

**IN THE MATTER OF AN INDEPENDENT REVIEW PROCESS BEFORE THE  
INTERNATIONAL CENTRE FOR DISPUTE RESOLUTION**

Namecheap, Inc. (Namecheap)

**Claimant**

v.

Internet Corporation For  
Assigned Names and Numbers  
(ICANN)

**Respondent**

ICDR Case No. 01-20-0000-6787

**Reply Report of Dennis W. Carlton, Ph.D.**

**March 14, 2022**

**HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY**

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## **I. QUALIFICATIONS, ASSIGNMENT, AND OVERVIEW OF CONCLUSIONS**

1. I previously submitted an expert report in this matter.<sup>1</sup> My qualifications were disclosed in that report and my current curriculum vitae and testifying experience are attached as Exhibit 1 to this report.

2. I have been asked by counsel for ICANN to address certain criticisms of my original analysis raised by Dr. Gregor Langus and Prof. Dr. Frank Verboven in their third expert report submitted in this matter.<sup>2</sup> I do not attempt to respond to every criticism they offer and lack of a response to particular criticisms should not be interpreted as indicating that I agree with those criticisms. I continue to rely on the materials disclosed in my initial report, and a list of additional materials that I and my staff, under my direction, have relied on in the preparation of this Reply Report is provided in Exhibit 2.

3. My main conclusion is that the economic analysis in Dr. Langus and Prof. Dr. Verboven's third expert report is flawed and hence does not change my principal conclusion that the cessation of price control provisions on .ORG, .INFO, and .BIZ has not caused any harm so far to Namecheap and is not likely to cause material harm to Namecheap in the future. I explain in detail the bases for my main conclusion in the remaining sections of this report.

## **II. DR. LANGUS AND PROF. DR. VERBOVEN'S CLAIMS REGARDING PASSTHROUGH AND HARM TO NAMECHEAP ARE NOT SUPPORTED BY THE EMPIRICAL EVIDENCE**

4. In my initial report I explained why, given the industry structure, Namecheap's economic incentives indicate that Namecheap should pass through cost increases and thus did not suffer in the past and should not be expected to suffer in the future material harm from the elimination of price caps on .ORG, .INFO, and .BIZ. I relied on empirical analysis to confirm this claim. First, I explained that there is no evidence that Namecheap has suffered any material harm to date even though price caps were lifted in 2019, and apparently no one disputes this point. As for the

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<sup>1</sup> Expert Report of Dennis W. Carlton, Ph.D., January 14, 2022 ("Carlton Report").

<sup>2</sup> Expert Report by Dr. Gregor Langus and Prof. Dr. Frank Verboven, February 8, 2022 ("Verboven Third Report").

future, I provided several reasons why one should not expect Namecheap to suffer material harm. One reason is that Namecheap should be expected to pass along any cost increases to registrants so that Namecheap's per unit margin should not be expected to fall as a result of an increase in wholesale registry costs. [Redacted - Confidential Information]

[Redacted] <sup>3</sup> and I showed that my analysis is robust to different, alternative specifications.<sup>4</sup> Dr. Langus and Prof. Dr. Verboven claim that the economic evidence I presented [Redacted - Confidential Information]

[Redacted] and they briefly describe (but do not present details of) their own regression analyses that they claim refute my passthrough findings; their regressions are similar to mine but estimate passthrough over shorter time periods [Redacted - Confidential Information].<sup>5</sup> (For simplicity, I refer to their econometric estimations as "passthrough" regressions.) In this section, I demonstrate that Dr. Langus and Prof. Dr. Verboven's passthrough regressions are not reliable because their results are driven by a couple of data anomalies. After removing those anomalies, their regressions demonstrate that, even over the short time periods that Dr. Langus and Prof. Dr. Verboven prefer, [Redacted - Confidential Information] and so there is no reason to expect that Namecheap will suffer harm from reduced per unit margins if wholesale registry prices rise. I also address in this section their claims that entry costs may protect Namecheap from competition,<sup>6</sup> that full passthrough is not guaranteed in the absence of perfect competition,<sup>7</sup> and that Namecheap may be harmed even if it passes through 100% of any wholesale price increase.<sup>8</sup>

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<sup>3</sup> I calculate changes in costs and changes in prices in dollar terms. [Redacted - Confidential Information]

<sup>4</sup> Carlton Report, § II.A.2.

<sup>5</sup> Verboven Third Report, ¶¶ 36-37.

<sup>6</sup> Verboven Third Report, § 4.1.

<sup>7</sup> Verboven Third Report, § 4.1.

<sup>8</sup> Verboven Third Report, §§ 4.4 (diversion of registrants to other registrars), 4.5 (loss of high margins on renewal registrations), 4.6 (significant reduction in overall demand), and 4.7 (loss of sales of complementary services).

A. **DR. LANGUS AND PROF. DR. VERBOVEN'S PASSTHROUGH REGRESSION RESULTS ARE UNRELIABLE**

5. In my initial report, I presented simple calculations demonstrating that Namecheap

Redacted - Confidential Information

.BIZ renewals over the period April 2018 – October 2021.<sup>9</sup> Passthrough rates for

Redacted - Confidential Information

<sup>10</sup> These simple calculations are illustrative, but I also used regression analysis to estimate Namecheap's passthrough rates for new registrations and renewal registrations for all TLDs. The regression analyses use more information than just the relationship of changes in wholesale cost and retail price for .BIZ and .INFO. My base regression estimated Namecheap's passthrough rates across all TLDs for which Namecheap had at least 50 registrants in both April 2018 and October 2021.<sup>11</sup> This analysis estimated passthrough <sup>Redacted - Confidential Information</sup> respectively.<sup>12</sup>

6. Even though I used data only from the time period in which Namecheap's cost and price data is considered to be reliable, it is still important to check that the analysis is robust to reasonable alternative specifications and data choices. I reported a series of such robustness checks in my initial report, summarized in Table 1 below. These robustness checks support the reliability of my base regressions that found <sup>Redacted - Confidential Information</sup> None of the many estimates presented in Table 1 indicate that passthrough <sup>Redacted - Confidential Information</sup><sup>13</sup> Yet, a low passthrough rate is exactly what Dr. Langus and Prof. Dr. Verboven's claim will allow Namecheap to be harmed by an increase in registry prices. They completely fail to substantiate that claim with reliable evidence.

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<sup>9</sup> Carlton Report, Table 1.

<sup>10</sup> Carlton Report, Table 2.

<sup>11</sup> I controlled for changes in prices over time that are not related to registry cost changes by including an intercept in my baseline regression and in many of the robustness checks.

<sup>12</sup> Redacted - Confidential Information

<sup>13</sup> Redacted - Confidential Information

Source: Carlton Report

7. Although my passthrough regressions consistently find a passthrough estimate that is Redacted - Confidential Information it is evident that estimates of passthrough can vary across groups of TLDs or across registration types (new or renewal). Such a result is typical and expected when one estimates an effect with regression analysis. It is also true, as Dr. Langus and Prof. Dr. Verboven point out,<sup>15</sup> that passthrough can be different when estimated over time periods of different lengths. For example, although I calculated simple measures of

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<sup>14</sup> Carlton Report, ¶ 26, n. 29 and 30.

<sup>15</sup> Verboven Third Report, ¶ 34.

individual passthrough rates over the period of April 2018 to October 2021 [Redacted - Confidential Information]

[Redacted] respectively,<sup>16</sup> this does not mean [Redacted - Confidential Information]

[Redacted] Table 2 shows how the average retail price charged by Namecheap for renewal registrations on .INFO and .BIZ has evolved with the change in wholesale costs and shows the implied passthrough rates for different time periods. Measured over the entire period, April 2018 – October 2021, Namecheap’s passthrough of [Redacted - Confidential Information]

[Redacted] Similarly, Namecheap’s passthrough [Redacted] when measured over the entire period, but in shorter periods of time passthrough is [Redacted - Confidential Information]

[Redacted - Confidential Information] These results demonstrate that even though Namecheap passed through

[Redacted - Confidential Information] on average, Namecheap [Redacted]

[Redacted - Confidential Information] [Redacted]

**Table 2: Namecheap Reaction to Changes in the .INFO and .BIZ Registry Price for a Renewal Registration, by Time Period**

[Redacted - Confidential Information]

Source: Namecheap005750; Namecheap005752.

Notes:

1. There is no change in the .ORG wholesale cost for a renewal from April 2018 - October 2021.
2. The date range is the range during which the wholesale cost is constant.
3. Restricted to registrations with a duration of one year.

<sup>16</sup> Carlton Report, Table 1.



8. One potential reason for variation in Namecheap’s passthrough rates when measured over shorter periods of time is lumpiness in Namecheap’s pricing behavior. [Redacted - Confidential Information]

[Redacted - Confidential Information].<sup>17</sup> Changes in Namecheap’s retail price also tend to be lumpy: [Redacted - Confidential Information]

[Redacted - Confidential Information]<sup>18</sup> [Redacted - Confidential Information]

[Redacted - Confidential Information]<sup>19</sup> This will cause passthrough estimates to [Redacted - Confidential Information] (either higher or lower) over shorter periods of time, but over longer periods of time passthrough estimates should be more stable.

9. Importantly, it is not true either theoretically or empirically that passthrough must be smaller when measured over the short term rather than over the long term. (See, Table 2, [Redacted - Confidential Information] [Redacted - Confidential Information]) Thus, Dr. Langus and Prof. Dr. Verboven’s criticism—that passthrough in the short term may be “incomplete”<sup>20</sup> and it is not appropriate to estimate passthrough over a longer term—is simply incorrect. As I show further below, it is not

<sup>17</sup> I use data provided by Namecheap that reports Namecheap’s domain registrations by TLD, day, registration type (new, renewal, or transfer), and registration duration (1-10 years). See Carlton Report ¶ 23. This analysis focuses on a duration of one year and weights each observation equally regardless of the registration volume. [Redacted - Confidential Information]

<sup>18</sup> This analysis only considers changes in persistent prices, not price blips. Specifically, I calculate the mode of the retail price for each TLD in each week and analyze only prices that persist for at least three consecutive weeks.

<sup>19</sup> For example, [Redacted - Confidential Information]

<sup>20</sup> Verboven Third Report, ¶ 32.

true that passthrough estimates are uniformly smaller when measured over short time periods; instead, they are more variable. The fact that passthrough may vary when measured over several, successive short time periods is the reason why estimating passthrough over a longer time period (as I did in my initial report) generates a measure of passthrough that is more stable and reliable than one based on only one short time period.

10. Dr. Langus and Prof. Dr. Verboven also contend that my analysis does not estimate passthrough because it does not control for factors other than wholesale registry costs that may affect Namecheap's prices. They state that these other factors are "very likely to change over a period of more than three years."<sup>21</sup> However, Dr. Langus and Prof. Dr. Verboven present no evidence that inclusion of other factors should matter to my results, nor do they explain why my baseline regression does not pick up such systematic factors in the intercept term. The difficulty in accounting for every conceivable factor is precisely why regression analysis is used and is not a valid criticism of such analyses that are routine in the economic literature and, based on my experience at both the Department of Justice and as an economic expert for private parties, are used routinely in competition matters around the world.

11. Having explained that there is no reason to expect that short-term passthrough is necessarily smaller than long-term passthrough, I now assess Dr. Langus and Prof. Dr. Verboven's regression analysis. They describe three alternative regressions focused on shorter time periods than my three-and-a-half-year period and claim that their results demonstrate that changes in registry wholesale costs are not fully passed through into the retail registration prices that Namecheap charges its customers, at least for renewal registrations.<sup>22</sup> They conclude that my results are "sensitive to the period over which price changes are considered."<sup>23</sup> I demonstrate below that Dr. Langus and Prof. Dr. Verboven's results are not reliable but are an artifact of data from one outlier TLD, .TO, or one outlier month, October 2018. Excluding these data anomalies yields Redacted - Confidential Information regardless of the length of time analyzed, and that any claim that passthrough rates Redacted - Confidential Information

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<sup>21</sup> Verboven Third Report, ¶¶ 31 and 34.

<sup>22</sup> Verboven Third Report, ¶ 37.

<sup>23</sup> Verboven Third Report, ¶ 37.

not based on reliable evidence. Therefore, when the data anomalies are corrected, their results based on their regressions support my conclusion that there is no reason to expect that Namecheap will suffer harm from reduced per unit margins if wholesale registry prices rise.

12. Before addressing each of Dr. Langus and Prof. Dr. Verboven's three alternative regression approaches in detail, [Redacted - Confidential Information]

[Redacted - Confidential Information] Thus, even if their findings for *renewal* registrations were reliable (and, as I demonstrate below, they are not), it would be inaccurate to claim that they had demonstrated that overall passthrough (i.e., including both new and renewal registrations) [Redacted - Confidential Information]<sup>24</sup> I demonstrate below that, when corrected, the regression results of Dr. Langus and Prof. Dr. Verboven provides strong confirmation of my conclusion that there is no reason to expect that Namecheap will suffer harm from reduced per unit margins if wholesale registry prices rise.

### 1. Annual Passthrough Regressions

13. Dr. Langus and Prof. Dr. Verboven's first alternative regression estimates passthrough using a single year of data. They compare changes in price to changes in cost for a set of TLDs between October 2020 and October 2021 and estimate [Redacted - Confidential Information]

[Redacted - Confidential Information]<sup>25</sup> Their passthrough estimate for new

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<sup>24</sup> The full passthrough is a weighted average of the passthrough of new registrations and renewal registrations, which means that Namecheap's passthrough [Redacted - Confidential Information] [Redacted - Confidential Information] Nevertheless, I estimated passthrough on each component and showed that *neither* component has passthrough [Redacted - Confidential Information] Dr. Langus and Prof. Dr. Verboven never claim that passthrough on new registrations is [Redacted - Confidential Information] so even if they were correct that passthrough on renewals is low, [Redacted - Confidential Information]

<sup>25</sup> Verboven Third Report, ¶ 36. Dr. Langus and Prof. Dr. Verboven's backup indicates they consider a few model specifications that are different from the primary model specification I considered in my prior report, but the differences appear to be minor. I restricted my primary analysis, though not all of my robustness checks, to TLD-periods with a cost change of at least one cent and my regression specification included an intercept term. Dr. Langus and Prof. Dr. Verboven include TLD-periods with zero cost change, estimate regression specifications both with and without an intercept term, and, for their stacked regressions, estimate a version with TLD-specific intercepts. They do not disclose in their report which specifications they prefer. For simplicity, I report robustness checks for one specification for each of their analyses: I use a specification with a single intercept and I include TLDs with zero cost change. The results of

[Redacted - Confidential Information] and (according to Dr. Langus and Prof. Dr. Verboven’s backup materials) their passthrough estimate for renewal registrations is [Redacted]

[Redacted - Confidential Information]. That is, of the four regressions in their backup examining passthrough on one year of data, in only one case—for renewals in only one of their two specifications (which omits an intercept term)—are they able to say that the passthrough [Redacted]

[Redacted - Confidential Information]

14. Dr. Langus and Prof. Dr. Verboven appear to claim that they analyzed the same set of TLDs as I analyzed in my base regression,<sup>26</sup> thus implying that the only explanation for the difference between my passthrough estimates and theirs is the length of the time period analyzed—indeed, they state that their alternative regressions are meant “to illustrate the role of the short-term adjustment” in passthrough rates.<sup>27</sup> The difference in the length of time considered, however, does not account for the difference in our estimated passthrough regressions. Rather, the critical difference is the set of TLDs included in the analysis. In my analysis, I looked at changes over 3-1/2 years and therefore required that the TLDs in my sample had to exist at least beginning in April 2018. Dr. Langus and Prof. Dr. Verboven use data only between October 2020 and October 2021 and thus are using TLDs that Namecheap did not sell in 2018 (or at least did not sell in significant quantities) and that were therefore excluded from my analysis.<sup>28</sup> An analysis of the same TLDs used in my prior report over the one-year time period

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robustness checks using their other specifications (without an intercept or, for stacked regressions, TLD-specific intercepts) are not qualitatively different from the results I report here.

Separately, Dr. Langus and Prof. Dr. Verboven appear to include registrations for which Namecheap works through an intermediary rather than being charged by the registry operator directly. I exclude these observations, which comprise less than 1% of Namecheap registrations. (Carlton Report, n. 27.)

<sup>26</sup> Verboven Third Report, ¶ 37.

<sup>27</sup> Verboven Third Report, ¶ 36.

<sup>28</sup> Although Dr. Langus and Prof. Dr. Verboven chose the TLDs to analyze using a criterion similar to the one that I used (namely, that the TLD had to have at least 50 registrants at Namecheap in the first and last month of the data used in the analysis), their shorter time period means that they include TLDs that entered after April 2018 and thus did not appear in my set of TLDs. In other words, their analysis used TLDs that had 50 or more registrations in both October 2020 and October 2021, but some of those TLDs were not in my analysis because they did not have 50 or more registrations in both April 2018 and October 2021.

suggested by Dr. Langus and Prof. Dr. Verboven yields passthrough [Redacted - Confidential Information] [Redacted - Confidential Information] respectively, with neither estimate being [Redacted - Confidential Information] [Redacted - Confidential Information]

15. It is not obvious that adding more TLDs to the analysis, as Dr. Langus and Prof. Dr. Verboven do, should bias upward or downward the estimates of passthrough rates (though of course different samples will produce different estimates) as long as there is nothing peculiar about the additional data. But examining the data shows that Namecheap's pricing of one particular ccTLD that Dr. Langus and Prof. Dr. Verboven added, .TO, is unusual. According to Namecheap's cost data, [Redacted - Confidential Information] [Redacted - Confidential Information] yet Namecheap did not change its retail price, which was constant [Redacted - Confidential Information]. In Dr. Langus and Prof. Dr. Verboven's annual passthrough regression for renewal registrations, [Redacted - Confidential Information], the largest of any TLD from October 2020 to October 2021, [Redacted - Confidential Information] <sup>29</sup>

16. It is unclear whether there is an error in the underlying Namecheap data or whether Namecheap treats .TO differently from other TLDs, but what is clear is that .TO is highly influential in Dr. Langus and Prof. Dr. Verboven's regression analysis. If I remove .TO from the annual regression (that is, I use the same sample of TLDs they used, but remove just .TO), the passthrough estimates [Redacted - Confidential Information] [Redacted - Confidential Information] respectively and these estimates are not statistically significantly [Redacted - Confidential Information] Dr. Langus and Prof. Dr. Verboven's finding that the annual passthrough rate is statistically [Redacted - Confidential Information] for renewal registrations in one of their two regressions for renewals is thus entirely dependent on one TLD out of the 161 TLDs they include in their renewal passthrough analysis. <sup>30</sup> Similarly, if I do as I

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<sup>29</sup> [Redacted - Confidential Information] [Redacted - Confidential Information]

<sup>30</sup> Dr. Langus and Prof. Dr. Verboven actually include 169 TLDs in their analysis, but I exclude registrations for which Namecheap works through an intermediary (see, n. 25 above), which reduces the number of TLDs to 161.



did in my initial report and use as a robustness check the results when the regression is estimated on only gTLDs (i.e., I exclude not only .TO but all ccTLDs), the passthrough estimates [REDACTED] [REDACTED - Confidential Information] respectively, and again these estimates are not statistically [REDACTED - Confidential Information]<sup>31</sup> These results illustrate the importance of checking regression results for sensitivity to reasonable alternative data choices; Dr. Langus and Prof. Dr. Verboven do not appear to have performed robustness checks like the ones I report in Table 1 with the result that their estimates are unreliable. Had they done so, they could have discovered that excluding one outlier TLD results in passthrough estimates that support my conclusion that there is no reason to expect that Namecheap will suffer harm from reduced per unit margins if wholesale registry prices rise.

17. As I discussed above, passthrough estimates over shorter time periods may underestimate or overestimate Namecheap’s average passthrough. An obvious robustness check would examine whether the annual passthrough estimate is sensitive to the exact time period chosen for the analysis. Dr. Langus and Prof. Dr. Verboven chose one twelve-month period for their analysis: October 2020 – October 2021. In light of the availability of the data, however, they could have chosen any of 31 different twelve-month periods, i.e., the twelve-month period beginning in April 2018, in May 2018, in June 2018, etc., up to the actual period they analyzed, the twelve-month period beginning in October 2020. Such robustness checks can reveal whether there are any peculiarities in the data or time period chosen. There is no reason to think that these robustness checks should produce very different results. I estimate annual passthrough regressions for each of these 31 time periods. The estimated passthrough rates for new registrations in each period are shown in Figures 1 and 2, where Figure 1 reports results using all TLDs except .TO and Figure 2 reports results using only gTLDs. The dots represent the point estimates of passthrough in each time period and the “whiskers” represent the 95% confidence intervals. [REDACTED - Confidential Information]

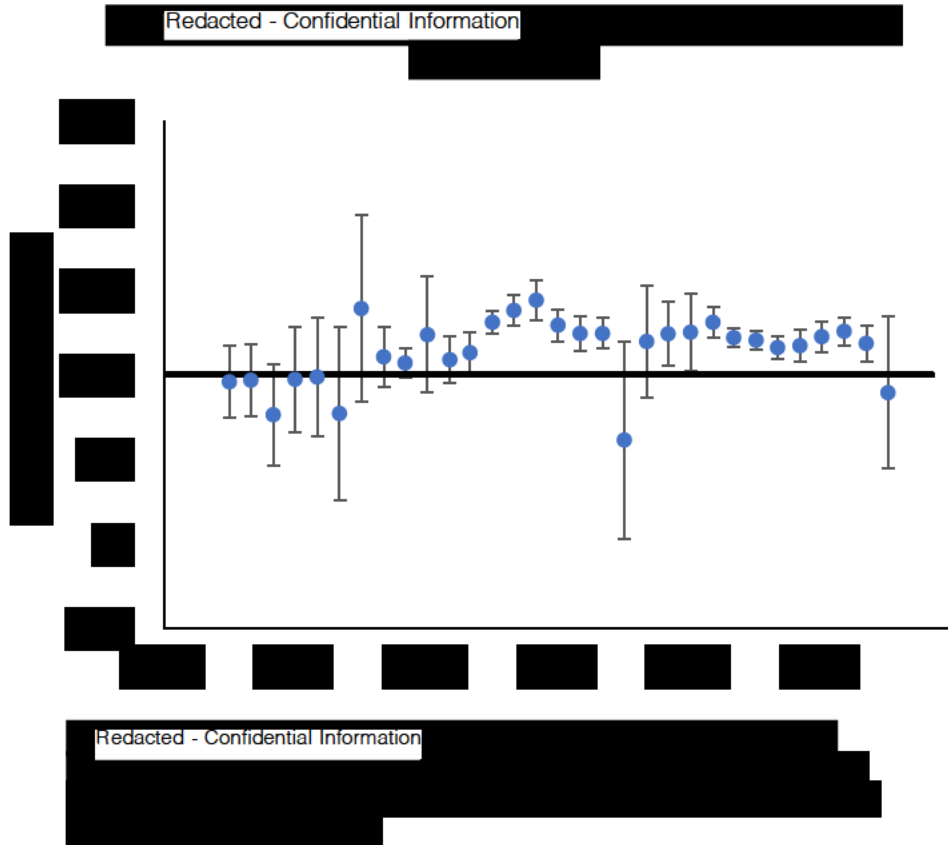
[REDACTED - Confidential Information] The graphs indicate that Namecheap’s passthrough is approximately [REDACTED - Confidential Information] though the

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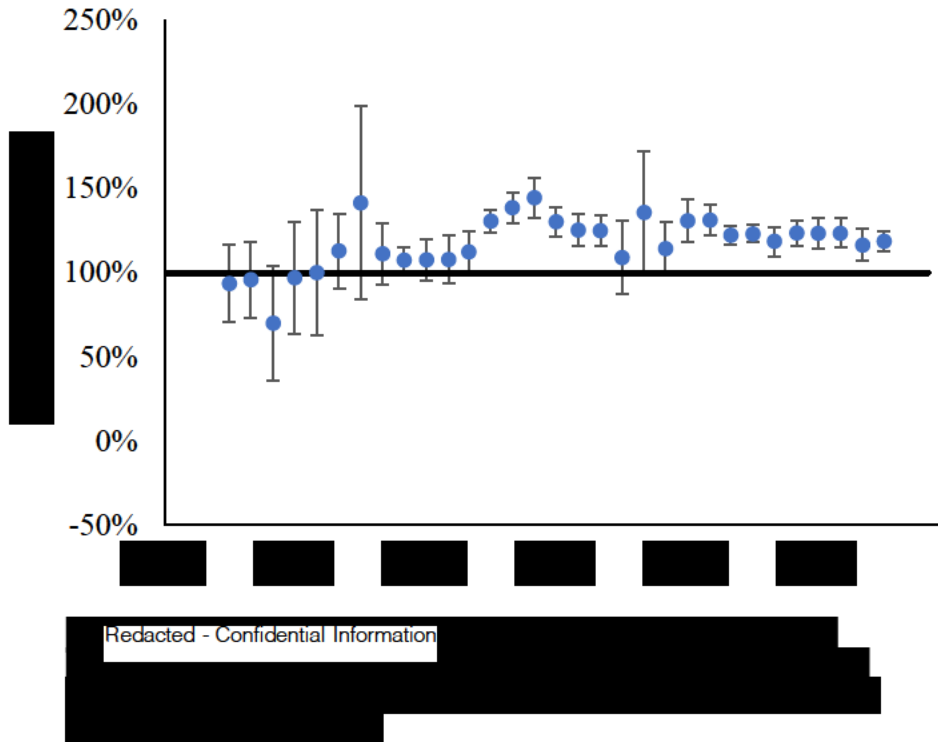
<sup>31</sup> I understand that, under the ICANN registry agreements, gTLD registry operators are not allowed to discriminate across registrars.

exact estimate bounces around from sample to sample, as is expected given the shorter time period, and in some cases, the estimated passthrough rate is statistically significantly [REDACTED]

[REDACTED - Confidential Information] In no case do the result support a claim that the passthrough rate for new registrations is [REDACTED - Confidential Information] (and based on their regression for a single time period, Dr. Langus and Prof. Dr. Verboven never make such a claim for new registrations).



**Figure 2: Annual Passthrough Regressions for New Registrations, gTLDs Only**



18. The estimated passthrough rates for renewal registrations in each period are shown in Figures 3 and 4. Figure 3 reports the results using all the TLDs that Dr. Langus and Prof. Dr. Verboven use, with the exception of .TO, while Figure 4 is a robustness check and uses only gTLDs (that is, it excludes not only .TO but all ccTLDs). Once again, the graphs indicate that Namecheap’s passthrough rate for renewal registrations Redacted - Confidential Information though the exact estimate bounces around from sample to sample. Redacted - Confidential Information

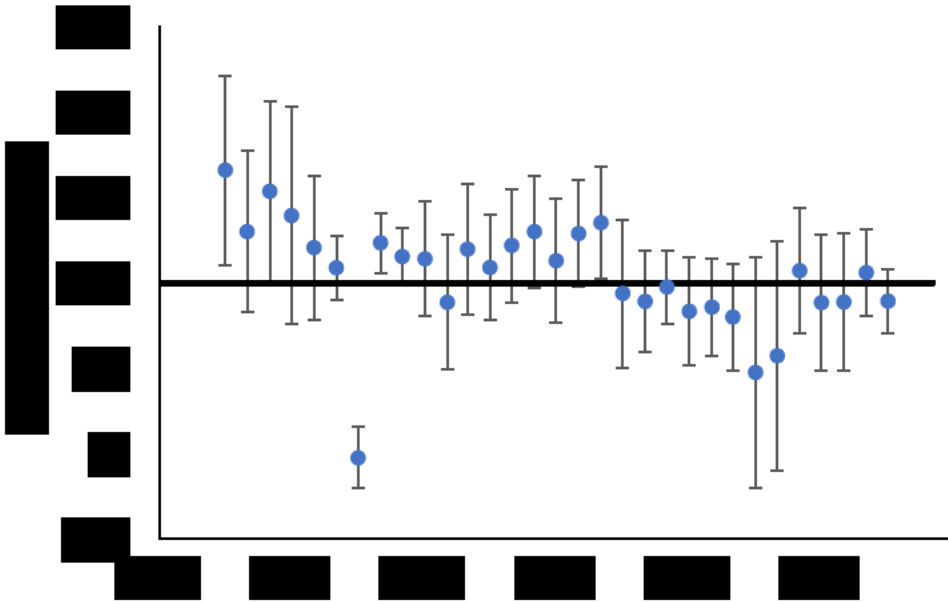
Redacted - Confidential Information

Redacted - Confidential Information That outlier is the twelve-month period beginning October 2018, which has an estimated passthrough rate that is negative. Figure 3 shows that there is only one annual regression (out of the 31 annual regressions that can be estimated using the available data) that supports the claim by Dr. Langus and Prof. Dr. Verboven that the passthrough rate for renewals

Redacted - Confidential Information The same holds true for Figure 4.



Redacted - Confidential Information

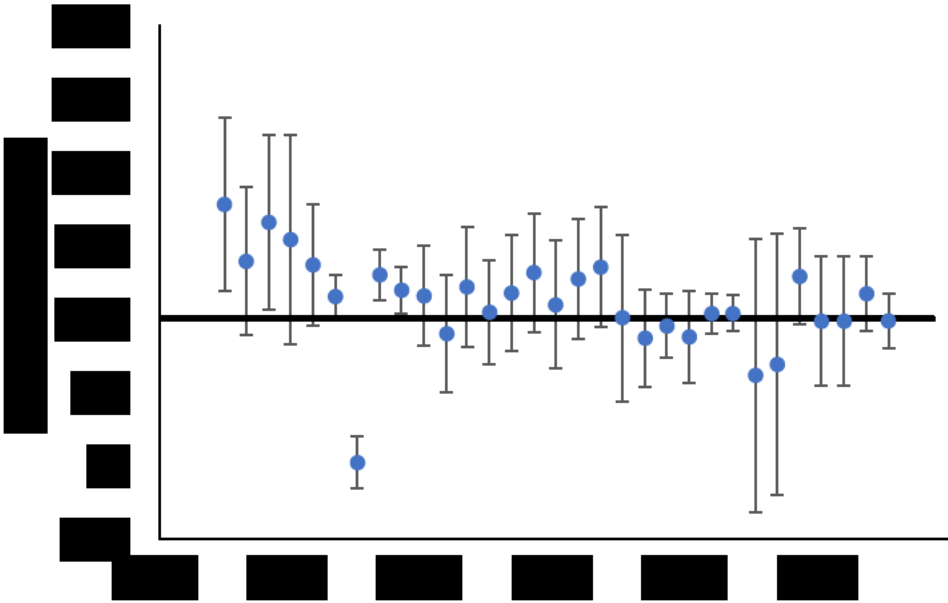


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[Redacted text block]

Redacted - Confidential Information

[Redacted text block]



Redacted - Confidential Information

[Redacted text block]

19. These robustness checks demonstrate that after excluding .TO, the bulk of the empirical evidence indicates that passthrough is [Redacted - Confidential Information] [Redacted] even over a shorter time period preferred by Dr. Langus and Prof. Dr. Verboven. The results also show that passthrough results can differ from year to year and that the results from any single year (e.g., the year beginning October 2018) are not representative of all years or of what passthrough would be over a longer time period. My conclusion is that Dr. Langus and Prof. Dr. Verboven’s annual regression analysis fails to support their claim that the [Redacted] [Redacted - Confidential Information] when corrected, supports my conclusion there is no reason to expect that Namecheap will suffer harm from reduced per unit margins if wholesale registry prices rise. Moreover, one should be aware that there appears to be something unusual when October 2018 is included in the analysis.

## 2. One-Year Stacked Passthrough Regressions

20. Dr. Langus and Prof. Dr. Verboven’s second alternative regression analysis estimates passthrough using three one-year periods beginning in October 2018, October 2019, and October 2020.<sup>32</sup> Although using data over three one-year periods should yield a passthrough estimate that is more stable than an analysis using a single year of data, it is still true that one should check such results for robustness to the time period chosen.

21. Dr. Langus and Prof. Dr. Verboven do not disclose the passthrough estimates from their annual stacked regressions in their report, stating only that their estimates of passthrough are lower than mine and that their estimate of passthrough for renewals is [Redacted - Confidential Information]

[Redacted].<sup>33</sup> I have replicated their analysis using their backup materials and find that they estimate

[Redacted - Confidential Information] [Redacted] This renewal passthrough rate implies that over the long run as costs increase, the renewal margins of Namecheap will be [Redacted - Confidential Information]

[Redacted] This is an implausible result and one inconsistent with the economic theory I explained in my initial report. This result points to the need to do robustness checks on the one-year stacked regressions to make sure that these results are reliable, and these checks show that the choice of

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<sup>32</sup> Verboven Third Report, ¶ 37.

<sup>33</sup> Verboven Third Report, ¶ 37.

using a time period that includes October 2018 drives their result for the renewal registrations, rendering their results unreliable.

22. Because Dr. Langus and Prof. Dr. Verboven use annual observations and data exists for April 2018 – October 2021, they could have estimated their one-year stacked passthrough regression seven different ways while still having three periods worth of data: they could have created three one-year time periods beginning in the months of April, May, June, July, August, September, or October.<sup>34</sup> Each of these choices would have yielded three years of annual observations and allowed them to estimate their annual stacked regression. Examining results from an analysis of these seven different choices would reveal whether there is anything peculiar in the data that Dr. Langus and Prof. Dr. Verboven use, which uses annual periods beginning in October. I have estimated regressions starting in these alternative months and find that if Dr. Langus and Prof. Dr. Verboven had chosen to start their analysis in **any month other than October**, their results would have been completely reversed and consistent with mine: [REDACTED]

[REDACTED - Confidential Information] In no case is the estimated passthrough rate [REDACTED - Confidential Information] as claimed by Dr. Langus and Prof. Dr. Verboven for renewal registrations. The left panel of Table 3 below shows the new and renewal regression results for each choice of ending month when all TLDs are included in the analysis. The middle panel excludes .TO from the analysis. The right panel shows the results if only gTLDs are included. Only the choice of October—which Dr. Langus and Prof. Dr. Verboven chose to use out of the seven possible choices—leads to a passthrough [REDACTED - Confidential Information]

[REDACTED] Whether one looks at all TLDs, excludes .TO, or looks at only gTLDs, the results from the renewal regressions that start in October are inconsistent with results from all of the other months, [REDACTED - Confidential Information]

[REDACTED]

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<sup>34</sup> For example, they could have used one-year periods beginning in May 2018, May 2019, and May 2020; or they could have used one-year periods beginning in June 2018, June 2019, and June 2020, etc. These choices would have entailed not using some data at the end of the available data period, rather than only at the beginning of the available data period.

**Table 3: One-Year Stacked Passthrough Regressions**

Redacted - Confidential Information

23. I am not sure what explains this peculiar result, but as I described in the previous section, passthrough estimates for the annual regression beginning in October 2018 are much lower than the annual regressions beginning in any other month. That same oddity appears to infect Dr. Langus and Prof. Dr. Verboven's one-year stacked regression analysis, though they make no mention of it (and they may be unaware of it). As shown in Table 3, the empirical evidence from a one-year stacked analysis overwhelmingly demonstrates that estimated passthrough

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This is consistent with my conclusion that there is no reason to expect that Namecheap will suffer harm from reduced per unit margins if wholesale registry prices rise. Dr. Langus and Prof. Dr. Verboven found the opposite result for renewal registrations because they began their analysis in the only time period, October 2018, that does not fit the general pattern of Table 3 for renewal regressions.

### 3. Three-Month Stacked Passthrough Regressions

24. Dr. Langus and Prof. Dr. Verboven's third alternative regression analysis estimates passthrough over successive three-month increments. That is, they estimate passthrough using price and cost changes from April 2018-July 2018, July 2018-October 2018, October 2018-January 2019, January 2019-April 2019, etc.

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25. The robustness checks I performed on Dr. Langus and Prof. Dr. Verboven's annual and one-year stacked regressions indicate that including October 2018 leads to passthrough estimates

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<sup>35</sup> Verboven Third Report, ¶ 37.

that differ considerably from analyses that exclude October 2018. I find that Dr. Langus and Prof. Dr. Verboven’s three-month stacked regression likewise generates passthrough estimates that are inconsistent with the bulk of the empirical evidence because Dr. Langus and Prof. Dr. Verboven include October 2018 in their analysis.

26. When constructing their data for their three-month stacked analysis, Dr. Langus and Prof. Dr. Verboven compare costs and prices using the first month of each successive quarter (January, April, July, October). Dr. Langus and Prof. Dr. Verboven do not indicate why the first month of each quarter was chosen, and I am not aware of any reason to limit the analysis to just those start months. Accordingly, as a robustness check, I analyze three-month stacked regressions not only for the first month of each quarter (January, April, July, October), but also for the second month of each quarter (February, May, August, and November) and the third month of each quarter (March, June, September, December). Table 4 below shows these results for new and renewal registrations. Once again, I report results including all gTLDs in the analysis, excluding .TO, and including only gTLDs. These results consistently show that estimated passthrough is

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Dr. Verboven focused on, which uses the first month in each quarter (and thus uses October 2018). Therefore, these corrected results again confirm my conclusion that there is no reason to expect that Namecheap will suffer harm from reduced per unit margins if wholesale registry prices rise.

**Table 4: Three-Month Stacked Passthrough Regressions**

Redacted - Confidential Information



27. If one were convinced that choosing shorter and shorter time periods were appropriate, as Dr. Langus and Prof. Dr. Verboven suggest, one could even implement Dr. Langus and Prof. Dr. Verboven’s approach with a monthly stacked regression, i.e., examine changes from April 2018-

May 2018, May 2018-June 2018, etc. I have performed this analysis as a robustness check and find again that passthrough [Redacted - Confidential Information]<sup>36</sup> For new registrations, the estimated passthrough [Redacted - Confidential Information] [Redacted - Confidential Information] For renewal registrations, the estimated passthrough [Redacted - Confidential Information] [Redacted - Confidential Information] That is, using what I assume Dr. Langus and Prof. Dr. Verboven would prefer based on their use of short periods, the analysis of monthly stacked regressions shows no evidence for their claim that the passthrough [Redacted - Confidential Information] [Redacted - Confidential Information] Therefore, these results confirm my conclusion that there is no reason to expect that Namecheap will suffer harm from reduced per unit margins if wholesale registry prices rise.

\* \* \*

28. In summary, Dr. Langus and Prof. Dr. Verboven’s conclusion that my estimated passthrough rates are inappropriate because those rates are based upon too long a time period and therefore overstate shorter-term passthrough is incorrect. They are led to that conclusion because of two data anomalies. Robustness checks on their analyses demonstrate that passthrough estimates over shorter time periods confirm the findings in my prior report: there is no reason to expect that Namecheap will suffer harm from reduced per unit margins if wholesale registry prices rise.

**B. DR. LANGUS AND PROF. DR. VERBOVEN RELIANCE ON ENTRY COSTS DOES NOT REFUTE MY CLAIM THAT NAMECHEAP FACES COMPETITION AS A REGISTRAR**

29. In addition to the lack of reliability of their econometric analysis of passthrough for renewal registrations, Dr. Langus and Prof. Dr. Verboven do not provide evidence that rebuts my previous opinion that observing full passthrough is to be expected given the industry structure in which Namecheap operates.<sup>37</sup> In my prior report, I explained that since entry appears relatively

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<sup>36</sup> With monthly observations, the importance of the anomalous data is minimized and estimated passthrough [Redacted - Confidential Information]

<sup>37</sup> Carlton Report, ¶¶ 17-20, 39.



easy (there are over 200 registrars selling registrations in .ORG, .INFO, and .BIZ<sup>38</sup>), competition among those registrars would lead one to expect—due to a registrar’s economic incentives in such an industry structure—that the passthrough rate should be approximately 100%.<sup>39</sup> Dr. Langus and Prof. Dr. Verboven suggest that the assumption of free entry into the industry might not hold.<sup>40</sup> Whatever the entry costs are, however, they are not so large that they significantly limit entry, as evidenced by the hundreds of registrars who have entered and now compete to sell domain name registrations on .ORG, .INFO, and .BIZ. In a previous report, Dr. Langus and Prof. Dr. Verboven themselves concluded that it is “certain” that there is “intense competition among registrars[.]”<sup>41</sup> Any suggestion that entry costs are so large as to alter the economic intuition about market forces when there are many firms (which face the same registry costs) competing for registrants is misleading. The existence of hundreds of registrars for .ORG, .INFO, and .BIZ (despite whatever entry costs Dr. Langus and Prof. Dr. Verboven have identified), Namecheap’s small share of registrants, and Dr. Langus and Prof. Dr. Verboven’s previous conclusion that registrars face intense competition mean that it is not surprising that my prior empirical analysis demonstrates approximately full passthrough.<sup>42</sup>

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<sup>38</sup> Carlton Report, ¶ 18 (“[T]here are 339 ICANN-accredited registrars with registered domains on .INFO, of which 239 registrars have at least 100 registered domains on .INFO. There are 294 ICANN-accredited registrars with registered domains on .BIZ, of which 200 registrars have at least 100 registered domains on .BIZ. .ORG’s registry operator, PIR, lists more than 200 registrars that are accredited by ICANN and have met PIR’s Quality Performance Index threshold and are authorized to register .ORG domains.”).

<sup>39</sup> Namecheap’s own public statements discuss competition in the registrar market and how that constrains the retail prices Namecheap can charge. See, <https://www.namecheap.com/blog/keep-domain-prices-in-check/> (“Think of the registrar as a domain name retailer and the registry as the wholesaler. The wholesale registry charges Namecheap a set fee per domain name per year. Namecheap then adds a little markup to cover things like support, provisioning domain services, transaction fees, etc. There’s a lot of competition for domain name registrars. This keeps prices that companies like Namecheap charge in check.”).

<sup>40</sup> Verboven Third Report, ¶ 27, n. 14.

<sup>41</sup> Verboven Second Report, ¶ 93.

<sup>42</sup> Even if a firm has some market power, the passthrough rate can be 100% or higher (or lower) depending on the characteristics of the demand curve.

C. **DR. LANGUS AND PROF. DR. VERBOVEN HAVE NOT DEMONSTRATED THAT NAMECHEAP IS LIKELY TO BE HARMED FROM LOWER REGISTRATIONS OR LOSS OF SALES OF COMPLEMENTARY SERVICES**

30. Dr. Langus and Prof. Dr. Verboven claim that there are several ways in which Namecheap may be harmed even if it fully passed on future wholesale registry price increases to registrants. One can always speculate about possible harms, of course, but the issue is whether any of them are likely and material. None of their potential mechanisms of harm are likely and they provide no evidence to substantiate their speculation.

31. First, Dr. Langus and Prof. Dr. Verboven claim that “Namecheap’s registrants may divert to other registrars.”<sup>43</sup> In support of this theoretical point, Dr. Langus and Prof. Dr. Verboven point to the status of GoDaddy as a vertically integrated registrar that would have different downstream pricing incentives vis-à-vis registrants on .BIZ (which GoDaddy owns). I have already described that there is no evidence that GoDaddy’s vertical integration has been a problem: if GoDaddy had treated itself more favorably than it treated other registrars on .BIZ, one would expect that GoDaddy’s share of registrations on .BIZ would be greater than its share on other registries; in fact GoDaddy’s share on .BIZ is not greater than its share on other registries.<sup>44</sup> In addition, the fact that GoDaddy has not increased the price of .BIZ domain names since acquiring the registry also indicates that GoDaddy has not attempted to take advantage of its vertically integrated status.<sup>45</sup> Dr. Langus and Prof. Dr. Verboven cannot point to any evidence to support their speculative theory of harm despite the existence of Go Daddy’s vertical integration. Dr. Langus and Prof. Dr. Verboven’s response is to (i) repeat that GoDaddy’s vertical integration raises a **theoretical** possibility of harm to Namecheap;<sup>46</sup> (ii) claim that empirical evidence can neither prove nor disprove this theoretical possibility;<sup>47</sup> and (iii) conclude that price caps should be reimposed (perhaps only on .BIZ, though they are vague on this point)

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<sup>43</sup> Verboven Third Report, § 4.4.

<sup>44</sup> Carlton Report, ¶ 35.

<sup>45</sup> Carlton Report, ¶ 35.

<sup>46</sup> Verboven Third Report, ¶¶ 42 and 44.

<sup>47</sup> Verboven Third Report, ¶ 43 (“The acquisition of Neustar’s registry business by GoDaddy is quite recent and an econometric analysis of this potential could be inconclusive even if we had data for such an analysis (which we do not).”).



to reduce the theoretical, future threat posed by GoDaddy’s vertical integration.<sup>48</sup> Dr. Langus and Prof. Dr. Verboven do not even go so far as to claim that this harm to Namecheap is *likely* to occur. They state only that one cannot “exclude[] the possibility” that GoDaddy may favor itself in the future and that this favoring “may happen in some form at some point in time.”<sup>49</sup> Taking this statement at face value, Dr. Langus and Prof. Dr. Verboven’s logic would endorse unwinding the existing vertical integration and prohibiting all future vertical integration of registries and registrars, even in the absence of evidence indicating such integration is likely to cause harm. As I stated in my first report, the imposition of regulation should consider both the costs and benefits of doing so,<sup>50</sup> and, in this case, my view is that the benefits of preventing a theoretical, future harm (for which there is no current evidence) are far too tentative to justify the reimposition of price caps.

32. Second, Dr. Langus and Prof. Dr. Verboven claim that registrars earn higher margins on renewals on .ORG, .INFO, and .BIZ than on new registrations on other registries, and so if registrants switched away from .ORG, .INFO, and .BIZ in response to Namecheap passing on a registry cost increase, Namecheap would earn less profit.<sup>51</sup> This is only a relevant consideration for a specific subset of pre-existing registrants: registrants who would respond to a price increase by simultaneously dropping their .ORG, .INFO, and .BIZ domain names and registering new domains within different TLDs. But Namecheap would make additional short-term profits from pre-existing registrants that respond to a price increase by locking in the original prices for long durations (up to ten years) and/or by registering secondary domains on other TLDs in order to transition gradually.<sup>52</sup> In addition, Namecheap would be benefited if a new registrant signed up

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<sup>48</sup> Verboven Third Report, ¶ 44.

<sup>49</sup> Verboven Third Report, ¶ 44.

<sup>50</sup> Carlton Report, ¶ 40.

<sup>51</sup> Verboven Third Report, § 4.5.

<sup>52</sup> Namecheap advertises such behavior to registrants in their public communications. Regarding the benefit of locking-in prices for up to ten years, see, <https://www.namecheap.com/blog/who-controls-the-price-of-com-domain-names/> and <https://www.namecheap.com/blog/renew-domains-advance-save-money/>. Regarding the benefit of transitioning to new domains gradually, see <https://www.namecheap.com/blog/how-to-change-your-domain-name-dp/> (“[T]he old domain should be redirected for as long as possible. We recommend at least six months, however, twelve months and longer would be better.”).

with a TLD other than .ORG, .INFO, or .BIZ as Namecheap earns higher margins on average on other TLDs than on .ORG, .INFO, and .BIZ.<sup>53</sup>

33. Third, Dr. Langus and Prof. Dr. Verboven claim that price increases for .ORG, .INFO, and .BIZ registrations “may significantly reduce overall demand for domain names.”<sup>54</sup> They provide no empirical evidence supporting the conclusion that a significant number of registrants that Namecheap currently serves may simply stop registering domain names entirely when faced with higher pricing for .ORG, .INFO, and .BIZ. They claim that the cost of a domain name registration may be a “significant cost item” to some registrants, but Rafert and Tucker (2015) estimated that the total cost of building a website was at least \$84 a year, of which registration costs were less than 10% on average.<sup>55</sup> This means that a modest increase in the registration price would comprise a tiny percentage increase in the total costs of having a website<sup>56</sup> and suggests that it is unlikely that a significant number of registrants will drop their domain names altogether when faced with an increase in the registration price for .ORG, .INFO, and .BIZ. In none of their three reports do Dr. Langus and Prof. Dr. Verboven provide **any** empirical evidence or even a rough estimate of the number of registrants who would drop domain names entirely after a modest increase in the price of registering a domain name.

34. Finally, Dr. Langus and Prof. Dr. Verboven claim that Namecheap will lose profits on the sale of complementary services.<sup>57</sup> They present new data showing [Redacted - Confidential Information] [Redacted] <sup>58</sup> and they claim that, if Namecheap passes on an increase in its wholesale registration cost, (i) it may simultaneously reduce the price of complementary services, leading to less than 100%

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<sup>53</sup> Carlton Report, ¶¶ 32-33.

<sup>54</sup> Verboven Third Report, § 4.6.

<sup>55</sup> Greg Rafert and Catherine Tucker, “Phase I Assessment of the Competitive Effects Associated with the New gTLD Program,” September 28, 2015, p. 29.

<sup>56</sup> If registration costs are 10% of the total cost and registration costs rise by 15%, then total costs rise by only 1.5%.

<sup>57</sup> Verboven Third Report, § 4.7. As I discussed in my initial report, [Redacted - Confidential Information] [Redacted] (Carlton Report, § II.B.2.)

<sup>58</sup> Verboven Third Report, Table 1.

passthrough on the registration-services bundle; or (ii) registrants may buy fewer complementary services when the price of the registration-services bundle increases. As with their claims regarding the elasticity of demand for registrations, Dr. Langus and Prof. Dr. Verboven provide no empirical evidence on which to evaluate whether such theoretical possibilities are likely to lead to a significant decline in Namecheap's profits.<sup>59</sup>

35. In addition, although Dr. Langus and Prof. Dr. Verboven raise the possibility that Namecheap could lose profits from the loss of sales of complementary services, it is actually the case that Namecheap earns proportionately higher gross profits on complementary services sold to registrants using TLDs other than .ORG, .INFO, and .BIZ than on the sale of these services to registrants using .ORG, .INFO, and .BIZ. Specifically, Namecheap's Redacted - Confidential Information

[REDACTED]<sup>60</sup> This means that it is possible that Namecheap will earn higher profits on complementary services if registrants shift to other TLDs in response to an increase in the registry price of .ORG, .INFO, and .BIZ.

### **III. DR. LANGUS AND PROF. DR. VERBOVEN DO NOT DEMONSTRATE THAT REGISTRY PRICES WILL INCREASE IN THE ABSENCE OF PRICE CONTROLS**

36. If, as economic theory and the empirical evidence indicate, I am correct in my assessment that registrar competition should result in Namecheap passing through approximately 100% of wholesale price increases, then registrants—not Namecheap—would bear the harm from hypothetical future registration price increases by .ORG, .INFO, and .BIZ. In my initial report, I presented evidence that price increases above what would have been allowed under the prior price caps (10% per year) are unlikely to occur because the evidence showed very little—if any—effect from the cessation of price caps, presumably because .ORG, and especially .INFO

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<sup>59</sup> Dr. Langus and Prof. Dr. Verboven speculate “that price of complementary services may decrease,” but they have presented no evidence supporting such a claim. Even if this occurred, a decrease in the price of complementary services would, all else equal, create an incentive for registrants to increase consumption of complementary services, and they ignore the positive impact that this would have on profits.

<sup>60</sup> Based on gross profit estimates from 2018-2020 in Domains and Complementary Services Gross Profit by Year (2017-2021).xlsx and registration volume in Namecheap005750 and Namecheap005752.

and .BIZ, face competition from other registries.<sup>61</sup> This competition is likely to protect registrants from additional registry price increases in the future and appears to have protected registrants from additional registry price increases since the price caps were eliminated nearly three years ago.<sup>62</sup>

37. Dr. Langus and Prof. Dr. Verboven do not address the question of whether .ORG, .INFO, and .BIZ have enough market power to raise prices above what would have been allowed under the prior price caps. Instead, Dr. Langus and Prof. Dr. Verboven present evidence that they claim shows .ORG, .INFO, and .BIZ have some market power and are able to raise prices above the “competitive” level. Even if, as is common for firms in our economy, .ORG, .INFO, and .BIZ have some market power over some customers, the facts cited by Dr. Langus and Prof. Dr. Verboven are either incorrect or do not support a conclusion that .ORG, .INFO, and .BIZ would raise price above the level that would have prevailed if the prior price caps had remained in effect or that .ORG, .INFO, and .BIZ should be price regulated while the approximately 1,500 TLDs should not be.<sup>63</sup>

**A. PRICES HAVE NOT, WITH ONE POSSIBLE EXCEPTION, INCREASED ABOVE THE LEVELS ALLOWED BY THE PRIOR PRICE CONTROLS**

38. Since the contractual price controls were removed in June 2019, .ORG, .INFO, and .BIZ have continued to set wholesale prices that would have been consistent with prior price controls, with the exception of a 13-cent price increase by .INFO in January 2022, as discussed in my prior report. Specifically, .ORG has not raised the wholesale price of a renewal registration in

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<sup>61</sup> Carlton Report, § III.B.

<sup>62</sup> My conclusion that .ORG is unlikely to increase prices above what would have been allowed under the prior price caps was also dependent on the non-profit status of .ORG’s registry operator, its repeated statements that it will not raise prices at the expense of harming registrants, and its apparent demonstration of that commitment by not raising prices in over five years. (Carlton Report, ¶ 13.)

<sup>63</sup> In 2009, I analyzed whether price restrictions were warranted for ngTLDs and concluded that they were not necessary. As explained in my prior report in this matter, my view in 2009 that price restrictions were undesirable partially depended on the existing price regulation of .COM and other legacy gTLDs at that time. (Carlton Report, ¶ 46.) The question now is whether .ORG, .INFO, and .BIZ should continue to be regulated given the additional market evidence that has accumulated since 2009, the current state of competition between TLDs (including .COM, ngTLDs, and ccTLDs), and the observed behavior of .ORG, .INFO, and .BIZ since the price caps were removed in 2019.

more than five years despite being allowed to raise prices by 10% annually when the contractual price controls were in force and having no contractual limits on price increases since the removal of the caps in June 2019.<sup>64</sup> .BIZ has increased the wholesale price of a renewal registration only once since the removal of the price controls, a 10% increase on November 4, 2019, which means that .BIZ prices have remained well within what the prior price caps would have allowed.

According to Namecheap cost data, [Redacted - Confidential Information]

[Redacted] According to “wholesale” price data reported by Domain Cost Club, .INFO did increase the wholesale renewal price by about 11% in January 2022, which is about 13 cents over what would have been allowed under the previous price controls; at the same time, .INFO lowered the registry price of a new registration by 38%.<sup>65</sup> With respect to new registrations, .ORG, .INFO, and BIZ have consistently set wholesale prices that are at or below the price of a renewal registration and therefore below the previous price caps.

39. The fact that, with one possible exception, .ORG, .INFO, and .BIZ have not increased prices above the levels that would have been allowed under the prior price controls provides additional evidence that there are constraints on .ORG, .INFO, and .BIZ pricing, such as competition from other TLDs. These constraints have protected registrants from additional

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<sup>64</sup> In their second report, Dr. Langus and Prof. Dr. Verboven suggest that “.ORG has continued to increase effective registry fees” every year. (Verboven Second Report, ¶ 159.) I did not directly respond to this claim in my prior report because the evidence appears clear that .ORG has charged a constant price of \$9.93 for renewal registrations since 2016. The relevant evidence is Namecheap cost data, Domain Cost Club stated prices (e.g., <https://web.archive.org/web/20161018082812/https://www.domaincostclub.com/pricing.dhtml> and <https://www.domaincostclub.com/pricing.dhtml>), and statements by .ORG’s registry operator (e.g., in a 2019 open letter, the .ORG registry operator stated, “we have not raised our prices for the last three years” <https://thenew.org/an-open-letter-to-the-org-community/>). Dr. Langus and Prof. Dr. Verboven acknowledge that “.ORG’s headline price has not increased in over five years” but repeat their claim that .ORG has raised “average effective registry fees” every year based on their calculation of .ORG’s average registration fee per domain under management (“DUM”). (Verboven Third Report, ¶¶ 153 and 154.) Their calculation is unreliable for several reasons. For example, it combines new and renewal registrations into one average. In addition, the registration fees in the numerator are from one data source while the domains under management in the denominator is from a different data source, and the time periods of the two data sources do not coincide.

<sup>65</sup> Carlton Report, n. 71.

registry price increases since price controls were eliminated nearly three years ago, and they are likely to protect registrants in the future as well.

**B. DR. LANGUS AND PROF. DR. VERBOVEN MISCHARACTERIZE THE EVIDENCE ON TLD PRICES AND USE IT TO DRAW AN INCORRECT CONCLUSION REGARDING THE ABILITY OF TLDs TO RAISE PRICES IN THE ABSENCE OF REGULATION**

40. Dr. Langus and Prof. Dr. Verboven claim that .ORG, .INFO, and .BIZ have high prices relative to certain ngTLDs, that such price differentials are “not consistent with the hypothesis that the new gTLDs intensely compete with this group of legacy gTLDs,”<sup>66</sup> and the “high” prices of .ORG, .INFO, and .BIZ are indicative of market power.<sup>67</sup> I show in this section that .ORG, .INFO, and .BIZ do not have high prices relative to other TLDs. This conclusion holds whether one compares .ORG, .INFO, and .BIZ to all ngTLDs, to popular TLDs that are semantically similar to .BIZ, or to the most popular ngTLDs. Then I address Dr. Langus and Prof. Dr. Verboven’s argument that the allegedly high prices charged by .ORG, .INFO, and .BIZ are evidence that these TLDs have market power and face no competitive constraints that would prevent them from raising prices in the absence of continued price regulation. Even if it were true (which it is not) that .ORG, .INFO, and .BIZ had high prices relative to other TLDs, this would not imply that .ORG, .INFO, and .BIZ face no competitive constraints. High prices alone imply neither a lack of competitive constraints nor a need for price regulation.

**1. .ORG, .INFO, and .BIZ Do Not Charge High Prices Relative to ngTLDs**

41. Dr. Langus and Prof. Dr. Verboven’s claim that .ORG, .INFO, and .BIZ charge “high” prices and that this is indicative of market power is false. First, Dr. Langus and Prof. Dr. Verboven provide a few examples of ngTLDs whose prices are lower than .ORG, .INFO, and .BIZ, but this is not true in general. As I explained in my prior report, the prices .ORG, .INFO, and .BIZ charge for new and renewal registrations are lower than the prices charged by

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<sup>66</sup> Verboven Third Report, ¶ 161.

<sup>67</sup> See, Verboven Third Report, ¶¶ 158 and 167.



approximately 80% of ngTLDs.<sup>68</sup> This is true for both new registrations and renewal registrations.

42. Second, it is not true that .ORG, .INFO, and .BIZ charge higher prices than popular TLDs that are semantically similar to .BIZ. Although Dr. Langus and Prof. Dr. Verboven state that “high” prices of .ORG, .INFO, and .BIZ are evidence of market power,<sup>69</sup> they reason that the high prices charged by many ngTLDs do not reflect market power and are instead necessitated by those ngTLDs’ low registration counts and resulting high fixed costs per registration.<sup>70</sup> Their implication appears to be that ngTLD prices are constrained by competition and so only ngTLDs with few registrations would charge higher prices than do .ORG, .INFO and .BIZ. As evidence, Dr. Langus and Prof. Dr. Verboven compare the price and registration count of .BIZ to the prices and registration counts of seven (out of the 13) alternative TLDs that I identified as being semantically similar to .BIZ.<sup>71</sup> All seven of these alternatives appear to have been designed for specific business purposes, and, as demonstrated by Dr. Langus and Prof. Dr. Verboven, these TLDs have relatively few domains under management (less than 100,000 combined, compared to .BIZ’s 1.4 million) and charge higher prices than does .BIZ. Dr. Langus and Prof. Dr. Verboven conclude that: “Given the highly specific meaning imbued in these new gTLDs, it is unlikely that they represent a good substitute for many potential registrants in .BIZ” and that the low registrations and relatively high prices are consistent with this conclusion.<sup>72</sup>

43. Dr. Langus and Prof. Dr. Verboven’s analysis is misleading and leads to an incorrect conclusion because it ignores the other six TLDs that I identified as being semantically similar to

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<sup>68</sup> Carlton Report, n. 58 (“For new registrations, 59%, 84%, and 84% of new gTLDs had higher wholesale costs than did .ORG, .INFO, and .BIZ, respectively. For renewal registrations, 87%, 82%, and 83% of new gTLDs had higher wholesale costs than did .ORG, .INFO, and .BIZ, respectively.”). Averaging across the percentages for .ORG, .INFO, and .BIZ yields 76% for new registrations and 84% for renewal registrations.

<sup>69</sup> Verboven Third Report, § 5.5.6.1.

<sup>70</sup> Verboven Third Report, ¶ 167. Dr. Langus and Prof. Dr. Verboven ignore the fact that most registries are operated by large registry operators that operate multiple TLDs. For example, Donuts Inc. operates over 200 TLDs, including five of the seven small TLDs listed in Verboven Third Report, Table 2 (.LIMO, .CAB, .FLORIST, .COFFEE, and .CAREERS). <https://donuts.domains/what-we-do/top-level-domain-portfolio/>

<sup>71</sup> Verboven Third Report, Table 2 and n. 146.

<sup>72</sup> Verboven Third Report, ¶ 169.

.BIZ. In particular, my previous report did not identify just the seven alternatives to .BIZ that Dr. Langus and Prof. Dr. Verboven analyze, but rather 13 alternatives (in addition to .COM).<sup>73</sup> Table 5 below shows domains under management and prices for the six TLDs that they excluded. Unlike the seven TLDs that Dr. Langus and Prof. Dr. Verboven included in their analysis, the six that they excluded are ones that, like .BIZ, appear to have been designed for generic business purposes and all but one of them have many more domains under management than the seven ngTLDs Dr. Langus and Prof. Dr. Verboven examined,<sup>74</sup> with some having even more domains than .BIZ. Thus, they would not appear likely to suffer from the problem of having high fixed costs per registration that Dr. Langus and Prof. Dr. Verboven identified for the seven small ngTLDs they analyzed. And yet most of these TLDs charge prices that are higher, not lower, than what .BIZ charges. Five out of the six charge a higher price than .BIZ for new registration, and five out of the six charge a higher price than .BIZ for renewal registrations.<sup>75</sup> I conclude that, contrary to the claims of Dr. Langus and Prof. Dr. Verboven, even popular TLDs often charge higher prices than do .ORG, .INFO, and .BIZ.

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<sup>73</sup> Carlton Report, ¶ 57; Verboven Third Report, n. 146.

<sup>74</sup> See Verboven Third Report, Table 2.

<sup>75</sup> The only TLD with a lower renewal price than .BIZ is .NET, which is subject to contractual price constraints.



**Table 5: Registration Fees for Generic Alternatives to .BIZ**

<b>TLD<sup>2</sup></b>	<b>Domains Under Management</b>	<b>Weighted Average Fee for a New Registration</b>	<b>Weighted Average Fee for Renewals</b>
.BIZ	1,441,390	3.04	12.63
.NET	13,703,781	9.77	9.77
.PRO	291,733	3.47	13.12
.LTD	119,370	5.97	14.18
.CO <sup>3</sup>	3,312,651	5.02	20.00
.STORE	529,872	1.18	21.22
.LLC	17,891	21.97	21.96

Source: Namecheap005750; Namecheap005752; ICANN monthly registry reports; Domain Tools.

Notes:

1. Follows the methodology of Verboven Third Report, Table 2. Domains under management are based on ICANN monthly registry reports (December 2020); weighted average fee is the average wholesale cost based on Namecheap's cost data from January - November 2021.
2. .LTD, .STORE, and .LLC are ngTLDs.
3. For .CO, domains under management comes from Domain Tools (accessed 3/10/2022).

44. Third, it is also not true that .ORG, .INFO, and .BIZ charge high prices relative to the most popular ngTLDs. Table 6 reports the new and renewal registration prices charged by .ORG, .INFO, .BIZ, and the ten most popular ngTLDs according to Domain Cost Club. The average of the renewal registration prices charged by the most popular ngTLDs is higher than the renewal registration prices charged by .ORG, .INFO, and .BIZ. For new registrations, the pricing evidence is more complicated,<sup>76</sup> though the average of the prices charged by the most popular ngTLDs is higher than the price charged by .INFO. Both new and renewal prices matter

<sup>76</sup> Domain Cost Club is an ICANN-accredited registrar that operates as a buying club. According to Domain Cost Club's website, registrants pay a membership fee and are then able to register domains at the wholesale price registrars pay to registry operators. See <https://www.icann.org/registrar-reports/accredited-list.html>, <https://www.domaincostclub.com/index.dhtml>, and <https://www.domaincostclub.com/pricing.dhtml> (last accessed 3/14/2022). I understand that occasionally some registries may have marketing incentive programs for registrars that could lower the effective registration price below the wholesale price. Regardless, the prices reported by Domain Cost Club are sometimes inconsistent with Namecheap's cost data. For example, according to Namecheap, .BIZ charged an average new registration price of \$3.04 in 2021 (see Table 5), which is lower than the average of the renewal registration prices charged by the most popular ngTLDs according to Domain Cost Club.

to a pricing comparison. Averaging the new and renewal registration prices together (using a simple weighting based on the overall industry split of registrations between new and renewal), shows that about half of the ten most popular ngTLDs charge registration prices that are higher than the prices charged by .ORG, .INFO, and .BIZ. Regardless of the exact comparison methodology, the prices charged by .ORG, .INFO, and .BIZ are not high relative to the range of prices charged by the most popular ngTLDs.

**Table 6: Registration Fees for .INFO and Large ngTLDs**

<b>TLD</b>	<b>Domains Under Management<sup>1</sup></b>	<b>New Registration Price<sup>2</sup></b>	<b>Renewal Registration Price<sup>2</sup></b>	<b>Weighted Average Price<sup>3</sup></b>
.ORG	10,598,175	\$9.93	\$9.93	\$9.93
.INFO	3,696,915	\$2.00	\$14.60	\$10.31
.BIZ	1,430,978	\$12.63 <sup>4</sup>	\$12.63	\$12.63
.XYZ	3,815,875	\$0.99	\$8.56	\$5.98
.ONLINE	1,847,988	\$2.99	\$25.00	\$17.50
.TOP	1,571,646	\$1.24	\$4.25	\$3.22
.SITE	1,021,595	\$2.59	\$20.00	\$14.07
.SHOP	994,879	\$1.56	\$24.96	\$16.99
.CLUB	868,787	\$9.95	\$9.95	\$9.95
.ICU	854,330	\$1.25	\$5.00	\$3.72
.STORE	732,960	\$4.99	\$40.00	\$28.07
.CYOU	671,303	\$1.00	\$3.00	\$2.32
.VIP	652,836	\$11.00	\$11.00	\$11.00
<b>Average<sup>5</sup></b>		<b>\$3.76</b>	<b>\$15.17</b>	<b>\$11.28</b>

Source: Domain Tools; Domain Cost Club; ICANN monthly registry reports.

Notes:

1. Domains under management comes from Domain Tools (accessed 3/10/2022).
2. According to Domain Cost Club (accessed 3/10/2022).
3. According to ICANN monthly registry reports 66% of registrations are renewals (among new and renewal registrations in the 12 months ending August 2021). The table weights new and renewal registration prices accordingly.
4. The prices reported by Domain Cost Club are sometimes inconsistent with Namecheap's cost data. For example, according to Namecheap, .BIZ charged an average new registration price of \$3.04 in Domain in 2021 (see Table 5).
5. Simple average across the ten ngTLDs in the table.

## 2. Differentiated Prices Do Not Reliably Indicate a Lack of Competition or the Need for Regulation

45. Even if it were true (it is not) that .ORG, .INFO, and .BIZ had high prices relative to other TLDs, this would not imply that .ORG, .INFO, and .BIZ necessarily face no competitive constraints that prevent them from raising prices above what would have been allowed under the prior price caps. As a matter of economic theory, the mere fact that sellers charge different prices does not imply that the sellers do not constrain each other's pricing. Consumers in a marketplace often have the option of choosing between several products that, while somewhat similar, are differentiated from each other and hence not perfect substitutes. Nevertheless, these products can be substitutes in the eyes of consumers even when their prices differ and thus they can constrain each other's prices. The fact that differentiated products that charge different prices can nonetheless compete with each other is well recognized in, for example, the Horizontal Merger Guidelines and in my textbook on industrial organization.<sup>77</sup>

46. Competition among TLDs can be characterized as differentiated product competition. All TLDs allow for domain name registration and serve to direct internet traffic to a registrant's website, so they must be substitutable to some degree, but registrants still may prefer some TLDs over others, which would imply that the substitutability is not perfect. The fact that two TLDs are not perfect substitutes or charge different prices is not a reliable indicator that the TLDs do not constrain each other's prices, nor does it indicate that some type of price regulation is warranted. Indeed, if the logic that Dr. Langus and Prof. Dr. Verboven cite to justify rate regulation here were applied to other industries, it would imply the need for widespread price regulation across the economy. That logic would also suggest that many of the currently

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<sup>77</sup> The Horizontal Merger Guidelines define a product market (a "group of substitute products") based on consumer reactions to changes in prices, not differences in price levels, and discuss measuring substitutability in differentiated product markets by calculating diversion ratios, which measure how sales shift between firms—including firms producing either "high-end" or "low-end" products—when one firm changes its price. (U.S. Department of Justice and the Federal Trade Commission, "Horizontal Merger Guidelines," August 19, 2010, *available at*: <https://www.justice.gov/atr/horizontal-merger-guidelines-08192010>, §§ 5.2 and 6.1.) In my textbook, I explained how markets are defined as a group of products that are close substitutes, and that demand substitutability is indicated by the reaction of consumer demand to a change in the price of one of the products. (Dennis W. Carlton and Jeffrey M. Perloff (2005), *Modern Industrial Organization, 4th Edition*, Pearson/Addison-Wesley, Chapter 19.)

unregulated ngTLDs, including popular ngTLDs such as .ONLINE and .CLUB, should be saddled with price regulation.

**C. DR. LANGUS AND PROF. DR. VERBOVEN’S COMPARISON OF REGISTRATION TRENDS IS NOT INFORMATIVE ABOUT THE COMPETITION FACED BY .ORG, .INFO, AND .BIZ**

47. Dr. Langus and Prof. Dr. Verboven compare the number of registered domains in each year on .ORG, .INFO, .BIZ and certain popular new ngTLDs. Dr. Langus and Prof. Dr. Verboven argue that registration volumes in .ORG, .INFO, and .BIZ were relatively stable compared to some of the ngTLDs and conclude that .ORG, .INFO, and .BIZ do not compete for registrations with ngTLDs.<sup>78</sup> This comparison is flawed and is not informative about the competition faced by .ORG, .INFO, and .BIZ.

48. First, the relative stability of individual TLDs is not a relevant comparison. A new registration on a ngTLD could be a substitute for a registration on another TLD—.ORG, .INFO, .BIZ, .COM, etc.—or it could be an incremental registration that would not have otherwise occurred. Incremental registrations may have been particularly common in the first couple of years after ngTLDs were introduced.<sup>79</sup> In addition, the effect of ngTLD competition on legacy TLDs was likely gradual as ngTLDs gained experience, reputation and industry penetration and as pre-existing registrants transitioned to alternative TLDs.<sup>80</sup>

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<sup>78</sup> Verboven Third Report, ¶¶ 177 and 185.

<sup>79</sup> Some ngTLDs offered very low or zero registration prices. For example, the registry .Berlin ran a promotion that gave away free domains to Berlin residents, and the registrar Network Solutions reportedly gave away complementary .XYZ registrations to their customers. <https://onlinedomain.com/2014/08/25/domain-extensions/new-gtlds/new-gtld-reach-2-million-domain-name-registrations-but-what-does-that-mean/>; <https://www.thedomains.com/2014/06/04/network-solutions-has-no-idea-what-i-am-talking-about/>. Several ngTLDs offered new registration prices of less than \$1. <https://web.archive.org/web/20161018082812/https://www.domaincostclub.com/pricing.dhtml>. These “teaser rates” might well have had large effects on new registrations for the effected TLDs, and little effect on registrations for other TLDs.

<sup>80</sup> During the transition period, registrants may have registered duplicate domains on different TLDs, which would be observed in the data as an increase in ngTLD registrations followed subsequently by a decrease in legacy TLD registrations.

49. Regardless, this line of argument by Dr. Langus and Prof. Dr. Verboven is of minor importance. As I explained in my prior report, .ORG, .INFO, and .BIZ face competition from many sources. The first and foremost source of competition is likely .COM, which is by far the most popular TLD, accounting for 74% of registered domains among gTLDs.<sup>81</sup> .ORG, .INFO, and .BIZ likely also face competition from other ngTLDs and ccTLDs, including open ccTLDs.

50. Dr. Langus and Prof. Dr. Verboven make no attempt to study the cross-elasticity or substitutability between TLDs. They merely show that year-to-year changes in .ORG, .INFO, and .BIZ registrations are relatively stable compared to year-to-year changes in select ngTLDs. The long-term trend, however, is clear. The number of registrations on .INFO and .BIZ has declined even as the total number of registrations across all gTLDs has increased. (See Table 7.) Among new registrations, where switching costs are not a concern, .INFO and .BIZ's number of registrations and share of registrations has fallen by an even larger percentage than domains under management has fallen. This suggests that .INFO and .BIZ have faced competition and will continue to face competition in the future.

**Table 7: Registrations on .INFO and .BIZ**

Year <sup>1</sup>	Domains Under Management			New Registrations		
	.INFO and .BIZ	Other gTLDs	.INFO and .BIZ Share	.INFO and .BIZ <sup>2</sup>	Other gTLDs	.BIZ Share <sup>2</sup>
2014	8,285,792	147,106,866	5.3%	207,166	3,373,449	5.8%
2015	7,471,014	157,183,914	4.5%	192,268	4,227,451	4.4%
2016	8,123,486	180,718,301	4.3%	198,071	4,888,313	3.9%
2017	8,420,721	186,776,019	4.3%	308,903	4,384,124	6.6%
2018	8,471,957	190,463,428	4.3%	192,853	4,892,036	3.8%
2019	6,967,575	199,717,055	3.4%	144,223	5,356,111	2.6%
2020	6,191,550	212,474,480	2.8%	105,651	5,189,406	2.0%
2021	5,711,759	212,068,275	2.6%	90,126	5,239,390	1.7%

Source: ICANN monthly registry reports.

Notes:

1. Annual values are calculated as the average of monthly values.

2. The increase in new registration share in 2017 corresponds with an ~80% decline in .INFO's new registration price. See

<https://web.archive.org/web/20210121041515/https://www.domaincostclub.com/pricing.dhtml>

<sup>81</sup> Carlton Report, ¶ 48.

51. Finally, Dr. Langus and Prof. Dr. Verboven’s reliance on short-run changes in domains under management (DUM) to determine whether TLDs face competition would lead to the conclusion that many TLDs have market power and should have price caps. For example, even among the ngTLDs analyzed by Dr. Langus and Prof. Dr. Verboven,<sup>82</sup> there is no apparent short-run correlation in DUM across some TLDs. .XYZ and .TOP both have an increase of several million DUM in 2016 and then a decline by several million in 2017, yet contemporaneous DUMs are relatively stable for .ONLINE, .SITE, and .ICU. Likewise, the rapid growth in popularity of .ICU in 2019 did not come at the apparent expense of any of the other ngTLDs. Basing a finding of the need for intervention on such trends would lead to the extreme conclusion that a great number of TLDs (including ngTLDs) should have price caps.

#### **IV. DR. LANGUS AND PROF. DR. VERBOVEN’S CLAIMS REGARDING ICANN’S ABILITY TO SET EFFECTIVE, EFFICIENT PRICE CAPS ARE NOT SUPPORTED BY EVIDENCE**

52. Dr. Langus and Prof. Dr. Verboven raise several criticisms of my analysis regarding the costs and benefits of price caps on .ORG, .INFO, and .BIZ, with a fundamental one being that I assume that, if price controls were in place after 2019, they would have been the same as the price controls that were in place from 2013 through 2019. In particular, they state:<sup>83</sup>

Prof. Carlton’s analysis of benefits of price caps relies on an assumption that ICANN’s best alternative to removing price caps was to leave them as they were set in the registry agreements signed in 2013. In our view, this assumption is not justified as ICANN could have strengthened price caps instead of removing them. Due to the way in which price caps on .ORG, .INFO, and .BIZ were set in 2013 (allowing a 10% year-on-year price increase), they may have no longer been binding on .ORG, .INFO, and .BIZ in 2019 or would not be binding in the future despite considerable market power of .ORG, .INFO, and .BIZ. Because of the unwarranted assumption on the future price caps, Prof. Carlton’s analysis has limited probative value for the questions that we have analyzed.

53. Essentially, I concluded that the benefits of capping the prices of .ORG, .INFO, and .BIZ at the prior price caps were unlikely to be significant as .ORG, .INFO, and .BIZ do not appear to have enough market power to raise prices significantly above the levels allowed under the prior

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<sup>82</sup> Verboven Third Report, Figures 5-7.

<sup>83</sup> Verboven Third Report, p. 5.

price caps. Dr. Langus and Prof. Dr. Verboven stated that the prior price caps “have likely been effective in limiting the ability of the registries to exploit their market power by increasing wholesale registration fees,”<sup>84</sup> and that “the removal of price caps in relation to these TLDs can be expected to result in an increase of wholesale registry prices of affected gTLDs.”<sup>85</sup> They have no response, however, to the evidence that prices did **not** rise when the caps were removed. They agree that this means the caps may have been ineffective, stating: “Due to the way in which price caps on .ORG, .INFO, and .BIZ were set in 2013 (allowing a 10% year-on-year price increase), they may have no longer been binding on .ORG, .INFO, and .BIZ in 2019 or would not be binding in the future[.]”<sup>86</sup> And they argue that, if the prior price caps were not sufficient to constrain market power in the future, ICANN could set stricter price caps that would efficiently constrain .ORG, .INFO, and .BIZ’s pricing behavior.

54. Dr. Langus and Prof. Dr. Verboven provide no evidence that ICANN would be able to successfully set future price caps at the “right” level, instead simply stating that ICANN is very experienced at setting prices (presumably the “right” ones).<sup>87</sup> ICANN itself has stated that it does not have the expertise to set efficient price caps,<sup>88</sup> which is in direct contradiction to Dr. Langus and Prof. Dr. Verboven’s assumption. And Dr. Langus and Prof. Dr. Verboven agree that the caps may not have been binding in 2019.<sup>89</sup> Presumably, if ICANN had been capable of setting effective price caps, those caps would have been effective in 2019. The fact that those price caps were ineffective is consistent with ICANN not having the expertise to set the right price. If ICANN was incapable of setting an effective price cap in 2019, it is not clear why they would do better in the future. My opinion is that setting a lower, future price cap could also be harmful if the new price cap were set too low, as I explained in my prior report,<sup>90</sup> and that the

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<sup>84</sup> Verboven Third Report, ¶ 20.

<sup>85</sup> Verboven Third Report, ¶ 20.

<sup>86</sup> Verboven Third Report, ¶ 16.

<sup>87</sup> Verboven Third Report, ¶ 81 (“ICANN has been using price caps for over 20 years (and they are still in force on .COM and .NET). It can therefore be presumed that ICANN has acquired significant experience about how to set them efficiently[.]”).

<sup>88</sup> Carlton Report, ¶ 43

<sup>89</sup> Verboven Third Report, ¶ 16.

<sup>90</sup> Carlton Report, § III.B.

setting of such price caps can cause harms. As I pointed out in my initial report, assuming that prices can be set at the “right” level leads to the tautological conclusion that price caps, not competition, should be used to set price not just here but everywhere in the economy.

## V. CONCLUSION

55. Dr. Langus and Prof. Dr. Verboven dismiss the insights from economic incentives and industry structure together with the econometric evidence by explaining that this industry deviates from one of perfect competition where all prices are the same and there is instant and 100% passthrough. To see how radical this approach is, if adopted it would recommend that all gTLDs should be regulated and that most goods in our economy should be regulated. It is based on speculation and is not based on any data that shows a harm to Namecheap. Dr. Langus and Prof. Dr. Verboven utterly ignore the evidence showing the ineffectiveness of the price regulations and ignore the continued existence of .COM as the dominant player with 74% of all registrations. They selectively present unreliable econometric results without recognizing that their own methods, if applied systematically, confirm my prior conclusion that there is no reason to expect that Namecheap will suffer harm from reduced per unit margins if wholesale registry prices rise.

*Dennis W. Carlton*

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Dennis W. Carlton  
March 14, 2022



**EXHIBIT 1**

**CURRICULUM VITAE OF DENNIS W. CARLTON**

**AND**

**TESTIMONY, JANUARY 2018-MARCH 2022**



## FIELDS OF SPECIALIZATION

Theoretical and Applied Microeconomics  
Industrial Organization

## ACADEMIC HONORS AND FELLOWSHIPS

Keynote Address, 32nd Annual Workshop of the Competition Law & Policy Institute of New Zealand, 2021  
2020 Award for Best Article in *Economic Inquiry* for the article "Antitrust Treatment of Nonprofits: Should Hospitals Receive Special Care? (with C. Capps and G. David)".  
Best Academic Economics Article in Antitrust - 2019 Antitrust Writing Awards, given by Concurrences and George Washington University Law School for the article "Vertical Most-Favored-Nation Restraints and Credit Card No-Surcharge Rules" (with R. Winter) in *Journal of Law and Economics*.  
Harris Professor Lecture, Clemson University, 2019  
Taft Lecture, New York Bar Association, 2018  
Keynote Address, CRESSE Conference, June 2018  
Best Academic Economics Article in Antitrust - 2016 Antitrust Writing Awards, given by Concurrences and George Washington University Law School for the article "Rethinking Antitrust in the Presence of Transaction Costs: Coasian Implications" (with B. Keating) in *Review of Industrial Organization*.  
Keynote Address, Federal Trade Commission, Auto Distribution: Current Issues and Future Trends, January 19, 2016  
Award for Antitrust Litigation Consultants of the Year 2015, awarded by Corporate Vision  
Keynote Address, International Industrial Organization Conference, 2014  
The 2014 Distinguished Fellow, Industrial Organization Society  
Economist of the Year, Global Competition Review, 2014  
Keynote Address, Sixth Annual Federal Trade Commission Microeconomics Conference, 2013  
Heath Memorial Lecture, University of Florida, 2013  
Award (w. Mark Israel) for Best Antitrust Analysis in Litigated Cases, Global Competition Review, 2013  
Keynote Address, 21<sup>st</sup> Annual Workshop of the Competition Law & Policy Institute of New Zealand, 2010  
Keynote Address, Japanese Symposium on Competition, sponsored by Japan Fair Trade Commission, 2009  
Recipient of Inaugural Robert F. Lanzilotti Prize, awarded by the Industrial Organization Society for Best Paper in Antitrust Economics, 2008  
Keynote Address to Israel Antitrust Conference, 2008  
Lewis Bernstein Memorial Antitrust Lecture, Washington, D.C., 2006  
Distinguished Visitor, University of Melbourne, April 2005  
Milton Handler Lecture, New York, 2004  
Keynote Address to the International Competition Network, Mexico, 2004  
Alexander Brody Distinguished Lecture, Yeshiva University, 2000  
Ph.D. Thesis chosen to appear in the Garland Series of Outstanding Dissertations in Economics  
Recipient of the 1977 P.W.S. Andrews Memorial Prize Essay, best essay in the field of Industrial Organization by a scholar under the age of thirty  
National Science Foundation Grant, 1977 - 1985  
Recipient of Post-doctoral Grant from the Lincoln Foundation, 1975  
National Science Foundation Fellowship, 1972 - 1975  
Phi Beta Kappa, 1971  
John Harvard Award, 1970  
Detur Book Prize, 1969  
Edwards Whitaker Award, 1969  
M.I.T., National Scholar Award, 1968

## PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Appointed to ABA Leadership in Antitrust Section: 2018-2019  
Participant in the FTC Competition and Consumer Protection Hearings: "The State of U.S. Antitrust Law", September 21, 2018 (Session 1) and "Merger Retrospective Hearing", April 12, 2019  
Co-Organizer and Instructor, Antitrust Law and Economics Institute, Federal Judicial Center, 2017, 2018  
Member, Task Force on International Divergence in Dominance Standards, American Bar Association 2017 - 2018  
Board Member, The Taub Center for Social Policy Studies, 2017 - present  
Member, U.S. Chamber of Commerce International Competition Policy Expert Group for report on International Trade and Competition, 2017  
Appointed Member of the ABA Presidential Transition Task Force, Antitrust Law, 2016  
Appointed Member of the ABA Presidential Transition Task Force, Antitrust Law, 2012  
Advisory panel to the Department of Justice and the FTC on the merger guidelines, 2010  
Co-editor, Journal of Law and Economics, 1980 - present  
Visiting Committee, MIT, Department of Economics, 1995 - 2011  
Member, Advisory Board, Economics Research Network, 1996 - present  
Member, Advisory Board of Antitrust and Regulation Abstracts, Social Science Research Network, 1998 - present  
Advisory Board, Massachusetts Institute of Technology, Department of Economics, 1999  
Editorial Board, Competition Policy International (CPI), 2010 - present, Co-Editor, Competition Policy International (CPI), 2004 - 2009  
Member, Economic Task Force - Antitrust Division, American Bar Association, 2010  
Advisory Board, Journal of Competition Law and Economics, 2004 - present  
Deputy Assistant Attorney General for Economic Analysis, Antitrust Division, U.S. Department of Justice, 2006 - 2008  
Presidential Appointment to the Antitrust Modernization Commission, 2004 - 2007  
Invited Panelist at Public Hearing on the Retail Banking Sector Inquiry: Payment Cards, before the European Commission in Brussels, Belgium, July 17, 2006.  
Consultant on Merger Guidelines to the FTC, 2003  
Professor, George Mason Institute for Judges, October 2001  
Chairman, FTC Round Table on Empirical Industrial Organization (September 11, 2001)  
Participant in the Round Table on the Economics of Mergers Between Large ILECS before the Federal Communications Commission, February 5, 1999  
Member, Steering Committee, Social Science Research Council, Program in Applied Economics, 1997 - 1999  
Participant in roundtable discussions on "The Role of Classical Market Power in Joint Venture Analysis," before the Federal Trade Commission, November 19, 1997 and March 17, 1998.  
Participant in meetings with Committee of the Federal Reserve on Payment Systems, June 5, 1997  
Associate Editor, Regional Science and Urban Economics, 1987 - 1997  
Resident Scholar, Board of Governors of the Federal Reserve System, Summer, 1995  
Accreditation Committee, Graduate School of Business, Stanford University, 1995  
Associate Editor, The International Journal of Industrial Organization, 1991 - 1995  
Editorial Board, Intellectual Property Fraud Reporter, 1990 - 1995  
Consultant on Merger Guidelines to the U.S. Department of Justice, 1991 - 1992  
Member, Advisory Committee to the Bureau of the Census, 1987 - 1990  
National Bureau of Economic Research, Research Associate  
Member, American Economic Association, Econometrics Society

## BOOKS

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Modern Industrial Organization, Scott, Foresman & Co., co-authored with Jeffrey Perloff, first edition (1990), (Chapter 17 of first edition reprinted as "The Economics of Information" for the University of Connecticut, Food Marketing Policy Center (1989)), second edition (1994), translated into Chinese, French, Hungarian and Italian; Addison Wesley Longman, third edition (2000), fourth edition (2005), translated into Chinese (2009).

## RESEARCH PAPERS

"The Equilibrium Analysis of Alternative Housing Allowance Payments," (with Joseph Ferreira) Chapter 6 of Analysis of a Direct Housing Allowance Program, The Joint Center for Urban Studies of M.I.T. and Harvard University, (July 1975).

"Theories of Vertical Integration," presented at Fourth Annual Telecommunications Conference. Appears in a volume of Proceedings of the Fourth Annual Telecommunications Conference, Office of Telecommunications Policy, (April 1976).

"Uncertainty, Production Lags, and Pricing," American Economic Review, (February 1977).

"Selecting Subsidy Strategies for Housing Allowance Programs," (with Joseph Ferreira) Journal of Urban Economics, (July 1977).

"Peak Load Pricing With Stochastic Demand," American Economic Review, (December 1977). (Reprinted in Economic Regulation edited by P.L. Joskow, Edward Elgar Publishing Limited, 1998 and Reprinted in The Economics of Public Utilities edited by Ray Rees, Professor of Economics at the University of Munich, Germany, 2005.)

"The Distribution of Permanent Income," (With R. Hall) Income Distribution and Economic Inequality, edited by Zvi Griliches, et al. (Halsted Press, 1978).

"Vertical Integration--An Overview," in Congressional Record Hearings on the Communications Act of 1978. Bill H.R. 13105, (August 3, 1978).

"Market Behavior with Demand Uncertainty and Price Inflexibility," American Economic Review, (September 1978).

"Vertical Integration in Competitive Markets Under Uncertainty," Journal of Industrial Economics, (March 1979). Awarded the P.W.S. Memorial Prize for the best essay in the field of Industrial Organization by a scholar under the age of thirty.

"Valuing Market Benefits and Costs in Related Output and Input Markets," American Economic Review, (September 1979).

"Contracts, Price Rigidity and Market Equilibrium," Journal of Political Economy, (October 1979).

"Why New Firms Locate Where They Do: An Econometric Model," in Studies in Regional Economics, edited by W. Wheaton, (Urban Institute, 1980).

- "Benefits and Costs of Airline Mergers: A Case Study," (with W. Landes and R. Posner) Bell Journal of Economics, (Spring 1980). (Reprinted in "Air Transport" in Classics In Transport Analysis series, edited by Kenneth Button and Peter Nijkamp, 2001.)
- "The Limitations of Pigouvian Taxes as a Long Run Remedy for Externalities," (with G. Loury) Quarterly Journal of Economics, (November 1980).
- "The Law and Economics of Rights in Valuable Information: A Comment," Journal of Legal Studies, (December 1980).
- "Price Discrimination: Vertical Integration and Divestiture in Natural Resources Markets," (with J. Perloff) Resources and Energy, (March 1981).
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## EXPERT TESTIMONIAL EXPERIENCE

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**EXHIBIT 2**

**ADDITIONAL MATERIALS RELIED ON**

## **EXPERT REPORTS**

Expert Report of Dr. Gregor Langus and Professor Dr. Frank Verboven and, *NameCheap, Inc., v. Internet Corporation for Assigned Names And Numbers*, ICDR Case No. 01-20-0000-6787, February 8, 2022

Expert Report of Dennis W. Carlton, Ph.D., *NameCheap, Inc., v. Internet Corporation for Assigned Names And Numbers*, ICDR Case No. 01-20-0000-6787, January 14, 2022

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