

## The global demand for technological goods: change of trend?

At the height of the pandemic we observed a change in consumption patterns. With major restrictions imposed on more social leisure pursuits, increased teleworking, remote education and new online services, the consumption of technological goods (such as electronics) withstood the crash in consumption during the spring of 2020. This resistance in 2020, coupled with the growth in 2021, raises the question of whether we are facing a change of trend in the consumption of technological goods, or whether, on the contrary, the end of the pandemic and the return to «social normality» will bring about a return to the previous consumption patterns.

### Resistance and increased demand for technology in times of pandemic

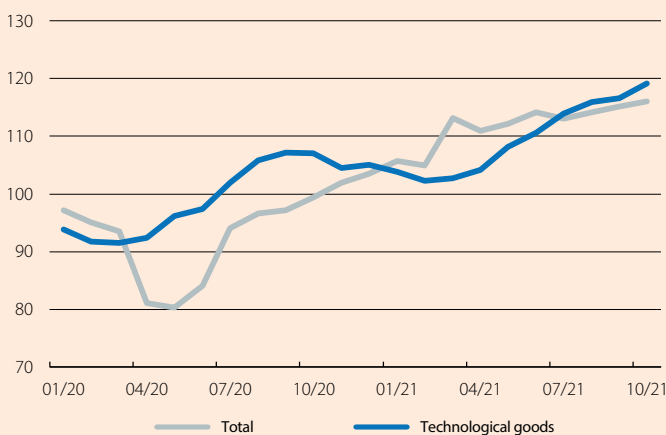
In 2020, the global trade in high-tech goods contracted by just 1%, compared to a fall in the case of all manufactured goods of 8%, demonstrating their resistance in a year marked by the pandemic.<sup>1</sup> In general, trade flows of technological goods are a good proxy for the demand for this type of goods, since they are highly tradable. Imports into the US, the world’s largest consumer market, is a proxy for global demand.<sup>2</sup>

If we look at high-tech US imports, we see that they contracted by slightly less than 1% in 2020, compared to -6.3% in the case of manufacturing imports in total, a pattern very much in line with the aforementioned global flows.<sup>3</sup> It should be noted that this disparity between the trend in technological goods and total manufactured goods in 2020 represented a substantial shift from the historical trend in these two types of trade flows in the US, which had shown very even growth rates since the year 2000 (see first chart).

At this point, the next step would be to analyse whether this shift in 2020, towards a clear increase in demand for technological goods versus other types of goods and services, continued during the course of 2021. In this regard, and according to preliminary data from the World Intellectual Property Organization (WIPO), it appears that during the early part of 2021 this was indeed the case. High-tech US imports continued to show significant growth in 2021 too. In fact, at the end of 2021 they stood clearly above the 2019 average, although in that same period imports of other goods almost completely closed the gap that had opened in 2020 with respect to imports of technological goods (see second chart).

### US: imports of manufactured goods

Level (monthly average 100 = 2019) \*



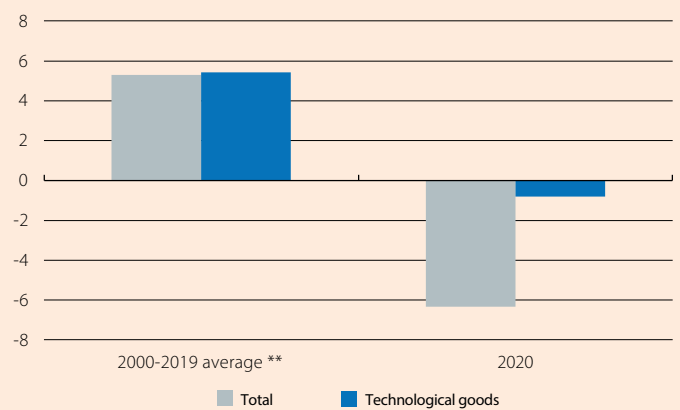
Notes: \* Monthly data in nominal terms. Seasonally adjusted series.  
Source: CaixaBank Research, based on data from the US Census Bureau.

really been a change of trend in the demand for this type of technological goods. Nevertheless, we can assess some of the factors that could potentially cause the increased demand for this type of goods to persist.

1. In nominal terms (US dollars) and according to data from the World Intellectual Property Organization and the World Trade Organization.  
2. A proxy is a variable which reliably approximates another variable that is more difficult to obtain. The exports of major producers of technological goods, such as China or Taiwan (for semiconductors), can be used as a proxy for supply, as we do in the [last article of this same Dossier](#).  
3. Advanced Technology Products classification, based on data from the US Census Bureau.

### US: imports of manufactured goods

Annual growth (%) \*



Notes: \* In nominal terms. \*\* Does not include the years 2009-2011, which coincide with the great fall and recovery of international trade as a result of the global financial crisis.  
Source: CaixaBank Research, based on data from the US Census Bureau.

However, the exceptional disruptions observed in the global supply chains since last summer make US technological imports less reliable as a proxy for the strength of their demand during much of 2021 and even 2022. It is precisely goods that are highly tradable and integrated into global value chains, such as technological products, that these disruptions have affected the most. Thus, the growth rate of these US imports would have been higher in the absence of the bottlenecks that have affected supply (the lack of chips, for example).

We will therefore have to wait a few years, once the mismatches between supply and demand have been resolved and the pandemic has receded, in order to see whether there has

## Factors supporting the boom in the demand for technology

There are a number of factors that may cause the increased relative demand for technological goods observed during the pandemic to persist. Let us take a look at some of them (see third chart).

Firstly, an increase in teleworking or hybrid working environments should support greater consumption of technological goods. Many of us, as workers, will have two usual working spaces: the classic office and a new space in the warmth of our own homes. In this context, while some electronic goods will be transported from our homes to the office and vice versa, others will be duplicated in both environments, which will inevitably lead to higher demand.

How common teleworking will be and, consequently, to what extent this factor will support the boom in technological goods still remains to be seen. The pandemic has not yet receded, so the current teleworking figures could moderate. Also, many companies are just now beginning to negotiate with workers on the new working arrangements for the future. That said, some recent surveys can help to shed some light on this matter. In particular, a highly representative survey of UK companies estimates that the country's workers will shift from a total of 7% of hours worked from home before the pandemic to 20% in the future (a clear paradigm shift).<sup>4</sup>

Similarly, a new analysis by Nicholas Bloom (an expert in teleworking from Stanford University) and other co-authors identifies five reasons why teleworking has come to stay.<sup>5</sup> Firstly, the surveys conducted within the framework of the study show that the teleworking experiment triggered by the COVID-19 crisis has yielded better results than expected. Secondly, during the pandemic, workers and companies made significant investments in physical and human capital that will facilitate the use of teleworking in the future. Also, and closely linked to the first factor, some of the stigma which historically accompanied teleworking has been reduced: the fear that workers would avoid doing their full hours when working remotely. Fourthly, the desire to avoid overcrowded spaces for fear of the pandemic will persist for some time to come. Finally, the technological innovations that enable teleworking will also facilitate its greater use in the future.

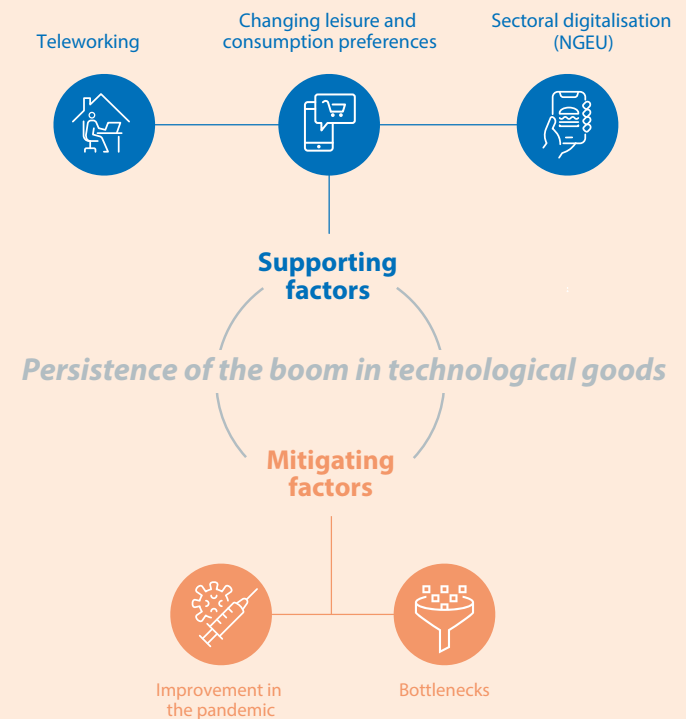
Changes in leisure, entertainment and consumption preferences are a second factor that will impact the demand for technology. In particular, although more social forms of leisure and entertainment are already recovering thanks to the vaccines, they could lose some ground to digital entertainment, such as that related to streaming services. On this note, and according to a survey by Deloitte, people who work remotely have a greater propensity to opt for this type of service, as well as for making more purchases online.

Finally, digitalisation in sectors such as education and health will also support this trend of increased demand for technological goods. Having more resilient education and health sectors requires a more hybrid model in the way in which they operate. The pandemic took millions of students out of the classroom, and without the support of digital tools they would not have been able to continue their studies. Similarly, the health sector, immersed in the fight against COVID-19, also decided to minimise the most routine medical visits, which helped provide a boost to telemedicine. To this end, we see that many countries are pushing for greater digitalisation in these two sectors. For instance, Germany will devote just over 25% of the digitalisation investments under the Next Generation EU programme to its healthcare system, and in the US the Biden administration has already made significant investments to boost access to telemedicine and is planning new projects under the Build Back Better Plan. Also, investments in digital health startups around the world nearly doubled in 2021, and portable medical devices could also double in the next three years.

In short, the COVID-19 pandemic could prove to be a major catalyst in bringing about a paradigm shift in consumption in which the demand for technological goods becomes greater. Although it is still early for such statements, the first available data, as well as the recent trends in teleworking and sectoral digitalisation, point in this direction.

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### Technological goods



Source: CaixaBank Research.

4. Decision Maker Panel survey.

5. See J.M. Barrero, N. Bloom and S.J. Davis (2021). «Why working from home will stick». National Bureau of Economic Research, nº w28731. Based on a survey of US citizens.