Barclays Research Highlights: Sustainable & Thematic Investing

Micromobility: Fast, Cheap and Good Solution for ‘Smart Cities’

City planners need to develop smarter cities that can transport an additional 2.7bn urban commuters by 2050. By the mid-2020s, 1.1tn passenger miles (4% of global total) could switch to micro, electric vehicles for urban trips below five miles, representing an $800bn revenue opportunity for micromobility operators.
Micromobility: Fast, Cheap and Good Solution for ‘Smart Cities’

Micromobility (transport using electric-powered personal-sized vehicles like e-scooters and e-bikes) could be an ‘iPhone moment’ for personal mobility

~30tn passenger miles are travelled per year globally. 60% of current trips are below 5 miles. We expect 1.1tn of those miles could switch to micromobility (MM), which implies $800bn global revenue, with the change happening because compared to full-sized autos, MM is:

**Faster**
In high-traffic cities, MM can move people faster than the current average speed of <10 mph with minimal infrastructure outlay required.

**Cheaper**
In the densest cities, the cost per mile of an e-scooter is as little as a third the cost of conventional auto options (ride-hailing, driving a personal vehicle).

**Good**
It’s better for the environment, better for city planning, the form factors can be more varied, and it is a fun way to get around.

Source: Barclays Research, company data
Micromobility is an electric vehicle weighing <500 kg that can be owned or shared and is connected using AI. It is used for utility purposes.

Micromobility market size opportunity by 2020s

<table>
<thead>
<tr>
<th>Region</th>
<th>Trip distance (miles)</th>
<th>% of total addressable market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>140bn PMT</td>
<td>14%</td>
</tr>
<tr>
<td>US</td>
<td>70bn PMT</td>
<td>6%</td>
</tr>
<tr>
<td>Asia</td>
<td>600bn PMT</td>
<td>&gt;50%</td>
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- **Europe**: Congested, E-scooters more regulated, Most likely to ban urban cars
- **US**: Car-centric, First to adopt scooters, Lack of cycling infrastructure
- **Asia**: Largest addressable markets, High 2-wheeler penetration, Low 2-wheeler electric penetration

To achieve 1.1tn PMT, Barclays estimates the micro vehicle parc could reach close to **300mn** vehicles, or **0.9bn** riders; long before full autonomy is adopted.

**Urban population (UN population forecasts)**

| Now      | 4.0bn     | 2050     | 6.7bn | By 2050, with urban population expected to be at 6.7bn people globally and with cities alone having 2.7bn additional people by 2050, how will cities deal with the demand for road space and clean air? |
|----------|-----------|----------|-------|Cities will want to make mobility…more efficient and reliable…more affordable…take up less space for parking…reduce congestion |

**Why does micromobility appeal to the consumer?**

- **Micromobility**: $1.40/mile
- **Medium distance**: $>5.00/mile
- **Long distance**: Trip distance (miles)

*Based on today’s population size and prices

Source: Barclays Research
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