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Abstract: In this paper, we attempt to provide an economic explanation for the adoption of bill co-sponsorship by the U.S. House of Representatives in 1967. We demonstrate empirically that key features of legislative production prior to 1967 (when House members' support for a bill was indicated by introduction of duplicate bills) and post-1967 (when political support for a bill is indicated by co-sponsorship) are strikingly similar. Specifically, the raw number of supporters of a bill, whether indicated by duplicate bills or by co-sponsorship, is not nearly as critical to advancement of that bill through the House of Representatives as is the political power of the individual who introduces it and those who support it. The relative sizes of these effects are highly consistent over time. In effect, this finding means that the underlying factors of importance in the House's legislative production function did not change significantly when bill co-sponsorship was adopted. This suggests that the change in operating procedure may have been driven by an intra-chamber struggle to control the legislative outcomes. We present empirical evidence that is highly consistent with this hypothesis - - adoption of bill co-sponsorship in 1967 coincides *exactly* with the post-World War II peak in a concentration ratio of legislation passed in the U.S. House of Representatives. Prior to the 90th Congress, there was a more-or-less steady increase in concentration of legislation passed by the five busiest committees that peaked at over 0.4 in the 90th Congress and then declined precipitously to under 0.15 by the 93rd Congress.

Key words: bill co-sponsorship, bill sponsorship, bills reported out of committee, U.S. House of Representatives, identical bill introduction, credit claiming

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On the Importance of Inequality in Politics: Duplicate Bills and Bill Co-sponsorship in the U.S. House of Representatives

"The cosponsorship of a bill adds prestige and strength to proposed legislation. For there is strength in unity. The proposal is given status by numbers"
- Colmer (1967)[1]

"Gaining co-sponsors is an important part of the legislative process. Bills with co-sponsors are more likely to be passed from committee to a floor vote."
- Cook (2000)

I. Introduction

In 1967 the Rules Committee of the U.S. House of Representatives unanimously agreed to permit up to a maximum of 25 co-sponsors on an introduced bill.[2] Temporally, this coincides *exactly* with the post-World War II peak in the total number of bills introduced each two-year cycle (Figure 1). This also coincides *exactly* with the post-World-War II peak in the percentage of bills introduced each two-year congressional cycle that were duplicates of other bills introduced previously in the session by other House members (Figure 2).

Yet this extraordinary change in operating procedure in the U.S. House of Representatives has for 45 years elicited very little attention from the scientific community. To start with, there is virtually no analysis of the role/importance of duplicate bills in the legislative production process. What little research there has been to-date on bill co-sponsorship has focused principally on two aspects: (1) description of co-sponsorship networks, and (2)

[1] Rep. William Colmer of Mississippi served on the House Rules Committee that unanimously approved limited co-sponsorship in 1967.

[2] Because the Rules Committee agreed unanimously on this proposed change, no roll call vote of the full House membership was required or taken. In 1978 members of the U.S. House of Representatives passed House Resolution 86, which removed the restriction on the number of bill co-sponsors.

discussion of the putative importance of bill co-sponsorship as a form of credibility signaling to external constituents (referred to as position taking) versus internal coalition-building by Representatives. In addition, there is a tiny thread of literature that addresses the impact(s) of bill co-sponsorship on legislative outcomes. But the compelling questions have been completely ignored: *why* did the House change its operating procedure and, more specifically, why did the House change its operating procedure *when* it did? This lacuna with respect to the 'why' and 'when' renders the discussion of co-sponsorship as position-taking or coalition-building awkward - - if bill co-sponsorship is driven principally by the desire of Representatives to signal policy-related positions to their constituents or to aid coalition-formation with their colleagues, surely these imperatives would have been present 10, 50, or 100 years earlier than 1967. Bills were co-sponsored in the U.S. Senate throughout the 20th Century, so it is not plausible that House members didn't understand that co-sponsorship was possible. That is, bill co-sponsorship simply could not have been a not-previously-considered innovation in the legislative production process.

In this paper, we attempt to provide an economic explanation for the adoption of bill co-sponsorship by the U.S. House of Representatives in 1967. In doing so, we demonstrate empirically that key features of legislative production prior to 1967 (when House members' support for a bill was indicated by introduction of duplicate bills) and post-1967 (when political support for a bill is indicated by co-sponsorship) are strikingly similar. Specifically, the raw number of supporters of a bill, whether indicated by duplicate bills or by co-sponsorship, is not nearly as critical to advancement of that bill through the House of Representatives as is the political power of the individual who introduces it and those who support it. The relative sizes of these effects are highly consistent over time. In effect, this finding means that the underlying

factors of importance in the House's legislative production function did not change significantly when bill co-sponsorship was adopted. This suggests that the change in operating procedure may have been driven by an intra-chamber struggle to control the legislative outcomes. We present empirical evidence that is highly consistent with this hypothesis - - adoption of bill co-sponsorship in 1967 coincides *exactly* with the post-World War II peak in a concentration ratio of legislation passed in the U.S. House of Representatives. Prior to the 90th Congress, there was a more-or-less steady increase in concentration of legislation passed by the five busiest committees that peaked at over 0.4 in the 90th Congress and then declined precipitously to under 0.15 by the 93rd Congress.

II. Background

Literally every member of the U.S. House of Representatives co-sponsors legislation, sometimes a sizable number of bills in each legislative session. For example, over the period 2000 – 2008, members of the U.S. House of Representatives sponsored, on average, 18 bills per 2-year congressional cycle while co-sponsoring an average of 112 bills. Every House member co-sponsored bills; the minimum was 4, the maximum was 425. Bill sponsors sometimes, perhaps frequently, solicit co-sponsors. For such a ubiquitous activity, relatively little is known about why bill co-sponsorship was unanimously adopted by the House Rules Committee in 1967 and what the effects of bill co-sponsorship are.

However, several strands of scientific literature with respect to bill co-sponsorship have emerged in recent years: (1) descriptive analysis/identification of networks of collaborative legislators revealed by patterns of bill co-sponsorship (Zhang et al. 2008; Fowler 2006a, 2006b; Burkett 1997), (2) a hypothesis that bill co-sponsorship serves as a mechanism whereby legislators signal constituents about their positions on policy issues (Highton and Rocca 2005;

Koger 2003; Campbell 1982), (3) analysis of the characteristics of co-sponsors, the timing of co-sponsorship, and the relationship between bill co-sponsorship and legislator voting on the bill itself (Harward and Moffett 2010; Kessler and Krehbiel 1996; Krehbiel 1995), and (4) the impact of bill co-sponsorship on legislative outcomes and on campaign contributions (Tanger et al. 2012; Tanger and Laband 2009; Wilson and Young 1997; Browne 1985).

With respect to (4), there is some evidence of a positive link between bill co-sponsorship and campaign contributions (Tanger and Laband, 2009). But the relationship is not direct: contributions do not flow *per se* to House members who co-sponsor lots of bills. Rather, campaign contributions flow to bill sponsors, with bill sponsorship being influenced positively by sponsors' previous co-sponsorship behavior (Tanger, Seals and Laband, 2012).

But in political markets, as in private markets, money gets exchanged for product and, in our opinion, the role of co-sponsorship in the bill production process has not been established with precision. Insofar as there is a 'conventional wisdom' with respect to this latter issue, it is reflected in the quotes that lead off our paper. That is, the likelihood of a bill being reported out of committee to a floor vote is positively related to the sheer number of co-sponsors. This finding is reported by Browne (1985), based on his analysis of 1,943 bills and resolutions on the elderly, introduced in four U.S. state legislatures during a 23-year period. But this putative general relationship potentially masks the importance of specific aspects of co-sponsorship with respect to determination of legislative outcomes. For example, in their analysis of bills introduced into the 99th Congress, Wilson and Young (1997) report that the number of co-sponsors is positively related to the likelihood that a bill receives some action in committee, that the ideological mix of co-sponsors matters, and that the percentage of co-sponsors who serve on the committee of first reference and whether the chair of that committee co-sponsors the bill are

significant, positive predictors of committee action. Likewise, Krutz (2005) analyzed factors that influence the likelihood that a bill was formally considered (winnowed) by committee in both chambers of the U.S. Congress during the period 2001-2008. He reports that the number of co-sponsors matters (positively influencing the likelihood of committee consideration), and that the percentage of co-sponsors from one party matters (negatively influencing the likelihood of committee consideration).

Aside from the astonishing paucity of studies examining the role of co-sponsorship in the legislative production process, what is surprising is that only Wilson and Young (1997) recognize what every veteran researcher of Congressional politics knows to be true: some Congressmen are more politically powerful than others, in terms of their ability to influence legislative outcomes. At a minimum, this suggests that not all Congressmen should be assumed to be of equal importance as bill co-sponsors. Even conceding that the sheer number of bill co-sponsors may be important with respect to outcomes, what plausibly should matter a great deal is who those co-sponsors are (or, more precisely, the political power wielded by those co-sponsors). While there is a variety of ways to parse apart these differences in a bill co-sponsorship context, Wilson and Young (1997) control only for whether a bill was co-sponsored by the Chairman of the committee of first reference and the percentage of co-sponsors who served on the committee of first reference. Based on their analysis of bills introduced in the 99th Congress, they fail to find evidence that a bill co-sponsored by the Chair of the Committee of first reference differentially is considered by that committee, but they do find that as the percentage of co-sponsors who serve on the committee of first reference increases so does the likelihood the bill was considered by the committee. They find no evidence that either measure of co-sponsorship affects the likelihood of bill passage once reported out of committee.

Our specific interest in this paper does not lie in attempting a more nuanced partition of the value-added by different bill co-sponsors. Rather, we focus on whether the relative importance of the inputs in the legislative production function is demonstrably different in the bill co-sponsorship era than in the pre-co-sponsorship era, when congressional support for a bill was purportedly indicated by House members introducing identical versions of it. That is, we seek empirical evidence on whether the *relative* importance of who supported a bill as compared to the raw numbers of supporters changed significantly after bill co-sponsorship was approved for the U.S. House of Representatives. If so, this would be consistent with an interpretation that the change in operating procedure had long-term implications for the legislative production function itself. If not, a plausible, if not likely, explanation is that the rule change was instituted to effect a short-term redistribution of political rents within the House.

III. Bill co-sponsorship and legislative success

A great deal of legislative activity ultimately proves to be unproductive, in the sense that it does not result in public law. For example, bill sponsorship and co-sponsorship reflect legislative activity that will (with a relatively small probability) or will not (with a relatively large probability) result in a piece of legislation that gets signed into law. Because we are interested in legislative production (success) as opposed to legislative activity, we focus our analytic lens on the likelihood that a bill introduced into the U.S. House of Representatives actually is reported out of the committee it was referred to for further action and whether it subsequently was approved by a floor vote.

We draw from previous research findings to construct our model of factors that influence the likelihood of a bill being reported out of committee and approved by a vote of the full House. There is well-established evidence that party matters; bills introduced by members of the

majority party are more likely to be reported out of committee and become law than bills introduced by their colleagues in the minority party (Volden et al. 2013; Volden and Wiseman 2009; Krutz 2005). The likelihood of a bill making it successfully through the legislative process is influenced positively by the seniority of the sponsor (Volden et al. 2013; Volden and Wiseman, 2009; Krutz 2005), the gender of the sponsor (Volden et al. 2013; Volden and Wiseman, 2009), by the fact that the sponsor holds a committee chairmanship (Volden et al. 2013; Volden and Wiseman, 2009) and especially by the fact that the sponsor Chairs the committee his/her bill is referred to (Thomas and Grofman, 1992).

As indicated previously several aspects of co-sponsorship have been found to (positively) impact legislative outcomes: the number of co-sponsors (Browne, 1985; Wilson and Young, 1997; Krutz, 2005), as well as the percentage of co-sponsors who serve on the committee of first reference and whether the chair of that committee co-sponsors the bill (Wilson and Young, 1997).

Pulling these various influences together yields the following model of the likelihood that a specific bill introduced (i) is reported out of committee or the likelihood that a specific bill introduced (ii) was approved by a floor vote of the full House of Representatives:

$$bill\ outcome_i = \beta \#CoSponsors_i + \text{CoSponsor Characteristics}_i'\Theta + X_i'\Gamma + \Lambda_{i,d,c}'\rho + \epsilon_i$$

#CoSponsors is a raw count of co-sponsors for the i_{th} bill; *CoSponsor Characteristics* is a vector of specific attributes of House members who co-sponsored the i_{th} bill; *X* is a vector of sponsor-specific attributes; Λ is a vector of indicators for standing committees; ε is an idiosyncratic disturbance term; and the β, Θ, Γ, ρ are parameters to be estimated.

We estimated alternative specifications of this model using data on 6,301 bills introduced in the U.S. House of Representatives, 111th Congress (2009-2010). Data on bill introduction, sponsorship, co-sponsors, committee referral, and action were retrieved from the Thomas Library of Congress website (http://thomas.loc.gov). Information on the number of terms in office and party affiliation of each House member as well as membership on committees was found at www.**house**.gov/**committees**/. Sample statistics are reported in Table 1.

Table 1 about here

Not surprisingly, since they held a majority of the seats in the House of Representatives, most of the bills (a full two-thirds) introduced into the 111th Congress were sponsored by Democrats. Of the bills with (no) supporting co-sponsors, 10 (5.5) percent were reported out of committee and 8 (4.5) percent were approved by the full House membership. This means that, at least in the 111th Congress, 80 percent of the bills that were reported out of committee subsequently were passed by the House. With respect to the bills that had at least one co-sponsor, the average number of co-sponsors was 22. Of these bill co-sponsors, just under 4, on average, were members of the committee the bill was referred to. Not quite 8 percent of the co-sponsored bills were co-sponsored by the Chair of the committee the bill was referred to.

In Table 2 we present our first set of regression estimation results. For the set of all bills introduced into the U.S. House of Representatives during the 111th Congress, we used Ordinary Least Squares regression to estimate the impact of each of the explanatory variables indicated in equation (1) on each of two dependent variables: (a) whether each bill was reported out of committee, and (b) whether each bill was approved by the full House membership. The regression estimation results reported in columns 1 and 3 are for the sample of all bills introduced in the House during the 111th Congress. Because a sizable fraction (just over one

quarter) of the introduced bills had no co-sponsor(s), we also report regression estimation results for the sample consisting only of those bills that had at least one co-sponsor (columns 2 and 4).

Table 2 about here

With respect to sponsor characteristics, we estimate that bills sponsored by members of the majority party (Democrats) were significantly more likely to be reported out of committee and to be passed by the full House than bills sponsored by members of the minority party (Republicans). From the sample mean of 10 percent, a bill sponsored by a Democrat had an additional 2 percentage point probability of being reported out of committee than an otherwise similar bill sponsored by a Republican. That is, holding other things constant, a bill introduced by a majority party member had an estimated 20 percent greater probability of being reported out of committee than a bill introduced by a member of the minority party. We find a similar, but understandably smaller, effect on the likelihood of bill passage by the entire House membership. As expected, sponsor seniority has a statistically significant, positive effect on the likelihood a bill gets reported out of committee. Again, we observe smaller, but not quite statistically significant, estimated effects on the likelihood of passage by the full House. Contrary to Volden et al. (2013) and Volden and Wiseman (2009), we estimate that bills introduced by female House members were less likely to be reported out of committee and approved by the full House than bills introduced by their otherwise-similar male colleagues, although the statistical significance of these estimated impacts is sensitive to inclusion of committee fixed effects.

Turning to bill characteristics, we focus first on the estimated impact of the bill being sponsored by the Chair of the committee of first reference. When this happens, the rate at which a bill gets reported out of committee (passed by the House membership) rises from 0.10 to 0.36 (0.05 to 0.22) - - from the models that included committee fixed effects. That is, the likelihood

of a bill being reported out of committee (passed by the House) is 3-4 (over 4) times greater if the sponsor Chairs the committee of first reference than if the sponsor does not Chair the committee of first reference. Committee chairmen are extremely influential, at least in terms of successfully moving their own legislation through the House. Moreover, each additional member of the committee of first reference who co-sponsors a bill, above the sample mean of 4, increases the *ceteris paribus* likelihood of the bill being reported out of committee (passed by the full House) from 0.10 to 0.16 (0.05 to 0.10). The fact that the sponsor of a bill sits on the committee of first reference, albeit not as the Chair, raises the probability of his/her bill being reported out of committee (passed by the full House) from 0.10 to 0.13 (0.05 to 0.07). Having the Chair of the committee of first reference signed on as a bill co-sponsor increases the probability of the bill being reported out of committee by 9 percent and the probability of a bill being approved by the full House by 16 percent.

In stark contrast are the estimated impacts of additional bill co-sponsors who do not have the distinctions indicated above. Controlling for other factors, we estimate that the impact of additional bill co-sponsors, above the sample mean of 22, on the probability of a bill being reported out of committee (passed by the full House) is *negative* and highly significant. The probability of a bill being reported out of committee (passed by the full House) falls from 0.10 (0.05) for bills with 22 co-sponsors to 0.05 (0) for bills with 72 co-sponsors. There are at least two, not mutually exclusive, reasons why this might be so. First, bills that have little-to-no chance of actually becoming law may attract a lot of co-sponsors because they present opportunities for low-cost political posturing. Second, the sponsor of a bill who uses a large number of co-sponsors as a show of support to the Chair of the committee of first reference may, in fact, simply antagonize the Chair. By signing up so many co-sponsors the bill's sponsor

reveals to the committee Chair that the sponsor simply does not understand the political realities of how legislation actually moves forward.

IV. Duplicate bills and legislative success

To our knowledge, no research previously has been conducted on the impact of duplicate bills on legislative success. Indeed, only one paper addresses *any* aspect of the production of duplicate bills. Thomas and Grofman (1993) link a rapid decline in the number of duplicate bills introduced into the U.S. House of Representatives to the 1978 change in operating procedure that permitted an unlimited number of House members to co-sponsor a bill. Prior to 1978, the maximum number of co-sponsors permitted on a House bill was 25; prior to 1968 bill co-sponsorship was not permitted in the House.

How should we interpret the introduction of duplicate bills? As suggested by Purpura et al. (2008; 5), one interpretation is that duplicate bills are an indication of broad-based support for the proposed legislation: "In their wisdom, legislators realized that they could publicly signal their association as a co-sponsor of the bill by simply reintroducing (largely) the same bill with different co-sponsors." While Purpura et al. clearly refer to the period between 1968 and 1978 when the House limited the number of co-sponsors on a bill to a maximum of 25, their argument surely generalizes to the period before 1968 when political support for a bill could only be demonstrated by introduction of a duplicate sponsored by each supportive House member. Indeed, this interpretation is consistent with Cook (2000), who argues: "Multiple introductions, the submission of identical bills with different resolution numbers and different principal sponsors, served as the functional equivalent of modern-day cosponsorship for some time before legalization. The willingness of legislators to wholly reintroduce legislation in order to register their support for it indicates that cosponsorship, or its equivalent, has long played an important

role in the legislative process." One empirical implication of this interpretation is that as the number of identical bills increases, the likelihood that one of the identical bills achieves legislative success (gets reported out of committee and/or approved by the legislature) improves. An additional empirical implication is that as the number of identical bills introduced increased, the likelihood that the first one introduced achieves legislative success also increases.

A second, not necessarily mutually exclusive, interpretation is that the number of identical bills submitted with respect to a specific piece of legislation reflects the intensity of competition among legislators to claim credit for the eventual public output (Thomas and Grofman 1993). It seems possible, if not likely, that other Members of the House would have attempted to claim credit for beneficial legislation introduced originally by a given Representative by introducing a duplicate version of the bill and then using their political power to advance their own bill while sabotaging the progress of the original (and other duplicates). An empirical implication derived from this interpretation is that as the number of identical bills introduced increases, the likelihood that the first one introduced achieves legislative success declines.

Mindful of those who believe that identical bills and co-sponsorship are functional equivalents, and in consideration of our empirical findings reported in the previous section, is surely is worth looking beyond the impact of the sheer number of identical bills to explore also the relationship between who introduces an identical bill and the likelihood that a previously-introduced version of that bill experiences legislative success. There are differences across Members of Congress regarding their respective ability to influence legislative outcomes. For example, the fact that the Chair (or another powerful member) of the committee of first reference submits/sponsors a bill that is identical to one previously submitted and assigned to the

committee likely exerts a greater impact on the fate of the original bill than a duplicate bill authored by a first-term Representative who does not sit on that committee. An empirical implication of this hypothesized 'pirating' behavior is that the likelihood of the original bill experiencing legislative success falls if one or more identical bills sponsored by politically more powerful individuals are submitted for consideration.

We explore these proposed relationships empirically by analyzing data on bill introductions in the U.S. House of Representatives during the 80^{th} – 90^{th} Congresses, inclusive. This is the 22-year period (1947-1948 through 1967-1968) leading up to adoption of bill co-sponsorship by the House Rules Committee. During this period, bill co-sponsorship was not allowed in the House of Representatives; however, MCs could copy the bills of other MCs. As before, we estimate models of the likelihood that a bill was reported out of committee and models of the likelihood that a bill was approved by the House. We control for the same set of personal characteristics of the sponsor as previously. Now, however, we replace the co-sponsorship variables with variables that reflect aspects of duplicate bill submission (the number of duplicates submitted, as well as who submitted them).

For this part of our analysis, we use data from the Congressional Bills Project. Although the foundation data we used was available online, we constructed several new variables which give a more complete picture of legislative production during this period than has heretofore been possible. Because the duplicate bills were introduced as stand-alone bills, the characteristics of the bill sponsors can be compared within a family of duplicate bills. In a related study, Fowler (2006) analyzes the characteristics of cosponsors in a social network analysis of bill production. Our data for the duplicate period are organized in a similar fashion; however, we focus on the bill as the unit of observation.

Table 3 provides summary statistics for both the full sample of bills and the sample of bills which contain at least one duplicate. Over the 22 years covered by our analysis, 11 percent of all unique bills introduced were reported out of committee (passed by the full House). Approximately 29 percent of the bills introduced were duplicated. Generally speaking, characteristics of bills that had duplicates submitted are similar to those of all bills introduced. One noticeable difference is that the fraction of duplicate bills sponsored by the Chair of the committee of first reference is considerably lower than the fraction of all bills sponsored by the Chair of the committee of first reference. Of the bills duplicated, the average bill had approximately fifteen identical versions submitted. The relatively sizable standard deviation on this variable reveals that on occasion a large number of duplicate versions of a bill were introduced.

The algorithm to create the variables which document the characteristics of the other sponsors of duplicate legislation is as follows. Duplicate bills were first identified by matching bill word titles, committee assignment, and major topic area.[3] For the i_{th} duplicate bill in family d, statistics for the characteristics of sponsors of $\sum_{j\neq i}^{n} bill_{j,d}$ are computed. For example, $\text{Avg. Years in the House for other Duplicate Sponsors} = \frac{1}{n-1}\sum_{j\neq i}^{n} Years\ of\ Service_{j,d}$, represents the general method used for computing average characteristics of other sponsors.[4]

We estimate the following equation for duplicate bills:

$$bill\ outcome_{i,d,c} = \beta \#duplicate\ bills + \mathrm{Z}'_{i,d,c}\Theta + X'_{i,d,c}\Gamma + \mathrm{K}'_{c}\alpha + \Lambda'_{i,d,c}\rho + \mathrm{Topic}'_{i}\gamma + \epsilon_{i,d,c}$$

[3] http://www.policyagendas.org/page/topic-codebook

[4] Hence, the i_{th} duplicate bill is not included in the calculations for mean characteristics of its counterparts in the same duplicate family. The Stata code used to generate all variables and subsequent estimates is available upon request.

where *Z* is a vector of other-sponsor characteristics specific to a duplicate family of bills; *X* is a vector of sponsor-specific attributes; K is a vector of indicator variables for each two-year Congressional cycle; Λ is a vector of indicators for standing committees; *Topic* is a vector of indicators for the topical nature of the bill which also includes private bills of relief; ε is an idiosyncratic disturbance term; and the β, Γ, Θ, α, ρ, and γ are parameters to be estimated. Our OLS regression estimation results are reported in Table 4.[5]

Table 4 about here

As we reported for bills considered by the House of Representatives during the 111th Congress, both the fact that the sponsor of a bill was in the majority party and the sponsor's seniority exerted a statistically significant, positive impact on the probability that it was reported out of committee and the probability that it was approved by the full membership of the House. Other factors held constant, bill sponsors from the majority party had a 15 percent probability of seeing their bills reported out of committee, compared to the sample mean of 11 percent. With respect to sponsor seniority, each year above the sample mean of 8.6 is estimated to increase the probability of a bill being reported out of committee (passed by the House) from 0.11 to 0.1128 (from 0.0985 to 0.1013). All other things equal, a sponsor with 29 years in the House would be half again as likely as the 'average' House member to see the bills (s)he sponsors get reported

[5] OLS does not require distributional assumptions for the error component to derive coefficient estimates, whereas probit and logit require strong distributional assumptions about the disturbance to derive the estimates. Additionally, OLS will generate approximately the same average partial effects as probit and logit. Heteroskedasticity can be mitigated by using robust standard errors; however, we also control for clustering which is actually a much bigger problem of inference. We understand that for extreme values of the independent variables predicted probabilities can fall outside the unit interval. However, in our analysis we are not primarily concerned with the extreme tails of the distribution; that is, we are concerned more with how average behavior is changing across two different institutional settings. See Wooldridge (2010, pp. 563). We also estimate the same models using probit and logit. The average partial effects for logit and probit were not significantly different form the marginal effects reported for OLS. These results are available upon request.

out of committee. If the sponsor was Chair of the committee of first reference, the probability that the bill got reported out of committee *tripled*, from 0.11 to 0.32. If the sponsor was a member of the committee the bill was referred to, the probability it was reported out of committee rose from 0.11 to 0.21. But, we estimate that the effect of adding additional duplicates, above the sample mean of 15, on the probability of a bill being reported out of committee or being passed by the House membership is negative and highly significant which, again, is completely consistent with our reported findings with respect to adding co-sponsors to bills introduced into the House during the 111th Congress. What this suggests is that duplicate bills were not filed as a show of support for the initial bill; rather, they were filed by other House members seeking to claim credit for the legislation. In a backhanded way, of course, this means that the number of duplicate bills introduced reflected House members' (competitive) interest in the original bill.

This interpretation is borne out by the OLS regression estimation results reported in Table 5, which are based on our analysis of each *set* of identical bills. We were especially interested in identifying factors that influenced the probability that any given bill within each set of identical bills was the one that was reported out of committee and/or passed by the members of the House of Representatives. Consistent with our previous findings, characteristics of the sponsor are statistically important predictors of the probability that a specific bill among a set of identical bills was reported out of committee and/or passed by the House. A duplicate bill sponsored by the chair of the committee it was referred to had a 6-times greater probability of being reported out of committee (0.301) than a duplicate bill sponsored by the 'average' House member (0.046). As compared to an 'average' sponsor, a duplicate bill sponsor who was a member of the committee of first reference boosted the probability of his version being reported

out of committee from 0.046 to 0.127. And, as expected, both seniority and being a member of the majority party significantly increased the probability that the sponsor of a duplicate bill saw his/her version reported out of committee.

Note that the original author of a subsequently-duplicated bill enjoyed a higher probability of his/her version being reported out of committee and/or being approved by the full House. We fail to observe a statistically significant impact of additional duplicate bills above the sample mean but do observe a statistically significant, positive impact of average seniority of the *other* duplicate bill sponsors. We interpret this latter finding as suggesting that a bill that attracted the interest of other, senior, House members, enjoyed a higher probability of having one of the set of identical bills reported out of committee than a duplicated bill with less interest from senior members. In other words, a large set of identical bills submitted by senior House members raised the success probability for every one of the bills in that set. But such bills almost certainly attracted the attention of property rights predators (credit seekers).

Evidence in support of this proposition can be found in the estimated effect of a duplicate bill being introduced by the chair of the committee the set of identical bills was referred to, the estimated effect of duplicates being submitted by members of the committee the set of identical bills was referred to, and the effect of the percentage of duplicate bill sponsors from the majority party. In every case, the effect of identical bills submitted by the author of a given bill's House colleagues lowered the probability that his bill would be passed by the House membership and in the latter two cases lowered the probability that his bill would be reported out of committee.

V. Comparing pre-co-sponsorship against post-co-sponsorship

We believe the results we report are striking, for a specific reason: they reveal that there has been little change over time with respect to the legislative production function in the U.S.

House of Representatives. One aspect of this production function has to do with the impact of characteristics of a bill's sponsor on legislative success. For example, both the estimated impact of a bill's sponsor being in the majority party and the estimated impact of the sponsor's seniority on the likelihood of a bill being reported out of committee and the likelihood of passage in the House is positive, statistically significant at the 0.01 level, and of roughly the same size in both the pre-co-sponsorship era and the co-sponsorship era. Likewise, regardless of whether we consider the pre-co-sponsorship era or the co-sponsorship era, the influence of powerful legislators on the advancement of bills in the House has been extremely large. For example, in the pre-co-sponsorship period that we examine, if the sponsor of a bill is the Chair of the committee of first reference, the bill is 3 times (nearly 3 times) as likely to be reported out of committee (passed by the House) than the sample mean of 11 (10) percent. In the co-sponsorship period, or at least in the 111th Congress, if the sponsor of a bill is the Chair of the committee of first reference, his bills are 3.6 times (over 4 times) as likely to be reported out of committee (passed by the full House) than bills sponsored by his otherwise 'average' House colleagues. Fundamentally, then, the political power of the sponsor of a bill always has been of critical importance to whether it becomes law; adoption of bill co-sponsorship appears not to have affected this long-run reality.

A second aspect of the legislative production function has to do with the impact of other legislators on the movement of a bill through the House. In the pre-co-sponsorship era, other legislators are those who submitted duplicate versions of an already-introduced bill whereas in the co-sponsorship era, other legislators are those who signed on as either original or unoriginal co-sponsors of a bill. In either case, the conventional wisdom that bills with larger numbers of 'supporters' are more likely to achieve legislative success than bills with smaller numbers of

supporters was determined to be inconsistent with the facts reported in Tables 2 and 4. We report consistent, statistically significant evidence that the likelihood of a bill being reported out of committee or passed on a floor vote is affected *negatively* by the number of duplicate bills introduced and by the number of co-sponsors. We will address this finding presently.

In addition to the impact of sheer numbers of other legislators who influence the movement of a bill through the House, our empirical results suggest that the role of politically powerful colleagues on legislative outcomes is dramatically different in the pre-co-sponsoring era as compared to the co-sponsorship era. Specifically, prior to adoption of co-sponsorship, the likelihood of a bill being reported out of committee and/or passed by the House declines significantly as the number of duplicates submitted by members of the committee of first reference for the original bill rises and as the percentage of duplicate bill sponsors from the majority party increases, *ceteris paribus*. Further, within each set of multiply-introduced bills, the likelihood that any given one was passed by the House took a very sizable and statistically significant hit when one of the duplicates was introduced by the Chair of the committee of first reference (Table 5). That is, if the Committee Chair wanted to poach the credit rights to an already-introduced bill assigned to his/her committee, there was little the original sponsor could do to prevent it. Finally, we can report that, within each set of multiply-introduced bills, the likelihood that the first-introduced bill was either reported out of committee or passed by the House was lowered significantly as the percent of duplicate sponsors from the majority party increased, as the number of duplicate sponsors who served on the committee of first reference increased, and if one of the duplicates was sponsored by the Chair of the committee of first reference.[6] We believe that these findings, taken together, constitute strong, albeit indirect, evidence of inter-legislator competition to claim credit for the duplicated legislation. That is, in

[6] These results are available upon request.

the pre-co-sponsorship era, the assignment of rights to legislation was structured as a zero-sum game characterized by intense competition between House members.

In contrast, the impact of politically powerful House colleagues on legislative outcomes in the 111th Congress is markedly different. Now, the *ceteris paribus* likelihood of a bill being reported out of committee and/or being passed by the House *rises* significantly as the number of co-sponsors who are members of the committee of first reference increases and if the Chair of the committee of first reference is a co-sponsor. When we restrict our attention only to those bills that were co-sponsored, these estimated effects are reinforced.

These findings are consistent with an interpretation that by permitting shared rights to legislative output, adoption of co-sponsorship converted a zero-sum game into a positive-sum game characterized by co-operation. But this would have been possible at any time, not just in 1967. Thus, a compelling explanation of why bill co-sponsorship was adopted in 1967 simply must address the timing issue.

VI. Revolt in the House of Representatives

We believe the weight of circumstantial evidence suggests that the adoption of bill co-sponsorship in 1967 was temporally related to something of great importance that occurred in the U.S. House of Representatives. In Figure 1, for example, we report total bill introductions in the House each legislative cycle from the 80th (1947-48) through the 105th (1997-98) Congresses. During the 20 years prior to the adoption of bill co-sponsorship there was an extremely rapid increase in the number of bills introduced, from around 7,000 to over 20,000. Bill introductions peaked at exactly the same time co-sponsorship was adopted, then fell dramatically over the ensuing 10 years. We also know that from the 80th to the 90th Congresses the number of unique bills introduced by multiple sponsors soared from approximately 100 to 1,500 (Figure 2). But at

the same time that bill introductions were rising, the percentage (as well as the raw count) of introduced bills that were passed by the House was declining, sharply (Figure 3). From the 80th Congress to the 90th Congress, the percentage of passed bills decreased by *three quarters*, from 17 percent to 4 percent. While a portion of the increase in total bills introduced, and thus a portion of the decrease in the *ceteris paribus* passage rate, can be attributed to an increase in the number of duplicate bills (of which a maximum of only one ultimately would have been passed) steady growth in the number of unique pieces of legislation introduced over the same time period (Figure 1) suggests that the dramatic drop in passage rate also reflects classic cartel behavior in the form of reduced output. Finally, over this same time period leading up to the 90th Congress, there also was a sharp increase in concentration of legislative output in the House (Figures 4 and 5), followed by a dramatic decline that started with the 91st Congress.

One straightforward interpretation of these events is that leading up to 1967 the leadership of the U.S. House of Representatives increasingly restricted legislative output, driving up the value of the associated political rents.[7] Internally, this set off a struggle among House members for control of the rents, which meant claiming credit for the bills that ultimately were passed. Since credit-claiming for legislation was structured as a zero-sum game, increasing competition for property rights to legislation during this time period would explain the dramatic increase in the number of unique bills with duplicates. On the demand-side, then, House members were becoming more assertive in their efforts to claim credit for legislation.

On the supply-side, however, the institutional process that determined which one of the N identical bills introduced actually became law increasingly was dominated by a small number of powerful individuals - - the committee Chairs. From the 80th – 90th Congresses, concentration of

[7] The Legislative Reorganization Act of 1946 had expanded the jurisdiction of standing committees and as a result increased the political influence of the committee chairs (Kravitz 1990).

legislative output produced by the 5 most-referred-to House committees rose by approximately one-third - - our constructed Herfindahl Index shows an increase from 0.31 to 0.41 over this period. This means that, their desire to claim credit for legislation notwithstanding, House members increasingly were being muscled aside by a small, but politically powerful set of colleagues.[8]

The House revolt started in 1967 with the adoption of co-sponsorship, which substantively changed the property rights assignment to bills from zero-sum to positive-sum. Specifically, once limited co-sponsorship was approved, a House member could not introduce a duplicate bill unless the original bill had accumulated the maximum 25 co-sponsors. If this coalition threshold was not in place, it was impossible for another Representative to even attempt to poach legislative credit by introducing a duplicate version. In effect, institutionalized co-sponsorship assigned legislative property rights to the first sponsor of a bill, not the most politically powerful sponsor.

This change in the assignment of rights to legislative output had an immediate and extraordinary effect on concentration of output: it fell precipitously. Our Herfindahl Index of concentration of legislative output among the five most-referred to committees in the House of Representatives fell from its peak of 0.41 in the 90th Congress to a low of 0.13 in the 93rd Congress. Evidently, the proletariat were successful in redistributing credit for bill production away from the few to the many, at least temporarily. Of course, adoption of co-sponsorship did not, by itself, strip control of legislative outcomes away from committee Chairs. So the mere fact that original sponsors were assigned credit for passed legislation did not mean that committee Chairs would permit bills sponsored by other House members to be passed.

[8] This really was an intra-party fight between members of the Democratic Party, which enjoyed a roughly 2-1 majority in the House of Representatives during the 1960s. Of course, many of these individuals were Southern Democrats - - conservative in philosophy rather than liberal.

With respect to the concentration of political power (and resulting control over legislative outcomes) in the House, several significant events took place soon after adoption of limited bill co-sponsorship. First, the Legislative Reorganization Act of 1970 sought as a primary objective to curb the power of committee chairs (Kravitz 1990).[9] For example, the 1970 act required committees to establish written rules, time limitations on reporting a bill to Congress once it had passed committee, and also allowed the Speaker to recognize authorized members of any committee if the committee chair refused to report to Congress a bill passed by the committee of first reference (Kravitz 1990). However, many members (in both parties) of the House were dissatisfied with provisions in the Legislative Reorganization Act of 1970 to restrain the abuse of power by committee chairs and voted in 1971 to end the seniority system for selection of chairs (Kravitz 1990).

In 1971, the Democratic Caucus restricted its members from holding simultaneously more than one subcommittee chairmanship. "This gave 16 Democrats elected in 1958 their first subcommittee chairmanship in 1971." (Haeberle 1978; 1054). However, being a subcommittee chair is a dubious distinction if you have little-to-no ability to influence committee outcomes because the committee chair makes all the important decisions. Consequently, in 1973 the Democratic Caucus voted to significantly strengthen the autonomy of subcommittees. As reported by Haeberle; 1054-1055):

> "….the Democratic Caucus voted to shift control over subcommittees from committee chairmen to the individual committee caucuses. Each committee caucus was granted the authority to select subcommittee chairmen, define subcommittee jurisdictions, set party ratios on subcommittees, and provide funding for subcommittees. Committee chairmen were required to report all legislation to the appropriate subcommittee within two weeks after receiving it from the floor, and subcommittee chairmen were given the right to be floor managers of all legislation reported out of their subcommittees.

[9] The formation in 1965 of the Joint Committee on the Organization of the Congress eventually resulted in the Legislative Reorganization Act of 1970.

> By the opening of the First Session of the 94th Congress, subcommittee chairmen had been given the prerogative of hiring at least one staff person. Each committee member was granted the right to select a subcommittee assignment in order of seniority before any member could choose a second assignment, and finally, the caucus required each committee with more than twenty members to establish at least four subcommittees."

These reforms transferred political power from committee chairs to committee members, especially subcommittee chairs. This made it more difficult for committee chairs to control/restrict legislative output. Subcommittee chairs and members took full advantage of their new powers by dramatically ramping up their activities (Figure 6, from Haeberle 1978; 1057). It is at precisely this point in time that the bill passage rate starts climbing, after a long period of decline, and dispersion of property rights to legislation peaks (i.e., concentration of legislative output in the House hits its low point).

It is hard to argue that the increase in activities at the subcommittee level indicated in Figure 6 was efficiency-enhancing in the sense that it represented an expansion of capacity needed to handle massive numbers of introduced bills. While the expansion of capacity aspect may be accurate, the need aspect arguably is not. The dramatic increase in the number of subcommittee meetings commenced with the 92nd Congress, but by then the total number of bills introduced into the House had peaked (4 years earlier) and experienced a substantial drop-off. This lends indirect support to Haeberle's (1978; 1954) description of adoption of what came to be known as the 'subcommittee bill of rights' as "…the greatest internal revolt in the House since Speaker Joseph G. Cannon was deposed in 1910."

VII. Discussion and Conclusion

Adoption of bill co-sponsorship did not change the fact that successful legislation necessarily is crafted in a team production context and therefore subject to shirking behavior by

individual legislators (Crain and Tollison, 1980, 1982; Leibowitz and Tollison, 1980). But bill co-sponsorship arguably did change an important aspect of that team production context: the costs of "…monitoring and management of legislator behavior (Crain, Leavens, and Tollison, 1986, p. 834). By virtue of its public-ness, bill co-sponsorship can be thought of as a political loyalty filter (Akerlof, 1983), provided by a legislator to reassure other parties to the multi-lateral contract that he will not subsequently renege on his promise to support the principal sponsor's proposed legislation. At a minimum, this would have reduced monitoring costs associated with shirking after adoption of bill co-sponsorship as compared to previously. Crain, Leavens, and Tollison posit that the possibility of political shirking has predictable consequences for the organization of legislative production. One particular implication is that legislation introduced by more trustworthy individuals (e.g., those with greater established seniority and/or leadership positions) will be voted on earlier in a legislative session than bills introduced by less trustworthy individuals (e.g., less senior members). C-L-T report empirical evidence from the 96th Congress (1979-1980) that is consistent with this hypothesis. Our analysis suggests a potentially fruitful related line of empirical inquiry - - namely, that bills with more co-sponsors, perhaps up to some threshold, should pass more quickly than bills with fewer co-sponsors, *ceteris paribus*. Similarly, controlling somehow for possible changes over time in the content of bills, passage times should be quicker since adoption of co-sponsorship than previously.

In this paper we have presented an explanation of the unanimous approval of limited bill co-sponsorship by the Rules Committee of the U.S. House of Representatives in 1967. By piecing together circumstantial evidence, we conclude that bill co-sponsorship was not embraced by the House leadership as an efficiency-enhancing means of dealing with a surge in bill submissions. Rather, bill co-sponsorship was an engineered change in operating procedures that

reduced the ability of politically powerful Committee Chairs to appropriate credit for legislation crafted by others. This is because co-sponsorship replaced a zero-sum, highly competitive rights assignment process with a more collaborative assignment of rights to first sponsors of legislation. Since bill co-sponsorship was practiced in the U.S. Senate throughout the 20th Century, we opined that a compelling explanation of why co-sponsorship was adopted in the House needed to also explain why the adoption occurred in 1967 specifically. We have argued that bill co-sponsorship was adopted in 1967 in response to de-facto cartelization of legislative output by a handful of powerful committee chairmen, which left other House members with little ability to claim credit for their legislative initiatives. The resulting inequality in the distribution of legislative production precipitated a revolt among relatively disenfranchised House members that resulted not only in bill co-sponsorship (1967) but also in the outright transference of political power from committee chairmen to subcommittee chairs (1971) and (sub)committee members (1973). Collectively, these measures led to a significant, albeit temporary, reduction in the concentration of legislative output and reversed a decades-long decline in the percentage of bills passed by the House.

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Table 1: Summary Statistics for the 111th Congress

Bill Characteristics	Co-sponsored Bills	Bills w/o Co-sponsors
Reported to the House?	0.102	0.0548
	(0.302)	(0.228)
Bill Passed the House?	0.0812	0.0448
	(0.273)	(0.207)
# of Co-sponsors	22.19	
	(39.34)	
# of Committee Members Co-sponsors	3.769	
	(6.024)	
Committee Chair a Co-sponsor?	0.0785	
	(0.471)	
Sponsor Committee Chair?	0.0396	0.0318
	(0.195)	(0.175)
Hearings held?	0.0415	0.0205
	(0.200)	(0.142)
Sponsor's Characteristics		
Democrat	0.711	0.666
	(0.454)	(0.472)
# of Terms Served by Sponsor	6.471	6.272
	(4.564)	(4.579)
Female	0.205	0.167
	(0.404)	(0.373)
Margin of Victory	43.59	39.98
	(29.60)	(29.99)
Observations	4695	1606

Notes: mean coefficients and standard deviations (in parentheses).

Table 2: Regression Results for the Full Sample of Bills from the 111th Congress

	Dep. Var.= 1 if Reported to House		Dep. Var.= 1 if Passed House	
Bill Characteristics	All bills	Co-sponsored bills only	All bills	Co-sponsored bills only
Sponsor Committee Chair?	0.262***	0.225***	0.173***	0.161***
	(0.0382)	(0.0428)	(0.0312)	(0.0419)
Sponsor Committee member?	0.0315***	0.0199*	0.0204**	0.00701
	(0.00953)	(0.0113)	(0.00867)	(0.0105)
# of Co-sponsors	-0.001***	-0.001***	-0.001***	-0.001***
	(0.0003)	(0.0003)	(0.0002)	(0.0002)
# of Committee Co-sponsors	0.0619**	0.0619**	0.0535**	0.0518**
	(0.0308)	(0.0291)	(0.0214)	(0.0214)
Committee Chair a Co-sponsor?	0.0089***	0.009***	0.008***	0.00842***
	(0.00178)	(0.0020)	(0.00167)	(0.00171)
# of Hearings	0.425***	0.432***	0.325***	0.313***
	(0.0362)	(0.0388)	(0.0385)	(0.0427)
Sponsor Characteristics				
Democrat	0.0213***	0.0205**	0.0153**	0.0140
	(0.00790)	(0.00933)	(0.00724)	(0.00854)
# of Terms Served by Sponsor	0.00314*	0.00248	0.00256	0.00188
	(0.00170)	(0.00181)	(0.00163)	(0.00171)
Female Sponsor	-0.0137	-0.0159	-0.0121	-0.0112
	(0.00843)	(0.00963)	(0.00738)	(0.00869)
Committee Membership Dummies	X	X	X	X
Committee Chair Dummies	X	X	X	X
N	6289	4683	6289	6289

R-square	0.310	0.241	0.310	0.171

Notes: All models are estimated with OLS. Standard errors (in parentheses) are clustered at the congressional district level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Mean Characteristics of House Bills for the 80th-90th Congress

All Bills	All Bills	Duplicate Bills
Reported to the House?	0.108	0.0457
	(0.311)	(0.209)
Passed the House?	0.0985	0.0370
	(0.298)	(0.189)
First Bill in Duplicate Sequence?	0.788	0.255
	(0.409)	(0.436)
Sponsor in Majority Party?	0.634	0.620
	(0.482)	(0.485)
Number of Years Sponsor Served in House	8.602	8.075
	(7.862)	(7.547)
Sponsor Chair of the Committee?	0.0349	0.0240
	(0.184)	(0.153)
Sponsor a Committee Member?	0.263	0.283
	(0.440)	(0.450)
Sponsor a Chair of other Committee?	0.0498	0.0346
	(0.218)	(0.183)
Duplicate Bills		
# of Duplicate Bills		14.69
		(27.97)
Avg. Years in the House for other Duplicate Sponsors		8.069
		(5.616)
Percentage of other Duplicate Sponsors in Majority Party		0.621
		(0.376)
# of External Committee Members who are also Duplicate Sponsors		0.277
		(0.868)
# of External Committee chairs who are also Duplicate Sponsors		0.0740
		(0.297)
Observations	137349	39142

Notes: mean coefficients and standard deviations (in parentheses).

Table 4: All Bills, Committee Passage, and House Passage in the 80th-90th U.S. Congress

	Dep. Var.= 1 if Reported to House		Dep. Var.= 1 if Passed House	
Sponsor Characteristics	Model 1	Model 2	Model 3	Model 4
Sponsor in Majority Party?	0.0227***	0.0216***	0.0179***	0.0170***
	(0.0016)	(0.0016)	(0.0016)	(0.0016)
Number of Years Sponsor Served in House	0.0028***	0.0028***	0.0028***	0.0028***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Sponsor Chair of the Committee?	0.1981***	0.2099***	0.1734***	0.1835***
	(0.0095)	(0.0095)	(0.0093)	(0.0092)
Sponsor a Committee Member?	0.1149***	0.1046***	0.0976***	0.0881***
	(0.0023)	(0.0023)	(0.0022)	(0.0022)
Sponsor a Chair of other Committee?	-0.047***	-0.052***	-0.039***	-0.043***
	(0.0064)	(0.0064)	(0.0063)	(0.0062)
Bill Characteristics				
# of Duplicate Bills	-0.0005***	-0.0004***	-0.0004***	-0.0003***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Congress Dummies	X	X	X	X
Major Topic Dummies		X		X
Committee Dummies		X		X
N	130182	130182	130178	130178
R-square	0.0829	0.1047	0.0765	0.0974

Notes: All models are estimated with OLS. Standard errors (in parentheses) are clustered at the unique legislation level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Major Topic Dummies coded from the Policy Agendas Project http://www.policyagendas.org/page/topic-codebook.

Table 5: Duplicate Bills, Committee Passage, and House Passage in the 80th-90th U.S. Congress

	Dep. Var.= 1 if Reported to House		Dep. Var.= 1 if Passed House	
Sponsor Characteristics	Model 1	Model 2	Model 3	Model 4
Sponsor in Majority Party?	0.0323***	0.0320***	0.1239***	0.1202***
	(0.0022)	(0.0022)	(0.0105)	(0.0105)
Number of Years Sponsor Served in House	0.0016***	0.0016***	0.0048***	0.0045***
	(0.0002)	(0.0002)	(0.0007)	(0.0007)
Sponsor Chair of the Committee?	0.2575***	0.2551***	0.2225***	0.2133***
	(0.0182)	(0.0182)	(0.0386)	(0.0382)
Sponsor a Committee Member?	0.0821***	0.0811***	0.1830***	0.1771***
	(0.0031)	(0.0031)	(0.0105)	(0.0106)
Sponsor a Chair of other Committee?	-0.0392***	-0.0390***	-0.0436	-0.0445
	(0.0102)	(0.0102)	(0.0360)	(0.0356)
Bill Characteristics				
First Bill in Duplicate Sequence?		0.0103***		0.0503***
		(0.0030)		(0.0171)
# of Duplicate Bills	0.0001	0.0001	-0.0005	-0.0004
	(0.0001)	(0.0001)	(0.0007)	(0.0007)
Committee Chair is another Duplicate Sponsor	-0.0062	-0.0052	-0.0961***	-0.0920***
	(0.0046)	(0.0046)	(0.0169)	(0.0163)
# of Committee Members also Duplicate Sponsors	-0.0028***	-0.0026***	-0.0191***	-0.0181***
	(0.0004)	(0.0004)	(0.0030)	(0.0029)
Avg.Years Served in House for other Duplicate Sponsors	0.0017***	0.0017***	-0.0027***	-0.0024***
	(0.0003)	(0.0003)	(0.0009)	(0.0009)
Percentage of Duplicate Bill Sponsors in Majority Party	-0.0150***	-0.0146***	-0.1475***	-0.1441***
	(0.0035)	(0.0035)	(0.0179)	(0.0177)
# of Duplicate Sponsors also External Committee Chairs	-0.0020	-0.0024	0.0311*	0.0308*
	(0.0021)	(0.0020)	(0.0169)	(0.0161)
Congress Dummies	X	X	X	X
Major Topic Dummies	X	X	X	X
Committee Dummies	X	X	X	X
N	37586	37586	6180	6180
R-square	0.1249	0.1254	0.2467	0.2490

Notes: All models are estimated with OLS. Standard errors (in parentheses) are clustered at the unique legislation level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Major Topic Dummies coded from the Policy Agendas Project http://www.policyagendas.org/page/topic-codebook.

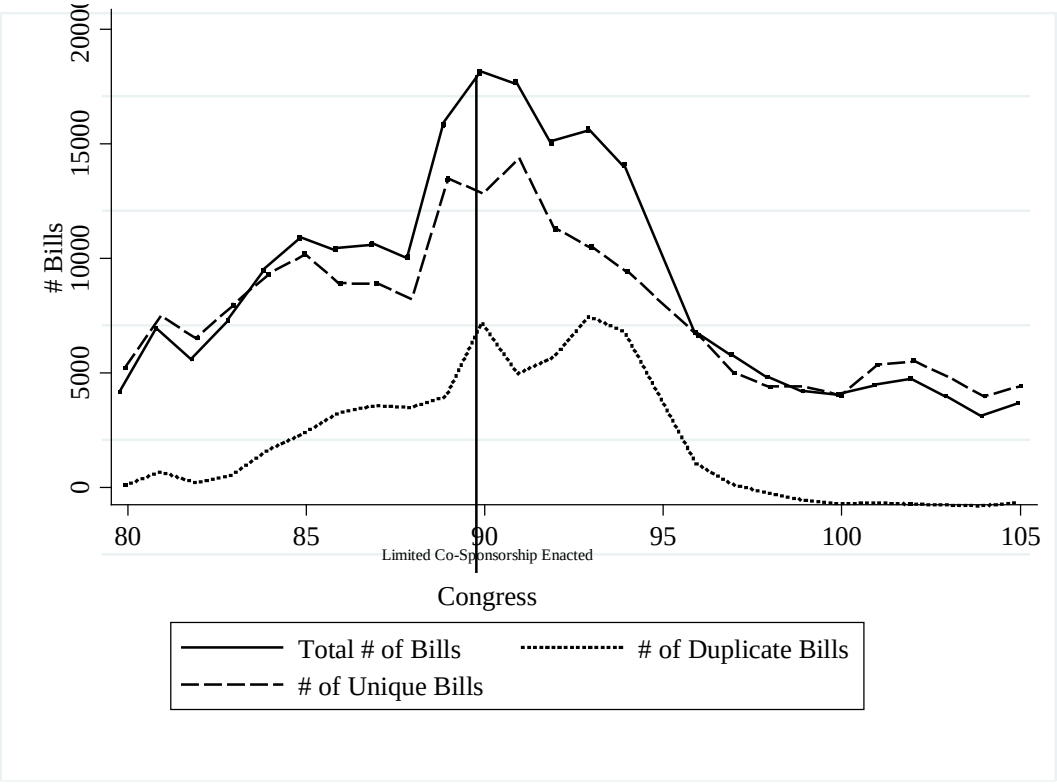

20000
15000
10000
5000
0
Bills
80
85
90
95
100
105
Limited Co-Sponsorship Enacted
Congress
Total # of Bills
# of Duplicate Bills
# of Unique Bills

Fig. 2: Number of Unique Bills with Multiple Sponsors by Congress

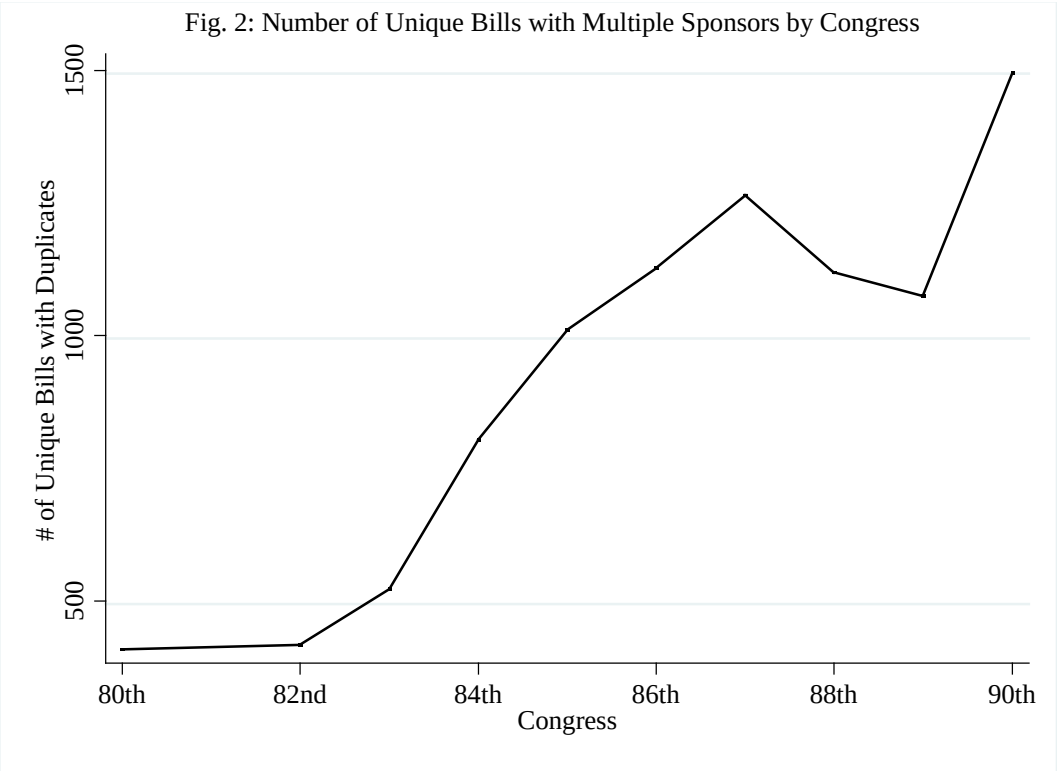


Fig. 3: Passage Rate for Bills in the House of Representatives

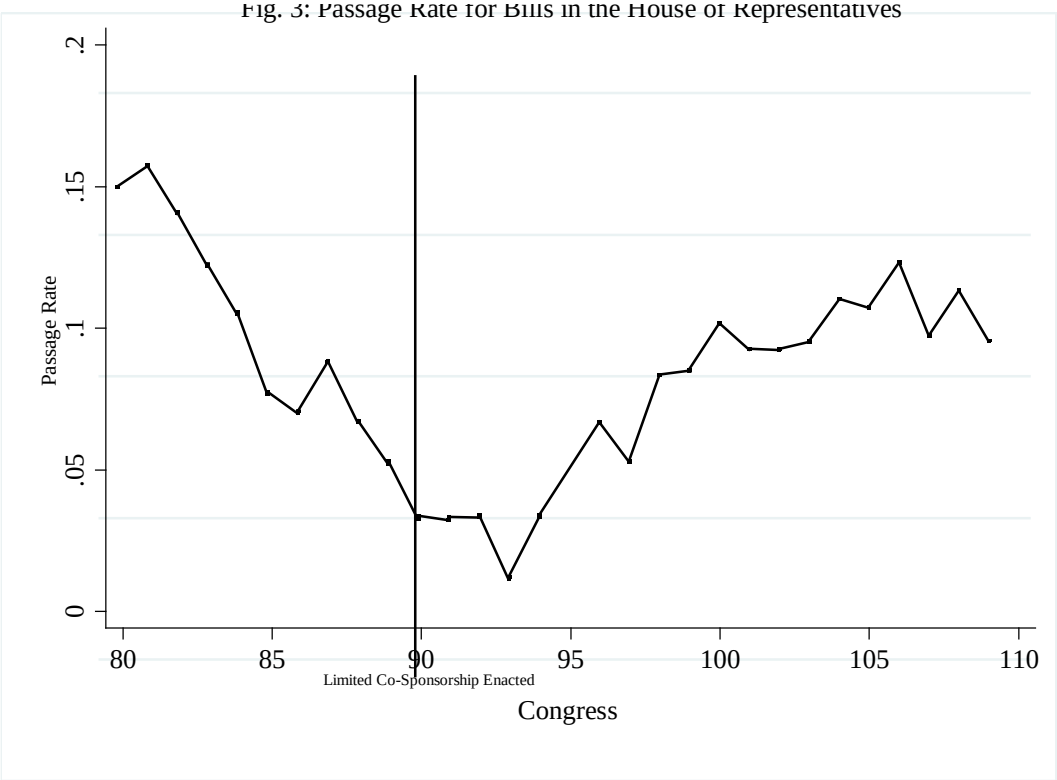


Fig. 4: Concentration of Sponsors Whose Legislation Passed the House of Representatives

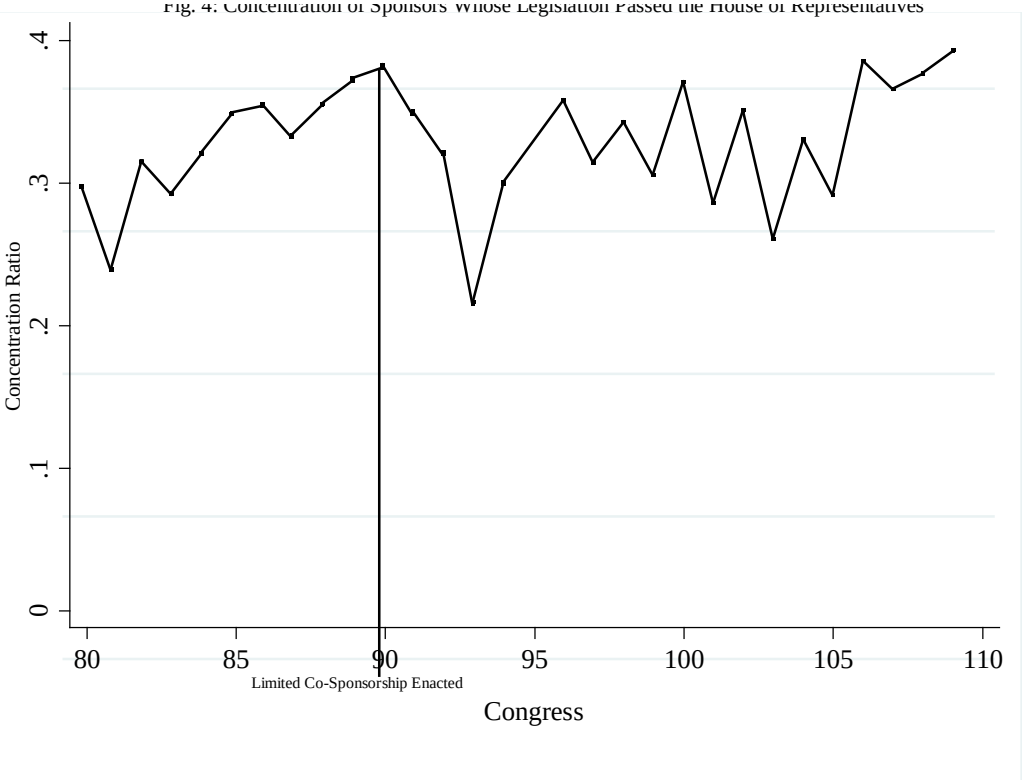
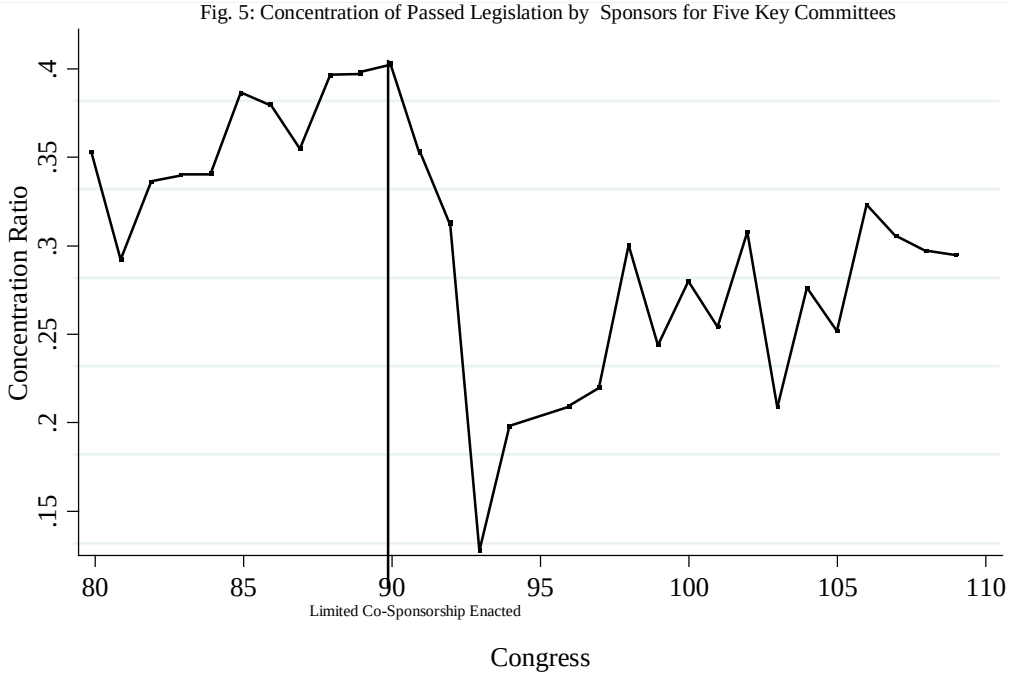


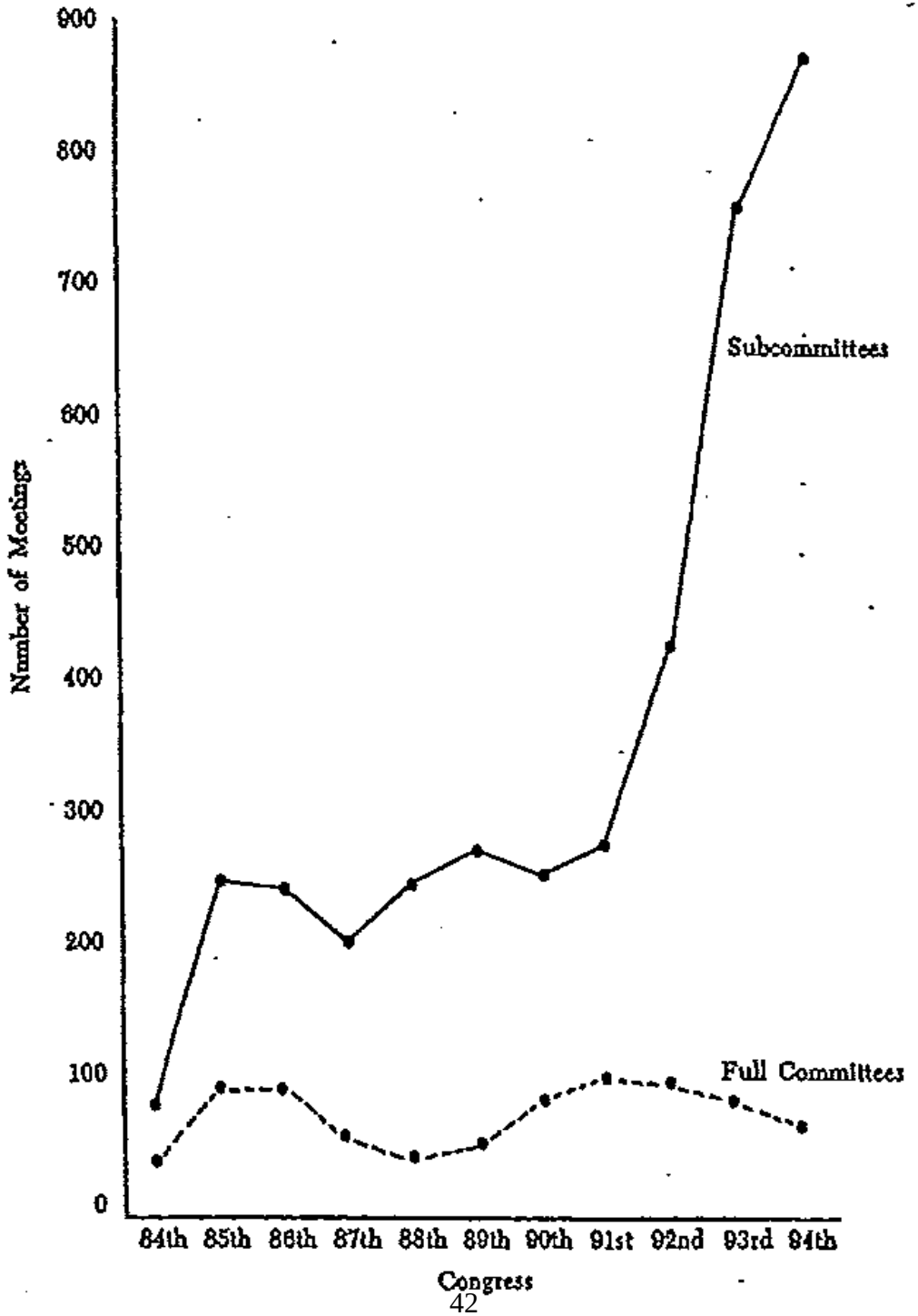
Fig. 5: Concentration of Passed Legislation by Sponsors for Five Key Committees



Committees: Education, Resources, Ways and Means, Commerce, and Judiciary

FIGURE 6

NUMBER OF COMMITTEE AND SUBCOMMITTEE MEETINGS PER CONGRESS[a]



[a] Source: *Congressional Index*, "Standing Committee Meetings," (Chicago: Commerce Clearing House, 1955-56 to 1975-76).