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Voting for protection: an electoral model of tariff policy

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Politicians want to please their constituents and will attempt to manipulate trade policy to further this goal. This article elaborates a model of the electoral incidence, across congressional districts, of the interindustry structure of tariff protection, with an application to the McKinley Tariff of 1890. It may contribute to a neglected area of research on the domestic politics of tariffs, to the history of a period of tariff formation in which there has been little recent work, and to the debate over legislative representation of constituency interests.

Models of the domestic political market for trade policy ("endogenous" tariff theory) can be divided into four categories, with classification based on whether they are formal or empirical and on whether they focus on the demand or the supply side of the political market. Many of the formal models are too abstract to produce readily testable propositions.1 Wolfgang Mayer's model, for example, assumes that tariffs are set by a national popular referendum and deduces tariff structures from median voter results.2 There is no government in this type of model; the demanders and suppliers of policy are the same. William Brock and Stephen Magee's model assumes a single-issue election in which politicians bid for votes by offering tariff protection up to the point at which marginal gains (votes plus campaign contributions) equal marginal costs (lost votes plus lost contributions).3

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Empirical work has focused on the demand side of the problem, testing theories that measure the propensity of industries to demand changes in trade policy. Economists have emphasized one aspect of this demand: the public good theory of interest groups. To explain the interindustry structure of protection, pioneers in the field chose variables such as industrial and geographic concentration on the grounds that these variables would measure the impact of free riding on the effectiveness of group demands. Political scientists also have directed their attention to the demand side, focusing on Congress as a passive register of group demands (as in E. E. Schattschneider’s 1935 analysis of the Smoot-Hawley bill) or on the nature and sources of interest group demands (as in the 1963 work of Raymond Bauer, Ithiel de Sola Pool, and Lewis Dexter on the trade policy preferences of business executives). Recent work by political scientists, such as the business cycle model of tariffs proposed by James Cassing, Timothy McKeown, and Jack Ochs, still offers a theory of demand without a supply side.

Models of supply factors center on the state, bureaucracy, or elections. State models adopt the familiar unitary rational actor assumption and predict trade policy from state goals. Efforts by economists to test state supply models, such as Richard Caves’ “national interest” model of the Canadian tariff, have had little success. Nonquantitative studies are prone to inducing goals from the cases to be explained. Bureaucratic theories are either too abstract (as is evident, for example, in Patrick Messerlin’s use of Niskanen’s budget-maximizing assumption to predict that bureaucrats will “oversupply” protection) or lack specification in a way that might induce tautology (as seen, for example, in I. M. Destler’s bureaucratic explanation of U.S. trade policy which appears to infer the structure of supply from the policy result). Bureaucratic models are problematic because of the difficulty of specifying both the bureaucratic suppliers’ goals and the causal relationship between bureaucracy and policy in a manner that does not resort to circular reasoning. Avoiding these problems requires a focus on smaller subsets of

4. If the interest group is large and its objective is a public good (low rivalry in enjoying the benefits and difficulty in excluding noncontributors), it may find collective lobbying difficult because of the incentive for beneficiaries to free ride.


7. See James Cassing, Timothy McKeown, and Jack Ochs, “The Political Economy of the Tariff Cycle,” *American Political Science Review* 80 (September 1986), pp. 843–62. Any market model must contain both a demand and a supply side. Models that lack explicit mention of either demand or supply are implicitly assuming that the omitted variable is exogenously fixed.


trade policy, as is found in J. M. Finger, Keith Hall, and Douglas Nelson's study of "escape clause" and "less than fair value" cases.\textsuperscript{10}

Electoral explanations of the supply of trade policy have examined the broad sectoral patterns of voter interests and have linked legislative votes to constituency interest. Peter Gourevitch's analysis of U.S. tariffs in the late nineteenth century identified tariff policy with voter coalitions across industries, classes, and regions. Yet his explanation lacked a foundation for predicting what pattern of electoral interests would be consistent with observed outcomes. Gourevitch's technique was historical interpretation: "to work backward from the conjuncture of 1896 to the broader forces that produced the contest."\textsuperscript{11} Quantitative studies of legislation abound. Robert Baldwin found that votes on the 1973 trade bill were a function of party, union contributions, and the importance of import-sensitive industries in the district.\textsuperscript{12} Cletus Coughlin's work on the 1982 domestic content bill for automobiles showed how votes were related to party, unemployment, campaign contributions, and the importance of the automobile and steel industries.\textsuperscript{13} Suzanne Tosini and Edward Tower's study of the 1985 textile quota bill related congressional votes to party, textile employment, general unemployment, and export dependence of the district.\textsuperscript{14} Unfortunately, a study of roll-call votes today tells us little about cross-sectional aspects of protection, since it explains only congressional action regarding a single industry. This suggests one advantage of looking at a tariff bill in the nineteenth century: an explanation of the bill will also explain the cross-sectional structure of tariff changes.

The following electoral model deals with some of these issues, combining demand and supply, explaining the cross-sectional structure of protection, and doing so in a way that is predictive. After reviewing the McKinley Tariff and the rationales for using it as a case, I present the model and apply it to the effect of elections on the process of tariff formation, to an explanation of the roll-call vote, and to a discussion of retrospective voting on the tariff.

The McKinley Tariff of 1890

There are numerous methodological advantages of using a tariff enacted in the late nineteenth century.


First, the time period gives an electoral model its best chance of success. Since the McKinley Tariff, like other tariffs prior to 1934, was set by Congress, it could be used to explain cross-sectional structures and not merely policies relating to individual industries. The McKinley Tariff was the first major post-Civil War tariff revision and "the highest and most thoroughly protectionist tariff ever enacted by Congress" (though it was later eclipsed in magnitude by the Smoot-Hawley Tariff of 1930). The McKinley bill was enacted during a period when the tariff was the single most important national issue. During 1885–89, President Cleveland had devoted his annual messages to Congress almost entirely to the tariff, and the 1888 congressional and presidential campaigns had been fought almost exclusively on the tariff issue. The salience of tariffs should help minimize statistical bias due to the omission of other variables which may affect the electoral phenomena under examination.

Electors clearly placed the tariff high on their list of voting issues. Three-term Congressman La Follette, defeated in Wisconsin's third district in 1890, had been warned by a supporter that "you hear little else than the tariff on the street." A month after the passage of the McKinley Tariff, the Republicans of the 51st Congress experienced a landslide defeat, attributed by most observers to their passage of the tariff act. The election was, in Edward Stanwood's words, "an emphatic rejection of the protection system by the voters of the country." Tariff historian Frank Taussig agreed that the electorate's judgment on the McKinley Tariff came "with remarkable promptness" and "in unmistakable terms," causing the Republicans to be "defeated as they had never been defeated before."

In addition to the political salience of the tariff issue, representatives ought to have been responsive to constituency interests. Congressional turnover was declining, potentially enhancing the willingness and ability of members of Congress to seek the tariff interests of their districts. Between the 1870s and the 1890s, the mean length of service in the House rose from two to three terms. One mechanism that promoted representation and longer tenure was the professionalization of the House and the enhancement of the rewards of office. Even those who abandoned their congressional careers were likely to return to their local business interests and thus had incentives "to please..."
constituents who were also neighbors and potential clients."21 Another factor was that districts during this period were still fairly small, with an average population of 150,000 in 1888 as compared with an average of 650,000 today.22 Insofar as districts with small populations are economically more homogeneous, the lesser diffusion of constituency interests may produce more concentrated pressure on members of Congress to promote sectional interests. As Ronald Rogowski notes, there is a greater propensity of small constituencies to encourage pork-barrel politics by reducing the autonomy of representatives from particularistic interests.23

The question of why this major tariff change and the consequences attributed to it took place in 1890, rather than earlier or later, would entail a more extended historical analysis than can be attempted here. A quantitative explanation would require time series data, aggregating the cross-sectional effects that are the object of my inquiry. Tariff bills had been sufficiently frequent (the logical limiting factor being only institutional transaction costs) to have allowed this tariff increase to have occurred earlier. John Hansen suggests that tariff bills occurred when one party had complete control of the government.24 The importance of 1890 may be that it represented the historical confluence of a number of pressures on politicians to define their positions on the tariff and its attendant issues, particularly economic growth and the distribution of income. The Civil War was far enough behind that arguments based on revenue needs or patriotism were no longer credible. As Tom Terrill notes, the tariff was also “less divisive than other issues and one that potentially has broad voter appeal.”25 Lance Davis and Douglass North suggest that the intensity of tariff politics at that time may also have been due to the decline in transaction costs, particularly in the organizational costs of lobbying (costs affected by the rise in national level organizations), and to the availability of more sophisticated knowledge of the distributional


22. The period under study has one characteristic of representation that is less useful to me: a high degree of party cohesion, which makes it difficult to distinguish party and constituency factors in the roll-call vote. However, insofar as the partisanship of the period is a result of a high variance in the industrial composition of districts, it makes my technique of analysis easier by allowing geographically flexible tariffs (see footnote 60, below). For a discussion of the period, see David Brady and Phillip Althoff, "Party Voting in the U.S. House of Representatives, 1890–1910: Elements of a Responsible Party System," Journal of Politics 36 (August 1974), p. 760.


effects of tariffs. 26 The analytic technique which I adopt here is ill-suited to explaining why these secular changes were taking place.

The attractiveness of the McKinley Tariff is further enhanced by the lesser severity of certain measurement problems that plague present day tariff studies. Stanley Lebergott notes that nineteenth-century politicians were well aware of the significance of input tariffs, so that effective rates of protection are what we need to model the political process. 27 Fortunately, nominal rates of protection were, by the 1880s, highly correlated with effective rates, 28 and this high correlation allows me to use nominal rates as a proxy for effective rates. Another problem that can be avoided is the difficulty of including agricultural protection, a difficulty due to the unavailability of agricultural employment data broken down by industry and by county. Agricultural discontent had been building and reached its climax in 1896 with the defeat of the populist movement. Although the Republican managers of the McKinley Tariff hoped to include major agricultural measures in the bill in order to broaden their support base, the measures actually included were trivial and only benefited farmers within a few hundred miles of the Canadian border. 29

Another advantage of focusing on the McKinley Tariff is that omitted variables (such as tariff substitutes, revenue goals, and international bargaining factors) are less of a difficulty. In the 1880s and 1890s, there were few of the close substitutes for the tariff that we find today, for example, in nontariff barriers and subsidies. The Republicans had argued, with little conviction, that the Silver Purchase and Anti-Trust Acts of 1890 were substitutes for tariff reduction or at least compensation for the farmers and consumers hurt by tariff increases. 30 But even if these measures had been widely accepted as substitutes for tariffs, they would have affected percep-

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27. See Stanley Lebergott, *The Americans: An Economic Record* (New York: Norton, 1984), pp. 150–52. The effective rate of protection is the nominal tariff on a commodity, weighted by the penalty incurred by producers of that commodity if they import inputs for which a tariff must be paid. Higher tariffs on inputs will lower the producer's effective rate of protection.


29. Taussig indicates that the increases in the tariffs on raw wool were "too small to have any serious effect." The raw sugar tariff was repealed but replaced with a bounty; this may have been of some import in the roll-call vote (see discussion of equation 9). According to Stanwood, the benefits of tariff increases on barley, eggs, meat, potatoes, and butter (benefits that were only large in the case of barley) were confined to the Canadian border area. See Taussig, *The Tariff History of the United States*, pp. 257–59; and Stanwood, *American Tariff Controversies*, p. 266.

30. The Sherman Silver Purchase Act of 1890 was an attempt to buy the support of farmers and Western mining interest groups by obliging the treasury to purchase silver and mint coins and thereby inflate the money supply. The devaluation of farm debt through inflation would have taken some time to occur and thus provided little short-term benefit to the Republicans. The immediate effect was financial panic and heavy buying of gold, which probably hurt the Republicans.
tions of the appropriate aggregate tariff level, rather than its cross-sectional structure.

The income tax issue was also related to the tariff. The populist wing of the Democratic party favored the reintroduction of the income tax as a replacement for revenue tariffs. This does not present problems for a cross-sectional model of tariffs. By the 1880s, most tariffs that were purely for revenue had gone, leaving protection as the main domestic interest factor. Protective tariffs still produced revenue; but to the extent that they did and insofar as a reduction in revenue was desired, tariff changes for revenue reduction tended to be across-the-board and did not disturb the cross-sectional structure of protection. Revenue and income tax politics affected the overall level, rather than the interindustry structure, of tariffs. Furthermore, any tendency for Democrats to favor lower tariffs for reasons relating to their position on the income tax or agricultural issues can be detected by the presence of a party variable in the model.

International bargaining was not yet a factor in the determination of the tariff structure. The McKinley Tariff did give the President authority to impose retaliatory duties on coffee, tea, hides, and sugar if countries exporting those goods discriminated against U.S. exports; but since these duties were imposed only on Colombia, Haiti, and Venezuela, the effect on the structure of protection was minor. International factors had little effect on the structure of protection until the 1934 Trade Act was enacted.

Prior work on the politics of the McKinley Tariff is sparse. Taussig suggested a regional phenomenon: politically strong regions received protection. Yet he was at a loss to explain the defeat of the Republicans in 1890. Were they not faithfully representing the interests of the North and Midwest? Part of the problem is that his reasoning was ad hoc: if protection changes, the political strength of the regions must have changed. Contrary to Taussig, Jonathan Pincus found the interindustry pattern of tariffs in 1824 to be inversely related to geographic concentration, suggesting that a broad geographic impact was necessary for an industry to obtain congressional support for protection. Stanwood concluded that “all tariff acts for many years have been to a large degree political measures, chiefly designed by their promoters to further the ends of party,” but he did not ask if the party label was indicative of deeper regional, industrial, or constituent interests. Terrill concurred, arguing that partisan unity, not constituents’ interests, determined tariffs. Yet he also said that the Democrats’ low tariff position reflected the rural interests of their constituents.

33. Pincus, Pressure Groups and Antebellum Tariffs, p. 158.
34. Stanwood, American Tariff Controversies, p. 359.
One recent interpretation of the period 1870–1914 is that of Bennett Baack and Edward Ray. Their test for electoral influence was whether a tariff was a function of that industry’s value added in states that had a majority of Republican representatives in the years in question (1870, 1910, and 1914). The results were not encouraging, and they concluded that industry and market characteristics (such as the rate of growth), not electoral factors, determined changes in tariffs. The conclusion is consistent with the demand side emphasis in most of the empirical endogenous tariff studies. However, Baack and Ray’s electoral variable (Republican states) is highly aggregated, longitudinally and spatially. The value of the variable in one year is unlikely to predict tariff changes for up to forty years later, when the party composition of states and the geographic distribution of industry would have been changing. State-level data also might not measure district interests.

Trends in the study of voter representation

In the American politics literature, there has been a long debate about whether members of Congress are “single-minded reelection seekers” representing constituency interests or whether they are maximizing something else, such as party loyalty or ideology. Most studies have examined roll-call votes, the obvious index of congressional activity, and have exhibited several trends.

One trend has been to question the long-held Turner thesis that since party identification is the best predictor of roll-call voting, constituents’ interests are not represented in legislatures. As Morris Fiorina has pointed out, however, party identification itself measures constituency interests. In seeking to specify a more complete model of representation, Fiorina suggested that a member of Congress will appeal to the largest sectional interest in the represented district and that electoral safety will be a function of the homogeneity of interests in that district. Though voters are ignorant and often

37. Strong group demands are not inconsistent with electoral factors influencing the tariff, unless one takes a strict public good view of group influence, in which industrial or geographic concentration is seen as the chief predictor of success. In this case, an electoral model and an interest group model pull in opposite directions, since the concentration necessary for collective action will usually mean fewer favorable voter interests both in terms of the number of voters and in terms of the number of districts.
40. See Morris P. Fiorina, *Representatives, Roll-Calls and Constituencies* (Lexington, Mass.: Lexington Books, 1974). The same issue arises in analyzing votes on tariff bills: the roll-call vote on the McKinley Tariff was a party line split, but this does not mean that ideology or party loyalty dominated constituency interests.
41. For a discussion of electoral safety and homogeneity, see footnote 64 (below).
just vote on the basis of party labels, representatives have two reasons for acting as though constituents respond to their voting record. The first is risk aversion (only a small swing in votes may be necessary to defeat a representative), and the second is the high cost of defeat (the loss of high fixed costs and the waste of specialized human capital).

Another trend has been to propose looser notions of representation. Symptomatic of this trend are David Mayhew’s analysis of “position-taking,” a weaker form of representation defined as “the public enunciation of a judgmental statement on . . . governmental ends,” and Richard Fenno’s analysis of “homestyle,” the cultivation of open lines of communication and trust. 42 Though these views do not exclude representation of specific interests, the focus is on style rather than substance, process rather than outcome. Fenno’s assessment is still close to that of Fiorina: it views members of Congress as conservative, preoccupied with self-preservation, and risk averse; argues that legislators only reach out to part of their electorate; and observes that legislators will implement the interests of at least one major subsection of their constituency. We should note here that regarding the McKinley Tariff, Senator John Sherman certainly was in no doubt as to what motivates representatives:

The real struggle is one of sections. . . . [It] is a “local question.” The Republican party affirms that it is for a protective tariff. The Democratic party declares that it is for a tariff for revenue only; but generally, when Republicans and Democrats together are framing a tariff, each Member or Senator consults the interest of his “deistrict [sic] or state. 43

A model of tariffs and popular votes

A simple model of the electoral market for protection would predict a partial equilibrium in which an upward sloping supply curve intersects a downward sloping demand curve, depicting the pattern in which the politician supplies a unique tariff increment to the represented district (CHGT, defined in Table 1 and discussed in the following section) in return for a given price (consisting of votes and campaign contributions) per unit of tariff change. The discussion below extends the simple model into a general equilibrium framework in which the exogenous variables determining demand and supply are also included, yielding equations that can be used to predict tariff increments in districts, roll-call voting, and retrospective electoral rewards.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
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<tr>
<td>ABS</td>
<td>Absenteeism or participation in a roll-call vote (absent or abstained and not part of an announced pair = 1; voted or paired = 0).</td>
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<tr>
<td>CHGT</td>
<td>Tariff increment, expressed as a ratio of ((T_{90} - T_{83})) to (T_{83}) (defined below).</td>
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<tr>
<td>MFG</td>
<td>Employment in the seven largest manufacturing industries as a proportion of district population.</td>
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<td>P88</td>
<td>Party of a winner of a congressional seat in 1888 (Democrat = 1; Republican = 0).</td>
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<tr>
<td>RC</td>
<td>Roll-call vote (in favor = 1; opposed = 0).</td>
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<tr>
<td>T83</td>
<td>Employment-weighted index of district protection in 1883.</td>
</tr>
<tr>
<td>T90</td>
<td>Employment-weighted index of district protection in 1890.</td>
</tr>
<tr>
<td>V88</td>
<td>Percentage of the popular vote gained by a winner of a congressional seat in 1888.</td>
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<tr>
<td>V90</td>
<td>Percentage of the popular vote gained by a congressional incumbent in 1890.</td>
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<th>Region (district inside the region = 1; outside = 0):</th>
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<td>CAN</td>
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Sources


Demand variables

A positive demand for protection is assumed. Although tariffs for a major employer in the district will hurt consumers, some of whom will be in the district, it is safe to assume that tariffs for that employer will still be a net vote winner in most situations. As John Kingdon puts it, "There is little opposition in the district to the [major] industry's interests, so that there is nothing to lose and everything to gain by defending them." Voters employed in the industry should find that their interests as employees outweigh their interests as consumers. District voters not employed in the industry are unlikely to find their share of the costs large enough to withhold electoral support (since costs will be diffuse within the electorate, giving the politician the advantage of fiscal illusion), and they may benefit indirectly from protection, through rising land values and local multiplier effects of the income gains to the district. If the district benefits exceed the district costs and if the transaction costs of side payments are low within districts and high between them, there would be no uncompensated, within-district opponents of protection. Most of the costs will be external to the district, falling on all consumers of the good in the United States.

If voters maximize a normal convex utility function (containing two goods, tariffs and everything else) subject to an income constraint, Lagrangian optimization will yield a demand curve for tariff increments which is a function of price, income, and a taste variable. Formally, given two goods (\(X\))

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and $Y$), the maximization of a utility function such as $U = X^a Y^{1-a}$ (a Cobb-Douglas function that satisfies the convexity requirement for maximization) subject to $P_x X + P_y Y = I$ will yield a demand curve for $X$ of the form $X = D(P_x, I, a)$, where $P_x$ is price, $I$ is income, and $a$ is taste. In this case, $X$ will be the district’s tariff increment ($CHGT$). The following three variables measure the structural equation for demand.

**Price.** This variable is assumed to have negative covariation with the quantity of protection increments demanded by constituents, since we would expect the marginal utility of $CHGT$ to decline. The value of extra protection cannot exceed the additional value of higher levels of local production, so that in the extreme case in which imports are totally excluded, the marginal utility of $CHGT$ must be equal to or less than zero. However, the model requires no assumption about the sign on price, since it is removed by substitution from the estimating equations below.

**Existing protection.** The base level of protection in the district ($T83$, defined in the next section) is expected to be positively related to the demand for tariff changes, for three reasons. First, the tariff level is a proxy for the income variable normally included in specifications of a demand curve. A higher tariff level will have raised the district’s income relative to what it would have been in the absence of previous tariff increments, and these income (and multiplier) effects should have a positive impact on demand if protection is a normal good. Empirically, tariff levels have been highly correlated with tariff increments across industries. Real Lavergne, for example, found that the Smoot-Hawley rates are the best predictors of contemporary U.S. tariffs.\(^{47}\) Second, tariff changes are likely to be exchanged for votes only in districts in which protection is already an important source of employment. In the extreme case in which there is no industry in the district to protect (as occurs in a purely agricultural district), votes cannot be exchanged for manufacturing tariffs unless the voters are promised infant-industry development.\(^{48}\) Third, locational uncertainty plays a role: while voters in districts already containing protected industries know that they will benefit from further protection of those industries, voters in districts containing little protected industry will be uncertain as to whether more protection will induce more industries to locate in their district.

A positive effect of tariff levels on total tariff changes is consistent with the assumption of diminishing marginal utility for $CHGT$. The latter suggests that the relationship, though positive, is concave, so that a higher base tariff

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48. In *The Tariff, Politics and American Foreign Policy*, p. 138, Terrill notes that "in the 1888 election the Republicans worked vigorously to bring the high tariff gospel to the South," arguing that it would lead to industrialization.
level may raise the demand for the total quantity of tariff changes, but in decreasing increments (that is, \( d\text{CHGT}/dT83 > 0 \), but \( d^2\text{CHGT}/dT83^2 < 0 \), with the latter inequality indicating diminishing marginal utility for \( \text{CHGT} \)).

For evidence that there is a concave correlation, see the discussion of equation 7, below.

**Geographic region.** Regional variation in demand reflects local issues, such as residual effects of the Civil War in the case of the McKinley Tariff. Although regional variation makes it difficult to predict the signs, it is included in order to capture the taste parameter in the demand curve. We might expect the South to have low demand and the East to have high demand, although the tendency of regional taste for redistribution and economic interest to offset each other at this time makes even simple predictions problematic.

The demand equation (with partial derivative signs below) incorporating price, income, and taste is thus:

\[
\text{CHGT} = D(price, T83, region)
\]

\[
(-) \quad (+) \quad (?)
\]

**Supply variables**

The supply side of the political market is also assumed to be concerned with the provision of positive increments of protection to districts. Legislators supply favors to their own districts only in a probabilistic sense; since I cannot incorporate coalition behavior into this model, I am forced to specify a more deterministic supply function. If total cost is a function of the opportunity cost of a politician’s time and personal total labor input into tariff-making activity beneficial to the district’s constituents and if the politician’s production is a function of the institutional technology of tariff making and personal labor input, then the politician’s supply will respond to the price of tariff increments, the cost of personal labor, and technology. Formally, if the total cost of producing \( X \) is \( C = wL \) (where \( w \) is the cost of the politician’s time and \( L \) is personal labor input) and if the production function is of the form \( X = bL \) (where \( b \) represents technology), then substituting the production function into the cost function and dividing through by \( X \) yields a supply curve of the form \( X = S(P_X, w, b) \). Hence, the structural equation for the supply function will include the following three variables.

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49. Diminishing marginal utility for a good implies that the price consumers will pay for each successive unit falls. However, the total value of consumption still rises, albeit in diminishing increments, producing a quadratic total revenue curve. The total amount of \( \text{CHGT} \) accruing to a district is analogous to total revenue.

Price. Politicians are assumed to be Downsian vote maximizers who supply more tariffs for a higher price. This assumption is more appropriate than the "minimum winning coalition" assumption because the latter applies only to zero-sum games and tariff making clearly is not one of them, since it may create deadweight losses or may be electorally beneficial to all parties. In the supply side of the political market, the positive sign on price may reflect both the increasing marginal opportunity costs to politicians of investing their human capital in tariff making (that is, the increasing amount of time and effort necessary to get successively higher amounts of local protection) and the diminishing marginal utility of extra votes or campaign contributions. Although the supply of tariff increments is likely to covary positively with price, this assumption is not necessary to the argument, since price does not appear in the estimating equations.

The incumbent's prior share of the popular vote. This variable is a proxy for the opportunity cost of the politician's time (w) allocated to tariff making. The notion that distributive activities and electoral success are correlated has been the subject of much debate, but recent wisdom suggests that it is both theoretically and empirically defensible. The hypothesis here is that supply is positively related to votes (V88), measured as the percentage of the vote received by the incumbent in the previous election (1888 in this case), since it reflects that politician's willingness and capacity to supply tariffs. A high percentage in one election will lower the opportunity cost of supplying protection to constituents in the next. For example, if a politician received a large percentage of V88 and responded by fulfilling promises (faithful representation), this signals the likelihood of honoring commitments in the future.

Pork-barrel activities promote electoral success, which further stimulates such activities, given the politician's risk aversion and the need for cumulative electoral success to stay in office. Robert Erikson has pointed out that even the safe representative cannot afford to become lazy, because even with, say, 93 percent of the vote, the probability of winning four elections in a row is only 75 percent. Furthermore, becoming less responsive to constituents as a result of electoral safety would indicate dynamically irrational expectations: if responsiveness leads to safety, unresponsiveness will lead the politician back to marginality. The association of electoral safety with redistributive service is not unfamiliar in the literature. Fiorina and Kingdon, for example, have both argued that long tenure in office (a result

of safety) should be associated with faithful representation. In their study of the North Carolina House of Representatives, Joel Thompson and Gary Moncrief found that pork-barrel success was strongly correlated with electoral safety and long tenure. And Gary Cox, discussing the specific issue of trade policy, concluded that “at every election, certain congressmen are returned virtually unopposed, but it is highly unlikely that they are less in tune with their constituents than those who face a contest. If anything, the exact opposite would seem more tenable.”

Let us assume for the sake of argument that safe members and marginal members of Congress had an equal desire to engage in tariff-setting activity beneficial to their constituents. Even if electoral safety had no effect on their desire to engage in this activity, it would have an effect on their capacity to do so. This is because safe members have gained seniority and positions of institutional power (particularly with respect to logrolling and committee chairmanships) which would make them more influential in setting tariffs, especially if their party is in office. In the case of the McKinley Tariff, then, we would expect safe Republicans to gain the highest tariff increments. Indeed, empirical evidence of this is shown in equation 7, below.

A positive relationship between the total tariff increment supplied to a district and the politician’s vote share is compatible with diminishing marginal utility from extra votes. This would be reflected in a concave association between $CHGT$ and $V88$, such that each extra vote induces the supply of a larger total tariff increment, but it does so in decreasing increments (that is, $dCHGT/dV88 > 0$, but $d^2CHGT/dV88^2 < 0$). As discussed below, this was also evident in the electoral distribution of the McKinley Tariff rates.

Party identification. This is a measure of the technology variable $b$ in the politician’s production function. After their election in 1888, Democrats ($P88 = 1$) would be less inclined to supply protection than would Republicans ($P88 = 0$) for reasons described earlier and related to ideology, agricultural populism, and the desire to promote the reintroduction of the income tax. Democrats would also have had less institutional capacity to supply tariffs during a Republican administration.

53. See Fiorina, Representatives, Roll-Calls and Constituencies, pp. 121–24; and Kingdon, Congressmen’s Voting Decisions, pp. 29–67. Kingdon associates safety and long tenure with following constituency interests on “high salience votes,” a term that surely fits the McKinley Tariff.


56. See footnote 49 (above).
Hence, the supply curve will be of the following form:

\[ CHGT = S(price, V88, P88) \]

\[ (+) \quad (+) \quad (-) \quad (2) \]

Reduced form equations

Since price and \( CHGT \) are endogenous and jointly determined by the system of two equations, empirical estimation must be of a reduced form (an equation with only exogenous variables on the right-hand side) which removes one of the endogenous variables. As price is unobservable, it is removed by substituting one equation into the other, yielding a reduced form equilibrium with \( CHGT \) as the dependent variable and with partial derivatives (predicted coefficient signs) that can be deduced by solving the two structural equations:

\[ CHGT = f(V88, P88, T83, region) \]

\[ (+) \quad (-) \quad (+) \quad (?) \quad (3) \]

The equation thus predicts that tariff increments supplied to districts will be a function of the politician’s opportunity cost and technology and of the electorate’s income and regional taste.

Two associated propositions can also be tested. First, given that a politician will attempt to supply the represented electorate with the tariff changes in equation 3, the roll-call (RC) vote of that politician will be cast either against a bill (RC = 0) or in favor of it (RC = 1), depending on whether the bill delivers tariff changes that match the same criteria. Equation 4 describes an hypothesized equilibrium in which a binary supply decision (RC) is set equal to the demand variables specified on the right-hand side of equation 1, substituting \( CHGT \) for price (since the two should covary along the demand curve). Once tariff changes are fixed in the bill and it comes to a final vote, \( CHGT \) can be treated as an \textit{exogenous} variable and be allowed to enter the right-hand side of equation 4. The specification of what is endogenous and what is exogenous is here a function of temporal sequence. A decision that is endogenous at one stage of the political process may become exogenous in the next stage. The reduced form for the roll-call vote is thus:

\[ RC = g(CHGT, T83, region) \]

\[ (+) \quad (+) \quad (?) \quad (4) \]

Second, the district electorate should reward the politician in the next election (in this case, 1890) with a proportion of the total popular vote (V90)
that varies (controlling for the previous vote) according to the same factors. Equation 5 is simply equation 3 with CHGT moved to the right-hand side (once the bill has passed, CHGT is exogenous) and the total vote (V90) appearing on the left-hand side as the dependent variable in order to capture the appropriate temporal sequence of causation:

\[ V90 = h(CHGT, V88, P88, T83, region) \]

\[ (+) \quad (+) \quad (-) \quad (+) \quad (?) \]

**An application of the model to the McKinley Tariff**

*Measuring district protection*

Before the change in district protection (CHGT) could be assessed, an index of district protection for 1883 (variable T83, the year of the tariff act prior to the McKinley bill) and for 1890 (variable T90, the year of the McKinley bill) had to be developed. For each district, the level of tariff protection was derived from the following equation using the nominal tariff on each of the seven largest manufacturing industries in the district, weighted by employment in that industry as a proportion of the district’s total population:57

\[ T_j = \sum_{i=1}^{7} t_i e_i / E_j \quad \text{for} \quad j = 1, \ldots, 330; \quad i = 1, \ldots, 7 \]

where \( T_j \) is the employment-weighted index of protection in district \( j \); \( t_i \) is the nominal tariff on manufacturing industry \( i \); \( e_i \) is the employment in industry \( i \) in district \( j \); and \( E_j \) is the total population of district \( j \).

Several comments should be made about this index. First, it is an index of manufacturing protection. Although it excludes agricultural protection, this protection was not important in the 1880s and 1890s, as discussed earlier. In any case, agricultural districts could be excluded by sampling only districts with high tariffs. Agricultural influence on the supply of protection is included in the party variable (P88), since it operated primarily through the strength of the Democratic party. Benefits to Canadian border farmers from the McKinley Tariff will be taken into account with a dummy variable in the roll-call analysis.

57. The 1880 census was the last one to list employment by county and by industry. The practice of listing this data was subsequently abandoned on the grounds that it revealed confidential information about specific firms. The index uses 1880 employment data in calculating T90 and T83, so that CHGT is holding employment constant. Although this introduces bias into the index, it avoids a worse problem. If CHGT included changes in both employment and tariffs, it would be unclear whether a relationship between CHGT and the electoral variables was due to the political market for tariffs or to changes in employment.
Second, the choice to use the seven largest industries in this index was made on the grounds that representatives do not have the cognitive capacity to look beyond the major industries in their districts (indeed, it would be an inefficient allocation of their time). The aim is to predict political behavior and not to provide a perfect index of the electoral incidence of protection. Aage Clausen and John Kingdon suggest that members of Congress attempt only to identify the largest industries in their districts.\textsuperscript{58} Fiorina even states that the representative will look only for the single largest interest in the district,\textsuperscript{59} which is probably going too far, since it assumes that politicians are unaware of the benefits of portfolio diversification.

Third, tariffs are a geographically blunt instrument. The components of the index make it unlikely that every district could simultaneously attain its equilibrium, since this would require either that each district levy its own tariff on each industry or that each industry be unique to a district. Fortunately, this problem is not severe, since variation in the industry composition of electorates is sufficiently high to make geographically flexible tariff increments possible, even in the absence of tariffs or industries that are district-unique.\textsuperscript{60} In any case, while the problem may distort a test of the making of the McKinley Tariff rates, it could not alter the analyses of the roll-call and retrospective voting in 1890, since electors can reward protection whether or not the tariff is geographically flexible.


\textsuperscript{59} Fiorina, \textit{Representatives, Roll-Calls and Constituencies}.

\textsuperscript{60} District protection (the $T_i$ index) can be broken down into two parts: the part due to the level of manufacturing activity in the district and the part due to the variation in the industry composition of the district. In this case, equation 6 would be as follows:

$$T_i = \sum_j(e_j/E_j) \cdot \frac{\sum_j(t_i e_j)}{\sum_j e_j} = MFG_i \cdot \frac{\sum_j(t_i e_j)}{\sum_j e_j}$$

where $MFG_i$ is the manufacturing employment as a proportion of total population. If a district's change in tariff protection is related more to the across-electorate variation in the overall level of manufacturing industry in the district ($MFG_i$) than it is to the across-industry variation in the industry composition of the district ($e_j/\sum_e j$), then the geographic discrimination in the tariff will be inflexible, always having a greater effect in districts with a high level of manufacturing industry, and only one district could ever have market-clearing tariff rates. This is not the case: the bivariate correlation of $CHGT$ with the across-electorate variation ($r = -.024$) is insignificant, but the correlation of $CHGT$ with the across-industry variation (measured as $CHGT/MFG$) is high ($r = .549$). The association of district protection with differences in the industry composition of districts suggests that the degree of geographic flexibility in the tariff is sufficient to produce tariff rates that will approximately clear each district's political market. Independent evidence supporting my analysis on this point is provided by Peltzman, who notes that the economic heterogeneity of states and regions of the United States (a variable similar to my variation in the industry composition of districts) was high at the beginning of the twentieth century. Brady and Althoff make a similar point in noting the agricultural-industrial "polarization" of the American economy in the period 1890–1910. See Peltzman, "An Economic Interpretation of the History of Congressional Voting in the Twentieth Century," p. 659; and Brady and Althoff, "Party Voting in the U.S. House of Representatives."
Tariff increments in districts

The pre-McKinley level of tariff protection ($T83$) in districts had a regional bias across the East ($E$), Midwest ($MW$), and South ($S$) following the 1883 tariff. Manufacturing industry was located primarily in the East (correlation with $T83$ is $r = .57$). Parts of the Midwest had heavy concentrations of manufacturing industry, but not enough to produce a positive association ($r = -.22$); and the South had little manufacturing industry to protect ($r = -.31$). There was a tendency for tariffs to agglomerate in Republican districts ($r_{T83.P8s} = -.19$). This is unremarkable, given the geographic pattern of American economic development and the post–Civil War Republican dominance.

In estimating the reduced form of supply and demand (equation 3), the sample was reduced to districts with above-average levels of tariff protection ($T83$), thereby removing agricultural districts in which the tariff was not an important employment issue. The results are shown in equation 7, with $t$-ratios in parentheses under the coefficients:

$$CHGT = -0.03 + 0.003 V88 - 0.002 P88 + 0.005 T83$$

$(-0.15)(+1.95)$ $(-0.07)$ $(+0.59)$

$+ 0.11 E$ $+ 0.03 MW - 0.06 S$

$(+0.73)$ $(+0.20)$ $(-0.42)$

$[R^2 = .212; F = 3.90; n = 94]$ 

As equation 7 indicates, the winner’s vote in 1888 ($V88$) was positively related to tariff changes, as predicted by the model, with the $F$-statistic surpassing the 1 percent significance level. Removing districts with below-average levels of tariff protection left a sample consisting primarily of Republican electorates (sixty out of ninety-four), so that the equation reflects in part the extent to which safe Republicans delivered high tariff increments. Since Republicans were the House majority and dominated the making of the bill, they were in a favorable position to direct its benefits to their own districts. The concavity ($d^2CHGT/dV88^2 < 0$) of the plot in Figure 1 confirms the hypothesis that politicians experienced a declining marginal utility for votes and shows the heavy representation of Massachusetts, New York, and Pennsylvania among these high tariff districts. The positive relationship between $T83$ and $CHGT$ was significant only in a curvilinear bivariate form, where $r = .19$; when the logarithm of $T83$ was used, the concavity was consistent with voters having diminishing marginal utility for tariffs.
FIGURE 1. Effect of 1888 votes (V88) on changes in district protection (CHGT) in New York, Pennsylvania, Massachusetts, and other states ($r = 0.26$; number of observations = 94 [T83 > mean])
**Roll-call voting**

The first House version of the McKinley bill passed on 21 May 1890. The second version, which incorporated conference committee revisions, passed on 27 September and was signed by the President on 1 October 1890.

As shown in Table 2, the House vote on the second version divided along party lines. The issue addressed by equation 4, however, was the extent to which the parties were aggregating other rent-seeking factors, as Fiorina suggested in his critique of the Turner thesis. In this case, Democrats represented low tariff \( (r_{P88,T83} = -0.19) \), Southern \( (r_{P88,S} = 0.54) \) districts. A logit analysis of the roll-call \( (RC) \) vote on the second version of the bill followed the predictions of equation 4, with representatives favoring the bill \( (RC = 1) \) if they were delivering a high tariff increment \( (CHGT) \) on a high tariff base \( (T83) \) and opposing it \( (RC = 0) \) if they were not. The results of this analysis,\(^{61}\) with L-RC representing the logarithm of the odds ratio, are shown in equation 8:

\[
L-RC = +5.63 +0.18 \, CHGT +0.09 \, T83 -0.62 \, E -0.13 \, MW
\]

\[
\begin{array}{cccc}
+39.23 & +2.45 & +4.80 & -3.95 & -0.84 \\
 \end{array}
\]

\( S \): -(3.90) \( CAN \): +(4.96)

\[ \text{pseudo-}R^2 = 0.279; \, n = 269 \text{ (absentees deleted)} \]

As predicted, votes had a positive relationship both to \( T83 \) and to \( CHGT \). Legislators from Canadian border states \( (CAN) \) tended to favor the bill, possibly reflecting the slight increment in agricultural protection to be gained from it. The negative vote of the South \( (S) \) was the result of Democratic dominance in an agricultural region. The negative vote of the East \( (E) \) may have reflected unusually strong urban consumer interests. A similar logit run on the first vote produced the same signs and significance levels.

An ordinary least squares regression using a trichotomous dependent variable (in favor, opposed, and absent) produced nearly identical results, although the sign of \( CHGT \) (while still positive) became insignificant. Since the inclusion of absentees appeared to introduce factors alien to the model, other tests were done. A logit analysis of absenteeism \( (ABS) \) on the second vote was run, taking into account those who voted \( (ABS = 0) \) and those who were absent \( (ABS = 1) \). The results of this analysis, with L-ABS representing the logarithm of the odds ratio, are shown in equation 9:

\[
L-ABS = +3.37 +1.46 \, P88 -0.02 \, T83 -0.65 \, CHGT
\]

\[
\begin{array}{cccc}
+9.18 & +3.97 & -0.63 & -4.34 \\
 \end{array}
\]

\[ \text{pseudo-}R^2 = 0.387; \, n = 330 \]
TABLE 2. Roll-call vote on the McKinley Tariff

<table>
<thead>
<tr>
<th>Vote</th>
<th>Democrats</th>
<th>Republicans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>Opposed the tariff</td>
<td>102</td>
<td>63.4%</td>
</tr>
<tr>
<td>Favored the tariff</td>
<td>3</td>
<td>1.9%</td>
</tr>
<tr>
<td>Absent or abstained</td>
<td>56</td>
<td>34.8%</td>
</tr>
<tr>
<td>Total</td>
<td>161</td>
<td>100%</td>
</tr>
</tbody>
</table>

Absenteeism was found to be related to low increments to district protection (CHGT) as well as to party (Democrat = 1; Republican = 0), with 35 percent of the Democrats absent. This is consistent with the prediction of equation 4 that incumbents in low tariff change seats would not vote for the bill, but it does not explain why they were absent rather than voting against it.

Absenteeism is probably explained by the factors related to strategic behavior not captured by the model. Democrats may have been trying to deny Speaker Reed a quorum in a House with a thin Republican majority, although the data suggest another characteristic of those absent: they were predominantly Southern (thirty-seven out of sixty-one absentee). The McKinley Tariff replaced the sugar duty with an equivalent bounty, leaving Southern sugar producers indifferent toward the two. Since non-Southern Democrats preferred to repeal the sugar tariff without a bounty, some Southern Democrats (those with sugar interests and their logrolling allies) may have had an incentive to be absent, thereby registering their preference for the bounty over no subsidy at all but doing so without breaching party unity.

Retrospective electoral rewards

Edward Stanwood and Frank Taussig were convinced that the catastrophe of the Republicans in the November 1890 election was due to their making

61. The pseudo-$R^2$ used here is that of McKelvey and Zavoina, cited by John H. Aldritch and Forest D. Nelson in Linear Probability, Logit and Probit Models (Beverly Hills, Calif.: Sage, 1984), pp. 57–58. It is the ratio of the explained sum of squares divided by the sum of the explained sum of squares and the number of observations.
62. The regional variables are omitted because of collinearity between party and region.
a ghastly mistake in judging voters’ tariff preferences. Explaining the results of the 1890 election would be a task far beyond the scope of this article and would require testing alternative explanations. I confine myself here to the more modest questions of whether tariffs could have affected the propensity of representatives to stand again and how those standing for reelection were rewarded for protection. The answer to the first question is that tariffs did not predict which incumbents (220 out of 330) chose to stand again. This was to be expected, since the election results seem to have been an unanticipated shock to everyone. Republicans were slightly less likely to stand again; the correlation of being a Republican and not standing again was $r = .113$.

Equation 10 addresses the main electoral reward question derived from the model (equation 5), estimating the vote of incumbents who stood for reelection ($V_{90}$):

$$V_{90} = +14.98 + 2.65 \text{CHGT} + 0.64 \text{V88} + 10.67 \text{P88} + 0.49 \text{T83}$$

$$\text{(10)}$$

$$+1.52 \text{CHGT} + 10.73 \text{V88} + 7.40 \text{P88} + 1.07 \text{T83}$$

$$-2.78 \text{E} - 4.87 \text{MW} + 4.26 \text{S} + 2.72 \text{CAN}$$

$$(-0.72) (-1.37) (+1.15) (+1.70)$$

$$[R^2 = .645; F = 48.14; n = 220]$$

Tariff changes were positively related to electoral success, as predicted by the model, but the base tariff level was insignificant. As I noted earlier, at some point the declining marginal utility of tariffs for voters must reach zero, and higher tariff levels may induce a withdrawal of electoral support. Voters may be wary of a high tariff level but nevertheless still be happy to accept incremental local benefits. This is consistent with the “tragedy of the commons” nature of the redistributive impact of tariffs: everyone may agree that high tariff levels are bad for the nation, but there is still a demand for incremental protection of local industries. If no other districts get protection increments, the local district will reap a windfall income redistribution; if all other districts get protection, the local district is better off joining in the demand for more protection.


64. I would note, however, that the data do not support Fiorina’s hypothesis about homogeneous districts being safer (see *Representatives, Roll-Calls and Constituencies*). If this were true, there should be a relationship between $V88$ and the proportion of manufacturing industry in a district ($MFG$): $V88 = a \cdot MFG^2 + b \cdot MFG + c$, where $a > 0$. An estimation of this equation, controlling for regional variation, produced an adjusted $R^2 = .17$, with a significant coefficient value for $a < 0$, indicating that heterogeneous districts (medium levels of manufacturing industry) are safest.
In any case, it is not obvious that Republicans were being punished for the McKinley Tariff increments. Industrial workers continued to vote Republican until the 1920s. Further support for this judgment was derived by regressing a variable measuring whether a seat shifted from Republican to Democrat in 1890 (= 1; otherwise = 0) on tariff levels and changes, controlling for the Republican vote share in 1888. The results were insignificant. There was a swing to the Democrats independent of the tariff. The regional variables indicated the safety of the Democratic South, possible benefits to incumbents in Canadian border states from the minor agricultural measures of the McKinley act, and Republican losses in the Midwest. Farmers were disgruntled by the lack of benefits from the Silver Purchase Act and were receptive to the Democratic claims that a lower tariff level would increase farm exports. Party and region appear to have been more important in defeating the Republicans than were tariffs. Although party and region can be seen as partial measures of issues related to the tariff, such as agricultural populism, the income tax, and the role of silver in the money supply, these were (as noted earlier) linked to the national tariff level rather than its cross-sectional structure. Republican losses might also be attributable to two factors unrelated to the tariff. Midterm elections generally work against the President’s party. Macroeconomic conditions are often thought to affect elections. The year 1890 was not one of general recession: parts of the farm sector were depressed and railway investment and housing had recently peaked, but the manufacturing sector continued to boom until 1892. Although recession does not usually affect congressional elections, particularly not midterm elections, it may affect the presidential party.

Conclusions

It is possible to specify the supply and demand of the electoral market for trade policy in a way that is not only conceptually plausible and empirically testable but also helps explain the spatial incidence of the interindustry structure of tariffs. The data and model suggest the following generalizations about the McKinley Tariff.

Congressional incumbents in general and Republicans in particular supplied more incremental protection to districts in which they received a large vote in the 1888 election and in which the tariff was already an important

source of employment. Roll-call votes on the bill itself indicated that representatives whose districts would receive a high tariff increment on a high base tariff level were in favor of the bill. This factor was operating primarily through the party: a Republican bill and a party line vote. Republicans represented high tariff districts and voted for a bill that shifted more protection into their districts. This need not suggest that party or ideology was more important than constituency interests; it simply suggests that the party identification of a district was partially determined by the electorate’s tariff interests. Democrats were absent in large numbers on the final vote, probably for regional logrolling motives that are outside the scope of the model. Incumbents received more votes in 1890, controlling for their previous vote share, if the tariff shifted a large tariff increment into their districts; however, high tariff levels per se did not help incumbents. This evidence does not support Stanwood and Taussig’s thesis that the Republicans defeated themselves with the McKinley Tariff. Their defeat was more associated with other factors related to party and region and possibly to recession.

The results support the argument that insofar as trade policy is a significant electoral issue, representatives seek to manipulate tariffs so as to direct rents to their districts. The results also support the argument that electors reward this behavior. The 1934 Trade Act largely delegated authority over tariffs to the executive. In recent years, Congress has been actively reinserting itself into the process of making trade policy (notably in the 1988 Trade Act), and if this trend persists, we should expect the model specified here to become of more contemporary relevance.