**The Effect of gTLD Entry on Industry Concentration**

Above, we described our analysis of the extent which new gTLDs together have captured a share of overall TLD registrations. In this section, we analyze whether, and the extent to which, the entry of new gTLDs has affected concentration among registry operators, registrars, and back-end providers using three standard measures of concentration, the 4-firm concentration ratio (the share of registrants served by the 4 largest firms, the 8-firm concentration ratio (the share of registrants served by the 8 largest firms), and the Herfindahl-Hirschman Index ["HHI"] (the sum of the squared shares of each firm.)

Under many economic theories, higher measures of concentration are associated with lower levels of competition. Moreover, a substantial body of empirical work in, and across, varying industries confirms that high concentration often lead to higher prices and markups. Although these studies are not definitive, and some studies find little or no relationship between concentration and prices, the preponderance of evidence is that markets with a small number of firms, or markets in which a few firms have very large market share, tend to have higher prices than where concentration is lower.[1]

Our analysis, which was limited to gTLDs and excluded brand and ROCC gTLDs, measured the change in each of the concentration measures among registries, registrars, and back-end providers between September 2013, which was before the new gTLDs entered, and March 2016.[2] Table X reports the results of our analysis.

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[1] We would have preferred to analyze the effects of new gTLD entry on competition directly but, as we note elsewhere in this Report, we were unable to obtain data on changes in the wholesale prices actually charged by legacy gTLDs after entry occurred.

[2] Measures of concentration among registries would have been substantially lower if we had defined the market to include both gTLDs and ccTLDs and somewhat lower if we had defined the market to include gTLDs and "open" ccTLDs. **I ASSUME THAT THESE CALCULATIONS WILL BE UPDATED FOR OUR FINAL REPORT.**

We found that, although measured concentration among registries remains high, new gTLD entry has reduced overall concentration.[3] In particular, the share of registrants served by the 4 largest firms declined by about 8 percentage points, the share of registrants served by the 8 largest firms declined by about 4 percentage points, and the HHI declined by over 1,000 points between 2013 and 2016. These differences can be explained largely by the fact that concentration among new gTLD registries is substantially lower than that among all gTLD registries. For example, where the HHI for all gTLD registries is 6,360, the HHI for new gTLD registries is only 683. **NUMBERS NEED TO BE CHECKED. THERE IS A SMALL DISCREPANCY AMONG TABLES.**

Concentration among all registrars, which was relatively low prior to new gTLD entry, declined somewhat between 2013 and 2016. In particular, the 4-firm and 8-firm concentration ratios both declined by about 6 percentage points and the HHI declined by about 1,000 points.[4] These declines are largely the result of the slightly lower concentration among registrars for new

[3] In characterizing concentration as high or low, we are employing the standards based on HHIs that are described in U.S. Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines,* Issued: August 19, 2010, pp. 18-19. As the agencies note: "The purpose of these thresholds is not to provide a rigid screen to separate competitively benign mergers from anticompetitive ones, although high levels of concentration do raise concerns. Rather, they provide one way to identify some mergers unlikely to raise competitive concerns and some others for which it is particularly important to examine whether other competitive factors confirm, reinforce, or counteract the potentially harmful effects of increased concentration. The higher the post-merger HHI and the increase in the HHI, the greater are the Agencies' potential competitive concerns and the greater is the likelihood that the Agencies will request additional information to conduct their analysis."

[4] We also found that, although concentration among registrars *for a given gTLD* was high for some gTLDs, for most it was generally quite low. Moreover, even where concentration was relatively high, there were often a large number of registrars for a gTLD. For example, among legacy gTLDs, the HHI among registrars for .pro was 3,666 but there were 90 registrars and the HHI among registrars for .job was 7,155 but there were 63 registrars. Among new gTLDs, the HHI among registrars for .bar was 5,864 but there were 95 registrars and the HHI for .casa was 5,191 but there were 62 registrars.

gTLDs – for example the HHI is 909 – as compared to the HHI for registrars for all gTLDs, which is 1,003.

Finally, with regard to back-end providers, although measured concentration remains high, it has declined since new gTLD entry. In particular, the 4-firm concentration ratio declined by about 4 percentage points and the HHI declined by about 1,000 points between 2013 and 2016. It is notable, however, that concentration among back-end providers for new gTLDs is substantially lower than that of concentration among of back-end providers for all gTLDs. For example, whereas the HHI for back-end providers for all gTLDs was 6,434 in March 2016, it was only 1,284 for back-end providers for new gTLDs.