STEALTH CONSOLIDATION: EVIDENCE FROM AN AMENDMENT TO THE HART-SCOTT-RODINO ACT*

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Abstract

Prospective merger review is the most frequent application of antitrust law, though it exempts deals below certain size thresholds. When industries are highly segmented, these exemptions can lead to *stealth consolidation*: anticompetitive mergers whose small size enables them to escape regulatory scrutiny but whose cumulative effect is large. I study this using an amendment to US law that raised reporting thresholds, leading to an abrupt, 70% drop in premerger notifications to the government. Below the amended threshold, enforcement fell to almost zero while mergers *between competitors* rose sharply. Exempt transactions consolidated hundreds of billions of dollars in US output.

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Antitrust laws serve a vital role in society, safeguarding against mergers-to-monopoly and the ensuing deadweight losses that would occur in their absence. Their most frequent application by far is prospective merger review,[1] wherein government agencies assess the anticompetitive effects of deals *prior* to their completion. This review process depends crucially on the relevant authorities receiving advanced notice of pending transactions, and as a result premerger notification requirements exist in the majority of the over 150 countries and supranational unions with antitrust laws.[2] Such programs exempt transactions that fall below certain size thresholds, which can screen out minor deals unlikely to have major effects on market structure. For industries that are highly segmented, however, these exemptions can result in *stealth consolidation*: anticompetitive deals whose small size enables them to escape regulatory scrutiny but whose cumulative effect is large.

To illustrate, consider two large industries that are otherwise identical except that the second is geographically segmented. To fix ideas, suppose the relevant market of the first is national, e.g., as in automotive manufacturing, while the second is local, e.g., as in funeral services. If, at some point, firms in the first industry desire to merge to reduce rivalry, these attempts would likely require premerger notifications, thereby inviting antitrust scrutiny. In the second industry, however, even mergers to monopoly may fail to trigger a single filing, and such events are not without historical precedent. Recent examples range from web-based business services and equipment manufacturing to healthcare and death care.[3]

Exempt deals, though, are economically substantial. Mergers transfer trillions of dollars in ownership rights each year, and the vast majority fall *below* premerger reporting thresholds. Moreover, thresholds have been increasing worldwide for decades. As a result, stealth consolidation may play a role in increasing aggregate concentration and, in turn, affecting markups [De Loecker and Eeckhout, 2017] and private investment [Gutiérrez and Philippon, 2016], aiding the rise of "superstar" firms [Autor et al., 2017], and even impacting the share of output going towards profits [Barkai, 2016] and away from labor [Elsby et al., 2013, Karabarbounis and Neiman, 2013].

I study these issues in the context of US merger activity and antitrust enforcement. The country's premerger notification program was established with the 1976 Hart-Scott-Rodino ("HSR") Antitrust Improvements Act, regarded today as one of the most important pieces of antitrust legislation in the

[1] In the last decade, e.g., the US Department of Justice investigated 758 mergers and reviewed 15,311 premerger filings. All other competition-related investigations totaled only 509.

[2] Most countries without them are creating them. Egypt is the most recent. Note that Egyptian mergers affecting cross-border commerce with other COMESA member states already require a premerger notification.

[3] For the first and second, see *US v. Bizarrevoice*, an online review platform, and *US v. Election Systems & Software*, a voting equipment manufacturer, respectively. For the third and fourth, see Section 4.

20th century [Scher, 1977, Baer, 1996]. The Act provides exemptions based on revenues, assets, the proportion and value of control transferred, and the type of economic activity the parties are engaged in. In practice, though, the Act can be summarized as exempting deals only if the target firm has assets under $10 million (and sales under $10 million, in the event the target is engaged in manufacturing). The only major modification of the program came with a December 27, 2000 Amendment to the Act, which can be summarized as additionally exempting transactions valued at less than $50 million, i.e. the "amended threshold". Figure I shows the dramatic effect on notifications. They rise throughout the 1990s alongside mergers from just over 1,000 to nearly 4,000, but as the Amendment takes effect they fall abruptly by 70%. In short, the competition authorities stopped receiving details about—or warning of—most previously-reported US mergers.

[Figure I about here.]

My data consists of premerger notifications and antitrust enforcement actions, compiled by the US Department of Justice ("DOJ") and Federal Trade Commission ("FTC"), and of reported US mergers, collected by Thomson Reuters. These measures are observed annually from 1994 to 2011, above and below the amended threshold, so variation occurs due to the timing of the Amendment and the size of the transactions. Notably, 30% of all enforcement actions prior to the Amendment target deals valued at less than $50 million, which rejects the notion that smaller deals are unlikely to cause anticompetitive harm. In the merger data, additional variation occurs because deals are categorized as either horizontal or non-horizontal. Horizontal deals are defined by the target and acquirer operating in the same narrowly-defined industry, so they often involve a merger between direct competitors. Thus, they present a distinct concern.

I first estimate effects on enforcement. If premerger notifications are crucial to the detection and challenge of anticompetitive deals, then agency actions directed towards mergers valued at less than $50 million should decline post-Amendment. I find that DOJ and FTC actions directed towards newly-exempt transactions fall sharply from about 150 per year to near zero. (Note that this is of no presumed fault of the US agencies, only of the legislation.) A coincidental shift towards less aggressive policy is an unlikely culprit. For deals valued at or above $50 million, merger activity and enforcement actions track closely with one another throughout the sample.

I then estimate the extent of stealth consolidation. If infrequent enforcement encourages anticompetitive deals, then horizontal mergers valued at less than $50 million should rise post-Amendment. I employ a difference-in-difference ("DD") research design, which controls for shifts in merger activity

over time by comparing the post-Amendment change in horizontal mergers to the post-Amendment change in non-horizontal mergers. I also employ a triple-difference ("DDD") research design, which additionally controls for shifts in horizontal merger activity over time by comparing the aforementioned DD estimate to one obtained on mergers valued at or above $50 million. I find that the decrease in enforcement leads to an increase in mergers between competitors. Below the amended threshold, horizontal and non-horizontal mergers track very closely with one another prior to the Amendment but diverge sharply after the it. This is unlikely to be driven by factors increasing horizontal merger activity overall: above the amended threshold, horizontal and non-horizontal mergers track very closely with one another *throughout the sample*.

DD and DDD estimates are close in magnitude and precision. They indicate a 19 to 22 percentage point increase in horizontal, newly-exempt mergers—between 253 to 324 economically-relevant firms each year that are acquired in response to the Amendment. These mergers consolidate an additional $32-40 billion of annual US output over the post-Amendment period. If one considers all horizontal mergers falling outside the purview of the Act over the full sample, then stealth consolidation transfers ownership over $250-325 billion in annual US output. For a sense of scale, this is 32-44% of the increase in four and eight firm industry concentration over the sample.

While there is little or no academic research examining these issues or quantifying their importance, the idea is certainly known to practitioners. For example, one prestigious, multinational law firm explicitly advises its clients with respect to "smaller scale transactions" that the "use of terms like 'dominant,' 'powerful,' 'rationalizing,' and 'strength' tend to get the attention of the regulators when used in reference to a completed transaction" [Murphy, 2016]. Another states, "Not only do competitors and frustrated suppliers have an incentive to *tell the agencies about non-reportable deals* in their markets, they can provide significant market information and direction on issues for greater focus" (emphasis added). Remarkably, the firm adds that "it is prudent to avoid rapid and sudden price increases in the first year after closing, particularly if they are not tied to cost increases," suggesting that although these transactions may permit higher markup through reduced rivalry, one should be careful to not broadcast this fact [Farrington et al., 2015].

This paper ties into a recent, growing literature on secular trends in market structure, markups, investment, and income (described briefly at the beginning of this section). If declining competition is driving these trends, then this paper provides one potential antecedent. Moreover, to the extent that "killer acquisitions" shutdown small rivals and eliminate future competition [Cunningham et al., 2017], or to the extent that concentration facilitates entry barriers, stealth consolidation may also contribute to

the decline in economic dynamism in the US [Decker et al., 2014]. Notably, these changes—particularly those evidenced by US data—coincide with or accelerate around the effective date of the Amendment.[4] Other candidate explanations include increasing common ownership of across rival firms by asset managers [Azar et al., 2016, Antón et al., 2016] and less restrictive antitrust policy overall following the *1982 Merger Guidelines* and influential work of Robert Bork [Peltzman, 2014], though these are probably complementary rather than competing theories with respect to the present work.[5]

1 Institutional details

Requiring notification

In the absence of premerger notification requirements, US antitrust enforcement was relatively ineffective [Baer, 1996]. The responsibility for discovering mergers near their completion fell to the agencies and proved difficult. In the event an anticompetitive deal was not spotted and challenged quickly, the process of *ex post* unwinding was so slow and expensive that it came to be known as "unscrambling the egg." When, for example, El Paso Natural Gas Co. acquired its only potential rival in a market, the government's challenge lasted 17 years and involved seven trips to the Supreme Court [Signs, 2015]. As a result, the agencies balked at pursuing completed deals and, in response, firms merged "speedily and surreptitiously" to avoid detection. Antitrust entered an era of what are euphemistically called "midnight mergers" [Baer, 1996].

To combat the problem, Congress provided bicameral, bipartisan support to the 1976 Hart-Scott-Rodino ("HSR") Antitrust Improvements Act, which established the US premerger notification program. Firms who wish to merge and are not explicitly exempted by the Act must notify the agencies of their intentions. They then must wait a predetermined period—about a month—before closing the deal.

The Act provides exemptions. Transactions in the ordinary course of business, like an airline's purchase of a jet, or those that do not affect US commerce, like the combination of firms that only operate in Canada, do not require a filing.[6] There are also exemptions based on size. In particular, a filing is required when both a "size-of-persons" and "size-of-transaction" test are met. The first of these tests is met if (a) the acquired party is engaged in manufacturing, has sales or assets of $10 million

[4] Profit shares roughly triple through the early-to-mid 2000s (see Figure 2(b) in particular of Barkai [2016]). Weakness in private fixed investment starts in the early 2000s (see Figures 2 and 4 in particular of Gutiérrez and Philippon [2016]). Declining dynamism accelerated since about 2000.

[5] For example, premerger notification program exemptions may be expediting many "common" ownership transfers. They may also work in concert with the circa-1982 enforcement changes that eliminated *per se* illegality for horizontal mergers.

[6] There are other exemptions, e.g., for hotels without casinos, which are described in the Appendix.

or more, and the acquiring party has sales or assets of $100 million or more, (b) the acquired party is not engaged in manufacturing, has assets of $10 million or more, and the acquiring party has sales or assets of $100 million or more, or (c) the acquired party has total assets of $10 million or more and the acquiring party has sales or assets of $100 million or more. The second of these tests is met if (a) 15% or more of the voting securities or assets are acquired or (b) an aggregate amount of voting securities or assets in excess of $15 million are acquired.

Though the Act is written for a host of contingencies, for almost all deals the rules simplify considerably. First, the acquirer is almost always larger than the target, so the size-of-persons test hinges on the target's financial statements alone. Second, deals that transfer small ownership stakes can be ignored. In the first year of the data, for example, they account for only about 2.5% of notifications and less than 2.0% enforcement actions. Moreover, these deals by definition usually do not involve changes of control, so they are unlikely to have operational impact. If one ignores them, i.e. transactions where less than 15% of voting rights change hands, the size-of-transactions test is always satisfied. In practice, then, the premerger notification requirement of the Act turns on whether the target has assets under $10 million (and sales under $10 million, in the event the target is engaged in manufacturing).

Amending the Act

On December 20, 2000, President Clinton signed into law an Amendment to the Act, effective February 2, 2001, whose main purpose was to modify the size and nature of the aforementioned thresholds. First, with respect to the size-of-transaction test, criterion (a) was eliminated while the threshold in criteria (b) was moved from $15 million to $50 million. Second, in all cases where the size of the transaction exceeded $200 million, the parties would have to report the deal, regardless of whether the size-of-persons tests was met or not. To summarize the Act, as amended, no deal would be reportable if the transaction size was under $50MM, all deals would be reportable if the transaction size was over $200MM, and for deals whose transaction size fell between these amounts, the size-of-persons tests would apply. Last, all dollar-based thresholds increase with gross national income after September 30, 2004.

For almost all mergers, the Amendment amounted to one crucial, almost immediate change: for parties meeting the size-of-persons test, the size-of-transactions test threshold rose from $0 to $50 million. The 15% transfer-of-control criterion can be ignored, following the logic above, as can the elimination of the size-of-persons test for transactions over $200 million. For the latter test to bind,

a deal must be valued at twenty times the underlying assets or more (and/or at twenty times sales or more, if the target was engaged in manufacturing), which is very unlikely. The Amendment also stipulated a trivial filing fee increase, equal to, at worst, 0.0016 of the transaction value. The Appendix provides more detail.

2 Data

Sources

The "Hart-Scott-Rodino Annual Report" provides data on the US premerger notification program. The DOJ and FTC jointly author the report, which counts the number of transactions for which the agencies receive premerger notifications ($Notifications$) and the number of enforcement actions taken on these transactions ($HSRActions$).[7] Each measure is available above and below the amended threshold. To count agency actions taken outside the scope of the Act, I turn to the annual "Workload Statistics" of the DOJ. The report provides the number of "non-HSR civil investigative demands" ($NonHSRs$).[8]

The "Thomson Reuters Mergers & Acquisition database" provides transaction details. It is an industry-leading source of information on worldwide ownership data and heavily relied upon by academics as well as practitioners. Included are the transaction date of the deal, the transaction value, and the industry, revenue, and assets of the target and acquirer, where available.[9] Transactions fall into three groups: those that are never exempt from the Act, newly exempt due to the Amendment, and always exempt (because they do not involve US commerce, fail the size-of-persons test, etc.). The research design centers around comparisons between the first two, so the third group is excluded (except in Table II, where it is otherwise noted). The Appendix describes variable construction in detail.

Summary

Panels A-B of Figure II plot mergers and notifications over time, above and below the amended threshold. Over 57,000 mergers comprise the sample, which spans eighteen years. The mean number of mergers each year is 3,180. As few as 2,070 and as many as 4,996 firms are acquired in a given year.

[7] The latter include both "clearances" and "second requests," which closely proxy for antitrust investigations and challenges.

[8] These are the first step to challenging a nonreportable and/or consummated deal. The FTC does not publish this statistic, but it can be approximated by the DOJ's figure, since on all other dimensions these agencies' actions are highly correlated. (For example, correlation in formal merger enforcement actions between 1994 to 2011 is 77%, with each contributing equally, i.e. 414 for the FTC and 411 for the DOJ.)

[9] In rare cases, an alternative data provider, CapitalIQ, has transaction details that Thomson Reuters does not. When possible, I use the additional data sources to fill in missing transaction value, sales, and asset figures.

The DOJ and FTC receive advanced notice of 31,464 pending transactions over this period, as required by the Act.

[Figure II about here.]

Comparing the plots over time, it is clear that the Thomson Reuters data boasts not only good coverage but also accurate information. Prior to the Amendment, when the total number of notifications and mergers should be near one another, the two measures differ by 19%. Over all years, but restricting the sample to above-the-amended-threshold observations, for which notifications are always required, they differ by 23%. This is not surprising, since some merging parties each year claim exemptions that I do not observe. Paramount to this, the ratio of above-the-amended-threshold to below-the-amended-threshold observations tallied by the DOJ and FTC prior to the Amendment (0.716) almost exactly equals the ratio based on the asset, sales, and transaction values extracted from Thomson Reuters (0.722). Perhaps most compelling, notifications and mergers track closely with one another from year to year (modulus the affect of the Amendment). Prior to the Amendment, the correlation between these two is 93%. Over all years, but restricting the sample to above-the-amended-threshold observations, the correlation is 91%.

Validation

These graphs also validate the use of the quasi-experiment to study stealth consolidation. They rule out that a drop in merger activity overall—perhaps related to the "dot com" bust and ensuing recession—drives the aforementioned 70% drop in notifications. In fact, mergers activity falls less than 25% year-over-year and recovers completely by the mid-2000s. Notifications never recover.

They also confirms that, conditional on merger activity, below-the-amended-threshold notifications account for effectively all of the drop. These fall abruptly from over 2,000 in the year prior to the Amendment to zero, or very close to it, in the years subsequent to the Amendment.[10] Outside this drop, though, other pre/post-Amendment comparisons are similar to one another. Ratios of post-2001 to pre-2000 above-the-amended-threshold mergers, above-the-amended-threshold notifications, and below-the-amended-threshold mergers are all between 0.85 and 0.93.

[10] In the year that the Amendment took effect, they total 300. This is roughly consistent with sub-$50MM transactions being required for just over a month in that year.

Relevance

For an initial sense of harm caused by nonreportable mergers, note that 30% of all enforcement actions taken by the DOJ and FTC from 1994 to 2000 were directed towards mergers whose transaction size fell below $50 million. This is lower than the proportion of all mergers that these deals account for, which squares with the notion that smaller deals are on average less harmful, but is nonetheless striking. If enforcement actions provide an unbiased measure of harm, then the Amendment could blind the authorities to nearly one-third of all anticompetitive mergers—even before one allows for an equilibrium response by firms, which will increase this proportion. Moreover, since "mega-mergers" receive widespread media attention,[11] they may face more stringent enforcement, in which case this yields a *lower* rather than *upper* bound on harm from exempt deals.

3 Empirical framework

Enforcement

The agencies are not restricted to challenge only deals for which they've received a premerger notification. Any deal can be challenged, regardless of size or completion status. Since an increase in agency actions taken outside the purview of the Act can, at least in theory, compensate for a drop in those taken within it, the effect of the Amendment and of the thresholds more generally is still unclear. Thus, the first empirical question is whether and by how much enforcement rates vary based on whether the competition authorities receive advanced warning of an impending deal.

To measure the effects of the threshold on enforcement, I exploit variation provided by the Amendment, which eliminates the premerger notification requirement for a well-defined set of prospective mergers in the data. I measure enforcement both with $HSRActions$ and with the sum of $HSRActions$ and $NonHSRs$, and I identify the effect of premerger reporting by comparing pre- and post-Amendment enforcement rates for newly-nonreportable transactions. I can also contrast this result with one derived from transactions above the amended threshold, i.e. never-exempt transactions. Previewing the result somewhat, the comparisons reported in the following section are rather stark, so I omit a lengthier discussion of identification and inference here.

[11] The AT&T and T-Mobile, Nasdaq and New York Stock Exchange, and Aetna and Humana proposed mergers are all recent examples.

Stealth consolidation

In the event that enforcement rates are much lower for exempt deals, firms may respond with stealth consolidation. If they do, then the 30% figure arrived at in the prior section may significantly understate harm from exempt deals, since it is based on a selected set of prospective transactions that are not obviously anticompetitive. Thus, the second empirical question is whether and by how much parties contemplating an anticompetitive merger are more likely to follow through if no premerger notification is required of them.

To measure the response to decreased antitrust scrutiny, I exploit the fact that horizontal mergers are anticompetitive relative to non-horizontal ones. That is, transactions in which the target and acquirer operate in the same primary four-digit SIC code industry are by definition more likely to reduce rivalry.[12] This view is shared by the US competition authorities: since 1992, they have even titled their general merger evaluation procedures the "Horizontal Merger Guidelines." I then rely on variation provided by the Amendment.[13]

I employ two identification strategies. A "DD" design compares the number of horizontal and non-horizontal mergers, below the amended threshold, before and after the Amendment. The DD estimating equation is given by

$$\ln Mergers_{it} = \beta \; I_i^H \cdot I_t^{Post} + \gamma I_i^H + \sum_{t=1994}^{2011} \left(\zeta_t I_t + \eta_t \; I_i^H \cdot I_t \right) + \epsilon_{it}. \quad (1)$$

i indexes the merger type, which is either horizontal or non-horizontal. I_i^H takes a value of one for horizontal mergers and zero otherwise. t indexes the year, so I_t denote year dummies. I_t^{Post} takes a value of one if $t > 2001$ and zero otherwise. The coefficient of interest is β.

Unbiased DD estimates require error in the model to be uncorrelated with the interaction between I_i^H and I_t^{Post}. The existence of factors aside from the Amendment that yield relatively more horizontal mergers post-2001 violate this condition. A DDD design, however, helps rule out confounding factors.

[12] Recall that the main problem for the agencies, given the cost and difficulty of *ex post* unwinding, and in particular of trying to "unscramble" assets, is the timing rather than the existence of a disclosure. Thus, there is no *per se* tension in assuming I observe on-average anticompetitive deals in the the Thomson Reuters data but that the agencies are unaware of them for the purposes of quickly investigating and potentially blocking the transactions.

[13] The setting tends to preclude a "regression discontinuity" research design, i.e. one that relies on a discontinuity in the probability mass distribution of transaction values at the threshold. One reason is that merging parties tend to agree on salient round number values and the US legislature selected such a value for the amended threshold. To illustrate, there are 5, 7, 9, and 10 deals valued on the intervals [$49.75MM,$49.85MM), [$49.85MM,$49.95MM), [$50.05MM,$50.15MM), and [$50.15MM,$50.25MM), respectively, but 293 deals at exactly $50,000,000. One has look as far below $50MM as $45MM and as far above $50MM as $55MM to find comparable mass in the distribution, and even still, only 200 and 142 targets transact at these values, respectively. Another reason is that manipulating transaction values, assets, or sales to avoid notification is explicitly forbidden by the Act and would entail severe penalties.

Intuitively, it compares the DD estimates that result from regressing on below-the-amended-threshold mergers to those that result from regressing on above-the-amended-threshold mergers. To illustrate, suppose that horizontal mergers increase relative to non-horizontal mergers post-Amendment by exactly the same amount above and below the amended threshold. The Amendment is an unlikely culprit, since it only affected below-the-amended threshold mergers. On the other hand, if there is a large relative post-Amendment increase in horizontal mergers only below the amended threshold, then the data provides evidence of stealth consolidation. The DDD estimating equation is given by

$$\begin{aligned}\ln Mergers_{ist} = \theta\ I_i^H \cdot I_s^{Below} \cdot I_t^{Post} \\ + \kappa I_i^H + \lambda I_s^{Below} + \mu\ I_i^H \cdot I_s^{Below} + \sum_{t=1994}^{2011} \left(\phi_t I_t + \chi_t\ I_s^{Below} \cdot I_t + \psi_t\ I_i^H \cdot I_t \right) + \nu_{ist}.\end{aligned} \quad (2)$$

s indexes the size of the transaction. I_s^{Below} takes a value of one for below-the-amended-threshold mergers and zero otherwise. The coefficient of interest is θ.

4 Results

Is enforcement affected?

To assess whether and by how much threshold changes impact enforcement, Panels C and D of Figure II report mergers and agency actions over time. Very apparent is the devastating effect of the Amendment on enforcement rates below the amended threshold, shown in Panel C. HSR-related actions fell from roughly 150 per year in the late 1990s to near zero in the years following the February 2001 law change without any appreciable increase in enforcement measures taken outside the Act.

Equally apparent, the elimination of thousands of premerger reviews did not, it seems, free up agency resources to increase scrutiny of mergers meeting the amended size-of-transactions test threshold. As shown in Panel D, *Mergers* and *HSRActions* above the amended threshold track closely with one another throughout the sample. It is impossible to say whether it is small or large deals whose enforcement is inelastic with respect to agency resources. It does, though, seem unlikely that this was driven by an Executive Branch party change, since there is no obvious reversal following the 2008 election of a Democrat.

Do firms stealth consolidate?

To assess how and whether firms respond, Figure III plots the log number of horizontal and non-horizontal mergers over time. Above the amended threshold, the Amendment does not affect reporting requirements—these deals always necessitate a notification—and should not affect the composition of transactions. The top panel confirms this hypothesis. The bottom panel shows a similar relationship, but only through 2001. At that point, horizontal and non-horizontal mergers diverge noticeably. This departure is evidence of stealth consolidation. In other words, when advanced warning to the DOJ and FTC is no longer required, as per Panel B of Figure II, resulting in a much lower likelihood of costly enforcement, as per Panel D of Figure II, direct competitors are much more likely to merge.

[Figure III about here.]

To quantify these differences, I turn to Table I. The first two columns report estimates from equations 1 and 2, respectively. Horizontal, below-the-amended-threshold mergers increase between 19% and 22% relative the control groups. Estimates are significant at the 1% level, and the fit of the model is very good. DD and DDD estimates are close. To see why, and to more precisely rule out that the bottom panel of Figure III reflects an exaggerated version of the top panel, column 3 re-estimates equation 1 for above-the-amended-threshold mergers. As opposed to the prior column, here we see a small, statistically insignificant decrease in horizontal deals.

[Table I about here.]

The last three columns replicate the first three, except that the left-hand size is measured in levels rather than logs. As a result of the Amendment, an additional 253 to 324 horizontal, exempt mergers occur each year. Over the post-Amendment period, this translates to as many as 3,240 competition-reducing business combinations. Additional specifications, estimated in the Appendix, indicate that these results are highly robust.

Note that these mergers are likely *mean illegal* by Section 7 of the Clayton Act. This section prohibits deals that "may substantially reduce competition" and serves as the legal basis for agency investigations and challenges as well as court orders that block or restructure US mergers, so it is the portion of US law from which the Amendment *de facto* shields mergers in the bottom panel. The divergence there reflects mergers that would not have otherwise been attempted, but for the higher threshold under the Amendment—less the parties suffer high expected enforcement costs of aborting or restructuring the transactions. Thus, by revealed preference, the gap comprises deals that are on

average unlawfully anticompetitive. (An alternative explanation for this pattern in the data involves the agencies disproportionately hassling parties to horizontal transactions under the purview of the Act, although this contradicts the consensus view of the US competition authorities[14] and probably the existing enforcement statistics.[15])

Potential impact

Among these more than 3,000 mergers, target net revenues average $9.2-12.3 million. Thus, these deals consolidate $30-40 billion in US output over the post-Amendment period. If one considers all horizontal mergers outside the purview of the Act over the full panel (regardless of whether they pass the size-of-persons test), then there are roughly 35,000 relevant transactions among which target net revenues average $7.1-9.3 million. The caveats required to accurately equate stealth consolidation to economy-wide changes in market structure—let alone the real effects of those changes—are too numerous to list. Nonetheless, if the acquiring parties in these deals are the industries' largest firms, and if entry barriers in their respective industries are high enough to preclude subsequent entry, then stealth consolidation could account for roughly 32-44% of the gross increase in output accounted for by the largest four and eight firms in their respective six-digit NAICS code industries. The Appendix provides detailed calculations.

Incidence across industries

For a sense of effected markets, I turn to Table II, which lists industries in which horizontal, exempt mergers are most common. Panel A sorts by proportion. Services dominate the list. Most are difficult to transport, consistent with the idea that segmentation (and in particularly the type imposed by geography) leads to smaller firms and facilitates stealth consolidation. This does not imply, though, that only local- or service-oriented businesses are affected—merely that these industries are less heterogeneous. This is apparent from Panel B, which sorts the industries by number rather than proportion. Many geographically concentrated and/or manufacturing-oriented industries top the list, including thousands of deals among medical device, pharmaceutical, and semiconductor producers.

[Table II about here.]

[14] That is, they are very rarely accused of being too "interventionist" and are often described as too "conservative." See, e.g., Voorhees [2014] for a summary of opinions on this subject.

[15] For example, more than 60% of DOJ "second requests" result in public challenges. From 1994 to 2011, 96% of these result in either a restructured/abandoned transaction or win in the federal court system. Also, more than 70% of FTC "second requests" result in formal enforcement actions over this period. Of these, substantially all result in settlement [Coate, 2012].

Healthcare deals are overrepresented, which are of particular concern since the sector accounts for a large, increasing share of public spending, was already highly concentrated at the time of the Amendment, and is home to research showing market power impacts not just price but quality of care.[16] There is recent evidence of this among hospitals [Gowrisankaran et al., 2015, Dafny et al., 2016] as well as dialysis centers [Eliason, 2018, Eliason et al., 2018], both of which appear in Panel A, and growing interest in post-acute care services, [Eliason et al., 2016, Einav et al., 2017], several of which appear in Panel B. Similarly represented are the "domestic outsourcing" industries, which have grown with the fissuring of the US workforce [Katz and Krueger, 2016].

Perhaps most striking, though, is that (aside from legal services) the top two industries here are home to highly-publicized antitrust investigations. In packaged ice, for example, 80% of deals are horizontal and exempt, and almost all involve Reddy Ice or Arctic Glacier. According to court documents, these deals contributed to a far-reaching price fixing conspiracy in which the two firms, along with a third co-conspirator, acquired smaller, independent rivals and subsequently allocated customers amongst themselves. Executives of both companies pleaded guilty to violations of the Sherman Act.

In the death care industry, as another example, state-level regulators have been critical of horizontal, exempt mergers since the late-1990s. A Florida Senate states, for example, "The consolidation of the funeral and cemetery industry in Florida has been characterized as 'creeping expansion' whereby a larger corporation buys one small or independent business at a time until the corporation's acquisitions represent a substantial presence in a particular region." It goes on to state, "Due to the small amount of assets involved in these individual buy-outs, the transactions do not trigger automatically any federal or state antitrust laws." The effects of these deals are measurable. Court documents from one related lawsuit state, "Records of the Federal Trade Commission 'clearly show that [Loewen] has consistently raised prices in almost every instance' in which it established market dominance."[17]

5 Conclusion

Many direct competitors would merge but for the costly enforcement actions they would face, so legislators should expect an equilibrium response to relaxing antitrust law. For example, as the probability of detection, investigation, and challenge falls, the likelihood that rivals pursue mergers

[16]See, e.g., Gaynor, Ho, and Town [2015].

[17]See *Jeremiah O'Keefe et al. v. The Loewen Group et al.*

rises. In the context of raising premerger notification program thresholds, which blind governments to many impending deals, the response is stealth consolidation. This is potentially very problematic in segmented industries, in which even small mergers can result in large increases in market power, in turn leading to sharp decreases in consumer welfare.

Mergers exempted from premerger notifications consolidated hundreds of billions of dollars in output since the mid-1990s in the US alone. Similar figures could obtain abroad, since thresholds have been rising worldwide. More work is, of course, needed to know their ultimate effect on market power, let alone consumer surplus and other real outcomes. This is left to future research.

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Figures

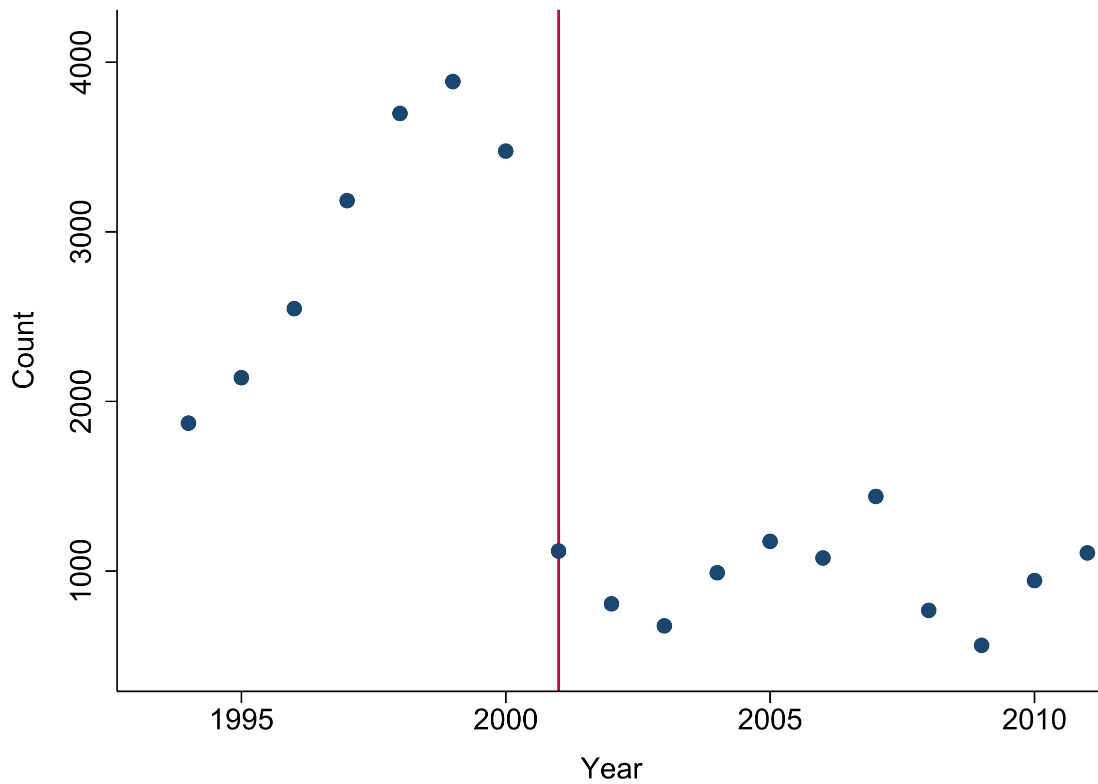

Figure I: *Notifications drop sharply when the Amendment takes effect.*

This graph plots premerger notifications filed in the US over time. Filings are received under the Hart-Scott-Rodino Antitrust Improvements Act and reviewed by the Department of Justice and the Federal Trade Commission. A vertical line marks 2001, the year the Act was amended to raise the size-of-transactions threshold at or above which mergers must be reported to the aforementioned US competition authorities.

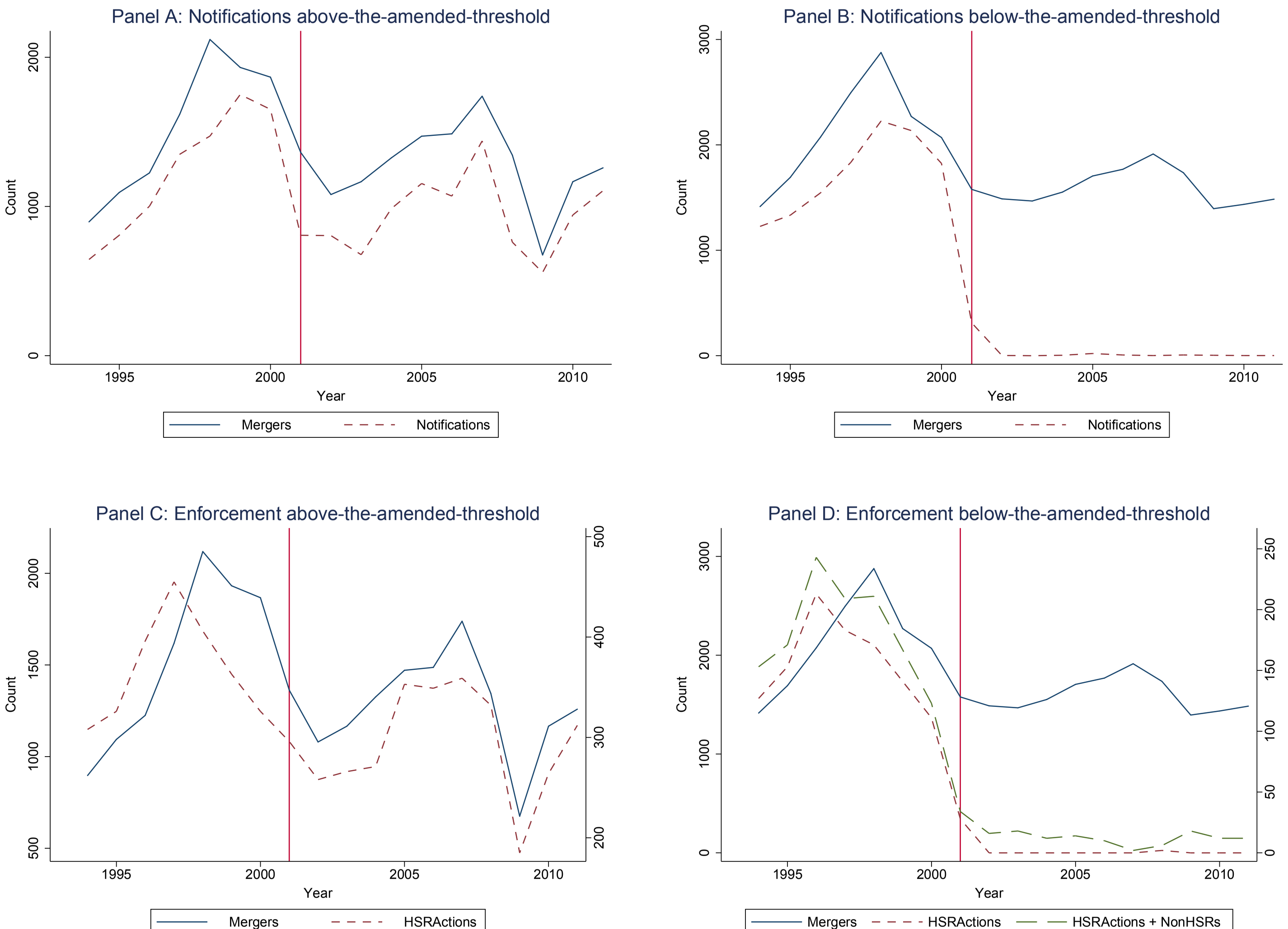

Figure II: *Effectively all of the decline in notifications and enforcement occurs below-the-amended-threshold.*

Panels A and B plot premerger notifications against mergers over time. Panels C-D plot agency actions against mergers over time (with the primary y-axis counting mergers and the secondary y-axis measuring actions). The left-hand side graphs are based on transactions valued at or above $50 million, so that they meet the amended size-of-transaction test and fall within the purview of the Act. The right-hand side graphs are based on transactions that are not. In all graphs, a vertical line marks 2001, the year the Act was amended to raise the size-of-transactions threshold. The Appendix provides an accompanying table sample statistics.

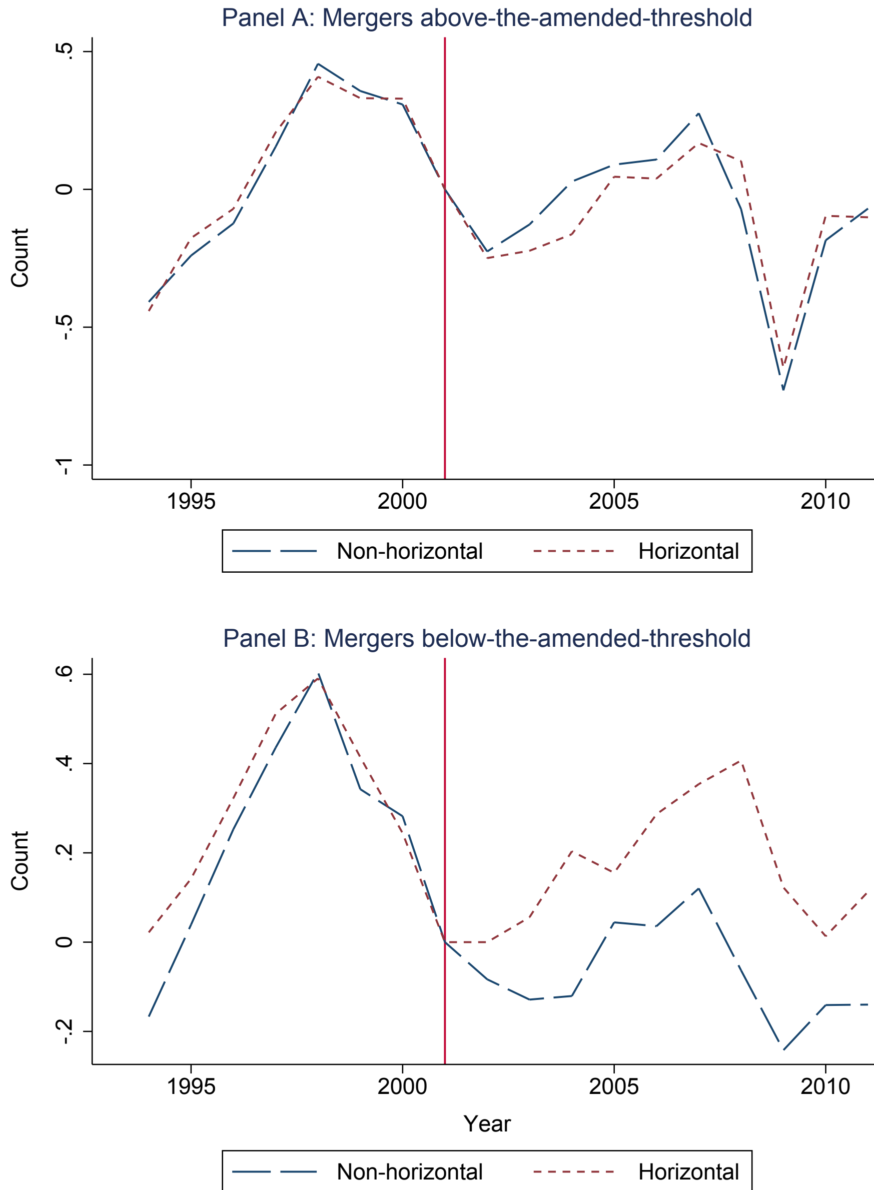

Figure III: *Horizontal, below-the-amended-threshold mergers increase following the Amendment.*

In both graphs, the x-axis denotes the calendar year of the mergers. The y-axis denotes the log number of mergers. Plotted values are reduced by the value they take in the year of the effective date of the Amendment. In other words, all lines intersect $y = 0$ *at* $x = 2001$. *Panel A is based on transactions valued at or above $50 million, so that they meet the amended size-of-transaction test and full within the purview of the Act. Panel B is based on transactions that are not.*

Tables

Table I: *Parameter estimates*

VARIABLES	(1) All	(2) Below	(3) Above	(4) All	(5) Below	(6) Above
$I_i^H \cdot I_s^{Below} \cdot I_t^{Post}$	.218			253		
	(.0504)			(54)		
$I_i^H \cdot I_t^{Post}$ (Below-the-amended-threshold)		.186			324	
		(.0457)			(87.4)	
$I_i^H \cdot I_t^{Post}$ (Above-the-amended-threshold)			-.0322			71.1
			(.0377)			(77.2)
Observations	72	36	36	72	36	36
R-squared	.997	.988	.993	.995	.96	.947

Columns 1-2 report estimates from equations 1 and 2, respectively. Column 3 reports estimates analogous to those reported in column 2 but restricts the sample to above-the-amended-threshold mergers. Columns 4-6 report estimates analogous to those in columns 1-3 except that the outcome measure is in level rather than log values. Robust standard errors are reported.

Table II: *Horizontal, exempt mergers by industry*

Panel A: Sorted by proportion of total		*Panel B: Sorted by count*	
Industry	Proportion	Industry	Count
Legal Services	82%	Prepackaged Software	4016
Ice Manufacturing	78%	Insurance Agents, Brokers and Service	845
Cemeteries and Crematories	75%	Crude Petroleum and Natural Gas	663
Uranium, Radium, Vanadium Ore Mining	72%	Business Services (NEC)	538
Credit Unions	70%	Pharmaceutical Preparations	467
New Car Dealers	68%	Refuse Systems	458
Elementary and Secondary Schools	67%	Semiconductors and Related Devices	451
Architectural Services	65%	Hospitals: General, Surgical, and NEC	442
Golf Courses and Country Clubs	65%	Radio Broadcasting Stations	420
Limousine Service	63%	Telephone Communications (Not Radio)	404
Public Relations Agencies	63%	Management Consulting Services	400
Water Supply	62%	Retail-Eating Places	400
Plumbing, Heating, and AC Contractors	61%	Real Estate Agents and Managers	365
Dental Laboratories	61%	Investment Advice	345
Cosmetology and Barber Schools	61%	Other Management Consulting Services	345
Fitness and Recreational Sports Centers	58%	Other Accounting Services	340
Insurance Agents, Brokers and Service	56%	Life Insurance	330
Fuel Dealers	56%	Gold Ore Mining	329
Other Accounting Services	56%	Legal Services	327
Motion Picture Theaters (Not Drive-Ins)	55%	Computer Facilities Management Svcs.	315
Kidney Dialysis Centers	53%	Periodicals: Publishing and/or Printing	291
Gold Ore Mining	53%	Advertising Agencies	284
Travel Agencies	51%	Engineering Services	273
Passenger Car Rental	50%	Surgical/Medical Instruments/Apparatus	261
Hospitals: General, Surgical, and NEC	50%	Radiotelephone Communications	260
Retail-Grocery Stores	50%	Cable and Other Pay Television Services	256
Retail-Eating Places	48%	Other Misc. Ambulatory Health Care Svcs.	256
Employment Agencies	48%	New Car Dealers	252
Collection Agencies	48%	Employment Agencies	249
Malt Beverages	48%	Home Health Care Services	247

This table reports thirty industries with the most horizontal, exempt mergers in the post-Amendment period. To provide a comprehensive list, it considers all mergers that fail to meet the amended size-of-transaction-test threshold (regardless of whether they meet the size-of-persons test). In Panel A, industries are sorted by the proportion of all mergers that horizontal, exempt mergers account for. In that panel, the first column reports the industry and the second reports the proportion. Panel B sorts by the number rather than proportion of these mergers. In that panel, the first column reports the industry and the second reports the number. "NEC" stands for "not elsewhere classified."

Online Appendix

STEALTH CONSOLIDATION: EVIDENCE FROM AN AMENDMENT TO THE HART-SCOTT-RODINO ACT [2018]

by Thomas Wollmann

1 Supplementary tables

1.1 Detailed summary statistics

Table I supplements Figure II in the body of the main text with summary statistics in tabular form.

[Table I about here.]

1.2 Robustness of main results

One potential concern with the research design is that the transaction values of the mergers have very wide support, with the sample including many mega-mergers that may provide a poor control group for mergers near the amended threshold. To assess the issue, Table II replicates Table I in the body of the main text but excludes all mergers whose adjusted transaction value exceeds $150 million. This cuts the number of mergers in the control group in half, providing a comparison set of transactions much nearer to the post-Amendment $50 million size-of-transactions test threshold. Yet, this leaves the parameter estimates nearly unchanged in magnitude and precision, which mitigates the concern.

[Table II about here.]

Another potential concern is that software mergers drive the results. Table II in the body of the main text shows that this industry accounts for a large number of horizontal, exempt mergers—about 10% of the total number of this type of transaction. To assess this concern, Table III replicates Table I in the body of the main text but excludes mergers in this industry. In particular, it excludes mergers in "Prepackaged software," SIC code 7372. Once again, the resulting estimates are very close to those that appear in the body of the paper, which mitigates the concern.

[Table III about here.]

2 Calculating potential impact

2.1 Effected output

Table I in the body of the main text indicates that the Amendment prompted an additional 3,240 horizontal, newly-exempt mergers from 2002 to 2011. Among these, the observed target net revenues in the Thomson Reuters database average $9.2. Target net revenues, however, are sometimes missing from the database, so for a sense of robustness and an alternate measure of average revenues, I turn to transaction values. I average the transaction values among these mergers and then translate these to revenue by dividing them by the average market value to sales ratio among S&P 500 companies, which is equal to 1.47. Using this approach, target net revenues average $12.3 million. Thus, these transactions account for gross consolidation of $32-40 billion in US output over the sample.

The calculations above reflect heightened merger activity induced by the threshold increase over the post-Amendment period. They do not, however, provide a sense of the total consolidation that might result from all transactions outside the scope of the Act. To do so, I relax the size-of-persons test restriction and consider all horizontal, exempt deals completed between 1994 and 2011, of which there are almost 35,000. Among these, observed target net revenues average $7.15 million. As above, I can also average transaction values and deflate by a factor of 1.47. This yields average target net revenues of $.9.3 million. (Note that it is unsurprising these figures are lower than those computed above; the averages here are based on deals that did not necessarily satisfy the size-of-persons test, so they are on average smaller transactions.) Thus, these transactions account for gross consolidation of roughly $250 billion to $325 billion of annual US output over the sample.

2.2 Scaled to economy-wide concentration changes

To put these figures in the context of overall consolidation, I turn to the US Census Bureau's Economic Census, which conducts an expansive survey of commercial activity every five years. To approximately match the start and end dates of the sample, I extract concentration data from the 1997 and 2012 Economic Census publications. To assess within-industry changes, I need to link the 1997 and 2012 publications at the six-digit NAICS code level. Fortunately a large majority—702 of 979—of the codes that appear in 1997 also appear in 2012.

Within these industries, the revenue accounted for by the largest four and eight firms increases by approximately $786 billion and $745 billion, respectively. (In percentage terms, the concentration ratios

increase 5.2 and 4.9 percentage points, respectively.) As stated in the body of the main text, the caveats required to equate prior (gross) consolidation figures to within-industry net consolidation figures are too numerous too list. Nonetheless, for a sense of scale, the $249-325 billion in exempt, horizontal mergers translates to 32-44% of the gross increases in concentration.

3 Additional information regarding the Amendment

An assumption of the paper is that the Amendment does not take effect contemporaneously with other statutory changes to antitrust law that would substantively influence my outcome variables. To the best of my knowledge, this is true. Another assumption is that the Amendment does not substantively affect my outcome variables except through the size-of-transactions test threshold change. This can be argued directly. First, Congress confined the Amendment to changes in the Act, and as the congressional report on the original 1976 legislation emphasizes, the "bill in no way alters the substantive legal standard of Section 7 [of the Clayton Act, i.e. the law governing merger control]." That is, the Act did not dictate any changes about which mergers should and should not be challenged. Further supporting this point, one of the Act's sponsors, Representative Peter Rodino, stated that"The [Act] makes procedural, rather than substantive changes in the Nation's antitrust laws" [Howell, 2001].

Second, the other changes the Amendment made are inconsequential to the results of the paper. The Amendment increased fees levied on some mergers, though these are negligible from the standpoint of the merging parties. Specifically, the fee for transactions valued at less than $50MM remained at $45,000. For transactions valued at between $50MM and $500MM, fees increased from $45,000 to $125,000; for transactions larger than this, fees increased to from $45,000 to $200,000. Thus, the fee increase amounted to less than 0.0016 of the transaction value in the worst case. The Amendment also stipulated that all thresholds will increase at the annual rate of growth of gross national income, based on a September 30 fiscal year basis, beginning fiscal year 2005. (The data adjustments account for this, as described in the following section.)

4 Dataset construction

4.1 Where the source is the HSR Annual Report

Individual HSR filings are neither published publicly nor subject to FOIA requests. However, the agencies conveniently bin the filings based on their characteristics—transaction size, target assets, etc.—and then report the number of filings within each bin annually. The agencies also report raw, aggregated counts of transactions by month. The data can be accurately extracted via optimal character recognition ("OCR") back to 1994. From these I construct $Notifications$ and $HSRActions$ above and below the amended threshold. The raw figures require some adjustments, e.g. from a September 30 fiscal year end to a calendar year end. These are described below. It may be useful to point out, though, that these adjustments do not drive any results in the paper, and in particular, that they do not "create" the dramatic decline in notifications evidenced by Figure I in the body of the main text. In fact, the drop is even more pronounced when one uses the raw counts of notifications.

To arrive at $Notifications$ below the amended threshold, I start with the number of filed transactions valued below $50 million, provided in the Report's Exhibit A Table I. To arrive at $Notifications$ above the amended threshold, I start with the number of filed transactions valued at or above $50 million, also provided in the Report's Exhibit A Table I. I make three adjustments. First, some deals involve transfers of small ownership stakes, which are not relevant for the purposes of my paper. They presumably do not transfer control, and indeed they are hardly ever investigated, as the Reports show. To exclude these deals, I turn to the Report's Exhibit A Table V. In the pre-Amendment years, the table reports deals that involve transfers of less than 25% but do not meet any dollar-based threshold. I remove these from below-the-amended-threshold $Notifications$. In all years, the table reports deals that involve an ownership transfer of less than 25% but met the dollar-based size-of-transactions test threshold. I remove these from above-the-amended-threshold $Notifications$. Second, some deals involve undefined industry classifications, as shown in the Report's Exhibit A Tables X and XI. In particular, the SIC and NAICS codes are described as either "not defined," "not available," or "non-classifiable," which the Report states represent "newly-formed companies, companies with no United States operations and notifications filed by some individuals" as well as "filings by newly-formed entities." These are not relevant for the purposes of my paper, so I remove them. Third, the resulting counts are converted from a September 30 fiscal year end basis to a calendar year end basis.

To arrive at $HSRActions$ below the amended threshold, I sum "clearances" and "second requests" related to transactions valued below $50 million. Analogously, to arrive at $HSRActions$ above the

amended threshold, I sum "clearances" and "second requests" related to transactions valued at or above $50 million. Since only one of the agencies can investigate a merger at a particular time, they must grant each other "clearance" to investigate. Thus, "clearances" capture early stage investigations. If a deal appears anticompetitive, the agencies issue a "Request for Additional Information and Documentary Materials," commonly known as the "second request." Roughly 70% of second requests result in formal, legal challenges. Thus, "second requests" provide a measure of more advanced investigations.

4.2 Where the source is the DOJ Workload Statistics report

The DOJ publishes annual "Workload Statistics" that provide a measure of enforcement related to deals that fall outside the scope of the US premerger notification program. Specifically, it reports the number of "non-HSR civil investigative demands" each year, which the body of the main text denotes $NonHSRs$. This variable is a close proxy for the number of investigations into exempt mergers. A "non-HSR CID," as it is commonly called, is the first step in challenging a nonreportable/consummated deal. As stated in the body of the main text, the FTC does not publish this statistic, so I approximate the total by doubling the DOJ's figure, since along all other dimensions agency antitrust actions are highly correlated. For example, the correlation between FTC and DOJ formal merger enforcement actions between 1994 and 2011 is 77%, and each contribute almost equally to the total, with the FTC taking 414 actions and the FOJ taking 411. This is very unlikely to be crucial to the analysis, as Figure II in the body of the main text shows.

Note that legally the agencies cannot disclose which deals require an HSR filing, so technically the measure includes mergers that were subject to but not investigated under the Act at an earlier time and are being revisited after completion. In practice, this is not a problem. Hardly any challenged, already-completed deals fit this description, which one can ascertain from either the Thomson Reuters data, court documents, or statements by agency officials. Moreover, $NonHSRs$ are very few in number regardless of whether one looks at the pre- or post-Amendment period, so this caveat does not impact the results of the paper anyway.

4.3 Where the source is Thomson Reuters

I extract data from the "Thomson Reuters Mergers & Acquisitions" database using "Thomson ONE," an web-based graphical user interface. The database is the industry-leading source of information on worldwide ownership changes and serves as the basis for a host of Thomson Reuters products.

For example, it is the basis for SDC Platinum, Deals Business Intelligence, and Eikon, which provides critical, real-time analysis to practitioners, including investment and commercial bankers. Note that each product is based on the same underlying merger data. They differ only in their presentation, timeliness of reporting, or non-merger data. Thomson Reuters data is updated as information is released. Among deals of a non-trivial size, i.e. those that satisfy the Act's size-of-persons test, the coverage and accuracy is likely to be very good, provided one does not use data from the prior few years. As evidence of this, the number and value of US M&A deals it provides track closely to aggregates provided by FactSET, an unrelated data source, until about 2012 to 2013. Note that adding these additional years does not affect the magnitude or significance of the main estimates.

Within the Thomson ONE interface, I extract data that satisfies the following criteria: "Deal Type" = "All Mergers & Acquisitions", and either "Target nation" = "United States of America" or "Acquiror nation" = "United States of America." The restrictions to US-based transactions follows from 16 CFR Sections 802.50 and 802.51, which exempt the acquisition of non-US interests and assets. Once the data is downloaded, I facilitate the use of string commands by placing acquirer and target names, "macro" and "micro" descriptions, and short business descriptions into lower case to facilitate string commands.

Some data are excluded as per the Act.

- Following 16 CFR Section 802.30, which exempts intraperson transactions, I exclude any deals where the acquirer and target name are the same. This involves dropping only 300 observations. These are presumably buyback tender offers (or other financial or legal maneuvers unrelated to control changes).

- Following 16 CR Section 802.3(a), effective 1996, which exempts carbon-based mineral reserves acquisitions, I exclude deals where the "target short description" includes "coal " or "oil and gas" starting in 1996. (Technically, this exempts only said assets below $500 million, but since it may be combined with other exemptions, this probably covers all carbon-based acquisitions. In any case, there are only 150 such deals in question.)

- Following 16 CFR Section 6802.2(e), which exempts hotels and motels without casinos, I exclude observations where the "target micro code" equals "HOTEL" and the "target short business description" does not include "casino."

- Following 16 CFR Section 802.9, which exempts "investment purposes only" deals, I exclude observations where the acquirer is an investment entity and Thomson ONE does not provide

the proportion of shares acquired or owned. I assume the acquirer is an investment entity if the "acquirer macro description" is "financials" but the following phrases do not appear in the "acquirer short business description": "credit," "ins br," "ins co," "insurance," "risk mgmt," "financing," "audit," "accounting." Following 16 CFR 802.63, which excludes acquisitions related to default on bona fide credit transactions, I exclude observations where the acquirer name is "creditor" or the "acquisition techniques" include "liquidation" or "bankruptcy acquisition."

- Following Section 18(a)(c)(1), which exempts real estate investment trusts, I exclude observations "acquirer short business description" includes "reit." Following 16 CFR 802.10, which exempts stock dividends/splits, reorganizations, management buyouts, and related transactions, I exclude observations where the "Acquisition techniques" include "Management Buyout," "Management Buy-in," "Recapitalization," "Leveraged Buyout," "Repurchase," "Restructuring," "Reverse Takeover," "Acquiror Includes Management," "Reverse LBO," "Sale and Leaseback," "LBO + Management + Employee," or "LBO + Employee Stock Plan."

- Following the Federal Deposit Insurance Act, the Bank Holding Company Act, and the Change in Bank Control Act, firms that provide banking services are always subject to at least one antitrust review, and oftentimes overlapping reviews, depending on their size and affiliation. Since they are less affected, or even unaffected by the Amendment, I exclude banks. In particular, I exclude observations where the "target short business description" includes "bank" or "bk", the latter of which is Thomson Reuters' abbreviation.

Also, I exclude observations where the percentage of shares acquired or owned is less than 15%. Only about forty observations are dropped. I also drop deals where one of these acquisition measures is over 100%. These are obviously errors, and there are only ten such observations. When these measures are missing, I replace them with 100%; a very large share of observations entail 100% transfers of ownership, so if Thomson Reuters failed to record the value, the number is very likely to be 100%. I replace the target's total assets with its net assets when the the former is missing but the latter is not; this applies only to a very small number of transactions.

I define a transaction as above-the-amended-threshold when its adjusted transaction value is greater than or equal to $50MM, or the target's adjusted net sales are greater than or equal to $50MM, or the target's adjusted total assets are greater than or equal to $50MM. I define a transaction as below-the-amended-threshold when its adjusted transaction value is less than $50MM, or the target's adjusted net sales are between $10MM and $50MM, or the target's adjusted total assets are between $10MM and

$50MM. I exclude all deals where I observe the target's total assets and they are less than $10MM.

"Adjusted" values are merely raw values that are deflated as per the Amendment. Beginning in 2005, asset, revenue, and transaction value cutoffs are scaled by GNI relative to its 2003 value. (See the following section for details.) Thus, I multiply these figures by 1/1.063, 1/1.1324, 1/1.196, 1/1.262, 1/1.303, and 1/1.269 for transactions completed in the periods beginning March 2005 and February 2006, 2007, 2008, 2009, 2010, and 2011, respectively. As an example, a transaction meets the size-of-transaction test if the transaction value is $51MM in April of 2004 but not April of 2005, since the test's threshold was revised upwards by GNI growth of 6.3% by the later date. Adjusted values correctly account for this.

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Tables

Table I: *Summary statistics*

	N	Mean	Median	Std. Dev.	Minimum	Maximum
Panel A. Full sample						
All Notifications	18	1,748	1,147	1,125	562	3,886
Notifications above threshold	18	1,055	994	352	558	1,750
Notifications below threshold	18	694	14	885	0	2,226
All Mergers	18	3,180	3,011	749	2,070	4,996
Mergers above threshold	18	1,379	1,335	370	675	2,119
Mergers below threshold	18	1,801	1,699	414	1,395	2,877
All HSRActions	18	386	351	131	185	638
HSRActions above threshold	18	324	326	63	185	455
HSRActions below threshold	18	63	1	80	0	213
Panel B. Pre-2001						
All Notifications	7	2,972	3,184	790	1,872	3,886
Notifications above threshold	7	1,240	1,350	427	645	1,750
Notifications below threshold	7	1,732	1,825	382	1,227	2,226
All Notifications	7	3,664	3,937	919	2,312	4,996
Mergers above threshold	7	1,536	1,618	468	897	2,119
Mergers below threshold	7	2,128	2,074	487	1,415	2,877
All Notifications	7	526	504	83	435	638
Actions above threshold	7	369	363	53	308	455
Actions below threshold	7	157	153	35	111	213
Panel C. Post-2001						
All Notifications	10	955	967	261	562	1,440
Notifications above threshold	10	950	965	259	558	1,439
Notifications below threshold	10	5	3	6	0	21
All Mergers	10	2,866	2,811	444	2,070	3,653
Mergers above threshold	10	1,271	1,293	284	675	1,739
Mergers below threshold	10	1,595	1,520	173	1,395	1,914
All HSRActions	10	295	292	56	185	359
HSRActions above threshold	10	295	292	56	185	359
HSRActions below threshold	10	0	0	1	0	2

"Above threshold" refers to transactions valued at or above $50 million (so that they meet the amended size-of-transaction test and fall within the purview of the Act); "below threshold" refers to those that are not. Since the Amendment to the Act is effective February 2, 2001, the calendar year containing the effective date is eliminated from both the "Pre" and "Post" samples for clarity.

Table II: *Parameter estimates excluding mergers valued over $150MM*

VARIABLES	(1) All	(2) Below	(3) Above	(4) All	(5) Below	(6) Above
$I_i^H \cdot I_s^{Below} \cdot I_t^{Post}$	.19			235		
	(.041)			(50.9)		
$I_i^H \cdot I_t^{Post}$ (Below-the-amended-threshold)		.183			293	
		(.0419)			(81.8)	
$I_i^H \cdot I_t^{Post}$ (Above-the-amended-threshold)			-.00683			57.9
			(.0537)			(37.8)
Observations	72	36	36	72	36	36
R-squared	.999	.989	.986	.996	.96	.947

This table replicates the results of Table I in the body of the main text but removes mergers valued over $150 million. This excludes about half of mergers in the never-exempt group and may create a better control group for newly-exempt group. Columns 1-2 report estimates from equations 1 and 2 in the body of the main text, respectively. Column 3 reports estimates analogous to those reported in column 2 but restricts the sample to above-the-amended-threshold mergers. Columns 4-6 report estimates analgous to those in columns 1-3 except that the outcome measure is in level rather than log values. Robust standard errors are reported.

Table III: *Parameter estimates excluding the software industry*

VARIABLES	(1) All	(2) Below	(3) Above	(4) All	(5) Below	(6) Above
$I_i^H \cdot I_s^{Below} \cdot I_t^{Post}$	.226			241		
	(.0594)			(55.5)		
$I_i^H \cdot I_t^{Post}$ (Below-the-amended-threshold)		.172			305	
		(.0612)			(91.5)	
$I_i^H \cdot I_t^{Post}$ (Above-the-amended-threshold)			-.0534			64.2
			(.0415)			(79.2)
Observations	72	36	36	72	36	36
R-squared	.996	.983	.992	.995	.956	.944

This table replicates the results of Table I in the body of the main text but removes mergers where the acquirer resides in SIC code 7372, "Prepackaged software," which account for a large number of horizontal, exempt deals. Columns 1-2 report estimates from equations 1 and 2 in the body of the main text, respectively. Column 3 reports estimates analogous to those reported in column 2 but restricts the sample to above-the-amended-threshold mergers. Columns 4-6 report estimates analgous to those in columns 1-3 except that the outcome measure is in level rather than log values. Robust standard errors are reported.