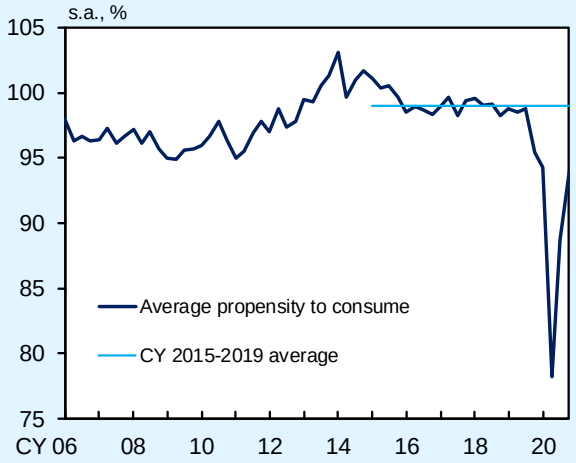
(Box 3) Effects of Widespread Vaccinations and Outlook for Private Consumption

While the progress with COVID-19 vaccinations has been led by overseas countries -- mainly European countries and the United States -- vaccinations in Japan have started for healthcare workers and seniors in February and April 2021, respectively, and those for the general public are scheduled to begin thereafter. In projecting the outlook for private consumption, the impact of widespread vaccinations on households' consumption behavior is an important factor. This box explains basic ideas regarding this factor, which are behind the baseline scenario of this Outlook Report, and touches on uncertainties accompanying them.

Progress with the rollout of effective COVID-19 vaccines is likely to have significant effects on overall private consumption and its components through the following three channels. First, due to a lowered risk of COVID-19 infection as a result of vaccinations, services consumption that involves contacting with others and going out -- which has been constrained to date -- is expected to increase again, and a recovery in overall private consumption is projected to become evident. In particular, as achievement of "herd immunity" becomes increasingly clear in the overall society due to the widespread vaccinations, there will likely be progress in the "normalization" of households' consumption behavior, in that such behavior will be under almost no constraint stemming from COVID-19 -- for example, social distancing.

Second, in the course of the aforementioned "normalization," goods consumption is likely to decline or be under downward pressure due to an unwinding of increased demand stemming from stay-at-home consumption during the pandemic. That said, the degree of this negative impact depends on the following: (1) the extent to which expanded online consumption and changed lifestyles -- both of which have been induced by COVID-19 -- will be maintained even after COVID-19 subsides, and (2) the extent to which firms in the services industry -- for which supply capacity has declined due to the impact of COVID-19, such as through a decrease in employees and a closure of some stores -- can accommodate services demand when it recovers. It should be noted that this second channel may also have implications for future price developments from the aspect of a difference in price sensitivity to economic activity between goods and services (see Box 4).

Chart B3-1: Average Propensity to Consume



Source: Cabinet Office.
Note: Average propensity to consume = consumption of households / disposable income, etc. "Disposable income, etc." consists of disposable income and "adjustment for the change in pension entitlements."

Third, as COVID-19 subsides, households may withdraw some of their "forced savings" and this may push up private consumption. Here, "forced savings" refers to the portion of disposable income that households effectively have been forced to save mainly because they lost opportunities to spend due to COVID-19; for example, there has been a decrease in opportunities to go out or move across national and prefectural borders. Such withdrawals of "forced savings" can be interpreted as the materialization of pent-up demand from a longer-term perspective. This means that, along with this materialization, the propensity to consume -- which has declined significantly to date due to constraints brought about by

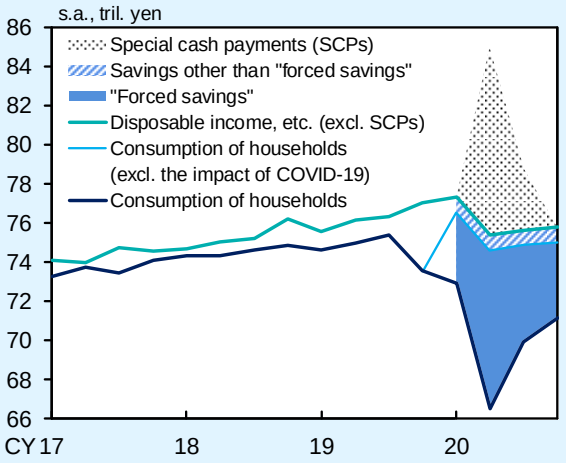
COVID-19 -- may turn to a rise and temporarily exceed the equilibrium level that is determined by such factors as demographic developments (Chart B3-1).[23]

As for the last channel of the withdrawals of "forced savings" in particular, these may have significant effects on developments in private consumption for the second half of the projection period, depending on the timing and pace of these withdrawals. Therefore, in the following, the size of "forced savings" is estimated based on a specific assumption, and the possible pace of the withdrawals is examined.

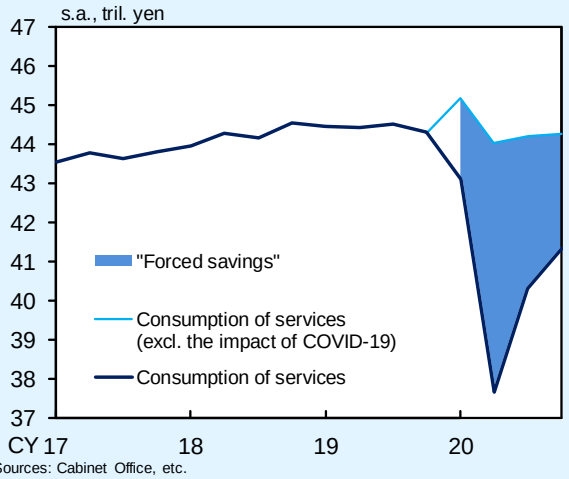
Using a simple method, the size of "forced savings" in the overall economy is estimated to be quite large, at around 20 trillion yen on a cumulative basis for 2020 (excluding the amount of special cash payments that have been put aside for savings), accounting for around 7 percent of disposable income (Chart B3-2[1]). In the estimation, for simplicity, "forced savings" is calculated by subtracting the observed level of private consumption from the level of consumption that could have been realized if people had not lost consumption opportunities due to COVID-19. The level that could have been

Chart B3-2: Estimated Amount of "Forced Savings"

1. Total Consumption



2. Consumption of Services



Sources: Cabinet Office, etc.
Notes: 1. "Disposable income, etc." consists of disposable income and "adjustment for the change in pension entitlements."
2. Consumption of households (excl. the impact of COVID-19)
= disposable income, etc. (excl. SCPs)
× average propensity to consume during the pre-pandemic period
Consumption of services (excl. the impact of COVID-19)
= consumption of households (excl. the impact of COVID-19)
× share of services in consumption during the pre-pandemic period
Share of services in consumption
= consumption of services / domestic final consumption expenditure of households
"Pre-pandemic period" in the equations refers to the period from 2015 through 2019.

[23] As described, the term "forced savings" is used in this box to refer to the portion of household consumption that should have been made during normal times but has been constrained due to the loss of consumption opportunities during the pandemic. It should be noted that, given the growing uncertainties regarding the outlook due to COVID-19, households may also have been increasing savings because of precautionary motives, and the amounts of such savings may be included in the estimated amounts of "forced savings" in this box. That said, as with "forced savings," savings made because of precautionary motives may be withdrawn as COVID-19 subsides.

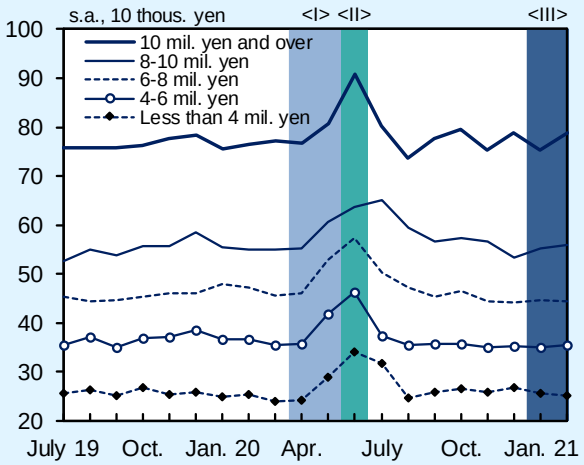
realized is obtained by multiplying disposable income by the average propensity to consume during the pre-pandemic period (the 2015-2019 average) (Chart B3-1).[24] The estimation results indicate that the majority of "forced savings" has accumulated as a result of reducing services consumption, of which constraints due to COVID-19 have been most significant (Chart B3-2[2]). For the time being, as long as vigilance against COVID-19 continues, "forced savings" due to the loss of consumption opportunities is likely to accumulate further, albeit at a slower pace than before.

By income group, "forced savings" seems to have accumulated mainly among middle- and high-income households. According to the results of the *Family Income and Expenditure Survey*, households whose consumption declined markedly in 2020 relative to their income were those with annual incomes of 6 million yen and over, although it should be noted that the results are subject to large short-term fluctuations (Chart B3-3). Consumption of middle- and high-income households is characterized not only by the large amount of consumption per household but also by the large share of selective expenditures for services in total consumption expenditures (Chart B3-4). Given this, a decline in the average propensity to consume since the outbreak of COVID-19 can be largely explained by the changes in the consumption behavior of those

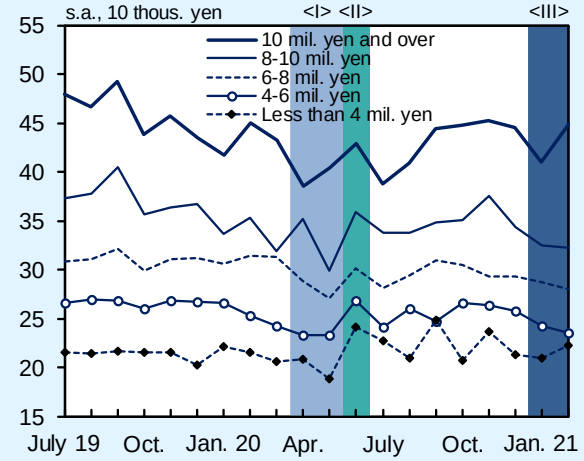
[24] In the estimation here, special cash payments are excluded from disposable income. This is because savings from special cash payments may be significantly different in nature from "forced savings" as defined in this box, given that there may be a significant difference in the propensity to consume between such temporary income as special cash payments and regular income, which includes employee income and pension income.

Chart B3-3: Income and Consumption by Annual Household Income

1. Disposable Income

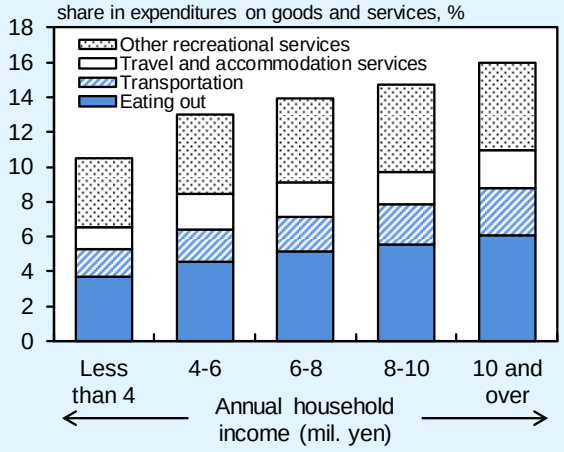


2. Consumption Expenditure



Source: Ministry of Internal Affairs and Communications.
Notes: 1. Figures are for workers' households with two or more persons in the "Family Income and Expenditure Survey."
2. Shaded area <I> denotes the period of the first state of emergency, <II> denotes when the provision of special cash payments began, and <III> denotes the period of the second state of emergency.

Chart B3-4: Shares of Selective Services Expenditures

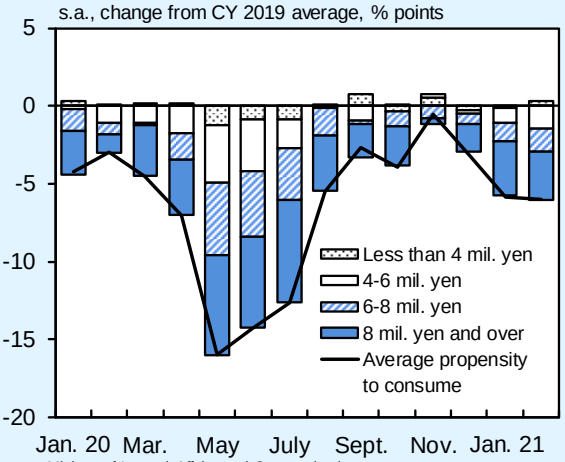


Source: Ministry of Internal Affairs and Communications.
Note: Figures are for two-or-more-person households in the "National Survey of Family Income, Consumption and Wealth." Expenditures on goods and services = consumption expenditures - pocket money - social expenses - remittance. Figures for travel and accommodation services are the sum of expenditures on accommodation services and package tours. Figures for other recreational services include expenditures on lesson fees. Figures are October-November 2019 averages.

households (Chart B3-5). The estimation using data for the amount of savings and the distribution of households, both by annual household income, shows that over half of "forced savings" seems to have been made by households with annual incomes of 6 million yen and over (Chart B3-6).

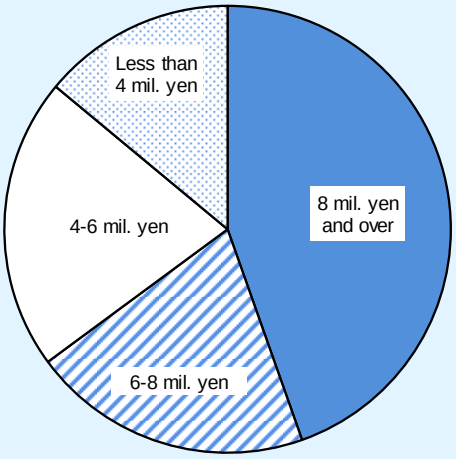
It is assumed in the baseline scenario of this Outlook Report that "forced savings" will be withdrawn gradually from the middle of the projection period, when vaccinations are assumed to become widespread, and that this will continue to be done for a long time beyond the projection period. The reasons for assuming that the pace of withdrawals will be quite moderate are as follows. First, the majority of "forced savings" has been made mainly by middle- and high-income households, as mentioned earlier, and these households' propensity to consume is relatively low (Chart B3-7).[25] Second, although pent-up demand for services will likely materialize, the amount of services that can be consumed within a certain time period seems to be limited compared with that of goods consumption. Services consumption is more likely to reach the upper limit of supply in the short run because there are many cases where (1) such consumption activity requires a certain time period and a specific occasion, as exemplified by travel, and (2) demand concentrates on a certain time of day or period, as seen in dining-out (Charts B3-8 and B3-9). Third, if the aggressive fiscal spending during the pandemic heightens households' concern about possible future increases in taxes and social security

Chart B3-5: Average Propensity to Consume by Annual Household Income



Source: Ministry of Internal Affairs and Communications.
Note: Figures are for workers' households with two or more persons in the "Family Income and Expenditure Survey." The figures for the average propensity to consume do not match those released in the "Family Income and Expenditure Survey" due to such factors as seasonal adjustment errors.

Chart B3-6: "Forced Savings" by Annual Household Income



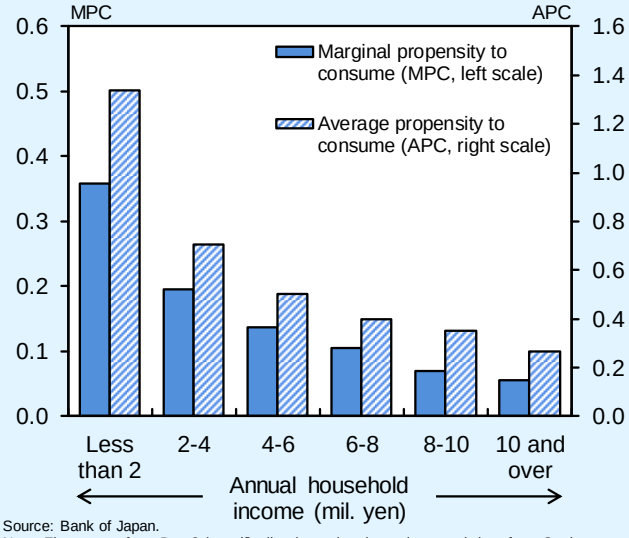
Sources: Ministry of Internal Affairs and Communications, etc.
Note: Figures are estimated using (1) the amounts of savings by annual household income (for workers' households with two or more persons) in the "Family Income and Expenditure Survey" and (2) the distribution of households by annual household income (for total households) in the "National Survey of Family Income, Consumption and Wealth" conducted in 2019.

[25] With regard to the propensity to consume by income group, see Box 3 in the October 2016 Outlook Report.

contributions, this may constrain consumption, mainly by middle- and high-income households whose current income levels (i.e., liquidity) are not acting as constraints on consumption expenditures.

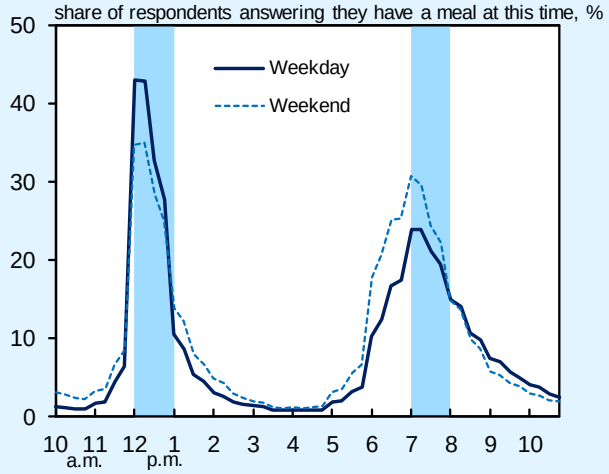
The quantitative estimation results for "forced savings" explained earlier need to be interpreted with some latitude as they may change depending on the equilibrium level for the propensity to consume. In addition, from a wider perspective, there are both upside and downside risks relative to the baseline scenario concerning the impact on private consumption of the COVID-19 situation and the widespread vaccinations. In the first place, until effective COVID-19 vaccines become widespread, the spread of COVID-19 may push down private consumption through public health measures and households' self-restraint behavior. Therefore, for the time being, attention should continue to be paid to downside risks posed by the spread of COVID-19. On the other hand, there are possibilities that, as vaccinations progress, the consumption behavior of those already vaccinated will become more active than expected, and that, around the time vaccinations become widespread, "forced savings" will be withdrawn at a faster pace and private consumption consequently will be pushed up. From a somewhat long-term perspective, it is also necessary to take into account the possibility that private consumption will see a larger-than-expected rebound as COVID-19 subsides because the amount of consumption of canceled activities -- such as events, dining with others, and travel -- seems to have become considerable due to the prolonged period of self-restraint from engaging in such activities.

Chart B3-7: Propensity to Consume by Annual Household Income



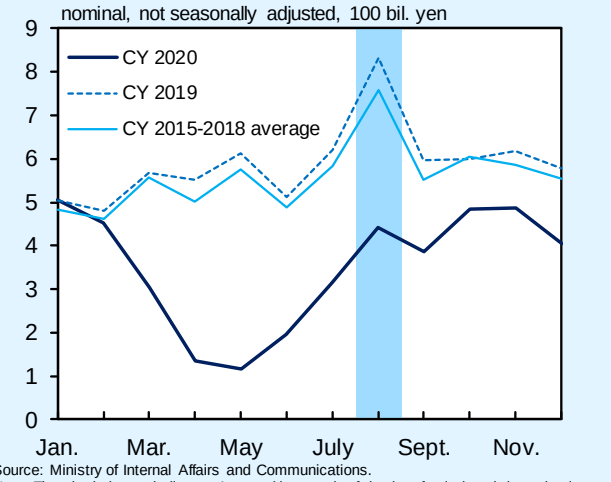
Source: Bank of Japan.
Note: Figures are from Box 3 (specifically, the estimation using panel data from Osaka University's "Preference Parameters Study" conducted as part of its Global COE Program) in the October 2016 Outlook Report.

Chart B3-8: Mealtimes



Source: Ministry of Internal Affairs and Communications.
Notes: 1. Figures are for employed persons and as of 2016. Figures for weekend are the simple averages of Saturday and Sunday.
2. Shaded areas indicate peak times for lunch and dinner.

Chart B3-9: Seasonality in Sales in the Accommodations Industry



Source: Ministry of Internal Affairs and Communications.
Note: The shaded area indicates August (the month of the *bon* festival and the school summer holiday).