



# Household Savings in the Mirror of National and Aggregate Transfer Accounts

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## Abstract

The article examines the changes in the Russian population's propensity to save in 2011–2020 in the context of national (SNA) and transfer (NTA) accounts. The calculation of the Households Savings value on a gross and net basis is methodologically consistent with the National Transfer Accounts Manual, the System of National Accounts 2008, and the official Rosstat statistical methodology for constructing non-financial accounts of the Household sector in the System of National Accounts of the Russian Federation.

Structural changes in households' savings were studied from three perspectives: against the background of the economy's savings, changes in the volume of public transfers to the private sector, and conclusions from international studies on NTA. The construction of the balance sheet of the Households sector's savings and accumulation (according to the SNA data) and the system of aggregate transfer accounts yielded the following results.

From 2011 to 2020, the population provided between 1/5 and 1/3 of the total gross saving of the Russian economy. The Households sector acted as a net creditor to other institutional sectors of the SNA (including the Rest of the World sector), providing them with resources saved but not used for accumulation amounting to 1.0–6.0% of GDP. This study confirms that there is a direct correlation between changes in the volume of income saved by the population and changes in life cycle and public reallocation accounts estimates. The analysis of the Russian economy shows that the households' saving rate was steadily low, comprising about 6.2% of disposable income on average, amidst significant public benefits. These findings match the results of cross-country comparative studies on developed economies made in the context of NTA.

## Keywords

net saving, aggregate transfer accounts, national accounts, households, economic lifecycle, labour income, consumption expenditure, current transfers, disposable income

**JEL codes:** E16, E21, J11, O11

## Introduction

Saving is among the broad resource parameters of the national economy (and its institutional sectors), being a category in both the Systems of National Accounts (SNA) and National Transfer Accounts (NTA). A sector is composed of institutional units (economic agents) that can, on their own behalf, own assets, take on liabilities, perform economic operations, and engage in transactions with other units. These units are homogeneous in terms of the functions they perform and their funding sources. Five sectors of the national economy are identified: Non-Financial and Financial Corporations, General Government (GG), Households (HH), and Non-Profit Institutions Serving Households (NPISH). These sectors cooperate with each other and with non-resident units combined in the Rest of the World sector (Rosstat 2023a: 42-43).

In national accounting, the amount of saving is the portion of an economic agent's disposable income that is not used for private consumption and is intended for purchasing non-financial or financial assets (Rosstat 2023b: 130). Disposable income is the sum of revenues derived by the economy and sectors from production activity and the reallocation of cash revenues and current transfers in the form of taxes, benefits, and other social payments (Rosstat 2023a: 20). According to the SNA methodology, only three sectors of the local economy can have consumer expenditures: Households (HHs), Non-Profit Institutions Serving Households (NPISH), and General Government (GG). The SNA methodology assumes that corporations, both non-financial and financial, do not engage in consumer spending; thus, their disposable income is equal to their savings (Rosstat 2023a: 21).

Based on vital needs, households' motives behind making savings can be divided into two large groups: savings for insurance and savings for specific purposes. The main motivations for saving include:

- retirement (to maintain a certain level of consumption) – insurance motive;
- emergencies (which can arise on the labour market or if the quality of life changes) – insurance motive;
- large expenses planned for future – savings motive;
- bequests – savings motive.

This research started from an assumption about interconnection between changes in the level of income saved by population (net savings made by the Households sectors) and changes in life cycle and public reallocation aggregate accounts estimates. The author analysed changes in the Russian households' saving in 2011-2022, and these were put in the context of changes in the volume of public transfers to the private sector as a channel of funding the life cycle deficit. The article presents the findings of this analysis. Savings of the HH sector are shown against savings in the economy as a whole (SNA) and in parallel to conclusions based on cross-country research (NTA).

## Methodological Comments to the Assessment of Savings in National and Transfer Accounts

Before analysing households' savings, I'd like to clarify several methodological points.

- Primary for National transfer accounts (NTA) are the estimates of economic life cycle result and the sources of its funding. The NTA system comprises three accounts. Table 1 shows NTA system accounts.

**Table 1.** NTA system accounts

<b>Economic life cycle (deficit (+) / surplus (-)) (1-2)</b>	=	<b>Age Reallocations (funding) (1+2)</b>
1. Consumption		1. Public Age Reallocations account
1.1. Public Consumption		1.1. Net Public Transfers
1.2. Private Consumption		1.2. Public Asset-based Reallocations
2. Labour Income		2. Private Age Reallocations account
2.1 Earnings		2.1. Net Private Transfers
2.2 Self-employment Labour Income		2.2. Private Asset-based Reallocations

Source: (UN 2022: 39).

On an aggregate level (on the total economy level), almost all values included in NTA are calculated based on the System of National Accounts (SNA) statistics (on the data from consolidated and sectoral accounts). This approach ensures macro controls for the NTA values and cross-country compatibility.

- In the National Transfer Accounts (NTA), the public sector corresponds to the government sector in the System of National Accounts (SNA). The private sector encompasses four SNA sectors: households (HH), non-profit institutions serving households (NPISH), non-financial corporations (NFC), and financial corporations (FC). NTA aggregated across all ages shows the extent to which the population funds their consumption from their labour income and the extent to which this consumption is funded by the budget and asset/property income. Similar to public asset-based reallocations, private asset-based reallocations are calculated as the sum of net asset (capital + property) income minus net saving.
- The estimated volume of savings can be either positive or negative. A positive value indicates an available resource that can be used for investment purposes (such as accumulating non-financial and financial assets) and partially provided to the Rest of the World or other sectors of the local economy as extra funding. Conversely, if consumer expenditures exceed disposable income, the difference is reflected as a negative value. This negative value represents the additional funds that the economy or sectors borrow from external sources to cover consumer expenditures. To address this shortfall, the difference must be funded by selling assets or taking on new liabilities (Rosstat 2023b: 130).
- The national accounting methodology (SNA) uses the terms “gross” and “net” saving for the economy or institutional sector. The difference between these estimates is that gross saving includes consumption of fixed capital (CFC), while net saving disregards it. Consumption of fixed capital is an estimated decline in the current value of fixed assets owned and used by producers within the reporting period. This decline results from physical deterioration, technological obsolescence, or normal accidental damage, which can be foreseen and covered by insurance (Rosstat 2021a: 1).
- Gross saving of the economy or a sector, adjusted for the balance of mutual settlements on capital transfers with the Rest of the World, determines the total capital available and influences the economy’s or sector’s propensity to invest, according to the System of National Accounts (SNA). The SNA categorizes three types of capital

transfers: capital taxes (tax on property whose ownership transfers to another unit through gift or inheritance.); investment grants (capital transfers provided by the GG sector to cover expenditures on the acquisition of fixed assets); other capital transfers (debt forgiveness by mutual agreement between a creditor and debtor, inheritance of property, exceptionally large donations to finance the gross capital formation of non-profit organizations (NPOs), and exceptionally large insurance benefits related to natural disasters). (Rosstat 2023b: 130-131).

- According to the National Transfer Accounts (NTA) methodology, the term “Net Saving” encompasses both private sector and public sector saving. From the methodological point of view, Net Private Saving includes the savings of corporations (both non-financial and financial), Non-Profit Institutions Serving Households (NPISHs), and Households (HHs) (UN 2022: 88).
- The amount of net savings in the Household (HH) sector includes an adjustment for changes in the net cost of money that households allocate to pension funds, specifically reflecting changes in pension rights. This adjustment is crucial because households, according to the System of National Accounts (SNA), are considered owners of reserves within non-public pension insurance programs.

This amendment reconciles households’ savings with changes in the net cost of money allocated to non-public pension funds, which is recorded in the financial account. Essentially, it adds the difference between contributions made to non-public pension funds and the pensions received from these funds to households’ disposable income. This ensures that the volume of household savings accurately reflects their overall financial activities, including their involvement in pension planning.

Conversely, a corresponding adjustment is made for non-public pension funds within the Financial Corporations sector, completing the reconciliation process within the national accounting framework (Rosstat 2023a: 21).

- In the context of National Transfer Accounts (NTA), the National Accounts statistics on gross savings of the economy and consumption of fixed capital serve as the definitive macro controls for calculating net savings. This process ensures that the net saving value for each sector is derived directly from the accounting statistics in NTA, as Net Saving in NTA corresponds to the same concept as in the System of National Accounts (SNA) at the economy level.

## Household Savings Analysis through the Russian Statistics

*National Accounts Statistics (SNA)* analysis allows for insights into how households allocate their savings into different forms of investments (different kinds of economic assets). Conclusions drawn from this analysis are typically based on the estimated balance of savings and accumulation within the HH sector, utilizing sector-specific statistical data from accumulation accounts such as the capital account and financial account. Table 2 presents data for 2011-2020.

Households annually invested resources in non-financial assets equivalent to 2.8-5.6% of GDP (in fixed capital, replenishment of inventories, and the net acquisition of valuables). Over the decade, there was a noticeable trend of decreasing investment in gross capital formation by the population. Specifically, the average structural weight of investments in non-financial assets was 4.7% of GDP during the first five years (2011-2015). This proportion declined to 3.1% of GDP in the subsequent five years (2016-2020).

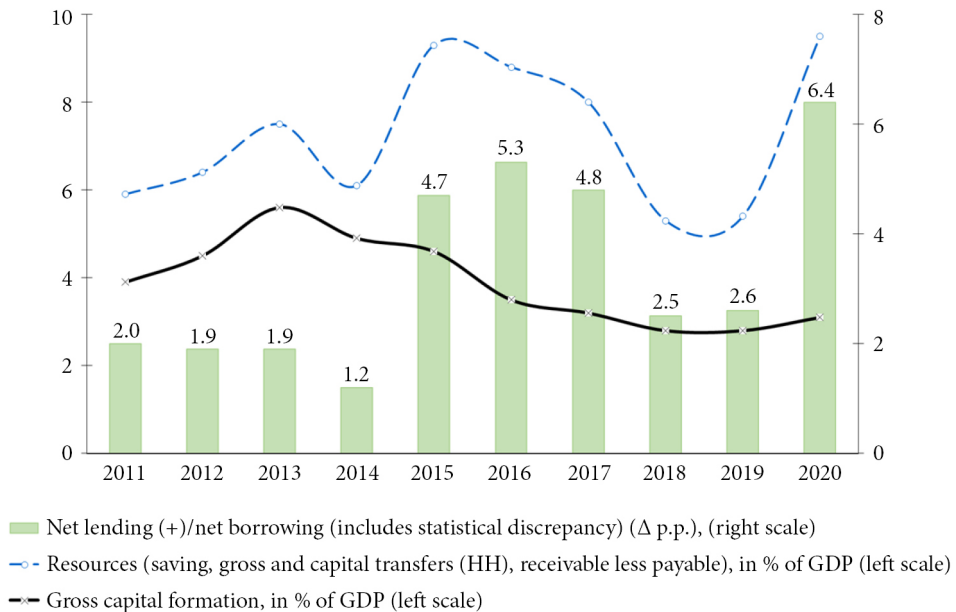
**Table 2.** Balance of savings and accumulation of the HH sector considering NPISHs in 2011-2020 (% GDP)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
RESOURCES	5.9	6.4	7.5	6.1	9.3	8.8	8.0	5.3	5.4	9.5
Gross saving	4.7	4.7	4.8	4.8	7.7	8.1	7.4	4.9	4.8	8.9
Capital transfers (net)	1.2	1.7	2.6	1.3	1.6	0.7	0.6	0.4	0.6	0.6
USE	5.9	6.4	7.5	6.1	9.3	8.8	8.0	5.3	5.4	9.5
Investment in non-financial assets	3.9	4.5	5.6	4.9	4.6	3.5	3.2	2.8	2.8	3.1
Gross capital formation	3.9	4.5	5.6	4.9	4.6	3.5	3.2	2.8	2.8	3.1
Increment of financial assets <sup>1</sup>	2.0	1.9	1.9	1.1	4.8	5.1	4.2	2.6	2.6	6.0
Foreign currency in cash and deposits	n/d	3.2	3.3	0.3	3.7	4.1	4.3	3.5	3.3	5.0
Debt securities	n/d	0.3	0.2	0.2	0.3	0.0	0.3	0.3	0.6	0.5
Credits and loans	n/d	-3.6	-3.4	-1.1	0.8	-0.5	-1.9	-2.6	-2.7	-2.4
Shares and other ways of participating in capital	n/d	0.7	0.8	1.4	-1.0	0.9	0.7	0.7	0.6	1.0
Insurance and pension reserves	n/d	0.5	0.8	0.3	1.0	0.8	0.8	0.6	0.3	0.3
Change in accounts receivable and payable	n/d	0.7	0.2	0.1	0.0	-0.1	0.1	0.2	0.5	1.5
including:										
individuals' funds in escrow accounts	n/d	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0
Statistical discrepancy	0.0	0.0	0.0	0.1	-0.1	0.2	0.6	-0.1	0.0	0.4

<sup>1</sup> – Increment of assets – increment of liabilities. Data source: SNA financial account. Corresponds to the sector's Net Lending (+) / Net Borrowing (-) disregarding a statistical discrepancy. Calculated based on the Central Bank of Russia's data, Financial Accounts and Balances of Financial Assets and Liabilities in the Russian Federation's System of National Accounts section, Annual Financial Accounts in the SNA subsection (time series). Financial Operations by Instruments (HH and Non-Profit Institutions Serving Households (NPISH) table. [https://cbr.ru/statistics/macro\\_itm/fafbs/](https://cbr.ru/statistics/macro_itm/fafbs/)

In terms of investments in financial assets, there were diverse changes in flows. Households shifted their focus towards securities, finding shares and other forms of capital participation more attractive than debt instruments. Concurrently, the total volume of household borrowing from the banking system continued to rise. A negative value in the ‘Credit and Loans’ item indicates accumulating outstanding loans. In 2020, households significantly increased resources placed in escrow accounts, which banks opened to enhance transaction security. Savings also grew in the form of cash currency and deposits. From 2012 to 2015, the average annual structural allocation to these instruments was 2.6% of GDP, whereas from 2016 to 2020, this average increased to 4.0% of GDP.

In Russia, households traditionally serve as the primary “net creditor” of the economy, supplying resources that are saved but not utilized for accumulation to other institutional sectors, including the Rest of the World sector. Over the period from 2011 to 2020, this amount ranged from 1.1% to 6.0% of GDP (see Figure 1).



**Figure 1.** Household and NPISH resources: turning savings into gross capital formation. *Data source:* Calculated according to the Data (Rosstat) on 01.09.2023. Digital versions of issues: *Russian National Accounts in 2015-2022, Russian National Accounts in 2014-2018* (for 2014), *Russian National Accounts in 2011-2016* (for 2011-2013). Integrated Table of National Accounts table. <https://rosstat.gov.ru/folder/210/document/13221>

The retrospective analysis of households’ savings from 2011 to 2020 revealed that the population contributed between one-fifth (20%) to one-third (33.3%) of the total gross savings of the Russian economy (see Table 3).

From the perspective of National Transfer Accounts (NTA), households’ savings are linked to changes in the coverage of the life cycle deficit.

**Table 3.** HH sector's savings and the life cycle result in 2011-2020

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1. HH sector's savings										
in proportion to the sector's disposable income (on a net basis), in %	3.5	3.4	3.8	3.9	9.0	9.3	8.5	4.9	4.3	10.9
in % of GDP (on a gross basis)	4.5	4.6	4.7	4.7	7.5	7.9	7.2	4.7	4.5	8.6
in % of GDP (for 5 years on average)			5.2					6.6		
2. Economy's savings										
in % of GDP (on a gross basis)	28.8	27.2	24.3	24.6	26.5	25.1	25.7	28.9	26.6	25.7
in % of GDP (for 5 years on average)			26.3					26.4		
3. Real disposable cash income of the Population <sup>1</sup> , % year-on-year	0.5	4.6	4.0	-1.2	-2.4	-4.5	-0.5	0.7	1.2	-2.0
<b>National Transfer Accounts (NTA):</b> (annual aggregate flows, % of GDP)										
Life Cycle Deficit (LCD), (+)	7.0	8.2	9.3	7.9	8.3	9.3	9.3	8.9	11.5	13.0
Consumption	54.4	56.0	59.1	58.8	60.2	61.7	61.3	57.5	59.5	61.6
Labour Income	47.4	47.8	49.8	50.9	51.9	52.4	52.0	48.6	48.0	48.6
Financing (Age Reallocations)	7.0	8.2	9.3	7.9	8.3	9.3	9.3	8.9	11.5	13.0
Net Public transfers	0.2	0.34	0.33	0.30	0.14	0.08	0.07	0.06	0.01	0.09
- Inflows	28.9	29.9	31.3	31.7	31.1	32.3	31.8	30.6	30.2	33.9
- Outflows	28.7	29.5	30.9	31.4	31.0	32.3	31.8	30.5	30.2	33.8
Other	6.8	7.86	8.97	7.60	8.16	9.22	9.23	8.84	11.49	12.91

*Data source:* Calculated according to the Data (Rosstat) on 01.09.2023. Digital versions of issues: *Russian National Accounts in 2015-2022*, *Russian National Accounts in 2014-2018* (for 2014), *Russian National Accounts in 2011-2016* (for 2011-2013). Integrated Table of National Accounts table. <https://rosstat.gov.ru/folder/210/document/13221>

<sup>1</sup> – Rosstat. Chapter «Population». The Level of Life section. Real Disposable Monetary Income of the Population of the Russian Federation tables. (<https://rosstat.gov.ru/folder/13397>)

Throughout 2011–2020, households saved annually between 3.4% to 10.9% of the sector's net disposable income.<sup>1</sup> The households' saving rate<sup>2</sup> ranged from 4.5% to 8.6% of GDP. The analysed period can be divided into four subperiods according to characteristics of the population's savings:

**2012–2014.** The consumption growth rate (NTA) nearly mirrored the growth rate of labour income in nominal terms (42.1% and 41.1% respectively), maintaining the life cycle deficit at approximately 8–9% of GDP. Towards the end of this period, the portion of households' disposable income allocated to savings slightly increased, reaching up to 3.9% of the total. The crisis that began in October 2014 and remained active until February 2015 had minimal impact on savings estimates for 2014 but significantly influenced household saving behaviour from 2015 to 2017.

**2015–2017.** Real disposable income declined in both the crisis and post-crisis periods, leading households to reduce their consumption. Nominal growth rates of labour income and consumption slowed by nearly half compared to the previous three-year period, with consumer expenditures still slightly outpacing labour income growth (21.3% and 18.9%, respectively). This resulted in a widening gap between them, amounting to 2.4 percentage points, compared to 1 percentage point for 2012–2014. Consequently, the life cycle deficit experienced a modest increase, reaching 9.3% of GDP in 2016 and maintaining this level in 2017.

Given that households' consumption and savings strategies are interconnected, the reduced consumer activity led to a significant increase in the proportion of income saved by households, rising to approximately 9% during 2015–2017 from 3.4–3.9% observed during 2011–2014.

The trend towards a growing share of paid individual services in the consumer market structure was an objective factor prompting the population to increase their savings levels. This structural shift is reflected in the distribution of aggregate National Transfer Accounts (NTA) flows among different age groups, correlating with age-related opportunities and preferences.

The volume of transfer support for each age group's consumption directly impacts both the current consumption levels within those age groups and their corresponding savings profiles.

**2018–2019.** The disparity between the nominal growth rates of current consumption and labour income widened significantly, increasing 2.5 times compared to the previous period of 2015–2017, reaching 5.8 percentage points (15.9% growth in consumption versus 10.1% growth in labour income). This growth in consumption was fuelled by the gradual realization of deferred demand, while real disposable income saw only modest increases.

Additionally, households actively pursued consumer loans, which became increasingly attractive due to reduced interest rates during this period. The Russian rouble portfolio of unsecured consumer loans expanded by 22.6% in 2018 and by 18.8% in 2019. Consequently, the economy's life cycle deficit continued to climb, reaching another peak of 11.5% of GDP by the end of 2019.

Household spending remained heavily skewed towards consumer purposes, resulting in a decrease in the amount of income saved by the Household (HH) sector to approximately

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1 Adjusted for the change in pension entitlements.

2 Volume of the sector's gross local savings correlated with the volume of GDP produced. Calculated as % of GDP.



4.9% in 2018 and 4.3% in 2019 of disposable income. The sluggish recovery in income was another factor contributing to reduced savings attractiveness during this period.

In 2018-2019, real disposable income experienced a modest recovery of only 1.9% following a cumulative decline of 9.2% over the preceding four years from 2014 to 2017.

**2020.** The COVID-19 pandemic had a significant impact on both government policies and household behaviours in Russia. Here are the specific trends observed among households:

- The amount of current public transfers to the private sector, with the majority (80-90%) directed to households, rose markedly, reaching nearly 34% of GDP. This was a substantial increase compared to the pre-COVID period, where annual transfer resources to the population typically ranged from 29% to 31% of GDP.
- There was a sharp decrease in the physical volume of households' expenditures on final consumption, declining by 5.9% year-on-year. This reduction can be attributed to postponed consumer demand during the pandemic, a renewed decline in real disposable income among the population, and the necessity to allocate significant funds towards loan repayments. In the preceding years, households had experienced a steep increase in debt burdens, exacerbating financial pressures.<sup>1</sup>

Consumer and investment strategies, as highlighted earlier in the article, are interconnected, influencing household financial behaviours. In 2020, several factors, including increased government support through social transfers and economic uncertainties due to the COVID-19 pandemic, led to a significant shift in household saving patterns.

The households' saving rate more than doubled in 2020, rising to 10.9% of disposable income. This increase can be attributed to households adjusting their financial strategies in response to economic conditions, similar to the trends observed during 2015-2016 when households prioritized savings over increased current expenditures.

During 2020, the share of income saved by households reached 9.0-9.3% of disposable income, reflecting a deliberate effort to build financial resilience amidst economic uncertainty. Despite these efforts, the life cycle deficit continued to escalate in nominal and structural terms, reaching 13% of GDP and marking another peak.

One can also analyse structural shifts in the distribution of household resources by considering changes in the physical volume of net disposable income and the population's net savings indices. This approach illustrates how saving behaviours among the population evolved in response to changes in income dynamics over time. The author's retrospective analysis of estimates spanning from 2012 to 2020 provides meaningful insights into these dynamic values over the long term.

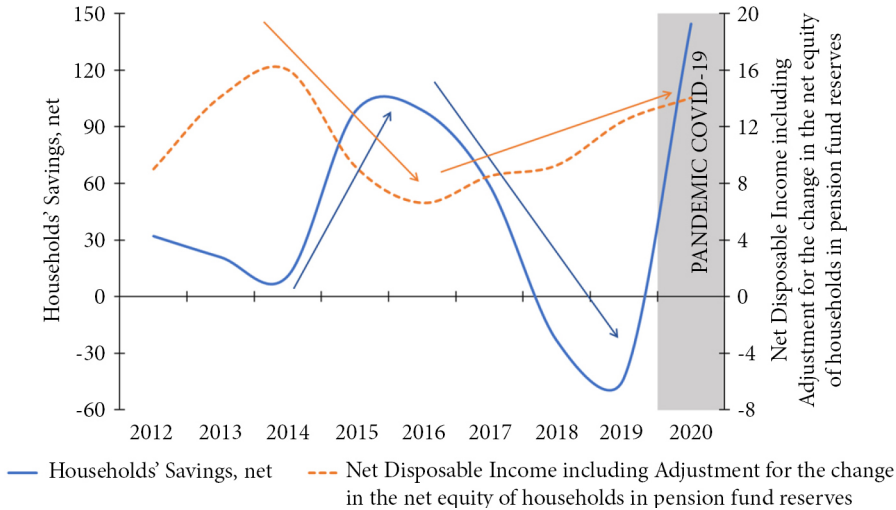
To estimate dynamic indices adjusted for price changes, expert conversion nominal volumes from current prices to comparable (base) prices of 2011 using the Consumer Price Index (CPI) for goods and services (EMISS, Indexes...) and the deflator for households' final consumption expenditures (Rosstat. National Accounts...). Following the System of National Accounts (SNA) methodology, the sector's net savings were calculated as the difference between net disposable income and current consumption expenditures. Subsequently, the dynamics of net savings in real terms were assessed (Figure 2).

Cumulative physical volume indices, calculated relative to 2011, revealed that during the period of slowed growth and declining disposable income (2014-2016), there was an

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<sup>1</sup> In addition to consumer loans, the volume of rouble-denominated home loans granted to individuals rose sharply: by 23.6% year-over-year in 2018, and by 17% in 2019 in annualised terms.

increase in the population’s propensity to save. This upward trend in net savings indicates a heightened inclination among households to save. However, from 2017 to 2019, this trend reversed. In 2020, households once again showed a stronger inclination towards saving, primarily driven by deferred consumer demand resulting from the COVID-19 pandemic.



**Figure 2.** Dynamics of households’ net disposable income and net savings in real terms (2011 = 100%). Data source: Calculated according to the Data (Rosstat) on 01.09.2023. Digital versions of issues: *Russian National Accounts in 2015-2022*, *Russian National Accounts in 2014-2018* (for 2014), *Russian National Accounts in 2011-2016* (for 2011-2013). Integrated Table of National Accounts table. <https://rosstat.gov.ru/folder/210/document/13221>

As people’s savings behaviour is significantly influenced by their lifestyle, age-related distribution of transfers, and various other factors, macro-level conclusions derived from aggregate transfer accounts were corroborated with findings from micro-statistical analyses. Surveys conducted quarterly and monthly by the Bank of Russia provide insights into the savings habits of Russia’s population aged 18 and above. These surveys utilize a representative Russia-wide sample, employing a 3-stage stratified sampling method based on geographical criteria. Each survey wave involves 2,000 respondents from 105 settlements across 55 regions of the Russian Federation.

Reports published on the Bank of Russia’s website document the findings from 56 waves of surveys conducted from September 2013 to the present (Bank of Russia 2013-2020). The author has reviewed reports by «inFOM» LLC regarding measurements of inflation expectations and consumer sentiments, based on these population polls spanning the analysis period. Several common aspects influencing people’s savings behaviour were identified.

- The surveys have revealed that savings attitudes and perceptions of inflation vary significantly depending on individuals’ financial conditions, age demographics, and family structures. Young people under the age of 30 tend to estimate inflation rates lower compared to other age groups, which correlates with a minimal propensity to save within this demographic. Similarly, representatives of large families, who benefit from higher levels of consumption support through familial transfers, also provided lower inflation estimates and exhibited lower savings propensity. Conversely, older

age groups generally reported higher estimates of inflation compared to younger individuals, accompanied by a stronger inclination towards saving. Pensioners, in particular, were identified as the demographic most inclined to save.

- From the perspective of Russia's federal districts, residents of the Central, Southern, North Caucasian, and Far Eastern districts tended to give higher estimates of inflation. This trend can be attributed to factors such as a relatively older population in the Central District and lower disposable incomes in the Southern, North Caucasian, and Far Eastern districts. In contrast, residents of the Volga and Siberian districts provided moderate estimates of inflation, while the lowest estimates were reported by respondents from the North-Western and Ural districts.
- Survey data indicates a declining proportion of households capable of saving, accompanied by an increasing number of respondents who allocate all their income to immediate needs. In mid-2014, the highest proportion of households reporting savings was recorded at 41%. However, this figure began to decline amidst the economic crisis, which intensified in October 2014. By the end of 2014, the share of savers decreased to 37-39%, followed by further declines to 35-36% in 2015-2016 and 31-33% in 2017. By the end of the analysed period, less than a third of households reported having savings. Since 2015, in response to the crisis and subsequent slow economic recovery, there has been a notable shift in consumer behaviour towards saving. The decline in real disposable income during the crisis prompted households to adopt a more conservative approach, including opting for cheaper alternatives and postponing major purchases. This shift towards saving was reflected in an increasing savings rate during 2016-2017.

Comparing these findings with macroeconomic estimates of household savings from Table 3, several interpretations arise. Pensioners exhibited a more active saving behaviour, although their impact on the overall household saving rate was limited due to their smaller average savings size. The 65+ age cohort contributed less than 15% to the economy's disposable income. Since 2019, influenced largely by the COVID-19 pandemic, the growth rate of the population aged over 65 has stagnated relative to the total population<sup>1</sup>, a trend that continued in nominal terms from 2020 onward. Households faced increased difficulty in saving after meeting immediate needs, partly due to changes in consumer demand structures, such as a higher share of paid individual services. Surveys corroborate that the population's saving behaviour shifted amid a prolonged decline in real disposable income, which has yet to return to pre-crisis levels observed in 2013.

The saving behaviour of working-age individuals is shaped by both changes in real income levels and current expenditures, as well as personal preferences between consumption and saving. During periods of inflation, some individuals opt to spend their income more actively, including tapping into previously accumulated savings, in response to rising inflationary expectations. As real income conditions improve, these individuals often prioritize replenishing their savings that were depleted during the crisis. Conversely, another segment of the population continues to prioritize saving as much as possible, even during periods of shrinking real income. They tend to limit their consumption in order to maintain or increase their savings.

The inclination of working-age individuals to save is significantly influenced by the allocation of public transfers, particularly those from the General Government sector according

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<sup>1</sup> It had decreased to 25.1% of the total population by early 2021 from 25.4% in 2019 and 25.7% at the end of 2018.

to SNA terminology, across different age groups. When monetary transfers are predominantly directed towards older individuals, younger regions tend to have a more active saving behaviour among their working population. This saving activity is driven by the need to financially support younger age groups within the region.

Thus, the counter-analysis indicates that the macroeconomic findings align with responses from surveyed individuals regarding their saving habits. In other words, the results of macro and micro analyses are not contradictory but rather complementary.

Initial experimental estimates for 2013, 2016, and 2019 from the Vishnevsky Institute of Demography at HSE (Higher School of Economics) reveal how aggregate NTA flow values are distributed across different age groups in Russia. These estimates show that both older and younger cohorts receive significant support from the General Government sector (Denisenko & Kozlov 2021). Approximately 45-55% of consumer spending for individuals aged 65 and above is covered by public transfers. Similarly, young people under 19 also rely on public transfers for 46-49% of their total consumption.

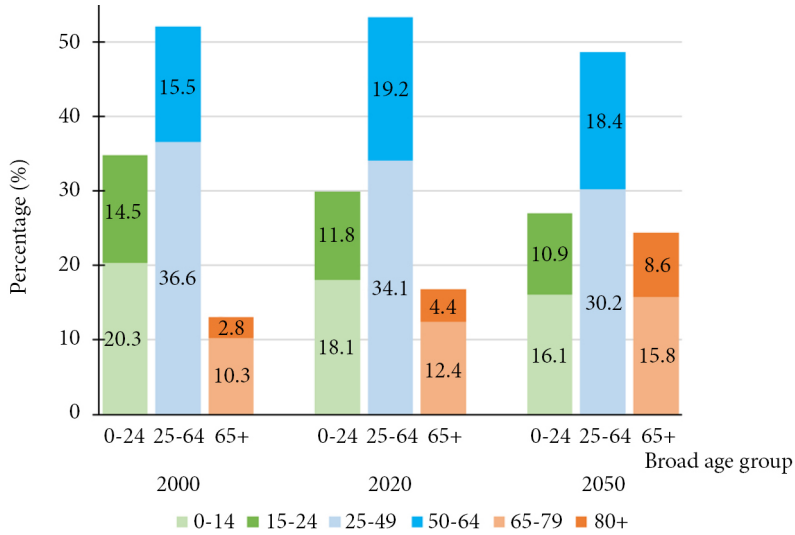
The estimated duration of the life cycle deficit-free period is among the factors determining the volume of public transfers aimed at covering consumer expenditures for economically dependent age groups. According to estimates from the Vishnevsky Institute of Demography, Russians enter the deficit-free stage at an average age of 23 and exit it at 56, constituting approximately 50% of their life expectancy at birth (Denisenko & Kozlov 2019). The length of the surplus stage directly impacts the resource base of the General Government sector and determines the amount allocated for private consumption of goods and services (Nazarova 2023).

The characteristics of the lifecycle in Russia, such as a late entry into the deficit-free stage and a prolonged surplus period, mirror those observed in developed economies. In many developed countries, the deficit-free period begins later due to extended periods of education, and retirement (the end of the surplus period) is largely determined by pension schemes rather than personal physiological capabilities (Denisenko & Kozlov 2019).

## **On the impact of public social transfers on households' savings. Conclusions from international studies**

Efforts to understand the impact of increased government spending on social security on private savings (i.e. whether they restrain the growth of savings partially substituting them or not) have been ongoing since the latter half of the 20th century. This period marked the onset of significant global demographic changes, particularly the aging population trend, which increasingly strained national budgets. Figure 3 illustrates global structural shifts in age demographics.

The growth of private savings slowed down notably as the population increasingly viewed social security payments (government pension benefits) as guaranteed savings to be received upon retirement. In 1974, Martin Feldstein, a Harvard University economics professor, examined the impact of the US mandatory social security system introduced in 1936 on the population's saving habits (Feldstein 1974). His analysis was based on a time-series study of US macroeconomic data spanning from 1929 to 1971. According to his calculations, the social security program reduced personal savings by 50%. Subsequently, Feldstein revised his initial findings, addressing criticisms and errors identified by economists D. Leimer and S. Lesnoy (Leimer & Lesnoy 1982). He extended his analysis, first by five years (Feldstein 1982), and later by a total of 21 years up to 1992 (Feldstein 1995).



**Figure 3.** UNECE population by broad age groups: percentage in 2000, 2020, and 2050. Source: ECE calculation based on United Nations, Department of Economic and Social Affairs, Population Division UNECE Policy Brief on Ageing № 27 February 2022. <https://unece.org/sites/default/files/2022-02/ECE-WG.1-39-PB27.pdf>. Figure 2. p. 3.

According to Feldstein, the increased generosity of social security was the primary reason for the reduction in private savings in the United States. The economist discussed the dual impact of social benefits on households' saving and investment decisions.

The negative effect is known as “asset substitution,” where the working-age population begins to decrease their voluntary individual savings, relying on guaranteed social security payments in the future. In regions with substantial social transfers, individuals base their personal savings decisions on the difference between expected consumption expenditures and anticipated public transfers (such as pension benefits). Generous social support can incentivize early retirement upon reaching the eligible age. Overall, this trend adversely affects the total potential savings, as individuals who continue to work could otherwise save from their labour income.

There is also a positive effect to consider. When individuals decide to retire earlier, a portion of the population begins saving more actively, aiming to accumulate as much as possible before retirement. The impact of social security on household savings depends significantly on the motives behind saving. If savings are primarily motivated by insurance purposes, the influence of social security tends to be more pronounced compared to other saving motives.

In the 21st century, studies on this issue gained traction as the large baby boomer generation (born between 1943 and 1960) reached retirement age (Howe & Strauss 2007), and the number of social security beneficiaries began to increase rapidly. For instance, as of early 2021, their number in Russia stood at 26.4 million people, which represents one-fifth of the total population, according to the author's calculations based on (Rosstat 2021b).

The connection between household (HH) sector savings processes and social security issues can also be explored through the lens of constructing aggregate transfer accounts.

Research on similar topics conducted under the international project National Transfer Accounts includes comparative analyses by Ronald Lee and Andrew Mason (Lee 2012; Lee & Mason 2010) involving 23 countries from 2010 to 2012. These studies focused on how the predominant sources of resources (public or private) used by households to cover the life cycle deficit influence household saving behaviour and consumption patterns. The findings highlighted a significant “macroeconomic dilemma”.

In developing economies, where per capita income levels are lower compared to developed economies (such as in several Southeast Asian and Latin American countries), deficits were primarily covered by private funds. Public expenditures on social programs were also considerably lower in these regions. A substantial portion of the population in these countries lived in multigenerational households, where budgets from different generations were combined (Lee et al. 2008). Consequently, income reallocation from assets and substantial familial transfers were the main channels used to cover resource deficits among older age groups. Younger individuals typically entered the labour market earlier, while older individuals remained in it longer. As a result, the population in these countries tended to save more actively compared to developed economies, despite lower levels of consumer activity. Additionally, the older generation had minimal influence on the overall dynamics of consumer expenditures within the economy.

The situation contrasts in developed economies with their high per capita income levels, seen prominently in several European countries, Japan, and the US. In these economies, public resources from the General Government sector typically constituted the primary source for funding the life cycle deficit. Developed economies benefited from robust transfer support from the General Government sector, with a significant portion of public transfers directed towards the elderly population. This demographic tended to exit the labour market earlier, supported by well-established public current transfer systems that imposed a burden on younger generations through higher taxes to finance benefits for the elderly. However, a positive aspect was the contribution of the older generation to overall consumer demand. In countries with advanced social security systems, the population tended to accumulate modest savings, while the consumer activity among the elderly remained relatively high (Lee 2014).

To illustrate the conclusions, age profiles based on data from the National Transfer Accounts Project are presented below. The structure of financing consumer expenditures in economically dependent age groups (0-19 years and 65+) was analysed for leading examples from developed and developing countries (8 states from each category). The resources considered include labour income, net current transfers (both private and public), and income from the redistribution of assets across the private and public sectors. This estimated structure was then compared with the saving rate of households in each country for the corresponding year when the transfer accounts were compiled. This comparison helps identify commonalities, as shown in Table 4.

**Advanced economies** exhibit strong public support, with transfers heavily favoring older age groups (65+ years). Younger individuals (0-19 years) also receive private transfers, supplemented significantly by public assistance. Among these economies, European countries stand out for their substantial government financial aid to both age groups. Japan closely resembles European countries in the distribution and parameters of public transfers. In contrast, the United States allocates a comparable structural weight of public support to younger individuals as its European counterparts, but allocates a lower share of transfers to the elderly.



**Table 4.** Sources of Consumer Spending Household and Percentage of Income Saved (across economically dependent age groups)

Age groups	0 – 19 years				65+ years				Saving, net, in % of net disposable income				
	Final consumption expenditure (NTA)	Labour income	Net Transfers, all	of these: net private transfers	Final consumption expenditure (NTA)	Labour income	Net Transfers, All	of these: net private transfers					
Countries				Net public transfers	Asset-based Reallocations, all		Net public transfers	Asset-based Reallocations, all					
Advanced Economies													
Austria	100	11.6	89.6	53.3	36.3	-1.2	100	1.8	90.4	-1.1	91.5	7.8	10.6
Germany	100	3.5	94.9	55.5	39.4	1.6	100	2.7	62.6	-7.4	69.4	34.7	10.6
Spain	100	4.0	97.5	62.5	35.0	-1.5	100	7.2	46.6	-12.2	58.8	46.2	6.6
USA	100	2.3	96.0	54.0	42.0	1.7	100	16.4	25.3	-6.6	31.9	58.3	5.6
Finland	100	3.3	96.5	40.0	56.5	0.2	100	4.1	83.0	-0.3	83.3	12.9	2.5
Sweden	100	3.7	95.6	51.4	44.2	0.7	100	6.6	92.8	-9.8	102.6	0.6	5.6
Japan	100	1.1	95.7	51.9	45.6	1.3	100	11.7	51.2	0.6	50.6	37.1	3.6
Taiwan	100	3.6	95.6	66.8	28.9	0.8	100	10.8	64.0	40.0	24.0	25.2	23.2
Emerging Market and Developing Economies													
India	100	8.9	86.7	74.9	11.8	4.4	100	26.5	3.9	1.6	2.3	69.6	24.4
Indonesia	100	9.1	86.1	70.0	16.1	4.8	100	44.4	-25.7	-26.9	1.2	81.3	21.1
Kenya	100	4.2	n/d	n/d	n/d	n/d	100	33.6	n/d	n/d	n/d	n/d	11.6
Costa-Rica	100	6.6	96.2	73.2	23.0	-2.8	100	23.9	49.0	-1.4	50.4	27.1	10.3
Mexico	100	7.0	90.3	70.1	20.2	2.7	100	26.4	7.7	-19.3	27.0	65.9	13.9
Nigeria	100	1.1	n/d	n/d	n/d	n/d	100	55.1	n/d	n/d	n/d	n/d	16.0
Philippines	100	6.2	94.1	76.5	17.6	-0.3	100	38.9	2.7	3.8	-1.1	58.4	18.1
Thailand	100	7.2	94.3	67.8	26.5	-1.5	100	17.4	26.7	30.0	-3.3	55.9	16.3

Source: Calculated according to the NTA Project <https://ntaccounts.org/web/nta/show/Country%20Summaries>, <https://data.oecd.org/hha/household-savings.htm>, National Accounts Statistics: Main Aggregates and Detailed Tables <https://www.un-ilibrary.org/content/periodicals/24121835>

**Emerging Market and Developing Economies** share several commonalities. In these regions, labour income covers a larger portion of consumption for both young and old age cohorts, indicating that younger individuals enter the labour market earlier and the elderly exit it later. Public transfers are considerably lower for all age groups, and in some countries, such as India, Indonesia, and the Philippines, transfers for those aged 65 and older are minimal or nearly non-existent. The primary means of covering the resource deficit for the elderly in these countries are income redistribution from assets and substantial familial transfers. This is largely because many people live in multigenerational families with shared budgets across different generations.

The varying degrees of government involvement in supporting household consumer demand between advanced and developing economies influence the population's propensity to save. In developed economies, this propensity is generally low. For instance, in Finland, where public transfers cover over 80% of the consumer expenditures for older adults and about 57% for young people under 19, the share of income saved by the population is just 2.45%. Conversely, in developing economies, where public support is weaker, the population is more inclined to save. In India, where public transfers cover only 2.3% of older adults' consumer expenditures, households save nearly a quarter (24.6%) of their disposable income.

The causal links between the generosity of public transfers and households' labour activity and savings, as described above, can be confirmed by comparing age per capita profiles of consumer expenditures and labour income across groups of developed and developing economies. This approach follows Ronald Lee's methodology in his paper «*How Population Aging Affects the Macroeconomy?*» (Lee 2014).

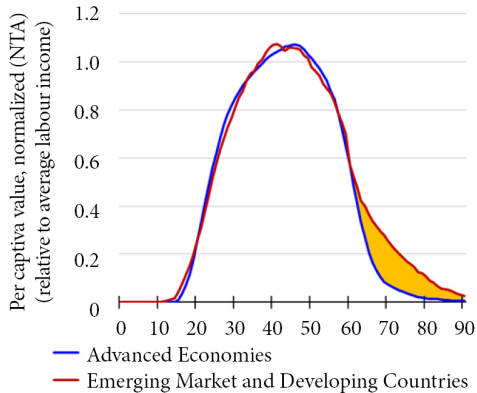
Lee estimated age profiles of consumption and labour income per capita for both developed and developing economies. Using the National Transfer Accounts (NTA) methodology, he transitioned from nominal estimates for various ages in each country to average normalized values for developed and developing economies as a whole. By comparing these average normalized age profiles across groups of economies through infographics, Lee was able to draw relevant conclusions.

To illustrate the findings, this study provides estimates of age profiles for the same 16 countries (as shown in Table 4), with half being developed economies and the other half being developing ones. The results indicate that labour income per capita (Figure 4) begins to decline from its peak slightly later in developed economies compared to developing ones, but the decline is more pronounced. This sharper decline is attributed to the generous public support provided in developed economies, such as pensions and social transfers to households, which encourages individuals to exit the labour market earlier, typically upon reaching retirement age.

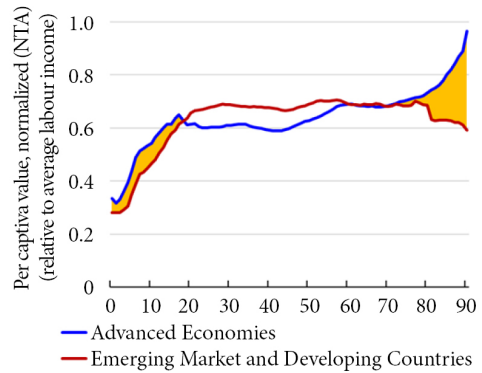
Age profiles of household consumption in developed and developing economies also differ significantly (Figure 5). In developed economies, the consumption level for younger age groups (0-19 years) is higher, reflecting larger investments in human capital such as education and healthcare. Additionally, the consumption level for older age groups is maintained and even increases due to substantial public transfers. Conversely, in developing economies, the weak public support for older age groups leads to reduced consumer activity among the elderly.

Table 5 further illustrates the volume of social support in some of the analysed countries.





**Figure 4.** Labour Income (per capita) for Eight High Income and Eight Developing Countries. *Source:* Calculated according to the NTA Project <https://ntaccounts.org/web/nta/show/Country%20Summaries>



**Figure 5.** Average Consumption (per capita) for Eight High Income and Eight Developing Countries. *Source:* Calculated according to the NTA Project <https://ntaccounts.org/web/nta/show/Country%20Summaries>

**Table 5.** Social benefits to households other than social transfers in kind (in cash, % of GDP)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Advanced Economies										
Austria	18.51	18.66	19.04	19.10	18.91	18.67	18.24	17.90	17.88	20.29
Germany	15.75	15.68	15.61	15.42	15.52	15.53	15.51	15.50	15.81	17.60
Spain	17.41	18.36	18.79	18.38	17.48	17.13	16.65	16.77	22.95	22.27
USA	14.92	14.40	12.28	14.35	14.59	14.65	14.53	14.36	14.56	20.04
Finland	17.79	18.58	19.40	20.08	20.29	19.99	19.37	18.94	18.85	19.99
Sweden	13.19	13.78	14.01	13.65	13.17	13.09	12.79	12.57	12.27	12.76
Japan	12.96	13.00	12.92	12.64	12.35	12.39	12.27	12.28	12.32	12.86
Taiwan	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d
Emerging Market and Developing Countries <sup>1</sup>										
India	0.46	0.47	0.43	0.37	0.39	0.38	0.33	0.34	0.38	0.50
Indonesia	0.04	0.03	0.13	0.10	0.14	0.13	0.16	0.19	0.28	1.03
Kenya	0.05	0.06	0.07	0.08	0.11	0.13	0.06	0.02	0.05	0.03
Costa-Rica	2.86	3.59	3.71	3.75	3.91	4.15	3.96	4.18	4.30	4.69
Mexico	2.07	2.14	2.25	2.52	2.59	2.66	2.84	3.09	3.33	3.74
Nigeria	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d	n/d
Philippines	1.70	1.79	1.91	1.99	2.14	2.13	2.24	2.18	2.33	2.44
Thailand	2.43	2.64	2.55	2.62	2.74	2.89	2.96	3.21	3.42	4.16

<sup>1</sup> – India and Kenya - Social Protecting (% of GDP).

*Source:* Calculated according to the National Accounts Statistics: Main Aggregates and Detailed Tables <https://www.un-ilibrary.org/content/periodicals/24121835>

## Key takeaways

Structural shifts in the net saving value within the household sector from 2011 to 2020 confirm a temporal correlation between the government's increasing role in transfer support for the population (i.e., the increase in current transfers to the private sector) and the population's savings behaviour. The saving rate rose to an average of 6.6% of GDP in 2016–2020 from 5.2% of GDP in 2011–2015. Meanwhile, this value for the economy as a whole remained almost unchanged (26.4% of GDP for 2016–2020 compared to 26.3% of GDP for 2011–2015).

Retrospective analysis of estimates for 2011–2020 indicates that overall, households did not save actively. Their annual savings did not exceed 10% of disposable income, averaging about 6.2% over the decade. The fact that a small share of disposable income is saved by households, despite significant public benefits, is consistent with the earlier conclusion from the comparative country analysis of developed economies. The share of income saved by the Russian population is relatively small, as the life cycle deficit is mainly financed by the government in Russia, similar to developed economies. Household saving behaviour thus depends on the degree of government participation in covering the life cycle deficit. Therefore, the findings from Russian research align with the results of comparative international studies on National Transfer Accounts (NTA).

A comprehensive analysis of the population's savings at the macroeconomic level, using aggregate National Transfer Accounts (NTA) and System of National Accounts (SNA), along with experimental estimates of NTA aggregate flows by the Vishnevsky Institute of Demography at NRU HSE<sup>1</sup>, has helped to understand economic shifts. Additionally, the first Russian life cycle research on economic dependence age boundaries provides a new perspective on traditional cohorts, allowing for a different angle on demographic support ratios and the distribution of social payments.

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