

Key Points

- A critical challenge for governments is to balance the continuation of essential services that sustain livelihoods with lockdowns required to control the spread of COVID-19.
- While work, lifestyle, and travel patterns in the future may change due to adaptation during the pandemic, telecommuting and e-learning practices are unable to completely replace physical activities, especially in developing countries.
- Well-planned urban public transport systems, with robust measures to adequately address health and safety issues, can enhance the accessibility and vibrancy of a city and improve the quality of life of its residents.
- Big data analysis can provide crucial insights for understanding the actual impact of COVID-mitigation measures and determining the “sweet spot” that balances business openings with limiting the spread of the virus.
- Future policies must be city-specific and tailored to unique factors, such as the distribution of types of businesses, local communities’ needs, health considerations, and infection rates.

Strategies for Recovery: COVID-19 and Urban Transport Policy in Asia

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The Effect of COVID-19 on the Transport Sector

The coronavirus disease (COVID-19) pandemic has had a widespread negative impact on every country, especially in the economic and social sectors, due to the virus’s rapid transmission and long incubation period, which is relatively longer than that of other viruses. As a result, COVID-19 has been more challenging to control than other pandemics. Moreover, daily human activities, such as traveling, are also contributing factors that help the virus spread rapidly across the globe.

Recent articles show that the transportation sector, both international and domestic, plays a vital role in supporting the population’s needs. Unfortunately, it also plays a significant role in the spread of COVID-19. For example, the high frequency of flights and high-speed train services out of Wuhan were significantly associated with COVID-19 cases in their destination cities (Zhang et al. 2020). In addition, inter- and intra-state mobility were key drivers of both local and inter-regional virus transmission (Candido et al. 2020). Therefore, both domestic and international transport were restricted. Most business trips and in-person activities were replaced by teleconferencing and other forms of digital communication.

In order to control the pandemic, policy makers needed to figure out measures to restrict people’s mobility. Some countries decided to implement lockdowns to minimize commuting by asking people to refrain from social activities. Evidence shows that home isolation, business closures, and lockdowns produced the most discernible benefits, while travel restrictions and bans on gatherings had mixed results (Hsiang et al. 2020).

Transport is a key sector of the economy in both developed and developing countries, particularly in Asia and the Pacific. The total value of the transportation sector for Asian Development Bank (ADB) members was estimated to be \$2.8 trillion in 2020, roughly 4% of all members’ GDP combined. Consequently, travel restrictions and lockdown



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measures directly affect the economy and eventually the social sector. It is expected that GDP in developing Asian countries will likely increase between 0.7% and 5.3% in 2022 (Terie 2021). Even though the pandemic has started to show signs of improvement, vaccine allocation inequality might slow-down economic recovery in some of the member countries. Therefore, policy makers need to consider the trade-offs between measures for curbing the spread of COVID-19 and preventing the economy from collapsing (ADB Guidance Note 2020).

Transport Policies to Control the COVID-19 Pandemic

An initial measure taken by ADB members to control the spread of the virus was the screening of visitors upon arrival, as shown in Figure 1. On 1 January 2020, some economies started screening new arrivals, while many had no measures; but 4 weeks later, bans on high-risk regions were implemented and quarantine-upon-arrival policies started in February. In March, total border closures were put in place, which were widely present

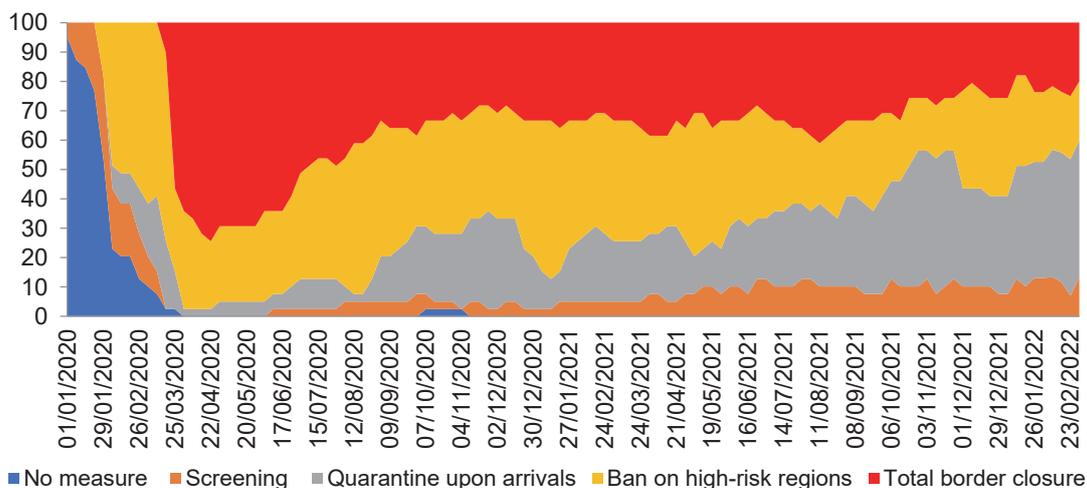
throughout 2021. These trends largely continued in the first 2 months of 2022.

In the case of domestic measures, the continuation of essential services is necessary to sustain the population's livelihood. What constitutes "essential services" varies from economy to economy, although health care, sanitation, water, and law and order are usually included. Determining which services to keep running while containing the spread of the virus is a key challenge for governments.

It is estimated that developed countries such as Singapore need to keep roughly 15%–20% of the workforce on-site to maintain essential services (Tay 2020). The widespread adoption of remote work and e-learning during the pandemic has been helpful in reducing the number of personnel required on-site. In addition, the introduction of rotating schedules at schools has helped to sustain the development of social skills in children while limiting the risk of contagion.

However, a scenario where most of the activities in an economy can be done remotely is far from true

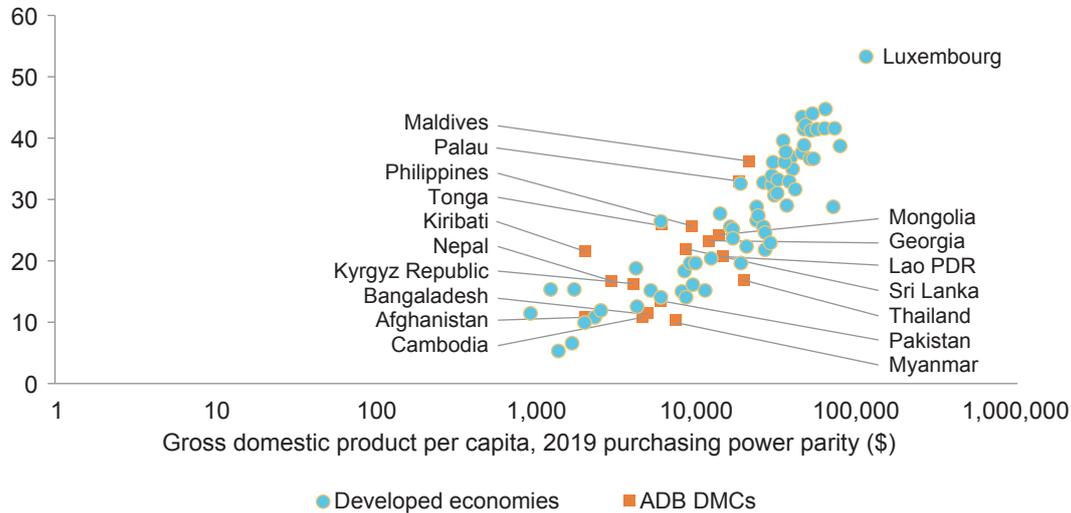
Figure 1: Trends in International Transport Restrictions in ADB Members (%)



Note: ADB regional members include: Afghanistan; Australia; Azerbaijan; Bangladesh; Bhutan; Brunei Darussalam; Cambodia; Fiji; Georgia; Hong Kong, China; India; Indonesia; Japan; Kazakhstan; Kiribati; the Kyrgyz Republic; Lao PDR; Malaysia; Mongolia; Myanmar; Nepal; New Zealand; Pakistan; Papua New Guinea; the People's Republic of China; the Philippines; the Republic of Korea; Singapore; Solomon Islands; Sri Lanka; Taipei, China; Tajikistan; Thailand; Timor-Leste; Tonga; Turkmenistan; Uzbekistan; Vanuatu; and Viet Nam.

Source: Created using data from University of Oxford's Coronavirus Response Tracker. <https://www.bsg.ox.ac.uk/research/research-projects/covid-19-government-response-tracker> (accessed 10 March 2022).

Figure 2: Share of Jobs That Can Be Done Remotely, Globally versus for ADB Members (%)



ADB = Asian Development Bank, DMC = developing member country, Lao PDR = Lao People's Democratic Republic.

Source: Dingel, J., and B. Neiman. 2020. *How Many Jobs Can Be Done at Home?* White Paper. Becker Friedman Institute. 19 June.

for most developing countries. As shown in Figure 2, barely 15%–20% of the activities can be done in any remote form in developing countries. This is mainly attributed to factors such as, but not limited to, the lack of sufficient digital infrastructure, the types of jobs in the economy, and the country's current economic structure (ADB Guidance Note 2020). To complicate things further, commuters often find themselves relying on informal public transit, often referred to as "paratransit," such as minivans, jeepneys, and shared automobiles. This sector has been strongly affected by the mobility restrictions imposed throughout the globe, which have severely crippled financial stability. Paratransit options are in a particularly delicate position because unlike formal means of transport, their access to financing is often limited, and they operate on very tight profit margins, lack adequate financial literacy, and have fragmented ownership structures.

Exit Strategy for Lockdown

During the pandemic, the seemingly never-ending lockdowns have collapsed both demand and supply for many goods and services. Their impact has been felt across several dimensions, from increased job insecurity to a weakened economy and trade. Thus, strict restrictions can only last for some time, and coexistence with the virus is the most likely path to be followed, with intermittent easing and tightening of constraints.

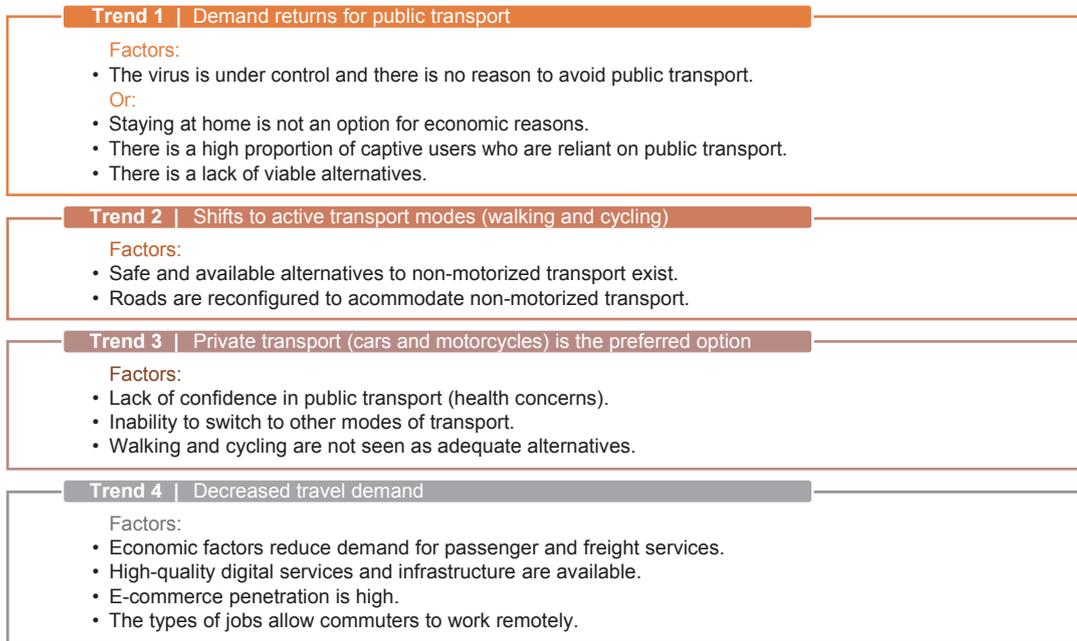
Temporary behavioral changes have also been taking place between transport users, most notably through reduced demand, which might persist beyond the pandemic. The continuity of these changes depends upon the extent to which remote working and e-learning are able to continue. If remote alternatives become the norm, it is estimated that the demand for public transportation will remain below pre-pandemic levels

Two challenges arise from this situation: (a) how to deal with reduced capacity while complying with safe-distance requirements, and (b) how to regain people's trust in the safety of public transport. Transportation companies will have to take additional measures to show that their services are clean and safe to use during the pandemic. Also, policy makers' support will be essential for providing mechanisms that allow public transit operators to remain financially stable over the long term.

Four possible post-COVID-19 scenarios for the transport sector have been outlined by ADB:

1. Demand returns for public transport.
2. Demand shifts to active transport modes (walking and cycling).
3. Private transport (cars and motorcycles) becomes the preferred choice.
4. There is a marked decline in demand for travel options.

Figure 3: Possible Post-COVID-19 Trends for the Transportation Sector



Note: Adapted from ADB’s *COVID-19 and Transport in Asia and the Pacific: Guidance Note*. 2020. (<https://www.adb.org/sites/default/files/institutional-document/623426/covid-19-transport-asia-pacific-guidance-note.pdf>).

These scenarios are heavily dependent on each country’s economy and mobility features, as means of transport and access to alternatives may vary. As Figure 3 shows, in developed countries such as Japan and Singapore, the demand for public transit is gradually recovering, but some of it has been replaced by sustained remote working, e-learning, and e-commerce; therefore, overall demand for travel has reduced. In comparison, several cities in Europe have shifted to active transport modes (i.e., walking or cycling) due to extensive government investment in cycling infrastructure.

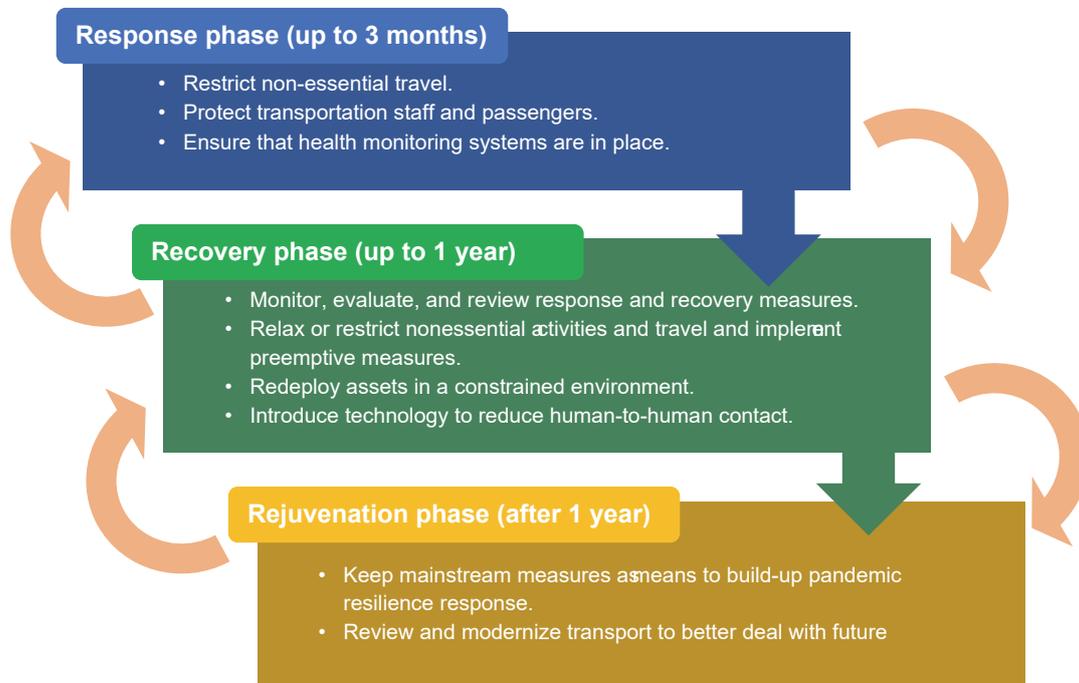
Public transport is by far the most efficient means to mobilize a large number of passengers at a lowest cost while being affordable and environmentally sustainable. A comprehensive urban transport system with extensive coverage and appropriate planning has the potential to improve the quality of life of a city’s residents through improved accessibility. Nevertheless, because of its mass-oriented nature, the movement of a large number of people can also be a factor that contributes to transmission of the virus, thus necessitating measures to improve the health resilience of public transit (ADB Guidance Note 2020).

“Bounce-Back” Strategy and Framework

In response to the current situation, ADB has developed a “bounce-back” strategy for the various sectors of the transportation industry, which provides a framework for exiting the lockdowns. The strategy is divided into three phases: response (up to 3 months), recovery (up to 1 year), and rejuvenation (beyond 1 year) for the immediate, medium, and long term.

The response phase focuses on allowing the flow of essential workers and the shipment of goods, with expected limited impact. The recovery phase comprises the relaxation of travel restrictions and social distancing measures, including public transportation, alongside improved sanitary measures. Finally, during the rejuvenation phase, the introduction of improved operative measures and contactless technologies enable a gradual return to normalcy (ADB Guidance Note 2020).

Figure 4: Bounce-Back Strategy for Exiting a Lockdown



Source: Adapted from ADB's *COVID-19 and Transport in Asia and the Pacific: Guidance Note*. 2020. (<https://www.adb.org/sites/default/files/institutional-document/623426/covid-19-transport-asia-pacific-guidance-note.pdf>).

Post-Pandemic Recovery Using Big Data

Monumental changes in technology over the past few decades, such as the advent of artificial intelligence, automation, digitalization of services, and the omnipresence of big data, are helping to shape a more sustainable and innovative transportation sector. The combination of these factors has the potential to generate data-based responses that factor in changes in behavioral patterns in the sector (Yabe et al. 2020).

Countries around the world have responded in diverse ways to the pandemic. The People's Republic of China and Italy imposed strict restrictions on mobility, while others like Japan adopted a less-restrictive approach. The effects are noticeable: global GDP rebounded about 4.9% during the last two trimesters of 2020, while Japan grew roughly 5.8% during the same period. These results indicate that

targeted approaches that balance the need for mobility restrictions and economic growth are preferable to a generalized shutdown of economic activities.

In Tokyo, big data was used to design and implement these less-restrictive approaches. The data were used to analyze the relationship between restrictions and the spread of the virus, how inequalities are reflected, and the extent to which social systems can withstand them (Ukkusuri et al. 2020).

A less-restrictive approach was possible thanks to the contribution of more than 200,000 mobile phone app users in the Tokyo Metropolitan Area provided by the Yahoo Japan Corporation. This information was used to estimate the number of social contacts and the distance travelled by users every day. The results showed a strong correlation between the reduction of social contact and the transmission of the virus. However, restrictions that

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reduced social contact by more than 60% only seemed to produce marginal benefits. In addition, those more capable of reducing social contact were in the higher-income brackets, indicating a clear inequality in the possibility and ability of minimizing contact.

The results of the analysis provide valuable resources for formulating comprehensive policies that balance economic recovery and virus transmission. They also help us understand that focused approaches, such as city-specific and tailored measures for each sector, are more effective than broad-based ones, because each city has its own unique features and transmission behaviors. Therefore, cities should determine optimal restriction levels based on the distribution of high-risk groups, patterns of mobility, infrastructure, physical features, and social norms for an effective response (ADBI 2020).

Support for Developing Countries

The pandemic has widened income disparities, forcing large numbers of people to fall back into poverty, which makes the situation more complex, fluid, and uncertain. To help developing countries overcome the pandemic's adverse effects, ADB prepared an aid package of \$20 billion with three objectives in mind:

1. To provide technical assistance to deal with health and safety concerns; offer assistance to meet the demand for equipment such as ventilators, protective gear, and test kits.
2. Quick disbursement budget support via a novel financing modality known as the COVID-19 Pandemic Response Option, or simply CPRO, for governments to implement countercyclical expenditure programs (Sato et al. 2021).
3. To provide financial aid and technical assistance to the private sector to keep companies afloat and workers employed.
4. ADB is also actively developing and evaluating ways to mitigate the burden on the transportation sector generated by the

pandemic by increasing the sector's financial and operational resilience. ADB aims to fulfill these expectations through three different strategies: "Safety," "Data," and "Green."

"Safety" refers to the actions performed in order to regain the public's confidence regarding the use of public transport, highlighting the safety of mass transit and the unsustainability of relying on private vehicles as a long-term alternative. These policies should be directed toward both existing and new transportation projects in all stages, from planning to operation. The adoption of these measures will not only increase the resilience of these systems, but might also contribute to providing safeguards against other risks, such as natural disasters and accidents.

"Data" refers to the collection of information on travel and consumer behavior for more informed decision making in the future, and also for the delivery and measurement of ADB assistance. Data regarding changes in consumer behavior and travel patterns are being collected to inform the strategic direction for the sector and ADB's assistance pipeline in order to have the maximum impact in a post-pandemic "new normal."

Finally, "Green" refers to the need to focus on sustainability in the industry. For example, the shift toward electric vehicles, prioritizing public transportation projects, or unmotorized transit. The main objective is to improve efficiency while minimizing the carbon footprint of the transportation sector (Asakawa 2020).

Conclusion

Every economy has been impacted by the coronavirus outbreak. Some adopted partial or full lockdown measures to limit people's travel and activities, but such measures inevitably affected economic and social sectors. Therefore, searching for a balance between restrictions, economic activity, and the provision of essential goods and services is key. To do so, determining

which services should be preserved at full capacity is critical for the proper functioning of social systems during the worst stages of the pandemic. Thus, a data-driven approach is optimal for finding the “sweet spot” for mobility restriction.

Additional challenges arise due to the need to regain the public’s confidence while tackling health and safety concerns. Transport operators and policy makers will have to prove to the public that appropriate and effective

safety measures are being implemented to encourage them to return to mass transit in a post-pandemic world.

Finally, it is important to highlight that a tailored approach is more reasonable and appropriate due to the diverse nature of cities’ physical, economic, and social aspects. Financial support, in addition to partnerships with the private sector in the transportation industry, will be critical for ensuring the financial sustainability and survival of many transport systems.

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