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How emerging global trends may affect labour migration in ASEAN

By Vincent Mack ¹ and Christopher Lim ²

ASEAN countries, particularly the newer ASEAN states, are dependent on migration for economic growth as well as it being one ready solution to problems of economic development. However, this arrangement is at risk due to the parallel challenges of anti-globalisation and the risks of job replacement through technological advancement such as Artificial Intelligence, labour automation, and 3D printing. In recent times, there has been a global resurgence of nationalism and anti-immigrant hostility. Coupled with the Eastward shift of global economic growth and the advancement of technologies could make certain segments of the labour market obsolete. This may impact on ASEAN's strategy of being the production base for global supply chains and its dependency on labour migration for economic development. To avert a potential labour market crisis, the ASEAN member states should maintain trade openness as well as explore alternative economic opportunities such as investing in manpower training and R&D in the agriculture sector.



Migrant workers. Credit: Flickr / Keri-Lee Beasley

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INTRODUCTION

Migration is not a new phenomenon. Humans have been moving from location to location since time immemorial. European settlers who wanted to escape poverty, and flee political and religious persecution in their home countries emigrated to the Americas from the 16th to the 19th century. Less permanent forms of migration such as the pastoral nomads of Mongolia, the hunter-gatherers of Kalahari Desert or the Swidden agriculture tribes of Southeast Asia move periodically in search of suitable lands to grow food and sustain their populations.

Labour mobility within Southeast Asia has contributed to the collective economic growth of the region in recent decades as transnational labour migration has become the valve regulating the balance of labour supply and demand across the region. Both receiving and sending countries have benefited from this arrangement; the former obtaining a more affordable source of labour, and the latter gaining access to more lucrative job markets overseas, providing a steady source of financial injection into their economies through the flow of private remittances back into source countries.

Broadly speaking, there are four main drivers of migration – (i) economic, (ii) social, (iii) political, and (iv) environmental (See Figure 1). Economic migrants move to find work, social migrants relocate in search of a better quality of life, political migrants leave their home countries to escape political persecution or conflict, and environmental migrants move in order to escape natural disasters.

While not completely ideal – as the vagaries of the migration experience levies a socio-political cost on both migrants and their families – the economic trade-offs from this arrangement has somewhat balanced the cost and benefits for both receiving and sending countries as well as the migrants themselves. However, this apparent equilibrium is at risk due to the parallel challenges of anti-globalisation and the risks of job replacement through technological advancement such as Artificial Intelligence, labour automation, and 3D printing. With a possible shrinking of the job market and a sizable portion of the labour market being made redundant, these challenges have the potential to reignite latent socio-political tensions. If ignored, these issues could eventually evolve into a political threat.

Tenure for Migration	Reasons for Migration			
	<i>Economic</i>	<i>Social</i>	<i>Political</i>	<i>Environmental</i>
<i>Temporary</i>	Transient Contract workers; Expatriates; Rural-urban migration; nomadic travelers; Swidden agriculture tribes	Moving overseas for education	Refugees staying in temporary refugee camps e.g. Vietnamese and Cambodian refugees in Galang Island in Indonesia immediately after the fall Vietnam in 1975	People staying in temporary refugee camps due to flooding or volcanic eruptions
<i>Transitional</i>	Early Chinese immigrants migrating to San Francisco during the Gold Rush in the 19 th Century.	Permanent Residents (P.R.s) awaiting citizenship.	Asylum seekers	Climate/disaster refugees
<i>Permanent</i>	Colonial settlers	Migrating to join families	Political exiles	Refugees that have been granted citizenship

Figure 1 – Two-by-four matrix on tenure and reasons for migration³

MIGRATION IN SOUTHEAST ASIA

Migration has an important role Southeast Asia, particularly for the Association of Southeast Asian Nations (ASEAN). ASEAN is a regional grouping of 10 countries in Southeast Asia – namely Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar the Philippines, Singapore, Thailand, and Vietnam. As of 2016, ASEAN is the seventh largest economy in the world as well as home to 615 million people, making it the third-largest labour force in the world, behind China and India. Because of the different levels of economic development across the ASEAN member states (AMS), there are different types of opportunities available to different states.

For developing countries with surplus unskilled labour, migration solves unemployment issues in source countries as prospective labour migrants leave their homes in search of job opportunities that are scarce domestically. This transnational migration complements the needs of more developed nations, as they have access to a ready labour pool willing to work the jobs that their locals find undesirable. Examples of such countries are Singapore, Malaysia and Thailand, which depend on migrant labour for lower skilled work such as in the manufacturing and construction sectors.

The same dynamic is also observed in the case of internal migration such as rural-urban movements. In economic literature⁴, internal migration has long been associated with economic growth and development; for example, Indonesians from the outer islands have flocked to Jakarta in search of employment opportunities.⁵ Likewise, similar internal migration

³ Source: Authors

⁴ Greenwood, Michael J. "Internal migration in developed countries." Handbook of population and family economics 1 (1997): 647-720.

⁵ Resudarmo; Suryadarma. "The effect of childhood migration on human capital accumulation: evidence from rural-urban migrants in Indonesia".

patterns can be observed in China, where people are more likely to migrate from second or third tier cities or townships to first tier cities⁶ such as Beijing and Shanghai in search of work.

Those who have migrated also provide their home countries or towns or provinces with remittances. This cash in-flow not only provides a steady stream of much needed funds to drive their domestic economies but also bolsters their foreign exchange reserves. For example, remittances to countries such as the Philippines and Vietnam, contribute a substantial percentage to their GDPs. World Bank data in 2015 show remittances making up 10.2 per cent of Philippines' GDP and 6.8 per cent of Vietnam's GDP.⁷

The International Organization for Migration (IOM) reported in 2014 that 87 per cent of intra-regional migrants in Southeast Asia are low-skilled or unskilled workers.⁸ Most of the regional migration within Southeast Asia (approximately 88 per cent) occurs within these top five corridors—Myanmar to Thailand, Indonesia to Malaysia, Malaysia to Singapore, Laos to Thailand, and Cambodia to Thailand. The increasing numbers of migrant workers in Southeast Asia are expected to continue, as migration is one of the key drivers of economic growth and poverty reduction, especially for developing countries.

COSTS OF MIGRATION

While migration between AMS brings about much economic benefit to the sending countries, there are costs as well. The surplus labour and the constant out-flow of emigrants suggest that the sending countries may not be fully utilizing their labour endowments sustainably by not sufficiently building up industries in their home countries for their working age population. Sending countries could become over-reliant on the remittances from lower-skilled labour as a much-needed funding source and ignore the need to develop their socio-economic infrastructure. Also, allegations of migrant labour exploitation have been rife in the region, where reports of dismal working and living conditions⁹, and employers withholding pay and/or underpaying workers have surfaced.¹⁰ More recently, politicians in Southeast Asia have begun to address the issue of migrant worker rights in the region. Philippines' President Rodrigo Duterte – with Indonesia's President Joko Widodo's support – have pushed for the adoption of a binding regional treaty to protect the rights of migrant workers.¹¹ While important, these issues also signal a deeper structural problem – of the inherent imbalance in the development of the socioeconomic infrastructure within AMS, particularly that of the sending countries. While it may be sensible to allow free

Australian National University. Retrieved February 16, 2012,

http://www.crawford.anu.edu.au/acde/publications/publish/papers/wp2011/wp_econ_2011_02.pdf

⁶ China uses a tiered city system in the classification of its 613 cities and tiers are assigned according to a combined score of GDP, level of political administration, and population. For more details, please refer to SCMP, "China's tiered city system explained", accessed on 27 March 2011,

<http://multimedia.scmp.com/2016/cities/>

⁷ The World Bank, Personal remittances, received (% of GDP), (2015), Accessed <http://data.worldbank.org/indicator/BX.TRF.PWKR.DT.GD.ZS>

⁸ Guntur Sugiyarto and Dovelyn Rannveig Agunias, A 'freer' flow of skilled labour within ASEAN: aspirations, opportunities, and challenges in 2015 and beyond, IOM Migration Policy Institute, (Dec 2014), <http://www.migrationpolicy.org/research/freer-flow-skilled-labour-within-asean-aspirations-opportunities-and-challenges-2015>

⁹ Ashley William Gois, Labour migration in the ASEAN region, 23 November 2015, <https://www.boell.de/en/2015/11/23/labour-migration-asean-region>

¹⁰ Pete Pettisson, Workers for McDonald's in Malaysia say they were victims of labour exploitation, 28 November 2016,

<https://www.theguardian.com/global-development/2016/nov/28/workers-for-mcdonalds-malaysia-claim-labour-exploitation>

¹¹ ASEAN Chairman Duterte pushes for migrant protection treaty, Asia Pacific Migration Network ILO, Accessed 27 March 2017

<http://apmigration.iilo.org/news/asean-chairman-duterte-pushes-for-migrant-protection-treaty>

market forces to better distribute the surplus workforce to foreign countries, sending countries may be missing a critical opportunity for their own economic development.

Migration has far reaching consequences affecting the migrant at the social and psychological level. Living far away from home, the migrant will inevitably be separated from his or her family, making them susceptible to depression and other mental health problems. This also affects the migrants' families as well – especially for those with children as many would grow up without knowing their parent(s) – resulting in some cases, estranged and malfunctioning family units.¹² The social cost of these malfunctioning family structures to both the society and the economy has yet to be quantified.

Should ASEAN maintain the status quo?

Given the above observations, one wonders if this current situation is sustainable in the long run. The current status quo is an ideal arrangement so long as the operating environment does not change. However, there are three emerging trends globally that suggests that the ecology is changing and we are currently at a tipping point.

Trend 1: Anti-immigrant sentiment

Anti-immigrant sentiment has been on the rise globally, particularly in the Developed Western world. This has been fueled by fears of job competition, terrorism, and the loss of identity in various nations. This rising wave of popular discontent has resulted in the growing popularity of populist politicians such as former leader of the U.K. Independence Party Nigel Farage, and current U.S. President Donald Trump. In Germany, Chancellor Angela Merkel's open-door policy to migrants have elicited backlash from German right-wing nationalists causing her popularity to plummet and may affect her chances of winning in the 2017 re-election. Closer to Asia, these trends have been mirrored in the rise of right wing politicians such as Pauline Hanson¹³ of Australia whose anti-immigrant discourse somewhat parrots the sentiments of President Trump.

While these events are happening in the Developed West, emerging economies are seemingly "immune"¹⁴ to the anti-immigration backlash and the movement of people in Asia from within and without continue unabated. Although occasional anti-immigrant sentiments do exist in Asia, they are not observed at the same intensity, given the higher incidence of anti-immigrant protests in the West compared to Asia. However, it would be wishful thinking to believe that there is no possibility that these resentments will not become more prominent in Asia in the future.

¹²Rhacel Salazar Parreñas. *Children of global migration: Transnational families and gendered woes*. (Stanford: Stanford University Press, 2005); Rhacel Salazar Parreñas. "Long distance intimacy: class, gender and intergenerational relations between mothers and children in Filipino transnational families." *Global networks* 5, no. 4 (2005): 317-336; Cati Coe. "What is the impact of transnational migration on family life? Women's comparisons of internal and international migration in a small town in Ghana." *American Ethnologist* 38, no. 1 (2011): 148-163

¹³ Ian Lloyd Neubauer, *Australia's Pauline Hanson wins on anti-Islam ticket*, Aljazeera, (11 July 2016), <http://www.aljazeera.com/indepth/features/2016/07/australia-pauline-hanson-wins-anti-islam-ticket-160710095439162.html>

¹⁴ This is a general observation made based on studying various trends in migration. Page 3, Figure 3 of the [OECD World Migration in Figures report](#) indicates that there are more labour migrants in developing economies than developed ones. The [UN 2015 migration report](#) states that between 2000 and 2015, Asia added more international migrants than any other major area. The favourable attitudes towards migrants in Asia is also evident from [ILO's stance](#) in their expressed much support for labour migration in the Asia Pacific region.

Trend 2: Shifting global economic centre of gravity

The ASEAN Economic Community (AEC) was launched in 2015. The key pillars of the AEC¹⁵ are premised on the establishment of a single production base, which encourages businesses across the region to tap on product and services complementation in Southeast Asia. This is reminiscent of Adam Smith's division of labour theory¹⁶ but at the regional level, where a network of industries across Southeast Asia participate in the global supply chain as a substantial part of its manufacturing sector. This allows ASEAN countries to specialize in the work they can do at the lowest opportunity cost based on the principle of comparative advantage.

Over the past decades, the centre of gravity of global economic growth had shifted eastwards to Asia. Prior to this shift, the relative cost of production in the developed western nations is much higher compared to those in ASEAN. This has led to many multi-national corporations (MNCs) to move part of their global supply chain to Asia, particularly in the ASEAN region.¹⁷

However, a large share today is dominated by emerging economies such as China and India (refer to Figure 1). The economic liberalization of China and India has further accelerated their high growth potential, creating a huge domestic demand for goods and services. Given their abundant supply of manpower, relatively low cost of production (which is either on par or even lower than ASEAN) and coupled with their huge domestic markets, China and India have become the logical choices as bases to relocate global supply chain operations.

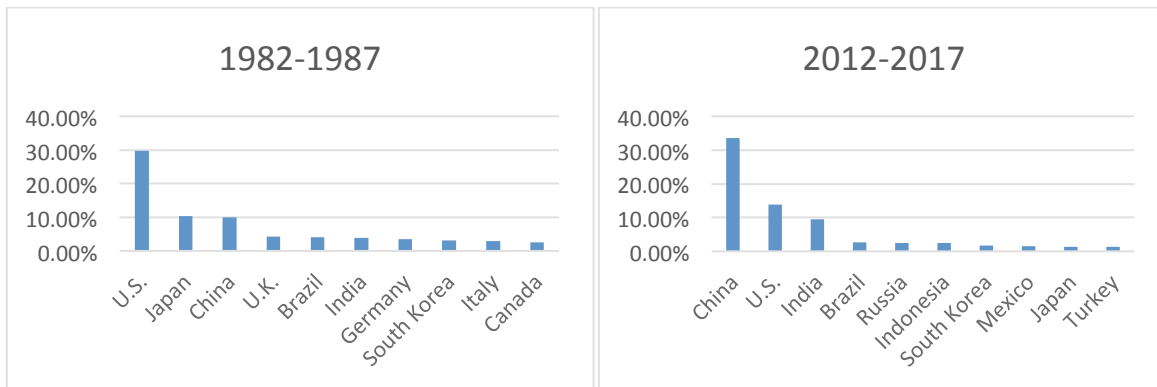


Figure 2 – Percentage of Global Growth of Top 10 Countries by Periods from 1982 to 2017¹⁸

With these developments in China and India, the attractiveness of ASEAN as the production centre of a global supply chain will be diminished. That means the manufacturing jobs in ASEAN will be reduced compared to the past where

¹⁵ The AEC has 4 key pillars: a single market and production base; a competitive economic region; equitable economic development; and integration into the global economy. Please refer to the Declaration on the AEC Blueprint for more information. asean.org/wp-content/uploads/archive/5187-10.pdf

¹⁶ According to Adam Smith's *The Wealth of Nations*, one of the main drivers for economic growth is increasing job specialisation through the division of labour. Please read <http://www.victorianweb.org/economics/division.html> for a primer.

¹⁷ Lamy, Pascal, and Takashi Shiraishi. "Trade Patterns and Global Value Chains in East Asia: from trade in goods to trade in tasks." *Geneva: IDE-JETRO and WTO* (2011).

¹⁸ Adapted from Matthew O'Brien, "Emerging Power: Developing Nations Now Claim the Majority of World GDP", *The Atlantic*, (June 4, 2013), <http://www.theatlantic.com/business/archive/2013/06/emerging-power-developing-nations-now-claim-the-majority-of-world-gdp/276543/>

ASEAN was primarily serving a production house for merchandise sold in the West. Furthermore, this presents a risk especially in light of technological advances in the region, such as 3D printing, digitisation and automation.

Trend 3: Technological impact on production base

As mentioned in the previous section, ASEAN's economic strategy as a region is premised upon its competitive advantage as a single production base for the global supply chain. In the coming years however, this fundamental premise could be tested by 3D printing technology and automation.

3D PRINTING AND IMPACT ON ASEAN

3D printing is a disruptive technology and “is now poised to disrupt the future of manufacturing”¹⁹ and also ASEAN's economic strategy of positioning it as a regional production base. To understand the stakes, consider how 3D printing could potentially reshape Southeast Asia. 3D printing refers to a manufacturing process of production where objects are created through layering materials on top of one another incrementally by an extrusion device or “printer” in three-dimensional space according to pre-programmed instructions. This has serious implications on the way products are manufactured.²⁰

In discrete manufacturing – i.e. the production of “finished products that are distinct items capable of being easily counted, touched or seen”²¹ such as automobiles, household appliances – can be classified as either tailor-made or mass produced. As illustrated in Figure 3 below, the production of these discrete products can be classified by the level of skill required to produce it and the degree of customization required. Objects that are mass produced require low skill levels and have low degree of customisation are called “low-mix, high volume” products and are cheap to produce and priced without a premium for competitive reasons. Conversely, tailor-made products that require high skill levels to produce and have a high degree of customization are considered as high-mix, low volume, and are usually priced much higher due to the difficulty and cost to produce them.

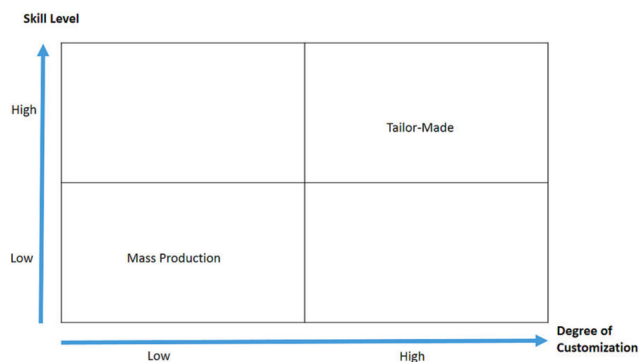


Figure 3 – Product categorization according to skill levels, degree of customization and production methods²²

¹⁹ Christopher Lim, 3-D Printing's Tipping point, (22 February 2017), Retrieved from: <https://reconasia.csis.org/analysis/entries/3-d-printings-tipping-point/>

²⁰ Christopher H. Lim and Tamara Nair, How 3D printing could disrupt Asia's manufacturing economies, The Conversation, (10 January 2017), Retrieved from: <https://theconversation.com/how-3d-printing-could-disrupt-asias-manufacturing-economies-69633>

²¹ Definition: Discrete Manufacturing: <http://searchmanufacturingerp.techtarget.com/definition/discrete-manufacturing>

²² Adapted from Christopher Lim, 3-D Printing's Tipping point, (22 February 2017), Retrieved from: <https://reconasia.csis.org/analysis/entries/3-d-printings-tipping-point/>

This tailor-made segment also includes complex products such as aircraft parts and engines that would require traditional manufacturers to produce separate parts individually before assembling them together in multiple stages. With 3D printing, the entire production process can potentially be reduced to a single stage, as 3D printers can print objects of any shape and geometry.

Although 3D printing has been around for decades, recent advancements in technology has helped transit it from hype to reality. Therefore, 3D printing is set to compete with and eventually take over the high-mix, low volume segment of manufacturing. For example, 3D printing has been adopted for the production of medical devices such as airway stents²³, and orthopedics.²⁴ 3D printing has also been used to create prototype and pre-production testing models.²⁵ Given time and further research and development into 3D printing technology, the 3D printers could take over the mass production segment as well.

The technology is finally maturing and has begun to scale up in the industry. According to a study by PricewaterhouseCoopers (PWC), two thirds of the top one hundred manufacturing companies have already incorporated or are exploring how to incorporate 3D printing into their production processes.²⁶ These include industry giants in the heavy manufacturing industry such as General Electric²⁷, Siemens²⁸, Boeing²⁹, and Ford (who actually begun using it in the 1980s).³⁰ 3D printing has also been taken up by companies in the light manufacturing industries such as footwear and orthodontics. Prominent examples are Nike in the former,³¹ and Invisalign, in the latter.³²

As the adoption of 3D printing in the manufacturing sector increases, the multiple links in the current supply chain structure could be reduced to either one or a few depending on the nature of the business or industry. For example, large manufacturing firms could effectively cut out the middle man, greatly reducing the number of links of the supply chain,

²³ Cheng, George Z., Erik Folch, Adam Wilson, Robert Brik, Noah Garcia, Raul San Jose Estepar, Jorge Onieva Onieva, Sidhu Gangadharan, and Adnan Majid. "3D Printing and Personalized Airway Stents." *Pulmonary Therapy*: 1-8., Retrieved from: <https://link.springer.com/article/10.1007/s41030-016-0026-y>

²⁴ "Additive Orthopaedics Develops 3D Printed Implant to Successfully Treat Hammertoes." 3DPrint.com | The Voice of 3D Printing / Additive Manufacturing. July 12, 2016. Accessed August 21, 2017. <https://3dprint.com/141935/3d-printed-implant-hammertoes/>.

²⁵ Wyman, Carrie. "3D Printed Jigs and Fixtures for Auto and Aero Design." *Stratasys Blog*. September 23, 2016. Accessed August 21, 2017. <http://blog.stratasys.com/2016/09/22/3d-printed-jigs-fixtures-auto-aero/>.

²⁶ Sarah Anderson Goehrke, Two-thirds of Top 100 Manufacturing Companies Already Use 3D Printing Says PWC Survey, 10 October 2014, Retrieved from: <https://3dprint.com/18633/3d-printers-manufacturing/>

²⁷ GE Global Research, 3D Printing Creates New Parts for Aircraft Engines, n.d., Retrieved from: <http://www.geglobalresearch.com/innovation/3d-printing-creates-new-parts-aircraft-engines>

²⁸ Reuters, Siemens completes key test of 3D-printed gas-turbine blades, 6 February 2017, Retrieved from: <http://uk.reuters.com/article/uk-siemens-turbines-3d-idUKKBN15L0ZZ>

²⁹ Reuters, Exclusive: Boeing's space taxis to use more than 600 3D-printed parts, 3 February 2017, Retrieved from: <http://www.reuters.com/article/us-boeing-space-exclusive-idUSKBN15I1HW>

³⁰ Ford, Ford's 3d-Printed Auto Parts Save Millions, Boost Quality, 12 December 2013, Retrieved from: https://media.ford.com/content/fordmedia/fna/us/en/news/2013/12/12/ford_s-3d-printed-auto-parts-save-millions--boost-quality.html

³¹ Lyndsey Gilpin, 3D printing: 10 companies using it in ground-breaking ways, 26 March 2014, Retrieved from: <http://www.techrepublic.com/article/3d-printing-10-companies-using-it-in-ground-breaking-ways/>

³² Bridget Butler Millsaps, 3D Printed Orthoprints: Sticking it to the Orthodontics Industry with a Smile, 15 March 2016, Retrieved from: <https://3dprint.com/124203/3d-printed-orthoprints/>

increasing cost savings, thereby generating more shareholder value.³³ As mentioned earlier, this has the potential to disrupt AEC's strategy of consolidating ASEAN as a viable base for production in the global supply chain, thus affecting the overall global demand for labour in Southeast Asia.

JOB SUBSTITUTION THROUGH AUTOMATION

The AMS' labour market also faces challenges from automation technology. In July 2016, the International Labour Organization's (ILO) published a working paper on the future of jobs in Southeast Asia at risk of being taken over by automation.³⁴ The paper reports that although Southeast Asia as a region is technologically savvy when it comes to consumer electronics, it remains far behind in terms of implementing technology at the work place.³⁵ This is due to a mixture of capital investment constraints and lower wage structures in developing regions that as a whole discourage workplace automation.



Figure 4 - Jobs at risk from automation in ASEAN reproduced³⁶

³³ Christopher H. Lim and Tamara Nair, How 3D printing could disrupt Asia's manufacturing economies, The Conversation, (10 January 2017), Retrieved from: <https://theconversation.com/how-3d-printing-could-disrupt-asias-manufacturing-economies-69633>

³⁴ Jae-Hee Chang and Phu. Huynh, ASEAN in transformation : the future of jobs at risk of automation, International Labour Office, Bureau for Employers' Activities, (July 2016), Retrieved from: http://www.ilo.org/public/english/dialogue/actemp/downloads/publications/2016/asean_in_transf_2016_r2_future.pdf

³⁵ ibid.

³⁶ Adapted from Jae-Hee Chang and Phu. Huynh, ASEAN in transformation : the future of jobs at risk of automation, International Labour Office, Bureau for Employers' Activities, (July 2016), Retrieved from: http://www.ilo.org/public/english/dialogue/actemp/downloads/publications/2016/asean_in_transf_2016_r2_future.pdf

The aforementioned paper found that there is a high potential for technology substitution in Southeast Asia across the various manufacturing sectors such as food and beverages, garments, computer electronics and motor vehicles. The services sectors are affected as well – namely in retail, hotel and hospitality, and banking. This results in nearly three in five jobs at high risk of being replaced by automation (see Figure 4). Particularly impacted are women, workers with less education and workers in lower-wage jobs.³⁷

Coupled with the advances of productivity technologies that allow for the further mechanization of labour through Artificial Intelligence and robotics, these may result in lower demand for migrant labour in the near future, especially for those that can be easily replaced by machines. Furthermore, given the widespread use of social media and the uncertainty in the global economic outlook, there is no guarantee the fires of anti-immigrant hostility will not spread to ASEAN. This uncertainty coupled with the competitive pressures from technological advances creates labour policy challenges for governments of sending countries, especially if these technologies are adopted in receiving countries. Insufficient ability to address these issues may lead to unemployment and lower growth rates, or in the worst-case scenario, political violence from a disenfranchised class.

RETHINKING REGIONAL DEVELOPMENTAL STRATEGIES AND EXPLOITING NEW OPPORTUNITIES

Given these challenges, it is only prudent for AMS to work out a new strategy for sustainable economic development. While the region remains immigrant friendly, sending countries should take the opportunity to build up their local economic infrastructure by continuing to make their countries attractive for both local and foreign investment. To ensure that their workers are able to perform at their most optimal, governments should direct these investments to create favorable conditions for domestic industrialization. Governments should also aim for the retention of technical expertise through the up skilling of locals in order to groom a more robust domestic workforce.

To kick-start this initiative, agriculture and fisheries are two key sectors that this strategy could be applied to. The rising global food demand wrought by the challenges of climate change and ever increasing global population, presents an economic opportunity that ASEAN could capitalize on. Based on the recent 2017 Future of Food and Agriculture report by the Food and Agricultural Organization of the United Nations (UNFAO), world population is expected to reach 9.7 billion by 2050, with growth concentrated in the African and South Asian regions. While both these regions rely on the agriculture sector for income and employment, they face stressed land and water resources, which place limits on their ability to expand. As a region, Southeast Asia also faces the same problem. This trend is projected to drive up global agriculture demand. Agriculture demand also face pressures from economic growth of developing countries, resulting in the emergence of the global middle class. With higher incomes come more expensive tastes, and consumption for resource-intensive food products such as meat and dairy products will increase. If no major changes to agricultural investments happen (i.e. the “business as usual” scenario), by 2030, hundreds of millions of people will be undernourished.³⁸

³⁷ Ibid.

³⁸ The Future of Food and Agriculture: Trends and Challenges, the Food and Agricultural Organization of the United Nations (UNFAO), (2017), retrieved from <http://www.fao.org/3/a-i6583e.pdf>

While these trends herald an impending global food crisis, the Southeast Asian region is well positioned to turn it into an opportunity for growth. Given that Southeast Asia is naturally well endowed with agricultural land and rich fishery catchment areas, it is an opportune time for Southeast Asian nations to make full use of the ASEAN Economic Community (AEC) to fuse the growth of these sectors and to capitalize on the comparative advantage of all ASEAN states to develop Southeast Asia as the global food bowl. ASEAN governments could collectively collaborate and consolidate efforts to advance sustainable fishery production in the region through reviewing their land use policies and agricultural development, coupled with manpower training and research and development in this area. These efforts will help develop local businesses and generate both skilled and non-skilled labour demand in the agricultural and fishery industries. While skilled labour is needed to operate machinery and work with automation, there are still areas where the current artificial intelligence and automation is not yet equipped or well developed enough to deal with. In this transition phase, there is still a place for non-skilled or low-skilled labour, especially in the planting, harvesting and processing stages. However, as the industry develops and the automation technology becomes more mature, these can be transitioned through training and (re)education to higher skilled functions. Doing so will help with the labour surplus problem – thus ensuring the economic survival of the sending countries – but also enhance the food security of the region and beyond. Moreover, this will solve the problem of brain waste where due to the poor transferability of formal and informal qualifications of immigrant labour, many migrants are underutilized and underemployed in the host countries.³⁹ With the development of these industries, more employment opportunities would be available to this demographic. This is also an opportune time for countries and agribusinesses to intensify investments in research and development in the agriculture and fishery sectors if they have yet to do so, with the aim of creating home-grown expertise and leadership in the global industry (see Figure 5 for illustration).

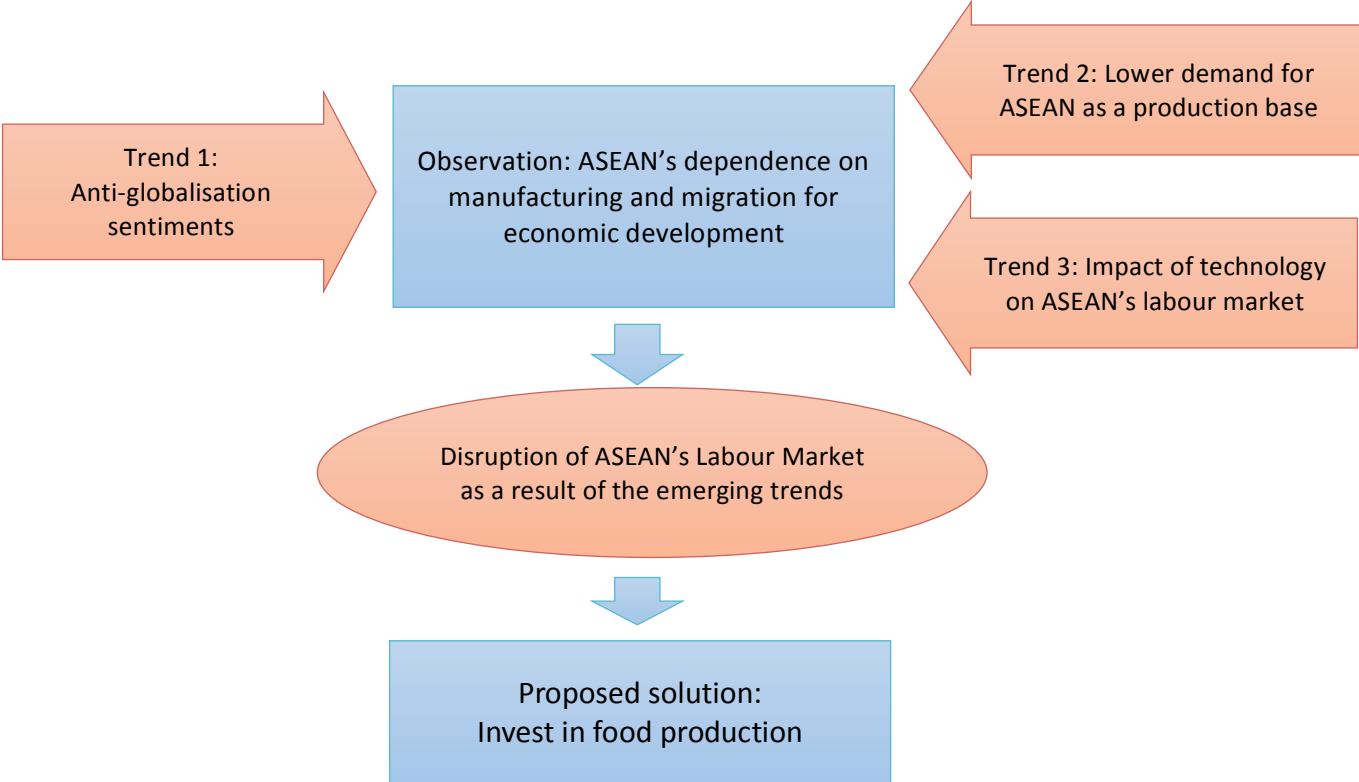


Figure 5 - Challenges and proposed solution to ASEAN's potential labour market disruption

³⁹ Sumption, Madeleine. "Tackling brain waste: Strategies to improve the recognition of immigrants' foreign qualifications." Washington, DC: Migration Policy Institute (2013).

CLOSING REMARKS

ASEAN needs to ride the oncoming technological tsunami and explore new markets and industries it can tap on and leverage opportunities to achieve economic success. Given ASEAN's endowments in the fishing and agricultural sectors coupled with the impending global food shortage as foreseen by UNFAO, ASEAN member states should collectively explore how they could collaborate to create a home-grown high-tech farming industry and nurture a more technologically savvy workforce that is ready to staff it. This will not only create more productivity, but also make a traditionally unattractive industry – due to long working hours and backbreaking work – more desirable. The proposed developments will hopefully create more jobs in sending countries, thus reducing the necessity of splitting families for economic survival and thereby minimising the social costs for future generations.

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