

# SECURITIES AND EXCHANGE COMMISSION

[Release Nos. 33-10675; 34-86750 / August 23, 2019]

## Order Making Fiscal Year 2020 Annual Adjustments to Registration Fee Rates

### I. Background

The Commission collects fees under various provisions of the securities laws. Section 6(b) of the Securities Act of 1933 (“Securities Act”) requires the Commission to collect fees from issuers on the registration of securities.<sup>1</sup> Section 13(e) of the Securities Exchange Act of 1934 (“Exchange Act”) requires the Commission to collect fees on specified repurchases of securities.<sup>2</sup> Section 14(g) of the Exchange Act requires the Commission to collect fees on specified proxy solicitations and statements in corporate control transactions.<sup>3</sup> These provisions require the Commission to make annual adjustments to the applicable fee rates.

### II. Fiscal Year 2020 Annual Adjustment to Fee Rates

Section 6(b)(2) of the Securities Act requires the Commission to make an annual adjustment to the fee rate applicable under Section 6(b).<sup>4</sup> The annual adjustment to the fee rate under Section 6(b) of the Securities Act also sets the annual adjustment to the fee rates under Sections 13(e) and 14(g) of the Exchange Act.<sup>5</sup>

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<sup>1</sup> 15 U.S.C. 77f(b).

<sup>2</sup> 15 U.S.C. 78m(e).

<sup>3</sup> 15 U.S.C. 78n(g).

<sup>4</sup> 15 U.S.C. 77f(b)(2). The annual adjustments are designed to adjust the fee rate in a given fiscal year so that, when applied to the aggregate maximum offering price at which securities are proposed to be offered for the fiscal year, it is reasonably likely to produce total fee collections under Section 6(b) equal to the “target fee collection amount” specified in Section 6(b)(6)(A) for that fiscal year.

<sup>5</sup> 15 U.S.C. 78m(e)(4) and 15 U.S.C. 78n(g)(4).

Section 6(b)(2) sets forth the method for determining the annual adjustment to the fee rate under Section 6(b) for fiscal year 2020. Specifically, the Commission must adjust the fee rate under Section 6(b) to a “rate that, when applied to the baseline estimate of the aggregate maximum offering prices for [fiscal year 2020], is reasonably likely to produce aggregate fee collections under [Section 6(b)] that are equal to the target fee collection amount for [fiscal year 2020].” That is, the adjusted rate is determined by dividing the “target fee collection amount” for fiscal year 2020 by the “baseline estimate of the aggregate maximum offering prices” for fiscal year 2020.

Section 6(b)(6)(A) specifies that the “target fee collection amount” for fiscal year 2020 is \$705,000,000. Section 6(b)(6)(B) defines the “baseline estimate of the aggregate maximum offering prices” for fiscal year 2020 as “the baseline estimate of the aggregate maximum offering price at which securities are proposed to be offered pursuant to registration statements filed with the Commission during [fiscal year 2020] as determined by the Commission, after consultation with the Congressional Budget Office and the Office of Management and Budget . . . .”

To make the baseline estimate of the aggregate maximum offering price for fiscal year 2020, the Commission is using a methodology that has been used in prior fiscal years and that was developed in consultation with the Congressional Budget Office and Office of Management and Budget.<sup>6</sup> Using this methodology, the Commission determines the “baseline estimate of the aggregate maximum offering price” for fiscal

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<sup>6</sup> Appendix A explains how we determined the “baseline estimate of the aggregate maximum offering price” for fiscal year 2020 using our methodology, and then shows the arithmetical process of calculating the fiscal year 2020 annual adjustment based on that estimate. The appendix includes the data used by the Commission in making its “baseline estimate of the aggregate maximum offering price” for fiscal year 2020.

year 2020 to be \$5,429,883,452,897. Based on this estimate, the Commission calculates the fee rate for fiscal 2020 to be \$129.80 per million. This adjusted fee rate applies to Section 6(b) of the Securities Act, as well as to Sections 13(e) and 14(g) of the Exchange Act.

### **III. Effective Dates of the Annual Adjustments**

The fiscal year 2020 annual adjustments to the fee rates applicable under Section 6(b) of the Securities Act and Sections 13(e) and 14(g) of the Exchange Act will be effective on October 1, 2019.<sup>7</sup>

### **IV. Conclusion**

Accordingly, pursuant to Section 6(b) of the Securities Act and Sections 13(e) and 14(g) of the Exchange Act,<sup>8</sup>

IT IS HEREBY ORDERED that the fee rates applicable under Section 6(b) of the Securities Act and Sections 13(e) and 14(g) of the Exchange Act shall be \$129.80 per million effective on October 1, 2019.

By the Commission.

Jill M. Peterson  
Assistant Secretary

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<sup>7</sup> 15 U.S.C. 77f(b)(4), 15 U.S.C. 78m(e)(6) and 15 U.S.C. 78n(g)(6).

<sup>8</sup> 15 U.S.C. 77f(b), 78m(e) and 78n(g).

## APPENDIX A

Congress has established a target amount of monies to be collected from fees charged to issuers based on the value of their registrations. This appendix provides the formula for determining such fees, which the Commission adjusts annually. Congress has mandated that the Commission determine these fees based on the “aggregate maximum offering prices,” which measures the aggregate dollar amount of securities registered with the Commission over the course of the year. In order to maximize the likelihood that the amount of monies targeted by Congress will be collected, the fee rate must be set to reflect projected aggregate maximum offering prices. As a percentage, the fee rate equals the ratio of the target amounts of monies to the projected aggregate maximum offering prices.

For 2020, the Commission has estimated the aggregate maximum offering prices by projecting forward the trend established in the previous decade. More specifically, an ARIMA model was used to forecast the value of the aggregate maximum offering prices for months subsequent to July 2019, the last month for which the Commission has data on the aggregate maximum offering prices.

The following sections describe this process in detail.

### **A. Baseline estimate of the aggregate maximum offering prices for fiscal year 2020.**

First, calculate the aggregate maximum offering prices (AMOP) for each month in the sample (July 2009 - July 2019). Next, calculate the percentage change in the AMOP from month to month.

Model the monthly percentage change in AMOP as a first order moving average process. The moving average approach allows one to model the effect that an exceptionally high (or low) observation of AMOP tends to be followed by a more “typical” value of AMOP.

Use the estimated moving average model to forecast the monthly percent change in AMOP. These percent changes can then be applied to obtain forecasts of the total dollar value of registrations. The following is a more formal (mathematical) description of the procedure:

1. Begin with the monthly data for AMOP. The sample spans ten years, from July 2009 to July 2019.
2. Divide each month’s AMOP (column C) by the number of trading days in that month (column B) to obtain the average daily AMOP (AAMOP, column D).
3. For each month  $t$ , the natural logarithm of AAMOP is reported in column E.
4. Calculate the change in  $\log(\text{AAMOP})$  from the previous month as  
$$\Delta_t = \log(\text{AAMOP}_t) - \log(\text{AAMOP}_{t-1}).$$
 This approximates the percentage change.
5. Estimate the first order moving average model  $\Delta_t = \alpha + \beta e_{t-1} + e_t$ , where  $e_t$  denotes the forecast error for month  $t$ . The forecast error is simply the difference between the one-month ahead forecast and the actual realization of  $\Delta_t$ . The forecast error is expressed as  $e_t = \Delta_t - \alpha - \beta e_{t-1}$ . The model can be estimated using standard commercially available software. Using least squares, the estimated parameter values are  $\alpha = 0.00585851$  and  $\beta = 0.88811274$ .

6. For the month of August 2019 forecast  $\Delta_{t=8/2019} = \alpha + \beta e_{t=7/2019}$ . For all subsequent months, forecast  $\Delta_t = \alpha$ .
7. Calculate forecasts of  $\log(\text{AAMOP})$ . For example, the forecast of  $\log(\text{AAMOP})$  for October 2019 is given by  $\text{FLAAMOP}_{t=10/2019} = \log(\text{AAMOP}_{t=7/2019}) + \Delta_{t=8/2019} + \Delta_{t=9/2019} + \Delta_{t=10/2019}$ .
8. Under the assumption that  $e_t$  is normally distributed, the n-step ahead forecast of AAMOP is given by  $\exp(\text{FLAAMOP}_t + \sigma_n^2/2)$ , where  $\sigma_n$  denotes the standard error of the n-step ahead forecast.
9. For October 2019, this gives a forecast AAMOP of \$20.703 billion (Column I), and a forecast AMOP of \$476.161 billion (Column J).
10. Iterate this process through September 2020 to obtain a baseline estimate of the aggregate maximum offering prices for fiscal year 2020 of \$5,429,883,452,897.

**B. Using the forecasts from A to calculate the new fee rate.**

1. Using the data from Table A, estimate the aggregate maximum offering prices between 10/01/19 and 9/30/20 to be \$5,429,883,452,897.
2. The rate necessary to collect the target \$705,000,000 in fee revenues set by Congress is then calculated as:  $\$705,000,000 \div \$5,429,883,452,897 = 0.000129837$ .
3. Round the result to the seventh decimal point, yielding a rate of 0.0001298 (or \$129.80 per million).

**Table A. Estimation of baseline of aggregate maximum offering prices .**

**Fee rate calculation.**

|  |           |
|--|-----------|
| a. Baseline estimate of the aggregate maximum offering prices, 10/01/19 to 09/30/20 (\$Millions) | 5,429,883 |
| b. Implied fee rate (\$705 Million / a)  | \$129.80  |

| (A)<br>Month | (B)<br># of<br>Trading<br>Days in<br>Month | (C)<br>Aggregate<br>Maximum Offering<br>Prices, in<br>\$Millions | (D)<br>Average Daily<br>Aggregate Max.<br>Offering Prices<br>(AAMOP) in \$Millions | (E)<br>log(AAMOP) | (F)<br>Log<br>(Change in<br>AAMOP) | (G)<br>Forecast<br>log(AAMOP) | (H)<br>Standard<br>Error | (I)<br>Forecast<br>AAMOP,<br>in<br>\$Millions | (J)<br>Forecast<br>Aggregate<br>Maximum Offering<br>Prices, in \$Millions |
|--------------|--|--|--|-------------------|------------------------------------|-------------------------------|--------------------------|---|---|
| Jul-09       | 22   | 185,187  | 8,418  | 22.854            |                                    |                               |                          |   |   |
| Aug-09       | 21   | 192,726  | 9,177  | 22.940            | 0.086                              |                               |                          |   |   |
| Sep-09       | 21   | 189,224  | 9,011  | 22.922            | -0.018                             |                               |                          |   |   |
| Oct-09       | 22   | 215,720  | 9,805  | 23.006            | 0.085                              |                               |                          |   |   |
| Nov-09       | 20   | 248,353  | 12,418   | 23.242            | 0.236                              |                               |                          |   |   |
| Dec-09       | 22   | 340,464  | 15,476   | 23.463            | 0.220                              |                               |                          |   |   |
| Jan-10       | 19   | 173,235  | 9,118  | 22.933            | -0.529                             |                               |                          |   |   |
| Feb-10       | 19   | 209,963  | 11,051   | 23.126            | 0.192                              |                               |                          |   |   |
| Mar-10       | 23   | 432,934  | 18,823   | 23.658            | 0.533                              |                               |                          |   |   |
| Apr-10       | 21   | 280,188  | 13,342   | 23.314            | -0.344                             |                               |                          |   |   |
| May-10       | 20   | 278,611  | 13,931   | 23.357            | 0.043                              |                               |                          |   |   |
| Jun-10       | 22   | 364,251  | 16,557   | 23.530            | 0.173                              |                               |                          |   |   |
| Jul-10       | 21   | 171,191  | 8,152  | 22.822            | -0.709                             |                               |                          |   |   |
| Aug-10       | 22   | 240,793  | 10,945   | 23.116            | 0.295                              |                               |                          |   |   |
| Sep-10       | 21   | 260,783  | 12,418   | 23.242            | 0.126                              |                               |                          |   |   |
| Oct-10       | 21   | 214,988  | 10,238   | 23.049            | -0.193                             |                               |                          |   |   |
| Nov-10       | 21   | 340,112  | 16,196   | 23.508            | 0.459                              |                               |                          |   |   |
| Dec-10       | 22   | 297,992  | 13,545   | 23.329            | -0.179                             |                               |                          |   |   |
| Jan-11       | 20   | 233,668  | 11,683   | 23.181            | -0.148                             |                               |                          |   |   |
| Feb-11       | 19   | 252,785  | 13,304   | 23.311            | 0.130                              |                               |                          |   |   |
| Mar-11       | 23   | 595,198  | 25,878   | 23.977            | 0.665                              |                               |                          |   |   |
| Apr-11       | 20   | 236,355  | 11,818   | 23.193            | -0.784                             |                               |                          |   |   |
| May-11       | 21   | 319,053  | 15,193   | 23.444            | 0.251                              |                               |                          |   |   |
| Jun-11       | 22   | 359,727  | 16,351   | 23.518            | 0.073                              |                               |                          |   |   |

| (A)<br>Month | (B)<br># of<br>Trading<br>Days in<br>Month | (C)<br>Aggregate<br>Maximum Offering<br>Prices, in<br>\$Millions | (D)<br>Average Daily<br>Aggregate Max.<br>Offering Prices<br>(AAMOP) in \$Millions | (E)<br>log(AAMOP) | (F)<br>Log<br>(Change in<br>AAMOP) | (G)<br>Forecast<br>log(AAMOP) | (H)<br>Standard<br>Error | (I)<br>Forecast<br>AAMOP,<br>in<br>\$Millions | (J)<br>Forecast<br>Aggregate<br>Maximum Offering<br>Prices, in \$Millions |
|--------------|--|--|--|-------------------|------------------------------------|-------------------------------|--------------------------|---|---|
| Jul-11       | 20   | 215,391  | 10,770   | 23.100            | -0.418                             |                               |                          |   |   |
| Aug-11       | 23   | 179,870  | 7,820  | 22.780            | -0.320                             |                               |                          |   |   |
| Sep-11       | 21   | 168,005  | 8,000  | 22.803            | 0.023                              |                               |                          |   |   |
| Oct-11       | 21   | 181,452  | 8,641  | 22.880            | 0.077                              |                               |                          |   |   |
| Nov-11       | 21   | 256,418  | 12,210   | 23.226            | 0.346                              |                               |                          |   |   |
| Dec-11       | 21   | 237,652  | 11,317   | 23.150            | -0.076                             |                               |                          |   |   |
| Jan-12       | 20   | 276,965  | 13,848   | 23.351            | 0.202                              |                               |                          |   |   |
| Feb-12       | 20   | 228,419  | 11,421   | 23.159            | -0.193                             |                               |                          |   |   |
| Mar-12       | 22   | 430,806  | 19,582   | 23.698            | 0.539                              |                               |                          |   |   |
| Apr-12       | 20   | 173,626  | 8,681  | 22.884            | -0.813                             |                               |                          |   |   |
| May-12       | 22   | 414,122  | 18,824   | 23.658            | 0.774                              |                               |                          |   |   |
| Jun-12       | 21   | 272,218  | 12,963   | 23.285            | -0.373                             |                               |                          |   |   |
| Jul-12       | 21   | 170,462  | 8,117  | 22.817            | -0.468                             |                               |                          |   |   |
| Aug-12       | 23   | 295,472  | 12,847   | 23.276            | 0.459                              |                               |                          |   |   |
| Sep-12       | 19   | 331,295  | 17,437   | 23.582            | 0.305                              |                               |                          |   |   |
| Oct-12       | 21   | 137,562  | 6,551  | 22.603            | -0.979                             |                               |                          |   |   |
| Nov-12       | 21   | 221,521  | 10,549   | 23.079            | 0.476                              |                               |                          |   |   |
| Dec-12       | 20   | 321,602  | 16,080   | 23.501            | 0.422                              |                               |                          |   |   |
| Jan-13       | 21   | 368,488  | 17,547   | 23.588            | 0.087                              |                               |                          |   |   |
| Feb-13       | 19   | 252,148  | 13,271   | 23.309            | -0.279                             |                               |                          |   |   |
| Mar-13       | 20   | 533,440  | 26,672   | 24.007            | 0.698                              |                               |                          |   |   |
| Apr-13       | 22   | 235,779  | 10,717   | 23.095            | -0.912                             |                               |                          |   |   |
| May-13       | 22   | 382,950  | 17,407   | 23.580            | 0.485                              |                               |                          |   |   |
| Jun-13       | 20   | 480,624  | 24,031   | 23.903            | 0.322                              |                               |                          |   |   |
| Jul-13       | 22   | 263,869  | 11,994   | 23.208            | -0.695                             |                               |                          |   |   |
| Aug-13       | 22   | 253,305  | 11,514   | 23.167            | -0.041                             |                               |                          |   |   |
| Sep-13       | 20   | 267,923  | 13,396   | 23.318            | 0.151                              |                               |                          |   |   |
| Oct-13       | 23   | 293,847  | 12,776   | 23.271            | -0.047                             |                               |                          |   |   |
| Nov-13       | 20   | 326,257  | 16,313   | 23.515            | 0.244                              |                               |                          |   |   |



| (A)<br>Month | (B)<br># of<br>Trading<br>Days in<br>Month | (C)<br>Aggregate<br>Maximum Offering<br>Prices, in<br>\$Millions | (D)<br>Average Daily<br>Aggregate Max.<br>Offering Prices<br>(AAMOP) in \$Millions | (E)<br>log(AAMOP) | (F)<br>Log<br>(Change in<br>AAMOP) | (G)<br>Forecast<br>log(AAMOP) | (H)<br>Standard<br>Error | (I)<br>Forecast<br>AAMOP,<br>in<br>\$Millions | (J)<br>Forecast<br>Aggregate<br>Maximum Offering<br>Prices, in \$Millions |
|--------------|--|--|--|-------------------|------------------------------------|-------------------------------|--------------------------|---|---|
| Dec-13       | 21   | 358,169  | 17,056   | 23.560            | 0.045                              |                               |                          |   |   |
| Jan-14       | 21   | 369,067  | 17,575   | 23.590            | 0.030                              |                               |                          |   |   |
| Feb-14       | 19   | 298,376  | 15,704   | 23.477            | -0.113                             |                               |                          |   |   |
| Mar-14       | 21   | 564,840  | 26,897   | 24.015            | 0.538                              |                               |                          |   |   |
| Apr-14       | 21   | 263,401  | 12,543   | 23.252            | -0.763                             |                               |                          |   |   |
| May-14       | 21   | 403,700  | 19,224   | 23.679            | 0.427                              |                               |                          |   |   |
| Jun-14       | 21   | 423,075  | 20,146   | 23.726            | 0.047                              |                               |                          |   |   |
| Jul-14       | 22   | 373,811  | 16,991   | 23.556            | -0.170                             |                               |                          |   |   |
| Aug-14       | 21   | 405,017  | 19,287   | 23.683            | 0.127                              |                               |                          |   |   |
| Sep-14       | 21   | 409,349  | 19,493   | 23.693            | 0.011                              |                               |                          |   |   |
| Oct-14       | 23   | 338,832  | 14,732   | 23.413            | -0.280                             |                               |                          |   |   |
| Nov-14       | 19   | 386,898  | 20,363   | 23.737            | 0.324                              |                               |                          |   |   |
| Dec-14       | 22   | 370,760  | 16,853   | 23.548            | -0.189                             |                               |                          |   |   |
| Jan-15       | 20   | 394,127  | 19,706   | 23.704            | 0.156                              |                               |                          |   |   |
| Feb-15       | 19   | 466,138  | 24,534   | 23.923            | 0.219                              |                               |                          |   |   |
| Mar-15       | 22   | 753,747  | 34,261   | 24.257            | 0.334                              |                               |                          |   |   |
| Apr-15       | 21   | 356,560  | 16,979   | 23.555            | -0.702                             |                               |                          |   |   |
| May-15       | 20   | 478,591  | 23,930   | 23.898            | 0.343                              |                               |                          |   |   |
| Jun-15       | 22   | 446,102  | 20,277   | 23.733            | -0.166                             |                               |                          |   |   |
| Jul-15       | 22   | 402,062  | 18,276   | 23.629            | -0.104                             |                               |                          |   |   |
| Aug-15       | 21   | 334,746  | 15,940   | 23.492            | -0.137                             |                               |                          |   |   |
| Sep-15       | 21   | 289,872  | 13,803   | 23.348            | -0.144                             |                               |                          |   |   |
| Oct-15       | 22   | 300,276  | 13,649   | 23.337            | -0.011                             |                               |                          |   |   |
| Nov-15       | 20   | 409,690  | 20,485   | 23.743            | 0.406                              |                               |                          |   |   |
| Dec-15       | 22   | 308,569  | 14,026   | 23.364            | -0.379                             |                               |                          |   |   |
| Jan-16       | 19   | 457,411  | 24,074   | 23.904            | 0.540                              |                               |                          |   |   |
| Feb-16       | 20   | 554,343  | 27,717   | 24.045            | 0.141                              |                               |                          |   |   |
| Mar-16       | 22   | 900,301  | 40,923   | 24.435            | 0.390                              |                               |                          |   |   |
| Apr-16       | 21   | 250,716  | 11,939   | 23.203            | -1.232                             |                               |                          |   |   |

| (A)<br>Month | (B)<br># of<br>Trading<br>Days in<br>Month | (C)<br>Aggregate<br>Maximum Offering<br>Prices, in<br>\$Millions | (D)<br>Average Daily<br>Aggregate Max.<br>Offering Prices<br>(AAMOP) in \$Millions | (E)<br>log(AAMOP) | (F)<br>Log<br>(Change in<br>AAMOP) | (G)<br>Forecast<br>log(AAMOP) | (H)<br>Standard<br>Error | (I)<br>Forecast<br>AAMOP,<br>in<br>\$Millions | (J)<br>Forecast<br>Aggregate<br>Maximum Offering<br>Prices, in \$Millions |
|--------------|--|--|--|-------------------|------------------------------------|-------------------------------|--------------------------|---|---|
| May-16       | 21   | 409,992  | 19,523   | 23.695            | 0.492                              |                               |                          |   |   |
| Jun-16       | 22   | 321,219  | 14,601   | 23.404            | -0.291                             |                               |                          |   |   |
| Jul-16       | 20   | 289,671  | 14,484   | 23.396            | -0.008                             |                               |                          |   |   |
| Aug-16       | 23   | 352,068  | 15,307   | 23.452            | 0.055                              |                               |                          |   |   |
| Sep-16       | 21   | 326,116  | 15,529   | 23.466            | 0.014                              |                               |                          |   |   |
| Oct-16       | 21   | 266,115  | 12,672   | 23.263            | -0.203                             |                               |                          |   |   |
| Nov-16       | 21   | 443,034  | 21,097   | 23.772            | 0.510                              |                               |                          |   |   |
| Dec-16       | 21   | 310,614  | 14,791   | 23.417            | -0.355                             |                               |                          |   |   |
| Jan-17       | 20   | 503,030  | 25,152   | 23.948            | 0.531                              |                               |                          |   |   |
| Feb-17       | 19   | 255,815  | 13,464   | 23.323            | -0.625                             |                               |                          |   |   |
| Mar-17       | 23   | 723,870  | 31,473   | 24.172            | 0.849                              |                               |                          |   |   |
| Apr-17       | 19   | 255,275  | 13,436   | 23.321            | -0.851                             |                               |                          |   |   |
| May-17       | 22   | 569,965  | 25,908   | 23.978            | 0.657                              |                               |                          |   |   |
| Jun-17       | 22   | 445,081  | 20,231   | 23.730            | -0.247                             |                               |                          |   |   |
| Jul-17       | 20   | 291,167  | 14,558   | 23.401            | -0.329                             |                               |                          |   |   |
| Aug-17       | 23   | 263,981  | 11,477   | 23.164            | -0.238                             |                               |                          |   |   |
| Sep-17       | 20   | 372,705  | 18,635   | 23.648            | 0.485                              |                               |                          |   |   |
| Oct-17       | 22   | 173,749  | 7,898  | 22.790            | -0.858                             |                               |                          |   |   |
| Nov-17       | 21   | 377,262  | 17,965   | 23.612            | 0.822                              |                               |                          |   |   |
| Dec-17       | 20   | 281,126  | 14,056   | 23.366            | -0.245                             |                               |                          |   |   |
| Jan-18       | 21   | 593,025  | 28,239   | 24.064            | 0.698                              |                               |                          |   |   |
| Feb-18       | 19   | 353,182  | 18,589   | 23.646            | -0.418                             |                               |                          |   |   |
| Mar-18       | 21   | 685,784  | 32,656   | 24.209            | 0.563                              |                               |                          |   |   |
| Apr-18       | 21   | 367,569  | 17,503   | 23.586            | -0.624                             |                               |                          |   |   |
| May-18       | 22   | 543,840  | 24,720   | 23.931            | 0.345                              |                               |                          |   |   |
| Jun-18       | 21   | 477,967  | 22,760   | 23.848            | -0.083                             |                               |                          |   |   |
| Jul-18       | 21   | 327,710  | 15,605   | 23.471            | -0.377                             |                               |                          |   |   |
| Aug-18       | 23   | 347,239  | 15,097   | 23.438            | -0.033                             |                               |                          |   |   |
| Sep-18       | 19   | 259,874  | 13,678   | 23.339            | -0.099                             |                               |                          |   |   |

| (A)<br>Month | (B)<br># of<br>Trading<br>Days in<br>Month | (C)<br>Aggregate<br>Maximum Offering<br>Prices, in<br>\$Millions | (D)<br>Average Daily<br>Aggregate Max.<br>Offering Prices<br>(AAMOP) in \$Millions | (E)<br>log(AAMOP) | (F)<br>Log<br>(Change in<br>AAMOP) | (G)<br>Forecast<br>log(AAMOP) | (H)<br>Standard<br>Error | (I)<br>Forecast<br>AAMOP,<br>in<br>\$Millions | (J)<br>Forecast<br>Aggregate<br>Maximum Offering<br>Prices, in \$Millions |
|--------------|--|--|--|-------------------|------------------------------------|-------------------------------|--------------------------|---|---|
| Oct-18       | 23   | 300,814  | 13,079   | 23.294            | -0.045                             |                               |                          |   |   |
| Nov-18       | 21   | 447,767  | 21,322   | 23.783            | 0.489                              |                               |                          |   |   |
| Dec-18       | 19   | 276,130  | 14,533   | 23.400            | -0.383                             |                               |                          |   |   |
| Jan-19       | 21   | 495,624  | 23,601   | 23.885            | 0.485                              |                               |                          |   |   |
| Feb-19       | 19   | 372,166  | 19,588   | 23.698            | -0.186                             |                               |                          |   |   |
| Mar-19       | 21   | 604,813  | 28,801   | 24.084            | 0.385                              |                               |                          |   |   |
| Apr-19       | 21   | 267,737  | 12,749   | 23.269            | -0.815                             |                               |                          |   |   |
| May-19       | 22   | 476,892  | 21,677   | 23.800            | 0.531                              |                               |                          |   |   |
| Jun-19       | 20   | 399,178  | 19,959   | 23.717            | -0.083                             |                               |                          |   |   |
| Jul-19       | 22   | 359,438  | 16,338   | 23.517            | -0.200                             |                               |                          |   |   |
| Aug-19       | 22   |  |  |                   |                                    | 23.689                        | 0.320                    | 20,435  | 449,575   |
| Sep-19       | 20   |  |  |                   |                                    | 23.695                        | 0.322                    | 20,568  | 411,370   |
| Oct-19       | 23   |  |  |                   |                                    | 23.701                        | 0.324                    | 20,703  | 476,161   |
| Nov-19       | 20   |  |  |                   |                                    | 23.707                        | 0.326                    | 20,838  | 416,753   |
| Dec-19       | 21   |  |  |                   |                                    | 23.713                        | 0.328                    | 20,974  | 440,445   |
| Jan-20       | 21   |  |  |                   |                                    | 23.719                        | 0.330                    | 21,110  | 443,317   |
| Feb-20       | 19   |  |  |                   |                                    | 23.724                        | 0.332                    | 21,248  | 403,713   |
| Mar-20       | 22   |  |  |                   |                                    | 23.730                        | 0.334                    | 21,387  | 470,505   |
| Apr-20       | 21   |  |  |                   |                                    | 23.736                        | 0.336                    | 21,526  | 452,048   |
| May-20       | 20   |  |  |                   |                                    | 23.742                        | 0.338                    | 21,666  | 433,330   |
| Jun-20       | 22   |  |  |                   |                                    | 23.748                        | 0.340                    | 21,808  | 479,772   |
| Jul-20       | 22   |  |  |                   |                                    | 23.754                        | 0.342                    | 21,950  | 482,901   |
| Aug-20       | 21   |  |  |                   |                                    | 23.760                        | 0.344                    | 22,093  | 463,957   |
| Sep-20       | 21   |  |  |                   |                                    | 23.765                        | 0.345                    | 22,237  | 466,983   |

Figure A  
Aggregate Maximum Offering Prices Subject to Securities Act Section 6(b)  
(Dashed Line Indicates Forecast Values)

Dollar Value,  
\$Billions

