Phase II Assessment of the Competitive Effects Associated with the New gTLD Program

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EXECUTIVE SUMMARY

This report was commissioned by ICANN to assess the extent to which the release of new gTLDs (the "New gTLD Program") has resulted in changes in competition in the domain name marketplace as part of ICANN's Affirmation of Commitments with the U.S. Department of Commerce. An initial report was published on September 28, 2015 (the "Phase I Assessment"), which established a baseline description of metrics that can be used to assess the competitive conditions in the marketplace for domain names. This subsequent report (the "Phase II Assessment") updates our measures of those metrics to assess the extent to which the New gTLD Program has affected competition in this marketplace over the past year.[2] While only one year has passed, we do observe some changes in the marketplace. It is important to note, however, that the New gTLD Program is still relatively new, and that top-level domains continue to be introduced. Therefore, there could be additional changes to the competitive environment in the future.

The metrics discussed in this report reflect economic theory related to measuring and evaluating competition and also reflect consultation with the Competition, Consumer Trust & Consumer Choice Review Team (the "CCT Review Team"). As a result, this report includes additional metrics that were not included in the Phase I Report.

In assessing how key metrics have changed over the past year, we find that:
- Average and median retail prices for registrations of legacy and new gTLDs, as well as retail mark-ups over wholesale prices, have declined since Phase I.[3]
- The overall price level of legacy TLD wholesale price caps continues to be lower than wholesale prices for new gTLDs.[4,5] In addition, we find effectively no change in wholesale price caps for legacy TLDs, nor wholesale price levels for new gTLDs, when comparing our Phase I and Phase II results. The presence of price caps on legacy TLDs may help to explain the absence of changes in legacy TLD wholesale prices.[6]
- There are noticeable changes in the set of entities included in the largest 15 registries and registrars ranked by total domain registrations as a result of entry by new gTLD registries and growth in registrations made by different registrars who register new gTLD domains. In addition, we observe declines in the share of gTLD registrations held by the top four, top eight, and top 15 registries and registrars between Phase I and Phase II.

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[2] The Phase I Assessment was released for public comment on September 28, 2015 and is publicly available at https://www.icann.org/news/announcement-2-2015-09-28-en.

[3] Due to limitations on our ability to collect data on legacy TLD wholesale prices, we substitute for them with legacy TLD price caps (not the actual wholesale prices charged by registry operators of legacy TLDs).

[4] Since legacy TLD wholesale price caps are below the wholesale prices of new gTLDs, legacy TLD wholesale prices must also be below wholesale prices of new gTLDs.

[5] Legacy TLDs exclude ccTLDs.

[6] While a number of legacy TLDs have price caps that adjust relative to the previous year's price (and therefore do not necessarily bind the TLD to a specific price level), the presence of the cap may still limit the incentive for the TLD to change its price.

- There were changes in the new gTLD registration shares of registrars, with the largest registrar in the Phase I Assessment dropping out of the top 15 registrars (ranked by total domain registrations) and being replaced by a registrar whose share of new gTLD registrations increased by nearly 22 percent. We also observe that registrars located in China have become more prevalent among registrars with the largest shares of new gTLD registrations.
- We find the largest percentage growth in the number of registry operators in the Asian Pacific and European regions.
- New gTLDs continue to target registrants with a variety of interests, and the entry of new gTLDs within a given interest area is often associated with a decline in registration shares of other new gTLDs within the same interest area.
- The expansion of new gTLDs has continued since our Phase I Assessment; new gTLD registrations have increased from 3,483,064 registrations as of November 2014 to 16,570,035 registrations as of March 2016. New gTLD registrations accounted for approximately 2 percent of all gTLD registrations as of November 2014 and now account for 9 percent of all gTLD registrations. Overall domain registration levels have also increased since Phase I, since legacy TLD registrations have not declined and new gTLD registrations are growing.
- There continues to be no aggregate (worldwide) effect of new gTLD entry or registrations on legacy TLD registrations. This suggests that total TLD registrations have grown since the beginning of the New gTLD program, since legacy TLD registrations have not fallen and new gTLD registrations are growing. However, in analyzing the effect of the entry of regionally-specific TLDs (e.g., nyc), we typically observe a decline in new gTLD and legacy registrations after the entry of the regional TLD in the region relevant to that TLD. This suggests that regional TLDs may be viewed as substitutes for other new gTLDs and legacy TLDs.

While we are unable to draw conclusions about whether the New gTLD Program has caused a change in competition in the domain name marketplace, some of these changes in the past year are consistent with what one would expect to see in a marketplace with increased competition. For example, the decline in the share of new gTLD registrations attributable to the four and eight registries with the most registrations, and the observed volatility in the registration shares held by registry operators, could point to increased competition. The volatility in new gTLD registration shares made by registrars may also be indicative of increased competition; while there are multiple explanations for this volatility, one could observe movement in registration shares because of the entry of new registrars in the marketplace.

One might also expect that increased competition among new gTLD registry operators would result in lower new gTLD wholesale prices, which we do not observe. However, the decline in retail prices and markups since Phase I is consistent with increased competition among registrars. In making these observations, it is important to note that our price-based analyses are limited by available data. In particular, we would have liked to evaluate detailed transaction-level data to compare, for example, how prices of the same or similar second-level domain names differ across legacy TLDs and new gTLDs. However, we received no data from secondary market institutions in Phase I or Phase II.

Finally, in both our Phase I and Phase II Assessments, we found no aggregate (worldwide) effect of new gTLD entry or registrations on legacy TLD registrations. This is consistent with new gTLDs generally not being treated as substitutes for legacy TLDs. The observed impact of the entry of regionally-specific TLDs (e.g., nyc) on other TLD registration activity in the regional TLD's geographic area, suggests that regional TLDs may be viewed as substitutes for other new gTLDs and legacy TLDs. However, we do not have the necessary transaction-level data to fully analyze the substitutability of new gTLDs for legacy TLDs.

SECTION I – INTRODUCTION

We were retained by ICANN to assess the extent to which the New gTLD Program has resulted in increased competition in the domain name marketplace, and we have divided our work into two phases: an initial report published on September 28, 2015 (the "Phase I Assessment"), which established a baseline description of metrics that can be used to assess, in the future, the competitive conditions in the marketplace for domain names, and this subsequent report (the "Phase II Assessment"), which assesses the extent to which the New gTLD Program has affected competition in this marketplace over the past year.[7]

Since the Phase I Assessment, the domain registration space has continued to expand. As of March 2016, there were 955 new gTLDs available for registration and 16,570,035 domain registrations in new gTLDs. This represents a growth of 405 available new gTLDs available for registrations and 13,086,971 domain registrations in new gTLDs since November 2014.[8]

Our Phase II Assessment reveals how the competition metrics established in the Phase I Assessment have changed (or remained the same) as the New gTLD Program has continued in the past year. When interpreting these results one should note that the New gTLD Program continues to introduce new gTLDs. Therefore, the marketplace for domain names may continue to change as the program proceeds.

In this assessment, our principal findings are that:
- Average and median retail prices for registrations of legacy and new gTLDs, as well as retail mark-ups over wholesale prices, have declined since Phase I.[9]
- The overall price level of legacy TLD wholesale price caps continues to be lower than wholesale prices for new gTLDs.[10,11] In addition, we find effectively no change in wholesale price caps for legacy TLDs, nor wholesale price levels for new gTLDs, when comparing our Phase I and Phase II results. The presence of price caps on

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[7] The Phase I Assessment was released for public comment on September 28, 2015 and is publicly available at https://www.icann.org/news/announcement-2-2015-09-28-en.
[8] Our Phase I Assessment relied on registration data available as of November 2014.
[9] Due to limitations on our ability to collect data on legacy TLD wholesale prices, we substitute for them with legacy TLD price caps (not the actual wholesale prices charged by registry operators of legacy TLDs).
[10] Since legacy TLD wholesale price caps are below the wholesale prices of new gTLDs, legacy TLD wholesale prices must also be below wholesale prices of new gTLDs.
[11] Legacy TLDs exclude ccTLDs.

legacy TLDs may help to explain the absence of changes in legacy TLD wholesale prices.[12]

- There are noticeable changes in the set of entities included in the largest 15 registries and registrars ranked by total domain registrations as a result of entry by new gTLD registries and growth in registrations made by different registrars who register new gTLD domains. In addition, we observe declines in the share of gTLD registrations held by the top four, top eight, and top 15 registries and registrars between Phase I and Phase II.
- There were changes in the new gTLD registration shares of registrars, with the largest registrar in the Phase I Assessment dropping out of the top 15 registrars (ranked by total domain registrations) and being replaced by a registrar whose share of new gTLD registrations increased by nearly 22 percent. We also observe that registrars located in China have become more prevalent among registrars with the largest shares of new gTLD registrations.
- We find the largest percentage growth in the number of registry operators in the Asian Pacific and European regions.
- New gTLDs continue to target registrants with a variety of interests, and the entry of new gTLDs within a given interest area is often associated with a decline in registration shares of other new gTLDs within the same interest area.
- The expansion of new gTLDs has continued since our Phase I Assessment; new gTLD registrations have increased from 3,483,064 registrations as of November 2014 to 16,570,035 registrations as of March 2016. New gTLD registrations accounted for approximately 2 percent of all gTLD registrations as of November 2014 and now account for 9 percent of all gTLD registrations. Overall domain registration levels have also increased since Phase I, since legacy TLD registrations have not declined and new gTLD registrations are growing.
- There continues to be no aggregate (worldwide) effect of new gTLD entry or registrations on legacy TLD registrations. This suggests that total TLD registrations have grown since the beginning of the New gTLD program, since legacy TLD registrations have not fallen and new gTLD registrations are growing. However, in analyzing the effect of the entry of regionally-specific TLDs (e.g., nyc), we typically observe a decline in new gTLD and legacy registrations after the entry of the regional TLD in the region relevant to that TLD, which suggests that regional TLDs may be viewed as substitutes for other new gTLDs and legacy TLDs.

SECTION II – THE MARKETPLACE FOR DOMAIN NAMES

In this section, we provide a brief overview of what types of changes we would expect to see in a marketplace that has experienced changes in competitive pressures. We then detail our methodological approach to assessing competitive effects in Section III and discuss our results in Section IV.

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[12] While a number of legacy TLDs have price caps that adjust relative to the previous year's price (and therefore do not necessarily bind the TLD to a specific price level), the presence of the cap may still limit the incentive for the TLD to change its price.

An Economic Framework

As discussed in Section II of the Phase I Assessment in more detail, firms in a marketplace can compete on factors such as price, product and service attributes, marketing and promotion efforts, and ancillary services. Since firms can compete on price and non-price factors, it follows that these factors are often used to evaluate changes in competition. Although there is not by any means necessarily a causal link, a decrease in the prices charged to consumers, an increase in the quality of products offered, and/or an increase in the quality of other services provided by firms may reflect increased competition. Furthermore, an increase in the number of firms offering services or an increase in the production of a given good may be correlated with increased competition in some instances.

As such, our assessment of the effect of the New gTLD Program on competition in the marketplace for domain names focuses on the extent to which price and non-price factors have changed as new gTLDs, registries, and registrars have entered into (or in some cases, exited from) the marketplace. If, for example, competition has increased among registries or registrars, we may expect to see entry by new registry operators or registrars, or changes in which parties have significant domain registration activity. Additionally, if competition has increased among registry operators in the past year, we may see signs that wholesale prices have decreased or begun to converge; similarly, if competition among registrars has increased, we may observe signs that retail prices have decreased or begun to converge. We also investigate whether registration activity or changes in retail and wholesale prices in the past year differ between new gTLDs and legacy TLDs. Such changes among legacy TLDs may indicate that consumer demand for legacy TLDs is related to new gTLDs: for example, a decline in registrations of legacy TLDs while new gTLD registrations increased would be consistent with the possibility that consumers view new gTLDs as substitutes for legacy TLDs. However, we note that given that only one year has passed since our initial assessment and that the New gTLD Program continues to develop, one can expect that these measures of competition may continue to change in the future.

If firms choose to engage in price competition, consumers will typically benefit from the resulting lower prices. Other benefits, which are more difficult to observe than price, may also manifest as a result of competition; for example, competing firms may choose to develop new or different product offerings, therefore increasing the variety of choices consumers face, and potentially allowing for more personalized products and increases in consumer welfare. In the marketplace for domain names, the availability of a diverse selection of specialized gTLDs may be an example of welfare-enhancing product differentiation.

SECTION III – DATA COLLECTION AND METHODOLOGY

In this section, we describe our sample selection methodology and data collection process,[13] and conclude with a brief overview of the data we compiled for the Phase I and Phase II Assessments.

TLD Sample Construction

Given the large number of new gTLDs available at the time of the Phase I Assessment, we developed a methodology designed to sample new gTLDs that had generated the greatest registration activity (both historically and recently); we also included new gTLDs that overlapped with those new gTLDs in terms of target customer groups. The resulting sample for the Phase I Assessment included 109 new gTLDs, accounting for 81.4 percent of new gTLD registrations; we also included 14 legacy TLDs, the selection of which is described below.

In the Phase II Assessment, we added additional new gTLDs based on recent registration volume and/or overlap with the target consumer groups of new gTLDs included in our Phase I sample. We also expanded the representation of IDN TLDs (that is, new gTLDs whose string included non-ASCII characters such as ".綀动""). In total, we added 30 new gTLDs to our sample for the Phase II Assessment, resulting in a total of 139 new gTLDs, which accounted for 83.3 percent of new gTLD registrations. We also included 14 legacy TLDs.

Our sampling approach provides several benefits. First, the approach is objective and reproducible. Second, the use of registration volumes in guiding our sampling means that we are allowing consumers' decisions in the marketplace to determine the relevant sample.[14] And finally, by including those new gTLDs that may overlap in their target consumer groups, we include sets of new gTLDs in which one may observe more direct competition for particular customers.

Below, we describe our selection process in more detail for new gTLDs and legacy TLDs.

Sample Selection of New gTLDs and Legacy TLDs

For the Phase I Assessment, our selection process for new gTLDs consisted of three steps. First, in order to ensure that our sample contained only active, new gTLDs that were

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[13] Details that do not compromise the confidentiality of the registrars and registries have been provided. For example, registry wholesale prices for gTLDs are confidential, and as such, we do not identify wholesale prices for specific gTLDs. Furthermore, we do not report summaries of registry wholesale prices for gTLDs that could be used to infer the wholesale prices for specific gTLDs.

[14] Such an approach is often used in the specification of common economic indices. For example, the S&P 500 index consists of the largest 500 companies listed in the NYSE. If an individual wants to gauge the performance of the broader economy, looking at the S&P 500 will be much more informative than choosing a few random and possibly small companies.

available for purchase in Phase I, we eliminated any gTLD for which there were no monthly transaction reports available as of March 2015.[15]

Second, we selected from this group as follows.
- First, we included a set of new gTLDs based on total current registrations to account for historically popular new gTLDs.
- Second, we included a set of new gTLDs based on the number of registrations in the three months prior to sample selection to account for "popular" new gTLDs at the time of selection.
- Finally, given the resulting list above, we also included any new gTLDs that were similar to these new gTLDs in name and likely purpose. These similar new gTLD groups consist of new gTLDs with similar spellings or topic areas and are likely to have some overlap in their respective target groups of consumers (e.g., if .work had been included, other new gTLDs such as .careers, .career, and .jobs would be considered.)

The process described above generated a set of 109 new gTLDs that represents 81.4 percent of overall gTLD registration activity.

Third, the 109 selected new gTLDs were examined to confirm that the resulting sample included new gTLDs reflecting diversity with respect to geographic scope and "community" designations. Specifically, we verified that our list of 109 new gTLDs included:
- At least five IDN new gTLDs.
- At least five "community" new gTLDs, where "community" new gTLDs are determined based on the original new gTLD applications. "Community" new gTLDs are operated for the benefit of a clearly defined community. All applicants must substantiate their claim that they represent a well-defined community, and must submit written endorsements to this effect.[16] However, these applications are only evaluated if the new gTLD string is contested.

In Phase II, we expanded the sample of new gTLDs with the inclusion of 30 additional new gTLDs. Twenty-five additional new gTLDs were selected based on their registration activity and/or overlap with the target consumer groups of new gTLDs included in our Phase I sample. In particular, 17 were selected due to having the largest number of registrations as of October 2015, while eight were selected due to their overlap with the target consumer groups of our Phase I sample. We also expanded our sample of IDN new gTLDs by selecting the five IDN new gTLDs that were not included in our Phase I sample and had the most active registrations as of October 2015.

In addition, we also included all legacy TLDs that were available before the first new gTLD was released in October 2013, and that are currently available for purchase without certain

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[15] Monthly transaction reports are submitted to ICANN by operating registries of legacy TLDs and new gTLDs, and detail the number of registrations and renewals for a TLD, for each registrar.

[16] These groups must also be of considerable size, and the members must also be aware that they belong to said group. "Shared characteristics" can be broadly defined, and includes professions, languages, and geographic locations. For more information, see ICANN Applicant Guidebook Section1.2.3.

registration restrictions. (We excluded legacy TLDs that were intended specifically for government entities, institutions, and organizations with restrictive registration requirements.) Based on the latter criterion, from the 22 legacy TLDs available, we limited our legacy TLD sample to those that did not have restrictive criteria that limited who could register domains: .com, .net, .org, .biz, .info, .name, .pro, .asia, .travel, .jobs, .mobi, .cat, .tel, and .xxx.[17]

Ultimately, our data requests and collection process included 109 new gTLDs and 14 legacy TLDs in Phase I, and 139 new gTLDs and 14 legacy TLDs in Phase II.

Registry and Registrar Selection

Since each TLD can only be operated by one registry operator, our sample of TLDs determined our list of registries from which to request data. Because a registry operator can operate multiple TLDs, our final list of registry operators that we contacted in Phase I consisted of 59 unique registry operators.[18] In Phase II, we contacted 65 unique registry operators.

While each TLD has a single registry operator, registrations in legacy TLDs and new gTLDs can be offered by more than one registrar. In Phase I, we selected a sample of 54 registrars associated with our selected TLDs to collect data from the registrars who account for the most domain registrations, and to also ensure that each TLD in our sample was offered by at least ten of the selected registrars.[19] In Phase II, we added registrars to our sample for any of the 30 new gTLDs that were added to our sample and were not represented by at least ten registrars in our Phase I registrar sample. In selecting these new registrars, we selected those with the most registrations of that TLD as of October 2015.[20] This resulted in a sample of 59 registrars.

Data Collection Methodology

Price and non-price data for the sample of registries and registrars were obtained through direct outreach to registries, review of registrars' publicly-available websites, and from ICANN. In Phase II, we also purchased registrar pricing data from Domain Name Prices, which provided us with registrar pricing data for registrars in and outside of our registrar sample.[21]

Registration Volumes

Publicly-available transaction reports for each TLD, which provide information on historical registration volumes, were collected from ICANN's website in Phase I at

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[17] This criterion excluded .gov, .edu, .int, .mil, .aero, .coop, .post, and museum from our sample.

[18] The reduction in the number of operating registries (from the total number of TLDs) was primarily due to one registry that is the operating registry for many of the TLDs in our Phase I and Phase II samples.

[19] Some TLDs were offered by a total of fewer than ten registrars. In this case, all registrars offering the TLD were included in the registrar sample.

[20] For those TLDs that were provided by a total of fewer than ten registrars, all registrars offering the TLD were included in the registrar sample.

[21] Domain Name Prices collects registrar registration, renewal, and transfer prices from publicly available sources, as well as premium domain sales. See www.dnpric.es/services.

https://www.icann.org/resources/pages/reports-2014-03-04-en. Reports as of March 2016 were provided by ICANN in Phase II (and are also publicly available). These reports detail how many registrations of a given TLD each registrar was responsible for in each month.

We also received registration data from DomainTools that was extracted from WhoIs registration records. WhoIs data are generated at the time that a domain name is registered, and consist of the registered domain name, information about the registration (i.e., registration date), and information about the registrant (i.e., registrant name and location).[22] We received data from DomainTools summarizing the number of new registrations made by registrants in a given geographic location in each new gTLD and legacy TLD for each month from January 2014 through January 2016. These data were obtained for registrants in certain geographic areas related to regional TLDs to analyze the impact of the entrance of such TLDs on registration activity in legacy and new gTLDs. The geo-TLDs which are included in our analysis include: .berlin, capetown, .cologne, .hamburg, .london, .nyc, .quebec, .scot, .tokyo, and .vegas.

Sunrise and Wholesale Prices
Data regarding sunrise and regular wholesale prices were requested and collected directly from the operating registries. While some legacy TLD registries provided data, most data on historic legacy TLD wholesale prices are restricted to price caps (and not the actual wholesale prices charged by registry operators of legacy TLDs), which were collected from official price change correspondence between operating registries and ICANN.[23] Legacy TLD price change data are available at
https://www.icann.org/resources/pages/correspondence.

Retail Prices
Requests for current and historical pricing data were sent to all registrars in our Phase I and Phase II samples. In Phase I, only six registrars, all from the Asia Pacific region, provided some form of historical data. These responsive registrars accounted for only 14 percent of registration volume of the new gTLDs being sampled and did not provide any regional geographic variation. The response in Phase II was similar, with only five registrars, all from the Asia Pacific region, electing to participate.

Given the lack of responses from registrars, we collected posted retail prices from the websites of registrars in our sample.[24] However, many registrars in our Phase I and Phase II samples (which were based on registration volumes of new gTLDs) did not offer publicly-

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[22] "WHOIS Primer," ICANN, available at https://Whois.icann.org/en/primer.
[23] Some legacy gTLD wholesale price data are also available in public press releases, however those data are not available for all legacy gTLDs and there is no guarantee that those data are complete.
[24] In collecting retail prices from registrar websites, we first looked for available price-sheets, which describe what the price for a one-year registration is for different TLDs. If price sheets were unavailable, we manually searched for the exact domain "somethinggeneric.tld" (in Phase I) or "testsomethinggeneric.tld" (in Phase II) for each TLD in our sample that the registrar offered and recorded the retail price for a one-year registration. We only report and analyze list prices.

available pricing information.[25] As a result, we collected retail price information from 39 of the original 54 registrars in our sample in Phase I.[26] In Phase II, if available, we collected retail price data from Domain Name Prices for registrars and TLDs in our sample; when not available from Domain Name Prices, we manually collected retail price data from the websites of registrars. As a result, we collected retail price information from a total of 39 registrars in Phase II: 14 were available in the Domain Name Prices data and 25 were collected manually. Because our retail price data are limited to registrars with publicly available pricing, our analyses of retail prices may not be representative of the retail market for domain names if consulting registrars or other registrars without publicly available price information exhibit meaningfully different pricing patterns than those with public price information.

We recognize that our price data are limited; given detailed transaction-level data, one could compare, for example, how prices of the same or similar second-level domain names differ across legacy TLDs and new gTLDs. We also received no data from secondary market institutions in Phase I or Phase II; such data would have allowed for better investigation of how consumers value different domain names at legacy TLDs and new gTLDs. However, the paucity of this type of detailed data available to us makes such an exercise currently impossible.

Add-on Prices and Availability
Examples of add-on services offered by registrars include hosting, email, server, SSL, privacy, website builder, eCommerce, DNS, and forwarding services. Requests for add-on services and relevant prices were sent to registrars in both Phase I and Phase II, but none provided data. Therefore, in Phase I, we manually collected current add-on prices and availability from a sample of 35 registrar webpages.[27] Our Phase I results showed a large variety of add-on categories offered by registrars, with each registrar often offering multiple products with varying prices within each category. Due to the wide range of add-on products and prices, an update to our Phase I analysis was unlikely to illuminate any competitive effects of the New gTLD Program. In Phase II, we therefore limited our analysis to a smaller set of registrars with the intention of analyzing whether the marketplace for add-on services has changed in a meaningful way or not. For the Phase II study, we manually collected current add-on prices and availability from ten registrar webpages.[28]

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[25] Many registrars that did not offer publicly-available pricing data were consulting registrars and did not have websites where consumers could shop for individual domain names.

[26] Retail price information for one gTLD was unavailable.

[27] Prices were collected either from price lists or via manual searches. In the case of manual searches, "testsomethinggeneric.tld" was used across a set of TLDs to ensure add-on prices did not vary across TLDs within a registrar. No differences were observed in add-on prices across TLDs within the same registrar.

[28] Registrars were selected based on the number of registrations made during the period of December 2014 through October 2015. We selected the 10 registrars with the highest number of registrations during that period.

Summary of Data Collected

Tables 1A and 1B below outline general statistics regarding the number of TLDs from which we were able to obtain price and registration volume data in Phase I and Phase II, respectively.

Table 1A
Summary of Collected Phase I Data

		Legacy TLDs	New gTLDs	All TLDs
Total in Sample		**14**	**109**	**123**
Sunrise Prices	Number of TLDs with Available Data	5	82	87
	Percent of Total Registrations	0.0%	11.6%	0.3%
April 2015 Wholesale Prices	Number of TLDs with Available Data	10	78	89
	Percent of Total Registrations	99.6%	68.7%	98.9%
April 2015 Retail Prices	Number of TLDs with Available Data	14	108	122
	Average Number of Offering Registrars Across TLDs	20	22	21
	Collected Registrars' Percent of TLD Registrations	55.7%	62.8%	55.9%
Registration Volume Data	TLDs With Historical Registration Data	14	109	123

Notes:

[1] Percent of Total Registrations for Sunrise Prices reports the sunrise volume data for TLDs with pricing information in our sample as a fraction of all April registration volume for our full sample of TLDs.

[2] Percent of Total Registrations for April 2015 Wholesale Prices reports the wholesale volume data for TLDs with pricing information in our sample as a fraction of all April registration volume for our full sample of TLDs.

[3] Average Number of Offering Registrars Across TLDs reports, on average, legacy TLDs were offered by 20 registrars.

[4] Collected Registrars' Percent of TLD Registrations reports the retail volume data for TLDs with pricing information in our sample as a fraction of all April registration volume for our full sample of TLDs.

[5] Sunrise prices were not available for all TLDs due to a lack of a response from the registries.

[6] Wholesale prices were not available for all TLDs due to a lack of a response from the registries.

[7] Retail prices were not available either for lack of offering registrars or lack of available list price information.

Sources:

[1] Wholesale prices were provided by operating registries and official ICANN documentation.

[2] Retail prices were collected from registrar websites.

[3] Volume data were provided through Monthly Transaction Reports.

Table 1B
Summary of Collected Phase II Data

		Legacy TLDs	New gTLDs	All TLDs
Total in Sample		**14**	**139**	**153**
Sunrise Prices	Number of TLDs with Available Data	6	104	110
	Percent of Total Registrations	4.3%	82.5%	10.2%
March 2016 Wholesale Prices	Number of TLDs with Available Data	12	105	117
	Percent of Total Registrations	99.8%	45.5%	95.7%
March 2016 Retail Prices	Number of TLDs with Available Data	14	136	150
	Average Number of Offering Registrars Across TLDs	24	20	20
	Percent of Total Registrations	100.0%	99.0%	99.9%
	Collected Registrars' Percent of TLD Registrations	54.2%	44.1%	53.4%
Registration Volume Data	TLDs With Historical Registration Data	14	139	153

Notes:

[1] Percent of Total Registrations for Sunrise prices reports the share of March 2016 registrations of TLDs in our sample accounted for by TLDs for which Sunrise pricing data is available.

[2] Percent of Total Registrations for March 2016 Wholesale prices reports the share of March 2016 registrations of TLDs in our sample accounted for by TLDs for which current wholesale pricing data is available.

[3] Percent of Total Registrations for March 2016 retail prices reports the share of March 2016 registrations of TLDs in our sample accounted for by TLDs for which any retail pricing data is available.

[4] Collected Registrars' Percent of TLD Registrations reports the retail volume accounted for by registrars from whom pricing information was available for each TLD in our sample as a fraction of all March 2016 registration volume for our full sample of TLDs.

[5] Sunrise period and current wholesale prices were not available for all TLDs due to a lack of a response from the registries.

[6] Retail prices were not availablefor all TLDs either for lack of offering registrars or lack of available list price information.

[7] Average number of offering registrars across TLDs reports the average number of registrars from which retail pricing information was collected for each type of TLD.

Sources:

[1] Current and Sunrise period wholesale prices were provided by operating registries and official ICANN documentation.

[2] Retail prices were collected from registrar websites or provided by DNPric.es.

[3] Volume data were provided through monthly transaction reports.

As shown in Table 1A, we collected retail price information in Phase I for 123 TLDs (this includes legacy TLDs and new gTLDs), with TLDs being offered by 21 registrars on average. Wholesale price information was provided for 78 new gTLDs and 89 TLDs overall, which account for 69 percent and 99 percent, respectively, of registrations in our original sample.[29] Additionally, add-on list prices were collected from a total of 35 registrars. Finally, historical registration volume data were available for all legacy and new gTLDs.

As shown in Table 1B, we collected retail price information in Phase II for 150 TLDs, with TLDs being offered by 20 registrars on average. Wholesale price information was provided for 105 new gTLDs and 117 TLDs overall, which account for 46 percent and 96 percent of registrations in our TLD sample, respectively.[30] Add-on list prices were collected from a total of ten registrars.

SECTION IV – RESULTS

Summary of Results
This section summarizes how measures of price, registration volume, and other competition metrics have changed since our baseline measurements in Phase I. Specifically:
- We investigated how the new gTLD expansion increased the number of available TLDs over time. The expansion has continued since our Phase I Assessment; new gTLD registrations now account for 9 percent of all gTLD registrations.[31]
- We investigated how domain name registrations are distributed across registries and registrars. In Phase I we found that registration shares across registries and registrars, respectively, were more dispersed for new gTLDs as compared to legacy TLDs. That result persists in the Phase II results. We also observe noticeable movement in the set of the entities included in the largest 15 registries and registrars ranked by total domain registrations, as a result of the entry of new gTLD registries and growth in registrations made by different registrars who register new gTLD domains.
- We observe a noticeable decline in the share of gTLD registrations held by the top 4, top 8, and top 15 registries and registrars between Phase I and Phase II, with the top registry's share declining by 6.2 percent and the top registrar's share declining by 2.8 percent.[32]
- We note that there were considerable changes in the new gTLD registration shares of registrars, with the largest registrar in the Phase I Assessment dropping out of the top 15 registrars (as ranked by registration volume) and being replaced by a registrar whose share of new gTLD registrations increased by nearly 22 percent.

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[29] As noted above, we rely on price cap information as a substitute for legacy gTLD wholesale prices.

[30] As noted above, we rely on price cap information as a substitute for legacy gTLD wholesale prices.

[31] This is calculated as the total registrations reported in March 2016 monthly transaction reports for new gTLDs divided by the total number of registrations reported in March 2016 for new and legacy TLDs.

[32] Top registry and registrar are defined as the registry and registrar with the most registrations in any new gTLD as of November 2014.

Registrars located in China have become more prevalent among registrars with the largest shares of new gTLD registrations.

- We found that, in general, the share of new gTLD registrations attributable to the four or eight registries and registrars with the most registrations, respectively, is smaller than the share of legacy TLD registrations attributable to those registries and registrars, respectively. The share of new gTLD registrations attributable to the four or eight largest registries and registrars of new gTLDs, respectively, has declined in the year since our Phase I Assessment.[33]
- In Phase I, we found a significant amount of price dispersion. In Phase II, we continue to see considerable price dispersion. Although there has not been much change in wholesale price caps over the past year, retail prices and mark-ups for both new gTLDs and legacy TLDs have declined since Phase I.
- We investigated how our price-index values for legacy TLDs and new gTLDs have changed since the Phase I Assessment. In Phase I, we found that the overall price level for legacy TLDs was lower than that for new gTLDs. That result persists in Phase II. We find limited changes in the wholesale price indices and un-weighted retail price index, but see noticeable declines in the retail price index for both legacy TLDs and new gTLDs when the index is weighted by registration volume.[34]
- We investigated the extent to which new gTLDs have affected legacy TLD registrations. In Phase I, we did not identify any effect of new gTLD entry or registrations on legacy TLD registrations. That general result persists in Phase II, as legacy TLD registration activity does not appear to experience a systematic change in response to the New gTLD Program. As a result, total TLD registration has increased since the beginning of the New gTLD Program.
- We investigated the extent to which the entry of regionally-specific TLDs (e.g., .nyc) affected legacy and other new gTLDs. We typically observe a decline in new gTLD and legacy registrations after the entry of the regional TLD in the region relevant to that TLD, which suggests that regional TLDs may be viewed as substitutes for other new gTLDs and legacy TLDs.
- We find the largest percentage growth in the number of registry operators in the Asian Pacific and European regions.
- We find that new gTLDs continue to target registrants with a variety of interests, and the entry of new gTLDs within a given interest area is often associated with a decline in registration shares of other new gTLDs within the same interest area.
- We continue to observe considerable variation in the non-price characteristics of ancillary services offered by registrars.

In what follows, we first present a simple examination of how the number of TLDs has changed over time. We then examine whether there are any indications that the New gTLD Program has affected competition in the TLD marketplace based on changes in our Phase I Assessment baseline measurements.

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[33] Concentration is measured by the combined registration share held by the four and eight registries with the largest shares of new gTLD registrations.

[34] As discussed above, we rely on price cap data as a substitute for legacy TLD wholesale prices.

Number of Available TLDs Over Time
We first examine how the expansion of the New gTLD Program has affected the number of TLDs available to consumers; these data are plotted below in Figure 1.

Figure 1
Cumulative Number of Available Legacy TLDs and gTLDs (2009 – 2016)
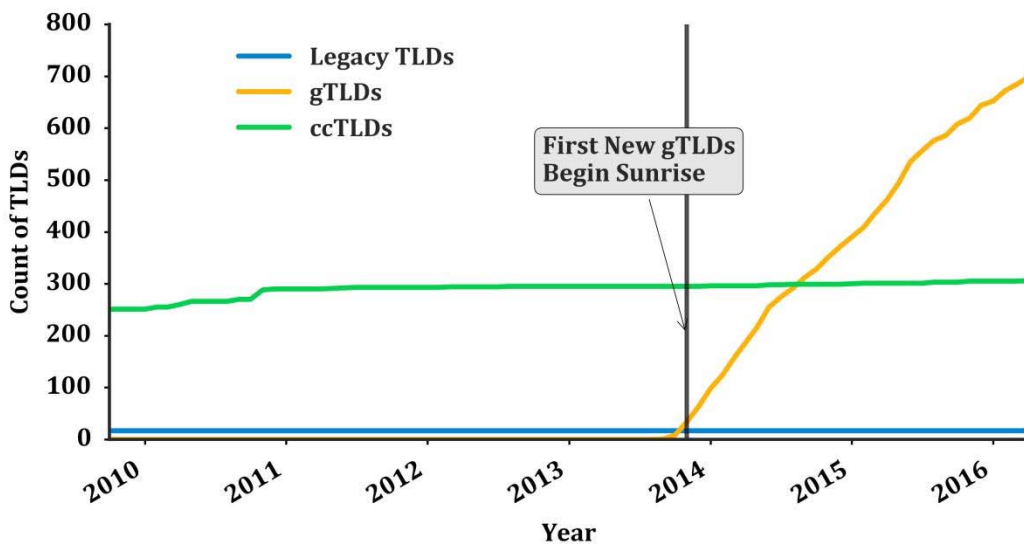
Notes:
[1] The entrance for each gTLD is defined as the end of its Sunrise period.
[2] Only new gTLDs with non-zero registration volumes as of March 2016 are included as being publicly available.

Sources:
[1] Sunrise period dates are collected from ICANN's website;
https://newgtlds.icann.org/en/program-status/sunrise-claims-periods
[2] ccTLD entrance dates were provided by ICANN.

Prior to the entry of the first new gTLDs, 14 legacy TLD domain names without certain restrictive registration requirements were available. The first new gTLDs were introduced in late 2013, and by the end of 2014, the number of available new gTLDs had increased to 428; in addition to the 14 available legacy TLDs, this resulted in a total of 442 gTLDs being available to consumers. As of March 2016, there are 955 available new gTLDs and 969 gTLDs including legacy TLDs.

Baseline Analyses
Given the available data, we focus on examining the distribution of prices and registration volumes across and within TLDs. In our Phase II Assessment, we are able to examine how these baseline measurements have changed over the course of one year.

Registration Distributions
We first examine the current distribution of domain name registrations. Tables 2A-2F below show the share of domain name registrations within legacy TLDs and new gTLDs for

the top 15 registries as ranked by their share of registrations during the Phase I Assessment and the Phase II Assessment.

Table 2A shows the top 15 registries based on their share of all registrations as of *November 2014* (i.e., as they were ranked in the Phase I Assessment). As can be seen below, Verisign, which operates .com, .net, and .name, remains the largest registry and has slightly increased its share of legacy TLD registrations from 86.9 percent to 87.2 percent. However, most movement in registration shares occurred among all registrations rather than legacy registrations. This suggests that registration activity in the new gTLDs, rather than in legacy TLDs, is affecting overall registry shares of registrations. Table 2B shows the top 15 registries ranked by their share of all registrations as of March 2016. Comparing this list of registries to those in Table 2A, new registries that are associated with new gTLDs have entered the top 15 ranking, such as Jiangsu Bangning Science & Technology, First Registry, Rightside, and 6A Queensway, and Dotsite. (These registries had no registrations in the Phase I Assessment and do not operate legacy TLDs.)

Table 2A
Registry Operator Shares of All Registrations (Legacy and New gTLDs)
Top 15 Registry Operators by Share of All Registrations as of November 2014

	Number of TLDs Operated by Registry Operator			Share of Registrations					
				All TLDs			Legacy TLDs		
	Phase			Phase			Phase		
	I	II	Change	I	II	Change	I	II	Change
Verisign	3	16	13	85.5%	79.4%	-6.2%	86.9%	87.2%	0.3%
Public Interest Registry	1	6	5	6.7%	6.2%	-0.5%	6.8%	6.8%	0.0%
Afilias	4	18	14	4.0%	3.9%	-0.2%	4.1%	3.9%	-0.2%
Neustar	1	2	1	1.6%	1.3%	-0.3%	1.7%	1.4%	-0.2%
XYZ.COM	2	3	1	0.5%	1.5%	1.0%	0.0%	0.0%	0.0%
Donuts	52	186	134	0.4%	0.9%	0.5%	0.0%	0.0%	0.0%
Dot Asia Organisation	1	1	0	0.2%	0.1%	-0.1%	0.2%	0.1%	-0.1%
dot Berlin	1	1	0	0.1%	0.0%	-0.1%	0.0%	0.0%	0.0%
.Club Domains	1	1	0	0.1%	0.4%	0.3%	0.0%	0.0%	0.0%
Uniregistry	10	24	14	0.1%	0.5%	0.4%	0.0%	0.0%	0.0%
Telnic	1	1	0	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%
Registry Services Corporation	1	1	0	0.1%	0.2%	0.1%	0.1%	0.2%	0.1%
ICM Registry	1	4	3	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%
Real Estate Domains	1	1	0	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Zodiac	1	4	3	0.1%	0.6%	0.5%	0.0%	0.0%	0.0%
All Other Registry Operators				0.4%	4.8%	4.3%	0.1%	0.1%	0.0%

Notes:

[1] Registration volumes are collected from monthly transaction reports provided to ICANN by registry operators. Phase I registration shares are as of November 2014. Phase II registration shares are as of March 2016.

[2] Each TLD's registration volume was assigned to a registry operator as specified in the registry agreement with ICANN.

[3] Each TLD was then linked to a parent company registry operator, the total domains for each of its associated TLDs was summed, and registration shares were calculated based on these sums for all registry operators.

[4] Registry operators shown are the top 15 as ranked by share of all registrations as of November 2014.

Source:

[1] Registration data is obtained from monthly transaction reports provided to ICANN by registry operators as of November 2014 for Phase I shares and March 2016 for Phase II shares.

Table 2B
Registry Operator Shares of All Registrations (Legacy and New gTLDs)
Top 15 Registry Operators by Share of All Registrations as of March 2016

	Number of TLDs Operated by Registry Operator			Share of Registrations					
				All TLDs			Legacy TLDs		
	Phase			Phase			Phase		
	I	II	Change	I	II	Change	I	II	Change
Verisign	3	16	13	85.5%	79.4%	-6.2%	86.9%	87.2%	0.3%
Public Interest Registry	1	6	5	6.7%	6.2%	-0.5%	6.8%	6.8%	0.0%
Afilias	4	18	14	4.0%	3.9%	-0.2%	4.1%	3.9%	-0.2%
XYZ.COM	2	3	1	0.5%	1.5%	1.0%	0.0%	0.0%	0.0%
Neustar	1	2	1	1.6%	1.3%	-0.3%	1.7%	1.4%	-0.2%
Jiangsu Bangning Science & Technology	1	1	0	0.0%	1.0%	1.0%	0.0%	0.0%	0.0%
Donuts	52	186	134	0.4%	0.9%	0.5%	0.0%	0.0%	0.0%
Zodiac	1	4	3	0.1%	0.6%	0.5%	0.0%	0.0%	0.0%
Uniregistry	10	24	14	0.1%	0.5%	0.4%	0.0%	0.0%	0.0%
First Registry	0	1	1	0.0%	0.5%	0.5%	0.0%	0.0%	0.0%
.Club Domains	1	1	0	0.1%	0.4%	0.3%	0.0%	0.0%	0.0%
Rightside	9	39	30	0.1%	0.3%	0.2%	0.0%	0.0%	0.0%
6A Queensway	0	4	4	0.0%	0.3%	0.3%	0.0%	0.0%	0.0%
Registry Services Corporation	1	1	0	0.1%	0.2%	0.1%	0.1%	0.2%	0.1%
Dotsite	0	1	1	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%
All Other Registry Operators				0.9%	3.0%	2.1%	0.5%	0.4%	0.0%

Notes:

[1] Registration volumes are collected from monthly transaction reports provided to ICANN by registry operators. Phase I registration shares are as of November 2014. Phase II registration shares are as of March 2016.

[2] Each TLD's registration volume was assigned to a registry operator as specified in the registry agreement with ICANN.

[3] Each TLD was then linked to a parent company registry operator, the total domains for each of its associated TLDs was summed, and registration shares were calculated based on these sums for all registry operators.

[4] Registry operators shown are the top 15 as ranked by share of all registrations as of March 2016.

Source:

[1] Registration data is obtained from monthly transaction reports provided to ICANN by registry operators as of November 2014 for Phase I shares and March 2016 for Phase II shares.

Tables 2C and 2D, below, rank the top 15 registries by new gTLD registrations as of November 2014 and March 2016, respectively. Table 2C shows that there has been a considerable decline in the registration shares of several new gTLD registries that were among the top 15 registries of new gTLDs in Phase I. Table 2D shows the top 15 registries by new gTLD registrations as of March 2016 and draws attention to the entry and growth of new registries among the top 15.

Table 2C

Registry Operator Shares of New gTLD Registrations

Top 15 Registry Operators by Share of New gTLD Registrations as of November 2014

Registry Operators	Number of New gTLDs Operated by Registry Operator			Share of New gTLD Registrations		
	Phase			Phase		
	I	II	Change	I	II	Change
XYZ.COM	2	3	1	28.4%	16.5%	-11.8%
Donuts	52	186	134	26.4%	10.0%	-16.4%
dot Berlin	1	1	0	6.1%	0.4%	-5.7%
.Club Domains	1	1	0	5.7%	4.6%	-1.2%
Uniregistry	10	24	14	5.6%	5.9%	0.3%
Real Estate Domains	1	1	0	3.4%	0.5%	-2.9%
Zodiac	1	4	3	3.3%	6.5%	3.2%
Rightside	9	39	30	3.2%	2.9%	-0.3%
NYC Department of Information Technology and Telecom	1	1	0	2.5%	0.5%	-2.0%
GMO Registry	1	4	3	2.4%	0.3%	-2.1%
OVH	1	1	0	2.2%	0.3%	-1.9%
Dot London Domains	1	1	0	2.1%	0.4%	-1.7%
NetCologne	2	2	0	1.4%	0.2%	-1.1%
Bayern Connect	1	1	0	1.0%	0.2%	-0.8%
Afilias	2	16	14	0.8%	3.5%	2.7%
All Other Registry Operators				5.7%	47.4%	41.7%

Notes:

[1] Registration volumes are collected from monthly transaction reports provided to ICANN by registry operators. Phase I registration shares are as of November 2014. Phase II registration shares are as of March 2016.

[2] Each TLD's registration volume was assigned to a registry operator as specified in the registry agreement with ICANN.

[3] Each TLD was then linked to a parent company registry operator, the total domains for each of its associated TLDs was summed, and registration shares were calculated based on these sums for all registry operators.

[4] Registry operators shown are the top 15 as ranked by share of new gTLD registrations only as of November 2014.

Source:

[1] Registration data is obtained from monthly transaction reports provided to ICANN by registry operators as of November 2014 for Phase I shares and March 2016 for Phase II shares.

Table 2D
Registry Operator Shares of New gTLD Registrations
Top 15 Registry Operators by Share of New gTLD Registrations as of March 2016

Registry Operators	Number of New gTLDs Operated by Registry Operator			Share of New gTLD Registrations		
	Phase			Phase		
	I	II	Change	I	II	Change
XYZ.COM	2	3	1	28.4%	16.5%	-11.8%
Jiangsu Bangning Science & Technology	1	1	0	0.5%	11.0%	10.5%
Donuts	52	186	134	26.4%	10.0%	-16.4%
Zodiac	1	4	3	3.3%	6.5%	3.2%
Uniregistry	10	24	14	5.6%	5.9%	0.3%
First Registry	0	1	1	0.0%	5.3%	5.3%
.Club Domains	1	1	0	5.7%	4.6%	-1.2%
Afilias	2	16	14	0.8%	3.5%	2.7%
Rightside	9	39	30	3.2%	2.9%	-0.3%
6A Queensway	0	4	4	0.0%	2.9%	2.9%
Dotsite	0	1	1	0.0%	2.1%	2.1%
Dot Science	0	1	1	0.0%	2.1%	2.1%
Dot Bid	0	1	1	0.0%	2.0%	2.0%
Elegant Leader	0	1	1	0.0%	1.9%	1.9%
Beijing Qianiang Wangjing Technology Development Co.	0	1	1	0.0%	1.8%	1.8%
All Other Registry Operators				26.1%	20.9%	-5.1%

Notes:

[1] Registration volumes are collected from monthly transaction reports provided to ICANN by registry operators. Phase I registration shares are as of November 2014. Phase II registration shares are as of March 2016.

[2] Each TLD's registration volume was assigned to a registry operator as specified in the registry agreement with ICANN.

[3] Each TLD was then linked to a parent company registry operator, the total domains for each of its associated TLDs was summed, and registration shares were calculated based on these sums for all registry operators.

[4] Registry operators shown are the top 15 as ranked by share of new gTLD registrations only as of March 2016.

Source:

[1] Registration data is obtained from monthly transaction reports provided to ICANN by registry operators as of November 2014 for Phase I shares and March 2016 for Phase II shares.

Table 2E

Registration Shares Across Registry Operators

Phase I and II Comparison

Ranked by Share of All Registrations as of November 2014

| | Share of All Registrations (Legacy and New gTLD) | | |
| | Phase | | |
	I	II	Change
Top Registry Operator	85.5%	79.4%	-6.2%
Top 4 Registry Operators	97.9%	90.7%	-7.1%
Top 8 Registry Operators	99.1%	93.3%	-5.8%
Top 15 Registry Operators	99.6%	95.2%	-4.3%

Notes:

[1] Registration volumes are collected from monthly transaction reports provided to ICANN by registry operators.

[2] Each TLD's registration volume was assigned to a registry operator as specified in the registry agreement with ICANN.

[3] Each TLD was then linked to a parent company registry operator, the total domains for each of its associated TLDs was summed, and registration shares were calculated based on these sums for all registry operators.

[4] Registry operators are ranked by share of all registrations across all TLDs as of November 2014.

Source:

[1] Registration data is obtained from monthly transaction reports provided to ICANN by registry operators as of November 2014 for Phase I shares and March 2016 for Phase II shares.

Table 2F
Registration Shares Across Registry Operators
Phase I and II Comparison
Ranked by Share of New gTLD Registrations as of November 2014

	Share of All New gTLD Registrations		
	Phase I	Phase II	Change
Top Registry Operator	28.4%	16.5%	-11.8%
Top 4 Registry Operators	66.6%	31.5%	-35.1%
Top 8 Registry Operators	82.1%	47.2%	-34.8%
Top 15 Registry Operators	94.3%	52.6%	-41.7%

Notes:

[1] Registration volumes are collected from monthly transaction reports provided to ICANN by registry operators.

[2] Each TLD's registration volume was assigned to a registry operator as specified in the registry agreement with ICANN.

[3] Each TLD was then linked to a parent company registry operator, the total domains for each of its associated TLDs was summed, and registration shares were calculated based on these sums for all registry operators.

[4] Registry operators are ranked by share of registrations across new gTLDs only as of November 2014.

Source:
[1] Registration data is obtained from monthly transaction reports provided to ICANN by registry operators as of November 2014 for Phase I shares and March 2016 for Phase II shares.

Table 2E above shows that the top four registries, as ranked by the share of *all registrations* as of November 2014, were responsible for 97.9 percent of all registrations in Phase I, and that this share has fallen slightly to 90.7 percent in Phase II. By contrast, Table 2F shows that the top four registries, as ranked by the share of *new gTLD registrations* as of November 2014, were responsible for 66.6 percent of all new gTLD registrations in Phase I, and that share has been cut roughly in half in Phase II. In general, the registration shares for new gTLDs are less concentrated compared to legacy TLDs and have continued to become less concentrated in the year since our Phase I Assessment.

Tables 3A through 3F below show a similar, though less pronounced, story for the largest 15 registrars by share of registrations. Table 3A shows that the top 15 registrars as of November 2014 are each generally responsible for a smaller share of all registrations in Phase II than they were in Phase I. Table 3B shows the top 15 registrars as of March 2016 based on all registrations. The registrars listed in Table 3B are largely the same as the registrars listed in Table 3A, showing that there has been less compositional change among

the top 15 registrars than among the top 15 registries based on all registrations.[35] (See Tables 2A and 2B above.) Tables 3C and 3D, however, demonstrate that there has been a considerable change in the composition of the top 15 registrars ranked by new gTLD registrations since Phase I. Table 3C shows the top 15 registrars of new gTLDs in Phase I, and Table 3D shows the top 15 registrars of new gTLDs in Phase II. The difference in registrars listed in the two tables draws attention to the instability of new gTLD registration activity across registrars. These results are highlighted in Tables 3E and 3F. Table 3E shows small changes in the share of all registrations made by the largest 15 registrars as of November 2014;[36] Table 3F shows considerably large changes in the share of new gTLD registrations made by the largest 15 registrars of new gTLDs as of November 2014.

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[35] Because legacy TLDs account for a large portion of all registrations, results that rank registrars by legacy TLD registrations are very similar to those shown in Tables 3A and 3B.
[36] Similar results not shown here are found for the largest 15 registrars based on legacy TLD registrations as of November 2014.

Table 3A
Registrar Shares of All Registrations (Legacy and New gTLD)
Top 15 Registrars Ranked by Share of All Registrations as of November 2014

Registrar	Share of All Registrations			Share of Legacy TLD Registrations			Share of New gTLD Registrations		
	Phase			Phase			Phase		
	I	II	Change	I	II	Change	I	II	Change
GoDaddy	32.0%	29.3%	-2.8%	32.3%	31.5%	-0.8%	14.8%	6.9%	-7.9%
eNom	7.4%	6.6%	-0.9%	7.5%	7.0%	-0.5%	5.4%	2.4%	-3.0%
Tucows	5.4%	4.5%	-0.8%	5.4%	4.9%	-0.5%	2.1%	1.2%	-0.9%
Network Solutions	5.0%	3.6%	-1.4%	4.8%	3.9%	-1.0%	15.3%	0.6%	-14.7%
1&1	3.8%	3.2%	-0.6%	3.8%	3.4%	-0.4%	4.3%	1.6%	-2.6%
PDR Ltd.	3.0%	2.9%	-0.1%	3.0%	3.0%	0.0%	0.8%	1.7%	0.9%
Wild West	2.4%	2.0%	-0.4%	2.4%	2.1%	-0.3%	0.3%	0.2%	-0.2%
GMO Internet	2.3%	2.4%	0.0%	2.3%	2.1%	-0.2%	5.3%	5.5%	0.1%
Register.com	1.8%	1.3%	-0.5%	1.8%	1.4%	-0.4%	0.3%	0.1%	-0.2%
Hichina Zhicheng Technology LTD	1.6%	3.0%	1.4%	1.6%	3.2%	1.6%	0.0%	0.1%	0.1%
Fastdomain	1.5%	1.3%	-0.2%	1.6%	1.4%	-0.1%	0.0%	0.0%	0.0%
Melbourne IT	1.5%	1.0%	-0.5%	1.5%	1.1%	-0.4%	0.0%	0.1%	0.1%
Domain.com	1.4%	1.2%	-0.2%	1.4%	1.3%	-0.1%	0.0%	0.0%	0.0%
XinNet Technology	1.3%	1.0%	-0.4%	1.2%	1.0%	-0.3%	6.6%	0.8%	-5.8%
OVH	1.2%	1.1%	-0.1%	1.2%	1.1%	-0.1%	2.4%	0.8%	-1.7%
All Other Registrars	28.4%	35.8%	7.4%	28.2%	31.6%	3.4%	42.3%	78.2%	35.9%

Notes:

[1] Registration volumes are collected from monthly transaction reports provided to ICANN by operating registries.

[2] Within a TLD, registration volumes were assigned to distinct registrars. Registrars are identified by their IANA ID.

[3] Registration volumes within a registrar were then summed, and registration shares were calculated based on these sums for all registrars.

[4] Registrars shown are the top 15 as ranked by share of all registrations as of November 2014.

Source:

[1] Registration data is derived from monthly transaction reports provided to ICANN by operating registries as of November 2014 for Phase I shares and March 2016 for Phase II shares.

Table 3B
Registrar Shares of All Registrations (Legacy and New gTLD)
Top 15 Registrars Ranked by Share of All Registrations as of March 2016

Registrar	Share of All Registrations			Share of Legacy TLD Registrations			Share of New gTLD Registrations		
	Phase			Phase			Phase		
	I	II	Change	I	II	Change	I	II	Change
GoDaddy	32.0%	29.3%	-2.8%	32.3%	31.5%	-0.8%	14.8%	6.9%	-7.9%
eNom	7.4%	6.6%	-0.9%	7.5%	7.0%	-0.5%	5.4%	2.4%	-3.0%
Tucows	5.4%	4.5%	-0.8%	5.4%	4.9%	-0.5%	2.1%	1.2%	-0.9%
Network Solutions	5.0%	3.6%	-1.4%	4.8%	3.9%	-1.0%	15.3%	0.6%	-14.7%
1&1	3.8%	3.2%	-0.6%	3.8%	3.4%	-0.4%	4.3%	1.6%	-2.6%
Hichina Zhicheng Technology LTD	1.6%	3.0%	1.4%	1.6%	3.2%	1.6%	0.0%	0.1%	0.1%
PDR Ltd.	3.0%	2.9%	-0.1%	3.0%	3.0%	0.0%	0.8%	1.7%	0.9%
Xiamen eName Technology	0.5%	2.6%	2.2%	0.5%	2.3%	1.8%	0.0%	6.3%	6.3%
Chengdu West Dimension Digital	0.4%	2.6%	2.3%	0.3%	0.4%	0.1%	2.9%	24.8%	21.9%
GMO Internet	2.3%	2.4%	0.0%	2.3%	2.1%	-0.2%	5.3%	5.5%	0.1%
Wild West	2.4%	2.0%	-0.4%	2.4%	2.1%	-0.3%	0.3%	0.2%	-0.2%
Register.com	1.8%	1.3%	-0.5%	1.8%	1.4%	-0.4%	0.3%	0.1%	-0.2%
Fastdomain	1.5%	1.3%	-0.2%	1.6%	1.4%	-0.1%	0.0%	0.0%	0.0%
Domain.com	1.4%	1.2%	-0.2%	1.4%	1.3%	-0.1%	0.0%	0.0%	0.0%
OVH	1.2%	1.1%	-0.1%	1.2%	1.1%	-0.1%	2.4%	0.8%	-1.7%
All Other Registrars	30.5%	32.5%	2.1%	30.2%	31.0%	0.8%	46.0%	48.1%	2.0%

Notes:

[1] Registration volumes are collected from monthly transaction reports provided to ICANN by operating registries.

[2] Within a TLD, registration volumes were assigned to distinct registrars. Registrars are identified by their IANA ID.

[3] Registration volumes within a registrar were then summed, and registration shares were calculated based on these sums for all registrars.

[4] Registrars shown are the top 15 as ranked by share of all registrations as of March 2016.

Source:

[1] Registration data is derived from monthly transaction reports provided to ICANN by operating registries as of November 2014 for Phase I shares and March 2016 for Phase II shares.

Table 3C
Registrar Shares of New gTLD Registrations

Top 15 Registrars Ranked by Share of New gTLD Registrations as of November 2014

Registrar	Share of New gTLD Registrations		
	Phase I	Phase II	Change
Network Solutions	15.3%	0.6%	-14.7%
GoDaddy	14.8%	6.9%	-7.9%
XinNet Technology	6.6%	0.8%	-5.8%
eNom	5.4%	2.4%	-3.0%
GMO Internet	5.3%	5.5%	0.1%
Psi USA	4.6%	0.5%	-4.2%
1&1	4.3%	1.6%	-2.6%
Uniregistrar	3.5%	2.6%	-0.9%
NameShare	3.4%	0.5%	-3.0%
United Domains	3.3%	0.9%	-2.4%
Chengdu West Dimension Digital	2.9%	24.8%	21.9%
OVH	2.4%	0.8%	-1.7%
Tucows	2.1%	1.2%	-0.9%
Mesh Digital	2.1%	0.8%	-1.4%
Crononag	1.7%	0.6%	-1.1%
All Other Registrars	22.2%	49.8%	27.6%

Notes:

[1] Registration volumes are collected from monthly transaction reports provided to ICANN by operating registries.

[2] Within a TLD, registration volumes were assigned to distinct registrars. Registrars are identified by their IANA ID.

[3] Registration volumes within a registrar were then summed, and registration shares were calculated based on these sums for all registrars.

[4] Registrars shown are the top 15 as ranked by share of new gTLD registrations as of November 2014.

Source:

[1] Registration data is derived from monthly transaction reports provided to ICANN by operating registries as of November 2014 for Phase I shares and March 2016 for Phase II shares.

Table 3D
Registrar Shares of New gTLD Registrations
Top 15 Registrars Ranked by Share of New gTLD Registrations as of March 2016

Registrar	Share of New gTLD Registrations		
	Phase I	Phase II	Change
Chengdu West Dimension Digital	2.9%	24.8%	21.9%
Paradise Registrars	0.2%	9.3%	9.0%
GoDaddy	14.8%	6.9%	-7.9%
Xiamen eName Technology	0.0%	6.3%	6.3%
GMO Internet	5.3%	5.5%	0.1%
Alibaba	0.0%	5.4%	5.4%
Namecheap	0.2%	4.6%	4.4%
West263 International	0.0%	2.8%	2.8%
Uniregistrar	3.5%	2.6%	-0.9%
eNom	5.4%	2.4%	-3.0%
PDR Ltd.	0.8%	1.7%	0.9%
Telecity Internal Registrar	0.0%	1.7%	1.7%
1&1	4.3%	1.6%	-2.6%
Nawang	0.1%	1.3%	1.2%
Tucows	2.1%	1.2%	-0.9%
All Other Registrars	60.3%	22.1%	-38.2%

Notes:

[1] Registration volumes are collected from monthly transaction reports provided to ICANN by operating registries.

[2] Within a TLD, registration volumes were assigned to distinct registrars. Registrars are identified by their IANA ID.

[3] Registration volumes within a registrar were then summed, and registration shares were calculated based on these sums for all registrars.

[4] Registrars shown are the top 15 as ranked by share of new gTLD registrations as of March 2016.

Source:

[1] Registration data is derived from monthly transaction reports provided to ICANN by operating registries as of November 2014 for Phase I shares and March 2016 for Phase II shares.

Table 3E
Registration Shares Across Registrars
Phase I and II Comparison
Ranked by Share of All Registrations (Legacy and New gTLD) as of November 2014

	Share of All Registrations (Legacy and New gTLD)		
	Phase I	**Phase II**	**Change**
Top Registrar	32.0%	29.3%	-2.8%
Top 4 Registrars	49.8%	43.9%	-5.9%
Top 8 Registrars	61.3%	54.4%	-6.9%
Top 15 Registrars	71.6%	64.2%	-7.4%

Notes:

[1] Registration volumes are collected from monthly transaction reports provided to ICANN by operating registries.

[2] Within a TLD, registration volumes were assigned to distinct registrars. Registrars are identified by their IANA ID.

[3] Registration volumes within a registrar were then summed, and registration shares were calculated based on these sums for all registrars.

[4] Registrars are ranked by share of all registrations across all TLDs as of November 2014.

Source:

[1] Registration data is derived from monthly transaction reports provided to ICANN by operating registries as of November 2014 for Phase I shares and March 2016 for Phase II shares.

Table 3F
Registration Shares Across Registrars
Phase I and II Comparison
Ranked by Share of New gTLD Registrations as of November 2014

	Share of All New gTLD Registrations		
	Phase I	**Phase II**	**Change**
Top Registrar	15.3%	0.6%	-14.7%
Top 4 Registrars	42.1%	10.7%	-31.4%
Top 8 Registrars	59.8%	20.8%	-39.0%
Top 15 Registrars	77.8%	50.2%	-27.6%

Notes:

[1] Registration volumes are collected from monthly transaction reports provided to ICANN by operating registries.

[2] Within a TLD, registration volumes were assigned to distinct registrars. Registrars are identified by their IANA ID.

[3] Registration volumes within a registrar were then summed, and registration shares were calculated based on these sums for all registrars.

[4] Registrars are ranked by share of all registrations across new gTLDs only as of November 2014.

Source:

[1] Registration data is derived from monthly transaction reports provided to ICANN by operating registries as of November 2014 for Phase I shares and March 2016 for Phase II shares.

Finally, the New gTLD Program allows culturally- or regionally-specific TLDs to be created. Table 4 below shows the number of registry operators which are based in each of ICANN's five regions,[37] and demonstrates an increase in the number of registry operators since Phase I, which is associated with the continuing entry of new gTLDs. In total, there are 125 new, active registry operators since Phase I, with the majority of growth occurring in Europe, Asia Pacific, and North America.

Table 4
Registry Operators Across Regions

Region	Number of Registry Operator Parent Companies		
	Phase I	Phase II	Change
Africa (AF)	2	2	0
Asia Pacific (AP)	29	61	32
Europe (EUR)	61	122	61
Latin America (LAC)	3	6	3
North America (NA)	30	59	29

Notes:
[1] The number of Phase I registry operator parent companies is the count of registry operator parent companies in each region that were operating at least one TLD as of April 2015. The number of Phase II registry operator parent companies is the count of registry operator parent companies in each region that were operating at least one TLD as of March 2016.

[2] Some registry operator parent companies are active in multiple regions. This analysis counts the same registry operator parent company operating in two separate regions as two separate entities. As of Phase I there were 121 unique registry operator parent companies. As of Phase II there were 244 unique registry operator parent companies.

[3] New gTLD start dates are used to determine whether a registry operator parent company was active as of Phase I or Phase II.

Sources:
[1] Registry Operators, parent companies, and locations were provided by ICANN.
[2] gTLD start dates are collected from ICANN's website; https://newgtlds.icann.org/en/program-status/sunrise-claims-periods

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[37] When applicable, registry operators are identified with their parent company. Jurisdictions are based on those indicated in registry agreements.

Sunrise Price Distribution

All new gTLDs must have a Sunrise period of at least 30 days. As discussed earlier, the purpose of a Sunrise period is to allow trademark holders the opportunity to register domain names that match their trademarks prior to other parties. New gTLDs are required to have such a Sunrise period, whereas legacy TLDs could elect to have a Sunrise period or not. One perspective is this structure helps trademark holders in that it gives them priority in choosing domain names in the new gTLD. However, others have raised concerns that this structure allows registries to exploit trademark holders by charging high prices. An example lies in .sucks, which had publicly stated Sunrise prices of $2,499 per registration and was the cause of concern for some entities.[38,39,40]

Given these above concerns, we include a summary of Sunrise prices in our report to determine whether very high prices were observed in Phase II. Sunrise prices were provided by the TLD operating registry for five legacy TLDs and 82 new gTLDs in our sample for our Phase I Assessment. For our Phase II Assessment, we received additional Sunrise price data for one legacy TLD and 22 new gTLDs in our sample. Table 5 below provides data regarding the distribution of Sunrise prices (in USD) for legacy TLDs and new gTLDs from Phase I, and for those TLDs that were added to our sample in Phase II, and shows that the highest observed sunrise price in Phase II was equal to approximately $254.

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[38] The operating registry for .sucks provides its suggested pricing online, available at https://www.registry.sucks/products/.

[39] .sucks is not included in our sample of gTLDs.

[40] For example, see the article "Is the Owner of the .sucks Domain Extorting Brands and Celebrities", available at http://www.dailydot.com/technology/dot-sucks-domain-name-icann/

Table 5
Sunrise Price Distribution
Phase I and II Comparison – Adjusted for CPI Inflation

	Phase I Results		TLDs Incremental to Phase II	
	Legacy TLDs	New gTLDs	Legacy TLDs	New gTLDs
Average	$44.78	$150.64	$65.14	$153.77
Minimum	$7.78	$0.00	$65.14	$75.84
25th Percentile	$9.02	$80.90	$65.14	$76.09
Median	$22.62	$81.37	$65.14	$113.89
75th Percentile	$66.75	$81.53	$65.14	$252.64
Maximum	$117.73	$2,971.85	$65.14	$253.95
Number of Obs.	5	82	1	22

Notes:
[1] One-year registration prices are reported.
[2] Sunrise prices were not available for all TLDs either due to a lack of a response from the registries or lack of a one-year registration price.
[3] All prices are adjusted for CPI inflation between sunrise period and June 2016.

Sources:
[1] New gTLD sunrise price information was provided by operating registries.
[2] Sunrise price information for legacy TLDs was obtained from official ICANN documentation.
[3] CPI inflation figures from St. Louis Fed website; https://fred.stlouisfed.org/series/CPIAUCSL.

Wholesale Price Distribution

Figure 2 below shows historical wholesale price *caps* for the legacy TLDs .com, .net, .info, .org, .name, .pro, and .biz. These data are obtained from public price cap change correspondences between registries and ICANN and show that while price cap changes have been somewhat infrequent, they have trended upward over time. The graph also shows that the largest price cap change occurred in 2013 prior to the entry of the first new gTLDs for six of the seven legacy TLDs plotted below. While these data show legacy TLD price caps rather than actual wholesale prices, it should be noted that all seven legacy TLDs shown, with the exception of .com, have had price caps since 2013 (or earlier) that increase relative to the previous year's price; as a result, any increase in a legacy TLD's price cap can potentially be interpreted as the result of an increase in that TLD's wholesale price.[41] Therefore, Figure 2 allows us to roughly gauge whether these legacy TLDs raised wholesale prices after the entry of new gTLDs began; in doing so, we see that only .net has increased its price since the entry of the new gTLDs and appears to have done so annually.

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[41] The price caps for .biz, .info, and .org, adjusted upwards in the second half of 2013 and became adjustable relative to the actual price charged on January 1, 2014. .name has had an adjustable price cap since June 2013, .net since July 2011, and .pro since January 2011. .com has had a fixed price cap since December 2012.

Figure 2
Historical Legacy Wholesale Price Caps (2001 – 2016)
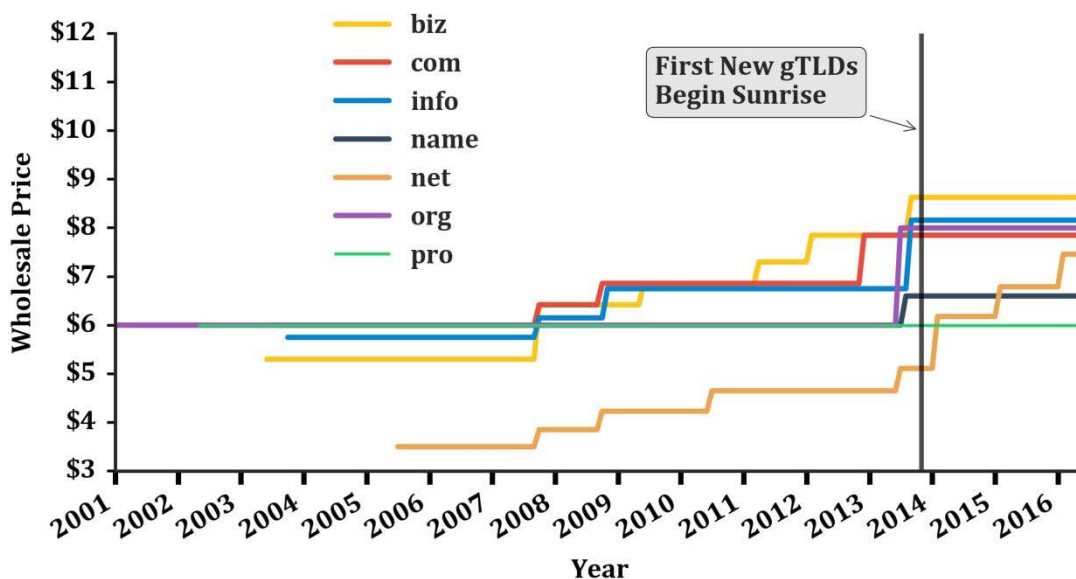
Figures 3A and 3B plot the distribution of wholesale price caps and prices for all legacy TLDs and new gTLDs in our sample as of Phase I and Phase II, respectively; these figures suggest that there exists higher price dispersion among new gTLDs as compared to legacy TLDs in both Phase I and Phase II. Although our legacy wholesale price data are represented by price caps, the lack of dispersion among price caps also reflects a lack of dispersion among actual wholesale prices.[42]

In our discussions regarding price dispersion here, and elsewhere in the report, it is important to note several items. First, when comparing legacy TLDs to new gTLDs, we must keep in mind that legacy TLDs historically had greater restrictions on pricing.[43] Second, the presence or absence of price dispersion does not imply a lack of competition since price dispersion can occur for a variety of reasons. For example, price dispersion might be expected if firms or products have been able to differentiate themselves, perhaps by offering better quality, certain product features or characteristics, better customer service, or through persuasive advertising. In this situation, consumers likely view the alternatives as not very good substitutes, and firms will have some ability to set higher prices. Alternatively, price dispersion could be consistent with a situation where consumers face high search costs or lack complete information regarding pricing and availability.[44] At present, we are only able to quantify the extent to which price dispersion exists, and do not have the necessary data to explain why any observed price dispersion exists. Nonetheless,

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[42] Eight new gTLDs with wholesale prices below $1 are excluded from this analysis. If those TLDs were included in the analysis, we would continue to find larger price dispersion among new gTLDs than legacy TLDs.

[43] To the extent that we see legacy TLD price caps below the wholesale prices of new gTLDs, we know that legacy TLD wholesale prices must also be lower than the wholesale prices of new gTLDs.

[44] Economic search costs are associated with the time and money that a consumer spends searching for his or her purchase options.

we include a discussion of price dispersion among our analyses because it is a useful way to describe the distribution of prices that we observe in the marketplace. Ultimately, much richer data (such as transaction-level data) is needed to thoroughly examine the underlying causes.

Figure 3A
Phase I Wholesale Price Caps for Legacy TLDs and Wholesale Prices for New gTLDs

All Phase I Prices
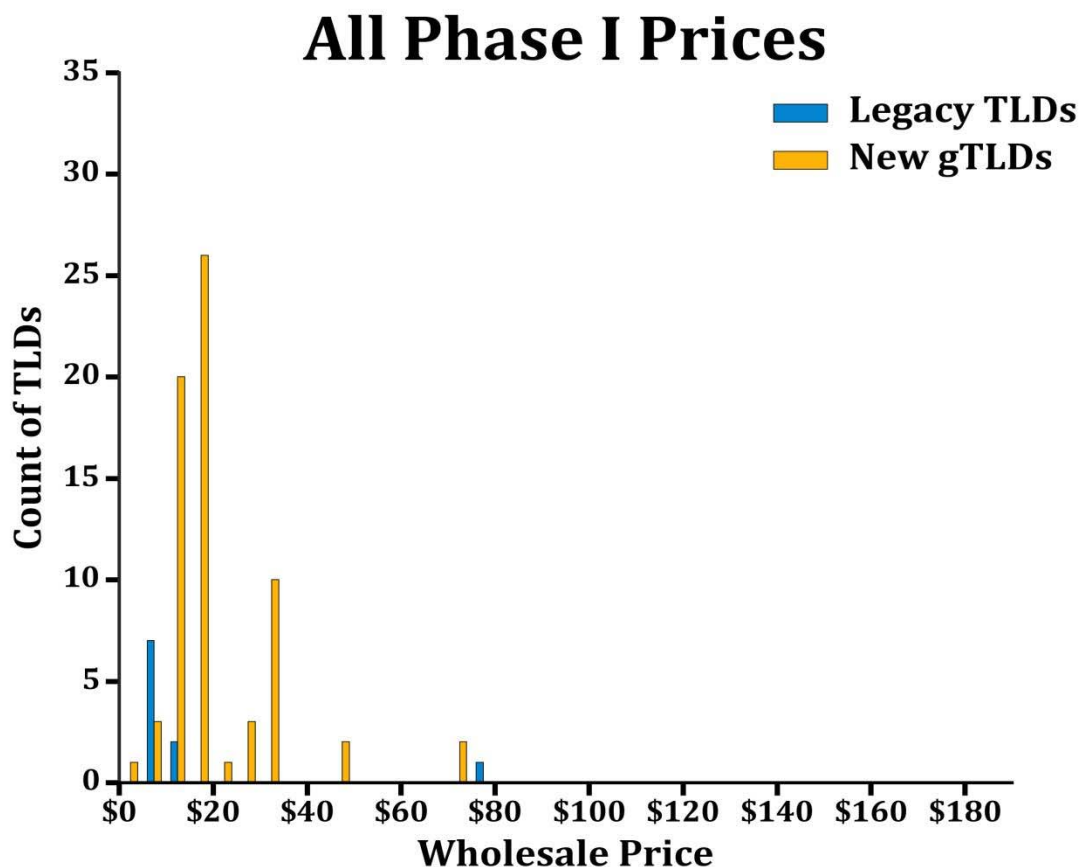
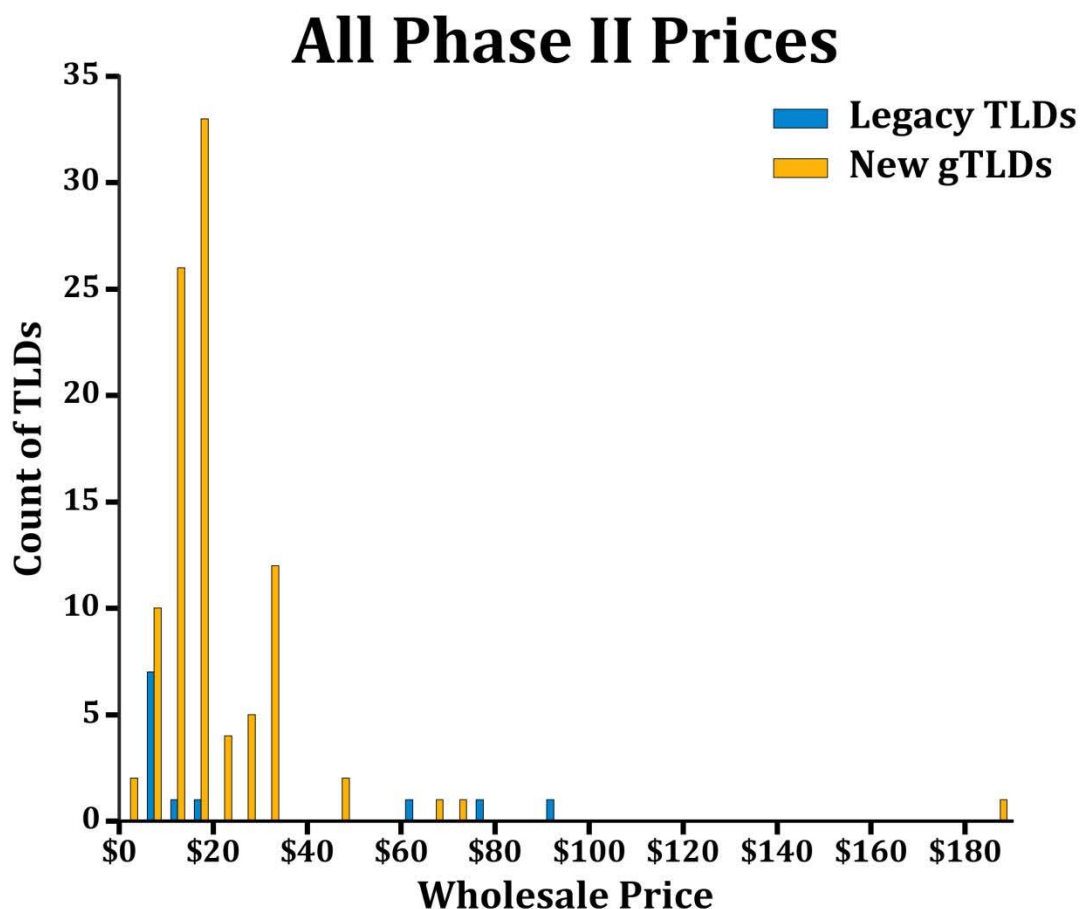**Notes:**
[1] Wholesale prices are as of April 2015.

Sources:
[1] Legacy wholesale price information were obtained from official price change correspondences between operating registries and ICANN.
[2] New gTLD wholesale prices were provided by registry operators.
[3] Eight new gTLDs with wholesale prices below $1 are excluded from this analysis.

Figure 3B
Phase II Wholesale Price Caps for Legacy TLDs and Wholesale Prices for New gTLDs

 Notes:
[1] Wholesale prices are as of April 2016.

Sources:
[1] Legacy wholesale price information were obtained from official price change correspondences between operating registries and ICANN.
[2] New gTLD wholesale prices were provided by registry operators.
[3] Eight new gTLDs with wholesale prices below $1 are excluded from this analysis.

Table 6 summarizes the distribution of wholesale prices for TLDs in our sample. (We note that legacy wholesale price data are proxied for by legacy wholesale price cap information.) The first set of columns shows the Phase I wholesale price distribution of legacy TLDs and new gTLDs in our Phase I sample based on the data available during the Phase I Assessment. The middle set of columns allows us to compare the Phase I and Phase II wholesale prices of legacy TLDs and new gTLDs for which we received wholesale pricing in both study phases. And, the last set of columns shows the Phase II wholesale price distribution of legacy TLDs and new gTLDs for which we received wholesale price data in Phase II but not in Phase I. (These TLDs are either new additions to our Phase II TLD sample or the registry operator did not provide data during the Phase I Assessment.)

The middle set of columns illustrates a slight increase in the average wholesale price cap of legacy TLDs since Phase I (from $16.09 to $16.72) and a slight decline in the average wholesale price of new gTLDs since Phase I (from $21.87 to $21.46); however, these differences are not statistically significant. (The median legacy TLD wholesale price cap increases from $8.08 to $9.23, from Phase I to Phase II, while the median new gTLD price remains unchanged.) We also do not see a meaningful change in the price dispersion of new gTLDs or legacy TLDs between Phase I and Phase II, with largely similar minimums, 25th, 50th, and 75th percentiles, and maximums.[45]

Table 6Phase I and Phase II Wholesale Price Distribution

| | Phase I Results | | TLDs with Prices Recorded in Both Phase I and Phase II | | | | Phase II Price for TLDs Incremental to Phase II | |
| | | | Legacy TLDs | | New gTLDs | | | |
	Legacy TLDs	New gTLDs	Phase I Price	Phase II Price	Phase I Price	Phase II Price	Legacy TLDs	New gTLDs
Average	$16.09	$20.91	$16.09	$16.72	$21.87	$21.46	$78.50	$24.08
Minimum	$6.00	$1.00	$6.00	$6.60	$1.00	$5.00	$62.00	$6.00
25th Percentile	$6.79	$13.00	$6.79	$7.85	$13.00	$13.00	$62.00	$12.00
Median	$8.08	$20.00	$8.08	$9.23	$20.00	$20.00	$78.50	$20.00
75th Percentile	$14.08	$20.26	$14.08	$12.00	$24.35	$25.20	$95.00	$25.00
Maximum	$80.00	$74.67	$80.00	$80.00	$74.67	$74.00	$95.00	$190.00
Number of Obs.	10	74	10	10	68	68	2	29

Notes:

[1] One-year registration prices are reported. Wholesale prices for Phase I are as of April 2015. Wholesale prices for Phase II are as of April 2016.

[2] Wholesale prices were not available for all TLDs either due to a lack of a response from the registries or lack of a one-year registration price.

[3] TLDs with prices recorded in both Phase I and Phase II include all TLDs for which registries provided a wholesale price in both Phase I and Phase II.

[4] TLDs incremental to Phase II include TLDs for which registries never provided a price as part of Phase I or TLDs that were added as part of the Phase II TLD sample.

[5] One TLD with a wholesale price of zero is excluded from this analysis because it carries the Spec 9 exemption with ICANN.

[6] Eight TLDs with wholesale prices below $1 are excluded from this analysis.

[7] The median price difference between Phase I and Phase II is not statistically significant at the .05 level for legacy TLDs or new gTLDs. Statistical significance is determined using a bootstrapped analysis of median price differenecs between Phase I and Phase II.

Source:

[1] Wholesale price information was provided by registry operators.

Retail Price Distribution

Figures 4A and 4B plot the distribution of retail prices for all legacy TLDs and new gTLDs in our sample as of Phase I and Phase II, respectively; these figures also suggest that there exists higher price dispersion among new gTLDs as compared to legacy TLDs in both Phase I and Phase II.[46]

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[45] Eight new gTLDs with wholesale prices below $1 are excluded from this analysis. If those TLDs were included in the analysis, we would continue to find minimal changes in the average and median prices of TLDs with price information available in Phase I and Phase II. The average Phase II retail price for new gTLDs incremental to Phase II would decrease to $19.48, and the median price for that set of TLDs would decrease slightly to $15.

[46] To be consistent with our analyses of wholesale prices, we exclude eight new gTLDs with wholesale prices less than $1 from our analyses of retail prices and markups. Inclusion of these TLDs in our analyses of retail prices does not have a meaningful impact on the results. These new gTLDs are excluded from the pricing and markup analyses because they exhibit extreme markup values due to their very low wholesale prices.

Figure 4A
Phase I Weighted Average Retail Price Distribution for Legacy and New gTLDs
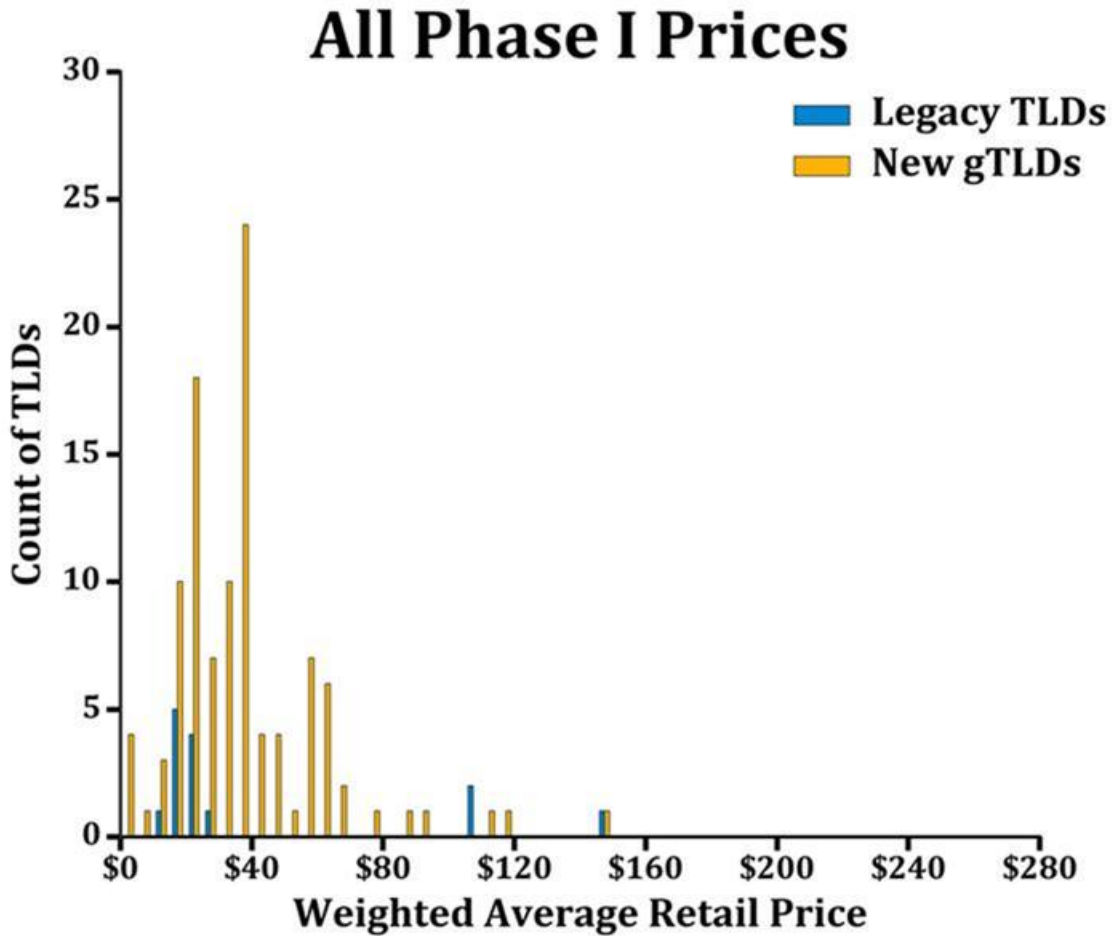
Notes:
[1] Weighted average retail price is calculated as the average of retail prices weighted by the share of registrations accounted for by each registrar from which retail pricing data were collected. Registrations and retail prices for Phase I weighted average prices are as of April 2015.
[2] Eight new gTLDs with wholesale prices below $1 are excluded from this analysis.

Sources:
[1] Retail prices were collected from registrar websites or provided by DNPric.es.
[2] Registration volume data were obtained from monthly transaction reports provided to ICANN by operating registries.

Figure 4B
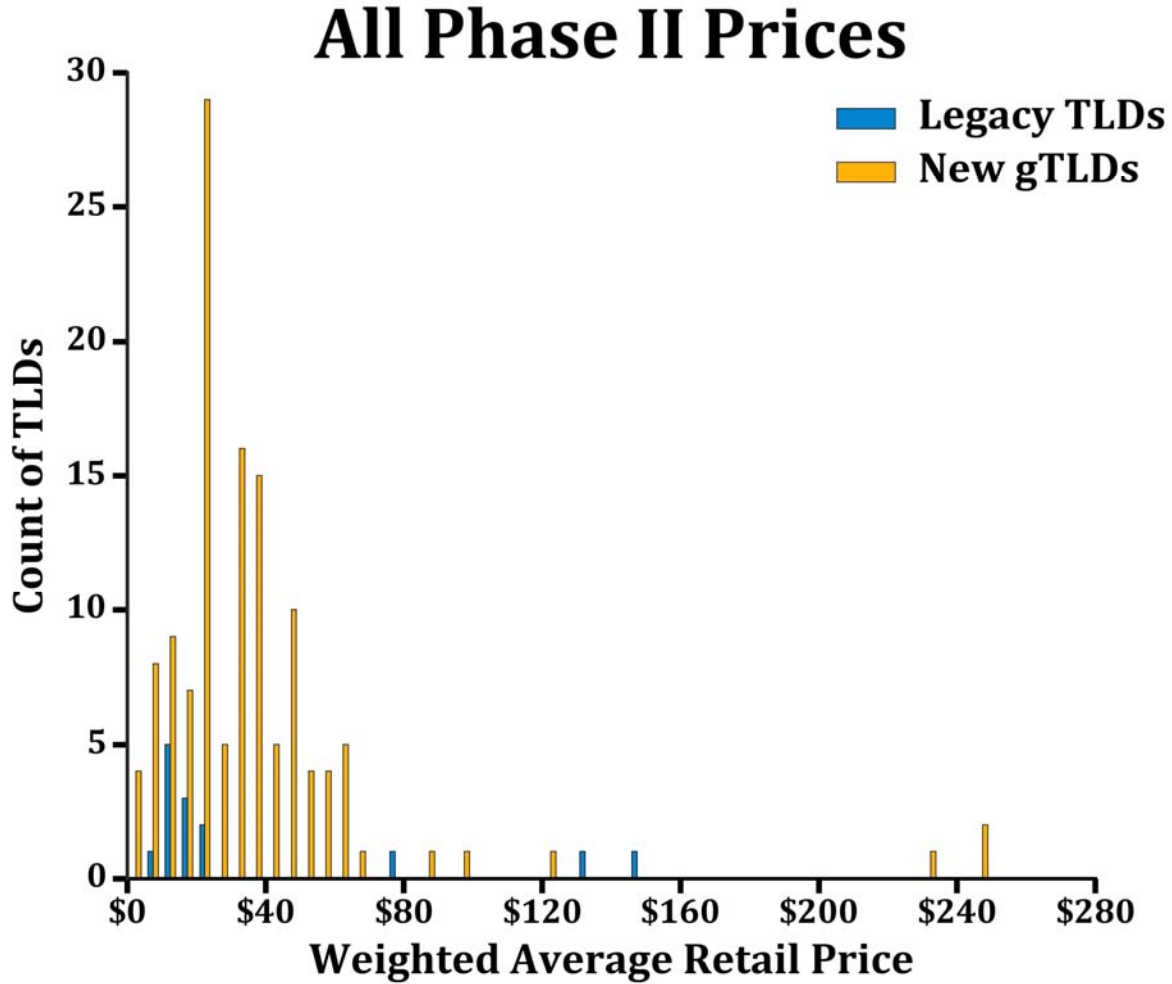**Phase II Weighted Average Retail Price Distribution for Legacy and New gTLDs**

Notes:
[1] Weighted average retail price is calculated as the average of retail prices weighted by the share of registrations accounted for by each registrar from which retail pricing data were collected. Registrations for Phase I weighted average prices are as of March 2016. Retail prices are as of June 2016.
[2] Eight new gTLDs with wholesale prices below $1 are excluded from this analysis.

Sources:
[1] Retail prices were collected from registrar websites or provided by DNPric.es.
[2] Registration volume data were obtained from monthly transaction reports provided to ICANN by operating registries.

Table 7 below summarizes the distribution of retail prices for TLDs in our sample.[47] The first set of columns shows the Phase I retail price distribution of legacy TLDs and new gTLDs, the middle set of columns allows us to compare the Phase I and Phase II retail prices of legacy TLDs and new gTLDs, and the last set of columns shows the Phase II retail price distribution of legacy TLDs and new gTLDs for which we collected retail price data in Phase II but not in Phase I. Similar to wholesale prices, new gTLDs have higher retail prices than legacy TLDs (based on comparing medians so as to control for the influence of outliers). Focusing on the TLDs with prices available in both Phase I and Phase II, we observe a decline in the average retail price of legacy TLDs since Phase I (from $41.34 to $37.62) and a decline in the average retail price of new gTLDs since Phase I (from $37.87 to $33.35). In comparing changes in median prices from Phase I to Phase II, which helps to control for the impact of outliers, we find that the median legacy TLD retail price declined from $20.75 to $16.19 and that the median new gTLD retail price declined from $35.06 to $31.73.[48]

Table 7
Phase I and Phase II Weighted Average Retail Price Distribution

| | Phase I Results | | TLDs with Prices Recorded in Both Phase I and Phase II | | | | Phase II Price for TLDs Incremental to Phase II | |
| | | | Legacy TLDs | | New gTLDs | | | |
	Legacy TLDs	New gTLDs	Phase I Price	Phase II Price	Phase I Price	Phase II Price	Legacy TLDs	New gTLDs
Average	$41.34	$37.87	$41.34	$37.62	$37.87	$33.35	N/A	$69.89
Minimum	$14.34	$3.68	$14.34	$7.89	$3.68	$2.11	N/A	$3.18
25th Percentile	$17.08	$23.90	$17.08	$13.81	$23.90	$21.31	N/A	$13.41
Median	$20.75	$35.06	$20.75	$16.19	$35.06	$31.73	N/A	$24.92
75th Percentile	$25.34	$41.81	$25.34	$22.47	$41.81	$41.86	N/A	$60.16
Maximum	$147.69	$146.57	$147.69	$148.89	$146.57	$124.90	N/A	$420.31
Number of Obs.	14	106	14	14	106	106	N/A	23

Notes:
[1] Phase I Retail Prices are as of April 2015. Phase II retail prices are as of June 2016.
[2] Weighted averages across registrars of one-year registration prices are reported. Prices are weighted by the share of registrations accounted for by each registrar from which retail pricing data were collected. Registrations for Phase I weighted average prices are as of April 2015. Registrations for Phase II weighted average prices are as of March 2016.
[3] Only prices from registrars that were able to be linked to an IANA Registrar ID are included in this analysis.
[4] Retail prices were not available for all TLDs either due to a lack of available information or lack of a one-year registration price.
[5] TLDs with prices recorded in both Phase I and Phase II include all TLDs for which retail prices were available in both Phase I and Phase II.
[6] TLDs incremental to Phase II include TLDs for which retail prices were not available in Phase I or TLDs that were added as part of the Phase II sample.
[7] Eight TLDs with wholesale prices below $1 are excluded from this analysis.

Source:
[1] Retail prices were collected from registrar websites or provided by DNPric.es.
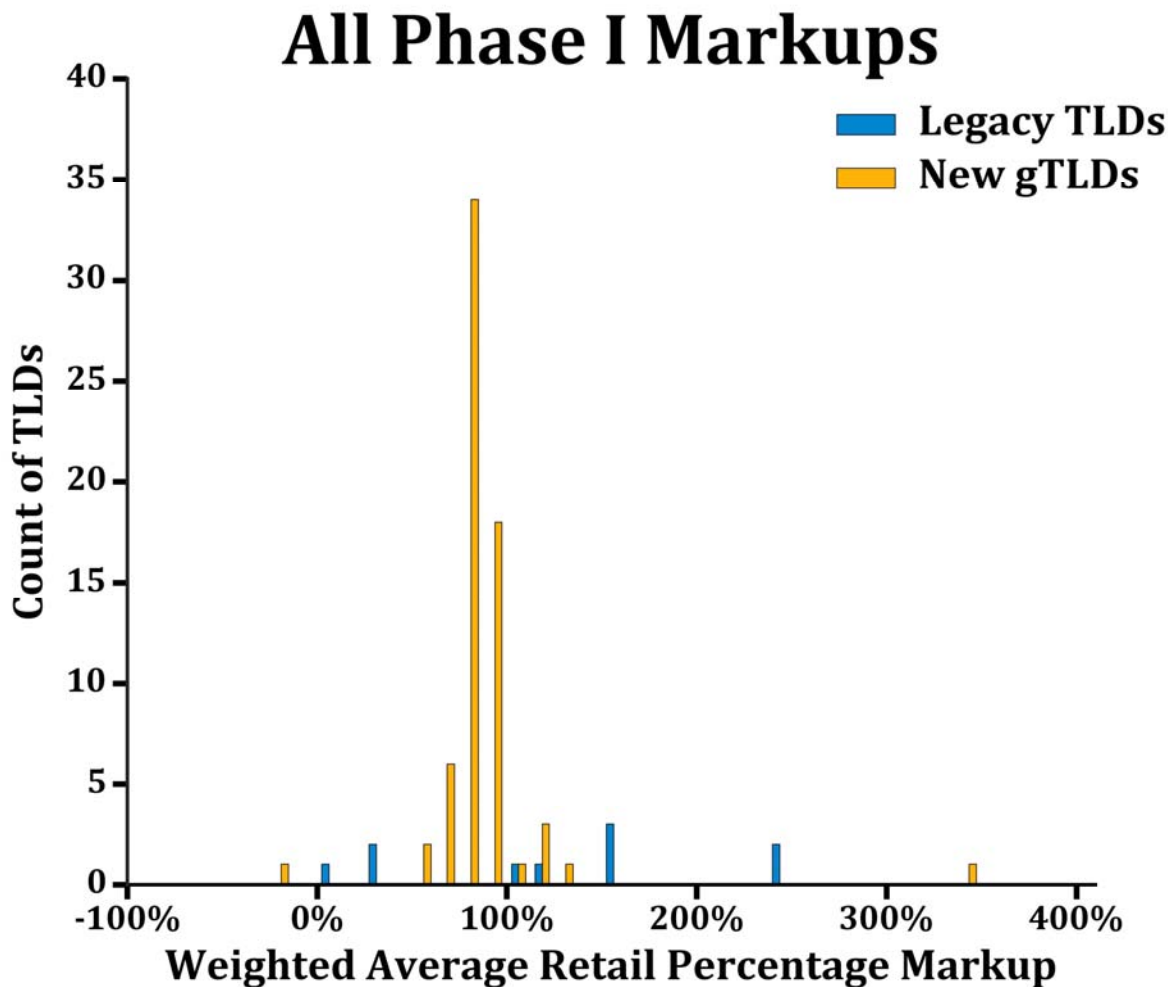[2] Registration volumes were collected from monthly transaction reports provided to ICANN by operating registries.

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[47] We calculate the average retail price for each TLD weighted by registrations. Our retail price data are as of April 2015 and June 2016 for Phase I and Phase II, respectively, and our registration volume data are from April 2015 and March 2016, respectively. To the extent that retail prices and/or registration activity changed considerably between March 2016 and June 2016, our results may not reflect the true distribution of retail prices or markups. However, we expect that any extreme changes in prices or registration activity are unlikely to be large enough to impact our results in a meaningful way.

[48] Eight new gTLDs with wholesale prices below $1 are excluded from this analysis. If those TLDs were included in the analysis, we would continue to find minimal changes in the average and median prices of TLDs with price information available in Phase I and Phase II. The average Phase II retail price for new gTLDs incremental to Phase II would decrease to $58.50, and the median price for that set of TLDs would decrease slightly to $23.51.

Retail Markups
Combining the data on wholesale and retail prices, Figures 5A and 5B below plot the distribution of retail markups: the percentage increase in retail price compared to wholesale price. (We note that legacy wholesale price data are proxied for by legacy wholesale price cap information.) As shown, legacy TLDs in Phase I typically had a higher markup as compared to new gTLDs; in Phase II, the distributions of legacy TLD and new gTLD mark-ups are more similar. It should be noted, that legacy TLD markups may be understated in this analysis since legacy TLD wholesale prices are being measured by legacy TLD price caps: wholesale prices may be lower than the reported wholesale price cap, making actual legacy TLD markups larger than those shown in this analysis. Below, Table 8 provides summary statistics for the distribution of retail markups across legacy TLDs and new gTLDs. For TLDs with markup data recorded in both Phase I and Phase II, we see that average and median markups have declined in the past year.

Figure 5A
Phase I Average Retail Percentage Markup for Legacy and New gTLDs

All Phase I Markups

Legend: Legacy TLDs (blue), New gTLDs (orange)

X-axis: Weighted Average Retail Percentage Markup (-100% to 400%)
Y-axis: Count of TLDs (0 to 40)

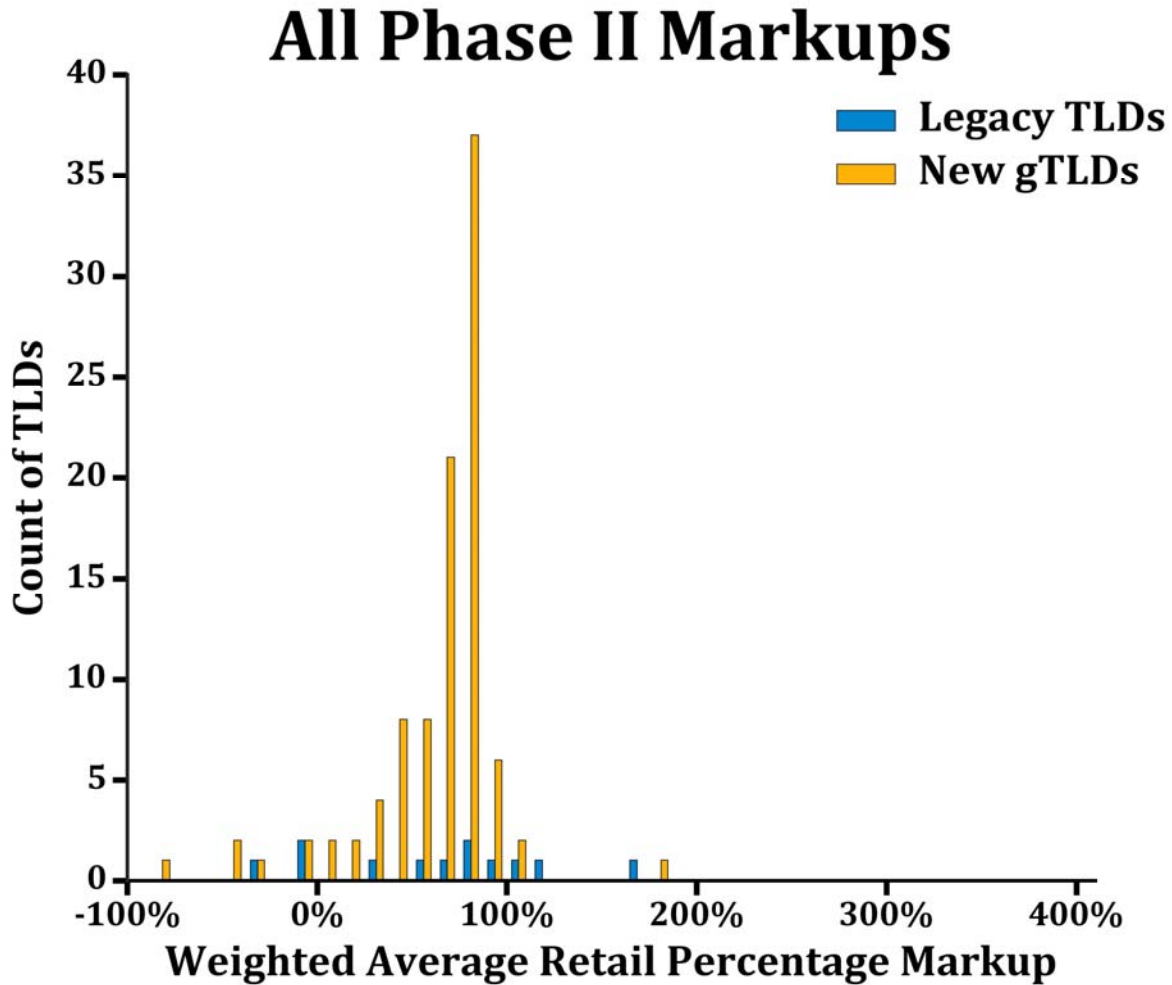**Notes:**
[1] Wholesale and retail prices for Phase I retail markups are as of April 2015.
[2] Retail markup is calculated as (weighted average retail price – wholesale price) / wholesale price. Weighted average retail price is calculated as the average of retail prices weighted by the share of registrations accounted for by each registrar from which retail pricing data were collected. Registrations for Phase I weighted average prices are as of April 2015.
[3] Eight new gTLDs with wholesale prices below $1 are excluded from this analysis.

Sources:
[1] Legacy wholesale price information were obtained from official price change correspondences between operating registries and ICANN.
[2] New gTLD wholesale prices were provided by registry operators.
[3] Retail prices were collected from registrar websites.
[4] Registration volume data were obtained from monthly transaction reports provided to ICANN by operating registries.

Figure 5B
Phase II Average Retail Percentage Markup for Legacy and New gTLDs

Notes:

[1] Wholesale prices for Phase II retail markups are as of April 2016. Retail prices for Phase II retail markups are as of June 2016.

[2] Retail markup is calculated as (weighted average retail price – wholesale price) / wholesale price. Weighted average retail price is calculated as the average of retail prices weighted by the share of registrations accounted for by each registrar from which retail pricing data were collected. Registrations for Phase I weighted average prices are as of April 2015. Registrations for Phase II weighted average prices are as of March 2016.

[3] Eight new gTLDs with wholesale prices below $1 are excluded from this analysis.

Sources:

[1] Legacy wholesale price information was obtained from official price change correspondences between operating registries and ICANN.

[2] New gTLD wholesale prices were provided by registry operators.

[3] Retail prices were collected from registrar websites.

[4] Registration volume data were obtained from monthly transaction reports provided to ICANN by operating registries.

Table 8
Retail Markup Distribution
Phase I and II Comparison

| | Phase I Results | | TLDs with Prices Recorded in Both Phase I and Phase II | | | | Phase II Markup for TLDs Incremental to Phase II | |
| | | | Legacy TLDs | | New gTLDs | | | |
	Legacy TLDs	New gTLDs	Phase I Markup	Phase II Markup	Phase I Markup	Phase II Markup	Legacy TLDs	New gTLDs
Average	125%	92%	125%	66%	96%	71%	41%	49%
Minimum	2%	-34%	2%	-37%	-20%	-44%	25%	-84%
25th Percentile	37%	78%	37%	-2%	78%	67%	25%	30%
Median	135%	85%	135%	76%	85%	74%	41%	55%
75th Percentile	162%	89%	162%	111%	89%	81%	57%	83%
Maximum	243%	639%	243%	170%	639%	186%	57%	95%
Number of Obs.	10	74	10	10	68	68	2	29

Notes:

[1] Phase I wholesale and retail prices are as of April 2015. Phase II wholesale prices are as of April 2016. Phase II retail prices are as of June 2016. One-year registration prices are reported. Prices were not available for all TLDs either due to a lack of available information or lack of a one-year registration price.

[2] Markup percentage is calculated by subtracting the wholesale price from the weighted average retail price weighted and dividing the difference by the wholesale price. Weighted average retail price is calculated as the average of retail prices weighted by the share of registrations accounted for by each registrar from which retail pricing data were collected. Registrations for Phase I weighted average prices are as of April 2015. Registrations for Phase II weighted average prices are as of March 2016.

[3] TLDs with prices recorded in both Phase I and Phase II include all TLDs for which both retail prices and wholesale prices were collected in both Phase I and Phase II.

[4] TLDs incremental to Phase II includes TLDs that were added as part of the Phase II TLD sample or TLDs for which operating registries did not provide a wholesale price during Phase I.

[5] One TLD with a wholesale price of zero is excluded from this analysis because it carries the Spec 9 exemption with ICANN.

[6] Eight new gTLDs with wholesale prices below $1 are excluded from this analysis.

Sources:

[1] Retail prices were collected from registrar websites or provided by DNPric.es.

[2] Wholesale price information was provided by operating registries.

[3] Registration volumes were collected from monthly transaction reports provided to ICANN by operating registries.

Wholesale Price Index

The expansion of new gTLDs has created a market with hundreds of TLD options for consumers. As shown in the above analyses, these TLDs vary substantially in price. A price index is a mathematical way to summarize the distribution of prices in a manner that also accounts for differences in registration volume. As prices and registration patterns change over time, monitoring this index value can help summarize changes in the overall price level for domain name registrations.

In Phase I, we calculated both weighted and un-weighted wholesale price index values for the overall set of TLDs as well as for legacy TLD and new gTLDs separately. (We note that legacy wholesale price data are proxied for by legacy wholesale price cap information.) We calculate both weighted and un-weighted index values: the un-weighted index value treats each TLD the same, whereas the weighted index value places more importance on TLDs with higher registration volumes.[49] This information is provided below in Table 9. Once again, when comparing the overall legacy TLD wholesale price to new gTLDs, we note that many legacy TLDs had historical price caps, as well as different start-up costs compared to

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[49] The weighted-price index value first calculates a weighted average retail price for each TLD, where the weights are determined by each registrar's registration volume of the TLD. Then, we take the average of these registrar-weighted average prices across all relevant TLDs, weighting each by their total domain registrations. As noted above, we exclude TLDs with extremely low wholesale prices from the analysis.

new gTLDs, both of which may be influencing their current prices relative to new gTLDs. We also again note that legacy TLD prices are measured based on price caps, and may overstate the wholesale price of legacy TLDs. New gTLDs, in contrast to legacy TLDs, are not subject to price caps. For legacy TLDs and new gTLDs with wholesale price information available in both Phase I and Phase II, we see a decline in the weighted price of new gTLDs, while legacy prices have largely remained the same. As discussed earlier, a decline in wholesale prices is consistent with increased competition in the domain name marketplace.

Table 9
Legacy TLD Wholesale Price Cap and gTLD Wholesale Price Index Values
Phase I and II Comparison

| | Phase I Results | | TLDs with Prices Recorded in Both Phase I and Phase II | | | | Phase II Prices for TLDs Incremental to Phase II | |
| | | | Legacy TLD Prices | | New gTLD Prices | | | |
	Legacy TLDs	New gTLDs	Phase I	Phase II	Phase I	Phase II	Legacy TLDs	New gTLDs
Simple Average Wholesale Price	$16.09	$20.91	$16.09	$16.72	$21.87	$21.46	$78.50	$24.08
Weighted Average Wholesale Price	$7.82	$13.30	$7.82	$7.92	$17.82	$15.38	$69.06	$15.46
Number of Obs.	10	74	10	10	68	68	2	29

Notes:

[1] Simple average price is the simple average of all available wholesale prices within each category. Weighted average wholesale price is the average of all available wholesale prices weighted by each TLD's share of registrations as of April 2015 for Phase I and March 2016 for Phase II.

[2] One-year registration prices are used. Phase I wholesale prices and registrations are as of April 2015. Phase II wholesale prices are as of April 2016 and registrations are as of March 2016. Wholesale prices were not available for all TLDs either due to a lack of a response from the registries or lack of a one-year registration price.

[3] TLDs with prices recorded in both Phase I and Phase II include all TLDs for which registries provided a wholesale price in both Phase I and Phase II.

[4] TLDs incremental to Phase II include TLDs for which registries never provided a price as part of Phase I or TLDs that were added as part of the Phase II TLD

[5] One TLD with a wholesale price of zero is excluded from this analysis because it carries the Spec 9 exemption with ICANN.

[6] Eight new gTLDs with wholesale prices below $1 are excluded from this analysis.

Sources:

[1] Retail prices were collected from registrar websites or provided by DNPric.es.

[2] Wholesale price information was provided by operating registries.

[3] Registration volumes were collected from monthly transaction reports provided to ICANN by operating registries.

Retail Price Index

In Phase I, we calculated retail price-index values for the overall set of TLDs as well as for legacy TLD and new gTLDs separately. For each TLD, we collected price observations from 39 registrars, and the index values were created from those price observations. We calculate both weighted and un-weighted index values: the un-weighted index value treats each TLD price observation the same, whereas the weighted index value places more importance on TLDs and registrars with higher registration volumes.[50] The end result, shown in Table 10 below, shows a decline in retail both weighted and un-weighted retail prices; this decline is most noticeable for the weighted new gTLD price index. In addition, we find that price declines are greater for new gTLDs than for legacy TLDs. As above, a decline in retail prices is consistent with increased competition among registrars.

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[50] The weighted-price index value weights each TLD by its total domain registrations. The un-weighted index values are higher for both legacy TLDs and gTLDs as compared to their respective weighted index values, reflecting the fact that lower-priced legacy TLDs have a larger number of registrations than more expensive TLDs. As noted above, we exclude TLDs with wholesale prices below $1 from the analysis.

Table 10
Legacy TLD and gTLD Retail Price Index Values
Phase I and II Comparison

| | Phase I Results | | TLDs with Prices Recorded in Both Phase I and Phase II | | | | Phase II Price Index for TLDs Incremental to Phase II | |
| | | | Legacy TLD Price Indices | | New gTLD Price Indices | | | |
	Legacy TLDs	New gTLDs	Phase I	Phase II	Phase I	Phase II	Legacy TLDs	New gTLDs
Un-Weighted Index Value	$41.34	$37.87	$41.34	$37.62	$37.87	$33.35	N/A	$69.89
Weighted Index Value	$17.45	$26.90	$17.45	$14.82	$26.90	$11.09	N/A	$36.92
Number of Obs.	14	106	14	14	106	106	N/A	23

Notes:

[1] The weighted price index value first calculates a weighted average retail price for each TLD, where each retail price is weighted by the registration volume of the the registrar from which the retail price was collected. The un-weighted index value the simple average of the weighted average retail price across TLDs. The weighted index value is the weighted average across TLDs of the weighted average retail price weighted by each TLD's share of all registrations.

[2] One-year registration prices are used. For Phase I price indices, prices and registrations are as of April 2015. For Phase II price indices, retail prices are as of June 2016 and registrations are as of March 2016.

[3] TLDs with prices recorded in both Phase I and Phase II include all TLDs for which a retail price was collected in both Phase I and Phase II.

[4] TLDs incremental to Phase II include TLDs that were added as part of the Phase II TLD sample.

[5] Eight new gTLDs with wholesale prices below $1 are excluded from this analysis.

Sources:

[1] Retail prices were collected from registrar websites or provided by DNPric.es.

[2] Registration volumes were collected from monthly transaction reports provided to ICANN by operating registries.

Add-On Prices and Availability

In our Phase I Assessment, we analyzed the presence of competition across non-price dimensions by evaluating registrar pricing and offering of add-on services. We found that there is a large variety of add-on categories registrars offer, and within an add-on category, a registrar may offer multiple products, each varying in price. Hosting, email, and server-related products were the most frequently offered.

Within each add-on category, we noted that some add-on categories had very little price dispersion (e.g., forwarding), while other categories have a large amount of variation. One possible explanation is that add-ons with lower price dispersion are add-ons where customers tend to be more sensitive to and well-informed about the pricing. However, without detailed transaction information from multiple registrars, we cannot investigate if hypotheses such as this are likely to be correct. In Phase II, we confirmed that registrar add-on services continue to have a large amount of variation, making it difficult to conduct an analysis of how registrars price similar comparable services. The diversity of add-on service offerings from registrars potentially reflects differentiation across registrar services in the retail domain name marketplace. As discussed in our overview of the marketplace for domain names, the availability of a diverse set of services is one way for sellers in a marketplace to compete along a non-price dimension.

Registration Shares

In Phase I, we defined several groups of new gTLDs that are similar, either in name and/or in their likely target consumers. For example, .career, .careers, .jobs, and .work might constitute such a group. As discussed in Section III, such groups were included as part of our sample construction process. After selecting new gTLDs based on total and recent registration volume, related new gTLDs were then added. For each proposed group, we ran domain name searches on two large-volume registrar websites[51] and recorded which new gTLDs were included in the "Suggested Domain Name" list immediately following the search. Every new gTLD in the groupings below had at least one other group member displayed as a suggested domain name alternative. For our Phase II Assessment, we have expanded on our TLD groups based on new gTLDs that have become available since our Phase I Assessment.

For each new gTLD in a group, Table 11 below shows its share of registrations within its corresponding group as of March 2016 and the number of months it has been available. We see that ten of the 15 TLD families listed that had new gTLDs in Phase I have experienced entry by a new gTLD in the past year. Of those ten families, eight experienced a decrease in the registration shares of the largest pre-existing new gTLDs in the same family. The entry of a new gTLD in ten of 15 TLD families suggests that new gTLDs that are focused at different types of registrants continue to be introduced to the marketplace. In addition, the finding that registration shares decreased in eight of ten TLD families that experienced entry by a new gTLD suggests those entries could have pro-competitive effects on other new gTLDs within those families: for example, when a new gTLD enters a TLD family and attracts registrants (associated with a decline in the registration share of pre-existing new gTLDs within that family), registry operators and registrars offering pre-existing new gTLDs in that TLD family may need to reduce prices in order to compete with the new gTLD entrant.

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[51]Specifically, we ran the checks using GoDaddy and 101 Domain.

Table 11
TLD Groups – Registration Shares

| TLD Family | TLD | Registration Share | | | Months Available | |
		Phase I	Phase II	Difference (Phase II - Phase I)	Phase I	Phase II
Beer	pub	37.8%	59.0%	21.2%	10	21
Beer	bar	22.5%	25.4%	2.9%	9	20
Beer	beer	39.6%	15.6%	-24.1%	7	18
Car	auto	N/A	35.9%	N/A	N/A	2
Car	car	N/A	32.7%	N/A	N/A	2
Car	cars	N/A	31.4%	N/A	N/A	2
Deals	kaufen	28.1%	28.7%	0.6%	10	21
Deals	deals	21.8%	24.3%	2.5%	7	18
Deals	discount	13.4%	14.2%	0.8%	8	19
Deals	gratis	11.6%	11.9%	0.3%	8	19
Deals	cheap	13.1%	11.0%	-2.1%	12	23
Deals	bargains	10.1%	8.3%	-1.8%	12	23
Deals	qpon	1.9%	1.7%	-0.2%	11	22
Dental	dental	74.5%	68.1%	-6.3%	8	19
Dental	dentist	25.5%	31.9%	6.3%	4	15
Education	academy	32.8%	26.0%	-6.8%	13	24
Education	education	29.3%	23.7%	-5.6%	13	24
Education	training	28.0%	21.4%	-6.5%	13	24
Education	college	N/A	9.7%	N/A	N/A	6
Education	school	N/A	8.9%	N/A	N/A	10
Education	university	6.7%	5.9%	-0.8%	9	20
Education	schule	2.5%	2.5%	-0.1%	8	19
Education	degree	0.7%	1.9%	1.2%	3	14
Expert/Consulting	expert	70.1%	62.8%	-7.4%	11	22
Expert/Consulting	consulting	29.9%	37.2%	7.4%	10	21
Finance	loan	N/A	90.4%	N/A	N/A	7
Finance	bank	N/A	2.4%	N/A	N/A	9
Finance	finance	23.0%	1.9%	-21.2%	7	18
Finance	financial	17.3%	1.3%	-16.0%	9	20
Finance	loans	15.8%	1.1%	-14.7%	7	18
Finance	investments	16.2%	1.1%	-15.1%	8	19
Finance	credit	14.3%	1.0%	-13.3%	8	19
Finance	mortgage	13.4%	0.9%	-12.5%	6	17
Global	world	29.1%	38.8%	9.7%	3	14
Global	global	32.6%	31.1%	-1.5%	7	18
Global	international	38.3%	25.9%	-12.4%	13	24
Global	earth	N/A	4.2%	N/A	N/A	4
Help	review	N/A	19.5%	N/A	N/A	8
Help	guru	28.7%	18.0%	-10.7%	15	26
Help	help	10.0%	13.6%	3.6%	5	16
Help	solutions	14.9%	12.6%	-2.3%	13	24
Help	tips	14.4%	9.6%	-4.7%	14	25
Help	expert	11.4%	7.6%	-3.8%	11	22
Help	wiki	4.3%	5.5%	1.2%	11	22
Help	reviews	5.6%	4.7%	-0.9%	11	22
Help	support	5.8%	4.5%	-1.2%	13	24
Help	guide	3.9%	3.5%	-0.5%	7	18
Help	how	1.0%	0.8%	-0.2%	3	14
Home	realtor	43.2%	32.2%	-11.0%	6	17
Home	property	17.8%	18.0%	0.2%	5	16
Home	casa	1.3%	8.4%	7.1%	2	13
Home	house	6.5%	6.5%	0.0%	13	24
Home	rentals	5.9%	4.9%	-1.0%	11	22
Home	immo	4.6%	4.8%	0.2%	4	15
Home	properties	5.1%	4.7%	-0.4%	11	22
Home	estate	5.7%	4.7%	-1.0%	14	25
Home	rent	N/A	3.8%	N/A	N/A	6
Home	immobilien	3.8%	3.5%	-0.3%	12	23
Home	forsale	2.4%	3.4%	1.0%	3	14

TLD Family	TLD	Registration Share			Months Available	
		Phase I	Phase II	Difference (Phase II - Phase I)	Phase I	Phase II
Home	haus	1.3%	1.5%	0.2%	9	20
Home	apartments	N/A	1.3%	N/A	N/A	10
Home	condos	1.2%	1.0%	-0.2%	11	22
Home	lease	0.7%	0.7%	0.0%	9	20
Home	maison	0.6%	0.5%	-0.1%	11	22
Jobs	work	29.9%	65.4%	35.4%	2	13
Jobs	jobs	59.5%	29.4%	-30.1%	101	112
Jobs	careers	9.5%	4.6%	-4.9%	14	25
Jobs	career	1.1%	0.7%	-0.5%	8	19
Legal	lawyer	50.0%	38.0%	-12.0%	6	17
Legal	legal	15.3%	23.5%	8.2%	1	12
Legal	attorney	34.7%	23.4%	-11.3%	6	17
Legal	law	N/A	15.1%	N/A	N/A	6
Medical	care	43.9%	45.5%	1.7%	8	19
Medical	healthcare	24.1%	26.2%	2.1%	6	17
Medical	clinic	22.7%	20.4%	-2.3%	8	19
Medical	surgery	9.3%	7.9%	-1.4%	8	19
Photography	photography	47.9%	34.5%	-13.3%	14	25
Photography	pics	8.7%	21.1%	12.3%	12	23
Photography	photo	16.3%	17.6%	1.3%	12	23
Photography	photos	17.1%	12.9%	-4.2%	14	25
Photography	studio	N/A	5.8%	N/A	N/A	5
Photography	pictures	4.9%	4.4%	-0.4%	9	20
Photography	camera	5.1%	3.6%	-1.5%	14	25
Science and Technology	science	85.2%	70.8%	-14.3%	2	13
Science and Technology	tech	N/A	19.7%	N/A	N/A	8
Science and Technology	technology	9.4%	5.2%	-4.2%	14	25
Science and Technology	software	2.2%	2.0%	-0.2%	4	15
Science and Technology	computer	1.8%	1.0%	-0.8%	13	24
Science and Technology	engineering	1.0%	0.7%	-0.3%	9	20
Science and Technology	engineer	0.4%	0.5%	0.1%	5	16
Travel	travel	47.8%	42.5%	-5.3%	109	120
Travel	reisen	11.3%	11.6%	0.3%	9	20
Travel	vacations	12.1%	10.7%	-1.3%	11	22
Travel	tours	N/A	10.6%	N/A	N/A	9
Travel	voyage	9.7%	7.6%	-2.0%	14	25
Travel	cruises	5.9%	5.4%	-0.5%	11	22
Travel	flights	5.7%	4.8%	-0.9%	11	22
Travel	reise	3.6%	3.5%	-0.1%	8	19
Travel	viajes	4.0%	3.1%	-0.8%	12	23

Notes:

[1] Registration shares are as of April 2015 for Phase I and March 2016 for Phase II.

[2] TLDs are grouped into families that consist of TLDs with similar topic areas and are likely to have a large overlap in their respective target groups of consumers.

[3] Registration share is calculated as the percent of volume the TLD represents compared to the total registrations within its family grouping.

[4] Months available is calculated as the number of months from the beginning of each TLD's general availability until April 2015 for Phase I and March 2016 for Phase II.
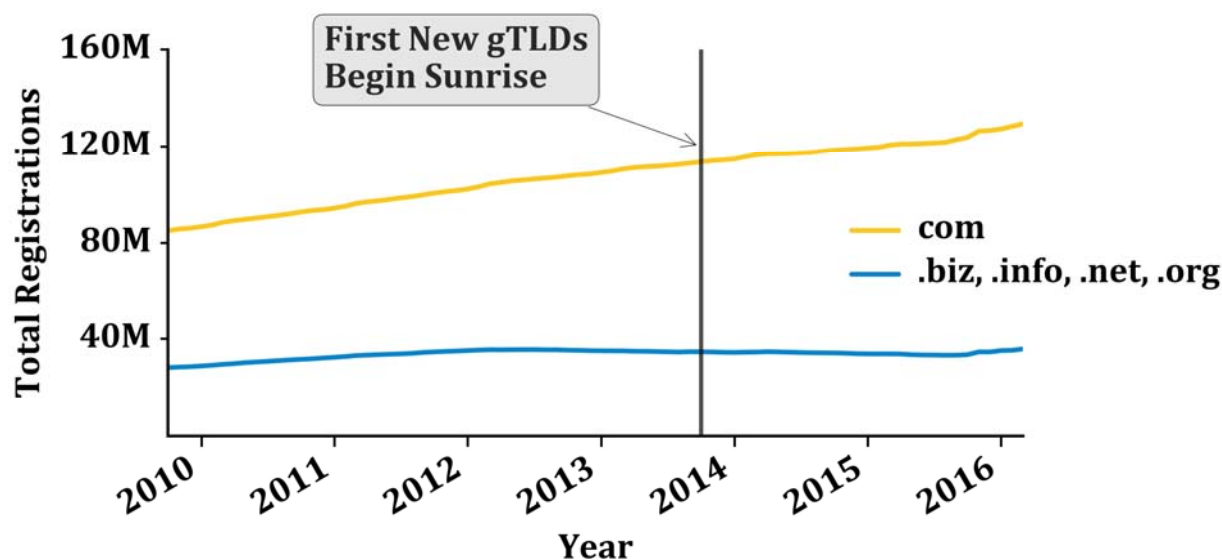
Sources:

[1] Registration volumes are collected from monthly transaction reports provided to ICANN by operating registries.

[2] General availability of new gTLDs is collected from https://newgtlds.icann.org/en/program-status/sunrise-claims-periods.

[3] General availability of legacy TLDs is identified as the first available monthly transaction report for each TLD from https://www.icann.org/resources/pages/registry-reports/#j.

Effects on Legacy TLD Registration Volumes

Registration Volumes

If consumers view new gTLDs as substitutes for legacy TLDs, one might expect that the release of new gTLDs would lower the registrations, rate of registrations, or renewals seen in legacy TLDs. On the other hand, if consumers do not view them as substitutes, we might not expect to see any changes in legacy TLD registrations. Using data from monthly transaction reports submitted to ICANN by registry operators, Figure 6 below shows total (cumulative) registrations for the top five legacy TLDs over time. The chart contrasts the largest legacy TLD in terms of registrations (.com), against the next four largest TLDs (.biz, .info, .net, and org).

Figure 6
Historical Legacy Registration Volumes (2010 – 2016)

Note:
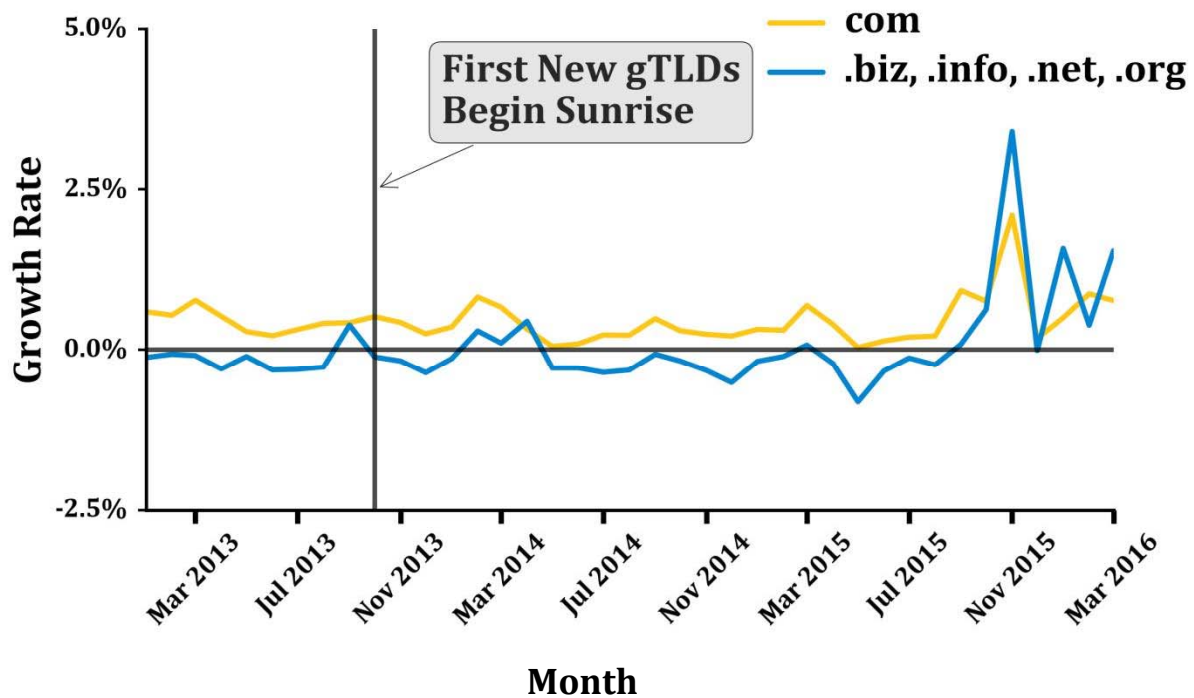[1] Top five legacy TLDs by volume are included.

Sources:
[1] Registration volume data were obtained from March 2016 monthly transaction reports provided to ICANN by operating registries.
[2] New gTLD entrance dates collected from ICANN's website;
https://newgtlds.icann.org/en/program-status/sunrise-claims-periods

As we saw in the Phase I Assessment, no clear effects are revealed in the above graph – legacy TLDs appear to be continuing to follow their previous registration trends. One possible explanation for this result is multi-year registrations have remained active in the past year even though they may not be renewed in the future (i.e., those registrations may shift to new gTLDs in the future). We therefore also present alternative measure of registration activity: growth rates. Figure 7 below plots monthly growth rates for each of the above five legacy TLDs with .biz, .info, .net, and .org again grouped together.

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Figure 7
Legacy TLD Registration Growth Rates

Notes:
[1] Growth rates are calculated as total registration count in month n less total registration count in month n – 1 divided by total registration count in month n – 1.
[2] Top five legacy TLDs by volume are included.

Sources:
[1] Registration volume data were obtained from March 2016 monthly transaction reports provided to ICANN by operating registries.
[2] New gTLD entrance dates collected from ICANN's website;
https://newgtlds.icann.org/en/program-status/sunrise-claims-periods

From this graph, we see that the growth rates of these legacy TLDs generally do not appear to have been affected by the entry of new gTLDs. There is a large uptick in legacy TLD growth rates in November 2015, however, the general trend since the entrance of the new gTLDs has been steady rates close to zero.

While we see that growth rates and registration trends for legacy TLDs do not yet suggest any reduction in registrations related to the New gTLD Program, it is important to note that since legacy TLD registrations have not fallen and new gTLD registrations are growing, overall registration activity has increased since the date on which new gTLDs first entered. As such, output, where output is measured by the total number of registrations, has increased.

It is possible that the introduction of new gTLDs affects legacy registration rates differently across regions and countries. In Table 12, we examine how regional TLDs that are targeted at registrants from certain geographic areas (e.g., .nyc) affect registrations made in legacy TLDs and other new gTLDs. Table 12 shows the average monthly registration counts in new gTLDs and legacy TLDs, respectively, for geographic areas associated with several regional TLDs that began their general availability period in 2014. Across nearly all regions, we observe a decline in new registrations after the entry of a relevant regional TLD, which suggests that regional TLDs may be viewed as substitutes for other new gTLDs and legacy TLDs. Although these results are suggestive, they do not measure a causal relation between the entry of a geo-TLD and changes in registrations of other TLDs.

Table 12
Change in Average Monthly Registration by TLD Type
After the Entry of a Regional TLD

Regional TLD[1]			New gTLDs				Legacy			
gTLD	Region	Entry Date[2]	Before[3]	After[4]	Abs. Change	% Change	Before[3]	After[4]	Abs. Change	% Change
.berlin	Berlin	3/18/2014	140.0	5.3	-134.7	-96.2%	136	127	-9	-7%
.capetown	Capetown	11/4/2014	5.0	2.8	-2.2	-43.6%	44	31	-14	-31%
.cologne	Cologne	8/26/2014	106.6	18.4	-88.2	-82.7%	1,623	364	-1,259	-78%
.hamburg	Hamburg	8/27/2014	16.1	3.3	-12.8	-79.5%	85	70	-15	-17%
.london	London	9/9/2014	26.9	9.0	-17.9	-66.7%	314	261	-53	-17%
.nyc	New York City	10/8/2014	14.9	7.8	-7.1	-47.5%	418	357	-61	-15%
.quebec	Quebec	11/18/2014	7.5	5.0	-2.5	-33.7%	179	167	-12	-7%
.scot	Edinburgh	9/23/2014	3.6	1.9	-1.6	-45.5%	25	18	-7	-29%
.scot	Glasgow	9/23/2014	5.2	2.4	-2.8	-54.4%	22	18	-5	-21%
.tokyo	Tokyo	7/22/2014	2.9	11.5	8.6	299.2%	22	109	87	389%
.vegas	Las Vegas	8/14/2014	12.4	4.1	-8.3	-66.9%	218	191	-27	-12%

Notes:

[1] Regional TLD refers to the region-specific gTLD assigned to a given area. Regional TLDs are matched to areas based on a correspondence between a city name and the regional TLD name (e.g., City of New York = .nyc).

[2] Regional TLD Entry Date refers to a given regional TLD's general availability date.

[3] Figures in the "Before" column refer to the average number of TLD registrations of legacy and new gTLDs, respectively, before the general availability date of the area's regional TLD.

[4] Figures in the "After" column refer to the average number of TLD registrations of legacy and new gTLDs, respectively, after the general availability date of the area's regional TLD.

[5] This analysis only includes TLDs in city-level regions with registration data before and after the general availability date of the area's regional TLD.

Source:

[1] Monthly data on new registrations by TLD and region from January 2014 to January 2016 were provided by DomainTools.

SECTION V – CONCLUSIONS

Our Phase II Assessment describes how the competition metrics established in the Phase I Assessment have changed (or remained the same) as the New gTLD Program has expanded in the past year. As only one year has passed since our initial assessment and the New gTLD Program continues to introduce new gTLDs, the marketplace for domain names will continue to change in the future. It should also be noted that our analyses are descriptive in nature and do not measure the causal impact of the New gTLD Program on competition.

While we are unable to draw conclusions about whether the New gTLD Program has caused a change in competition in the domain name marketplace, we have observed some changes in the past year that are consistent with what one would expect to see in a marketplace with increased competition. For example, we see a decline in the share of new gTLD registrations attributable to the four and eight registries with the most registrations. We also see volatility in the registration shares held by registry operators. This may be due to the entry of new gTLDs being offered by new registry operators or general volatility in the marketplace. Consistent with the first explanation, we see that when new gTLDs enter the marketplace, there is a decline in the registration shares of other new gTLDs within the same topic or subject area. One might also expect that increased competition among new gTLD registry operators would result in lower new gTLD wholesale prices, which we do not observe.

We observe similar volatility in new gTLD registration shares made by registrars, with the largest registrar in the Phase I Assessment dropping out of the top 15 registrars ranked by total domain registrations and being replaced by a registrar whose share of new gTLD registrations increased by nearly 22 percent. Registrars located in China have also become more prevalent among registrars with the largest shares of new gTLD registrations. We also observe that retail prices and markups have declined since Phase I, consistent with increased competition.

We also have evaluated how the entry of new gTLDs is related to the registration activity of other TLDs, such as legacy TLDs. Since legacy TLD registrations have not fallen and new gTLD registrations are growing, total TLD registration has increased since the beginning of the New gTLD Program. In both our Phase I and Phase II Assessments, we found no aggregate (worldwide) effect of new gTLD entry or registrations on legacy TLD registrations: registrations of legacy TLDs continued to follow the same pattern before and after the beginning of the New gTLD Program. This is consistent with new gTLDs generally not being treated as substitutes for legacy TLDs. We then analyzed if the entry of regionally-specific TLDs (e.g., nyc) is related to other TLD registration activity by registrants in the regional TLD's geographic area. We typically observe a decline in new gTLD and legacy registrations after the entry of the regional TLD in the region relevant to that TLD, which suggests that regional TLDs may be viewed as substitutes for other new gTLDs and legacy TLDs. We however do not have sufficient data to fully analyze the substitutability of new gTLDs for the legacy TLDs.