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Guiding frameworks for regulation of digital trade in services

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The importance of digital trade to APEC economies is now recognised. Developing an enabling environment for access to and delivery of 'digital services' is a new focus in APEC. It is emerging as a core part in APEC's plans to improve the competitiveness of services and trade in services in the region.

What constitutes a digital service is not yet well understood or agreed by policymakers and regulators. Accordingly, the relationship between the digital platform and the services, and how these services might be most efficiently traded is yet to be systematically analysed. How they should be regulated is commanding increasing attention from governments.



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Competing regulatory models are starting to emerge over the extent to which governments should control cross-border data flows to implement policy goals such as privacy, cybersecurity or public order.ⁱ For example, the recent EU General Data Protection Regulationⁱⁱ imposes more stringent rules on businesses operating in or trading with the EU to protect data and consumer privacy, while the US has advocated international disciplines to reduce restrictions on digital trade.ⁱⁱⁱ

At the same time, controls on digital services are extensive in most APEC economies. Governments have been reluctant to liberalise despite the need for competitive services to support growth. There has been a widespread proliferation of regulatory restrictions which impact on the ability of firms to harness digital technology to conduct services business internationally. Data localisation requirements, local content measures and restrictions on investment impede delivery of services, data and payments across borders. Divergence in approaches can create obstacles to cross border business.

Trade agreements now include measures which address digital trade in services. The recently signed Comprehensive Progressive Trans Pacific Partnership Agreement (CPTPP) provisions on e-commerce are the most advanced of any agreement yet negotiated - covering cross border data flows, transparency, cloud computing, technology transfer and data localisation. For example, the agreement guarantees the free flow of data across borders for service suppliers and investors; prohibits forced technology transfers and ensures that companies can locate servers in the country they choose and are not forced to hold data locally.^{iv}

Commitments to liberalise services are also significant for facilitating trade in all services. They expand upon those in previous FTAs. For example, they permit the cross-border delivery of electronic payment card services, enable the transfer of information for data processing for financial institutions and provide freedom of payments and transfers that relate to the cross-border supply of services.^v The way the agreement is structured means that new services are automatically opened to TPP members unless

countries explicitly decide to close them. And where a party eases or lifts certain existing restrictions, the liberalised measure becomes an integral part of the party's treaty commitments.

Various bilateral FTAs of Australia and other APEC economies include similar commitments. Australia has included electronic commerce chapters in almost all of its bilateral FTAs. All agreements provide for services liberalisation beyond WTO commitments. It is currently pursuing commitments on digital trade in ongoing negotiations (eg: bilateral agreements with Hong Kong, Indonesia). Ecommerce rules and commitments to further services liberalisation are under negotiation in the Regional Comprehensive Economic Partnership Agreement (RCEP) involving numerous APEC members. A joint Australian initiative with ASEAN countries to promote digital trade and support inclusive economic growth was recently announced.^{vi}

And at the multilateral level there is support in WTO for the creation of a working group to consider negotiating global rules on e-commerce. Commitments to advance digital trade in services are under consideration in the (currently stalled) Trade in Services Agreement (TiSA).

Provisions on e-commerce in trade and investment agreements are relatively new. Their application to general trade and investment law disciplines is uncertain and complicated.^{vii}

Notwithstanding this, provisions in international trade and investment agreements, like the CPTPP, can serve as reference points for the development of legal and policy frameworks that promote trade enabling rules for the free flow of information and services.

Australia for example recognises the role of international rules in advancing digital trade. Its international cyber engagement strategy^{viii} seeks to 'actively shape global rule making on digital trade,' and to 'promote trade enabling rules and the free flow of information,' including through FTAs.

Open legal and regulatory frameworks will generate trade and investment opportunities for digital services in APEC. APEC is an important platform for building policy coordination and consensus within and between governments to support this. It is well positioned to take the lead in advancing a facilitative framework to promote policy settings for cross-border e-commerce that support an open and competitive environment for digital services. This includes both advancing rules in trade agreements and encouraging alignment of these rules with broader international frameworks (for example, normative principles like net neutrality, OECD Principles for Internet Policy Making^{ix}) and the realities of the digital economy.^x

As pointed out by trade law experts,^{xi} approaches to build a better framework for open, secure and efficient services trade should be underpinned by extensive policy coordination across a variety of stakeholders. This includes the wider internet community, international bodies dealing with broader internet governance issues, services industries and consumers. Greater quantitative and qualitative evidence on the link between services, data flows, productivity, innovation, and digital trade would also help.

ⁱ Andrew Mitchell and Jarrod Hepburn, Don't Fence Me In: Reforming Trade and Investment Law to Better Facilitate Cross-Border Data Transfer' (2017) 19 *Yale Journal of Law and Technology* 182–237, at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2846830

ⁱⁱ See <https://www.eugdpr.org/>

ⁱⁱⁱ The US supports a work program on developing rules on e-commerce in the WTO which includes permanent bans on duties on electronic transmissions, forced technology transfers and discriminatory technology requirements. It has commissioned research by the USITC on barriers to US digital exports.

^{iv} This commitment does not apply to financial services.

^v Commitments are conditional, are subject to privacy and confidentiality requirements and in some cases are limited to the specific commitments that have been made by each party. See CPTPP Chapter on Financial Services at <http://dfat.gov.au/trade/agreements/not-yet-in-force/tpp-11/official-documents/Pages/official-documents.aspx>

^{vi} See <http://minister.industry.gov.au/ministers/cash/media-releases/australia-and-asean-driving-digital-trade>

^{vii} See note 1.

^{viii} Australia's International Cyber Engagement Strategy, accessed at http://dfat.gov.au/international-relations/themes/cyber-affairs/aices/chapters/part_1_digital_trade.html

^{ix} See <https://www.oecd.org/sti/ieconomy/oecd-principles-for-internet-policy-making.pdf>

^x See note 1.

^{xi} See note 1.

WHERE TO WITH APEC'S INVESTMENT FRAMEWORK?

By Ken Waller, former Director the Australian APEC Study Centre, RMIT University, Executive Director, APEC 2018 and Director, PNG ABAC Secretariat

APEC is now embarking on a most important review of a post 2020 Vision for a region which has as its fundamental objective the Bogor goals of open trade and investment. APEC is also considering its approach to the Next Generation of Trade and Investment Issues (NGenTI).

The Bogor goals established the concept of free and open investment across the APEC region by 2020 as a crucial aspect of regional economic integration. Since the inception of APEC, FDI flows have grown strongly but more recently, and particularly since the Global Financial Crisis, growth has stalled.

There is an inter-relationship between the post 2020 Vision review and NGenTI. The central issue under consideration is how promote an environment in the region that encourages cross-border investment flows.

The benefits of such flows have often been stated. Foreign direct investment (FDI) can complement domestic savings and investment thus allowing more rapid economic development than would otherwise occur. FDI can be associated with raising technology inputs in an economy, contributing to better production and marketing practices, jobs growth, increases in efficiency and productivity in domestic markets and increasing the prospects of better export performance and consumer choice. All are benefits.

Most international organisations do work to promote FDI and its benefits. Sound principles to protect the rights of foreign investors and those of the economies that are recipients of FDI flows have evolved and are reflected in treaties of a multilateral, plurilateral and bilateral character.

The principles include most favoured nation treatment, national treatment, recognition of concepts of compensation for losses incurred when a government determines to acquire an asset owned by a private citizen, foreign or domestic, and treaties usually include methods to settle to disputes between investors and the states they invest in.

In a broad sense, FDI occurs because there is a degree of confidence in laws and practices under which investments take place. There is recognition of laws and practices that provide a balance in the interests of investors and those economies in which they invest.

APEC has developed the Investment Facilitation Action Plan (IFAP) to promote investment flows in the region. The plan was launched in Sydney at the APEC Leaders meeting in 2007. Because it is an APEC initiative it is of a non-binding character; it incorporates 8 principle and 35 articles that member economies might consider to improve their investment attractiveness.

IFAP includes principles to promote accessibility and transparency in investment decision-making by a home economy, measures to promote a stable investment environment, consistency and predictability in policies, efficiency in procedures, the building of stakeholder relationships and international cooperation. IFAP is thus a guide for the region which recognises well-established international principles, discussed later in this article.



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IFAP is but one aspect of APEC's broad agenda that incorporates other aspects of economic policy making that impact on the environment in which investment decisions are made. Other aspect of APEC's agenda include those relating to structural reform, regulation and competitiveness, market access and efficiencies in financial systems, to name just a few.

These inter-relationships across APEC's agenda, are important in ensuring a mature and cohesive approach as economies draw on their membership of APEC in formulating domestic policy-making directives.

As well as formulating IFAP, APEC draws on the work of, and collaborates closely with, relevant international organisations responsible for trade and investment, including the WTO, UNCTAD, UNICTRAL, the OECD, World Bank, IMF and the ADB as well as industry and trade associations, academia and think-tanks.

Moreover, APEC, through the APEC Business Advisory Council, ABAC, absorbs advice on infrastructure investment through the Asia Pacific Infrastructure Partnership and the Global Infrastructure Hub.

Notwithstanding the quantity and quality of and the variety of work to promote and facilitate investment flows in the Asia Pacific region, there has been only partial recovery in flows since the end of the Global Financial Crisis. Most recent figures by UNCTAD in the 2017 World Investment Report show that global flows of FDI fell by about 2% to \$US1.5 trillion in 2016 and flows in developing economies declined even more by 14%. Flows to lesser developed countries and structurally weak economies remain volatile and low. Although a modest recovery of FDI flows is expected to be recorded in 2017, flows over 2017-2018 are likely to remain well below the 2007 level.

The 2017 UNCTAD report also draws attention to the impact of the digital economy on investment decision-making. Digitisation is impacting on all aspects of economic activity, including global value and supply chains. UNCTAD warns that the development of digital strategies either fail to address investment or discuss investments needs only at a very general level.

Given the massive infrastructure needs and investment associated with the Sustainable Development Goals, higher rates of FDI flows must remain as a regional and global priority and highly relevant to APEC's post 2020 review and to consideration of the NGenTI .

At this juncture in APEC, the following issues are highly relevant to the post 2020 vision and to NGenTI;

- The need for strong FDI flows to and across the Asia Pacific remains as an imperative;
- APEC initiatives to promote a sound investment environment in member economies sufficient to realise the Bogor goals of a free and open investment region are unlikely to be achieved by 2020. That said, FDI has been, and will continue to be, a major contributor to the Asia Pacific region and to regional economic integration – attainment of the Bogor goals is an imperative for APEC;
- The interests of states (economies) is being influenced perhaps more sharply than previously by domestic and global community concerns on significant issues such as the environment, health, climate change and development issues generally which impact on FDI flows;
- These interests of governments might usefully be considered as one of balancing public and private investor interests and should be recognised as such in creating an environment in which FDI flows are encouraged; in some if not in all economies, they are reflected in investment policies which involve decision making on national interest terms;
- APEC is not empowered to be involved as a party to treaty negotiations of multilateral, plurilateral and bilateral investment negotiations that are being required to reflect the types of concerns just noted; however, APEC investment guidelines might be reviewed with a view to advocating a realistic and flexible approach in treaties its members may enter into to reflect those concerns;

- The IFAP principles include measures to improve stakeholder relationships and measures to promote international cooperation; these principles could usefully be assessed to see if they can usefully be extended to incorporate the concepts noted above, reflecting the interests of governments;
- The key principles of non-discrimination, MFN and National Treatment that have evolved in treaties and agreements to fairly reflect the interests of investors (and states) should continue to be essential components of reviews and measures that seek to promote investment flows in the region;
- The need to develop a more effective pathway to deliver on Action Plan reviews to show performance in policy-making, judged against IFAP principles;
- Encouragement of like-minded interested economies in developing systematic approaches to reviewing key sections of IFAP over say the next three to four years by a group comprising APEC members and external experts drawn from respected international organisations and publish reports drawing out key lessons learned;
- The need to promote continuing work on quantitative and qualitative analysis, started under the Regional Investment Analytical Group, and focused on APEC-wide research key aspects of investment that enhances trade, competitiveness, productivity growth and employment;
- Review of UNCTAD's report and consult with UNCTAD, on digitisation and innovation and determine a pathway to give effect to key recommendations involving these issues in strategic investment planning at economy level;
- Increase collaboration with the private sector, MDBs and the Global Infrastructure Hub and APIP to identify most effective ways to promote sustained growth in quality infrastructure in the region.

The New Trade Agenda, Mutual Recognition and BREXIT

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International trade policy is changing rapidly. Trade flows of goods are now dominated by global supply chains of commodities and manufactures, sustained by growing services trade. As a consequence, individual economies are becoming more integrated.

The GATT trade negotiations concluded in the early 1990s with the creation of the WTO and brought import tariffs on manufactures down to an average of 3-4% in OECD countries. Since then, behind the border non-tariff barriers (NTBs) became the major restrictions on trade flows in manufactures, services and to some extent foodstuffs.

Frictions over agriculture support policy no longer dominate trade relations between Australia and the EU. The EU is now Australia's largest two-way trading partner in services. Australia and the EU are set to negotiate a Free Trade Agreement (FTA) that aims to be comprehensive, covering all sectors of trade. These are key themes of a book published by ANU Press in 2017, [*Australia, the European Union and the New Trade Agenda* \(Elijah et al. 2017\)](#)

Now that import tariffs no longer dictate trade flows, it is imperative that the world embraces a 'New Trade Agenda' that reduces the trade-reducing effects of diverging domestic policies. These include national regulatory requirements such as product standards on goods, certification, licensing procedures on goods and services and professional qualifications on traded services.

Such requirements frequently differ from country to country and often act as trade restrictions, whether intended or not. The New Trade Agenda also encompasses other domestic policies impacting on trade, notably; investment, public procurement and competition policies. An important aim of trade negotiations increasingly is to remove the NTB effect of these domestic policies to the greatest extent possible and expand trade opportunities.

One problem, however, is that the rules of the WTO have not kept pace with the capacity of regulatory NTBs to restrict trade. The negotiations that created the WTO made efforts to bring NTBs into the multilateral trade rules.

The General Agreement on Trade in Services (GATS) intended to mirror the GATT rules on goods trade in force from the 1940s, recognised the current importance of services in world trade. The Technical Barriers to Trade agreement (TBT) and the Agreement on Sanitary and Phytosanitary Measures (SPS) also came into force with the WTO. They were similarly important in recognising the growing impact of NTBs over tariffs in limiting trade flows.



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Nevertheless, the 'Domestic Regulation' provisions of these agreements exhort WTO members to ensure only that technical regulations not 'constitute unnecessary barriers to trade' or 'be more restrictive than necessary'. Each of these agreements also encourages members to seek equivalence or mutual recognition (MR) solutions to regulatory NTB problems, but they do little more. WTO rules disciplining NTBs have not been updated since the 1990s and need strengthening.

In the concluding chapter of *Australia and the EU: Partners in the New Trade Agenda*, Kenyon and Van der Eng (2017) argue for an MR approach to liberalising the trade-restrictive effect of regulatory divergences in the forthcoming Australia-EU FTA negotiations. This would be in the context of bilateral tariffs between Australia and the EU (apart from agriculture) being reduced to zero, as they have in other FTAs negotiated by the EU.

Both the EU and Australia have considerable experience with MR in dealing with the trade restrictions of regulatory divergences. MR works in circumstances where there may be regulatory differences, but where there is also a high level of equivalence of regulatory intent and where there is a high level of trust in regulatory integrity. In effect, MR achieves acknowledgement that goods made to the standards, or marketed to the certification or licensing provisions of country A, may be freely traded in country B, and *vice versa*. By granting recognition to the technically divergent regulations of another jurisdiction, the certifying state effectively acknowledges that the regulations reach acceptable standards.

This has been a principle important for the EU in constructing its Single Market in the early 1990s, by building on the earlier "cassis de Dijon" judgment of the European Court of Justice that goods lawfully produced in one member state cannot be banned from sale in another member state. Australia applied the same principle across the differing product standards then applying in the six states of Australia in the Mutual Recognition Agreement of 1993. It extended the principle to New Zealand in 1997 with the Trans-Tasman Mutual Recognition Agreement (TTMRA), which also included an MR of professional qualifications. The TTMRA was the first to apply MR internationally. As we indicate below, there is every reason why there should be others.

When it came to bringing services fully into the Single Market in the 2000s, the EU had become a bloc of 28 countries. In this larger EU, there was not the same trust in regulatory integrity across all member states. It became clear that an MR approach to the creation of a single market in the EU for services could not just simply be applied across the larger bloc without further confidence building.

Nevertheless, MR remained the basis for the solution reached in the EU's Services Directive of 2006 in the form of 'managed MR'. In effect, the directive establishes a prior step to MR, known in the EU as 'Mutual Evaluation'. This is a process of transparency and peer review between member states aimed at increasing equivalence and confidence as a stepping stone to MR. McNaughton and Lo (2017) discuss the steps taken in the 2006 directive to bring traded services fully into the Single Market.

The extensive experiences both Australia and the EU have with MR in liberalising the trade restricting impact of regulatory divergences both internally (between Australian states and between EU member states) and internationally (between Australia and NZ in the TTMRA) place Australia and the EU in a strong position to pursue MR solutions to regulatory NTBs on goods and services in the forthcoming FTA negotiations.

Both Australia and the EU have well-developed regulatory standards, enjoy high equivalence of regulatory intent, and share a high level of trust in each other's regulatory capacities. The latter is evidenced by 'conformity assessment' agreements currently in force to test for each other's standards. To the extent that any of the above elements may need reinforcing, the transparency/peer review process contained in the 2006 Services Directive could provide a stepping stone to MR solutions.

In June 2016, the UK decided by referendum to leave the EU and triggered the article 50 withdrawal provision of the Treaty on European Union on 29 March 2017. The UK subsequently clarified it will leave both the Single Market and the Customs Union of the EU. The latter in order to re-establish an independent external tariff and to be free to make separate trade agreements with other countries. More recently, the British Prime Minister spoke about the future relations with the EU on 2 March 2018 (UK 2018). She specified that the UK must avoid:

1. damage to the "integrated supply chains" that are now essential to trade in manufactures between the UK and the rest of Europe,
2. re-establishment of "customs and regulatory checks" between the UK and Europe, and
3. creation of a "hard border" between Northern Ireland and the Republic of Ireland.

She concluded that the only way to realise these aims would be through a "comprehensive system of Mutual Recognition" between the UK and the EU. The logic of this conclusion appears incontestable. After BREXIT, import tariffs between the UK and the EU will remain reduced to zero under a bilateral FTA, maybe except agriculture. But without an MR approach, regulatory NTBs could arise again between the UK and the EU.

Against all the points above, a post-BREXIT trade relationship that deals with regulatory barriers through MR will be consistent with the objectives of the TTMRA to eliminate regulatory trade barriers between close trading partners. This should be the aim of all trading partners who share high regulatory standards, capacity and equivalence of intent as they move towards greater trade liberalisation in a manner that will reinforce disciplines on regulatory NTBs adopted with the establishment of the WTO.

In her speech, Britain's PM made a number of other specific points to demonstrate why MR is the preferred route for dealing with regulatory NTBs. She noted that the UK's "regulatory standards will remain as high as the EU's" and will "remain substantially similar". This is not a commitment to harmonisation, but to equivalence. In any case, the UK would be starting from a situation of full regulatory integration with the EU. An explicit commitment to MR would make it unlikely to stray far in regulatory differences.

Also, the PM's speech indicated an expectation that "regulators on both sides" would be involved in monitoring any post-BREXIT modifications. This transparency, together with use of the peer review mutual evaluation process now available from the EU Services Directive, should provide sufficient confidence that close equivalence of regulatory intent will remain between UK and EU.

Britain's PM also noted that a post-BREXIT trade arrangement, which includes MR on regulatory provisions, will permit cooperation "deeper than in any other existing trade agreement" the EU has. This is important, as it is true that without liberalisation of regulatory trade barriers, the value of any FTA in liberalising trade between partners will always be severely curtailed. This is increasingly the case as behind-the-border NTBs become more important than more traditional trade restrictions such as tariffs and quotas. As noted above, regulatory NTBs emerged as the main restriction on global trade. The liberalisation of NTBs is central to continued economic integration and prosperity.

In conclusion, the UK rightly points to an MR solution to avoid the re-emergence of regulatory NTBs on trade with the EU following BREXIT. MR is the most 'trade friendly' solution. It will foster deeper UK-EU economic integration than possible in a trade arrangement focussed primarily on tariff elimination. The EU's 2006 "Global Europe" communication on trade policy stated that the EU was committed to future FTAs that build on the GATT rules "by going further and faster in promoting openness and integration" (EU 2016). Future FTAs, it said "must be comprehensive in scope, provide for liberalisation of substantially all trade and go beyond WTO disciplines. The EU's priority will be to ensure that new FTAs ... serve as a stepping stone not a stumbling block for multilateral liberalisation".

A post-BREXIT UK-EU trade arrangement that includes MR on regulatory barriers will achieve that aim. An appropriately designed surveillance and arbitration mechanism within the overall arrangement could monitor its application. Possibly through recourse to arrangements modelled on the transparency and peer review procedures in the EU Services Directive. An FTA between Australia and the EU that also encompasses MR of regulatory divergences on conditions similar to those that can be worked out for the UK could be equally liberalising and also play a positive role in realising the aims of "Global Europe". Such an approach might also be of value in future bilateral and multilateral approaches involving APEC countries.

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Global value chains in the Asia-Pacific

By John West, Adjunct Professor at Tokyo's Sophia University, Contributing Editor at FDI-Intelligence, a Financial Times magazine, and Executive Director of the Asian Century Institute. Author of ["Asian Century... on a Knife-edge: A 360 Degree Analysis of Asia's Recent Economic Development"](#).

APEC's vision of an Asia-Pacific with free and open trade and investment, supported by structural reform and capacity building, is more relevant than ever in today's economy where global value chains (GVCs) are a crucial factor driving the region's development.

GVCs and Asia's economic development

GVCs are a dominant feature of the economic landscape of the Asia-Pacific, as I highlight in my recent book on the Asian Century. Perhaps the most celebrated case is that of the iPhone, which was designed and conceived in California, whose high-tech components come from Japan, Korea, Taiwan, Germany and elsewhere, and which is assembled in China by two companies from Chinese Taipei, Foxconn and Pegatron.



John West

But there are many other examples like clothing garments which are often designed in European capitals, but which are cut, sewn and trimmed in China, Bangladesh, Cambodia, and Vietnam. In the services sector, the Philippines plays an important role in business process outsourcing GVCs, especially for call centres.

GVCs are driven by multinational enterprises (MNEs) which have invested and established production facilities in Asia's emerging economies, notably China, Malaysia and Thailand. And participation in these GVCs has boosted economic growth, poverty reduction, and prosperity in these economies, thereby providing a fast track to development.

But a close examination of Asia's GVCs indicates that there is much that Asian governments could do to get better value out of GVCs. Despite its large and youthful workforce, the Philippines is barely present in manufacturing GVCs. While Malaysia and Thailand are struggling to transition from middle- to high-income countries, and China is very conscious of the steep challenge of upgrading its economy, as evident in its decision to launch the "Made in China 2025" plan.

Multilateral trade and investment liberalisation for GVCs

Since GVC participation by emerging economies is mainly driven by foreign direct investment (FDI) from MNEs, it is critical to foster an investment-friendly ecosystem. This means open trade and investment policies, as well good transport, logistics and other infrastructure, and minimal restrictions on doing business. And yet, APEC economies like the Philippines, China, Indonesia, and Malaysia have enormous barriers to FDI, as do other neighbouring economies like Myanmar, India, and Lao PDR, according to the OECD. This prevents them from exploiting many of the potential benefits of GVCs.

Multilateral trade and investment liberalisation offers a path towards greater participation in GVCs. And the recently agreed TPP-11 (Comprehensive and Progressive Agreement for Trans-Pacific Partnership) is a very important initiative in this regard. It covers a host of issues which are relevant to GVCs like investment, services, intellectual property, and cross-border data flows for service suppliers and investors. But it only includes a small group of countries from the Asia-Pacific, and must be expanded to include other economies, still on the basis of the agreement's high standards.

In contrast, the Regional Comprehensive Economic Partnership (RCEP), the other major trade negotiation underway in the region, is more limited in scope. It does not focus sufficiently on issues like services, investment and intellectual property. It also has more limited ambitions to advance trade and investment liberalisation. Moreover, it is far from clear if RCEP will ever be concluded, as deadlines get extended year after year.

The TPP-11 and RCEP have the potential to become important building blocks for APEC's vision of a Free Trade Area of the Asia-Pacific (FTAAP). But a higher level of ambition and a greater sense of urgency are required for these multilateral trade and investment initiatives to enable Asia's emerging economies to extract more value out of the region's GVCs.

While the Asia-Pacific is making inadequate progress towards the lofty FTAAP vision, the region is now increasingly haunted by the spectre of protectionism. And although much attention is now focussed on protectionist measures in the US and Europe, the unfortunate reality is that most economies in the Asia-Pacific are just as guilty of protectionism, if not more so. According to the Global Trade Alert, since 2008 Asia-Pacific economies have adopted a total of over 71,000 trade restricting policy measures. This is undermining the potential for GVCs to remain a driver of growth in the Asia-Pacific.

Logistics and ease of doing business for GVCs

The great challenges in the area of trade logistics facing countries like Papua New Guinea, the Philippines, Indonesia, and Thailand are evident from the World Bank's Logistics Performance Index. Improving logistics in APEC's emerging economies is critical for enabling stronger participation in GVCs. The World Bank, Asian Development Bank and the new Asian Infrastructure Investment Bank, along with bilateral donors, are providing important assistance and capacity building to improve Asia's logistics infrastructure. And while there is also potential for public-private partnerships, it is of most critical importance to develop and promote more seriously pipelines of bankable and investment-ready infrastructure project pipelines, and to improve taxation collection efforts to generate local revenue for infrastructure investment.

When local businesses participate in GVCs through working with MNEs, the domestic economy can benefit handsomely through economic growth, job creation, and technology and knowledge transfer. And yet as the World Bank's Doing Business project highlights, the Philippines, Papua New Guinea, China, Indonesia, and Brunei Darussalam suffer from regulatory environments which greatly inhibit the starting and operations of local firms. APEC's recent initiatives to improve the ease of doing business could generate great benefits for micro, small and medium enterprises which have much potential to participate in the region's GVCs.

Climbing Asia's GVCs

Despite the manifest benefits of emerging Asia's participation in GVCs, for the most part China and the ASEAN economies remain in a subordinate role in these GVCs, which are led by MNEs from advanced countries. China and ASEAN mostly undertake low value-added activities, such as assembling electronics and motor vehicles, and sewing garments. And even though China has made some progress in climbing Asia's GVCs, especially in the area of mobile telephony, Chinese companies are still reliant on suppliers from advanced companies for much high-tech componentry.

Asia's GVC successes, such as they are, have been mainly in the manufacturing sector. In contrast, the services sector in most of Asia's emerging economies is bogged down in traditional services with low productivity. Even in Japan and South Korea, productivity in the services sector is only half that of the manufacturing sector. Outside the services dynamos of Hong Kong and Singapore, the only real success story in services GVCs in East Asia is that of the Philippines, and even here, much of the focus is on low value-added activities, such as call centers.

Most Asian economies have an immense structural reform agenda to climb Asia's GVCs and "get better value out of the region's GVCs" by becoming GVC leaders, rather than subordinate followers. This means substantially upgrading economic, business and technological sophistication through investments in human capital, fostering innovation and creativity, improving infrastructure and connectivity, reforming corporate governance, tackling corruption, capturing the potential of the digital economy, to mention just a few. This is the only way that emerging Asian economies can become GVC leaders.

But the unfortunate reality is that most Asian countries—notably regional leaders such as Japan, South Korea and China—have been slow to respond to the region's structural reform imperative. According to the latest annual survey of the Pacific Economic Cooperation Council (PECC), failure to implement structural reforms is one of the top five risks to the region's growth.

Digitalisation and Asia's GVCs

The advent of digitalisation could have major impacts on the region's GVCs and provide governments with major policy challenges, as it sweeps through our economies, societies and politics. The digital economy has the potential to improve productivity, lower production costs, and raise demand. But as repetitive and routine tasks are replaced by machines, automation, and robots, governments could be tempted to implement self-defeating protectionism. What is necessary is for governments to invest more seriously in education, skills and training, and lifelong learning, both to optimise the benefits of digitalisation, and to enable displaced workers to find new employment.

More fundamentally, for those economies that have based their attractiveness on their low-cost labour, digitalisation may pose a strategic threat. As digital technologies and the 4th Industrial Revolution reduces costs in advanced economies, there is less incentive to offshore production to distant low-wage countries. Indeed, there has been mounting evidence that in recent years GVCs have been contracting with more MNEs 'onshoring' production. This highlights the importance and urgency of the structural reform agenda indicated above. Looking ahead, Asia's emerging economies must aim to base their development on smart labour and advanced technology rather than just cheap labour.

APEC's lofty visions more relevant than ever

APEC's lofty vision of an Asia-Pacific with free and open trade and investment and a FTAAP, supported by structural reform and capacity building, was established many years ago. But as I argue in this article, even if the global context may now be fundamentally different, these visions are more relevant than ever in today's economy where GVCs are a crucial factor driving the region's development.

Supply Chains on Blockchains¹

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Globalisation 2.0

Blockchain technology is shaping up as one of the most disruptive new technologies of the 21st century, facilitating an entirely new decentralised architecture of economic organization. While still experimental, it is disrupting industry after industry, beginning with money, banking and payments, and now moving through finance, logistics, health, and across the digital economy. These waves of innovation are being driven by both new entrepreneurial startups as well as by industry dominant firms reimagining and rebuilding their business models and services to use blockchain technology. Trade platforms and supply chains are shaping up as the major use case for blockchain technology, and we explain here how this may lead to a second phase of globalisation.

Breakthroughs in the technology of trade can have far-reaching consequences. Sailing ships and steam ships, refrigeration and aircraft were all watersheds in the making of the modern world, but two technologies of trade delivered us the modern era of globalization: these are (1) the shipping container, and (2) the WTO (formerly known as the GATT).

The invention of the shipping container in 1956 led to a revolution in international trade, birthing a new phase of globalisation. Blockchains, invented in 2009, promise a similar revolution. Blockchains offer a fundamental architectural change in the way firms and governments manage international trade, with enormous efficiency and productivity gains.

But, just as the shipping container required significant investment to bear fruit—and came up against the interests of the unions, regulators and ports—blockchain-enabled trade will require substantial upfront investment in new systems and will inevitably challenge existing interests. In the 1950s the shipping container was the solution to the problem of the high expense in money, time, and security to load cargo in and out of ships. Handling costs were high, operations were slow, and theft was rife.

Today the constraints on trade consist of the ever-increasing complexity of the data, records, payments and regulatory permissions that accompany goods as they travel across the world. Every good moving along a supply chain is accompanied by a data trail, often still as paperwork, to track bills of lading, invoices of receipt and payment, origin, ownership and provenance, as well as



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compliance with vast schedules of trade prohibitions and environmental regulation, taxes and duties.

The shipping container is a physical coordination technology, while the WTO is an institutional coordination technology. At the Blockchain Innovation Hub we believe that blockchain technology – as tradetech – is shaping up as the third great technology of trade.

The Cost of Information and Trust

Blockchain technology can solve a major and growing problem with the global trading order – namely the problem of information. Every time a good or service moves, information moves with it. The quantity of information associated with each product continues to grow, and the costs of dealing with this information, from compliance, auditing, verification – trust, in a word – is becoming a greater and greater share of the costs of the global trading system.

This information includes provenance and inputs – the information on a label. It includes trade-finance, bills of lading, shipping and handling information, security clearance – the commercial and administrative information. It includes the documentation of where it's been and where it's going, and who has handled it and who hasn't. And it includes all the information that each country requires in relation to customs and duties, biosecurity, labour and environmental regulations, compliance with various treaties – a vast rigmarole of auditing and compliance, each of which is necessary, desirable and costly. With each day, the information burden increases, not decreases. As the information cost of trade increases, it is not simply enough to digitize everything, because the real problem is that we need to be able to trust the information that is there.

Tradetech

Globalisation 2.0 will be built on tradetech, and the crucial infrastructural component of tradetech is blockchain. Blockchain technology, which is a distributed, append-only, peer-to-peer, trustless secure ledger, is almost custom-made for trade-tech.

It provides an infrastructural platform upon which to build a new information architecture for globally tradable goods – and to do so in a way that is fully digital, tamper-proof, low-cost, end-to-end secure, verifiable, transparent, scalable and computable. What cryptocurrencies did for money tradetech will do for globalization.

Tradetech will integrate the benefits of fintech into trade networks. Crypto-based models of payments, trade finance, insurance and other risk management tools will be automated. Tradetech will integrate the benefits of regtech into trade networks. Verification and compliance with local regulations will be automated. Tradetech will power-up logistics technologies with blockchain affordances such as smart contracts, decentralized autonomous organisations (DAOs), and the full technology stack that includes AI integration.

So we think of blockchain as a next-generation infrastructural technology for the global movement of goods and services. Service exports have the same constraints with respect to compliance with

certification, credential verification, and quality standards assurance. These same problems apply generally to the movement of people too. We are still yet to weave together a seamless global system of identity documents, education and trade certification and permissions, and taxation and other public liabilities.

Example: Benefits for Australia

Tradetech facilitated supply chains could to bring significant advantages to Australia, and her trading partners. This is win-win because there are both consumers and producers on each side.

For Australian exporters, there are at least two obvious advances. Tradetech facilitated Australian Agriculture will significantly boost the quality of **provenance** claims as to origin and quality of product. When this transparent verifiable information passes at much lower cost to final consumers, more of that assurance value passes back to suppliers, boosting primary producer income.

We are starting to see this already with start-ups in the primary export industry, for instance with *Beef-ledger*, *Agridigital* and *Grainchain*. We will also likely see the benefits of similar assurance in advanced manufacturing, such as in aerospace, medical devices, pharma and other high value bespoke manufacturing where quality is paramount and certification is costly. Or in other areas that rely heavily on intellectual property, such as creative industries.

Blockchain based tradetech will benefit producers and consumers by lowering the cost of providing and processing high value information that rewards legitimate quality production and minimizes rent-extraction along the way.

Crypto Free Trade Zones

Blockchain-based next-generation trade infrastructure opens the prospect of a next generation of crypto free trade zones. These may overlay existing trade zones – within bilateral or multi-lateral zones – with a standard protocol for information handling. This would lower the transactions costs of trade, which economic theory predicts would increase the quantity of trade, and therefore value creation.

But blockchain trade areas could also build on private supply chains and infrastructure, as with consortia such as the IBM-Maersk-Walmart alliance, or with the recently announced adoption by FedEx of blockchain technology. This is the difference between say email (an open standard) and Facebook (a proprietary model). The strength of the closed network model is that it incentivizes investment. But it creates power, and invariably requires regulation to constrain that power. And regulation in turn stifles innovation.

We need to start thinking about how we want free trade to evolve in the blockchain era. Global open standards should be our ambition, because this brings the maximum prospect for growth and innovation. But open standard protocols are challenging to get started, because it can stumble on a coordination problem at the outset. This is why in order to build the next generation of

globalization on blockchain infrastructure we will need to solve the open standards coordination problem.

1. This article is based on a talk given Australia-China Blockchain Event, 13th March 2018.
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