R&C Trendwatch

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The disruptive effects of automation could mean changes for retail and consumer goods companies

Executive summary

- *Automation has the potential to disrupt labor markets worldwide as well as the economic development trajectory of some highly vulnerable emerging and frontier markets.*
- *The speed, depth, and breadth of contemporary automation upends traditional assumptions that a large, young population will fuel economic growth.*
- *Developed markets are best-placed to manage the effects of automation, ensuring relatively strong economic growth despite their aging populations.*
- *Some countries with big youth populations are highly vulnerable to automation and have the lowest capacity to manage.*
- *Retail and consumer goods companies will have to rethink their assumptions on what drives consumer demand growth and customer category evolution.*
- *Scenario-planning will help retail and consumer goods companies innovate for the future consumer in different markets.*
- *Companies seeking to expand and diversify their global footprint will benefit from considering the impact of automation on the business and regulatory environment in different countries.*
- *Retail and consumer goods companies may face increased taxation and corporate social burdens as governments try to manage the effects of automation.*
- *Companies should weigh the benefits of automation against the potential for public and consumer backlash.*

Introduction

The conventional growth forecasts used by retailers and consumer goods manufacturers rest on an assumption that a broadening working-age population supports the economy by fostering urbanization, industrialization, and productivity gains. Countries with large youth populations, such as India and the Philippines, are expected to benefit from a so-called demographic dividend that fuels economic expansion and offsets fiscal pressures. Retail and consumer goods companies think of these markets as important opportunities to attract new customers as personal wealth increases. But technologies that not only augment human productivity, but now in many cases replace human labor altogether, are undermining these assumptions.

Much depends on a government's capacity to manage the disruptive effects of automation as well as its ability to use technological innovation as a means of enhancing opportunities for its citizens. If there are fewer available jobs than young people in a country with few prospects for improvement, for example, a growing working-age population may not be a force for economic growth. It could in fact become a costly and destabilizing liability. On the other hand, a country with an aging population that can harness the efficiency gains of automation could be well-placed to prosper.

This report examines the likely effects of automation on a wide range of countries as well as potential government responses to the challenge. It teases out the implications for retail and consumer goods companies in different markets highlighting challenges, opportunities and potential future costs.

*This publication is produced in collaboration with **Eurasia Group (www.eurasiagroup.net)**. Eurasia Group is a leading political risk research and consulting company. The statements and conclusions expressed here are based on their published and unpublished analysis.*

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Broader, deeper, and faster

The displacement of human activity by machines has been a fact of economic life since well before the first Industrial Revolution. It has primarily been a good thing, fueling productivity, wealth, and better living standards for hundreds of years. The coming revolution in robotics will also bring huge economic benefits. One leading study estimates that robots and artificial intelligence (AI) could boost productivity by 30% in many industries and cut manufacturing labor costs by 18%–33%.[1] Yet these trends also mean that a massive number of jobs across the world and across sectors and industries will disappear over the next few decades.

Robotics, AI, and automating technologies will almost surely have a larger and more lasting effect on global labor markets than previous labor-displacing technologies. Services and advanced cognitive tasks that traditionally have been far less affected by automation will be increasingly vulnerable. This will reduce potential sources of future job creation to replace jobs already lost in the manufacturing sector. Low-wage service jobs are already being automated and will not be coming back. Supermarkets and fast food restaurants are, for example, making use of self-checkouts and self-ordering kiosks. There are now robots that can autonomously audit supermarket shelves to ensure that goods are correctly located, stocked and priced[2]. In the construction sector, the Australian company, Fastbrick Robotics, has developed a robot that lays 1,000 standard bricks in one hour – a task that takes human bricklayers a day or longer. And it is not just low-wage jobs at risk: Doctors and lawyers are seeing some of their usual tasks being automated.[3] AI is being increasingly deployed in the analysis of X-rays and CT scans, while computer programs are replacing tasks traditionally carried out by junior lawyers, including name checks and other verification processes; some programs can even read and analyse clauses in standard legal agreements. As computers carry out more and more complex analytic work, it will become increasingly difficult for workers to move up the cognitive value chain in search of future job opportunities.

Automation, meanwhile, is happening faster than at any time in history, making it harder for governments, economies, and societies to adapt. An analysis by our partners at Eurasia Group found 500 million jobs at risk in the manufacturing and retail sectors alone as highlighted in Figure 1.[4] According to a variety of recent studies, automation threatens up to 47% of jobs in the United States,[5] 54% of those in the European Union,[6] and as many as 59% of German workers.[7] A regional study conducted by the International Labor Organization found that 137 million workers across Cambodia, Indonesia, the Philippines, Thailand and Vietnam are likely to lose their jobs (particularly in apparel manufacturing) because of automation – this represents approximately 56% of the total workforce of those countries[8]. All in all, 25% of "manufacturing, packing, construction, maintenance, and agriculture" positions could be at risk globally.[9] And even very conservative estimates put roughly 10% of labor within the world's most advanced economies at risk of replacement.[10]

According to Eurasia Group analysis, manufacturing, retail, construction and agriculture measure high risk. Other sectors such as financial services, IT, and entertainment—while still vulnerable to some automation-related net job losses—are likely to be less affected. Nevertheless, the highest numbers of jobs at risk are not in what are thought of as typical manufacturing jobs—they are in services (including waitressing, cleaning and call centres), and sales (including cashiers, counter and rental clerks) and occupations such as janitors and laborers.

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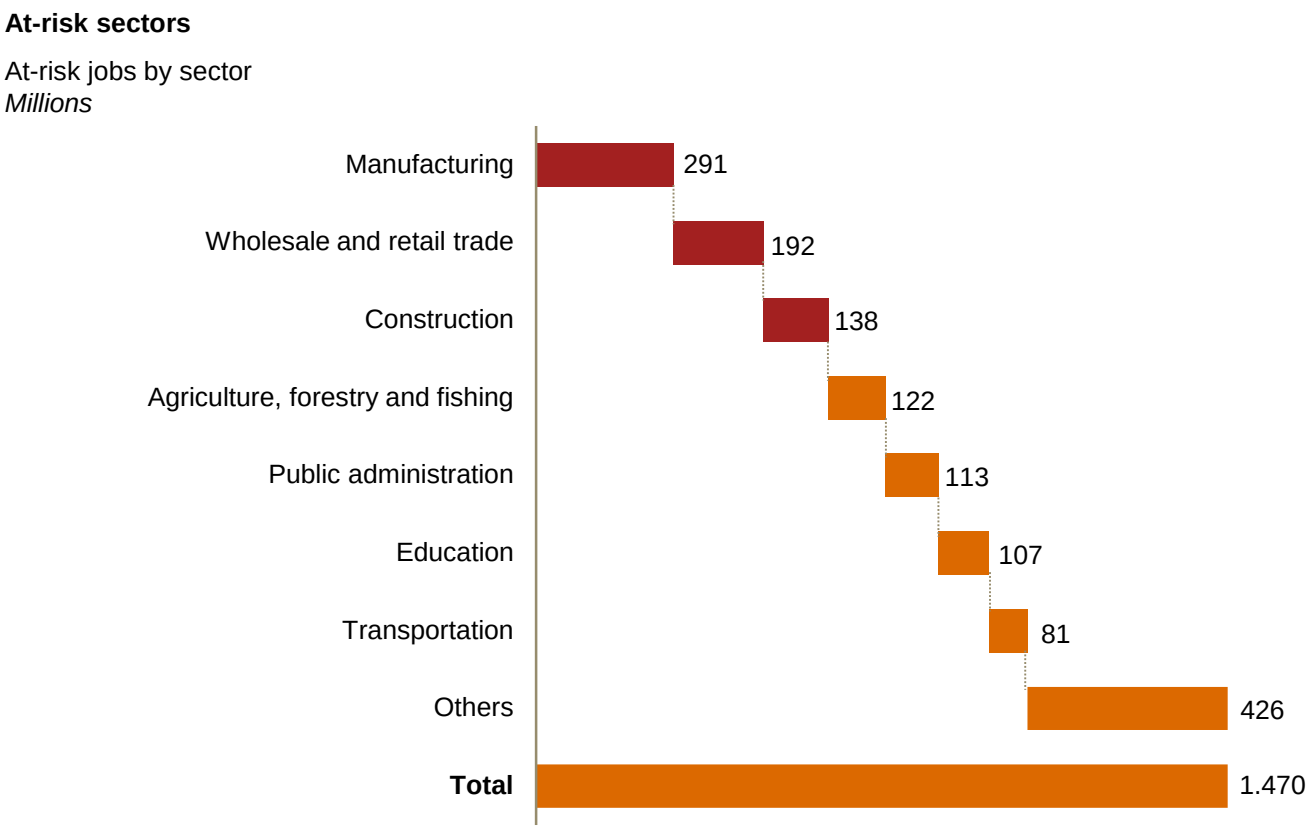
[1] http://about.bankofamerica.com/assets/davos-2016/PDFs/robotic-revolution.pdf
[2] http://www.themanufacturer.com/articles/tally-robot-autonomously-monitors-store-shelves/
[3] https://www.washingtonpost.com/news/innovations/wp/2016/05/16/meet-ross-the-newly-hired-legal-robot/, http://qz.com/675584/theres-now-a-robot-doctor-that-can-finish-performing-a-surgery-on-its-own/
[4] It is important to note that by "jobs at risk of displacement" we mean jobs that are at risk of automation; at-risk jobs do not necessarily mean jobs lost, as employees could find their way into other occupations or accept lower wages.
[5] http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf
[6] http://bruegel.org/2014/07/chart-of-the-week-54-of-eu-jobs-at-risk-of-computerisation/
[7] https://www.ing-diba.de/pdf/ueber-uns/presse/publikationen/ing-diba-economic-research-die-roboter-kommen.pdf
[8] http://www.ilo.org/public/english/dialogue/actemp/downloads/publications/2016/asean_in_transf_2016_r2_future.pdf
[9] http://www.mckinsey.com/business-functions/business-technology/our-insights/disruptive-technologies
[10] http://www.oecd-ilibrary.org/docserver/download/5jlz9h56dvq7-en.pdf?expires=1490269889&id=id&accname=guest&checksum=C2D6AA4934D797398F4962C79935D7F3

Figure 1 – At risk jobs worldwide, by sector



For many poorer and less developed countries, the main challenge will not be the loss of existing jobs; it will be that the path forward to development and greater wealth may be closed off by automation. If manufacturing is less reliant on human labor and therefore less attracted by low labor costs, the incentives for locating in emerging or frontier countries are reduced. Companies could choose to relocate closer to their consumer market, for example. One sportswear manufacturer is piloting highly automated factories in Germany and the US, specialising in customized footwear that can be delivered to the buyer quickly and cheaply. A major electronics manufacturer has set a benchmark of 30% automation at its Chinese factories by 2020[11].

Fewer available manufacturing and services jobs in developing markets would diminish the traditional model of industrialisation accompanied by rural-to-urban migration in the quest for better wages and the increase in per-capita income (and purchasing power) that accompanies formal employment. Retail and consumer goods companies will need to understand how different markets will be affected, and that will depend on their exposure, their resilience and the government's response to the challenge of automation.

Upending assumptions on growth

Forecasting job losses as a result of automation is nothing new. Textile workers protested that machines were robbing them of their livelihoods during the Industrial Revolution[12]. John Maynard Keynes spoke of technological unemployment as early as the 1930s, and President John F. Kennedy identified automation as a major challenge to providing jobs for everyone in 1960s America[13]. In today's globalized economy, some countries are better equipped than others to manage the disruptive effects of automation, particularly at a time when automation is likely to be faster, deeper and broader than before.

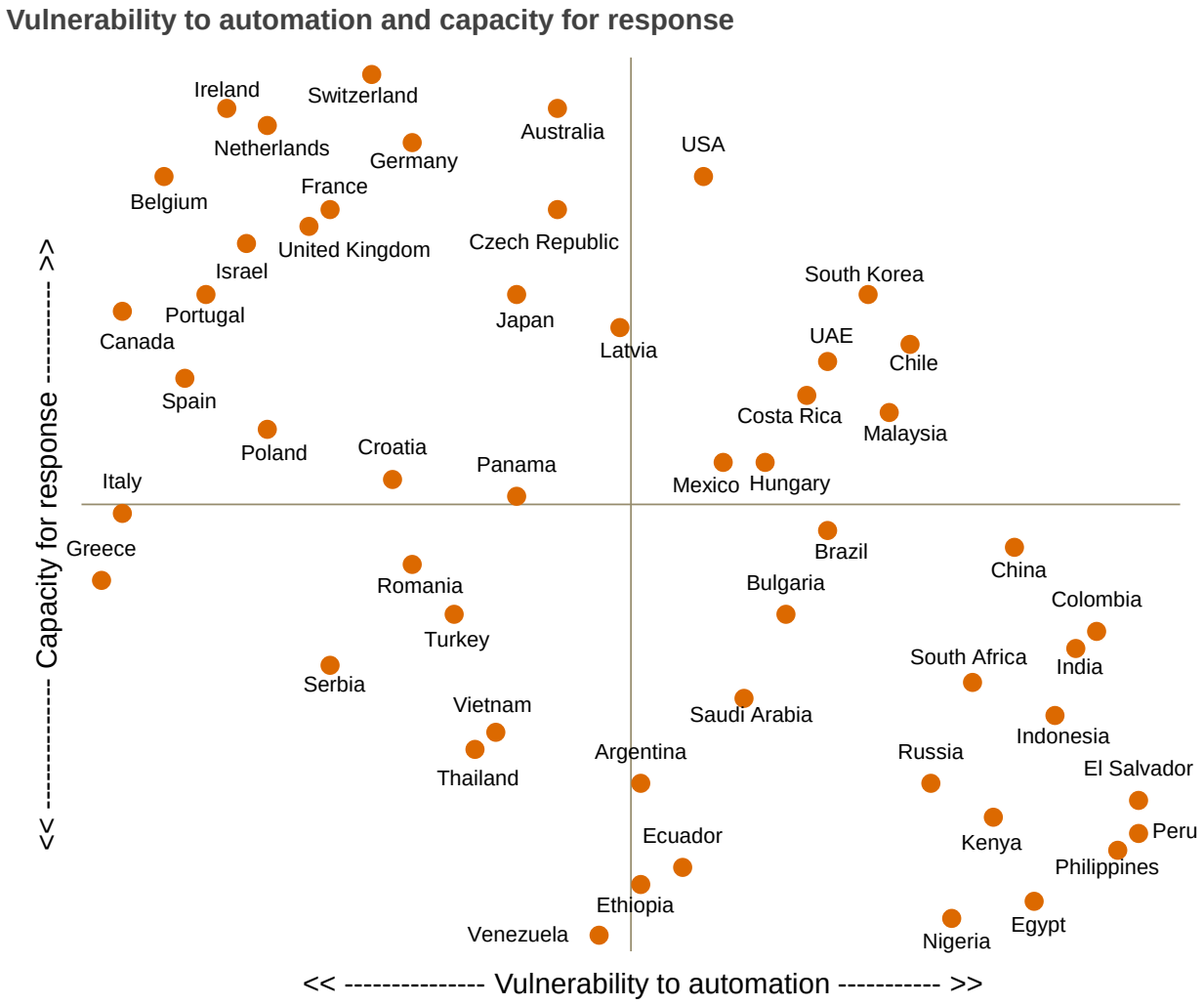
The degree to which countries will be affected depends on their exposure to this coming labor market shock and their resilience in managing the consequences. This matters to retail and consumer goods companies because it has the potential to undermine assumptions about the growth of wealth and consumption over the next few years. Increasing per capita wealth in once vibrant

[11] https://www.theguardian.com/sustainable-business/2016/sep/20/robots-automation-end-rapid-economic-growth-poorer-countries-africa-asia
[12] http://www.nationalarchives.gov.uk/education/politics/g3/
[13] http://www.economist.com/news/special-report/21700758-will-smarter-machines-cause-mass-unemployment-automation-and-anxiety

developing markets cannot be taken for granted. Nor can the assumption that customers will become steadily wealthier and more interested in more expensive, branded consumer goods.

To assess which countries are most exposed to labor market shocks associated with automation, Eurasia Group — in a 2016 study — matched the sectors most likely to endure the biggest job losses with the number of people employed in each sector in 52 developed, emerging, and frontier countries. Scaling the number of at-risk jobs by the total population in each country then provided a measure of economic vulnerability to job losses. Eurasia Group then measured this against the countries' capacity for response. This is an indicator with two primary components: a country's state capacity and forward-looking measure of its innovation policy environment.[14]

Figure 2 – Countries' vulnerability to automation and capacity for response



[14] State capacity is measured as a composite of bureaucratic autonomy, technocracy, and party institutionalization, among other variables. The innovation policy environment reflects R&D incentives, human capital and infrastructure investment, policies affecting technological adoption, economic development targets, intellectual property laws, informal sector activity, and labor market regulations.

This simple framework offers a multi-dimensional view of the challenges and opportunities faced by countries with increasing automation and falling demand for labor. It also challenges some key assumptions on economic and consumer demand growth.

In Figure 2, nearly all of the low-vulnerability, high-capacity countries are developed states—suggesting that the age of automation may be an era of relative economic strength for developed markets, despite the fact that they have aging populations that are less productive and fiscally draining. The ten countries best combining low vulnerability with high capacity are Ireland, Belgium, the Netherlands, Switzerland, Canada, Israel, Portugal, France, Germany, and the United Kingdom. Retailers and consumer goods manufacturers might want to refocus on these markets that—though they may not offer the scale of consumers comparable to China, Indonesia, or India—will continue to have the highest disposable income globally, at least for the foreseeable future. Companies that focus on attracting the so-called silver market (thought to be worth more than $700 billion globally) are likely to succeed in optimizing value-sales growth in the developed world.

Some countries with large youth populations, traditionally considered to be a driving force behind economic expansion and important opportunities for retail and consumer goods companies, are significantly vulnerable to automation and have the lowest capacity to manage. Jobs in these markets are highly vulnerable to automation, while the government and its institutions are not in a strong position to provide a social security net or retraining to its workforce, nor are they well-equipped to provide funding or other types of support for research and development.

Countries like the US and South Korea have a high number of jobs that will be vulnerable to replacement by automation, but they also have a strong capacity to respond. This means that the government and its institutions are well-placed to direct resources toward re-training the workforce and educating their youth to better align with the changing jobs market. In addition, their robust innovation policy environment and support for research and development will help harness the benefits of automation to create new jobs and opportunities. For example, who would have thought a century ago that careers in cybersecurity and online gaming would exist? These are jobs that have been created by a well-functioning business and commercial environment, facilitated by good governance and made possible by technological innovation. In such an environment, innovations in AI become a strength, making professionals like doctors and lawyers better at their jobs, and conceivably increasing the range of their services as well as demand for their time.

Rather than relying on economic and demographic growth projections, retail and consumer goods companies may want to revisit their assumptions about consumer demand growth, factoring in the combination of vulnerability to automation and state capacity to address its disruptive effects. At the very least, this is going to be an important component in identifying future opportunities. The reduced opportunities to grow wages and increase wealth will affect consumers' ability to graduate from "value" to "mainstream" customers. Retail and consumer goods companies might find it worth innovating to create branded products at a lower price point for highly vulnerable markets. Companies that succeed in attracting consumers in a low- or no-growth environment in these states are likely to succeed in optimizing their volume-sales growth.

Implications for the retail and consumer goods sector

The interplay between vulnerability to automation and shock-absorption capacity has important implications for retail and consumer goods companies looking to expand and diversify their global footprint. Companies may decide to avoid establishing operations in countries with lower capacity to manage the negative effects of automation and the disruptions that naturally ensue. They may decide to focus instead on countries able to provide the levels of social and political stability that are necessary to the normal conduct of business and to ensuring predictability on revenue, costs and profitability.

Higher political capacity will also increase the risks of redistributive action on the part of governments. With fiscal balances under stress, governments will be looking for ways to share the burden of maintaining basic income levels and quality of life for citizens.

The possibility of increased taxation and corporate social burdens

Countries that choose to embrace the automation revolution will have to face its socio-economic consequences; the question then becomes what governments will do to protect living standards from economic insecurity, and who pays. How this plays out is the crux of the redefinition of social contracts, but higher taxation and corporate social obligations on business are a likely policy choice for a large number of countries.

Initial government responses to the disruptive effects of automation have so far focused on education to improve the prospects of the most vulnerable segments of populations and on protecting minimum wages. But as the pace and scope of automation intensify, so does the pressure to launch more comprehensive solutions that can protect larger tracts of the population from depressing wages and worsening job prospects. These can range from increasing the depth and latitude of safety nets, either directly by the state or through mandatory private benefits, to universal basic income guarantees and more.

Policymakers in some countries could also deploy strategies like taxing the purchase and implementation of robots, enforcing human worker quotas, or even prohibiting (or drastically tightening) the dismissal of human workers. These measures would affect the cost-benefit calculations that retail and consumer goods companies make before basing operations in one country or another.

Passing on costs to private enterprise could take on several forms:

- A simple future model in which economic and intellectual capital is owned by a few, with production taxed at higher rates by governments, which then pass on that revenue to citizens through guaranteed basic incomes, including direct transfers and support for small, artisanal enterprises
- Alternative capitalization structures, already seen in strong states with aging populations, in which capital is widely owned through pension schemes such as social shares
- Indirect mechanisms such as monetizing intellectual property rights on publicly-funded automation research
- Increasing control over private sector gains through forcible mechanisms (e.g., nationalization)

The progress and intensity of automation will ultimately depend on a complex balancing of costs and benefits. Whereas the aspired benefits are straightforward – gains in efficiency and quality of products and services – costs will likely grow.

Rethinking opportunities

Planning for different economic growth scenarios will enable retail and consumer goods companies to meet different consumer demands at different price points. Selling fewer premium products in richer, older markets may be as profitable as selling many value products in poorer markets, for example. Questioning the sustainability of rapid growth in income per capita in countries such as India, Vietnam, and China will help companies plan their inventories and expansions more cautiously. Knowing which countries are relatively well-placed to handle the disruptive effects of automation on their labor markets—places such as the US, South Korea, the UAE, and Mexico (as illustrated in Figure 2) —will also help companies allocate resources across their global footprint. And it will help companies avoid the risks of the potential social and political instability that may arise in countries with a high vulnerability but low capacity to manage automation.

Branding and public relations

The impact of potential public backlash against automation will be felt differently across industries. The retail sector in particular may be vulnerable to protests and strikes given that it is a major employer and workers are highly visible in their interactions with the general public. The degree to which protests and strikes are a risk will also depend on the strength of labor unions in any given country.

Automation in consumer goods manufacturing will be less visible, but opposition to it may arise where there is a perceived need for human oversight to guarantee safety and quality—in infant or health products, for example. In addition, consumers may be willing to pay more for human-manufactured products, particularly in the premium segment, such as craft beer or artisanal cheese or chocolate. In all scenarios, retailers and consumer goods manufacturers will need to anticipate how the efficiency gains made by automating certain jobs may be canceled out by public opposition or damage to their brand.

Strategies and implications

Rethink predictive models of future growth

Refining the current predictive models for economic growth, disposable income and consumer spending will enable retailers and consumer goods companies to more accurately meet future consumer demands at different price points.

Re-assess allocated resources and inventories

Scenario planning for the disruptive effects of automation on different markets will help retail and consumer goods companies manage the risks in calculating inventories, expanding their footprint and allocating resources worldwide. It will also help them avoid the risks of the potential social and political instability that may arise in countries with a high vulnerability but low capacity to manage automation.

Weigh the benefits of automation against the costs

While the efficiency gains of greater automation are often clear, the costs can be hidden. Retail and consumer goods companies must assess the risks of greater taxation and/or regulatory burdens as well as the risk of a public backlash against automating certain roles.

Prepare a new corporate social strategy

Retailers and consumer goods manufacturers should plan a corporate social strategy that will anticipate the different challenges faced by governments. Such a strategy could include an increase in apprenticeship roles, re-training opportunities for staff, and outreach projects with the unemployed, for example.

Resources

John G. Maxwell
Global Retail & Consumer Leader
john.g.maxwell@pwc.com

Susan Eggleton
Global Retail & Consumer Marketing
susan.eggleton@pwc.com

Mike Brewster
Global Retail & Consumer Marketing
michael.j.brewster@pwc.com

Denis Smith
Global Retail & Consumer Marketing
denis.s.smith@hk.pwc.com

Eurasia Group
New York headquarters
149 Fifth Avenue, 15th Floor
New York, NY 10010
+1 212 213 3112

Eva Molyneux
Senior Analyst, Retail and Consumer
molyneux@eurasiagroup.net