Visa Business and Economic Insights

Global Economic Insights

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Innovation powers the global recovery

Pandemic-era technological and digital adoption helped accelerate entrepreneurship—and the economic recovery

It is often said that "necessity is the mother of invention," but the COVID pandemic may just be an exception to the rule. Rather than spurring new inventions, the sudden stop of the global economy, fueling a recession and bifurcated recovery, may have prompted faster adoption and more efficient use of existing technologies instead. To understand what happened, we used alternative data sources and took a deep dive into the App Economy to gain potentially useful foresight into the important determinants of the recovery— such as entrepreneurship, productivity, and creative destruction—that are often only evident with a lag.

Conventional economic theory and history tell us investment should have collapsed, and we should be dramatically less innovative and risk-averse at this stage of the recovery. It would also suggest that a sudden-stop shock of the magnitude of the COVID-19 pandemic should slow technology adoption through multiple channels.

In This Issue

What actually happened

In 2020, the sudden shock had a major negative effect on demand, plunging the world into a synchronized global recession that was the greatest drop in annual output in over a century. Falling demand reduces the return on investments, particularly those in new technologies as there are fewer customers to buy increased output. Second, the other major obstacle to investment—uncertainty—was dramatically higher. Investment in new technology is a sunk cost that is irreversible. With an opaque economic outlook, firms typically delay making investment decisions until there is more certainty.

Third, company revenues or cash flows were abruptly stopped by mobility restrictions and became less predictable with subsequent waves of the pandemic and subsequent lockdowns. This typically creates a liquidity constraint to further investment, particularly risky investment in new technologies. Finally, managerial decision-making quickly pivots to short-run, immediate issues such as lay-offs, liquidity and inventories rather than long-term strategic planning.

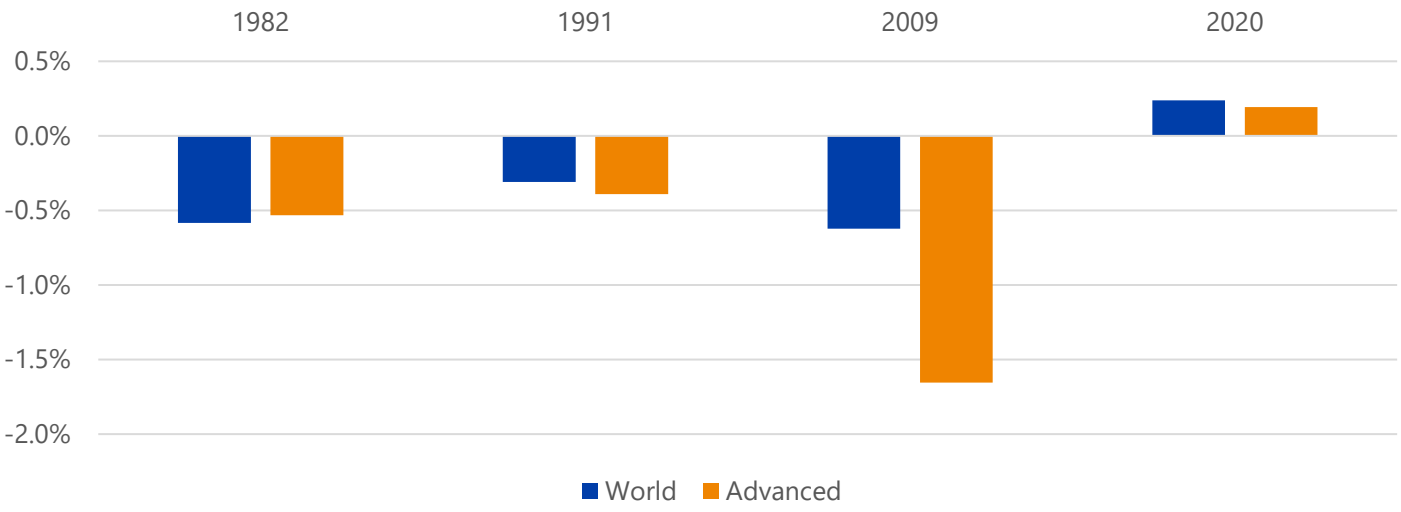
The response by both firms (many of which are merchants) and employees (typically consumers) broke all the traditional economic norms around technology adoption. Rapid investments embedded existing technologies more deeply into workplace culture and processes, and diffused them across the entire workforce. This continues to be one of the most idiosyncratic (and unpredictable) differentiators of the COVID recovery compared to other great shocks.

Unprecedented change in investment behavior

The historical norm for the previous three global recessions (1982, 1991, 2009)* was an average decline in global investment as a share of GDP of 0.5 percentage points. 2020 was different as investment globally rose by 0.2 percent of GDP. The contrast between the most recent recession and prior ones is even greater when considering what happened in the advanced economies, including key economies in North America, Western Europe and Northeast Asia, where the change in investment relative to GDP was -0.9 percentage points over the prior three recessions and +0.2 percentages points in 2020. Based on economic figures released to date and most forecasts, investment is set to rise in 2021 and 2022, with several countervailing forces at play.

In 2020, firms, especially in the advanced economies, had to invest in technology to mitigate the disruption and allow business continuity. Working from home required firms to invest more in software platforms that facilitate virtual meetings and respond to the need for less physical or face-to-face interaction by further application of automation technologies. Creative responses are required to deal with reduced physical interactions with clients, in particular investing in intangibles such as marketing and advertising to retain brand loyalty. For consumer-facing firms, it has also meant adapting to a world where commerce increasingly occurs online in the digital space.

Investment shocks after global recessions (year-over-year change in investment as a share of GDP)



*Dates of global recessions as discussed in M. Ayhan Kose and Marco E. Terrones, *Collapse and Revival: Understanding Global Recessions and Recoveries, IMF*, 2015. Sources: Oxford Economics/Haver Analytics

What is motivating consumer behavior?

Overall, this fundamental and unprecedented change in investment behavior in response to a profound economic shock looks to be setting the stage for faster creative destruction than we have seen in previous cycles. But firms / merchants represent only one side of the market. What is motivating employees / consumers to more intensely use existing technologies or to substitute digital solutions for physical interactions altogether?

From an economics perspective, the answer is relatively simple. For a technology or innovation to be rapidly adopted in a two-sided market (payments are a classic example of a two-sided market) you need both merchants on the supply side and consumers on the demand side to simultaneously adopt a new form-factor.

This assures both of them that their early adoption of the new form factor will be widely accepted. A low uptake of a new technology on either the consumer or merchant side of the market, or both, is referred to by economists as a "coordination failure" and is the principal reason why some technologies are much slower to adoption in certain markets or sectors, or even countries.

Measuring innovation in the current recovery

Traditional economic metrics may underestimate the impact

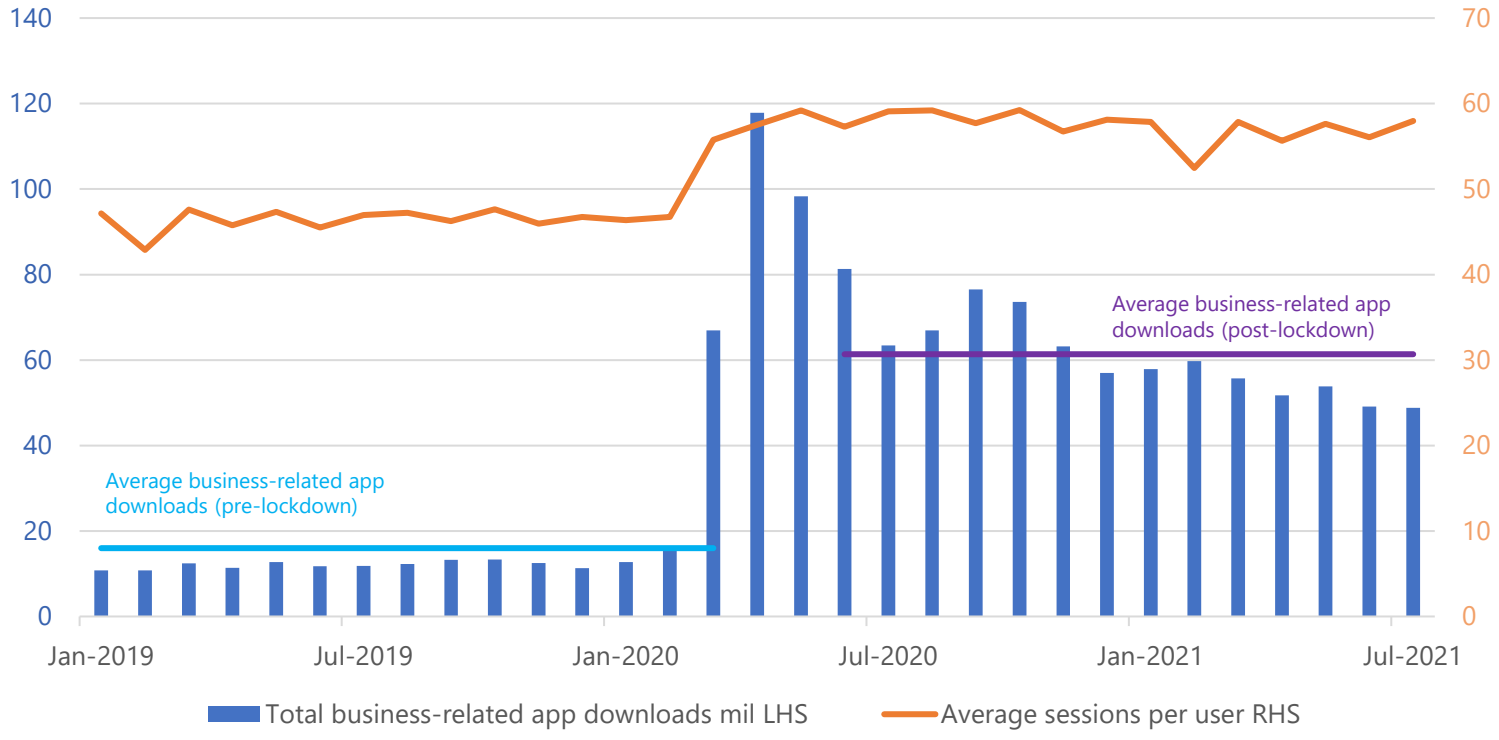
Across a whole range of industries and sectors over the long run, we can see that when coordinated uptake of new technologies is low, a smaller number of economic agents will be using this new technology. If there is very low coordination failure on both sides of the market, a much more optimal equilibrium is found where more economic agents are benefitting from this new technology.

Since one of the defining features of COVID was that it forced companies, merchants, consumers, teachers and students to simultaneously find a solution to the disruption and separation digitally, this vastly reduced the risk of coordination failure. From a technological uptake perspective, COVID may be the one example where coordination failure was solved at scale by the almost simultaneous diffusion and adoption of new technologies across sectors, markets, countries and networks. There is clear evidence of this in our use of mobile phones and the App Economy.

Using traditional economic metrics, innovation might be easily underestimated in this recovery. Business surveys, for example, might only measure whether a business adopted a new technology, but we can gain better visibility into how successfully that technology became embedded in the business by leveraging metrics from the App Economy.

Total business-related (top 20) apps downloaded can be thought of as the adoption of new technology. Worldwide, total business-related (top 20) app downloads likely had a structural break around the COVID immobility period and since March 2020 have been trending about three times higher than the average number of monthly downloads pre-lockdown. However, that focus on the number of downloads paints an incomplete picture. The average number of sessions per user, on the other hand, has remained strong—increasing 20 percent from January 2019 to July 2021.

Monthly usage of business-related apps is trending upward worldwide (downloads of apps and average number of times used per month per user)



Sources: Visa Business and Economic Insights, Apptopia

An economy reinventing itself

The real power of the App Economy in analyzing this recovery is that it makes the unusual surge in risk-taking behavior understandable – and even appears to have enabled it.

Uncertainty favors the status quo and we typically see very little voluntary churn in the labor market immediately after or during recessions. The willingness of ordinary workers to take risks, leave formal employment and start their own business is an early and unusual defining feature of the recovery so far. What is being heard anecdotally across many countries is showing up in data from the United States. There, the amount of voluntary quits from the formal labor force, the amount of reskilling taking place, and the number of new business starts is occurring much sooner and at a dramatically stronger pace than anything we have seen in previous slowdowns or recessions.

Perhaps now, one year later, we are seeing the economic benefits of an unprecedented global "coordination success." From the sudden economic stop to the unprecedented size and speed of job losses that followed and the rapid adoption of new ways and forms of work for those in open sectors, to the need for retraining or upskilling for those workers in closed sectors, it should not come as a surprise that "creative destruction" for the future is occurring more rapidly in a densely connected digital world.

The economy is reinventing itself.

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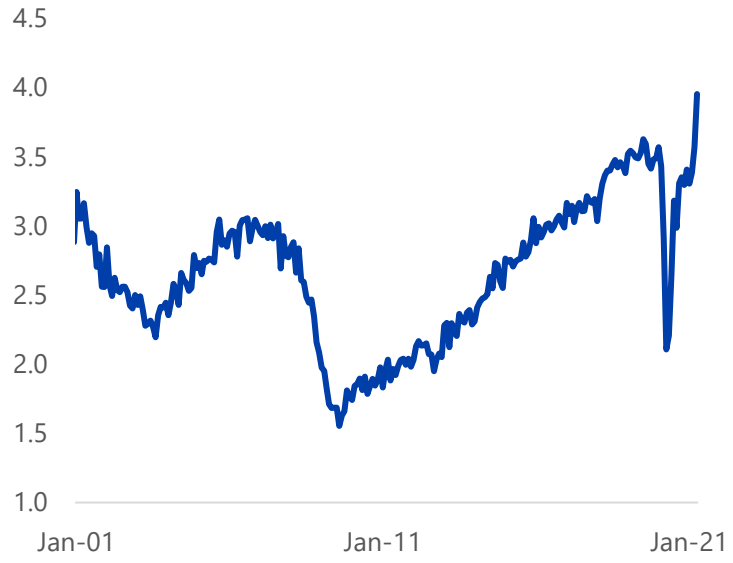
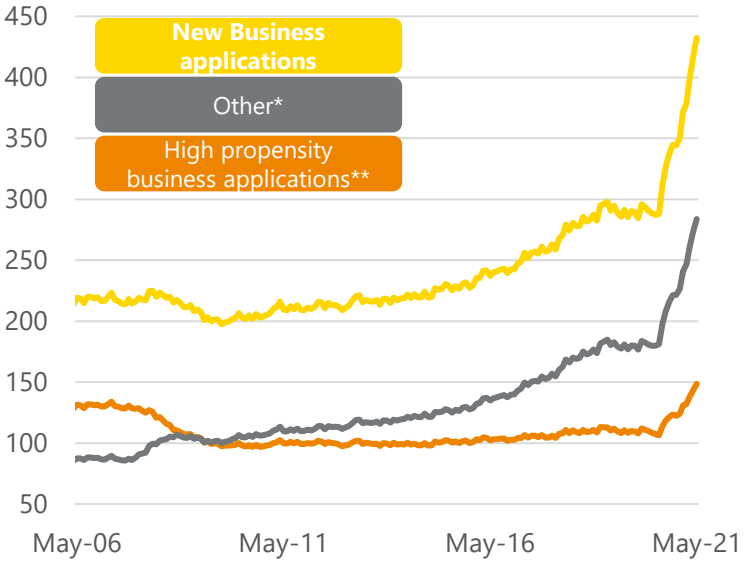
U.S. voluntary quits (in millions, SA)



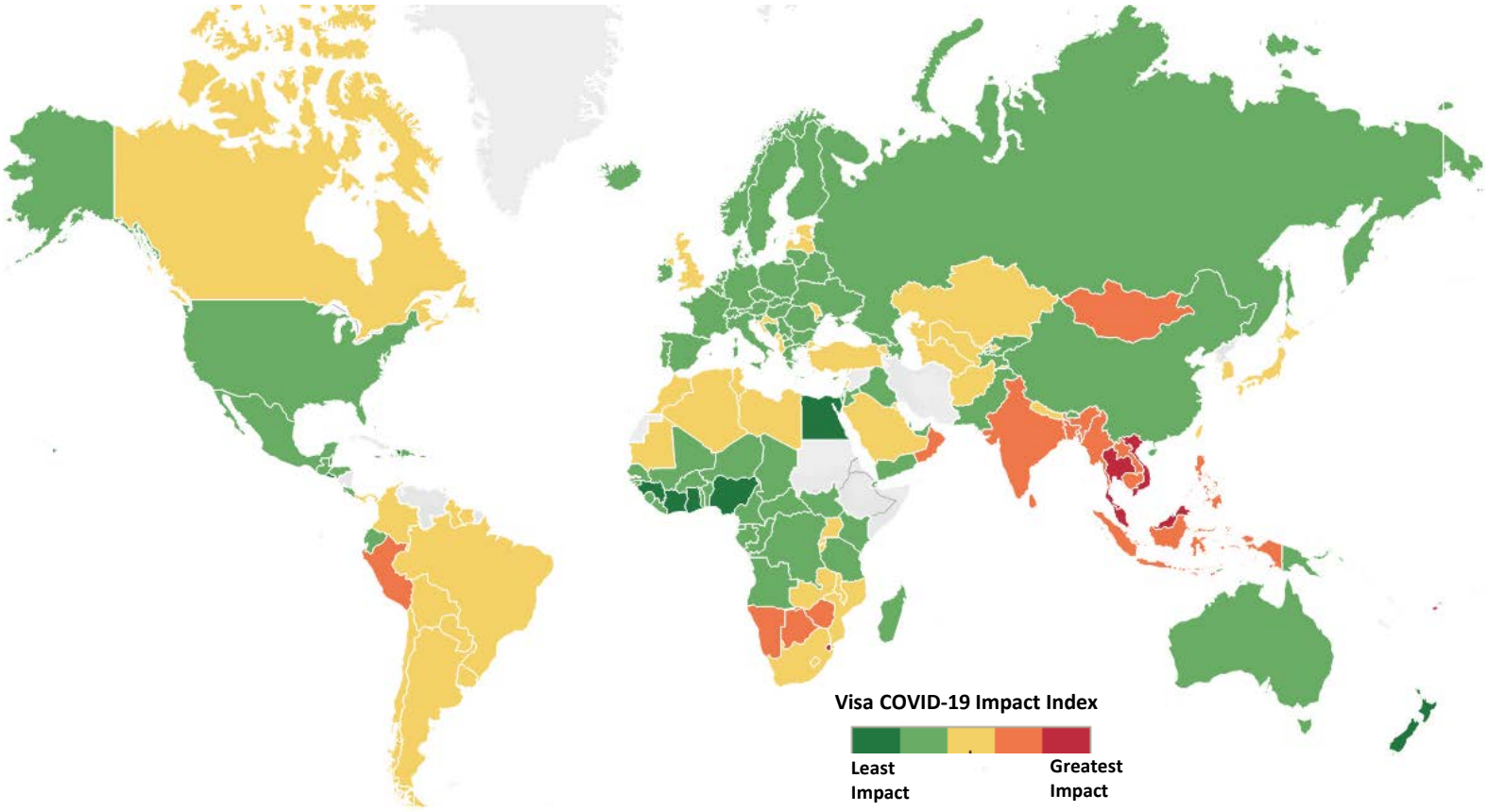
Sources: Bureau of Labor Statistics/CEIC Database

New business applications booming in the U.S. (In thousands, 12 month moving average)



Sources: Visa Business and Economic Insights, U.S. Census Bureau Business Formation Statistics
* Non-employer businesses
** Businesses with payroll

Economic impact of COVID-19
(As of 6 August 2021)



- The Delta variant's rapid spread over the last few weeks led some nations to re-instate lockdown measures. For countries where the majority of the population has been vaccinated, consumer spending has been resilient and continues to recover, especially in Europe.
- Furthermore, spending on airlines, lodging and discretionary items have improved for the majority of countries while restaurant spend improved for a quarter of countries.
- Most new COVID-19 cases registered across the world are the Delta variant. According to the COVID-19 variant tracker on GISAD, at the beginning of September Delta accounts for 95 percent of cases sequenced, and is driving a new wave of infections in Brazil where it now accounts for 28 percent of cases.
- According to data compiled by Our World in Data, 40 percent of the world's population has received at least one dose of a COVID-19 vaccine, with 41 million doses delivered daily.

The **Visa COVID-19 Economic Impact Index** tracks how the pandemic has affected economic activity across the globe through 12 key indicators: COVID-19 confirmed cases, COVID-19 death rates, airline transactions, cross-border lodging transactions, discretionary spend, discretionary transactions, restaurant spend, restaurant transactions, Google COVID-19 community mobility, consumer confidence, Purchasing Managers' Index (PMI) and leading economic indicators.

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