



Federal Communications Commission  
Washington, D.C. 20554

November 13, 2019

Marlene H. Dortch  
Secretary, Federal Communications Commission  
445 12<sup>th</sup> Street SW  
Washington, D.C. 20054

Dear Ms. Dortch,

On behalf of the Federal Communications Commission's Office of Economics and Analytics, I am entering into WC Docket No. 18-89 (Protecting Against National Security Threats to the Communications Supply Chain Through FCC Programs) excerpts from a June 5, 2019 report from Barclays entitled *5G Leadership: Huawei in Context*.<sup>1</sup> The report is prepared by Barclays for its clients and other limited parties and therefore is not available publicly. OEA is submitting into the record only those portions of the report relevant to the proceeding with the author's approval.

Sincerely,

Eric Ralph  
Associate Chief  
Office of Economics and Analytics  
Federal Communications Commission

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<sup>1</sup> Barclays, *5G Leadership: Huawei in Context* at 2, 12-13 (June 5, 2019).

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#tradepolicy



Special Report  
5 June 2019

TMT

## 5G Leadership: Huawei in Context



Credit Research\*

Public Policy Research\*

Equity Research\*

\*For list of authors, see page 1

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FOR IMPORTANT FIXED INCOME RESEARCH DISCLOSURES, PLEASE SEE PAGE 67.

FOR IMPORTANT EQUITY RESEARCH DISCLOSURES, PLEASE SEE PAGE 70.

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[REDACTED]

**Effect on the pace of global 5G deployment:** The US should remain immune, while Europe and Asia could see some slowdown in the pace of 5G deployment if the US restrictions on Huawei continue.

- **US:** We expect the pace of 5G deployment in the US to remain largely unaffected by the restrictions, as none of the major wireless operators uses Huawei equipment. Well under 1% of US wireless customers use Huawei equipment (mostly in rural areas), and none of the major internet nodes in the US contains Huawei equipment. Furthermore, 5G is a standards-based technology, so the US will not get left behind (from a quality or timing perspective) if it continues to use non-Huawei equipment for 5G. With that said, given the 5G standard clearly relies on China’s contributions, users of 5G technology globally, including the US, will end up indirectly paying for that innovation.

- [REDACTED]

[REDACTED]

[REDACTED]

[1] RAN (radio access network): Network between cell phone and core network



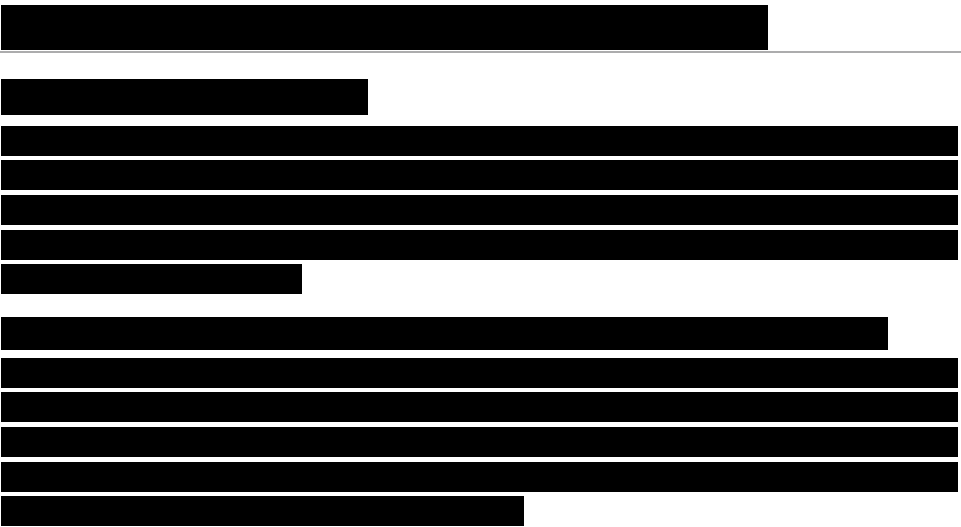
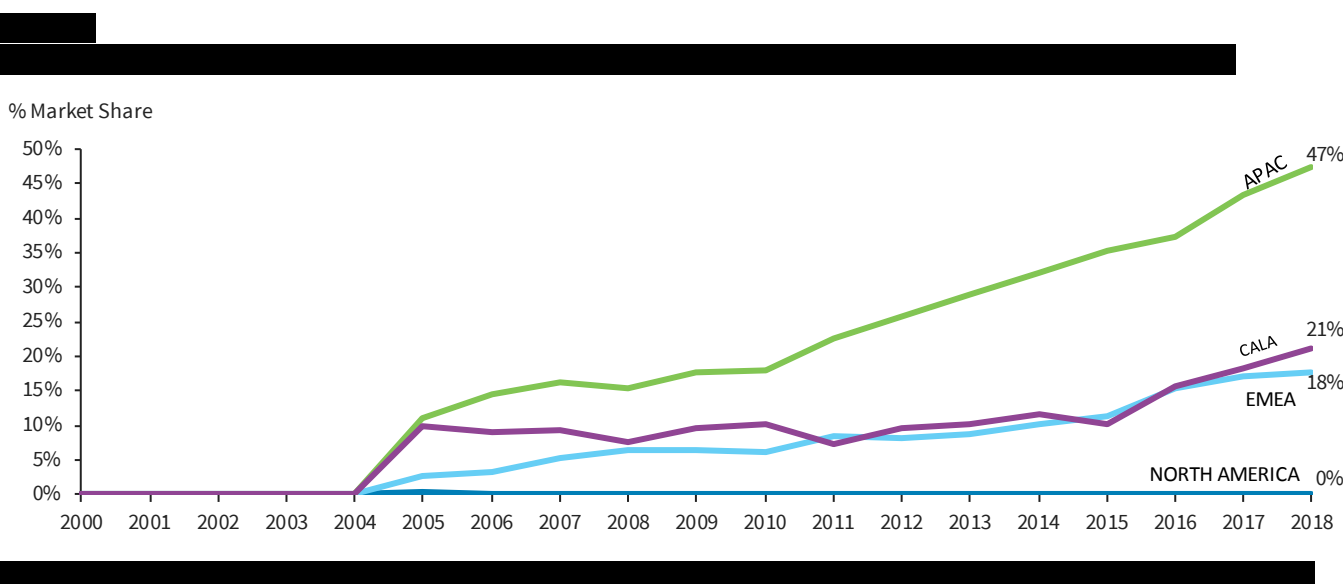


FIGURE 9  
Economic implications for the communications technology sector

Market	Market Size (\$bn)	Huawei's share (%)	Huawei's share (\$bn)
Wireless telecom equipment	100	31%	31
Mobile devices	100	10%	10
Cloud services	100	5%	5
Software	100	2%	2

Source: IDC, Dell'Oro, IPlytics, Barclays Research



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

#### *Implications for the telecom infrastructure equipment market*

The US government has been adamant that its European allies stop using Huawei equipment in their networks. From the perspective of maximizing cybersecurity, it may seem ideal for Huawei and other Chinese telecom manufacturers to be excluded from any western telecom network. However, this approach has vastly different cost implications for Europe and the US. The US is able to take a hardline approach because almost none of the US telecom networks (wireless or wireline) use Chinese telecom equipment; banning Huawei from the US will cost major US telcos almost nothing. However, Huawei equipment is used in wireless RAN and core networks across Europe. From an economic perspective, replacing Chinese equipment from the core European networks will cost much less than doing so in European wireless networks (RAN). This explains why European governments