



U.S. Consumption Drives Global Rise in Durable Goods Prices

**—Key factors are Massive fiscal/monetary policy packages
and changes in consumer behavior—**

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Summary

- ◆ The recent worldwide surge in inflation is being driven by higher prices of durable goods. This rise in durables prices is particularly marked in the U.S., where they have jumped around 20% year on year, a rate of increase that has not been seen for 80 years. Prices of most durable goods, including cars, ICT devices, appliances, and furniture, are climbing.
- ◆ In the background is a major shift in demand from services to durable goods. The U.S. has a strong presence in the global durables market, and the steep rise in demand there has flowed into supply chains and led to higher output in a wide variety of industries globally, and in some cases, supply constraints. This supply/demand pressure in the durables market has pushed up the prices at which the goods are traded, and rippled into a worldwide upswing in consumer prices. In Japan, the impact on retail prices has been limited, though the prices of imported durable goods have risen almost 10% from the previous year.
- ◆ A couple of factors have served to push up U.S. durables demand: (1) large-scale fiscal and monetary policy measures and (2) changes in consumer behavior. The consumption of durable goods is highly elastic in response to both income and interest rates, and huge cash handouts to households and cuts in interest rates have given a boost to consumption. In addition, the shift to teleworking during the COVID-19 pandemic was more pronounced in the U.S. than in many other countries, and many people have been moving out of densely populated cities into the suburbs. Lifestyle changes like this have also played a part in driving up durables demand. According to estimates, 60% of the rise in durables consumption in the U.S. is due to policy factors, with the remaining 40% being the result of

changes in consumer behavior.

- ◆ With policy looking set to move toward tightening going forward, the rise in durables consumption is likely to slow, and on the demand side, too, upward price pressure could ease. However, if supply constraints are only alleviated slowly, or if lifestyle changes result in a sustained stimulus for the consumption of durable goods, the impact of policy on easing the supply/demand pressure will be limited, and inflation could be here for the long term, so caution is required.

- This is an English version of “世界的な耐久財インフレ、米国消費が主導 — 大規模な財政・金融政策と消費行動の変化が背景 —” in JRI Research Focus (The original version is available at <https://www.jri.co.jp/MediaLibrary/file/report/researchfocus/pdf/13236.pdf>)

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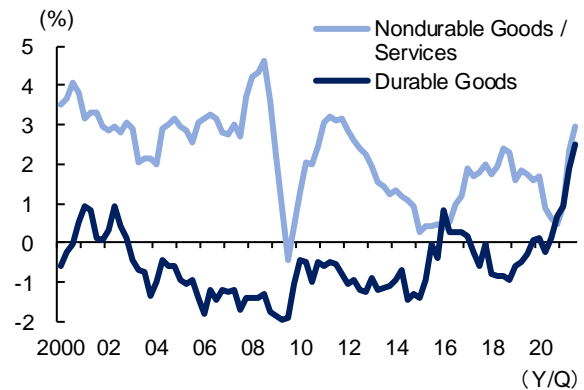
1. Durables prices rising worldwide

Prices of durable goods are increasing globally. Aggregating the consumption deflators of advanced countries (OECD members), durables prices soared from the middle of 2020, with the figure reaching the mid-2% range (year on year) in the July-September quarter of 2021 (Figure 1). The downward trend that had continued since the beginning of the 2000s stopped abruptly and reversed as COVID-19 exploded onto the scene, and the recent pace of price increases is on a par with nondurables and services. Until recently, inflation tended to be driven by rising resource prices, with higher prices mainly being seen in nondurable goods such as gasoline, utilities, and transport costs, as well as services. And during this phase, too, resource prices have been the global inflation driver, but added to that, rising durables prices have also had a powerful impact, and this could be said to be a characteristic of the current inflation pattern.

Among advanced countries, the rise in prices in the U.S. has been particularly striking. According to the Consumer Price Index (CPI) published by the U.S. Department of Labor, in January 2022 the prices of durable goods were 18% higher than a year earlier (Figure 2). This margin of increase outstrips even that seen during the oil crisis of the 1970s, and is actually the highest it has been for 80 years, since March 1942 in the midst of World War II.

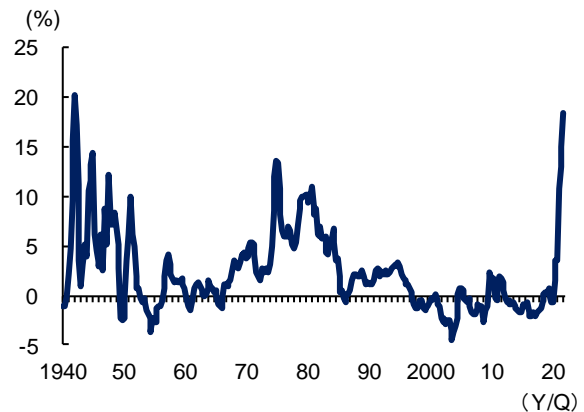
Breaking the figure down, used car prices, which skyrocketed by more than 40% year on year, account for a hefty portion. Durable goods other than used cars have also risen sharply, 6.6% higher in January 2022 than a year before, which is the biggest jump since 1981. The increase in durables prices encompasses a wide variety of product types, with prices of new cars and furniture exhibiting rises in the 10% range. ICT devices and household appliances such as PCs, which had been declining pre-COVID, have also seen an upturn in prices (Figure 3).

Figure 1. Consumption Deflator in Advanced Countries (YoY)



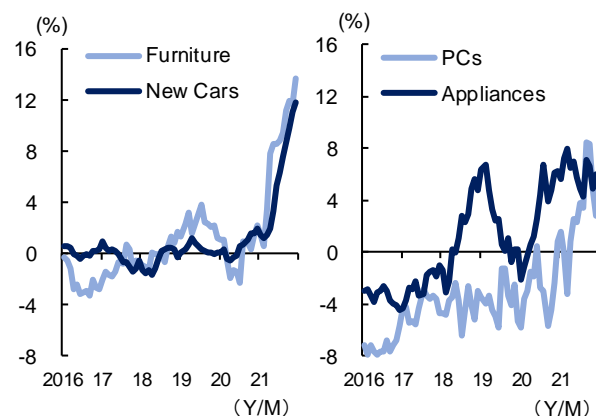
Source: Prepared by JRI from OECD data
Note: Medians of 33 OECD member countries

Figure 2. U.S. Durable Goods Prices (YoY)



Source: U.S. Department of Labor

Figure 3: U.S. Durable Goods Prices by Product Type (YoY)



Source: U.S. Department of Labor

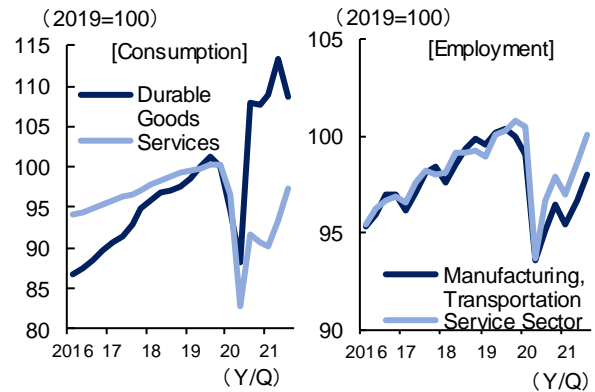
2. Sharp rise in U.S. demand pushing up prices

The global increase in durables prices owes much to the fact that supply has failed to keep pace with the sudden rise in demand. After the COVID pandemic emerged, there was a big shift in demand from services to durable goods, but no similar shift occurred on the supply side. Looking at consumption in advanced countries, while service consumption is lower than it was prior to the pandemic, consumption of durables has risen by over 10% since before COVID, attesting to a major shift in demand between the two (Figure 4 left). In contrast, the supply-side shift has not gone as smoothly as the demand-side one. Take the employment trend, for example, with which there is little difference between the manufacturing and transportation sectors, which are closely connected to durable goods, and the service sector (Figure 4 right). And in the area of fixed capital, such as factories and vehicles, it takes time for supply capacity to be expanded, and there are supply lags in multiple segments.

The demand shift to durable goods is especially marked in the U.S., where durables consumption had risen 20% from pre-COVID levels as of the end of 2021. This is much faster than the previous trend, and the growth surpasses that of other countries where demand for durables is still at the same level as before COVID (Figure 5 left). And given that there is little difference between the U.S. and other nations in terms of service consumption, the increase in U.S. durables consumption stands out (Figure 5 right).

The increase in demand for durable goods in the U.S. provides a powerful impetus for production worldwide through global supply chains. This is down to the U.S.'s imposing presence in world durables trade. The U.S. accounts for more than 20% of global imports of durable goods, which is double the

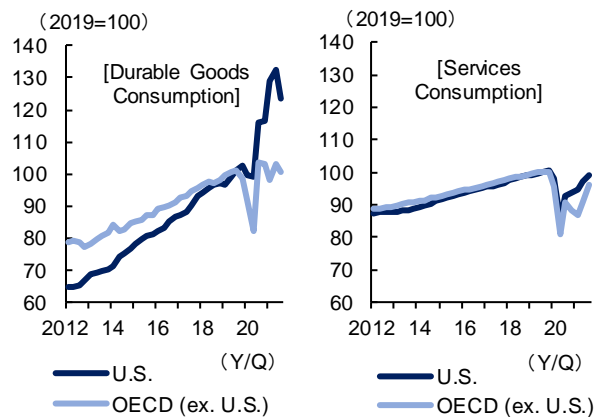
Figure 4. Consumption and Employment (OECD Members, Total)



Sources: OECD, ILO

Note: Durable goods consumption is for 34 OECD countries, services is for 24 countries, and employment is for 26 countries. Consumption is expressed in real terms, and figures are weighted averages based on GDP (2020). Employment is the total number of persons employed. The service sector excludes transportation.

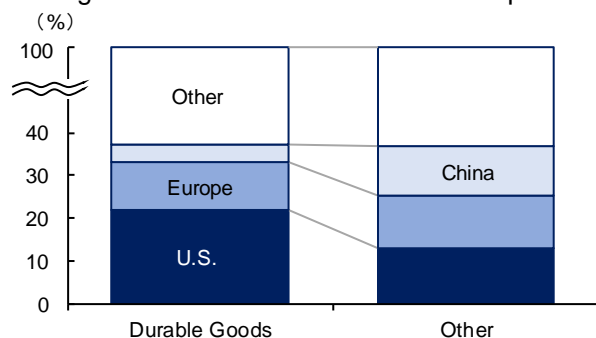
Figure 5. Durable Goods Consumption and Services Consumption (Real)



Source: OECD

Note: Consumption is expressed in real terms. Durable goods consumption is for 34 OECD member countries, and services consumption is for 24 countries. Figures are weighted averages based on GDP (2020, \$).

Figure 6. National Shares of Global Imports



Source: United Nations

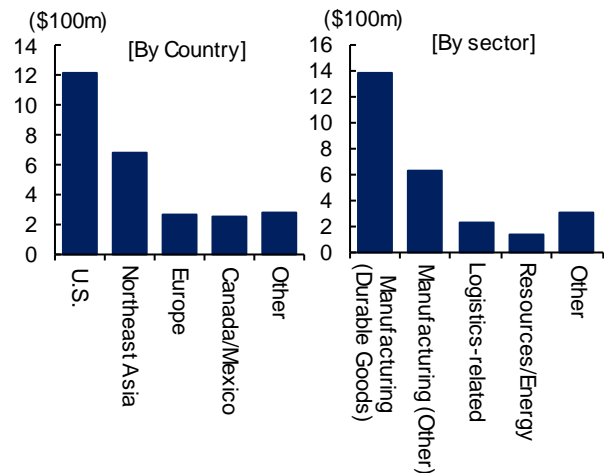
Note: Aggregate of products under the HS codes (six-digit) corresponding to consumer durable goods in special classification. 2018. Europe means the 28 EU member states.

country's share for nondurables (Figure 6). China is also known for its global presence in durables trade, but if the discussion is limited to durables imports, China only makes up 4% of world trade, which provides another indication of the strong influence of the U.S.

The increase in global output triggered by rising demand for durable goods extends to various countries and industries. Estimates based on international input/output tables indicate that a billion dollar rise in U.S. durables consumption leads to an increase in worldwide output of \$2.7 billion (Figure 7 left). Of this, \$1.5 billion is produced outside the U.S. while \$1.2 is produced domestically, so the inducement effect is greater overseas. The rise in production extends over a wide area, covering not only Canada and Mexico but also Northeast Asia and Europe. The effect of interindustry production knock-ons is large. Whereas output in durables-related industries has risen by \$1.4 billion, the increase in other manufacturing sectors has been around half that, at \$0.6 billion (Fig. 7 right). And the large international ripples have travelled beyond the manufacturing sector to the non-manufacturing industries, with higher output being seen in logistics sectors such as maritime and air transport as well as in the resource sector.

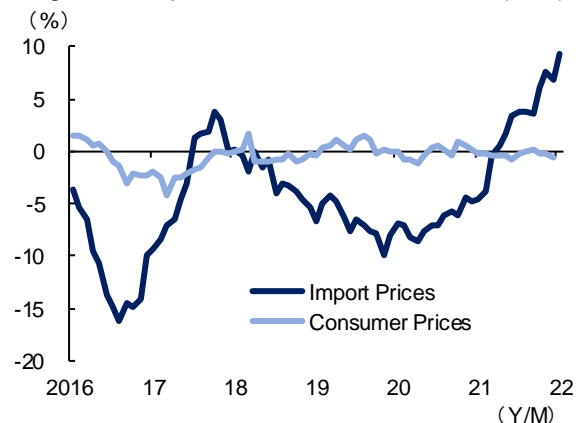
The U.S. demand spurt has resulted in increased production in a wide range of sectors around the world, and this probably has been part of the cause of constrained supply. As a consequence of the shortage of chips and other components, output of cars and appliances has been impeded, while a lack of raw materials such as lumber has strained the supply/demand balance for furniture. In addition, logistics networks have been disrupted worldwide, and in the U.S. the increase in cargo handled, coupled with a labor shortage in such vocations as dock work and truck driving, has brought distribution to a standstill. Such demand/supply pressures have pushed up trade prices for durable goods, and this rise has rippled into consumer prices around the world, and in the U.S. in particular. The elevation in prices of durable goods has also reached Japan, with import prices rising as high as almost 10% in January 2022 compared with a year earlier (Figure 8). However, the increase has not as yet been passed on to consumers in the form of higher retail prices, and consumer prices are more or less the same as they were a year ago.

Figure 7. Production induced by U.S. Durable Goods Consumption



Source: World Input Output Table
 Note: Value of output induced by billion dollar increase in U.S. durable goods consumption. U.S. durable goods consumption is assumed to refer to consumption of cars, ICT devices, and furniture. Northeast Asia means Japan, China, South Korea, and Taiwan. Logistics-related means w wholesale/retail and transportation.

Figure 8. Japan's Durable Goods Prices (YoY)



Sources: Ministry of Internal Affairs and Communications, Bank of Japan
 Note: Consumer prices do not include consumption tax.

3. Economic policy and structural changes invite a sharp rise in demand

The key factors behind the rapid increase in U.S. demand for durable goods are (1) large-scale economic stimulus from the government and (2) changes in consumer behavior.

(1) Large-scale economic stimulus

The huge fiscal and monetary policy packages that the U.S. government has come out with in response to the COVID-19 pandemic have triggered a steep rise in demand for durable consumer goods. In the fiscal space, households have received multiple cash handouts to lessen the impact of the pandemic, amounting to as much as \$3,200 per person in some cases. Families also seem to have benefitted from higher unemployment insurance payouts, which were subject to increases until last autumn. On average, U.S. household disposable income (per capita) is up by around 10% compared to before the pandemic (Figure 9). Although cash handouts and other benefits were also paid out in other advanced countries, disposable incomes rose only slightly. In the monetary space, too, the U.S. saw massive easing, and the policy rate was cut from 1.5% pre-COVID to close to zero.

These economic policies have had a powerful impact on the consumption of durables. Durable goods, when compared to non-durable goods and services, include many high-priced luxury items, so consumption volume is strongly influenced by income levels. In addition, durables, and most notably cars, are often purchased by taking out loans, so interest rate changes also heavily affect their consumption. Estimating the relationship between consumption and income as well as consumption and interest rates using pre-COVID data reveals that income elasticity and interest elasticity are higher for durable goods than for non-durables and services (Figure 10). Income elasticity is an expression of the increase in consumption that follows a 1% rise in income, and is also referred to as the marginal propensity to consume. The income elasticity of durable goods is 0.6, five times

Figure 9. Per-capita Disposable Income (Real)

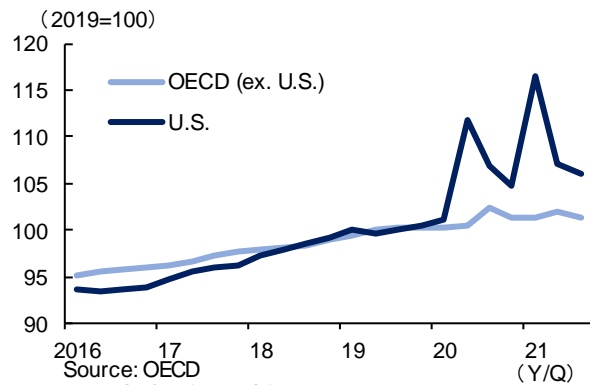
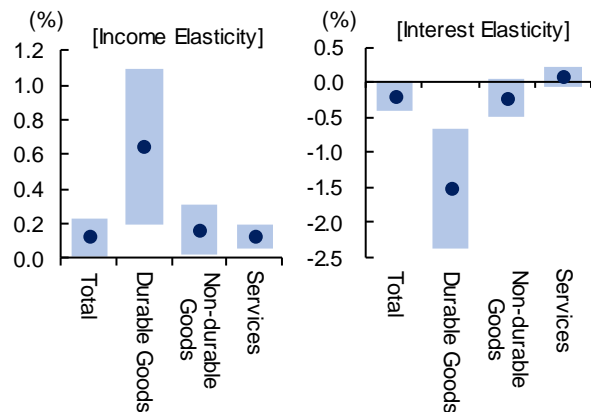


Figure 10. U.S. Consumption Income/Interest Rate Elasticity



Sources: Estimates by the author based on data from the U.S. Department of Commerce and the U.S. Federal Reserve System

Note: Income/interest rate elasticity is the rate of change (annual rate) in real consumption following a 1% increase in real interest rates or real incomes. Figures for elasticity were computed by regression of real consumption (YoY change) for real disposable income (YoY change) and the real interest rate. Real income is the higher of the figure at that time or the figure for one quarter earlier. The real interest rate is the difference between the Federal Funds Rate and the consumption deflator (YoY change). The black spots are the estimates and the shadows are within 2 standard deviations. The estimation quarter was from July-September 2002 to October-December 2019.

that for non-durable goods and services. Interest elasticity, meanwhile, expresses the rate of change in consumption following a 1% rise in the real interest rate, and in the case of durable goods, it is much larger, at -1.5, than for non-durable goods and services, for which the figures are close to zero¹.

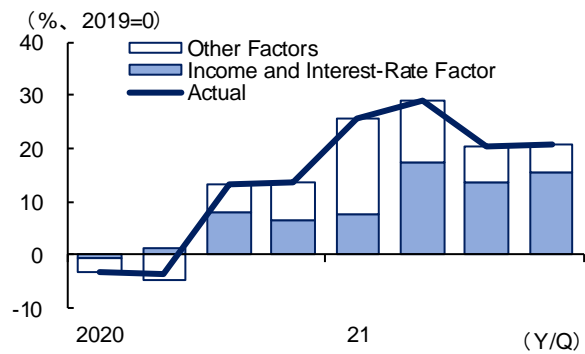
Breaking down the change in consumption into its component factors based on the elasticity estimates, we find that about 60% of the rise in demand for durables since 2020 can be explained by income factors and interest rate factors (Figure 11). Given that the increase in incomes and the fall in interest rates in the U.S. has been caused almost entirely by fiscal and monetary policy, it can therefore also be said that as much as 60% of the rise in durables consumption has been due to government policy. As for the remaining 40%, it can be viewed as resulting from changes in consumer behavior, as described below.

(2) Changes in consumer behavior

The dynamic nature of changes in consumer behavior in the U.S. compared with other countries may have led to a shift in demand toward durable goods. For example, teleworking and online shopping suddenly became much more widespread as a consequence of the COVID pandemic, and this resulted in greater demand for tech products such as PCs and smartphones. The proliferation of teleworking may have spurred people to move from densely-populated cities to the suburbs, and to replace their durable goods with new ones. Furthermore, a tendency to avoid consumption in densely-populated areas has been seen in various segments, and numerous shifts have been observed, including from public transportation to private cars, from eating out to buying goods for cooking at home, and from going to the gym to purchasing bicycles and training equipment.

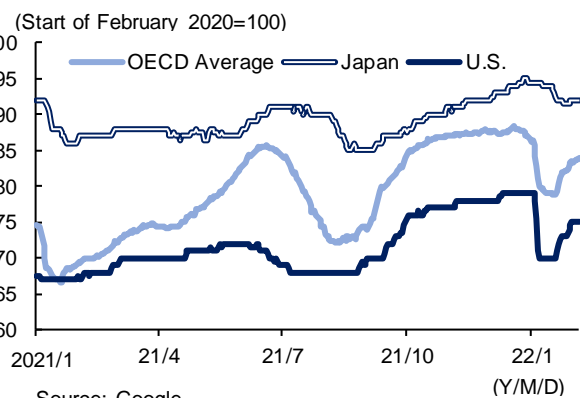
While such changes in consumer behavior have been seen in numerous countries, they seem to be particularly pronounced in the U.S. For example, mobility data from Google indicates that the number

Figure 11. U.S. Durable Goods Consumption (Cumulative Rate of Change)



Sources: Estimates by the author based on data from the U.S. Department of Commerce and the U.S. Federal Reserve System
 Note: The October-December 2019 quarter is the starting point for the cumulative rate of change. Income and interest-rate factors have been computed by extrapolating real interest rates and real disposable incomes to the regression formula used in Fig. 10.

Figure 12. Number of Visits to Workplace



Source: Google
 Note: Medians for past 30 days. The OECD average is the simple mean of 33 OECD member countries.

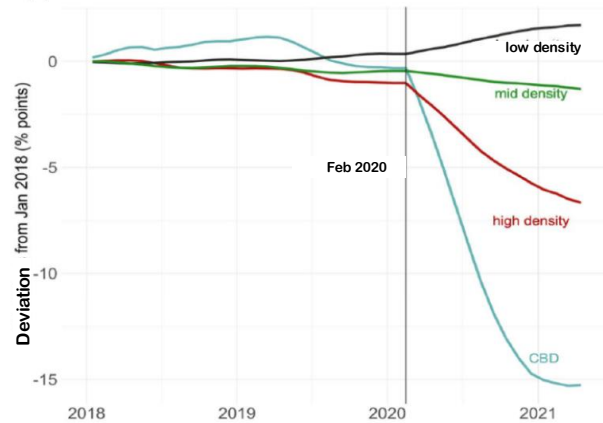
¹ The elasticities estimated here are more or less consistent with estimates from previous research. Using state-level data, Tauber and Zandweghe [2021] estimated income elasticity for durables consumption as being in the region of 0.6., and claimed that half the rise in consumption in 2020 could be explained by increased incomes as a result of policy measures. Meanwhile, Erceg and Levin [2006] performed vector autoregression analysis to estimate the impulse response function, and stated that an interest-rate cut of 0.6% would cause an increase in spending on durable goods (including housing investment) of as much as just under 1%. Furthermore, Sterk and Tenreyro [2018], who employed the same methodology, contended that a 0.75% drop in interest rates would be followed by a 2% rise in durables consumption.

of visits to workplaces has dropped to around 70% from the pre-COVID level, which is a lot lower than the OECD average (Figure 12). In Japan, for example, the decline has only gone as far as 90%. So Americans are going to their workplaces far less frequently, and instead increasing teleworking. Moreover, the proportion of companies offering telework to their employees was already high before COVID. In the 2010s, only 10-40% of European firms allowed their personnel to work from home, while in the U.S. the figure was over 80%, according to survey results². Therefore during the past two years, the degree of adoption of teleworking in the U.S. may have been far higher than in other countries.

With the proliferation of teleworking, more and more Americans have been moving out to the suburbs, and this has likely driven the rise in consumption of durable goods. Remani and Bloom [2021] used microdata on changes in address from the U.S. Postal Service to investigate population inflows/outflows and rent levels. They found that in the U.S., there is not much migration between different cities, but that there is a great deal of relocation within cities. In big cities, in particular, 15% of people who lived in central districts have moved out to suburbs where population density is low (Figure 13). This trend is also reflected in rent levels, as rents in areas with high population densities have fallen steeply, while those in low-population density areas have surged (Figure 14). In the background to this high-intracity and low-intercity migration pattern is the fact that most teleworkers are actually working in a hybrid fashion, having to head to the office two or three days a week. This means that the bulk of migration is taking place within a range that allows for commuting. Changes in behavioral patterns as a result of the pandemic, including the popularization of teleworking, therefore seem to have been a factor in the expansion in durable-goods consumption.

4. Protracted inflation possible if behavioral changes are sustained

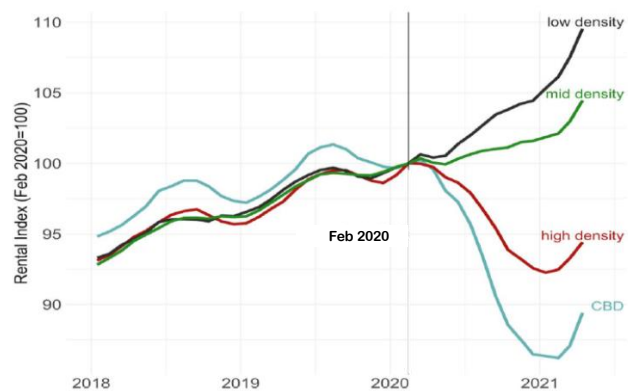
Figure 13. U.S. Population Outflow/Inflow (12 Major Cities)



Source: Remani and Bloom [2021]

Note: High density means the top 10% of districts outside the CBD for population density. Mid density means the 10-50% range from the top, while low density means the 50-100% range.

Figure 14. U.S. Rents (12 Major Cities)



Source: Remani and Bloom [2021]

Note: High density means the top 10% of districts outside the CBD for population density. Mid density means the 10-50% range from the top, while low density means the 50-100% range.

² According to data from the teleworking portal site run by Japan's Ministry of Health, Labour and Welfare, the percentage of employers offering remote work was 85.0% in the U.S. (2015), 38.2% in the U.K. (2010), 21.9% in Germany (2010), and 14.0% in France (2010)

With inflation progressing in the U.S., it is certain that policy there will shift to tightening in the future. In the area of monetary policy, it is widely believed that the policy rate will be subject to rapid series of hikes, and it is therefore likely that higher interest rates on housing and auto loans will trigger a downturn in durables consumption. As for fiscal policy, direct handouts to households will be limited, and the boost to consumption from the income effect should gradually recede. As the fiscal/monetary stance of the authorities returns to its pre-COVID state, the growth in durables consumption should slow, and upward price pressure from the demand side should be eased.

Nevertheless, attention needs to be paid to the possibility that going forward, the market for durable goods could see a weakening of the effect of government policies on relieving supply/demand tension if (1) there are delays in the easing of supply constraints or (2) changes in the demand structure are sustained. In fact, regarding the semiconductor shortage, the prevailing view is that it will last for another one or two years. Moreover, the pace of recovery in the U.S. labor force is sluggish. And on the demand side, despite progress with vaccination, consumption of services such as entertainment and travel is weaker than expected, so the possibility of the demand shift to durable goods being here for the long term cannot be ruled out. Regarding the future U.S. inflationary trend, as Nishioka [2021] has pointed out, the focus is shifting to the prices of services, but a close eye will still need to be kept on the prices of durable goods, which are moving in a distinctive way.

References

- Nishioka, Shinichi [2021], "The Widening Inflation Gap Between Japan and the United States Keeps a Weaker Yen: Behind service-led price volatility," Japan Research Institute, JRI Research Journal, Vol.4, No.10.
- Erceg, Christopher and Andrew Levin [2006], "Optimal Monetary Policy with Durable Consumption Goods," *Journal of Monetary Economics*, Volume 53, issue 7, pp.1314-1359.
- Remani, Arjun and Nicholas Bloom [2021], "The Donut Effect of COVID-19 on Cities," NBER Working Paper Series, No.28876.
- Sterk, Vincent and Silvana Tenreyro [2018], "The Transmission of Monetary Policy through Redistributions and Durable Purchases," *Journal of Monetary Economics*, Volume 99, issue c, pp.124-137.
- Tauber, Kristen and Willem Van Zandweghe, [2021], "Why Has Durable Goods Spending Been So Strong during the COVID-19 Pandemic?", Federal Reserve Bank of Cleveland, Economic Commentary, No.2021-16.