RESEARCH SURVEY REPORT

CONSUMER SMARTPHONE ANALYTICS: DEVICE CAPABILITIES AND USAGE

KEREM ARSAL, HEENU NIHALANI and GIULIO SINIBALDI

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About this report

This report analyses real-world smartphone usage data to answer questions about the relationship between user behaviour and device characteristics, such as model age, network capability, camera quality and screen size. It assesses how engagement time, data traffic and video viewing vary by the characteristics of the smartphones used.

The report also provides recommendations for operators concerning the role of smartphones as primary devices of engagement and monetisation.

It is based on data collected by Verto Analytics using a passive on-device monitoring app during July and August 2016.[1]

KEY QUESTIONS ANSWERED IN THIS REPORT

- What difference does the level of the smartphone used make to users' engagement in terms of time and apps used?
- Which apps and services are used on smartphones with different characteristics? (For example, 3G or 4G, model age or camera quality.)
- How much data is generated by smartphones with different characteristics?
- How does video viewing behaviour and data consumption differ depending on the screen size of the smartphone used?

SURVEY OUTLINE

The analysis is based on data provided by Verto Analytics, collected through a passive on-device monitoring app 'Smart Panel'. The app tracks:

- app download and usage
- system processes
- data traffic from each app/process
- voice traffic
- web browser activity.

GEOGRAPHICAL COVERAGE

- Germany
- India
- United Kingdom (UK)
- United States of America (USA)

WHO SHOULD READ THIS REPORT

- Strategy and planning executives who are responsible for mobile operators' apps, services and communications strategies and partnerships with OTT players.
- Smartphone vendors and relevant operator units who want to learn about the impact of smartphone characteristics on consumer behaviour.
- Executives in mobile operators' technology and innovations teams who are responsible for developing apps and services.
- Marketing executives at vendors of communication services equipment and software, as it will help them understand the needs of their operator customers and their end-users.

[1] For further insights into this data, see Analysys Mason's Reports *Consumer smartphone analytics: applications and services* and *Consumer smartphone analytics: communication services*.

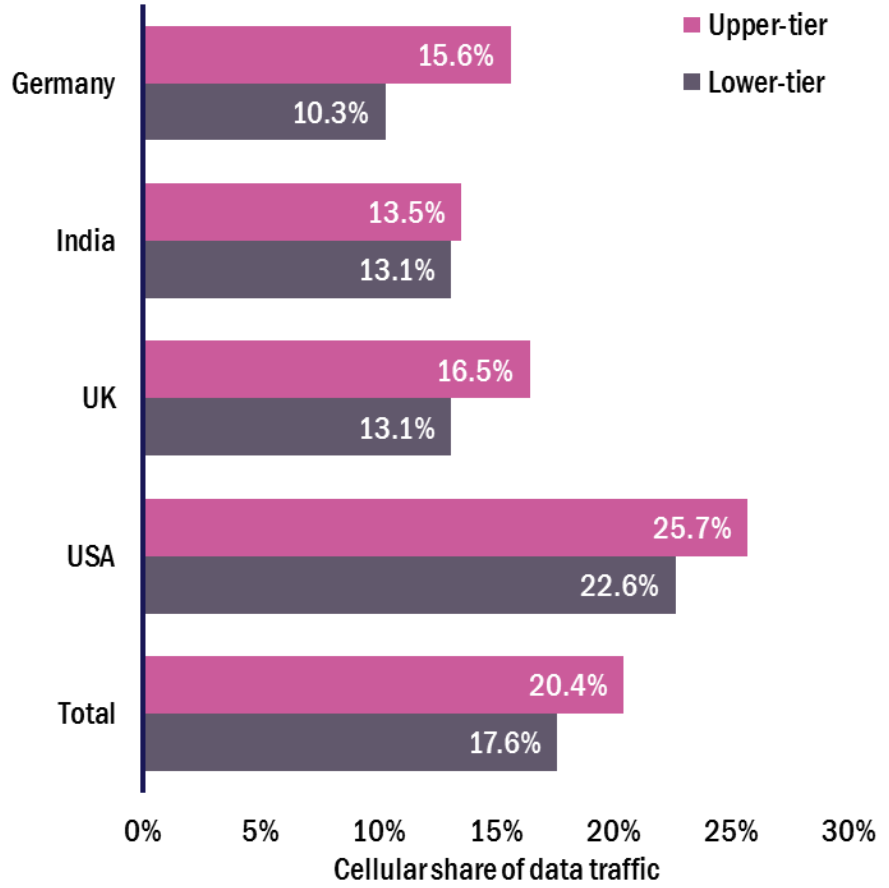
Cellular traffic comprises a larger share of total data traffic on upper-tier smartphones than on lower-tier ones

The percentage of total data traffic that is generated over cellular networks is higher for upper-tier smartphones in all countries surveyed. The difference is small in India (at 0.4 percentage points), but noticeable in Germany (at 5.3 percentage points). This difference between upper- and lower-tier smartphones is probably due to upper-tier device owners being more likely to be subscribed to mobile plans with larger cellular data allowances.

There are consistent differences in the share of cellular traffic between countries and across both smartphone tiers. For example, both upper- and lower-tier smartphone users in the USA generate more than 20% of their total data traffic on cellular networks, indicating that they rely more on these networks than users in the UK or Germany. Availability of Wi-Fi access, quality and coverage of 4G networks and operators' mobile data pricing strategies will also have an impact on which type of network consumers choose to use and to what extent.

Mobile data plans in India were not particularly affordable, limited in allowance size and not available on 4G networks at the time of our survey. The combination of these factors not only resulted in a low cellular share of total data traffic, but a negligible difference between upper- and lower-tier smartphones. We believe that the cellular share will increase with the entrance of Reliance Jio to the Indian market and the release of more competitively-priced 4G data bundles. The difference between the two smartphone tiers in terms of cellular share of data traffic will widen as a result.

Figure 13: Cellular percentage of monthly data traffic by country and by smartphone tier (n = 8292)



Source: Analysys Mason and Verto Analytics

Large-screen smartphone users have a wider variety of video apps, but all users watch YouTube, regardless of screen size

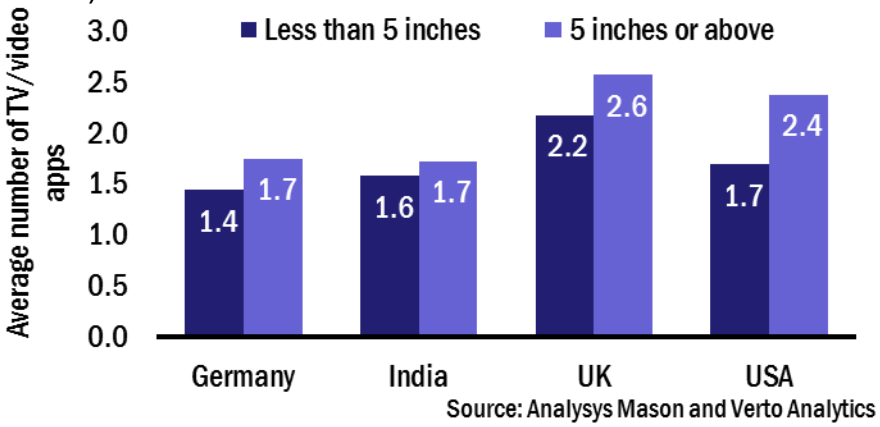
We hypothesised that large-screen smartphones may be used for more 'high-end' video experiences. We compared the number of different TV/video apps in use and users' dependence on YouTube for small- and large-screen smartphones to answer this question.

Large-screen smartphone users in mature markets have more video apps on average than those with small screens (Figure 18). This difference was particularly noticeable in countries where many OTT-video platforms are competing for consumers' attention.

- The difference was clearest in the USA, where large-screen smartphone users have an average of 2.4 video apps each, compared to 1.7 for small-screen smartphone users.
- There was only a marginal difference in the average number of apps used by large- and small-screen smartphone users in India. The lower income levels in India compared to other surveyed countries may mean that users are less inclined to download paid-for video apps beyond YouTube, even if large-screen phones would enable their enjoyment of these paid-for apps.

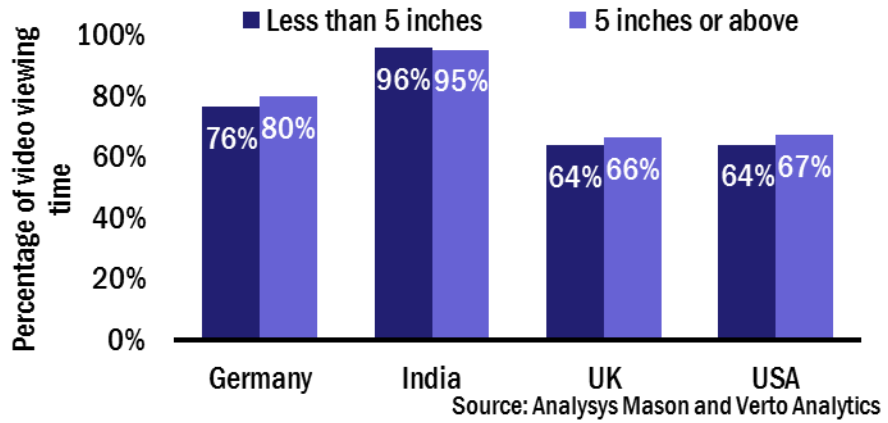
YouTube was by far the most-used of all video apps. Between 64% and 96% of the users' video viewing time was spent on YouTube and there were only small differences in viewing time between large- and small-screen smartphones (Figure 19). Screen size therefore did not appear to affect YouTube's share of total video viewing, despite larger screens perhaps enabling more 'premium' video experiences.

Figure 18: Average number of TV/video apps for each active user by country and screen size (n = 6740)



Source: Analysys Mason and Verto Analytics

Figure 19: YouTube's share of total video viewing time by country and screen size (n = 6740)



Source: Analysys Mason and Verto Analytics

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About the authors

Kerem Arsal (Principal Analyst) leads Analysys Mason's *Mobile Services*, *Mobile Devices* and *Convergence Strategies* research programmes. Kerem advises operators on strategic and tactical decisions on key issues relating to these three programmes, including mobile data monetisation, service design and pricing, customer retention, device sales and multi-play take-up and bundling, especially in the context of fixed–mobile convergence. Previously, Kerem was a research manager at Pyramid Research, where he was responsible for setting the research agenda across multiple programmes and regions. He also led numerous projects around operator strategies, as well as in demand assessment and commercialisation of new products in the consumer and enterprise segments.

Heenu Nihalani (Research Analyst) is a member of Analysys Mason's Consumer Services research team in London, contributing to the *Mobile Services*, *Mobile Devices*, *Fixed Broadband Services*, *Video Strategies* and *Convergence Strategies* research programmes. Her research is focused on consumer behaviour and operator strategies in mobile devices, convergence and TV and video. She also tracks fixed broadband subscriptions, spectrum auctions and mobile service pricing. Prior to joining Analysys Mason, she worked as a financial knowledge broker in London, and as a journalist and copywriter in Hong Kong. Heenu holds an MSc in financial analysis from the Hong Kong University of Science and Technology, and a Bachelor's degree in philosophy, politics and economics from the University of Warwick.

Giulio Sinibaldi (Research Analyst) focuses on data collection and analysis for the Consumer Services research practice. Before joining Analysys Mason, Giulio was an intern at the Italian permanent mission to the United Nations in Geneva, and in the Market Intelligence team of Philips Electronics (H&W) in Amsterdam. He holds a BSc and MSc in Economics and Social Sciences from Bocconi University (Italy), which included an exchange at Georgia Institute of Technology (Atlanta).

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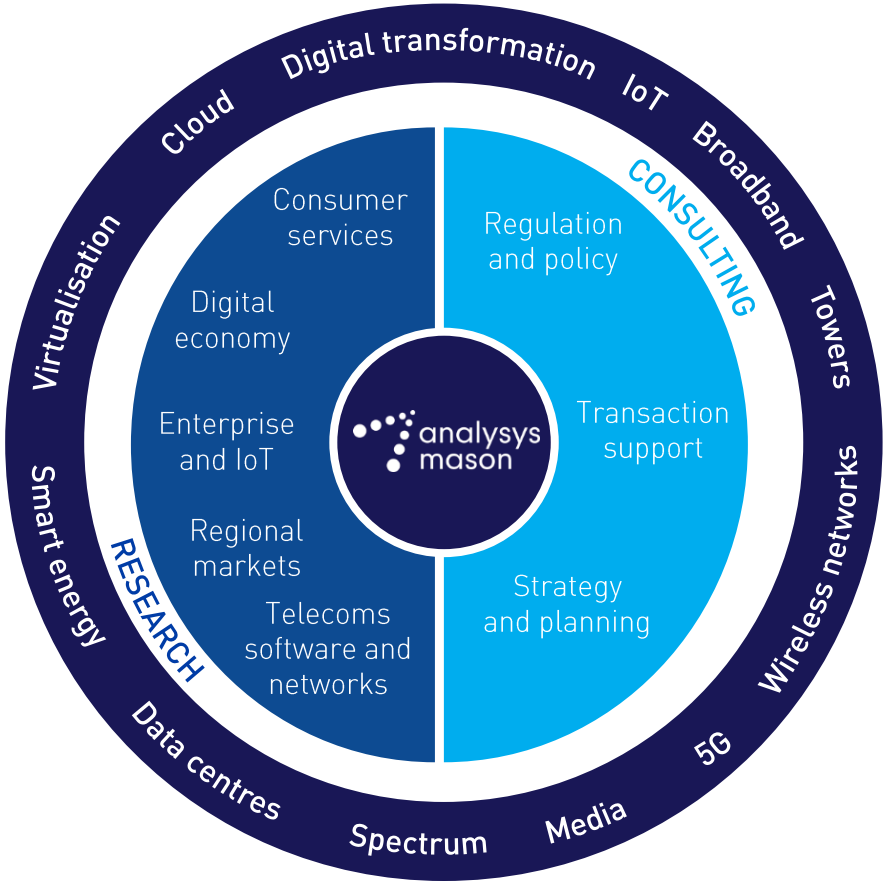

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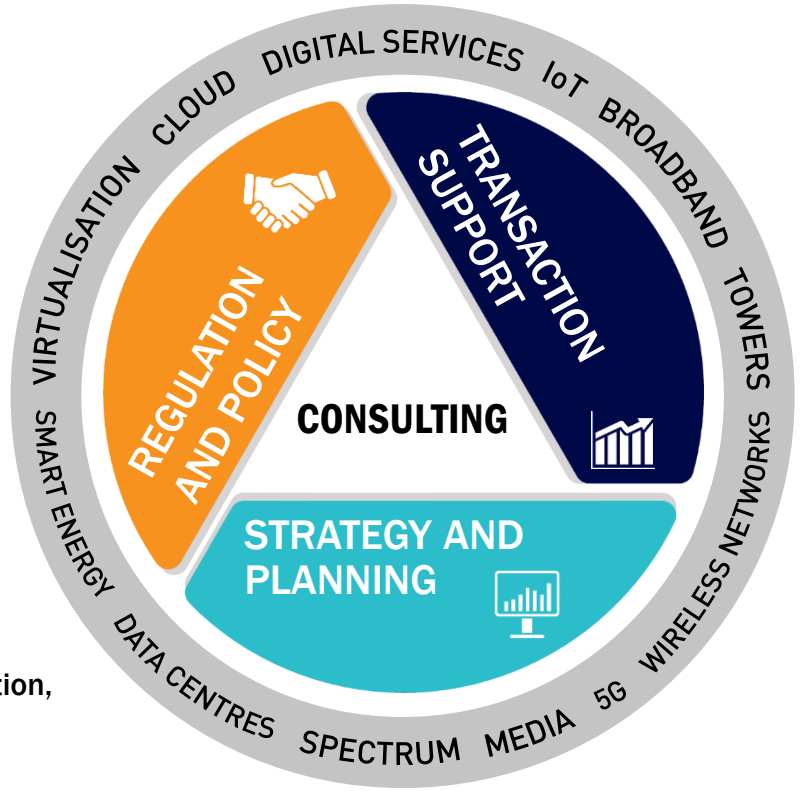

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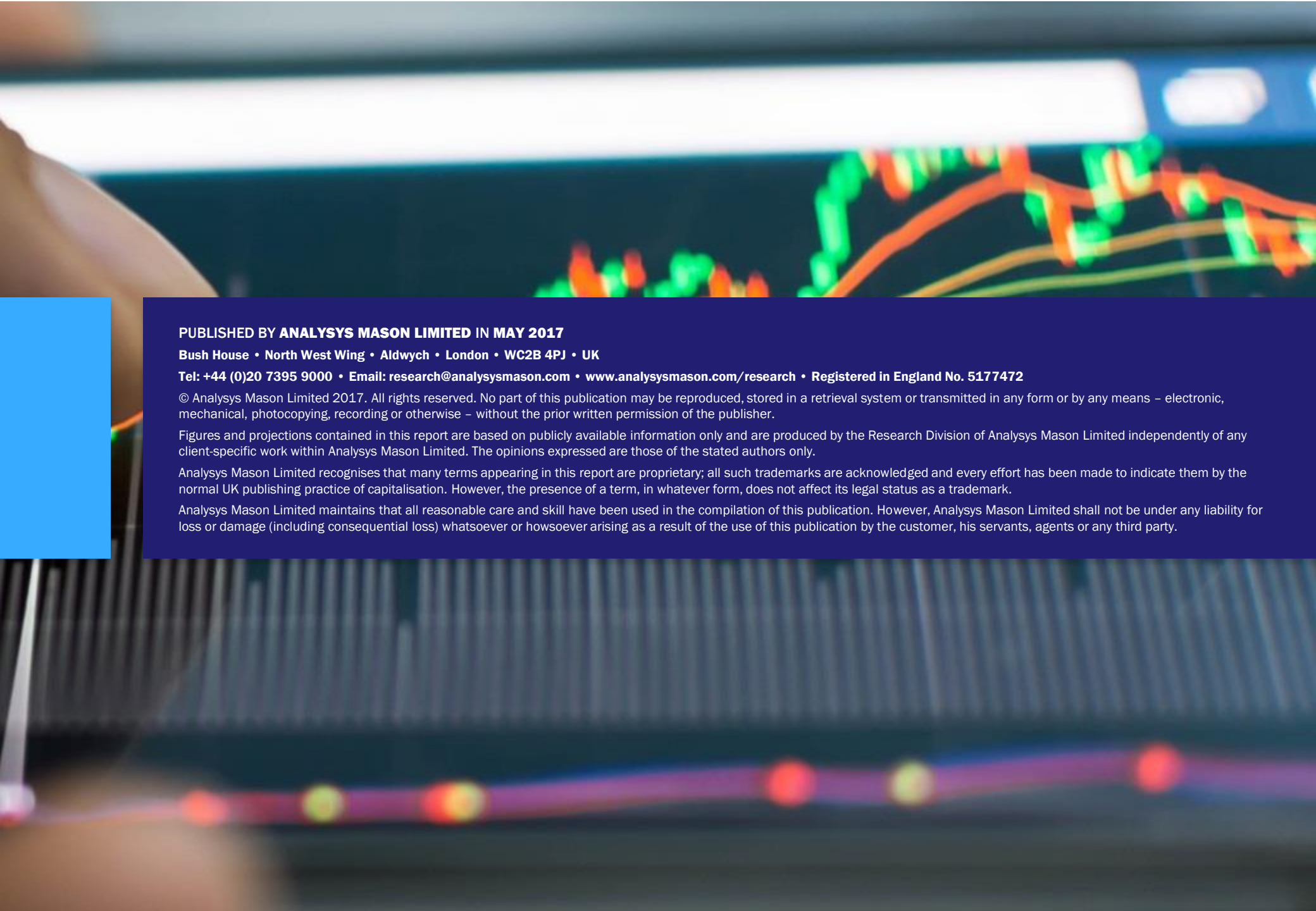

PUBLISHED BY **ANALYSYS MASON LIMITED** IN **MAY 2017**

Bush House • North West Wing • Aldwych • London • WC2B 4PJ • UK

Tel: +44 (0)20 7395 9000 • Email: research@analysysmason.com • www.analysysmason.com/research • Registered in England No. 5177472