

Unbundling Regimes and Development Strategies in ASEAN

Old Issues and New Challenges

Fukunari Kimura

This paper extends the conceptual framework of “unbundling” proposed by Baldwin (2016), and tries to provide a starting point for reorganizing development strategies of ASEAN member states (AMS). While AMS have largely been successful in utilizing the mechanics of the second unbundling with a reduction in communication costs, there still exists a lot of room for exploiting its benefits. In addition, a new wave of the third unbundling, which comes with a reduction in face-to-face costs, has already arrived at ASEAN, and AMS must start incorporating it into their development strategies.

Keywords: Unbundling, production network, industrial promotion, infrastructure, international commercial policies.

1. Introduction: Evolving International Division of Labour and ASEAN

Changes in technological paradigm have transformed the pattern of international division of labour and the North-South economic relationship, particularly in the past three decades. The concept of “unbundling” proposed by Baldwin (2016) is extremely useful for reorganizing our thoughts on the development strategies of newly developed and developing countries.

While most of the developing world is still stuck to the first unbundling, forerunners among ASEAN member states (AMS), namely Singapore, Malaysia, and Thailand, have been successful in aggressively utilizing the mechanics of the second unbundling to accelerate economic growth and poverty alleviation. With some time lags, Indonesia, the Philippines and Vietnam have tried to deepen their involvement in the second unbundling. Latecomers including Cambodia, Laos and Myanmar, too, have recently shown signs of engaging in the second unbundling. We have observed a “step-by-step” upgrading of unbundling in their economic development.

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On the other hand, the third unbundling has arrived abruptly in ASEAN. Due to a drastic reduction in face-to-face costs, search engines such as Google have dominated the world; social media sites like Facebook and Tencent have rapidly expanded; B2C and C2C matching businesses such as Uber, Gojek, Grab, and Airbnb have flourished; e-commerce platforms such as Amazon and Alibaba.com have broadened their scope; and e-payments have swiftly been disseminated. Such a series of new phenomena certainly comes with deep development implications, making it imperative for countries to incorporate them into their development strategies.

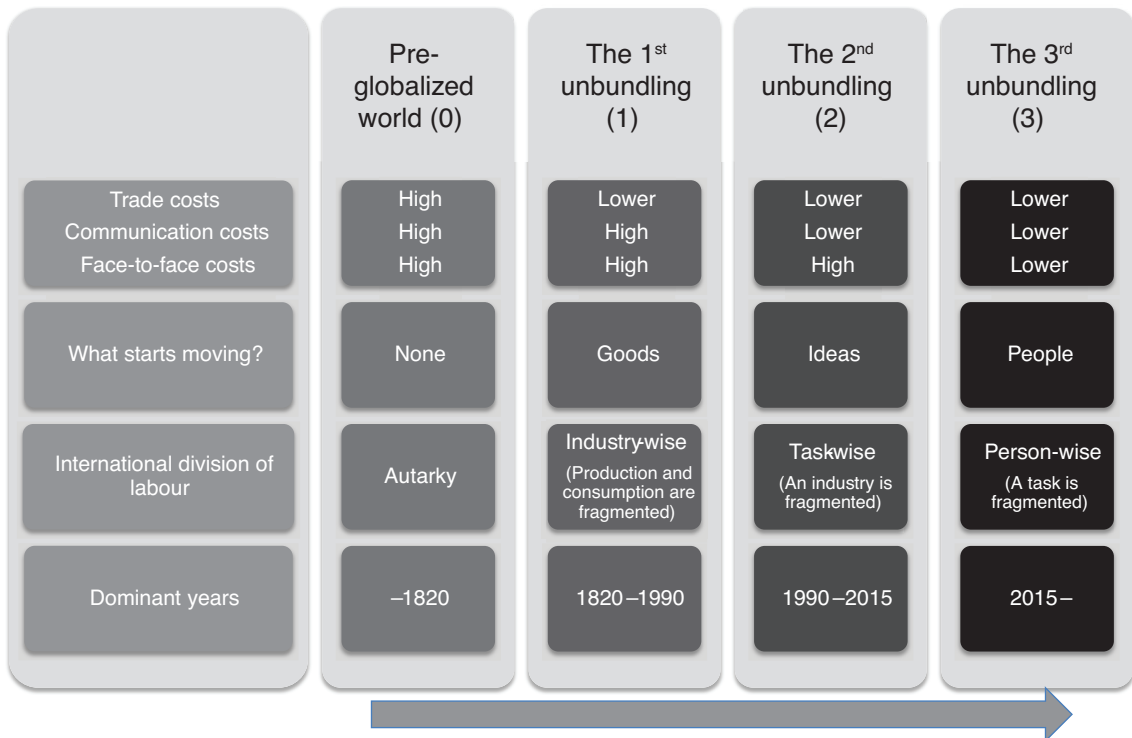
This paper tries to provide a conceptual framework of the evolution of international division of labour and set a starting point for reconsidering ASEAN’s development strategies.

2. Conceptual Framework

Baldwin’s unbundling framework has been summarized in Figure 1. Technological breakthroughs have historically overcome the penalty of distance in three steps.

Since the nineteenth century, a reduction in trade costs due to the introduction of steam ships, railways, and other modes of transportation has made goods easier to move, and production as well as consumption have been unbundled across national borders, i.e., “the first unbundling”. Countries have specialized in

FIGURE 1
Overcoming Distance and the Evolution of Unbundlings



SOURCE: The ERIA-IDE-JETRO Team.

industries with comparative advantage, and raw materials and final products have been traded between nations. In most of the developing world, globalization still means the first unbundling at most.

Together with the ICT (information communication technology) revolution, the forerunners in ASEAN stepped into a new frontier in the mid-1980s, giving rise to “the second unbundling”. A reduction in communication costs accelerated the movement of ideas across national borders, and countries started sharing production in terms of production processes or tasks. Typical second unbundling is found in machinery industries, where snake-wise and spider-wise production networks are extended across countries and massive international trade in parts and components is generated. The prototypes were simple cross-border production sharing and insulated export-processing zones, but more sophisticated international production “networks” gradually emerged together with the formation of domestic industrial agglomeration. With the mobility of ideas, advanced technology in the North and labour in the South began to share production, which generated “the great convergence” of the income levels between the North and the South.

Now “the third unbundling” has emerged. Further advancement in communication technology is making a qualitative breakthrough by reducing face-to-face costs. Matching between individuals is becoming easier than before, and various forms of sharing economy have started mushrooming. A “task” can now be unbundled, and then handled by persons in different locations. International data flows have expanded as well, and individuals in the world are getting connected with each other in a much tighter manner.

The wave of the third unbundling has already arrived at newly developed and developing countries. Although the deep usage of the mechanics of the third unbundling may require a critical mass of infrastructure and human capital, piecemeal technologies and new business models are already flourishing and being utilized everywhere. Looser regulatory frameworks and the phasing out of old businesses may accelerate the application of new technologies. Since the third unbundling is an unprecedented phenomenon, the quantitative importance of newly emerging businesses cannot be directly measured yet. However, new elements should certainly be incorporated into the argument of development strategies.

3. Industrial Dynamism

3.1 Evolving Unbundlings

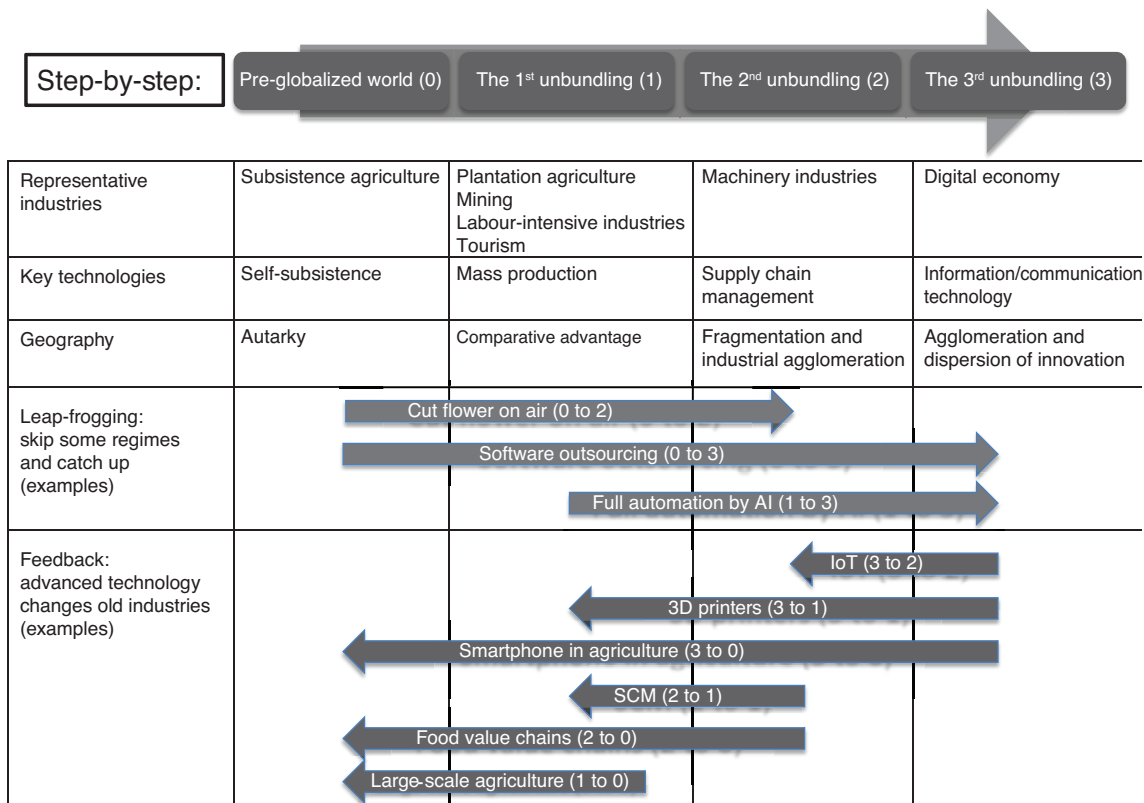
Economic integration by ASEAN has applied a development strategy in which the mechanics of the second unbundling have been effectively explored. Although achieving a single market is advocated, the construction of integrated production base is prioritized. The concept of connectivity is introduced to reduce the service link cost in production networks. The participation in production networks and the formation of industrial agglomeration are pursued at the same time. These can all be interpreted as a series of efforts for exploiting the second unbundling.

It should be noted, however, that the degree of participation in the second unbundling differs across countries and regions, even among AMS. Forerunners are Singapore, Malaysia, and Thailand, and the other countries can learn a lot from the experience of these three nations on how to deepen their involvements in the second unbundling. On the other hand, the wave of the third unbundling is approaching fast. The development strategies for AMS should, therefore, be reorganized with the following three pillars: step-by-step; leap-frogging; and feedback (Table 1).

3.2 Step-by-step

The usage of unbundling is uneven, as it differs by countries, regions, and industries. There is still a lot of room for utilizing the mechanics of the first and second unbundlings. The sequential step-by-step

TABLE 1
Industrial Dynamism within and between Unbundling Regimes



SOURCE: The ERIA-IDE-JETRO Team.

approach is partially an old agenda, but still remains applicable for a wide range of development issues in ASEAN.

Opportunities for the first unbundling are not exhausted yet for some regions in ASEAN. Mountainous areas in Mekong and islands in Indonesia and the Philippines can still explore ways to develop plantation agriculture, mining, labour-intensive industries such as garment and footwear, and tourism. By reducing trade costs with medium-grade but reliable connectivity, traditional industries such as agriculture may have outward-oriented business models. Economic development in remote areas is important for both poverty alleviation and political stability.

Even the most advanced areas in each county can further deepen the involvement in the second unbundling.¹ Indonesia, the Philippines and Vietnam are on the way of forming efficient industrial agglomeration that cater to just-in-time systems, typically in machinery industries. Cambodia, Laos and Myanmar have just begun to participate in machinery production networks. To exploit such opportunities, trade liberalization and facilitation, as well as high-grade connectivity must be prepared.²

The step-by-step approach, i.e., the way to proceed sequentially from the first and second unbundlings to the third unbundling, has a lot of advantages in terms of policy environment, infrastructure and human resources. The first unbundling certainly provides good preparation for the second unbundling. In case of the former, once a country/region starts modernizing its economy, the minimal level of policy environment and infrastructure is already in place. Likewise, as people begin to move from traditional to modern sectors, some level of human resource is already acquired.

The second unbundling should also help to make it easier for a country/region to enter into the third unbundling. International connectivity and efficient industrial agglomeration are also helpful for creating various business models with the third unbundling. For example, high-grade connectivity in the second unbundling certainly helps e-commerce in the third unbundling expand its market. Beyond poverty alleviation, human capital begins to accumulate under the second unbundling.³

A step towards the third unbundling is going to be a big issue for AMS. Given the heavy dependence on multinationals in core industries such as machinery, the second unbundling may not automatically provide innovation bases and human capital. Connecting the manufacturing sector with the third unbundling will be a serious challenge for AMS. It may be difficult, at least in the short run, to establish a thick innovation base for fully utilizing the third unbundling.

It should also be taken into account that information technology — represented by artificial intelligence (AI) and Industry 4.0 — appears to reduce the number of tasks and promote concentration of innovative activities, and communication technology helps us overcome distance and generates dispersion forces. AMS should create innovation hubs and make the window open to the most advanced innovation in the world. Even if it is difficult to foster big platform firms immediately, various kinds of application jobs can be created. While platform firms may have network effects that generate a sort of economies of scale, such business models seem to be imitated relatively easily, as technological progress is fast. Additionally, too strong infant industry protection may be costly for business platform users and consumers, particularly for small developing countries.

It is also important to attract educated people, both nationals and foreigners, in order to obtain a critical mass of innovation activities. As cities in the United States have for long competed with each other, AMS may also start competing for attracting skilled people. If so, urban amenities are going to be of importance. Glaeser, Kolko and Saiz (2001) list four elements of urban amenities: (i) the presence of a rich variety of services and consumer goods; (ii) aesthetics and physical setting; (iii) good public services; and (iv) speed. Urban amenities can be improved relatively easily if good infrastructure for industrial agglomeration has already been established.

AMS has applied the step-by-step development strategy, which will certainly be helpful for us to reach the higher levels of unbundlings. Ample room remains for this old development agenda. A sequential development path must be continuously explored.

3.3 Leap-frogging

The step-by-step approach is not the only development path here. While the benefits from this approach are obvious, it certainly takes time to go through the first and second unbundlings. Some countries/regions may want to skip certain stages and jump straight into a higher level of unbundling, which is referred to as leap-frogging.

An example of leap-frogging from the pre-globalized world to the second unbundling is the export of cut flowers. If air transportation and commercial connection are ready, less developed countries — even without any industrialization — may export cut flowers. Likewise, leap-frogging from the pre-globalized world to the third unbundling or from the first to the third unbundling can be done for software outsourcing. Although scarce human capital would be a bottleneck, Internet connection may create software-related

jobs even in remote rural areas. These operations may be limited in size, but countries/regions should certainly capture any new business opportunities as such. To do so, minimal levels of policy environment, infrastructure, and human resources must be arranged.

3.4 Feedback

The third component of development strategies is the feedback of new technologies to old industries. Even if the entire industrial structure is not transformed, new piecemeal technologies can be used for reactivating and upgrading old industries.

Technologies in the second unbundling have already been used in the pre-globalized world and the first unbundling. The development of food value chains is a feedback from the second unbundling to the pre-globalized world or the first unbundling. Supply chain management (SCM) has also been applied in old industries, which is a feedback from the second to the first unbundling.

Technologies in the third unbundling should have a lot of potential for feedback. The use of smartphones and remote sensing in agriculture has already spread: from the third unbundling to the pre-globalized world or the first unbundling. Similarly, 3D printers may produce T-shirts: from the third to first unbundling; IoT (Internet of things) may add further sophistication to SCM: from the third to second unbundling. In fact, Uber, Airbnb, e-payment and others may also be interpreted as feedbacks from the third unbundling to the first or second unbundling.

4. Development Policies

4.1 Policies to Overcome Distance

The question that arises here is what type of policies are needed for rapid development of AMS. The answer lies in the fact that development policies must be reorganized in order to reflect necessary conditions for each unbundling. Each country is likely to face different types of unbundlings at the same time, depending on differences across regions and industries. However, by listing typical policies required for each unbundling, one can identify current bottlenecks and prioritize policies in a fixed timespan.

Table 2 is a brief, not exhaustive, list of required policies for unbundlings that overcome distance and enhance connectivity. Soft infrastructure covers international commercial policies. For the first unbundling, relatively simplistic trade liberalization in goods may suffice. Sometimes, countries do not proceed beyond the Generalized System of Preferences (GSP). The second unbundling requires greater efforts. A reduction in costs of moving ideas should be achieved with overall tariff removals, trade facilitation, and services/investment liberalization for international production networks. Typically, a comprehensive free trade agreement (FTA) is used for taking care of these multiple aspects simultaneously.

The third unbundling — which involves lowering of face-to-face costs — calls for further liberalization and facilitation, as well as back-up policies. Not only B2B transactions, but also person-to-person connectivity should be supported by a series of policies. As for trade liberalization, leap-frogging and feedback in services and e-commerce should be prioritized. Trade facilitation must be more consumer-friendly, and movements of educated people should be facilitated. Liberalization also requires back-up policies — consumer protection and privacy, competition policy, taxation system and cyber-security must be properly taken care of.

The requirement for hard infrastructure also depends on different stages of unbundling. The first unbundling needs relatively slow but reliable connectivity. In particular, long-distance transportation could be a focus. The second unbundling definitely requires high-grade connectivity, which includes airports, full-scale ports with container yards, as well as multi-modal cargo/passenger transport systems. The

TABLE 2
Required Infrastructure and Industrial Promotion Policies

	<i>Pre-globalized world (0)</i>	<i>The 1st unbundling (1)</i>	<i>The 2nd unbundling (2)</i>	<i>The 3rd unbundling (3)</i>
Soft infrastructure		Trade liberalization – GSP	Trade liberalization and facilitation – FTAs – Tariff removal – E-customs, TBT – Services and investment liberalization for GVCs	Trade liberalization – Modes 3 and 4 in services – Cross-border e-commerce Trade facilitation – SPS – Standards and conformance – Movements of educated people Backups – Consumer protection/privacy – Competition policy – Taxation – Cyber-security
Hard infrastructure		Medium-grade connectivity – Road networks – Ports and airports Infrastructure services	High-grade connectivity – Full-scale port with container yard – Full-scale airport – Multi-modal (cargo, passenger) Urban/sub-urban development for industrial agglomeration – Logistics (highway system) – Mass economic infrastructure services (special economic zones/ industrial estates, electricity, energy, water)	Data connectivity – Internet connection Metropolitan development and urban amenities – Urban transport (LRT, subway, airport access) – Residential environment (education, medical services, safety) – Other urban amenities
Industrial promotion policies	Rural development Microfinance	Industrial promotion based on comparative advantage	Participating in production networks and forming industrial agglomeration	Innovative industries
Small medium enterprises (SMEs)	Cottage industry	SMEs exporting primary products	Supporting industry (manufacturing, services)	Venture business, start-ups

SOURCE: The ERIA-IDE-JETRO Team.

development of industrial agglomeration is also essential to making the connection with outsiders thicker. Intra-suburban logistics, including highway networks and the provision of mass economic infrastructure services such as stable electricity supply, are crucial. The third unbundling should be supported by even better data connectivity and urban amenities.

4.2 Supplementary Policies for Industrial Promotion

Better connectivity with soft and hard infrastructure may not automatically foster internationally competitive location advantages. While too much government intervention is not desirable, some mild industrial promotion policies may be needed for connectivity enhancement. Again, one should keep in mind that policy priorities have to be shifted, depending on different stages of unbundling. In the first unbundling, the focus should be placed on industries with comparative advantage. Following a long-lasting debate on the infant industry protection argument, the conclusion was that industrial promotion against comparative advantage would simply not work. For the second unbundling, priority must be on how to participate in production networks and form industrial agglomeration at the same time. In the context of the third unbundling, policy makers are not yet sure about how to set up competitiveness in developing countries, but are certain about the need to engage people in innovative industries.

The promotion of small and medium enterprises (SMEs) has recently been emphasized in all kinds of development strategies. This discussion usually centres on a standard set of policies that include: (i) institutional framework; (ii) access to support services; (iii) establishing procedure; (iv) access to finance; (v) technology upgrading; (vi) market expansion; (vii) entrepreneurship; and (viii) policy influence.⁴ However, somehow the exact types of SMEs that should be nurtured are not specified. The conceptual framework presented in this paper provides a clearer image of the SMEs involved in each stage of unbundling. Starting from cottage industry in pre-globalized world, the first unbundling may foster SMEs that export primary or labour-intensive products. The central players in the second unbundling, on the other hand, are so-called supporting industries that support industrial agglomeration. A new wave of SMEs and venture business and start-ups form important components of the third unbundling.

4.3 Assessment of ASEAN's Achievements

A number of initiatives for economic integration in ASEAN, including the ASEAN Economic Community (AEC) and the Master Plan on ASEAN Connectivity (MPAC), have primarily concentrated on necessary policies for the first and second unbundlings, and achieved substantial success. As for soft infrastructure, clean tariff removals have been completed among AMS, and trade facilitation has also made good progress. Services and investment liberalization has had some delay, making it difficult for further activating the second unbundling. With regard to hard infrastructure, remote areas in ASEAN, such as mountainous areas in Mekong and islands in Indonesia and the Philippines, would need the first-unbundling-type logistics infrastructure. Metropolitan areas of Jakarta, Manila, Hanoi, and Ho Chi Minh must continue to construct efficient industrial agglomeration. While these target may appear old, meeting them is crucial.

When it comes to shortcomings, ASEAN has not yet implemented several policies required for undertaking the third unbundling in an organized manner. Although some fragmented effort is found in AEC2025 and MPAC2025, a comprehensive approach is needed to face new challenges.

5. Conclusion

This paper sketches out the conceptual framework of unbundlings originally proposed by Baldwin

(2016) and extends it for application in the development strategies of ASEAN. In a rapidly globalizing world, AMS were overall successful in utilizing the mechanics of the second unbundling for economic development, but now face challenges as frontrunners of novel development strategies.

A series of pending tasks and new challenges lies ahead. Although some signs of protectionism seem to emerge in the world, forces of globalization will not stop. ASEAN must understand the nature of globalization and reorganize AEC2025 and MPAC2025. Bearing this in mind, the contents of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) should be examined carefully. The significance of the Regional Comprehensive Economic Partnership (RCEP) under negotiation has to be re-evaluated, too. Whether ASEAN can take advantage of new globalizing wave depends on its strategic moves in the coming years.

NOTES

1. Obashi and Kimura (2017) empirically investigate the degree of participation in machinery production networks by AMS with utilizing the concept of intensive and extensive margins in international trade.
2. ERIA (2010, 2015) discuss soft and hard infrastructure required for the second unbundling in detail. In particular, referring to the fragmentation theory (Jones and Kierzkowski 1990; Kimura and Ando 2005) and new economic geography (Fujita, Krugman and Venables 1999; Baldwin et al. 2003), the two volumes emphasize the importance of the reduction in service link costs and the formation of industrial agglomeration.
3. Kimura and Chang (2017) claim that the second unbundling in East Asia has accelerated not only economic growth but also poverty alleviation, particularly through labour movements from the traditional sector to the modern sector.
4. See ERIA (2014) for example.

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