Table A1. Sample Selection for Data Used in Tables 1 and 2

This table shows how we arrived at the final sample used in the main analysis. The final sample after Step 3 is that used in Table 1 and in columns (1) and (2) of Table 2. The final sample after Step 5 is that used for the “Excluding High Medicaid Share Drugs” analysis in column (3) of Table 2.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Number of NDCs</th>
<th>NDCs in 2016-18</th>
<th>NDC-Years 2016-18</th>
<th>Number of Brand Names</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>All NDCs appearing in both SSR Health and First Databank datasets, 2015-2018</td>
<td>2,046</td>
<td>1,919</td>
<td>6,952</td>
<td>5,067</td>
<td>951</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2015, 2016, 2017, 2018</td>
</tr>
<tr>
<td>2</td>
<td>Drop NDCs with rebates &lt; 0 (i.e. net price &gt; list price) in any year</td>
<td>608</td>
<td></td>
<td>1,947</td>
<td></td>
<td>310</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2015, 2016, 2017, 2018</td>
</tr>
<tr>
<td></td>
<td>Remaining</td>
<td>1,438</td>
<td>1,313</td>
<td>5,005</td>
<td>3,682</td>
<td>641</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2015, 2016, 2017, 2018</td>
</tr>
<tr>
<td>3</td>
<td>Calculate changes in rebates from year (t-1) to year (t), and drop NDC-Years where change in rebates is missing</td>
<td>103</td>
<td></td>
<td>1,444</td>
<td>42</td>
<td>2015, 2016, 2017, 2018</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remaining</td>
<td>1,335</td>
<td>3,561</td>
<td>599</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>For high Medicaid share analysis only (Table 2, Column 3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Drop NDCs that do not appear in both MEPS 2016 and SSR data</td>
<td>430</td>
<td></td>
<td>1,185</td>
<td>0</td>
<td>2016, 2017, 2018</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remaining</td>
<td>905</td>
<td>2,376</td>
<td>390</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Drop NDCs in classes with Medicaid ratio above the 50th percentile</td>
<td>430</td>
<td></td>
<td>1,129</td>
<td>185</td>
<td>2016, 2017, 2018</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remaining</td>
<td>475</td>
<td>1,247</td>
<td>205</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: NDC=National Drug Code; MEPS=Medical Expenditure Panel Survey
Table A2. Sample Selection for Data Used in Tables A3 and A4

This table shows how we arrived at the final sample used in the sensitivity analyses with a less restricted sample of drugs. The final sample after Step 3 is that used in Table A3 and in columns (1) and (2) of Table A4. The final sample after Step 5 is that used in column (3) of Table A4.

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Number of NDCs</th>
<th>NDCs in 2016-18</th>
<th>NDC-Years 2016-18</th>
<th>Number of Brand Names</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>All NDCs appearing in both SSR Health and First Databank datasets, 2015-2018</td>
<td>2,046</td>
<td>1,919</td>
<td>6,952</td>
<td>951</td>
<td>2015, 2016, 2017, 2018</td>
</tr>
<tr>
<td>2</td>
<td>Drop NDCs with rebates &lt; -$1,000 (i.e. net price – list price &gt; $1,000) in any year</td>
<td>44</td>
<td>127</td>
<td>27</td>
<td></td>
<td>2015, 2016, 2017, 2018</td>
</tr>
<tr>
<td></td>
<td>Remaining</td>
<td>2,002</td>
<td>1,876</td>
<td>6,825</td>
<td>924</td>
<td>2015, 2016, 2017, 2018</td>
</tr>
<tr>
<td>3</td>
<td>Calculate changes in rebates from year (t-1) to year (t), and drop NDC-Years where change in rebates is missing</td>
<td>169</td>
<td>2,015</td>
<td>761</td>
<td></td>
<td>2015, 2016, 2017, 2018</td>
</tr>
<tr>
<td></td>
<td>Remaining</td>
<td>1,833</td>
<td>4,810</td>
<td>853</td>
<td></td>
<td>2016, 2017, 2018</td>
</tr>
<tr>
<td></td>
<td>For high Medicaid share analysis only (Table A4, Column 3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Drop NDCs that do not appear in both MEPS 2016 and SSR data</td>
<td>671</td>
<td>1,793</td>
<td>339</td>
<td></td>
<td>2016, 2017, 2018</td>
</tr>
<tr>
<td></td>
<td>Remaining</td>
<td>1,162</td>
<td>3,017</td>
<td>514</td>
<td></td>
<td>2016, 2017, 2018</td>
</tr>
<tr>
<td>5</td>
<td>Drop NDCs in classes with Medicaid ratio above the 50th percentile</td>
<td>592</td>
<td>1,535</td>
<td>246</td>
<td></td>
<td>2016, 2017, 2018</td>
</tr>
<tr>
<td></td>
<td>Remaining</td>
<td>570</td>
<td>1,482</td>
<td>268</td>
<td></td>
<td>2016, 2017, 2018</td>
</tr>
</tbody>
</table>

Notes: NDC=National Drug Code; MEPS=Medical Expenditure Panel Survey
Table A3. Descriptive Statistics of Analytic Variables — Less Restricted Sample

This table describes the analytic variables (corresponding to Table 1) in our less restricted sample of 4,810 NDC-Years that excludes only the 44 NDCs (127 NDC-Years) with rebates < -$1,000.

<table>
<thead>
<tr>
<th>Year</th>
<th>List Price</th>
<th>Net Price</th>
<th>Rebate</th>
<th>Change in List Price</th>
<th>Change in Net Price</th>
<th>Change in Rebate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean ($/Unit)</td>
<td>Standard Deviation ($/Unit)</td>
<td>Minimum ($/Unit)</td>
<td>Maximum ($/Unit)</td>
<td>Number of NDCs</td>
<td>Mean ($/Unit)</td>
</tr>
<tr>
<td>2015</td>
<td>305.42</td>
<td>1,335</td>
<td>0.19</td>
<td>27,849</td>
<td>1,712</td>
<td>247.80</td>
</tr>
<tr>
<td>2016</td>
<td>337.08</td>
<td>1,524</td>
<td>0.20</td>
<td>28,712</td>
<td>1,712</td>
<td>257.89</td>
</tr>
<tr>
<td>2017</td>
<td>398.56</td>
<td>1,644</td>
<td>0.20</td>
<td>28,161</td>
<td>1,639</td>
<td>299.51</td>
</tr>
<tr>
<td>2018</td>
<td>448.33</td>
<td>1,700</td>
<td>0.20</td>
<td>31,339</td>
<td>1,459</td>
<td>315.49</td>
</tr>
</tbody>
</table>

| Change in List Price | 2015-16 | 31.65 | 283 | (112.26) | 10,139 | 1,712 | 2015-16 | 10.09 | 201 | (3,134) | 6,489 | 1,712 | 2015-16 | 21.57 | 182 | (925.79) | 3,997 | 1,712 |
| Change in Net Price | 2016-17 | 18.76 | 346 | (7,651) | 9,395 | 1,639 | 2017-18 | (12.83) | 229 | (7,324) | 998.76 | 1,459 | 2017-18 | 31.13 | 217 | (3,517) | 3,863 | 1,459 |
| Change in Rebate | 2016-17 | 9.00 | 178 | (1,878) | 4,335 | 1,639 |
| 2017-18 | 31.13 | 217 | (3,517) | 3,863 | 1,459 |

Notes: The sample includes only drugs with rebates ≥ -1,000. SSR Health methodology may produce negative rebates due to disparities in timing between inventory and sales. NDC=National Drug Code. All dollar figures are nominal. Stata® 14 was used for analyses.
Table A4. Association Between Change in List Prices and Change in Rebates ($US/Unit) — Less Restricted Sample

This table presents our main results (corresponding to Table 2) using the less restricted sample of 4,810 NDC-Years that excludes only the 44 NDCs (127 NDC-Years) with rebates $< -$1,000.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable: Annual Change in List Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1) Longitudinal Estimation of Annual Change in List Prices</td>
</tr>
<tr>
<td>Annual Change in Rebates</td>
<td>1.23</td>
</tr>
<tr>
<td>P-value</td>
<td>$&lt; 0.001$</td>
</tr>
<tr>
<td>95% Confidence Interval</td>
<td>0.75 to 1.72</td>
</tr>
<tr>
<td>Year 2015-16 Indicator</td>
<td>Reference</td>
</tr>
<tr>
<td>Year 2016-17 Indicator</td>
<td>11.60</td>
</tr>
<tr>
<td>P-value</td>
<td>0.22</td>
</tr>
<tr>
<td>95% Confidence Interval</td>
<td>-6.99 to 30.18</td>
</tr>
<tr>
<td>Year 2017-18 Indicator</td>
<td>-25.15</td>
</tr>
<tr>
<td>P-value</td>
<td>$&lt; 0.001$</td>
</tr>
<tr>
<td>95% Confidence Interval</td>
<td>-39.28 to 11.01</td>
</tr>
<tr>
<td>Constant</td>
<td>5.07</td>
</tr>
<tr>
<td>P-value</td>
<td>0.50</td>
</tr>
<tr>
<td>95% Confidence Interval</td>
<td>-9.74 to 19.87</td>
</tr>
<tr>
<td>Number of NDC-Years†</td>
<td>4,810</td>
</tr>
</tbody>
</table>

Notes: Robust standard errors are clustered by National Drug Code (NDC).
† From the original 2,046 NDCs, we excluded 44 with rebates below -$1,000 in any year from 2015 to 2018, and 169 with missing data in changes in rebates. Data are based on annual changes in list prices and rebates for 1,833 NDCs in columns (1) and (2), and for 570 NDCs in column (3). Not all NDCs are present in all years. In column (2) the coefficients on the (year) × (drug class) variables are not reported. Stata® 14 was used for estimations.
REFERENCES


