn about their government's ability.[2] This paper contributes to this discussion by measuring the electoral outcomes following two similar economic shocks that differ in how far they are from the scope of the government's powers. The events of 1931 originated abroad, and the events of 1933 resulted from a decision made by the incumbent at the time. The reaction of voters was similar in both.

The remainder of the paper is organized as follows. Section 2 frames this paper within the existing literature. Section 3 provides details on the historical context. Section 4 describes the data and research design. Section 5 presents the results, and Section 6 concludes.

## 2 Relevant Literature

This paper bridges the literature exploring the effect of economic voting (i.e., the effect of shifts to economic conditions on electoral outcomes) at the local level and the large literature on the causes and consequences of the great depression. The literature on economic voting spans multiple elections and countries. Lewis-Beck and Stegmaier

[2]The appreciation shocks of 1931 were unexpected, and their origin was beyond the government's control. It is possible to interpret voters' reactions as the valuation of the administration's policy reaction or inaction in response to the shocks.

(2000) review almost 300 of the early articles and books exploring the empirical relevance of economic voting. Most used presidential popularity (e.g., Gallup polls, which allowed for longer series than elections since these occur less frequently) or vote shares as dependent variables, and GNP or unemployment (monthly or quarterly when used along with popularity) as the regressor of interest. They conclude that economic conditions shape election outcomes and that this phenomenon is robust across different contexts. Duch and Stevenson (2008) paints a much more nuanced picture of the evidence by analyzing 103 political parties in 18 countries over 22 years; the main lesson from their book is that the cross-country variation might be attributed to the way voters recognize governments' responsibility in determining electoral outcomes, something Anderson (2007) called the contingency dilemmas.[3]

Duch and Stevenson (2010) propose a model of economic voting in which voters must determine by using a noisy signal the extent to which economic shifts result from the incumbent's competency instead of exogenous shocks. According to their predictions, there should be little room for economic voting after the appreciation generated by the UK abandonment of the gold standard as long as voters realize the shock was "non-political." Although Duch and Stevenson (2010) place great importance on the information that individuals might acquire to take decisions, in this setting we are unable to judge the relevance of this mechanism directly. We alleviate this concern by combining the longitudinal dimension of the data set and the assumption that county-level information barriers were stable enough to be captured by county fixed effects. Hellwig (2008) studies how globalization -as a constraint to domestic policy- might impact economic voting. He argues that voters evaluate parties differently when elected representatives are perceived to be constrained by exogenous conditions. Kosmidis (2018) answers a similar question experimentally by varying the ability of the government to design fiscal policy in two different hypothetical situations presented to participants. The main finding is that while economic voting is strong, its strength is independent of the government's room to maneuver. Our paper extends this literature by focusing on historical events that produced a natural experiment from foreign and

[3] A related literature has also studied economic voting through novel angles such as the role of partisanship identification (Ang et al., 2022), the "clarity of responsibility" stemming from multilevel governance (Anderson, 2006), and the credibility of economic information (Alt, Marshall, and Lassen, 2016).

local policies.

On the other hand, one should expect an important role for economic voting right after the US abandoned the gold standard and economic conditions improved for the tradable sector. According to Duch and Stevenson (2010), voters should interpret this as a "competence signal" and reward the government. We evaluate the effects of the shock on electoral outcomes that occur one to three years after the shock.

In order to overcome the vast empirical challenges to estimating the extent of economic voting, researchers have used granular data with the idea that the endogeneity concerns at the national level are ameliorated at the local level. Healy and Lenz (2017) use two population-based data sets: consumer loans in California (between 2006-2010) and business establishments in the US since the 1990s. Similarly, de Benedictis-Kessner and Warshaw (2020) study the effect of changes in local wages on local elections between 1968 and 2018. Both of these papers find significant effects. We contribute to this literature by focusing on exogenous sources of variation in local economic conditions, making progress in alleviating endogeneity concerns.

We focus on the extensive literature that has focused on the causes and effects of the Great Depression on the American economy. Leading studies of the causes, consequences, and ending of the Great Depression have highlighted the roles of uncertainty and policy reactions (Romer, 1990, 1992, 1993), in particular the importance of the gold standard and currency devaluations in creating trade and monetary effects (Eichengreen, 1996b; Eichengreen and Sachs, 1985). We contribute to this literature by analyzing the effect of the appreciations and depreciations of the US dollar on economic voting. We use insights from recent literature (Bouscasse, 2022; Candia and Pedemonte, 2021) that studies the consequences of depreciations on economic aggregates via expenditure switching and monetary expansions. The effects of exchange rate variations on electoral outcomes we document are inclusive of local general equilibrium effects, notably the Farm Channel documented by Hausman, Rhode, and Wieland (2019).

The use of these historical events is not anecdotal but key to alleviating empirical concerns. In particular, Guntermann, Lenz, and Myers (2021) point out that most studies on economic voting focus on modern economies, in which governments can use the Keynesian toolbox to affect local or national economic activity, and voters are exposed

to media coverage of the economy.

# 3 Context

Our study period was marked by the Great Depression, at the beginning of which most countries had their currencies tied to the price of gold, which implied a system of fixed exchange rates (Eichengreen, 1996a). Starting in August 1931, large US trading partners depreciated their currencies or left the gold standard altogether: Mexico in August, the UK in September, and Japan in December. Consequently, a significant appreciation of the US dollar relative to the currencies of its trading partners followed.

During the Great Depression, the collapse of prices was a fundamental problem; it impacted business as debt burdens relative to prices soared to unprecedented levels. Franklin Delano Roosevelt (FDR) campaigned for the presidency on a platform that prioritized economic recovery by raising commodity prices and providing relief for the unemployed, advocating for a policy of "controlled inflation." Neither the gold standard nor a devaluation were significant issues during the early stages of the 1932 presidential campaign, nor were prominent topics of public debate as policy tools to fight deflation. As Edwards (2018) recounts, the path to devaluation was tortuous and long, full of impediments, intellectual battles, uncertainties, and unknowns. We summarize this path below and represent the critical milestones in Figure 1.

FDR won the election against the incumbent Herbert Hoover in November 1932 and assumed office on March 4, 1933. Even then, there were no concrete plans to take the United States off the gold standard. However, FDR was convinced that hoarding of gold stalled economic growth and worsened the depression. As a response, one month after inauguration day, on April 5, 1933, he issued Executive Order 6102 requiring citizens to sell their gold holdings to the Federal Reserve at the official rate of $20.67 per ounce (see Figure A.3 in the Appendix). At the time, this was a controversial measure that required the invocation of the "Trading with the Enemy Act", a legislation that conferred the President extraordinary powers in times of war.

Among policy proposals to overcome the Great Depression, Congress discussed the Agricultural Adjustment Act (AAA) in April 1933. During the negotiations, a consensus was built around the idea that provisions in it (e.g., requiring farmers to limit

production) would not raise commodity prices quickly enough. Many believed that currency devaluation was a more effective solution, a view partially based on the success of Great Britain's departure from the gold standard in September 1931. As a result of negotiations, Title III of the AAA included the Thomas Amendment, granting the president the authority to raise the official price of gold (i.e., reduce the gold content of the dollar) by up to 50%.

Subsequently, on April 19, 1933 –by forbidding the export of gold– FDR declared the U.S. off the gold standard. Although the actual devaluation happened eight months later when the Gold Reserved Act passed, the gold holding restrictions and the announced US dollar/gold depreciation produced a steady devaluation of the US dollar relative to other currencies, affecting unevenly the effective bilateral exchange rate of the US with its trade partners (Edwards, 2017). An important part of this delay was due to the presence of debt contracts containing a "gold clause", which tied repayment obligations to the price of gold, offering insurance to devaluations to holders of debt titles. Under the gold clause, a devaluation would increase the dollar value of debts throughout the economy, potentially leading to bankruptcies and a deterioration of the public budget. After a fierce debate, in which concerns of the rule of law, the sanctity of contracts, and the international standing of the United States were cited, Congress annulled the gold clause on June 5, 1933, from existing and future contracts.

The annulment of the gold clause opened the door to devaluation as debts containing it would not increase accordingly. Thus, on January 31, 1934, FDR officially devalued the dollar from $20.67 to $35 per ounce of gold, a power granted by the Thomas Amendment. The devaluation induced recovery in the tradable sector (**?**Candia and Pedemonte, 2021). This depreciation did not necessarily imply an adjustment with respect to the currencies against which the US dollar appreciated in 1931. For example, France and Germany maintained the value of their currencies. As a consequence, the depreciation of the US dollar was stronger relative to the currencies of these countries than to those of countries that at the time had a flexible exchange rate, such as the UK.[4] On the other side, after depreciating against the US dollar in August 1931, the Mexican peso was tied back to the US dollar and remained tied after the US left the gold

[4]In 1931, the bilateral exchange rate between the US and France and between the US and Germany did not change.

standard in 1933.

Legal battles arose throughout the country by those affected by eliminating the gold clause. Two of these cases reached the Supreme Court, which weighed in on February 18, 1935, confirming the constitutionality of the Joint Resolution that abrogated the gold clause for private debts but not public debts. However, the ruling stated that no damages or compensation could be sought in this regard, thus supporting FDR's ultimate goal of devaluating the dollar.

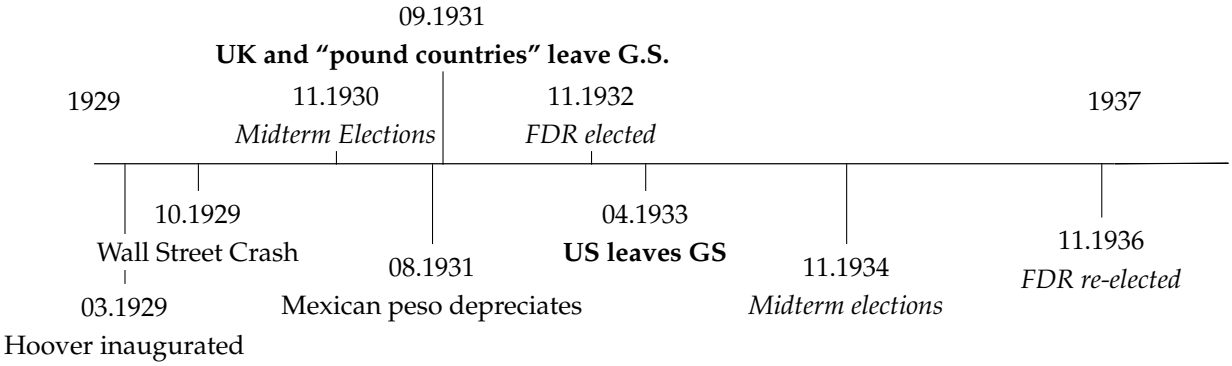



Figure 1: Timeline of events

Note: Economic shocks in bold; measured outcomes in italics.

# 4 Data and Research Design

We collect data on electoral outcomes and local economic conditions in the United States between 1930 and 1936. We create a county-level shift-share measure of exposure to trade, which combines shifts in bilateral exchange rates, shares of export destination by sector, and sectoral employment by county. The core of our research design consists of comparing the electoral outcomes of counties differentially exposed to trade to different destinations, for example, the UK versus Germany, and using the fact that the US dollar appreciated against the Pound Sterling but not against the Deutschmark in 1931.

We gather election results at the county level from the Inter-university Consortium for Political and Social Research (1999) for four different elections: the midterm elections of 1930, the presidential elections of 1932, the midterm elections of 1934, and the

presidential elections of 1936. We measure a party's vote share in percentage points, between 0 and 100. Figure A.1 in Appendix A shows the county-level distribution of the Democratic Party's vote share in the four elections we cover. We focus on the effect of economic conditions on voting results rather than on other interesting outcomes like electoral turnout.

To measure exposure to trade, we use changes in exchange rates weighted by sector and destination shares by county. Specifically, we construct the following measure:

$$\text{Exposure to Trade}_c^{t,t-1} = \underbrace{\sum_s \text{Share}_{s,c,1930}^{W}}_{(i)} \times \left[ \underbrace{\sum_d \text{Share}_{s,d,1928}^{Ex}}_{(ii)} \times \underbrace{(\text{ER}_{d,t} - \text{ER}_{d,t-1})}_{(iii)} \right], \quad (1)$$

where $c$ indexes counties and $t$ indexes years.

$\text{Share}_{s,c,1930}^{W}$ represents the share of workers in sector $s$ in county $c$ according to the census of 1930, the closest census before the date on which Britain abandoned the gold standard. We measure it by taking a ratio of total employment in sector $s$ in county $c$ over the total employment count in the same county. $\text{Share}_{s,d,1928}^{Ex}$ is sector's $s$ export share going to destination $d$ in 1928 gathered from Foreign Commerce and Navigation of the United States, 1928 of the Bureau of Foreign and Domestic Commerce of the U.S. Department of Commerce. We compute it for 45 sectors and 33 destinations. $\text{ER}_{d,t}$ is the normalized bilateral exchange rate between destination $d$ and the United States in year $t$, which we compute for different pairs of years: 1928-1930, 1928-1932, 1932-1934, and 1934-1935. We use public data on nominal exchange rates from the Federal Reserve Bulletins. We normalized the bilateral exchange rates to their value in October 1928 for each bilateral exchange rate, so all exchange rate variations are relative to a base year, and the changes are comparable.

To merge our trade information (at the sectoral x destination level) with the employment share data (at the sectoral x county level), we use the correspondence described in Candia and Pedemonte (2021) to make sectors compatible. We track 45 sectors and 33 different destination countries. To illustrate the heterogeneity in the dataset, we provide an illustrative example. Although Canada and the United Kingdom were the

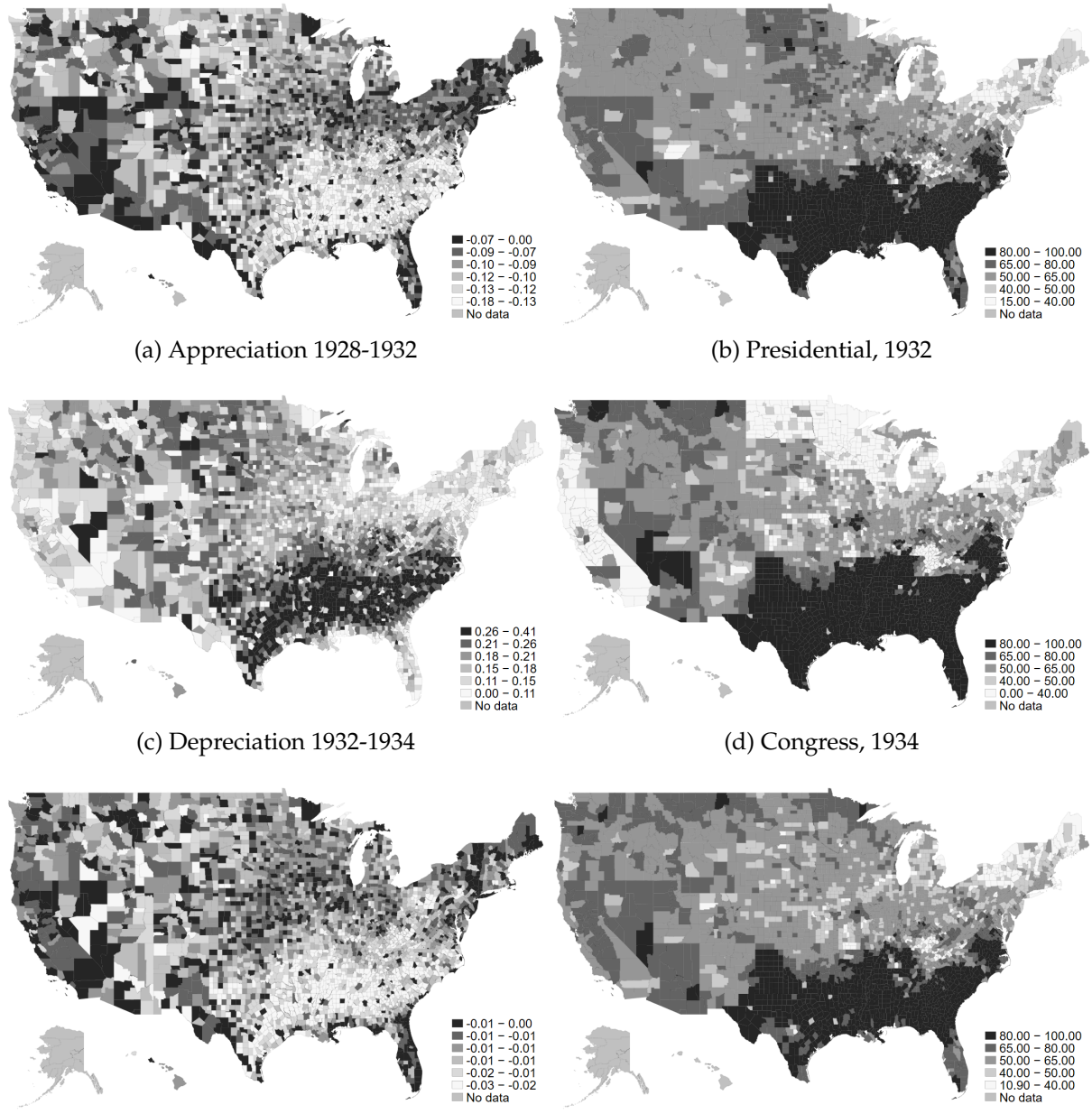
main trading partners of the United States in 1928, Japan was the leading export destination for forestry and fertilizer exports, Mexico was the leading export destination for explosives and firearms, the Netherlands for precious stones, and Germany for cotton. Across counties, Cook County, MN, led in allocating workers to forestry; Warren County, OH, to explosives; Pickens County, GA, to precious stones; and Tunica County, MS, to cotton. Our correspondence then assigns to Tunica County, MS, a higher exposure to movements in the exchange rate between the US Dollar and the German Deutschmark than to the Japanese Yen since that county specialized in a product that the US exported to Germany with a higher intensity relative to Japan.

Our Exposure to Trade measure captures changes in economic conditions of the exporting sector in a given county between period $t-1$ and $t$ driven by changes in bilateral exchange rates. It exploits the differential effects of depreciations across counties weighted by the pre-existing exposure of counties to trade across destinations. Figure 2 shows the three different episodes alongside the corresponding effects on election outcomes at the county level. Panel (a) shows that the large appreciation between 1928 and 1932 due to the UK and Mexico abandoning the gold standard had substantial effects in the counties in the southeast. Panel (b) shows a large vote share for the Democratic Party in the same geographic region. Similarly, panels (c) and (d) show that the counties that experienced a large effective depreciation following FDR's decision to abandon the gold standard voted more strongly for the Democratic Party. Panels (e) and (f) show a milder reaction, since exchange rates moved less in this period than in previous periods.

We estimate the relationship between exposure to trade and the outcomes of the midterm elections of 1930, the presidential election of 1932, the midterm elections of 1934, and the presidential election of 1936, pooling all county-election observations and estimating the following regression:

$$\%\text{ Dem Party}_{ct} = \alpha_c + \lambda_t + \beta \text{Exp to Trade}_c^{t,t-1} + \gamma \mathbb{1}_{t=\text{FDR}} \cdot \text{Exp to Trade}_c^{t,t-1} + \varepsilon_{ct}, \quad (2)$$

where $\alpha_c$ and $\lambda_t$ are county and time fixed effects, respectively. $\%\text{ Dem Party}_{ct}$ is the vote share of the Democratic Party expressed as a number between 0 and 100. $\text{Exposure to Trade}_c^{t,t-1}$ varies across time and counties, as explained before. $\mathbb{1}_{t=\text{FDR}}$ is




(a) Appreciation 1928-1932

(b) Presidential, 1932

(c) Depreciation 1932-1934

(d) Congress, 1934

(e) Depreciation 1934-1935

(f) Presidential, 1936

Figure 2: Depreciation and vote share of the Democratic Party, by election

Note: The maps in the left panels show the geographic variation in the trade exposure variable detailed in Equation 1. The maps in the right panels show Democratic Party vote shares across counties. The top panel shows data between 1928 and 1932 and the electoral outcomes of the presidential election of 1932. The middle panel shows data for the midterm elections of 1934 and the change in exchange rates between 1932 and 1934. The bottom panel uses data for the presidential election of 1936 and the change in exchange rates between 1934 and 1935.

an indicator that takes a value of 1 if the election took place when FDR was president. Under the assumptions of our research design, which we explain below, $\beta$ captures the causal effect of an effective depreciation on the voting share of the Democratic party during the years in which Hoover acted as US president. Our economic framework predicts that $\beta < 0$, since a depreciation boosts the relative stance of a local economy after controlling for time-fixed effects and via economic voting, should increase the incumbent popularity, hurting the Democratic party. Similarly, since FDR was in power, our framework predicts that $\gamma > 0$ will benefit the Democratic Party.

Our identifying assumption is that, after controls, unobservable shocks that drive variation in voting behavior for one party versus the other at the county level are not correlated with our measure of Exposure to Trade. This identifying assumption is weaker than in studies of economic voting that use variation in the stance of national economies. Using variation at the national level only, one would need to argue that the timing of the exit from the gold standard in the United States did not respond to other factors that drive electoral success.

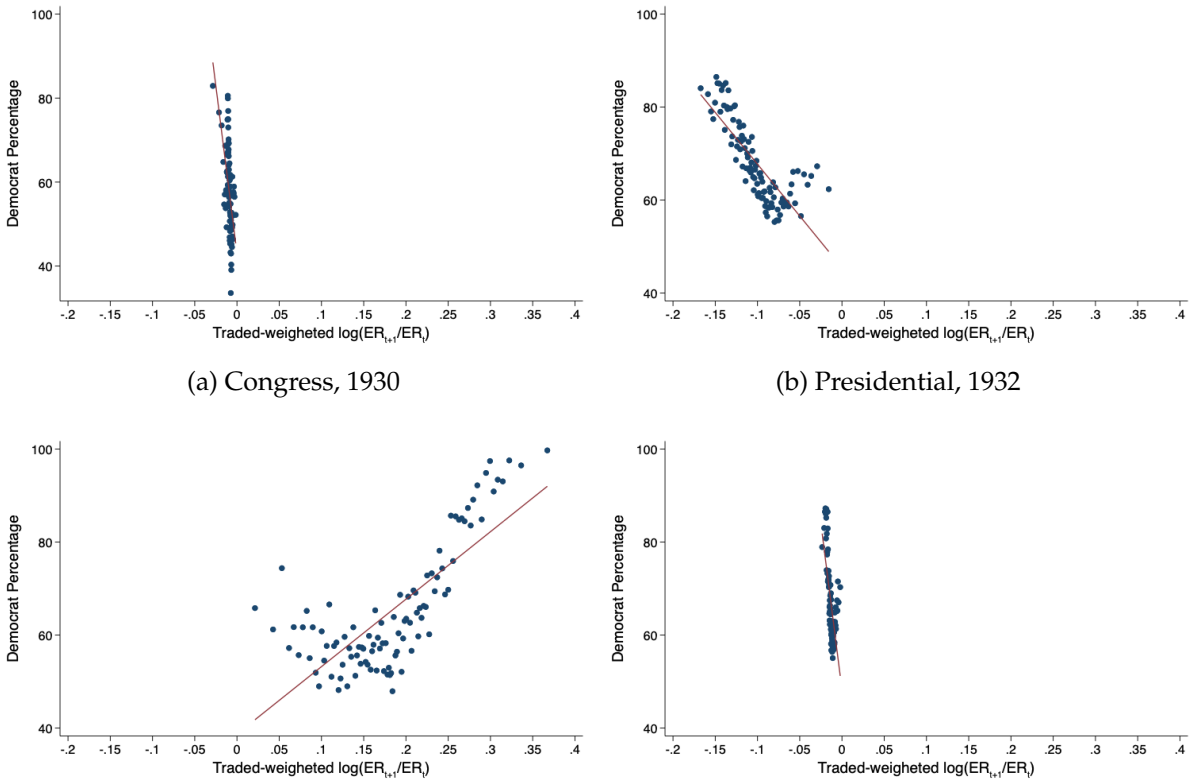
Our source of variation also ameliorates concerns with studies of economic voting at the local level. We exploit variation driven by national policies that had an effect contingent on the response of governments worldwide, with differential local effects. It is unlikely that the US government devalued its currency to systematically benefit some counties that exported goods to one destination relative to another. Previous work has used raw measures of economic conditions, such as the growth in wage rates at the local level, which could be influenced directly by federal or local governments by targeting spending across space in a way that correlated with the expected electoral success of the incumbent in those areas. Our approach "fixes" the exposure shares to those observed before the onset of the shock, and only uses variation triggered by a set of shocks that the US or foreign governments did not choose in order to benefit one particular county versus another. Intuitively, our identification assumption is that Britain did not exit the gold standard to affect, for example, Van Buren, TN, over Dare, NC, and that the US did not leave the gold standard to benefit Borden, TX over Clifton Forge, VA.

# 5 Results

We start by showing the systematic relation that local voting patterns had with exchange rate depreciations in a form similar to an event study. By separating the periods and elections, we are effectively abstracting from the determinants of the average voting outcomes of one party relative to another and the average depreciation the nation faced. Instead, we focus on the relative relation between voting results and currency depreciations.

Figure 3 plots a binned scatter-plot of exposure to trade and the Democratic Party's vote share for the set of elections we study. Panel (a), which uses the midterm election of 1930 and depreciations between 1928 and 1930, shows an almost vertical cloud of points relating depreciations to vote shares. The reason behind the lack of variation in depreciations is the absence of meaningful changes in exchange rate regimes worldwide from the perspective of the United States until 1930. There are exceptions to this claim. Brazil, China, and Spain devalued their currencies in this period, creating variations across US counties. However, since the US exporting shares to these countries are small, there is a limited effect of exchange rate changes in these countries. Panel (b), which uses data on the 1932 presidential election and depreciations between 1928 and 1932, shows larger variation in exchange rates. The main events that triggered this variation were the depreciation triggered by actions in the UK, Mexico, and Japan during 1931. US counties perceived an appreciation of their exchange rates (denoted by negative numbers in the horizontal axis). However, the critical feature is the dispersion in the effective depreciation across counties. Local areas differentially exposed to trade with Britain faced larger appreciations than counties differentially exposed to France. Counties that perceived larger appreciations voted less by the incumbent, which speaks to the joint hypothesis that depreciations were a cause of adverse shifts in economic conditions and that economic voting is present in the data. Panel (c) illustrates a case in which depreciations triggered by a domestic policy in the United States in 1933 positively influenced the outcomes of the incumbent party. The x-axis uses depreciations between 1932 and 1934, and the y-axis uses the voting results of the Democratic party in the midterm elections of 1934. Panel (d) confirms that once the staggered exits from the gold standard ended, the scope of variation in exchange

rate depreciations ended, represented by the limited variation in the x-axis when using data between 1934 and 1935.




(a) Congress, 1930

(b) Presidential, 1932

(c) Congress, 1934

(d) Presidential, 1936

Figure 3: Exposure to trade and Democratic Party vote share, by election

Binnned scatterplots of Democrats' percentage of the vote by effective depreciations. Panel (a) uses the exchange rate variation between 1928 and 1930; Panel (b) between 1928 and 1932; Panel (c) between 1932 and 1934; Panel (d) between 1932 and 1935. The red line shows the best linear fit of each scatter plot. The horizontal axis is kept constant in each figure to aid the reader in appreciating the difference in magnitude of the changes in exchange rates.

To estimate the extent of economic voting triggered by a series of exchange rate regimes at home and abroad systematically, we estimate equation 2 pooling observations from the four elections. Table 1 presents the results. The coefficients in the first row ($\mathbb{1}_{FDR}$) show the difference in percentage points of voting for the Democratic party when FDR was president for an average county that experienced no change in its effective exchange rate. The coefficient in the second row (Exposure to Trade$^{t,t-1}$) captures the effect of one standard deviation in our weighted measure of depreciation on voting for the Democratic party in election years in which President Hoover was in power. Fi-

nally, the third row ( $\mathbb{1}_{FDR} \cdot$ Exposure to Trade$^{t,t-1}$) shows the marginal causal effect of a one standard deviation depreciation in years in which FDR was president. The sum of the coefficients in the second and third rows gives the overall effect of a depreciation when FDR was president.

Column (1) is estimated without including any controls, notably it does not include time fixed effects. Therefore, the effects of a change in exchange rates on economic voting will combine three effects. First, an expenditure switching effect in which the products exported in the local region become more expensive abroad, so their demand falls. Second, the effect of the depreciation on aggregate economic conditions in the United States. Third is the effect of any other confounder shock that affects economic conditions and voting and is correlated with the timing of the depreciations. By not including county fixed effects, Column (1) uses variation across counties with different latent exposure to trade in which one party is permanently more popular than another. Column (2) includes county fixed effects, therefore normalizing the voting outcome of one party at the local level and the average exchange rate changes faced by its county average. Finally, Column (3) includes time fixed effects and county fixed effects, effectively controlling for any effect of the shock that is symmetric to every location, and the effect of any confounder that affects the left- and right-hand side variables simultaneously and coincides temporally with the shock.

We estimate that a one-standard-deviation appreciation of the exchange rate at the local level increased the voting share of the Democratic Party by 1.5 percentage points during the Hoover years and that a one-standard-deviation depreciation of the exchange rate at the local level increased the voting share of the Democratic Party by roughly 1.2 percentage points (2.66 - 1.47). These effects are statistically significant. The fact that the effects are smaller than those without county and time-fixed effects indicates the importance of endogeneity concerns in economic conditions to understand the strength of economic voting. This issue is not minor. When using aggregate variation in exchange rates, which drives aggregate variation in economic conditions, the estimated strength of economic voting is larger by a factor of three.

We use a more direct measure of economic activity instrumented with our measure of exchange rate depreciations to ease the interpretation of our main findings. The

Table 1: Effect of city-specific depreciation on Democratic Party vote share

| | (1) | (2) | (3) |
|---|---|---|---|
| $\mathbb{1}_{FDR}$ | 21.3199*** | 7.8162*** | |
| | (1.0208) | (0.5502) | |
| Exposure to Trade$^{t,t-1}$ | -6.1642*** | -1.5177*** | -1.4742*** |
| | (0.3429) | (0.1711) | (0.1664) |
| $\mathbb{1}_{FDR} \cdot$ Exposure to Trade$^{t,t-1}$ | 7.2729*** | 2.8925*** | 2.6650*** |
| | (0.3141) | (0.1625) | (0.2053) |
| Time F.E. | No | No | Yes |
| County F.E. | No | Yes | Yes |
| $N$ | 12283 | 12281 | 12281 |

Note: Observations are at the county-year level. Election years 1930, 1932, 1934, and 1936 are included. The dependent variable corresponds to the share of the Democratic Party's vote, expressed as a number between 0 and 100. Exposure to trade is included in the regression relative to the standard deviation of each year. An indicator for presidential elections is also included as an explanatory variable. Standard errors are clustered at the county level in all specifications.

main advantage of our instrumental variable research design is that it is more closely comparable to previous studies using economic activity as a right-hand side variable. The main downside of our instrumental variable design is that the measure of retail sales we use, developed initially by Fishback (2017) is available for a subset of years for which we are interested. In particular, we do not have access to retail data for the 1932 election, so the results of the instrumental variable approach are informed by the exit from gold by the FDR administration and the minor exchange rate variations around the 1930 and 1936 elections.

Column (1) in Table 2 shows the first stage regression. It shows that a depreciation correlates with an increase in local retail sales conditional on time and county fixed effects. A change of one standard deviation in our exposure to trade measure is correlated with an increase in retail sales per capita of 18.7 dollars of 1967. This estimate is economically significant. Average retail sales per capita in 1928 were equal to 541 dollars, so one standard deviation correlates with an increase of roughly 3% of the average retail sales per capita. As shown in row F in Table 2, the F-Stat is large for our instrumental variable. In addition, we perform weak instrument tests proposed by **?**. All the specifications reject the null of weak instruments.

Column (2) shows that a 1 dollar increase in retail sales per capita caused by a shift

in exchange rates created an increase in the voting share for the incumbent equal to 0.2%. This number should be rescaled by an economically relevant magnitude. For instance, a 10% drop in retail sales per capita from its 1928 level would have caused a decrease in the votes for the incumbent equal to 11 percentage points, a significant effect. Column (3) shows our results are robust to include lagged voting shares for the incumbent to control for differential local trends in political results. Column (4) attempts to distinguish the elasticity of local votes to local economic conditions by the president in power. We run regressions in which we interact local retail sales with categorical variables that take the value of one in periods in which FDR and Hoover were presidents, respectively. A caution in interpreting this result is that we do not have retail sales data for 1932, so the results for the Hoover administration are computed using the limited variation of depreciations by Brazil, China, and Spain.

In Columns (5) to (8), we estimate our regressions by splitting across samples and using the percentage voting of the Democratic party, as opposed to that of the incumbent party, and control for the lagged voting performance of the Democratic party. These columns show that controlling for local trends in the voting outcomes for a given party or the party in power does not change our results qualitatively. However, the results are smaller if we control for local trends in the voting outcomes of the Democratic party.

We have argued that using raw measures of economic activity, even at the local level and even after controlling for time and county fixed effects, could yield biased estimates of the strength of economic voting to the extent that unobservables drive both variables or covary geographically. We illustrate the different estimates in using raw measures of retail sales per capita in an OLS specification versus our IV research design.

Table 3 shows the results. Each pair of columns is comparable to one of the columns from (5) to (8) of Table 2. For example, Column (1) and (2) are analogous to the specification in Column (5) of Table 2. The main message of this exercise is that no matter the sub-period we consider, the inclusion of additional controls, or the inclusion of time and county fixed effects, the estimated coefficients using our instrument are roughly two times as large as those using OLS. IV estimates are larger than OLS for the 1930

Table 2: Effect of economic activity on votes

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| | Retail Sales | Incumbent | | | Democrats | | | |
| Exp to Trade | 18.770*** | | | | | | | |
| | (0.795) | | | | | | | |
| Retail Sales (RS) | | 0.212*** | 0.135*** | | -0.038*** | 0.023*** | 0.097*** | 0.054*** |
| | | (0.015) | (0.014) | | (0.006) | (0.006) | (0.0097) | (0.005) |
| Lag incumbent | | | 0.814*** | | | | | |
| | | | (0.017) | | | | | |
| RS Hoover | | | | 0.183*** | | | | |
| | | | | (0.048) | | | | |
| RS FDR | | | | 0.120** | | | | |
| | | | | (0.053) | | | | |
| Lag democrats | | | | | 0.909*** | 0.820*** | | -0.845*** |
| | | | | | (0.039) | (0.020) | | (0.011) |
| Time F.E. | Yes | Yes | Yes | Yes | No | No | Yes | Yes |
| County F.E. | Yes | Yes | Yes | Yes | No | No | Yes | Yes |
| Sample | 1930-36 | 1930-36 | 1930-36 | 1930-36 | 1930 | 1934-36 | 1934-36 | 1934-36 |
| F | | 643.701 | 601.602 | 56.519 | 247.956 | 251.658 | 931.802 | 893.543 |
| *N* | 9034 | 9034 | 9020 | 9034 | 2969 | 6055 | 6052 | 6048 |

Note: An observation is a county-year pair. Specification in Column (1) uses retail sales per capita as the dependent variable; specifications in columns (2)-(8) use the share of votes, expressed as a number between 0 and 100. Specifications in columns (2)-(8) use our measure of exposure to trade as an instrument for retail sales, which are measured in per capita terms in 1967 US dollars. Standard errors are clustered at the county level in all specifications.

election (Columns 1 and 2), after controlling for time fixed effects (Columns 5 to 8), and controlling for past trends (every column except 5 and 6).

The direction of the bias of OLS is challenging to predict in advance and may depend on the application since different forces may generate biases in both directions. For example, a politician attempting to boost the economic conditions of regions in which they expect a close call would bias OLS downwards. If unobservable variables generate positive comovement between economic outcomes and electoral outcomes, then OLS would be biased upwards. If there is measurement error in local economic conditions, OLS estimates may be attenuated.

Our results show a clear pattern: counties more exposed to these economic shocks reacted by voting to punish or reward the government. These results control for local voting trends and national policies that affect regions symmetrically. Our results show that the political events of the 1930s in the US were influenced by the economic environment, particularly by the effects of the exchange rate fluctuations in the local economies due to monetary policies in the US and abroad.

Table 3: IV and OLS estimates

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| | Democrats Votes | | | | | | | |
| Retail Sales | -0.025*** | -0.038*** | -0.001* | 0.023*** | 0.044*** | 0.094*** | 0.026*** | 0.054*** |
| | (0.002) | (0.006) | (0.001) | (0.006) | (0.005) | (0.010) | (0.002) | (0.005) |
| Lag Democrats | 0.985*** | 0.909*** | 0.732*** | 0.820*** | | | -0.861*** | -0.845*** |
| | (0.023) | (0.039) | (0.012) | (0.020) | | | (0.011) | (0.011) |
| Time FE | No | No | No | No | Yes | Yes | Yes | Yes |
| County FE | No | No | No | No | Yes | Yes | Yes | Yes |
| Sample | 1930 | 1930 | 1934-1936 | 1934-1936 | 1934-1936 | 1934-1936 | 1934-1936 | 1934-1936 |
| Regression | OLS | IV | OLS | IV | OLS | IV | OLS | IV |
| F Test | | 248.0 | | 251.7 | | 931.8 | | 893.5 |
| Observations | 2,969 | 2,969 | 6,055 | 6,055 | 6,052 | 6,052 | 6,048 | 6,048 |

Note: Observations are at the county-year level. Specification pairs are analogous to those in Table 2

# 6 Conclusion

This study aims to answer two related questions. First, whether voters reacted to changes in economic performance during the Great Depression. Second, whether that reaction depends on the origin of the shock. By exploiting a historical set of circumstances, we are able to isolate two economic shocks and their causes: first, an appreciation of the US dollar that took place after the UK and other important US trading partners abandoned the gold standard, a decision largely outside the scope of influence of the US president; second, a depreciation that took place after the US abandoned the gold standard, a decision taken by the executive branch.

This article finds evidence that voters weight economic conditions when voting regardless of the government's responsibility in terms of the origin of a shock, since they punished the incumbent after the negative shock of 1931 symmetrically to the way they rewarded the incumbent in 1936 after a comparable positive shock.

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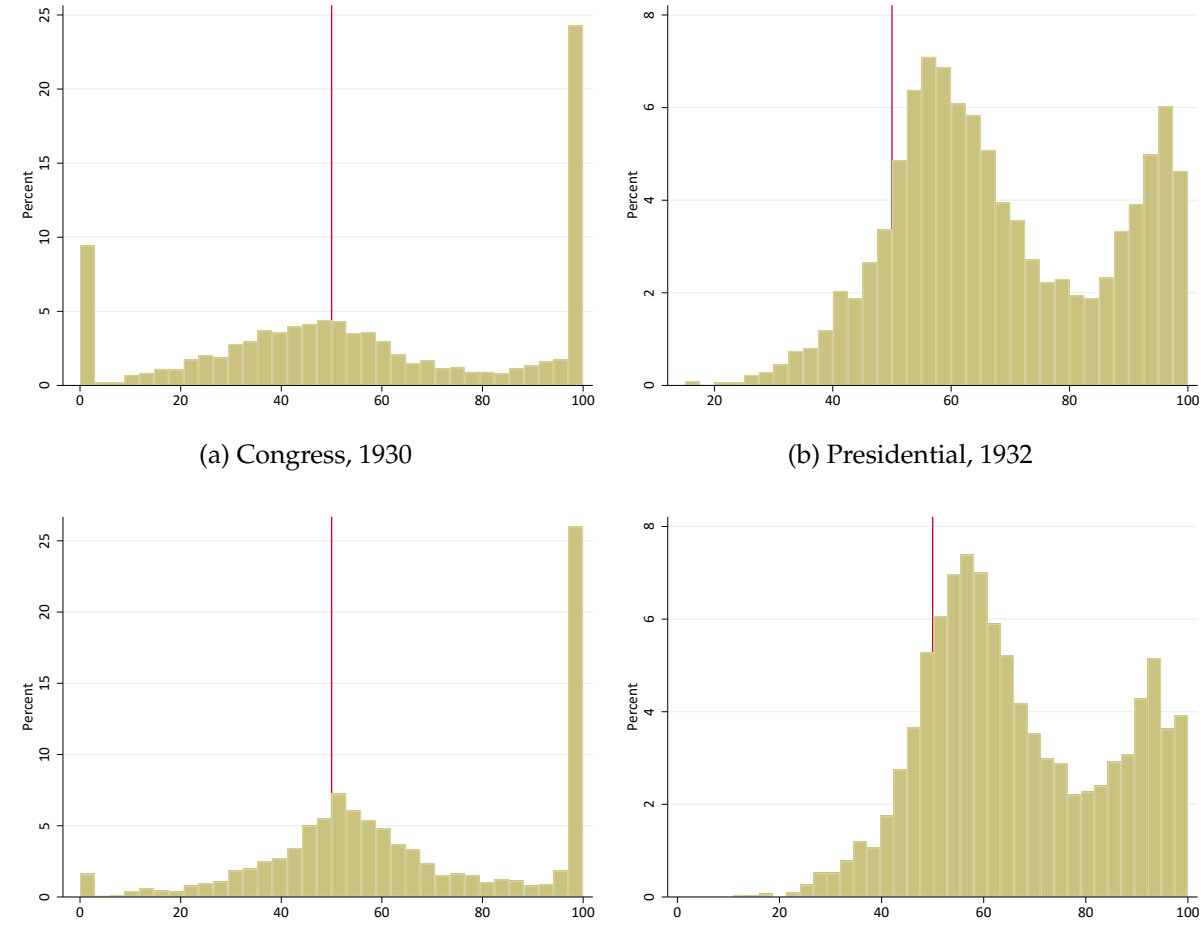
# A Appendix




(a) Congress, 1930

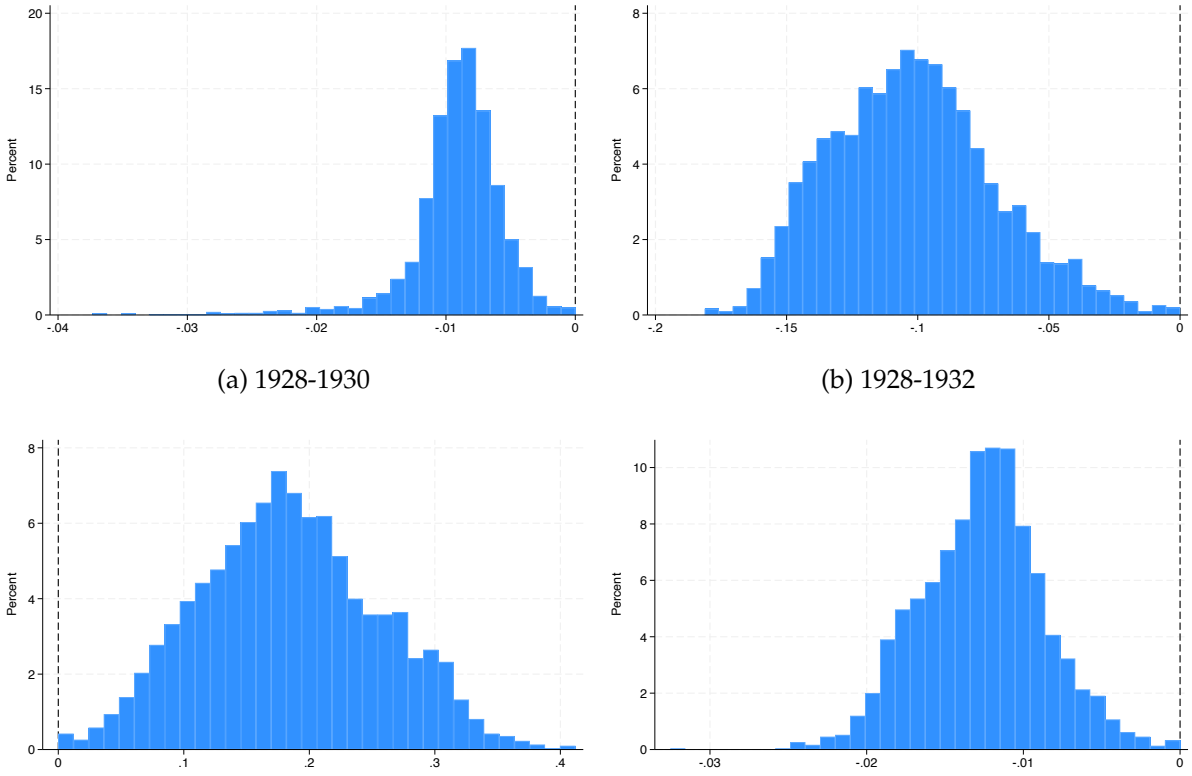
(b) Presidential, 1932

(c) Congress, 1934

(d) Presidential, 1936

Figure A.1: Democratic Party's vote share, by election

This figure shows the raw data corresponding to the Democratic Party's vote share at the county level for the four elections used. The x-axis corresponds to the percentage of Democratic Party votes and the y-axis the national density in each election. Vertical red lines indicate a value of 50 percent.




(a) 1928-1930

(b) 1928-1932

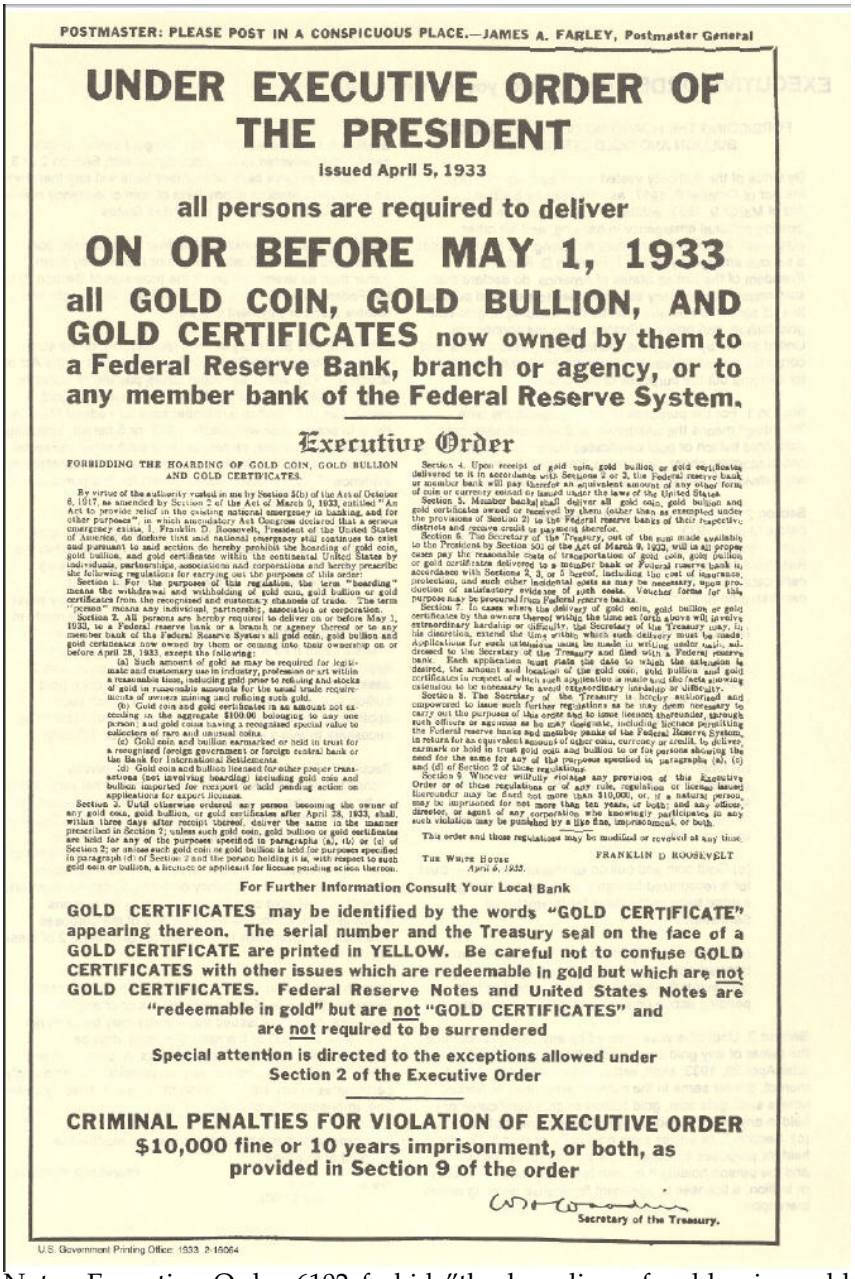
(c) 1932-1934

(d) 1932-1935

Figure A.2: Exposure to trade measure between each pair of years

This figure shows the cross-county distribution of Exposure to Trade$_c^{t,t-1}$ for different years. See Equation 1. The x-axis indicates the change in exposure between the years exposed in the graph and y-axis the density. Vertical red lines indicate a value of zero.

Figure A.3: Executive Order 6102



POSTMASTER: PLEASE POST IN A CONSPICUOUS PLACE.—JAMES A. FARLEY, Postmaster General

# UNDER EXECUTIVE ORDER OF THE PRESIDENT

Issued April 5, 1933

all persons are required to deliver

## ON OR BEFORE MAY 1, 1933

all GOLD COIN, GOLD BULLION, AND GOLD CERTIFICATES now owned by them to a Federal Reserve Bank, branch or agency, or to any member bank of the Federal Reserve System.

## Executive Order

FORBIDDING THE HOARDING OF GOLD COIN, GOLD BULLION AND GOLD CERTIFICATES.

By virtue of the authority vested in me by Section 5(b) of the Act of October 6, 1917, as amended by Section 2 of the Act of March 9, 1933, entitled "An Act to provide relief in the existing national emergency in banking, and for other purposes", in which emergency Act Congress declared that a serious emergency exists, I, Franklin D. Roosevelt, President of the United States of America, do declare that said national emergency still continues to exist and pursuant to said section do hereby prohibit the hoarding of gold coin, gold bullion, and gold certificates within the continental United States by individuals, partnerships, associations and corporations and hereby prescribe the following regulations for carrying out the purposes of this order:

Section 1. For the purposes of this regulation, the term "hoarding" means the withdrawal and withholding of gold coin, gold bullion or gold certificates from the recognized and customary channels of trade. The term "person" means any individual, partnership, association or corporation.

Section 2. All persons are hereby required to deliver on or before May 1, 1933, to a Federal reserve bank or a branch or agency thereof or to any member bank of the Federal Reserve System all gold coin, gold bullion and gold certificates now owned by them or coming into their ownership on or before April 28, 1933, except the following:

(a) Such amount of gold as may be required for legitimate and customary use in industry, profession or art within a reasonable time, including gold prior to refining and stocks of gold in reasonable amounts for the usual trade requirements of owners mining and refining such gold.

(b) Gold coin and gold certificates in an amount not exceeding in the aggregate $100.00 belonging to any one person; and gold coins having a recognized special value to collectors of rare and unusual coins.

(c) Gold coin and bullion earmarked or held in trust for a recognized foreign government or foreign central bank or the Bank for International Settlements.

(d) Gold coin and bullion licensed for other proper transactions (not involving hoarding) including gold coin and bullion imported for reexport or held pending action on applications for export licenses.

Section 3. Until otherwise ordered any person becoming the owner of any gold coin, gold bullion, or gold certificates after April 28, 1933, shall, within three days after receipt thereof, deliver the same in the manner prescribed in Section 2; unless such gold coin, gold bullion or gold certificates are held for any of the purposes specified in paragraphs (a), (b) or (c) of Section 2; or unless such gold coin or gold bullion is held for purposes specified in paragraph (d) of Section 2 and the person holding it is, with respect to such gold coin or bullion, a licensee or applicant for license pending action thereon.

Section 4. Upon receipt of gold coin, gold bullion or gold certificates delivered to it in accordance with Sections 2 or 3, the Federal reserve bank or member bank will pay therefor an equivalent amount of any other form of coin or currency coined or issued under the laws of the United States.

Section 5. Member banks shall deliver all gold coin, gold bullion and gold certificates owned or received by them (other than as exempted under the provisions of Section 2) to the Federal reserve banks of their respective districts and receive credit or payment therefor.

Section 6. The Secretary of the Treasury, out of the sum made available to the President by Section 501 of the Act of March 9, 1933, will in all proper cases pay the reasonable costs of transportation of gold coin, gold bullion or gold certificates delivered to a member bank or Federal reserve bank in accordance with Sections 2, 3, or 5 hereof, including the cost of insurance, protection, and such other incidental costs as may be necessary, upon production of satisfactory evidence of such costs. Voucher forms for this purpose may be procured from Federal reserve banks.

Section 7. In cases where the delivery of gold coin, gold bullion or gold certificates by the owners thereof within the time set forth above will involve extraordinary hardship or difficulty, the Secretary of the Treasury may, in his discretion, extend the time within which such delivery must be made. Applications for such extensions must be made in writing under oath, addressed to the Secretary of the Treasury and filed with a Federal reserve bank. Each application must state the date to which the extension is desired, the amount and location of the gold coin, gold bullion and gold certificates in respect of which such application is made and the facts showing extension to be necessary to avoid extraordinary hardship or difficulty.

Section 8. The Secretary of the Treasury is hereby authorized and empowered to issue such further regulations as he may deem necessary to carry out the purposes of this order and to issue licenses thereunder, through such officers or agencies as he may designate, including licenses permitting the Federal reserve banks and member banks of the Federal Reserve System, in return for an equivalent amount of other coin, currency or credit, to deliver, earmark or hold in trust gold coin and bullion to or for persons showing the need for the same for any of the purposes specified in paragraphs (a), (c) and (d) of Section 2 of these regulations.

Section 9. Whoever willfully violates any provision of this Executive Order or of these regulations or of any rule, regulation or license issued thereunder may be fined not more than $10,000, or, if a natural person, may be imprisoned for not more than ten years, or both; and any officer, director, or agent of any corporation who knowingly participates in any such violation may be punished by a like fine, imprisonment, or both.

This order and these regulations may be modified or revoked at any time.

THE WHITE HOUSE
April 5, 1933.

FRANKLIN D ROOSEVELT

For Further Information Consult Your Local Bank

GOLD CERTIFICATES may be identified by the words "GOLD CERTIFICATE" appearing thereon. The serial number and the Treasury seal on the face of a GOLD CERTIFICATE are printed in YELLOW. Be careful not to confuse GOLD CERTIFICATES with other issues which are redeemable in gold but which are not GOLD CERTIFICATES. Federal Reserve Notes and United States Notes are "redeemable in gold" but are not "GOLD CERTIFICATES" and are not required to be surrendered

Special attention is directed to the exceptions allowed under Section 2 of the Executive Order

CRIMINAL PENALTIES FOR VIOLATION OF EXECUTIVE ORDER
$10,000 fine or 10 years imprisonment, or both, as provided in Section 9 of the order

Secretary of the Treasury.

U.S. Government Printing Office: 1933 2-16064

Note: Executive Order 6102 forbid "the hoarding of gold coin, gold bullion, and gold certificates within the continental United States."