THE FUTURE OF WORK IN THE A REPORT BY THE EMPLOYMENT LAW ALLIANCE OCTOBER 2017





INTRODUCTION

The future of work has been the subject of intense debate globally over the last five years. Yet insufficient attention has been focused on the cumulative effects of automation, machine learning, artificial intelligence, technical innovation and the gig economy on businesses and workers in Asia-Pacific countries. These cumulative effects pose a long-term challenge to businesses in the region.

This region, according to the International Monetary Fund, currently leads the world in growth (projected to be 5.5% in 2017, and 5.4% in 2018),¹ making up a third of the world's GDP and over half of its population.²

Given the central contribution of Asia-Pacific to the international economy, Corrs Chambers Westgarth (Australia) and Deacons (Hong Kong) partnered with Asia-Pacific member firms of the Employment Law Alliance to produce this report on *The Future of Work in the Asia-Pacific*.

We asked 15 law firms across Asia-Pacific to respond to a Questionnaire³ examining the current and anticipated effects of AI, robotics and the rapid expansion of the 'gig economy' on jobs and the future of work in their jurisdiction.

We also asked them about the impact of the United Kingdom's modern slavery legislation, which is emerging as another key issue given the prevalence of human trafficking and forced labour in the Asia-Pacific region. Broadly, the respondents observed the following:

- The development of innovative technology is having an effect on their respective countries, but each was positive about the opportunities that these developments offer.
- The emergence of the gig economy is challenging the policy position in a number of countries, indicating that the issues raised in Europe and the USA regarding this work are not confined to Western jurisdictions.
- Although there are national programs that support home economies, the Asia-Pacific region is not yet seeing potential changes to trade policies as a critical threat to their markets.
- Modern Slavery laws (in particular the UK las) is having an effect, albeit moderate to date, in focussing greater attention on labour standards and compliance within supply chains in the Asia-Pacific region.

The key themes for the report are outlined in Part A below, along with the questions related to each theme and highlights from the member firms' responses. The detailed responses from each national firm are then extracted in Part B.

We hope you find this report insightful and relevant.

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Cynthia Chung Deacons Hong Kong THE FUTURE OF WORK IN THE ASIA-PACIFIC EMPLOYMENT LAW ALLIANCE REPORT OCTOBER 2017

PART A KEY THEMES, QUESTIONS AND HIGHLIGHTS FROM ELA MEMBER FIRMS' RESPONSES Theme 1: The future of manufacturing in Asia-Pacific and the likely impact of automation/AI on the world of work For many years now, companies in the developed world have relocated all or part of their manufacturing operations to Asian countries like China due to lower labour costs.⁴ However, several factors may be converging to bring about a reversal of this trend and a consequent reduction in the demand for labour in Asia-Pacific. Increased implementation of advanced automation and robotics is having a major impact on manufacturing.

A widespread view is emerging that: 'Digital automation is eroding the comparative advantage of cheap labour.'⁵ Staying with the example of China, wage levels have been rising at the rate of 12% annually over the past decade.⁶ At the same time, the Chinese Government's 'Made in China 2025' strategy has driven a transformation of the manufacturing sector, with China overtaking Japan in 2016 as 'the world's biggest operator of industrial robots'.⁷

A shift away from the traditional core of agricultural employment is seeing high (unmet) demand for skilled workers in ASEAN countries. Simultaneously, however, skilled jobs in these countries face similar threats from automation to those in industrialised nations. Robots are replacing not only manual jobs but also cognitive ones – the World Bank estimates that 69% of jobs in India are threatened by automation, and 77% in China.⁸ The ILO's 2016 study of the future of work in ASEAN nations identified significant impacts from digital automation which are already occurring, including changes to the skill sets needed from workers following deployment of 3D printing, 'sewbots', the 'internet of things' and other technology. The ILO projects that 56% of employment in the ASEAN-5 (Cambodia, Indonesia, the Philippines, Thailand and Vietnam) may be displaced due to technology innovation over the next 10-20 years.⁹

The data from our Questionnaire responses confirm many of these trends, but also highlight significant opportunities for Asia-Pacific nations arising from the adoption of new technology in the processes of production and service provision.¹⁰

Table 1.1 - Summary of ELA Member Firms' Responses to questions:

- 1. In what industries/sectors is automation having the greatest impact in your jurisdiction?
- 2. What threats do you already see to traditional jobs? Provide examples of the types of work most at risk, and the technologies being deployed.

Asia-Pacific countries	Technology/automation transforming work	Sectors and jobs under threat	Opportunities	
Australia Remote technology for operation of mines and container terminals; automated picking, packing and ordering in warehouses		Resources, maritime, agriculture, warehousing, logistics, retail and finance	Firm-level and national productivity gains through a more highly-skilled/ technologically capable workforce	
Bangladesh	Lightweight robots that can handle fabric, pick, place and sew	Manufacturing/garments sector (80% of total export earnings)	Lower labour costs than China, attracting foreign direct investment	
Hong Kong Financial technology ('fintech'): currency exchange, online lending and wealth management using 'big data'		Customer-facing functions in banking and financial services	Banking and finance professionals offering tailor- made solutions to customers (e.g. using predictive analytics)	
India	dia Software companies IT and IT-ena employing AI platforms to including dat increase revenues software test centres		Remains among the most popular markets for outsourcing IT functions	
automation of services s		Manufacturing of garments and consumable goods; retail salespersons, gardeners, tailors	Productivity and efficiency gains via reduced reliance on monotonous labouring functions	
Japan Driverless cars, automated marketing image/speech recognition, AI research labs within companies, machine learning		Transport, customer service, media/advertising (e.g. data analytics automatically drafting articles), vehicle manufacturing	Global leader in techonology, 80% of foreign companies plan to increase investment in Japan over next 5 years	
Korea 531 robots per 10,000 factory workers (ahead of Japan, Germany and USA)		Press, frame and painting in car production almost fully automated; technology also impacting on cashiers in retail trade, restaurant and bank staff, security industry	Emerging at the forefront of cutting-edge robotics, transforming the production process	

Asia-Pacific countries	Technology/automation transforming work	Sectors and jobs under threat	Opportunities	
Malaysia Automated channels e.g. online internet banking, self- service kiosks		Banking and finance sector – some impact also in semi- conductor industry	Local and foreign banks developing staff to perform higher-end duties to service changing customer expectations	
New Zealand	Self-service facilities in supermarkets and petrol stations; robots performing cleaning in airports	Transport, construction, manufacturing, services (e.g. accounting)	Driverless cars; strategic accounting advice performed by humans	
Philippines	Philippines Collaborative industrial E robots in auto manufacturing C		BPO workers and agents upgrading skills, e.g. critical thinking, complex decision- making	
Singapore	Automated guided vehicles in warehousing; sensors and robotics in government buildings, e.g. National Library	Food and electronics manufacturing; service industries (e.g. restaurants, fast-food outlets, hotels)	Government grants/ schemes for businesses to automate, partly driven by manpower shortages	
machines with supporting includin		Garment manufacturing including embroidering and stitching	Chinese investment in countries like Sri Lanka (the new 'Silk Route')	
Taiwan Advanced know-how in sensors, electronic shelf labelling, biometrics recognition technologies		Insurance companies, payment collection services, hotels (self-check-in and robotic baggage delivery)	Government's Automation Intelligence Industry Development Project encourages R&D (intelligent machines, Internet of Things)	
Thailand	Robots and advanced automation in manufacturing; electronic banking; online shopping	Unskilled/low-skilled manufacturing jobs; information content providers reliant on advertising (switch to social media)	Use of technology to meet shifts in consumer demand	

In addition to the impact of rising labour costs in some Asian countries, as discussed above, the developed world is experiencing what the OECD describes as a 'backlash against globalisation'.¹¹

While most clearly evident in the UK's 2016 referendum vote in favour of leaving the European Union, and the anti-free trade rhetoric and election pledges of President Trump, signs of this increasingly protectionist tendency can also be seen in countries like Australia. In recent months, the Labor Party and the trade union movement have been adopting more robust positions in favour of putting 'Australian jobs first' and urging consumers to 'buy Australian'.¹²

Changes to trade policies remains a significant risk to country growth. The positions being articulated most strongly in the USA and UK threaten a more decisive turn away from 'offshoring' to 'reshoring'. In the USA, The Reshoring Initiative (a non-profit organisation) estimates that 260,000 jobs have already been created by the decisions of companies like Walmart, Boeing and Ford to bring production facilities back to their parent countries.¹³ Earlier this year, the IMF observed that:

The [Asia-Pacific] region experienced net capital outflows for a short period following the Brexit referendum and in the last two months of 2016 following the change in market expectations after the U.S. elections.¹⁴ The IMF went on to warn that a return to protectionist tendencies in countries like the USA and UK presents a significant challenge to Asian economies which are heavily reliant on exports:

Deglobalization poses a substantial downside risk to the region. ... A disruption of global trade, capital, and labor flows resulting from an inward shift in policies, including toward protectionism, would deter investment, reduce productivity, and lower global growth. Asian economies are particularly vulnerable to trade shocks because they generally have high trade openness ratios, with significant participation in global value chains.¹⁵

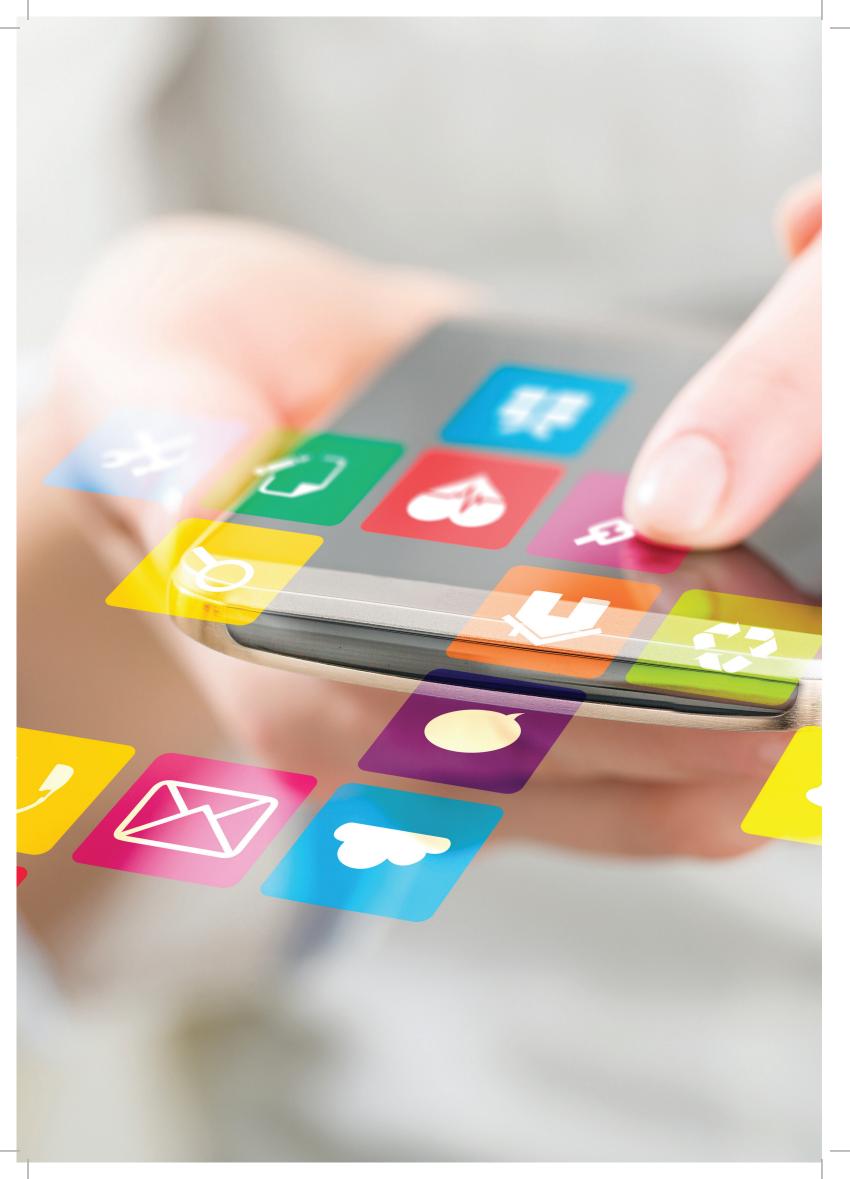
More recently, the First Vice-Chair of the International Chamber of Commerce John W.H. Denton AO responded to the current debate, calling for business leaders to actively work to rebalance the public debate on globalisation and recognise that "trade helps lift millions out of poverty, promotes economic growth and job creation and drives technical progress."¹⁶

The data from our Questionnaire responses indicate that, with a few exceptions, these concerns have not yet been borne out on a widespread basis. However, there is a high level of competition within Asia-Pacific nations to attract foreign investment, and many national governments are supporting domestic production through 'buy local' campaigns and programs.

Table 1.2 - Summary of ELA Member Firms' Responses to question:

3. Is there any indication at this point of the scaling back or relocation of overseas manufacturing or other investment from your jurisdiction, related to factors such as increased labour costs or the protectionist turn in advanced economies?

Australia	 Considerably higher wage levels than most other Asia-Pacific countries have led to offshoring of textiles/ clothing/footwear for some time and, more recently, the exit of automotive manufacturing Some indication of protectionist sentiment. However, new evidence of investment and a re-assessment of viability as a manufacturing base focused on advanced technology
Bangladesh	 Trend towards relocation of manufacturing from China to other Asian countries like Bangladesh and Vietnam Bangladesh even more competitive now in attracting foreign direct investment from developed countries
Hong Kong	 Continued investment of Hong Kong manufacturing firms in China (e.g. Pearl River Delta region) Despite increasing labour costs, China is attractive due to geographical vicinity and lower rental expenses/ other living costs
India	 Offshoring of IT services has been impacted by protectionist measures, such as suspension of premium visas by countries like the USA 'Make in India' policy encourages global investment with India remaining a lucrative manufacturing destination
Indonesia	 No impact as yet (e.g. relocation of foreign firms), and retention of strong manufacturing base for domestic production
Japan	 Not an offshore labour supply for foreign companies (higher wage levels than other Asian countries) No scaling back or relocation of overseas manufacturing, overseas real estate investment is increasing (weaker Yen and declining property costs in urban centres relative to e.g. Hong Kong, Singapore)
Korea	 High upward pressure on wages has led to some domestic manufacturing firms relocating e.g. to Vietnam Ministry of Trade, Industry and Energy data indicate 17,103 firms have relocated all/part of their production facilities overseas since 2012
Malaysia	 American hard-disk maker Seagate Technology Plc relocated from Malaysia to Thailand in 2016 British American Tobacco (M) Bhd has wound down factory operations in stages (completed mid-2017)
New Zealand	 Typically higher wage levels than many Asia-Pacific countries Domestic manufacturing, especially food and beverages, strongly supported by consumer preferences for NZ-made products and proposed legislation
Philippines	 Protectionist policies in the US impact on the Business Process Outsourcing (BPO) sector which mainly services American firms (many of these are suspending expansion plans and considering relocation to the US)
Singapore	 Exit of some firms to reduce costs, e.g. in container shipping, offshore marine services, beverage bottling However aerospace and biomedical companies have established regional headquarters in Singapore to take advantage of higher value-add capabilities (including innovation and research)
Sri Linka	 Some shift back to US-held proximity countries, e.g. Costa Rica and Puerto Rico is already discernible However opportunities for Sri Lanka to leverage low technology manufacturing into semi and high-technology production (e.g. drones)
Taiwan	 New US administration presents the biggest challenge to Taiwan, as US makes up 12% of direct exports Prospect of increased American tariffs against Chinese exports already causing Taiwanese businesses to expand into the US
Thailand	 Labour cost advantage has deteriorated, no longer the preferred manufacturing destination in south-east Asia Many textile and electronics companies have moved operations to Cambodia, Myanmar and Bangladesh



Theme 2: Keeping up with the 'Gig Economy' Across the world, over the last five years, we have witnessed the rapid growth of app-based forms of service delivery or 'platforms' such as Uber, Airtasker, Didi Chuxing and Foodora. Technological innovation has created opportunities for work to take place in a series of one-off 'gigs', rather than in an ongoing relationship with a single employer. Supporters highlight the benefits to workers, consumers and the economy that the on-demand gigs provide to job growth and the economy. New income and supplementary income streams have been created. However, this expansion of the gig economy has created major challenges for traditional employment regulation in much of Europe, the USA and Australia.

The starting assumption of most gig companies is that workers engaged through the apps are contractors, rather than employees covered by protective employment regulations. In regards to some services, this is being questioned through class actions and test cases seeking to establish employment or 'worker' status (USA, UK),¹⁷ union efforts to organise gig workers (UK, Australia),¹⁸ collective self-organisation e.g. by food-delivery riders and ride-share drivers (Italy, Australia)¹⁹ and regulatory scrutiny (Australia).²⁰ Much of the debate over the gig economy in these countries focuses on the issue of employment status, and whether an intermediate category falling between 'employee' and 'contractor' may be necessary to provide workers engaged through apps some minimum employment standards.²¹The emergence of the gig economy has led to an increase in policy interest across contingent work arrangements.

The gig economy has also arrived in the Asia-Pacific, although its implications for employment regulation could be expected to have a different focus compared with the regions/countries discussed above. In particular, the advent of platform-based work based on an assumption of contracting may add to existing challenges arising from inadequate enforcement of employment regulations, and the large numbers of workers already found in the 'informal economy' (around 60% of the workforce).²²

However, the data from our Questionnaire responses suggests that, in fact, the policy issues arising from the gig economy in Asia-Pacific are really quite similar to elsewhere in the world. To a limited extent, unions are agitating on behalf of platform workers and more spontaneous forms of worker representation are occurring (e.g. driver/delivery rider strikes). There is also a focus on establishing employment-based rights for gig workers through court cases in some jurisdictions, although not generally through legislative changes.

Table 2.1 - Summary of ELA Member Firms' Responses to question:

4. Are gig economy companies active in your jurisdiction (provide examples), and is there any debate over adaptation of existing employment regulation in response to this?

Asia-Pacific countries	Major gig economy companies operating	Typical basis for engagement of workers	Debate over employment regulation, other responses to the gig economy
Australia	Uber, Deliveroo, Foodora, Airtasker	Independent contractors	Minimal discussion of an intermediate 'gig worker' category; unions and regulators focused on testing employment status in the courts
Bangladesh	Uber, Food Panda, Pathao, UpWork	Independent contractors	Freelancers (e.g. UpWork) most likely genuine contractors, therefore Bangladesh labour laws not applicable
Hong Kong	Deliveroo, Uber, GoGet	Independent contractors	Local Government protective of licensed taxi drivers, deterring ride-share operations; no formal discussions yet over adapting existing employment regulation (dichotomous employee/contractor classification)
India	Uber, Wipro, Infosys, Ola, Flipkart, Myntra	Project-to-project	Rising concerns over applicability of social welfare labour legislation to gig workers; writ petition filed with Delhi High Court to assess whether Uber/Ola drivers are employees; strikes by delivery persons (Flipkart/Myntra)
Indonesia	Gojek, Grab, Uber	Partnership arrangements	Strikes by workers demanding employment rights, especially Gojek drivers
Japan	Lancers Inc, CrowdWorks Inc, AnyTimes Inc, Gengo Inc, anydooR Inc, visasQ Inc	Unclear	Employment regulation for gig economy companies has not matured yet; if established as employees, gig workers would receive generous labour law protections, company benefits and social insurance
Korea	Kakao Taxi, Kakao Driver, Quick (delivery), Uber	Unclear	Push-back against Uber when it entered Korean market, company and then-CEO indicted in late 2014 for violation of transportation service licensing laws; debate over avoidance of regular, full-time employment through gig economy and certain features of gig engagement (digital surveillance, hyper-connectivity)

Asia-Pacific countries	Major gig economy companies operating	Typical basis for engagement of workers	Debate over employment regulation, other responses to the gig economy
Malaysia	Uber, Grab	Unclear	Legislation passed in early 2017 regulating e-hailing services; consideration of whether drivers are employees or independent contractors, although no court cases determining this point
New Zealand	Uber, shared workspaces promoting gig work	Mostly contractors, some employees	No challenge yet to nature of working relationship in gig companies, nor changes in regulatory sphere to encourage or limit this form of working
Philippines	Grab, Uber, Food Panda, U-go, Kanguru	Independent contractors	Significant growth since 2015; popularity of transport apps has led to accreditation and Government recognition that drivers are contractors
Singapore	Uber, Grab, Lazada, Deliveroo, Food Panda, Redmart	Freelancers	Employment regulations do not extend to gig workers; Ministry of Manpower closely monitoring potential impact and tripartite body has developed Guidelines on Employment of Term Contract Employees
Sri Lanka	Pick me, Uber	Unclear	Common law tests to distinguish self-employment from independent contract employment will have to be revisited
Taiwan	Uber (partner with rental car industry), Lalamove, GoGoVan	Employees (in case of Uber)	Uber drivers are legally deemed to be employees of the rental car company; questions remain as to legal relationship between 'platform providers' and 'labour providers'
Thailand	Grab Taxi, Uber	Unclear	Confrontation between gig transportation companies and taxi industry; Government has developed IT system to make taxi sector more competitive

Theme 3: Implications of the UK's Modern Slavery legislation for Asian companies and Asia-based subsidiaries of UK multinationals

The UK's Modern Slavery Act 2015 created the Office of the Independent Anti-Slavery Commissioner and imposes reporting requirements on companies with an annual global turnover of more than £36 million. These businesses must provide an annual statement of the steps taken to ensure that slavery and human trafficking are not taking place in the business or within any of its supply chains.²³ The legislation also established the office of Independent Anti-Slavery Commissioner, to promote best practice and investigate and prosecute slavery and human trafficking offences under UK law.²⁴

Certifying that the UK company has no modern slavery or human trafficking in its supply chain or any part of the business requires auditing of all Asia-Pacific operations, where it is estimated that 66.4% of the world's 45 million people in modern slavery are found. This includes people subjected to forced labour in brick kilns, agriculture and garment production; child soldiers in several countries; forced begging; and commercial sexual exploitation.²⁵

Companies with operations based in the Asia-Pacific region also need to ensure compliance with local laws in each jurisdiction relating to forced labour, human trafficking, and similar offences. It is considered that the increased focus on modern slavery will broaden to include tighter regulation and reporting on other practices including money laundering and transnational organized crime.²⁶ The imposition of requirements to report on measures taken to combat modern slavery has been criticised as inadequate, given that it falls short of requiring companies to take active steps to eliminate the conditions which give rise to forced labour and human trafficking. Stronger laws have been urged including mandating due diligence steps to identify and prevent modern slavery, with high penalties for non-compliance.²⁷

The data from our Questionnaire responses shows that the UK's *Modern Slavery Act* is having a moderate effect in focusing greater attention on labour standards compliance and the avoidance of modern slavery within supply chains in some Asia-Pacific countries. It is also likely that Australia, and possibly also New Zealand, will replicate the UK legislation in the near future.

Many of the country responses indicated that subsidiaries or related entities of UK companies covered by the *Modern Slavery Act*, located within the relevant jurisdiction, have responded to information requests from their UK parents in relation to supply chain activity or assisted in some other way with the UK bodies' reporting requirements.

Table 3.1 – Summary of ELA Member Firms' Responses to question:

5.	What effect is the UK Modern Slavery Act having on subsidiary companies in your jurisdiction
	(e.g. responding to requests to meet the reporting requirements, changes to employment practices
	within the supply chain)?

Australia	 Recent focus on labour compliance in domestic supply chains has revealed underpayments and other workplace law breaches, and some practices associated with modern slavery (e.g. withholding of passports and tied accommodation arrangements) Australian Government committed to replicating UK's <i>Modern Slavery Act</i> and Parliament passed important new protections for vulnerable workers
Bangladesh	 UK legislation has led to greater cooperation between manufacturers and retailers to address widespread modern slavery practices UK-based retailers vigilant re Bangladeshi supply chains following 2013 Rana Plaza disaster
Hong Kong	 Several local laws apply to prohibit slavery/human trafficking (trafficking for prostitution purposes), migrant smuggling and trafficking-related money laundering
India	 Some Indian companies with UK branch offices/subsidiaries have published Modern Slavery Statements including guidance manuals, due diligence steps, corporate governance frameworks Various statutes with similar objectives to <i>Modern Slavery Act</i>, e.g. legislation prohibiting exploitation of bonded labourers, criminalisation of sex slavery/human trafficking/forced labour
Indonesia	 Estimated 736,100 people living in modern slavery in Indonesia Prevalent in the palm oil industry, agriculture, domestic work, fishing (crew of foreign, reflagged vessels) No major changes within supply chains discernible at this stage
Japan	 Japan is a destination, source and transit country for forced labour/ human trafficking, with up to 290,000 people in modern slavery conditions Modern Slavery Act plays important role as global standard followed by Japanese companies
Korea	Not able to indicate how UK legislation is affecting Korean companies
Malaysia	 No impact as yet of <i>Modern Slavery Act</i> on Malaysian subsidiaries Malaysia upgraded by US State Department to Tier 2 for human trafficking, following implementation of laws enabling approved shelter residents to move freely and work
New Zealand	 NZ subsidiaries of UK companies have renewed supply chains to comply with <i>Modern Slavery Act</i> Modern slavery identified as a problem in recent report, Government may introduce equivalent to UK legislation once Australia does so
Philippines	 Tier 1 ranking by US State Department (highest compliance level), only country in south-east Asia fully compliant with minimum standards to combat human trafficking
Singapore	 No significant changes, some companies (e.g. DBS Bank) have amended policies, training and sourcing/ service contracts to reflect obligations of Singaporean suppliers to comply with applicable laws
Sri Lanka	 Some consider that Modern Slavery Act requirements will permeate Sri Lankan legal system based on higher compliance with international standards accepted by UK buyers
Taiwan	 Little impact of UK legislation on Taiwanese subsidiaries, because entities meeting high reporting threshold could not escape stringent labour compliance requirements imposed by Taiwan's labour laws
Thailand	 Regulations enacted to prohibit labour-related abuses of foreign workers from neighbouring countries (Myanmar, Lao, Cambodia)

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PART B DETAILED ELA MEMBER FIRM RESPONSES TO THE QUESTIONNAIRE

QUESTIONS

- 1. In what industries/sectors is automation having the greatest impact in your jurisdiction?
- 2. What threats do you already see to traditional jobs? Provide examples of the types of work most at risk, and the technologies being deployed.
- 3. Is there any indication at this point of the scaling back or relocation of overseas manufacturing or other investment from your jurisdiction, related to factors such as increased labour costs or the protectionist turn in advanced economies?
- 4. Are gig economy companies active in your jurisdiction (provide examples)? Is there any debate over adaptation of existing employment regulation in response to this?
- 5. What effect is the UK *Modern Slavery Act* having on subsidiary companies in your jurisdiction (e.g. responding to requests to meet the reporting requirements, changes to employment practices within the supply chain)?

AUSTRALIA



- 1. Advanced automation is having a considerable impact in the Australian manufacturing, resources, maritime and agricultural sectors, as well as warehousing, logistics and retail. For example, almost all of Patrick's Brisbane container terminal is now run from Sydney, and Rio Tinto runs mines in Australia and globally from a single room in Brisbane. Picking, packing and ordering functions in large warehouses are increasingly utilising robots and automated systems to do the work previously done by humans (e.g. implementation of Vanderlande's technology at Woolworths and Australia Post distribution centres), and electronic scanners are widespread throughout the retail sector. Amazon's entry into the Australian market is widely expected to amplify these trends.²⁸
- 2. Many jobs in traditionally highemployment (and generally highly unionised) industries have been eradicated through automation, such as Rio Tinto's deployment of 69 automated trucks to undertake haulage work at its mines in the Pilbara region of Western Australia. Hi-tech manufacturing involving the use of AI and robotics, such as Robert Bosch Australia's diode manufacturing facility in Melbourne, is transforming the production of consumer goods and industrial technology applications. The 2016 Future of Work Report indicated that two-thirds of Australian workers believe that their jobs will not exist within five years, while 47% expect

their jobs will require quite different skills. Recent research suggests that the job impacts of automation are not entirely negative, given that technology may free many workers up to do work differently and provide a higher quality service to customers (e.g. bank staff assisting with financial advice rather than processing basic transactions). This has the potential to deliver significant firm-level and national productivity benefits.²⁹

3. This question invites a different perspective for Australia (compared with other Asia-Pacific countries), given that businesses here have been offshoring manufacturing to lower-wage economies for many years now. Australia has considerably higher wage levels than many OECD countries, and a robust framework of minimum employment standards. This has contributed to the nearcomplete wind-down of domestic automotive manufacturing, and offshoring of many elements of the manufacturing process in textile, clothing and footwear production. The protectionist, counter-globalisation tendencies exhibited through the Brexit and Trump phenomena can be seen to some extent in the Labor Party's recent (and controversial) adoption of an 'Australian jobs first' position. There is also something of a reassessment occurring of Australia's viability as a manufacturing base, which may lead to 'reshoring' in the years ahead through a combination of advanced technology, high

investment in skills development/ training and interconnected specialised supply chains.³⁰ The Sydney operations of biotech companies Cochlear and ResMed are leading exponents of Australian advanced manufacturing capability.

4. Australia has seen rapid growth in the gig economy over the last five years, with local companies like Airtasker and global players (Uber, Deliveroo, Foodora) entering the Australian market. As in many other countries, these companies have engaged workers (to provide services to consumers through app-based technologies) on the assumption of an independent contractor relationship rather than employment. This has triggered debate over the employment status of gig workers, with union organisations seeking to represent and establish employment-based entitlements for them (Unions NSW and Victorian Trades Hall Council/Young Workers Centre have been particularly active, and a worker self-representative body 'Ride Share Drivers United' has also emerged). The debate in Australia has involved only minimal consideration, mainly by academics, of introducing an intermediate 'worker' category sitting between 'employee' (with full employment rights) and 'contractor' (independent businesses or 'self-employed' in the UK context). Rather, unions and regulatory bodies like the Fair Work Ombudsman have been concerned more with determining what employment rights (if any)

are applicable under Australian workplace, safety and taxation laws in the setting of gig economy engagement.

5. Australian-based subsidiaries or related entities of UK companies covered by the *Modern Slavery* Act 2015 will have been involved in responding to information requests from their UK parents in relation to supply chain activity and compliance. Recent Australian experience has seen a major focus on the level of labour standards compliance in domestic supply chains, following revelations of systemic workplace law breaches (mainly underpayments) within the business structures of several leading brands (e.g. 7-Eleven, Caltex, Domino's Pizza). Some practices associated with modern slavery have also been identified in the operations of labour contractors in the horticulture and meat processing industries, including withholding of overseas workers' passports and the use of bonds and tied accommodation arrangements. At a broader level, an Australian Parliamentary Committee is conducting an inquiry into the adoption of a Modern Slavery Act in this jurisdiction, which has received widespread support among the business community, unions and NGOs. The Federal Government recently committed to introducing this legislation following a stakeholder consultation process.

BANGLADESH



- 1. In Bangladesh, the manufacturing sector/industry (particularly readymade garments, the auto industry and agriculture), transportation and the telecom sectors are in most threat of automation. Overall, by 2020, it is estimated that 5 million jobs would be lost due to technological advances such as automation. The garments industry looks set to be revolutionised. which would bring with it great changes and would greatly impact other sectors as a result. At the grassroots level, at least 4.4 million workers currently employed in the industry would risk losing their jobs. At the national level, rising automation means that foreign buyers would not be able to take advantage of cheap labour costs in places like Bangladesh and China. As a result, countries like Bangladesh would lose a great source of its exports earnings. This would in turn have a great impact on other sectors, because it would then oblige Bangladesh to change from positioning itself as a premier source of cheap human labour.³¹
- 2. A sector where automation has already had an impact would be the telecom sector particularly in relation to call centres, where due to automatic phone systems, fewer workers are actually needed. Through manually typing numbers on their mobile devices, users may have their most common enquiries answered by pre-recorded audio clips, and only if they require additional help would they need to contact the human customer

service managers. Leading telecommunication firms such as Grameenphone are utilising these techniques to minimise their costs already. The most impacted sector would be the garments industry for Bangladesh. As garments exports account for 80% of Bangladesh's total export earnings (amounting to \$19 billion annually), rising automation would hit the nation's foreign exchange earnings. This, in turn, will affect job opportunities for an approximate 4.4 million workers, many of whom are young uneducated women. The technologies being deployed to fuel the automation revolution of the garments industry include automatic sewing machines, such as that of the Atlanta-based SoftWear Automation Inc and technologies such as LOWRY, which is a lightweight robot which can handle fabric, pick and place them, as well as directly sew on them.³²

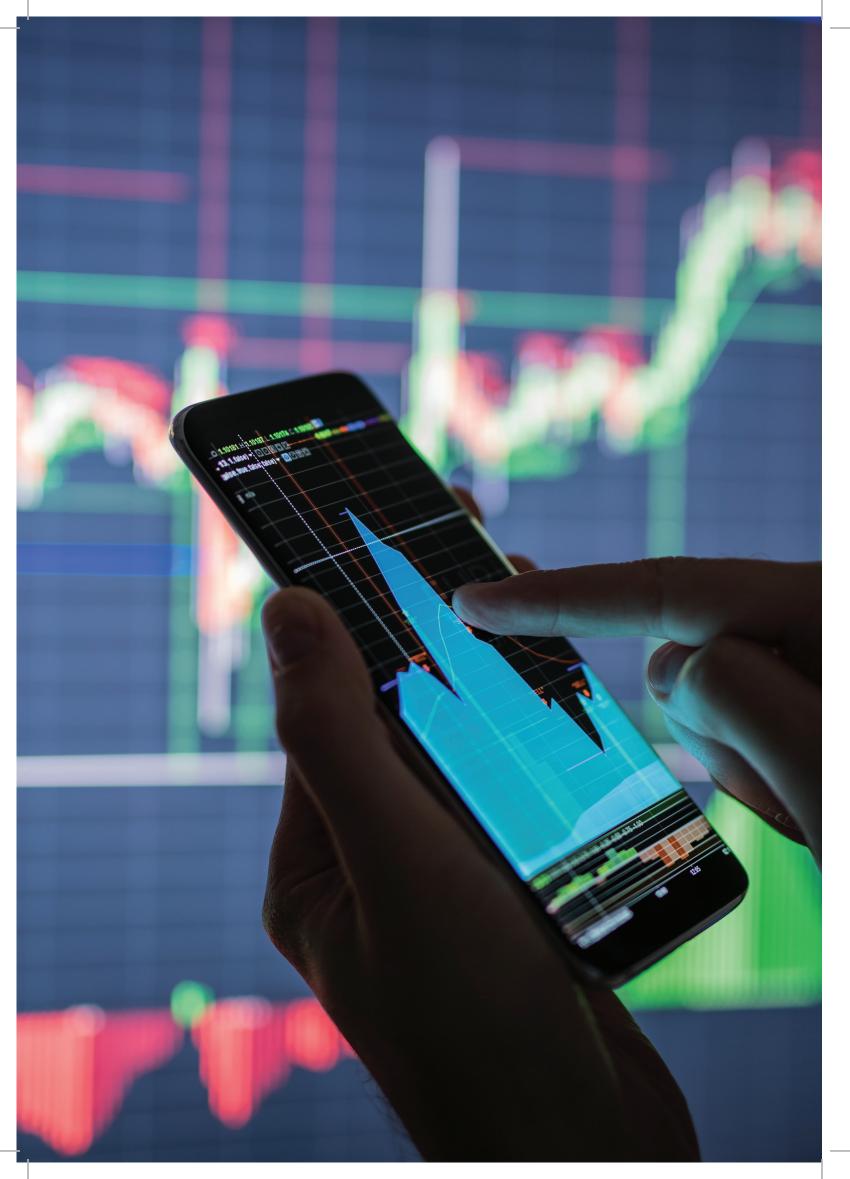
3. At this point, we are not aware of any scaling back or relocation of overseas manufacturing or other investment from Bangladesh. On the contrary, there is a trend of relocation of manufacturing away from locations like China to other Asian countries such as Vietnam/ Bangladesh due to increasing labour costs in China. Due to increase in Chinese labour costs, Bangladesh is even more competitive now in attracting foreign orders/investment from developed countries. However, soon enough, as the protectionist approach tends to grow, the direct impacts will naturally be felt in

Bangladesh. For example, SoftWear CEO KP Reddy stated that if the garments production process is automated, then this can be located close to their ultimate customers in developed countries. This brings benefits such as lowered costs in an obtuse supply chain, being able to win more business, and faster adaptation to changing consumer needs.

4. Although at a nascent stage, gig companies are gaining momentum in Bangladesh. For example, several international players have entered Bangladesh, such as Uber, Food Panda etc. For example, Uber's success has encouraged local firms to also set up such similar enterprises to combat the unique problems that people in Dhaka face, namely traffic congestion. An example of a local firm such as this would be Pathao, a company that is similar to Uber but with the vehicle being a motorcycle. Apart from the transportation industry, skilled professionals are increasingly starting to work from home and freelancing online on online platforms where they receive work on a project-based basis. Websites such as UpWork are very popular amongst such freelancers, and indeed this class of freelancers is increasing due to the attractiveness of such a career: payment from US/European clients with higher paying ability, secured payments from the websiteplatform holding the payment on escrow, wide range of work, as well as the safety of working from

home being an important factor for women. UpWork alone has more than 650,000 Bangladeshi freelancers, a number which looks to grow. Freelancers are generally treated as independent contractors as opposed to employees of the particular company like Pathao, UpWork. Several factors point to the conclusion that such freelancers are independent contractors, for example there being no insurance provided for Pathao's drivers, the workers having to use their own vehicles/computers etc. As a result, the Bangladeshi labour laws will not be strictly applicable for the freelancers. It is now for the legislature to consider whether, in light of the rise in gig companies, they should consider passing new laws or amending the existing labour laws to address this category of workers.³³

5. In Bangladesh, modern slavery was always a problem. The UK *Modern* Slavery Act 2015 will certainly have a positive impact on this situation. This is because the said Act will lead to (and has!) greater cooperation between the manufactures and the retailers since Bangladeshi firms are frequently responding to information requests from their UKbased parent companies. However, even prior to the UK Modern Slavery Act of 2015, UK-based retailers had been wary of their supply chains operating in Bangladesh. This is mainly because of the Rana Plaza disaster in 2013, which killed over 1,100 workers.³⁴



HONG KONG



1. The economy of Hong Kong has been dominated by the service industry. The contribution of the service industry to the local GDP at basic prices has risen even higher from 91.8 percent in 2006 to 93.1 percent in 2015.³⁵ Amongst the several service sectors, automation has had the greatest impact on the banking and financial service sectors in Hong Kong, With regard to the banking sector, the number of establishments in Hong Kong has declined for 4 consecutive years from 2012 to 2016 by 5.23 percent,³⁶ and the number of persons engaged in the sector has also fallen by 0.6 percent from 2015 to 2016.³⁷ This is to be contrasted with the drastic increase of gross output of the banking services by 29 percent from 2012 to 2015.38 This exhibits a negative correlation between business performance of banking services and the number of persons engaged in this sector. For instance, the Bank of East Asia laid off 180 employees in Hong Kong last year which attributed partly to the growing reliance on technology³⁹ whereas East Asia Securities Company Limited closed all of its 22 retail outlets in Hong Kong in July last year and instead only provides trading services via telephone and electronic channels such as automated phone service.⁴⁰ A major thrust behind automation of the banking and financial service sectors is financial technology (known as Fintech). Fintech offers various services, such as tech-enabled payments, currency exchange, online lending and wealth management services, through harnessing internet, mobile technologies and big data. People in Hong Kong can now trade stocks, conduct funds transfer, bank transfer, foreign exchange and global bill payment

with mobile applications.⁴¹ In view of this trend, banks and financial institutions in Hong Kong have made enormous efforts in digitalizing customer-facing functions: the Bank of East Asia has been overseeing a project to digitalize its branch model, and introducing a mobile banking platform which incorporates stock trading, creditcard and personal loan services:42 the Standard Chartered Bank has put in place an online application system for credit cards and is exploring digitalization of the mortgage application process;43 Credit Suisse has introduced a digital private banking service via a mobile application;⁴⁴ and Wing Lung Bank has automated many routine functions such as cheque processing through an integrated retail banking system,⁴⁵ etc. The local Government has also recently advocated for the development of Fintech in the banking sector by launching the "Fintech Supervisory Sandbox" to facilitate pilot trials of Fintech and technology initiatives of the sector.⁴⁶ All in all, the expansion of digital ecosystem and platforms has reduced the demand for the lower-skilled labour as back-office procedures in banking and trading operations have increasingly been automated by digital solutions. On the other hand, automation is not only about threats and disruption, but it is also about opportunities and evolution. Automation has assisted banking and financial professionals in offering tailor-made financial management solutions to clients and enhancing customers' experience. For instance, banking and financial specialists may now take advantage of accurate predictive analysis and automated asset allocation supported by cloud computing, big data and advanced analytics.

HONG KONG CONTINUED

2. In addition to the banking and financial service sectors, automation is likely to reduce the need of unskilled and low-skilled jobs in the manufacturing sector, logistics networks and warehouse operation through an increasing use of autonomous vehicles and adoption of 3D printing. As an illustration, the Hong Kong-based TAL Group, a major apparel manufacturer with factories established throughout Asia including Hong Kong, has implemented a vendor-managed inventory system for maintaining inventory, generating purchase orders and delivery supported by web-based technology and computer platforms.⁴⁷ As a result traditional administrative functions such as the handling of Electronic Data Interchange documents and synchronization of supply and demand activities have now been automated. Automation occurring in the vicinity of Hong Kong has also affected the traditional local jobs. For instance, automation and digitalization of industries in China has a knock-on impact on the local jobs in the transport, logistics, retail and business services sectors.48 Further, the increasing automation and internationalization of the infrastructure in China, such as ports and airports, has reduced

labour demand for re-export and cross-border logistics services in Hong Kong.⁴⁹ Given that the dominant revenue source of media is advertisements, automation has threatened traditional forms of media such as newspapers, magazines and radio as audience increasingly switches to online platforms and digital media which are capable of tailoring personalized contents suggestion and advertisements based on online tracking technologies. Digital Broadcasting Corporation Hong Kong Limited applied for the surrender of its digital audio broadcasting license,⁵⁰ and the Sun Daily, a Chinese-language newspaper, ceased publishing in 2016. Automation renders meter reading personnel obsolete with the adoption of automated meter reading technology. Besides, in the tourism services sector, various websites such as Expedia, booking.com and KAYAK have allowed customers to book hotel accommodation and air tickets by themselves with some providing price comparison services. Accordingly, this reduces information asymmetry, provides convenient access of the services of vendors to the end users, and in turn eliminates the need to engage travel agencies in making bookings for individual visitors.

3. The manufacturing industry has declined in Hong Kong a long time ago as the tertiary industry has taken over the Hong Kong economy. Recently, the relative importance of the manufacturing sector has declined even further, as substantiated by the decline of its contribution to the GDP at basic prices from 2.7 percent in 2006 to 1.1 percent in 2015.⁵¹ In the past decade, a vast number of Hong Kong enterprises have set up factories or established businesses in China. While in recent years, China saw an increase in wages and proemployee labour regulations, yet provided its geographical vicinity, lower rental expenses and costs of living as compared to Hong Kong, there is not massive relocation or scaling back of the manufacturing operations - in 2015 there had still been 32,000 Hong Kong companies which established factories in the Pearl River Delta region of China.52 Having said that, there may be a few relocation of factories from China to other low-wage Southeast Asian countries such as Myanmar as the yuan appreciates. Smallscale manufacturing operations of businesses which engage in high value-added and innovative manufacturing instead of labourintensive operations have moved back to Hong Kong.⁵³ Conclusively, the scaling back or relocation of manufacturing operations could be attributable to the increased labour costs of China, however as explained China is still a key host for factories owned by Hong Kong enterprises. On the other hand, Hong Kong has yet to see significant impact of protectionist and anti-globalisation sentiments on its manufacturing sector thus far.

4. Hong Kong has seen the proliferation of gig economy companies - the best known ones include Deliveroo, Airbnb and Uber. The other example in Hong Kong - GoGet, which provides errands-running and delivery services, ceased operations in Hong Kong recently. In fact, not all such new businesses have been welcomed by the Government, with the legality of some even being challenged in court. Five Uber drivers have been convicted of driving without a permit and thirdparty insurance in the landmark court ruling in March this year. The local Government has been protective of the 18,000 licensed taxi drivers and the police have recently arrested 22 Uber drivers.⁵⁴ These undoubtedly have deterred ridesharing operations. As to official statistics, there have not been meaningful records on the number of Hong Kong workers that engage in the gig economy as the concept is still relatively new and emerging. According to the 2016 Hays Asia Salary Guide which surveyed over 3,000 employers across Asia,

54 percent of employers in Hong Kong said they have hired contingent staff in the past year.⁵⁵ Uber has reportedly served one million riders in the city by 30,000 drivers with 80 percent of them working part-time from mid-2014 to 2017.56 Under the current employment law in Hong Kong, statutory employment benefits entitlement hinges heavily on the dichotomous classification of independent contractors and employees. The present position of the Courts in Hong Kong is that they would apply a factual assessment of the parties' relationship on a caseby-case basis in determining such issue. There however have not been formal discussions over adaptation of existing employment regulation in response to this trend of gig economy. While emergence of gig economy would potentially transform the workforce model, it is debatable whether there should be clearer regulatory guidelines or the laws of Hong Kong should retain some flexibility for the benefit of workers and companies.

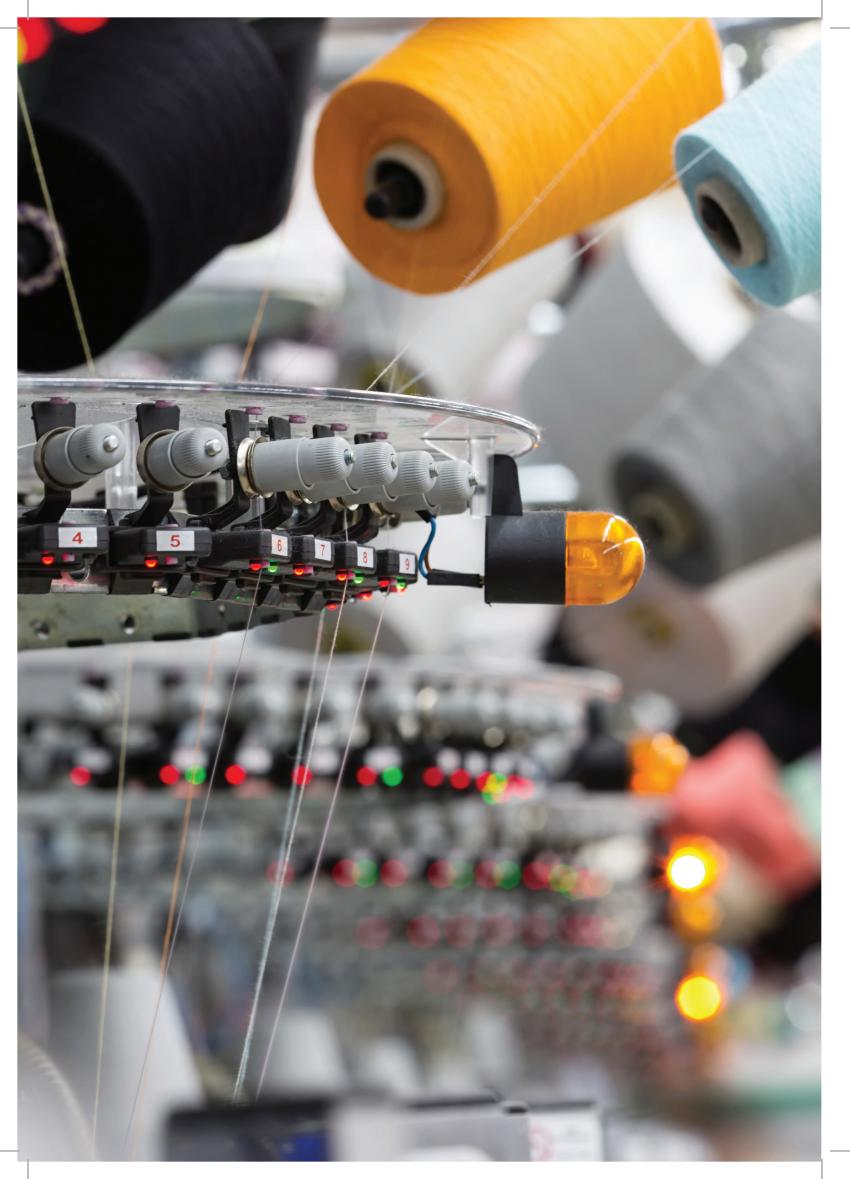
5. Hong Kong subsidiaries or related entities of UK companies are likely to have to comply with the UK *Modern* Slavery Act 2015. Further, there are a number of local laws in place which may apply to mitigate the risk of slavery and human trafficking. First, human trafficking is narrowly defined in the law to cover the trafficking of persons to or from Hona Kona for prostitution purposes. Second, the general criminal law together with employment and immigration regulations could also be used to prosecute persons who engage in slavery and human trafficking. Third, by criminalizing the dealing in or failing to report the proceeds of indictable offences, which could include human trafficking and migrant smuggling, the Hong Kong laws have made trafficking-related predicate offences to anti-money laundering legislation.57

INDIA



- 1. The penetration of advanced technologies is not as high in India as in other western nations given the cheap labour costs in India and the high costs of initial automation/ Al.⁵⁸ Despite this, India is witnessing a considerable impact of increased usage of digitization, automation and Al in the recent years with several jobs becoming obsolete⁵⁹ and a slowdown in hiring.⁶⁰ Introduction of automation has intensified output levels, and led to greater cost efficiencies. The sectors that have predominantly deployed such advanced technologies include manufacturing industries,⁶¹ automobile industries⁶² and lowskilled jobs in the banking sector, Information Technology (IT) and IT-enabled services⁶³ such as data entry, manual software testing, call centres.⁶⁴ Software companies like Wipro, Infosys and TCS have employed AI platforms such as Holmes, Mano and Ignio respectively to increase revenues.⁶⁵ There have also been a few instances of experimentation of AI for performing manual functions in the legal sector⁶⁶ for understanding contracts/legal documents, understanding compliance and fraud,⁶⁷ telecom, medical processes,⁶⁸ pharmaceuticals, e-commerce services,⁶⁹ food and beverages, logistics, and security services;⁷⁰ however, this minimal involvement of automation/AI has not adversely impacted jobs in these sectors yet.
- 2. The World Bank has estimated that automation may threaten 69% of the jobs in India.⁷¹ Several low-skilled and entry level job profiles in BPOs, IT industry and banking sector are being displaced by deployment of robotics or automated devices. Recruitment in the IT industry in the financial year 2016 has been low relative to the figures in 2015.72 A leading IT firm. Infosys, has recently reported elimination/release of approximately 11,000 full-time employees (FTE) worth of effort and an increase of 1.2% revenue per FTE due to automation.⁷³ Likewise, digitalization of salary credits, underwriting loans, use of cash deposit and passbook updating machines have made several banking employees redundant⁷⁴ with Axis Bank, ICICI Bank and HDFC Bank aiming to consolidate their operations.⁷⁵ Contract labourers and trainees stand threatened in automobile companies such as Volkswagen, Hyundai India and Tata Motors which are now increasingly automating and employing robotics in their body assembly and painting plants.⁷⁶ Exaggerated effects are likely to become more prominent in India by 2021 with a share of 23% in global redundancies and a loss of up to 10 million jobs due to automation/ AI, according to PeopleStrong⁷⁷ and ASSOCHAM.⁷⁸ Even a renowned textiles company, Raymond, has announced replacement of about 10,000 employees in the coming three years. Some companies such as Infosys and Hyundai India, despite the release of employees, are working towards relocation or reskilling such employees to acquire new skill-sets to interoperate with the new technologies.79

- 3. India has been a popular offshoring destination for most advanced economies for factors such as low cost employees. However, in the recent times, the IT industry and software services in India, which occupy a large portion/ share in Indian outsourcing, have been targets of the effective implementation of protectionist measures, such as, suspension of premium visas in western countries like U.S.A.⁸⁰ Although there has been some impact on the export of IT services or immigration from India into U.S.A., the impact has not significantly affected outsourcing, and India still continues to be one amongst the popular markets for outsourcing IT workforce. The manufacturing industry does not seem affected by the western protectionist regimes. This is evidenced by Apple's and Boeing's announcement of establishing manufacturing facilities in India.⁸¹ With the Government of India floating business friendly and promotion policies such as 'Make in India' to encourage global businesses to invest in India. the country still seems to be a lucrative destination for manufacturing. A few concerns have arisen over business relations with Indian services post-Brexit given that many EU-headquarters of Indian IT firms are based in UK.82 However, IT trade association NASSCOM has predicted that although contracts may be impacted in the short-term, India may benefit from Brexit in the longer run, suspecting that UK may become less dependent on intra-EU immigration and more receptive to non-EU highly skilled immigrants.83
- 4. India is witnessing a boom in gig economies with inflow of foreign direct investment from western companies (such as Uber and Amazon) and domestic companies (such as Wipro, Infosys, Ola and Flipkart) hiring gig workers on a project-to-project basis.84 Gig workers have been popular particularly in urban areas, with start-ups and in industries such as cab services, pharmaceuticals, food delivery, e-commerce, marketing and finance.⁸⁵ It is roughly estimated that India houses around 15 million freelancers and contributes to about 40% of the global freelancing business.⁸⁶ Gradually, companies are embracing the trend of gig economy given the flexibility of legal compliances of providing, inter alia, social security benefits.⁸⁷ With such a trend gaining momentum, there have been rising concerns over the applicability of social welfare labour legislations to gig workers. A Writ Petition. recently filed by a drivers' union, is being heard by the Delhi High Court to assess whether Uber and Ola drivers can be the considered as employees of these companies so as to extend benefits to them under various employment laws in India.⁸⁸ In a similar stride, delivery persons of Indian e-commerce ventures such as Flipkart and Myntra have gone on strikes seeking better working amenities on par with their white collar counterparts.⁸⁹ Although claims and petitions have been made to the Government and before courts by gig workers or their unions seeking extension of prevalent labour laws to them, the Government has not yet undertaken any legal measures to provide them relief.
- 5. It is quite likely that Indian subsidiaries of United Kingdom (UK) companies covered under the UK Modern Slavery Act, 2015 would be engaged in supplying the requisite information to their parent companies, in relation to the prevalent employment practises in their supply chains. We have seen that some of the Indian companies⁹⁰ having branch offices/subsidiaries in the UK have published their annual statements as required by Section 54 of the UK Modern Slavery Act, 2015 (MSA). In these statements. the companies have published their guidance manuals and have disclosed the due diligence steps/ policies, corporate governance frameworks and training programs they have undertaken (or those that are intended to be undertaken) to identify, tackle and mitigate slavery and human trafficking in their supply chains. Further, India also houses two primary legislations - the Bonded Labour System (Abolition) Act, 1976 and the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979 - that share similar objectives as the MSA. These statutes aim to prevent oppression in employment by prohibiting economic and physical exploitation of bonded labourers, and preventing malpractices in engaging migrant workmen in harsh working conditions without providing them with statutory labour entitlements. Further, the Indian Penal Code, 1860 criminalizes the acts of kidnapping/ abducting done with the intent of subjecting the victims to slavery. Given the high instances of sex slavery and human trafficking in India,⁹¹ in 2016, the Government of India amended the Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) 1989 to punish any form of forced/bonded labour against persons belonging to the Scheduled Castes/Tribes with imprisonment.



INDONESIA



1. Considering the sheer amount of factories built in Indonesia, automation will have the greatest impact in manufacturing industries, such as the manufacturing of garment and consumable goods, as well as shop salespersons, gardeners, and tailors. Due to the constant demand of increase of minimum wage, among a multitude of other factors such as human errors and the vaguely distant yet not-so-far-fetched possibility of workers strike and rebellion, employers are considering the use of technology more and more in recent years. As many of the works done by factory labourers are monotone in nature and requires little to no decision making, the option of replacing the labourers with costefficient robots become a temptation that cannot go by unnoticed. One of

the most telling example is in the decision of PT Santos Jaya Abadi, the producer of Kapal Api, one of Indonesia's biggest coffee company, which has elected to periodically replace approximately 60% of its labourers for robots in favour of an increase of production and efficiency.⁹²

2. As shortly elaborated above, the work that is put most at risk by automation is the laborious, monotonous work which does not require a specific skillset but instead demands long work hours, as well as shop salespersons, gardeners, and tailors. While the risk of automation is unarguably real in the next decades or so, this threat has yet to pose a big issue in Indonesia as of current.⁹³

- As one of the popular choices for manufacturing, relocation does not seem to be a popular case in Indonesia due to many local producer preferring to have their products manufactured domestically.
- 4. Gig economy is one of the newly emerged, fastest growing business in Indonesia, most commonly those providing delivery and transportation services (e.g., Gojek, Grab, Uber). These companies do not engage the workers or drivers in an employment relationship, but rather in a partnership arrangement. In the past couple of years, there have been strikes conducted by the workers who demanded they be engaged as employees by the companies and subsequently be entitled to the rights given to employees. This is particularly the case for Gojek drivers.⁹⁴ On a different note, as opposed to demanding amendment to existing employment regulation to suit these partnership arrangements, most of the workers demand adjustments and flexibility of transportation regulations. In their view, the regulations currently in place has yet to facilitate the existence and the growth of onlinebased transportation.95
- 5. Subsidiaries of UK companies and other parties subject to the UK Modern Slavery Act in Indonesia would have to coordinate with their parent companies in relation to compliance and other reporting requirements of the UK Modern *Slavery Act.* While there has been an estimate of 736,100 people living in modern slavery in Indonesia,⁹⁶ particularly in the palm oil industry, agriculture industry, domestic work, and fishing industry where young workers are deceived to become crews of foreign, reflagged vessels with little to no chance of escape once on board,⁹⁷ there does not seem to have been major changes in the supply chain. Attempts to stop such modern day slavery has been commenced, but they are often poorly implemented or hampered by corruption.98

JAPAN



- 1. Industries on which automation is having the greatest impact include: AI, automotive (driverless cars) and robotics. Sectors and applications effected include marketing, information services and security, e.g., via data analysis, automated marketing and image recognition. Small and mid-sized companies have established AI research labs in recent years, such as Recruit Holdings (2015) and Dwango (2014). Also, Honda announced in June 2016 that it would establish an R&D base in Tokyo with specialization in Al. According to Nomura Research Institute, about half of Japan's labour force may be replaced with robots or Al in the next 10 – 20 years. It will be necessary to consider privacy, security, regulations and law when integrating AI technology into private sector activities and to develop new business models to cope with emerging AI technologies. The current regulatory framework not designed with AI in mind is likely insufficient. AI affects and will affect more in the next decade and beyond the following sectors: agriculture, forestry & fishery; manufacturing; construction; information services; wholesale & retail; financial & insurance; real estate; transport; distribution; technical services; advertising; entertainment; education; medical care and welfare; and living related services.99
- 2. The industries and sectors that will likely be hit the hardest in terms of traditional jobs and technologies are the service sector, transport, wholesale and retail and manufacturing, as well as all the jobs affected by machine learning. Much of marketing can be done via automation. Manufacturing is being doubly hit by automation

and robotisation. For example, Fujitsu Peripherals Limited, which is a manufacturer working on automation and robotisation with its technologies in the mechanics, electronics and software has doubled productivity in an entire production line and improved the ROI by establishing an automated production line with Virtual Product/ Factory using 3D CAD before prototyping. Also, in addition to the industries and sectors affected by automation and Al indicated in the answer to question 1, it should be noted that in banking, speech recognition technology is used for automated customer service telephone interactions and has largely replaced customer service operators for most functions. In media & advertising, some companies are using data analytics technology to automatically draft articles such as corporate earnings summaries. AI solutions are also particularly being used in the automobile industry, retail, healthcare and manufacturing. Other applications are business decision making, business process improvement, predictive analysis and forecast affecting 30 percent of industries (including stock trading, fraud detection, transport, medicine, control systems and advertising).¹⁰⁰

 Japan is not an offshore labour supply for foreign companies, since the remuneration level in Japan compared to other countries in Asia is not low. It cannot be said that there is scaling back or relocation of overseas manufacturing or other investment from Japan due to increase in labour cost or anything else. Real estate investment has been increasing these days due to monetary easing and the weaker yen and declining commercial real estate and employee housing costs in Japan's urban centres relative to Hong Kong, Singapore and other major Asian cities. Other investment is attracted by, inter alia, Japan's outstanding technologies and knowhow with an eye to the booming Asian market and increasing tourism. In fact, it was reported in 2016 that eight out of 10 foreign affiliated companies in Japan intend to step up investment in the next five years. Nearly all of the remainder said that they intended to maintain the status quo. Around 62% of foreign companies said that while the business environment has not changed much, around 31% of them said that improvements have been made in regulatory reform and simplifying of administrative procedures.¹⁰¹

4. Gig economy companies have been active in Japan for a number of years now. Lancers, Inc. and CrowdWorks Inc. are giant crowd sourcing companies. Besides them, there are also many companies which have expertise in the specific field such as AnyTimes Inc. (everyday work), Gengo, Inc. and anydooR, Inc. (translation), and visasQ inc. (consulting). Because of the relatively short history in Japan (Lancers, the first crowd sourcing company, was established in 2008.), employment regulation for gig economy companies has not matured yet, but a key point is whether workers are independent contractors or employees covered by employment regulation. If a worker is found to be an "independent contractor" from, among other things, the relationship with a person making an order, he/she will not be able to receive generous protection under the labour law in Japan in various

aspects such as wages, working hours, dismissal and obligation for safety. In addition, such worker does not receive company benefit or social insurance in many cases.¹⁰²

5. Japanese companies covered under the UK Modern Slavery Act 2015, release statements in which they state their policies, practices and activities thereunder, management thereof and employee training with respect thereto, e.g., to ensure that no slavery or trafficking occurs in any of their supply chains or part of their business. Modern slavery is also problem in Japan. It has been estimated that 290,000 people are under such condition in Japan. In addition, the "Trafficking in Persons Report, June 2017," of the U.S. Department of State says that Japan is a destination, source, and transit country for men and women subjected to forced labour and sex trafficking, and for children subjected to sex trafficking. The Technical Intern Training program (TITP), through which Japanese industry accepts workers from other countries for a certain period for professional and skill training, has had instances of forced labour. Japan passed legislation to enhance oversight of the program, but has not identified trafficking victims or prosecuted labour traffickers notwithstanding reports and allegations by NGOs. Under these circumstances, the UK Modern Slavery Act plays an important role as the global standard to be followed by Japanese companies. In fact, many Japanese companies to which this Act is applicable disclose their Slavery and Human Trafficking Statements based on the UK Modern Slavery Act on their webpages.¹⁰³

KOREA



- Applying Frey & Osborne's¹⁰⁴ research to the Korean labour market, we find that the share of jobs under high risk of automation (probability of computerization higher than 0.7) is about 55~57%. This number is higher than the US labour market's 47%. Occupations under high risk of automation are: Textile & garment, Business & sales, security & cleaningrelated services, Food processing, Machinery, Food service, Financial & insurance services, Chemical, Material, Agriculture and Fishing.
- 2. Why are Korean jobs under a higher risk of automation than those in the US?
- Higher employment share of occupations with a higher risk: such as business & sales
- Lower employment share of occupations with a lower risk: such as educational services, legal & public services, medical services, etc.

- Industries such as agriculture, forestry & hunting, real estate, mining, electricity, gas, steam & water supply, financial institutions & insurance, transportation are under higher risks of automation/ computerization.
- 46.2% of total employment belongs to high risk industries (w/ probability > 0.7).
- Employment of some high risk industries such as Mining and Financial institutions & insurance has shrunk between 2002~2014.
- High risk industries such as Agriculture, forestry & hunting, Electricity, gas, steam & water supply, Transportation and Accommodation and food service activities have shown lower employment growth rates compared to other industries.

Estimated probability of computerization: by occupation

Occupational area	Probability
Textile & garment	0.854
Business & sales	0.847
Security & cleaning	0.778
Food processing	0.762
Machinery	0.753
Food service	0.740
Financial & insurance	0.723
Chemical	0.720
Material	0.715
Agriculture & fishing	0.715
Environmental	0.691
Electrical & electronic	0.690

Occupational area	Probability
Construction	0.689
Travel & transportation	0.666
Accounting & business support	0.651
Personal care	0.540
Management	0.424
Legal & public service	0.400
Arts, culture, design & broadcasting	0.325
ICT	0.302
Community & social service	0.277
Education & research	0.254
Healthcare	0.238

Sources: Occupational Employment Statistics (KEIS), Frey & Osborne (2013), and author's calculation

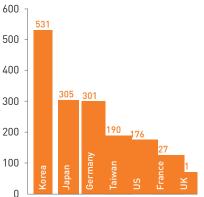
Estimated probability of computerization: by industry

Industry	Employment (thousands)	Employment share (%)	Probability
Agriculture, forestry & hunting	1,286	4.9	0.980
Real estate activities, and renting and leasing	570	2.2	0.975
Mining	19	0.1	0.968
Activities of extraterritorial organizations and bodies	16	0.1	0.960
Electricity, gas, steam & water supply	89	0.3	0.955
Financial institutions & insurance	797	3.0	0.878
Activities of households as employers	69	0.3	0.867
Transportation	1,412	5.4	0.837
Accommodation and food service activities	2,277	8.7	0.806
Wholesale and retail trade	3,729	14.2	0.794
Construction	1,845	7.0	0.772
Manufacturing	4,481	17.1	0.561
Business facilities management and business support services	1,293	4.9	0.547
Membership organizations, repair and other personal services	1,272	4.8	0.515
Publishing, visual entertainment, information and communications	786	3.0	0.444
Arts, sports and recreation related services	406	1.5	0.379
Professional, scientific and technical activities	1,102	4.2	0.311
Sewage, waste management, materials recovery and remediation activities	96	0.4	0.276
Public administration and defense ; compulsory social security	993	3.8	0.191
Human health and social work activities	1,851	7.1	0.134
Education service	1,846	7.0	0.012
Total	26,235		

Sources: Occupational Employment Statistics (KEIS), Frey & Osborne (2013), and author's calculations

3. Robots in traditional manufacturing sectors are replacing human workers. Of more than 229,000 industrial robots sold in 2014, 24,700 were sold to Korean companies. Korea has 531 industrial robots per 10,000 workers, which is the highest in the world. The fast pace of automation is due to increased labour costs and an aging workforce.

Number of robots per 10,000 workers, 2016



Source: International Federation of Robotics

According to Hyundai Motors, nearly half of its passenger car production process (such as press, frame, and painting) is almost fully automated.

Some jobs, such as cashiers in the retail trade sector, and bank tellers in the banking sector, are already affected by automation. Machines (ordering kiosks) are increasingly taking orders at local fast food restaurants such as LOTTERIA, Burger King, and McDonalds.

Check-out machines are replacing human checkers at domestic convenience stores and grocery stores, such as e-Mart and LotteMart.

Citibank will close 90 out of 126 of its branches in Korea due to automation and as customers increasingly use online and personal device-based banking services. Jobs, such as



KOREA CONTINUED

security guards, in the business support industry have been affected by automation. Seoul National University has adopted automated security systems in some buildings, and has assigned 20 workers to new positions. Many apartment complexes equipped with automated security systems hire fewer security guards than they used to.

So far, the reshoring tendency has been limited in Korea because of domestic wage hikes. For example, the government recently set the minimum wage for 2018 at ₩7,530 (representing a 16.4% increase from 2017), and this will put significant high upward pressure on wages. The government's stated goal is to increase the minimum wage to ₩10,000 by 2020. Additionally, issues such as litigation concerning the wage items that should be included in "ordinary wage" (an average hourly wage calculation that is used to calculate various payments to employees, such as overtime allowances and unused vacation time) will result in labour cost hikes. Typical plaintiff's claim: The ordinary wage of employees must be re-computed by the employer so as to include regular bonuses as a wage item, and the re-computed ordinary wage must be used to calculate overtime, night-time, and holiday allowances, etc., paid to the employees. Some domestic manufacturing firms (especially firms in labour-intensive industries such as textiles) decided to relocate their production facilities to Southeast Asian countries such as Vietnam. Kyung Bang, a large textile firm, will relocate some of its cotton yarn facilities to Vietnam, and Chun Bang, another big textile firm, will close three out of six of its domestic production facilities in the coming years. According to the Ministry of Trade, Industry and Energy, 17,103 firms have relocated all or part of their production facilities to foreign countries since 2012, but only 41 firms have returned. A survey by KOTRA (the

Korea Trade Investment Promotion Agency) shows that 498 SMEs out of 1,015 (49.1%) have considered relocating their production facilities to foreign countries.

5. Gig economy companies are quite active in the transportation and delivery service industries in Korea. Transportation: Kakao Taxi (taxi hailing app), Kakao Driver (a chauffeur/driver rental service called daeri-unjeon: passengers post their point of origin and destination and request a driver to drive their cars for them) Delivery services: Quick (delivery) services, and food pick-up and delivery services, are quite common and the service providers are often seen zipping around on their scooters, monitoring multiple mobile devices for delivery gigs. Cleaning services: car wash and laundry pick-up services are quite common. Uber faced significant push-back from both governmental authorities and the taxi driver's labour union when it entered the Korean market. In late 2014, following its official launch of UberX, the Company and its then-CEO faced indictments for allegedly violating a law that required that only licensed entities could provide transportation services. Uber subsequently shut down its UberX operations, currently operates its Uber Black, Uber Trip, and Uber Assist services in Seoul. Gig economy employment has also expanded to professional services, such as computer programming, legal services, and financial consultation services. There is great deal of debate over the effects of the Fourth Industrial Revolution on employment: The Gig economy is based on hyper-connectivity and hyper-intelligence, which are the key features of the Fourth Industrial Revolution. These key features will eventually change the basic attributes of workplaces and the employer-employee relationship. The current debate is mainly focused on the effects of the Fourth Industrial Revolution on job creation, job destruction, and security of employment. In 2004, more than 37.0 percent of all workers were temporarily employed. In 2017, the figure has subsided to 32.8 percent, although the percentage of temporary workers is still much higher than the OECD average. The Moon administration (the new government elected in May 2017) believes that low-paving. unstable, irregular jobs have left households with little money to spend, thereby leaving the economy with insufficient domestic demand and suffering from low growth. Therefore, reducing the number of irregular workers (or temporary contractors) is one of the key goals of President Moon Jae-in's jobs policy. The expansion of the gig economy, however, will pose a particular challenge to President Moon's jobs policy because businesses will avoid hiring regular, full-time workers. However, there is also some debate about the relevance of traditional employment regulations, as well as newly-arising problems inherent in the era of the gig economy. These include:

- High frequency of work during break time (in this hyper-connected era, everyone is always connected);
- Increase in the number of on-call contracts, and the attendant issues of protecting those workers;
- New difficulties, such as measuring working hours arising from the emergence of various types of work (telework, homeworking, multitasking, ubiquitous work, etc.); and
- Digital surveillance, and protecting workers' private and personal information.
- 6. We have not had any requests or inquiries from our clients in this regard, so we cannot comment on how this law may be affecting companies.

MALAYSIA



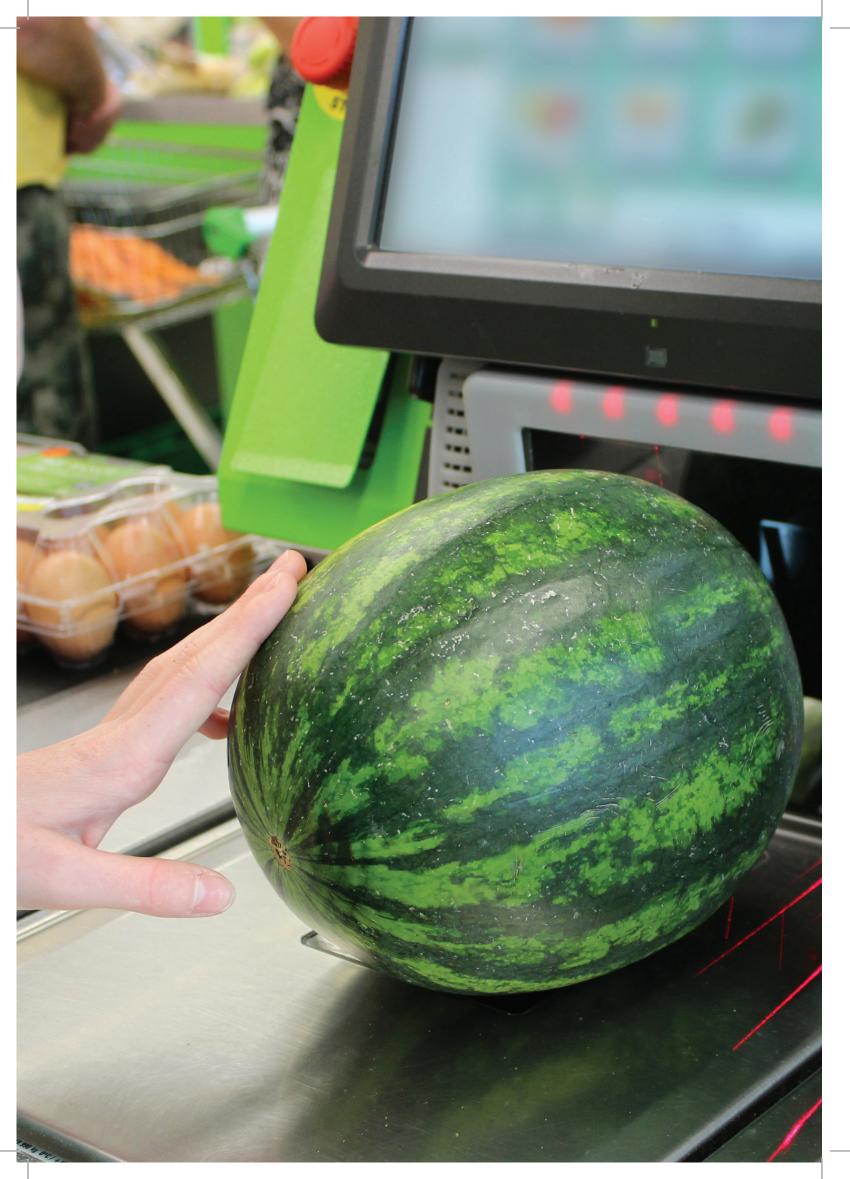
- In Malaysia, the impact of automation is most felt in the semiconductor industry and the banking sector. The News Straits Times reported on 15.7.2016 that American hard disk maker Seagate Technology Plc (which investment history in Malaysia was reported to date back to 1988), and American computer data storage firm Western Digital Corp were relocating the bulk of their operations from Malaysia to Thailand, with the former also putting up its land for sale.
- 2. In respect of the banking sector, both local and foreign banks – in acknowledging a changing business environment and evolving needs of their customers - have over the past decade, attempted to phase out the purely clerical staff and replace them with employees who perform higher-end and more diverse duties and greater responsibilities/levels of authority. This has in a large part been facilitated by a reduction in the requirement by customers for physical over-the-counter tellers and a corresponding increase in the demand for automated channels such as on-line internet banking and/or self-service kiosks.
- 3. Apart from the semiconductor industry, other sectors have also relocated to other countries where the labour cost is considerably cheaper. On 17.3.2016, the Star reported that British American Tobacco (M) Bhd, and its manufacturing unit, Tobacco Importers and Manufacturers Sdn Bhd, which makes tobacco-related products would be winding down its

factory operations in stages and due to be completed by the middle of this year.¹⁰⁵ The land where the facility is located was also being disposed of by way of a public tender exercise, and the equipment and machinery utilised in the facility was to be sold to related parties within the global BAT group.

4. A gig economy is an environment in which temporary positions are common and organizations contract with independent workers for shortterm engagements. On 27.7.2017, the Dewan Rakyat (lower house of Parliament) passed amendments to the Land Public Transport Act 2010 and the Commercial Vehicles Licensing Board Act 1987, which are scheduled to be gazetted by October 2017 for implementation nationwide, whereby the said amendments included the regulation of e-hailing services such as Uber and Grab. In a media statement dated 28.7.2017 issued by the Land Public Transport Commission, it was explained that the said amendments were to ensure that the e-hailing service operators and drivers adopt the highest levels of safety and service standards which included mandatory background checks. There has been a recent spate of incidents involving alleged assaults by Uber/Grab on passengers. One of the issues arising from the aforesaid development will be the question as to whether the drivers of Uber/Grab will be characterized as employees or independent contractors? In the event they are categorized under the former, they could potentially be

entitled to statutory contributions and benefits such as minimum wage and sick leave. Recent cases in the United Kingdom and in America indicate a trend to adopt the approach of deeming them employees. However, in Malaysia, as at to-date, there are no court cases exploring or determining this point; and the current position suggests the latter approach, in that the drivers on these e-hailing platforms are covered by the Self-Employment Social Security Act 2017 which applies to those carrying out selfemployment activity in the industry specified in the 1st Schedule. The 1st Schedule inter alia, provides that, "1(a) The service of carriage of passengers – (i) by means of public service vehicle or motor vehicle owned by a person, or managed, maintained or operated by a person, under any form of arrangement with the owner or lessor of the vehicle...".

5. As far as we are aware, there is no impact of UK Modern Slavery Act 2015 on subsidiary companies in Malaysia. On 1.7.2016, the News Straits Times reported that Malaysia had been upgraded by the US Department's State's Trafficking in Persons Report (TIP) to Tier 2. This was largely due to efforts by Malaysia in implementing laws creating a process for shelter residents to move freely and to work if they are cleared by medical, security, and mental health professionals and approved by the anti-trafficking council.



NEW ZEALAND



- 1. Automation continues to move further into industries in New Zealand. By way of example, most supermarkets and petrol stations now have self-service facilities and the Auckland Airport has three robots to help with cleaning. A study done by Chartered Accountants Australia and New Zealand (CAANZ) in October 2015 found that 46 percent of New Zealand's jobs risked automation in the next 20 years including approximately 12 percent of professional jobs. Driverless cars may also be on the horizon as New Zealand has been considered for a pilot project for an unnamed vehicle manufacturer. New Zealand's transport laws do not currently require a driver and so may present fewer hurdles than in other jurisdictions. This would likely impact taxi services and may also affect public transport, but details of when this may occur have not been made public yet.¹⁰⁶
- 2. The CAANZ study, conducted with help from the New Zealand Institute of Economic Research, predicted that occupations in transport, construction and manufacturing were at high risk of automation and in particular, labourers (making up approximately 143,000 jobs at the time of the survey) were the highest risk. Service jobs were less susceptible as social skills would be harder or take longer to automate (if automation occurs in those jobs at all). "Service" encompasses both jobs that predominantly use social skills as well as those that use a combination of social and technical skills. PwC have predicted that current tasks done by accountants (and by analogy, other professions that involve calculations and numerical analysis) will be made obsolete, but that strategic advice is still performed by humans and is valued by clients. PwC stated many accountancy tasks have already been automated.¹⁰⁷
- 3. As with Australia, the position in New Zealand may well be different to other Asia-Pacific countries. New Zealand typically has higher wage levels than many Asia-Pacific countries and minimum employment standards that make New Zealand less likely to be a place to which manufacturing is outsourced. Instead, many New Zealand manufacturers engage factories and workers overseas for production in a variety of different industries. New Zealand consumers prefer New Zealand made products in certain categories (particularly food and beverages) and not in others. This preference has also been illustrated by the recent "Consumers' Right to Know (Country of Origin of Food) Bill" introduced in New Zealand earlier this year that aims to make it compulsory to indicate the country of origin of single source foods. This may be indicative of a "reshoring" trend, but appears to be more because of supporting local businesses than because of the anti-globalisation

preferences that accompanied the US Election or Brexit's messaging.¹⁰⁸

- 4. There are gig economy companies that are active in New Zealand (such as Uber and AirBnB) and there are more shared workspaces being set up, which facilitate and promote gig economy workers. Many of these gig economy companies engage workers as contractors rather than employees (although in the shared workspaces, it is possible that some workers would be employees working remotely, for example). The nature of the working relationship (employee vs contractor) has not yet been challenged in gig economy companies in New Zealand and there are no particular changes in the regulatory sphere to encourage or limit workers in their relationship to gig economy companies (although sector specific changes may take place such as Uber lobbying to reduce requirements on drivers who take passengers). In New Zealand, contractors are not covered by minimum employment standards as employees, so there are fewer requirements for companies to meet if they engage workers as contractors rather than employees.¹⁰⁹
- 5. Subsidiaries of UK companies in New Zealand and New Zealand companies with a presence in the UK have had to renew their supply chains to ensure compliance with the UK Modern Slavery Act. This includes looking into conditions of overseas manufacturing, but also looking at companies' own practices in New Zealand. New Zealand may consider developing its own Modern Slavery Act, a change encouraged by the Human Trafficking Research Coalition who last year released their report Worker exploitation in New Zealand: A troubling landscape. The report claimed that modern slavery is a problem in New Zealand. However, reform does not appear to be imminent. There may be more widespread interest and support if Australia passes similar laws.110

PHILIPPINES



- 1. The Department of Information and Communications Technology (DICT) of the Philippines has recognized that automation could affect around 48% of employees (or around 18.2 million jobs) in the country, especially those in the agriculture and manufacturing industries. The manufacturing sector is seen to have the highest proportion of automatable work among all the sectors at 61%. Another major industry which could potentially be affected by automation is the Business Process Outsourcing (BPO) industry. A contact centre industry group declared that BPO workers are upgrading their skills in order to prepare for the growing use of artificial intelligence. BPO agents are being trained for higher-paying jobs that require critical thinking, and complex decision-making, veering away from repetitive jobs that are susceptible to automation.¹¹¹
- 2. While there has been talk of automating certain industries and jobs in the Philippines, the reality remains that few industries have started automation. The Philippine automotive industry, which has a 2% market share in the Southeast Asian region, is one of the industries moving towards automation, using collaborative industrial robots in order to ensure cost-effective increases in manufacturing. The BPO industry is also gearing up for the impact of artificial intelligence on the industry and aims to provide BPO agents with more skills involving cloud, analytics and mobile applications. The foregoing could potentially reduce the personnel required in the operations.¹¹²

- 3. The protectionist policies of the US may have an impact on US investments in the Philippines, particularly the BPO sector, which mostly services US firms. A report issued by the Capital Economics found that outsourcing firms have suspended their expansion plans and are considering relocating to the US. The Philippine Economic Zone Authority has nonetheless stated that US firms have moved to reassure their BPO providers in the Philippines that the US government will not press for IT-BPM [information technology-businessprocess management] to cut down on offshore operations.¹¹³
- 4. The Philippines has witnessed a significant growth in the gig economy since 2015. Global companies like Grab, Uber and Food Panda have easily penetrated the domestic market, which encouraged local companies like U-Go and Kanguru to provide similar technology-based platforms. The gig economy has also become prevalent in the BPO industry where many full time-time workers spend an additional two-hour gig in other BPO companies for extra income. The popularity of transport apps resulted in issuances by the Department of Transportation and Communication (DOTC) creating a new type of service for public transport conveyances known as the Transportation Network Vehicle Service (TNVS) and providing for the accreditation of transportation network companies (TNCs) such as Grab and Uber. While there are still ongoing debates over the employment status of the drivers accredited by the TNCs, it is significant to note that the DOTC has expressly recognized that the drivers are independent contractors.114
- 5. The UK Modern Slavery Act (Act) is an act which defines slavery, forced or compulsory labour and human trafficking and other prohibited acts and provides for their corresponding punishment. The Act further contains provisions on protection of victims and the appointment of an Anti-Slavery Commissioner, among others. Part 6 of the Act provides that any commercial organization in any sector, which supplies goods or services, and carries on a business or part of a business in the UK and is above a specified total turnover, must produce a slavery and human trafficking statement for each financial year of the organization. Any organisation in any part of a group structure will be required to comply with the provision and produce a statement if they: (i) are a body corporate or a partnership (described as an "organisation" in this document), wherever incorporated; (ii) carry on a business, or part of a business, in the UK; (iii) supply goods or services; and (iv) have an annual turnover of £36M or more.] Philippine subsidiaries of UK companies will have complied with the provisions of the UK *Modern* Slavery Act if applicable and/or if required by their parent companies. In the Philippines, Congress enacted an Anti-Trafficking in Persons Act in 2003. In 2017, the Philippines was given a Tier 1 ranking - the highest compliance level that a government can achieve for its anti-trafficking measures - by the US Department State in its 2017 Trafficking in Persons Report (Report). According to the Report, the Philippines is the only country in Southeast Asia to fully comply with the US' minimum standards in fighting human trafficking. The prevalent forms of trafficking in

the Philippines include (i) forced labour, especially for Filipinos working abroad; (ii) commercial sexual exploitation; and (iii) the use of child soldiers. The Department of Labor and Employment, which is one of the pioneer members of the Philippines' Inter-Agency Council Against Trafficking, has significantly contributed to preventing trafficking-in-persons and to punishing perpetrators by addressing recruitment malpractices, monitoring workplaces, and setting labour standards that prevent exploitation.115

SINGAPORE



1. Singapore has embraced the vision to be a Smart Nation. That is, a nation where the lives of her citizens are enabled seamlessly by technology. The Government is committed to laying the foundation for this by building the infrastructure, facilitating innovation and creating the framework for all involved to contribute. In respect of the workforce, the local industry constantly grapples with manpower shortages. The government is thus also encouraging businesses to adopt a manpower lean model. Related to this, there is a push towards the use of automation across multiple industries. The Government has put in place certain schemes and grants for businesses that utilize automation.¹¹⁶ Automation is widespread in manufacturing. For instance, in food manufacturing, many of the processes along the chain are automated.¹¹⁷ Similarly, electronics manufacturing firm Feinmetall Singapore used automation to improve its manufacturing processes. In 2015, it designed and introduced a machine that slashed the time required to bend needles used in the manufacturing of probe cards.¹¹⁸ The warehousing and logistics industry also utilizes automation. In 2015, the government set aside S\$15 million to try out automated guided vehicles in warehousing. These vehicles are used to reduce repetitive work in storage and retrieval.¹¹⁹ We have since seen many other areas which have adopted automation. For instance, the national library sorts books at night using robotics and

sensors.¹²⁰ At the KK Women's and Children's Hospital, a robotic bottledispensing system was rolled out in 2015 to load, pick, assemble and label medicine bottles.¹²¹ Automation has also been introduced in servicerelated industries. Robots have been used to wait tables, and in at least one hotel (M Social Hotel), they are using a guest-facing robot to deliver items to quests.¹²² Fast food chains, such as McDonald's, KFC and Burger King have also used automated kiosks for food ordering, complementing the more traditional queues at the counters.

- 2. Automation tends to complement existing jobs. It is used in a collaborative way, together with human employees, to raise the productivity of higher skilled workers, rather than to replace them. The Singapore government is encouraging employees to "upskill" to increase productivity. That said, according to a recent survey (published in June 2017) by recruitment firm, Randstad, nearly 1 in 5 Singapore employees fear losing jobs to automation.¹²³ It remains to be seen if such fear is real.
- There are some industries which have moved out of Singapore to cut costs. For instance, container carrier Maersk Line has consolidated its Asia headquarters in Hong Kong and offshore marine firms such as Subsea 7, Mc Dermott, Technip and Saipem have relocated to Kuala Lumpur.¹²⁴ Oil and gas rigging equipment supplier KTL Global had also in

2015 relocated to Malaysia.¹²⁵ Similarly, Coca-Cola's bottling plant operations have moved to Malaysia.¹²⁶ However, companies (e.g. those in the aerospace and biomedical industries) that require higher value-add capabilities, such as new technologies, innovation and research, are seeking to set up their regional headquarters in Singapore.¹²⁷

4. Yes. Uber, Grab, Lazada, Deliveroo, Food Panda and Redmart are some of the active gig economy companies active in Singapore. Airbnb too is widespread, despite the fact that in most properties, short-term rentals (of less than 6 months) are illegal. Existing employment regulation does not adequately cover the free lancers performing such jobs. Further, in the car hire industry, the existing legislation also did not extend to private car hire players such as Uber and Grab. Consequently, certain significant changes are taking / have taken place: (a) new laws have been passed for the private car hire industry requiring the drivers to be licensed;¹²⁸ (b) the Ministry of Manpower, the National Trades Union Congress and the Singapore National Employers Federation have jointly developed a set of Tripartite Guidelines on the Employment of Term contract Employees to provide some measure of protection for contractors;¹²⁹ and (c) the Urban Renewal Authority is studying the option of allowing owners of private residences to engage in short-term rentals (pursuant to

the Planning (Amendment) Bill.¹³⁰ From the employment perspective, the Ministry of Manpower is closely monitoring the potential impact of gig economy workers, and is continually trying to find practical solutions to address the issues faced by such workers.¹³¹

5. We have not seen any significant changes. However, we are aware that companies have put in place written processes to address this issue. For example, in 2015, DBS Bank amended its template sourcing and service contracts to require its Singaporean suppliers to acknowledge that they will conduct their businesses in compliance with any applicable laws, including the UK Modern Slavery Act.¹³² DBS Bank also updated its hiring, training and conduct policies to address concerns regarding unethical business practices including modern slavery.¹³³ Companies such as OCBC Group, K2 Partnering Solutions, Civica and the Shipowners' Club have also made similar changes to their corporate policies.134

SRI LANKA



1. The impact of technology on the 'world of work' is being addressed as a matter of priority by the ILO and member countries as the implications that can arise can lead to serious socio economic issues for any country. It is for this reason that the Future of Work Report 2015 that was presented by the ILO Director General at the Davos Economic summit in 2016 gives glimpse of these issues and their implications, if unaddressed.¹³⁵ Whereas some countries have undertaken studies and begun the process of gathering evidence, most do not. Unfortunately, Sri Lanka falls into the latter category, though the impact has already been felt in some industries. It is for this reason that the ILC 2016 also resolved to support countries so that they could carry out proper research, employee training etc. From the little research that has been carried out up to date on this issue – more specifically in relation to the technology sector - it would appear that employers in Sri Lanka are in a position to assess the impact and have even found partly viable solutions. Apart from the requirement to adopt new technology - software & hardware many companies in Sri Lanka have resorted to train and re-deploy their workforce to take up new assignments rather than having to deal with redundancy situations and re-trench experienced and competent employees. The dearth of personnel in this sector appears to have influenced companies following a policy of retention rather than retrenchment. For example, production cycle issue employees have to be retrained in new software versions at very short periods. The IT sector has also progressed in allowing employees to have more flexibility by using technology so that they can enjoy better work life balance. Flexi time, working from

home or working on the basis of virtual offices have all come to stay on the basis of advanced technology and the 'telecommuting options' that are available for both companies and employees follow. Some in industry are of the view that sadly the lack of progress that has been shown in the areas of development of the law, (such as the implementation of the already drafted Information Security Act), has hindered implementation of technology as well as the adoption of work related solutions. In regard to the manufacturing sector there is hardly any information in relation to any impact of technology on the business. However some companies are in the process of making assessments on account of the requirement to reduce costs as well as investor interests in implementing production process changes using robotics. For instance the rationalization of head count in the cutting division in some companies has been influenced by the introduction of robotics. The concept of 'deskilling' where any new recruit after a few days of training is deployed on machines which are technically advanced and have supporting processes to enable even a new recruit to handle some of the most skilled work areas can be cited as an example. Embroidery work, stitching of certain pieces can be cited as examples.

 These developments can have serious implications for countries which are still implementing labour incentive strategy to manufacture garments. Bangladesh is a classic example. Sri Lanka, on the other hand, is in the process of implementing hybrid version of technology automation in the garment manufacturing trade due to the lack of skilled labour who are interested to join the industry. There are also a number of changes that are taking place in the world due to the current political situations as well as the protection policy of some governments. US and EU is a classic example. Due to President Trump's policy statement jobs which were hitherto shifted out to the developing world are being shifted back to the US held 'proximity countries' such as Costa Rica and Autonomous US statutory Puerto Rico. However, there is also a dynamic situation that is taking place with countries such as China. On account of the higher labour costs China is now looking at investing in countries like Sri Lanka and countries in the China Belt and Trade (the new Silk Route). If these opportunities are made use of Sri Lanka can shift its industries from low technology machinery oriented products such as garments (including niche garment products such as sportswear) into semi high technology and very high technology oriented products. At present China has indicated that it can even allow Sri Lanka to benefit from manufacturing toys which have a high technology input such as manufacturing of drones, in Sri Lankan territory. This would enable Sri Lanka to benefit from the technology transfer as well as train its employees to keep up with advancements in the manufacturing world.

3. When there is such advancement in technology in the world of work, there is bound to be a dilemma that countries will have to contend with as is currently seen in developed countries where certain jobs will invariably be redundant although there are opportunities to train and redeploy personnel. Due to the impact of technology, notwithstanding that new jobs may be created, the competency of handling such assignments is likely to present limitations. For instance, even redeployment after training is likely to be limited as the technological input/ automation will not require as a larger number of personnel as previously done. Therefore countries have also to look at diversifying their labour requirements and as a result redeployment of human resources may not be in the same area. It is also likely to create major challenges for countries such as Sri Lanka and most countries in the South Asian region due to issues such as integrity of labour. At present there is no tangible evidence to suggest that the production policy of some governments in the Western world is affecting Sri Lanka. However in India a trend has been observed for Indian nationals to return to their home country seeking employment as well as investment opportunities. However, these trends have to be further studied to come into a conclusion. However some protectionist policies such as higher tariff rates and nontariff barriers, e.g. point of origin, are being enhanced by certain trade blocks such as the US and EU and this has resulted higher costs for the supplying countries due to compliance costs etc.

4. Sri Lanka is also witnessing the impact of gig economy at present. In addition to local players such 'Pick me', 'Uber' (a global taxi operator, have already entered into the Sri Lankan market. Indian Transnational, which operates a similar service, is looking at investing in Sri Lanka. The gig economy has also put a lot of pressure on traditional legal concepts, particularly in the world of work. The common law tests that are applied to distinguish self-employment from independent contract employment will have to be revisited or applied in the context of the new developments. New forms of self-employment opportunities as well as employment opportunities

in the development of technology have also bolstered the gig economy. Telemarketing has become extremely popular when sourcing personal goods and utilities and even groceries.

5. The principles of the *Modern* Slavery Act of the UK appear to be intended to prevent sweat shops. Some commentators consider that the requirements of the Modern Slavery Act can permeate into the Sri Lankan legal system on the basis of higher compliance of international standards accepted by UK Buyers. However, ideally, such standards should not apply in countries such as Sri Lanka as there are conventions which Sri Lanka has already ratified and based on which municipal laws have been adjusted to comply with international labour standards. For example, Core Conventions, ILO Convention No.29 of 1930, Forced Labour Convention, No.182 of 1999 - Worst Forms of Child Labour Convention. The importance of UN Conventions such as the Universal Declaration of Human Rights which has been universally ratified cannot be discounted. The UDHR is a core human rights convention which Sri Lanka has ratified. Furthermore Sri Lanka has already implemented processes to ensure compliance based on the conventions ratified above in relation to the world of work. Any breach thereof should therefore be taken up by the ILO which is a specialized UN Agency established to handle such labour issues. We are of the view that even if the requirements of UK laws such as the UK's *Modern Slavery* Act are to implemented even in a vicarious manner this will be no bad thing and that arguments that this would impinge on the sovereignty of Sri Lankan legal system should be disregarded.

TAIWAN



- 1. Automation has caused a great impact on the traditional manufacturing industry in Taiwan, but not in an entirely negative manner; even though a substantial number of workers in the manufacturing industry will be replaced, but the automation trend has also caused industries in Taiwan to evolve and upgrade in order to increase their competitiveness. In order to respond to the automation trend, the Taiwan government has strongly pushed Q the "Automation Intelligence Industry Development Project" since 2011 to encourage businesses to research and develop intelligent machines, the Internet of Things, cloud computing, etc. For example, a business in the garment industry is using digital template sewing machines, which will integrate with robotic arms technology for use in production lines; this use of technology has raised the overall competitiveness of that business. In addition. there is also an automobile spare parts business that has gradually automated its production lines, which not only reduced human resources costs but also increased production efficiency. In particular, Taiwan has advanced know-how in sensors, electronic shelf labelling and biometrics recognition technologies, as well as the ability to supply industrial computers, robotics and automated inventory systems. Thus, the automation trend presents a great opportunity for the evolution and upgrade of Taiwan's industries.
- 2. Besides the aforementioned potential replacement of workers in manufacturing by robotics, workers who provide reception services or collect payments are also being threatened. For example:
- With the advent of the Electronic Toll Collection (ETC) system for freeways in Taiwan since 2014 and the use of RFID sensors to detect vehicles traveling on those roads for automatic toll payment, human toll collectors have been completely replaced.

Insurance companies have been offering various payment methods for payment of premiums, and a life insurance company has announced the elimination of all its insurance policy premium collectors by the end of 2017.

For brick-and-mortar stores, some businesses have introduced supermarkets or convenience stores with no employees which allow customers to pay on their own with cash or electronic payment (020 Convenience Store). There is also even a complete self-service hotel (CHASE Walker Hotel) in which guests can complete the check-in procedure electronically and have robotic bellhops carry and take their luggage, thereby obviating the need of receptionists at the hotel. With the rise of Fintech, on August 10, 2017, the Taiwan Financial Supervisory Committee officially allowed securities and investment consultants to employ automated investment consulting services (Robo-Advisor), meaning that, based on an agreement between the investment consultant company and its client, the investment consultant company has an "computerized consultant" automatically build the best investment portfolio for the client with the appropriate exits and stop losses. Some banks have since officially started providing such service.

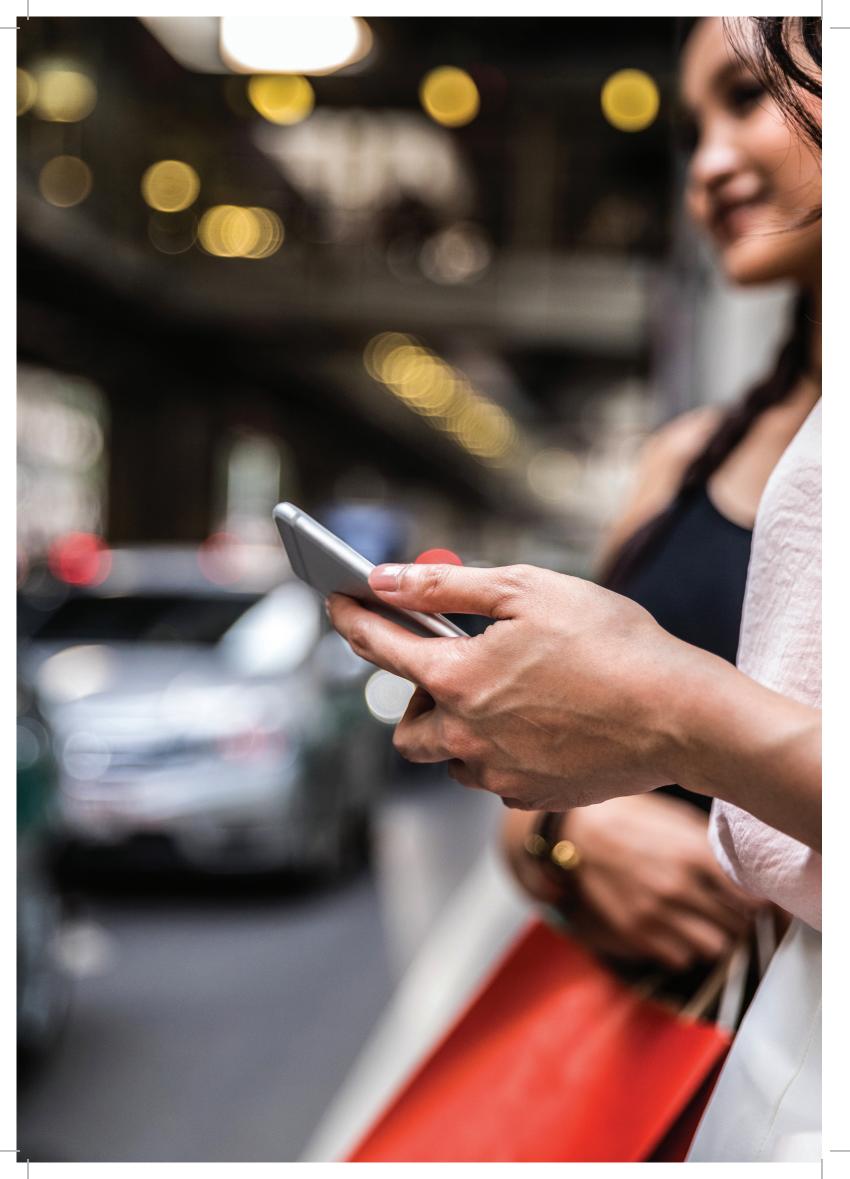
3. With respect to increasing labour costs, after Taiwan implemented the "one holiday, one rest day" policy in the Labor Standards Act in December 2016, which require businesses to give one day of rest to labourers for every seven days of work and pay significantly increased wages for overtime work. it has caused the labour costs of those in the services industry and labour-intensive industries to increase dramatically. Per the statistics from the Chinese National Federation of Industries and the ROC General Chamber of Commerce, 72.8% of businesses

in Taiwan experienced an increase of more than 3% in labour costs as a result of this policy, and at least 20% of businesses expressed that they would move their production overseas, turn away purchase orders or even suspend business operations. As for the global rise in protectionism, the Trump administration presents the biggest impact to Taiwan. The US makes up about 12% of Taiwan's direct exports, and 50% of electronic products from Taiwan that are further processed in China is shipped directly out of China to the US, thus Trump's stance on raising tariffs against Chinese exports has actually caused Taiwan businesses to start expanding into the US instead, with the primary example being Foxconn Technology Group announcing the construction of a 10.5G LCD panel factory in Wisconsin for a total investment value of over US\$10 billion on July 26, 2017. In addition, the E United Group is also preparing to build an electric arc furnace steelmaking plant and a sponge iron plant in Texas for a combined investment of about US\$1,600-1,800 million. The demise of the Trans-Pacific Strategic Economic Partnership Agreement has also affected Taiwan's regional free trade planning and strategy.

4. Gig economy companies are growing at a substantial pace in Taiwan. In addition to the widespread public awareness of entities with new business models such as Uber and Airbnb, there are other platforms which give individuals opportunity for additional earnings on their own, such as Logistic businesses Lalamove and GoGoVan, which allow registered car/motorcycle owners to pick up and deliver goods in their own free time. In the case of Uber, after some initial conflict and a temporary withdrawal, Uber has returned to the Taiwan market as a "partner" working with the rental car industry, and Uber drivers deemed under law as employees of a rental car company, thus the controversy as to the legal status of Uber drivers is currently settled for the most part in Taiwan. However, as most gig economy companies in Taiwan still generally only provide a platform for matchmaking, there are still a lot of legal questions surrounding how to place "platform providers" with "labour providers" in the traditional employeremployee framework - should all present labour laws apply to the relationship between the two? If not, which ones? It remains to be seen as to how these questions may be resolved in practice.

5. Generally speaking, Taiwan labour laws provide considerable protection to the welfare of workers (e.g., statutory max working hours, overtime hour restrictions, entitled days off, etc.). In addition, there is a whistleblowing/ complaint mechanism, and the labour competent authorities have diligently conducted labour inspections of employers nationwide to ensure compliance with the law. Thus, it would be difficult for an employer in Taiwan to engage in indentured labour or other modern slavery practices, regardless of the worker's nationality.

Based on the above, the UK *Modern* Slavery Act as a whole has little impact on subsidiary companies or Taiwan companies that do business with the UK because the threshold for reporting requirements is sufficiently high that any entity who meets those requirements in Taiwan could not escape the aforementioned labour compliance scrutiny from the government, thus the sole material difference for companies would be the annual Slavery and Human Trafficking Statement and the measures taken to address modern slavery in the company's supply chain (if any).



THAILAND



- 1. Automation is having the greatest impact on manufacturing in Thailand. Over the few decades running up to the 1997 Asian financial crisis, Thailand received significant foreign investment in manufacturing, such as in the production of cars and electric appliances, in order to take advantage of the country's relatively low labour costs and plentiful unskilled and semi-skilled labour supply. This investment has significantly benefitted the Thai economy and helped propel it to middle-income status. After the crisis, the government launched a number of labour-friendly policies, such as increasing the minimum wage, which reduced the Thai labour market's competitive advantage. The response by industry has been to bring in workers from neighbouring countries (especially Myanmar) and to begin utilizing more robots and other advanced automation systems in the manufacturing process.
- 2. In addition to its impact on unskilled and low-skilled jobs in manufacturing, automation is posing threats to information content providers that have traditionally relied on advertising, such as television, newspapers and magazines. Advertisers are now switching to social media platforms, such as Facebook and YouTube, as their ads can now be targeted to particular users due in part to automation technologies. Automation in the form of ATMs and IT applications are also becoming more prevalent in the Thai banking sector, which will likely threaten banking staff numbers. Online shopping is also taking off in Thailand, especially as people become more comfortable making purchases on a "sight unseen" basis, and which is anticipated to affect retail staff numbers at Thailand's numerous department stores.

- 3. As Thailand's labour cost advantage has deteriorated, it is no longer the preferred destination for manufacturing in Southeast Asia and the "peak" in manufacturing employment has likely already passed. Many textile and electronics companies have moved their operations to other countries in the region such as Cambodia, Mvanmar and Bangladesh. At this stage, Thailand does not appear to have experienced any side effects from the protectionist turn in other advanced economies. that have exacerbated Thailand's manufacturing woes.
- 4. The taxi industry is probably the area most disrupted by gig economy companies. Grab Taxi and Uber are becoming more prevalent on Thailand's roads, as these companies can utilize private cars and arrange transport through their IT systems. Their increased presence has resulted in numerous confrontations with Thailand's taxi industry, however, and the Thai government has responded by developing an IT system for the taxi industry (i.e. by allowing customers to book regular taxis via their smart phones or computers), in a bid to make it competitive with what is on offer by the gig economy companies.
- 5. Thai-based subsidiaries or related entities of UK companies covered by the Modern Slavery Act 2015 will have been involved in responding to information requests from their UK parents in relation to supply chain activity and compliance. Thailand has also enacted regulations intended to prohibit labourrelated abuses of foreign labour from neighbouring countries (i.e., Myanmar, Lao and Cambodia) in order to comply with international regulations and as recommended by the ILO i.e., the anti-trafficking regulations.

CHINA (RESPONDING TO A DIFFERENT QUESTIONNAIRE)



1. What legal requirements must be met in your jurisdiction when implementing new technology in production or service processes which impact upon existing employment levels or positions?

If the new technology implemented will merely cause changes to the workflow process, instead of any changes to employment-related policy or individual work position or responsibility, then there is no legal requirements. However, if there is a change to employmentrelated policy or regulation, the company is required to modify the company policy under the statutory democratic procedures, including providing the draft rules and regulations to all the employees and solicit their comments (not necessarily getting the employees' consent). In addition, if the new technology causes adjustment to an individual's work position (especially demotion) or working hours, the employer is required to negotiate with the employee and to get his/her agreement.

 What role do trade unions or other workers representatives play in consultation and/or negotiation over changes to manufacturing systems at firm-level?

Similar to the foregoing question, if the company revises rules or material matters that have a direct bearing on the immediate interests of its employees, the employer shall fulfil and comply with the below procedures:

- The employer shall first notify the employee representative congress or all employees (in lack of an ERC) and seek their proposal and/or comments;
- The employer shall further consult with the trade union or employee representatives (in absence of a trade union) on a basis of equality;
- The employer shall publicly announce the finalised company rules and policies or its decision on material employee related matters, or notify the same to the employees.

The law only requires the employer to consult with, rather than seek consent from, the trade union. The employer can ultimately decide on the rules and policies or material matters without the employees' consent, to the extent such rules, policies or decisions on material matters do not violate the PRC law. 3. Do the legal rules in the above areas operate as disincentives to the agile adaptation by businesses of automation/other improvements to their production capacity?

No.

- 4. Gig economy: What are the legal tests for distinguishing employees from self-employed/contractors in your jurisdiction?
- Instructions and direct management
- Applicability of employer's internal rules and polices;
- Working premises;
- Direct payment of salary; and
- Signing employment contract or service contract;
- 5. Gig Economy: To the extent that gig economy service providers are active, do they engage their workers as employees or selfemployed/contractors?

We are aware of both arrangements.

6. Are trade unions involved in seeking to establish minimum rights/standards for workers in the gig economy? Is there any indication of workers 'selforganising' to fulfil this role (like 'Ride Share Drivers United' in Australia)?

We are not aware of any 'selforganising' organisations involved in establish minimum rights/standards for workers in the gig economy. Trade union of the company has the right to negotiate a collective contract with the company, which usually provides minimum rights/ standards for employees.

7. Modern slavery: What legal rules apply in your jurisdiction in relation to the prevention of forced labour, human trafficking or other forms of modern slavery?

Forced labour is strictly prohibited under Labour Law and could be subject to criminal liability.

Employer is also prohibited from hiring employees under 16 years old and assigning employees between 16 and 18 to do certain jobs.

8. Modern slavery: Have there been any changes to these laws in recent years, e.g. to prohibit labourrelated abuses of foreign labour from neighbouring countries (as introduced in Thailand)?

No.

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