Termination Rate Debate in Africa

Dr. Christoph Stork
Termination Rates: Monopoly = Cost based

- Retail Payment
- CPP

Call

- Wholesale CPNP payment

Originating Network

Terminating Network
Dominant Operators will argue

- They use termination revenue to **subsidise** access and usage (**Two sided market** or **waterbed effect** argument)

- If MTRs are lowered:
  - Retail prices will increase
  - There will be less subscribers
  - Operators will invest less

- However, the opposite is the case
  - Increased competition leads to lower retail prices and more subscribers
  - Operators have to invest more to stay competitive
Minutes of use

Mobile Termination Rates 2009 in US cents
Two-sided Market and Waterbed Effect

- Fail to predict market outcomes correctly
- Cannot be empirically observed following termination rate cuts
- Retail and wholesale prices are not interdependent for several reasons:
  - Termination rates are not prices but contractual arrangements that rarely change
  - Operators cannot increase MTR because its market share increased
  - MTRs are wholesale costs and wholesale revenue
  - Operators have choices: MTR reductions can be passed on or not
  - Operators can set only their own retail prices and not those of other operators; off-net prices will influence how many calls are being received
Pro Waterbed Effects

- An argument put forward is that the waterbed effects exist but it is masked by other developments such as increased competition and decreasing unit costs and can hence not be observed with the naked eye.

- Why should policymakers pay attention to the waterbed effects if so small that one needs advanced econometric techniques to find it?

- Questionable evidence from panel data studies.
1) Constructing data sets with enough data points to account is impossible

- Mobile penetration rates and mobile retail prices in a country depend on many factors:
  - Number of fixed and mobile operators
  - sequence of market entry
  - technologies deployed, market share of operators
  - user profiles of subscribers
  - brand loyalty
  - contractual lock-ins and club effects
  - price elasticity of demand
  - income elasticity of demand
  - levels of disposable income
  - business models used by operators
  - penetration of substitute technologies like fixed-line and cable TV
  - past regulatory interventions and their sequence
  - regulatory strategies
  - communication laws and policies and many other social and economic factors.
2) Omitted variables may render models invalid

- An example is the paper by Sandbach and Hooft (2009), which tries to estimate the impact of telecommunication policies on mobile penetration and usage without including prices in its models. Including prices, which are undoubtedly significant factors in explaining access and usage in economic theory, could lead to changes in significance levels and coefficients, or even signs of coefficients. Data sets constructed for panel studies are unlikely to capture even the most important variables.
3) Retail prices used for modelling only prices of dominant operators

Several studies attempt to show that if termination rates are being reduced retail prices will increase using OECD basket methodology (e.g. CEG 2009 and Genakos & Valletti 2009)

- OECD price baskets methodology only captures the retail prices of dominant operators (together 50% market share)
- Including smaller operators would indicate price changes following regulatory interventions better
- Dominant operators are less likely to change retail prices than new entrants
3) Lower EBITDA margins following MTR cuts are not proof for waterbed effect

- To be expected for some operators since lower termination rates increase competition and lead to lower, not higher, retail prices, though traffic may increase as a result.

- Operators that were shielded by high termination rates from competition could decline under competitive pressure if business models are not being adjusted.

- Dominant operators may have lower EBITDA margins others may have higher as a result of termination rate cuts.

- Lower EBITDA margins of operators from one country compared to EBITDA margins of operators from another country based on the level of MTR is no proof for waterbed effect but for profit form anti-competitive practices.
Alternative 1: Panel data model based on operators not countries

- Incorporate all operators of a country
- Increase the data available by a factor of 3 or 4
- Allows to include significant explanatory variables such as market share and year of market entry
- The waterbed effect is a hypothesis about the pricing strategies of operators and as such need to be tested at the operator level
Alternative 2: Case Studies

- A less econometrically sophisticated but more plausible: Did Vodafone UK increase its retail prices after any MTR reduction in the UK?
- And how did the smaller operators or the net-interconnect-payers react?
Kenya
Retail Prices

<table>
<thead>
<tr>
<th></th>
<th>Safaricom*</th>
<th>Airtel</th>
<th>Orange</th>
<th>Yu</th>
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</thead>
<tbody>
<tr>
<td>Jan-10</td>
<td>7.75</td>
<td>6.15</td>
<td>4.12</td>
<td></td>
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<tr>
<td>Sep-10</td>
<td>6.70</td>
<td>2.09</td>
<td>1.91</td>
<td>2.24</td>
</tr>
<tr>
<td>Jan-11</td>
<td>2.46</td>
<td>1.14</td>
<td>1.90</td>
<td>1.96</td>
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</tbody>
</table>
Safaricom’s key performance indicators for financial years ending in March

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
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</thead>
<tbody>
<tr>
<td>Revenue billion KES</td>
<td>47.45</td>
<td>61.37</td>
<td>70.48</td>
<td>83.96</td>
</tr>
<tr>
<td>Subscribers in million</td>
<td>6.10</td>
<td>10.23</td>
<td>13.36</td>
<td>15.79</td>
</tr>
<tr>
<td>EBITDA Margin</td>
<td>51.7%</td>
<td>45.9%</td>
<td>39.6%</td>
<td>43.6%</td>
</tr>
<tr>
<td>After-tax profit in billion KES</td>
<td>12</td>
<td>13.85</td>
<td>10.54</td>
<td>15.15</td>
</tr>
<tr>
<td>Dividend paid in billion KES</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>
Namibia
Termination Rates US cents

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</thead>
<tbody>
<tr>
<td>MTR</td>
<td>9.00</td>
<td>8.20</td>
<td>6.80</td>
<td>5.50</td>
<td>4.10</td>
</tr>
<tr>
<td>FTR</td>
<td>14.40</td>
<td>8.20</td>
<td>6.80</td>
<td>5.50</td>
<td>4.10</td>
</tr>
</tbody>
</table>

MTR: Main Termination Rate
FTR: Foreign Termination Rate
Retail Prices of MTC in US$ for OECD (2006) baskets

<table>
<thead>
<tr>
<th></th>
<th>Sep-05</th>
<th>Dec-08</th>
<th>May-10</th>
<th>Mar-11</th>
<th>Mar-11 (2005 prices)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low User</strong></td>
<td>11.3</td>
<td>6.8</td>
<td>6.8</td>
<td>4.8</td>
<td>10.8</td>
</tr>
<tr>
<td><strong>Medium User</strong></td>
<td>23.7</td>
<td>6.8</td>
<td>6.8</td>
<td>4.8</td>
<td>16.2</td>
</tr>
<tr>
<td><strong>High User</strong></td>
<td>19.9</td>
<td>13.2</td>
<td>13.2</td>
<td>9.2</td>
<td>24.4</td>
</tr>
</tbody>
</table>
# MTC key performance indicators

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subscribers in million</td>
<td>0.40</td>
<td>0.56</td>
<td>0.74</td>
<td>1.00</td>
<td>1.28</td>
<td>1.53</td>
</tr>
<tr>
<td>EBITDA Margin</td>
<td>61%</td>
<td>60.2%</td>
<td>52.2%</td>
<td>50.9%</td>
<td>53.8%</td>
<td>55.8%</td>
</tr>
<tr>
<td>After-tax profit million US$</td>
<td>39.90</td>
<td>45.94</td>
<td>46.27</td>
<td>48.53</td>
<td>52.79</td>
<td>54.10</td>
</tr>
<tr>
<td>Dividend paid in million US$</td>
<td>14.99</td>
<td>10.90</td>
<td>33.38</td>
<td>30.11</td>
<td>50.41</td>
<td>52.26</td>
</tr>
<tr>
<td>Dividend payment as share of after tax profit</td>
<td>37.6%</td>
<td>23.7%</td>
<td>72.1%</td>
<td>62.0%</td>
<td>95.5%</td>
<td>96.6%</td>
</tr>
</tbody>
</table>
MTN
Nigeria, South Africa, Botswana
Large reduction in MTR in Nigeria and RSA

- MTR changes in Nigeria and RSA
  - RSA peak rate dropped from ZAR 1.25 to ZAR 0.89
  - Nigeria peak rate dropped from 11.4 Naira to 8.2 Naira
- Interconnect revenue decreased 13%
  - RSA revenue decreased 10%
  - Nigeria revenue decreased 25% in local currency
- Net interconnect margin increased from 28% to 32%
  - Higher on-net traffic offset some of the interconnect rate decline
  - RSA prepaid on-net improved 7pts to 61%
  - Nigeria total on-net increased by 4pts to 83%

Group interconnect
(ZAR bn)

<table>
<thead>
<tr>
<th>Year</th>
<th>Cost</th>
<th>Revenue</th>
<th>Margin %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>-14.1</td>
<td>19.5</td>
<td>5.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>28%</td>
</tr>
<tr>
<td>2010</td>
<td>-11.5</td>
<td>17.0</td>
<td>5.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>32%</td>
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</tbody>
</table>
High User OECD usage baskets in US$

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>MTN South Africa</td>
<td>68.4</td>
<td>68.4</td>
<td>68.4</td>
<td>68.4</td>
</tr>
<tr>
<td>Mascom</td>
<td>46.6</td>
<td>44.4</td>
<td>44.4</td>
<td>44.4</td>
</tr>
<tr>
<td>MTN Nigeria</td>
<td>60.7</td>
<td>57.9</td>
<td>36.5</td>
<td>36.5</td>
</tr>
</tbody>
</table>
Conclusion

- No Waterbed Effect in Namibia, Kenya, Botswana, South Africa or Nigeria
- Two-sided market argument can clearly be rejected
- Retail prices decrease after termination rate cuts
- Operators pursue different pricing strategies
- Cost based termination rates lead to more competition:
  - more subscribers
  - more traffic
  - more investment
  - bigger pie of revenues to share among operators