DISTRIBUTION OF EXPENDITURE AMONG QUINTILES IN ISRAEL

JOINT MEETING

To be held on 27-29 October 2015
OECD Conference Centre
Beginning at 4:00 pm on the first day

This document has been prepared by Tali Shalem and Hila Di-Zahav - Israel Central Bureau of Statistics and will be presented under item 16 of the draft agenda
DISTRIBUTION OF EXPENDITURE AMONG QUINTILES IN ISRAEL

1. Introduction

The global financial crisis, coupled with the 2011 social justice protests in Israel, exposed weaknesses in the measurement of private consumption expenditure, and household income and savings, as they are calculated and published today in the National Accounts. Today's measurement completely disregards the question of inequality and does not provide any information about the division of consumption and income among different households.

Israel's private consumption expenditure in 2013 was NIS 611 billion, and was 55% of the Gross Domestic Product and 42.2% of the total use of resources.

The Stiglitz report, written in the wake of the global financial crisis at the request of the French government, emphasized the indispensability of information on the distribution of consumption and income within the population.

Processing information on the distribution within the population is needed to integrate the micro-economic sources (household income and expenditure surveys) and the macro-sources – the National Accounts. To answer this need, the OECD and Eurostat established the Expert Group on Disparities in National Accounts (EG DNA) in 2011. The goal was to examine whether the disparities between micro- and macro-sources could be measured in a consistent, reliable and harmonized methodology, based on macro-sources and using divisions into population groups from the information in the micro-sources. The macro-sources were based on the System of National Accounts (SNA 2008), and were divided into income quintiles, based on the micro-sources, as well as into other socio-demographic divisions. The expert group consisted of representatives from about 20 OECD member countries, as well as OECD and Eurostat representatives.
In the Expert Group, Israel calculated expenditure and income according to the National Accounts aggregates by quintiles of income, types of households and households by income sources for the years 2009 and 2012, according to updated data, in accordance with the methodology proposed by the expert group.

This paper presents the distribution of consumption expenditure of Israeli households in the domestic market by quintiles for 2009-2013. The share of each income quintile in the main expenditure items out of the total expenditure of those items in 2009-2013 is presented as well. Additionally, the quantitative change in the final domestic consumption expenditure of all the quintiles over the years is presented, as well as the contribution of each quintile to the quantitative change of the final domestic consumption expenditure and the main expenditure items.

The findings serve as an implementation of the Stiglitz report recommendations.

2. Methodology and Data Sources

2.1. Distribution of private consumption expenditure by quintiles

The calculation of the distribution of private consumption expenditure by quintiles was based on the System of National Accounts Distributional Information on Household Income, Consumption and Savings Guidelines, which was prepared on 26 September, 2014, on the basis of the expert group’s conclusions. The guidelines aid in the computation of the distribution of income, consumption and savings estimates into population groups, in accordance with the SNA, and based on existing micro-data sources.

2.2. Household consumption expenditure (National Accounts)

The calculation in this paper is for the household consumption expenditure in the domestic market excluding non-profit institutions, and excluding the expenditure of tourists and foreign workers.

The estimate was obtained by calculating the consumption expenditure in the domestic market based on data from the Input-Output tables for 2006, following the adjustment to SNA2008. The estimates of household consumption expenditure were made according the new International Standard Industrial Classification (ISIC # 4).

Also, the structure of the household consumption expenditure is in accordance with the Classification of Individual Consumption According the Purpose (COICOP).

SOURCES OF THE DATA:

Food consumption is estimated on the basis of marketing data of agricultural products, and on production and marketing data of industrial food products and their prices. Expenditure on industrial products, excluding food, is estimated on the basis of the Household Expenditure Survey, reports of establishments on domestic production of major durable goods (refrigerators, washing machines), and on foreign trade statistics.

Housing consumption is estimated on the basis of the growth of residential construction areas, and the rise in prices of housing services.

Under the Other Services item, a significant part of the estimates is based on findings from the Household Expenditure Survey and extrapolation by various indicators in the years between surveys. Another part of the estimates (e.g., supply of electricity, person-nights in hotels, visits to movie theaters, hospitalization days in commercial hospitals, etc.) is based on appropriate data of quantities and prices.
The consumption estimate of foreign residents in the country and of Israelis abroad, is taken from the Foreign Travel item in the balance of payments, after deducting the estimate for business expenditure.

2.3. Household Expenditure Surveys (Micro-source)

- The Israeli expenditure survey has been conducted since the early 1950s.
- Until 1997 the survey was conducted every 5 years, and from 1997 the survey is conducted annually.
- It measures the total expenditure and the total income of households in Israel and the ownership of durable goods and services.
- It also measures the total income of individuals in Israel.
- It is a cross sectional survey.
- It is an obligatory survey.
- Sample Unit – dwelling; research unit – household; sample size - 10,000 households per a year; coverage - 97% of the Israeli population; the response rate is approximately 83%.

- The survey questionnaires:
  - Questionnaire A: filled out by the interviewer, providing basic demographic and economic data on each member of the household (e.g., age, sex, country of birth, year of immigration, status at work, etc.)
  - A biweekly diary - in which the household recorded each member’s daily expenditures over a period of two weeks.
  - Questionnaire B: A questionnaire on large or exceptional expenditures and on income - filled out by the interviewer on the basis of reporting by the household, related to the 3- or 12-month period preceding the interview date (depending on the rarity of expenditures for the items investigated).

2.4. Calculation of the Distribution of Expenditure by Quintiles in Each Year at the Previous Year's (Constant) Prices

The constant prices were obtained by dividing the current estimates of each quintile by the implicit price change (as obtained from the National Accounts for each consumption item – the ratio between the annual nominal changes and quantitative changes) of each expenditure item.

The quantitative change is obtained by dividing each datum in the year \( t \) at the previous year's prices by the current datum of the year \( t - 1 \).

2.5. Calculation of the Contribution of the Quintiles to Quantitative Change of a Year Compared with the Previous Year

In order to see the contribution of each quintile to the quantitative change for each expenditure item as it was published in the National Accounts, the contribution was calculated in the following way for each expenditure item:

\[
\frac{X_{i,t-1}^t - X_{i,t-1}^{t-1}}{\sum_{i=1}^{5} X_{i,t-1}^{t-1}}
\]
The difference between the expenditure (X) in year \( t \) at the prices of the previous year (\( X_{t,t-1} \)) and the current expenditure of year \( t-1 \) (\( X_{t-1,t-1} \)) is divided by the total expenditure of year \( t-1 \) at current prices (\( \sum_{i=1}^{5} X_{t-1,t-1}^{i} \)).

3. Findings – Distribution of Expenditure by Quintiles, 2009-2013

3.1. The Distribution of Total Consumption Expenditure (at current prices)

The distribution of total private consumption expenditure in 2009-2013 of each quintile was similar over the entire period – the first quintile comprised 11%-12% of the total expenditure, the second quintile was 14%-16%, the third quintile was 18%-19%, the fourth was 23%-24%, and the fifth was 31%-32%. The consumption expenditure of the fifth quintile was almost three times as much as the expenditure of the first quintile.

The upper quintile's share of total consumption expenditure decreased from 32.3% in 2010 to 30.8% in 2011, while the share of the second quintile increased from 14.4% in 2010 to 15.2% in 2011.

Total expenditure of the first quintile and the second quintile was similar to the total expenditure of the fourth quintile.

It can be seen that the consumption expenditure of the three lower quintiles was less (46% of the total expenditure) than the expenditure of the two upper quintiles (54% of total expenditure).
The expenditure items of clothing and footwear, water supply, household maintenance, health (expenditure on medical products and services), and education (which together constitute approximately 11% of the total domestic consumption expenditure) had a distribution among the quintiles similar to the distribution of the total private consumption expenditure.

3.1.1 Similar and Equal Distribution among Quintiles

The distribution of the expenditure on alcoholic beverages and tobacco was uniformly distributed and the most equal of all the expenditure items. The first and fifth quintiles had an average of 18%-19% of the total expenditure on alcohol and tobacco, and the second, third and fourth quintiles had 20%-21%.

The distribution of the expenditure on Food and Non-alcoholic Beverages among the quintiles was fairly uniform over the years, increasing gradually by quintiles and remaining very similar. The share of the total expenditure, on the average, in the first quintile was 17.7%, 18.6% in the second quintile, 19.7% in the third quintile and 20.9% in the fourth and 23 in the fifth. A similar picture emerges for the following consumption items as well: electricity, natural gas, and fuel.

3.1.2 Large Gap in the Distribution of Expenditure among Quintiles

The following expenditure items had a large gap in the distribution of expenditure among quintiles: Furnishings, household equipment and routine household maintenance, vehicle maintenance and transportation services, hospital services, entertainment and culture services, restaurants and hotels, insurance and miscellaneous. For example, in the item of furnishing, household equipment and maintenance, the share of the first quintile was 8%-9% of the total expenditure, the second quintile was between 11%-13%, the third was 16%-18%, the fourth was 23%-25%, while the share of the upper quintile reached 36%-40% of the total expenditure for these items. It seems that over the years there has been a small improvement and the gaps between the first and second quintile and the other quintiles has been reduced.
3.1.3 Very Large Gap in the Distribution of Expenditure among Quintiles- Purchase of Motor Vehicles

In the purchase of motor vehicles, the gap in the distribution of expenditure among the quintiles was very large. In this item, the first quintile's share was less than 5% of the total expenditure for the purchase of motor vehicles, and the second quintile accounted for 8%-11%. The distribution of the third, fourth and fifth quintiles was non-uniform over the years and the fluctuation likely reflects changes in prices, changes in tax policy, and the impact of the exchange rate. On the average, the share of the third quintile was 17% of the total expenditure for the purchase of motor vehicles, the share of the fourth quintile was 27%, and of the fifth it was 43%.
3.1.4 Distribution of Housing Expenditure Items among Quintiles

In Israel, about 68% of the residents live in owned dwellings and about 26% live in rented dwellings in year 2012.

As of 2005, the percentage of persons living in owned dwellings has been clearly decreasing and the percentage of those in rented dwellings has been increasing. This is a result of the housing crisis brought about by the increase in housing prices, due to the rise in demand caused by population growth and a lack of attractive alternative investments. Additionally, the housing supply is low, mainly due to government policy and an overburdening bureaucracy.

Regarding the imputed expenditure for owned dwellings, the distribution in each quintile was similar every year, with the first quintile's share, on the average, at 14.7%, the second quintile at 16.4%, 19.5% for the third, 22.7% for the fourth, and 26.7% for the fifth.

Regarding expenditure for housing rentals, the distribution was similar over the years as well. The average share of the first quintile was 12.7% of total expenditure, the second quintile – 18.8%, the third – 20.3%, the fourth – 21.6%, and the fifth – 26.6%.

It can be discerned that the lowest quintile's share of total expenditure for owned dwellings was higher than the share of expenditure on housing rentals in 2009-2013, while in the second quintile, the opposite phenomenon is discernible – the share of expenditure on housing rentals was higher than the share of expenditure on owned dwellings. This could be due to students and young singles who generally belong to the second quintile and prefer to rent an apartment near city centers and universities than to buy an apartment.

In 2009-2013, the following was also discernible:

The share of the third and fifth quintile of total expenditure on an owned dwelling was the same as their total expenditure on housing rentals.

The fourth quintile's share of total imputed expenditure on owned dwellings was higher than their share of total expenditure on housing rentals.

According to an analysis of the consumption expenditure on housing services by quintiles, the change in the share of the second and third quintiles accounts for the phenomenon mentioned above – that the percentage of persons living in rented dwellings has increased and the percentage of those living in owned dwellings has decreased. This finding supports the claim heard at the time of the 2011 social justice protests in Israel – that the housing crisis mainly harmed the middle class.
3.1.5 Communications Expenditure

The first quintile's share of the communications expenditure was significantly lower (13%-14%) than the other four quintiles, whose share ranged from 18% of total communications in the second quintile to 23% in the fourth and fifth quintiles. The reason the share of the lowest quintile is significantly lower is probably because it is composed of a relatively large proportion of the insular ultra-Orthodox Jewish population, which prohibits the use of the Internet, smartphones, TV, and other measures that allow access to the outside world.
3.1.6 Distribution of Social Transfers in Kind

The distribution of expenditure of social transfers in kind (STIK) by income quintiles represents the average distribution of the social transfers in kind to education and health, which together constitute 78.5% of total social transfers in kind.

In this item, as expected, the first quintile's share of the total expenditure was the highest – 27%; the second quintile's share was 21%, the third quintile's was 19%, the fourth's – 18% and the fifth's – 15%.

The distribution of the expenditure by quintiles was similar over the entire period.
3.2. Calculation of the Distribution of Expenditure by Quintiles in constant prices (Each Year at the Previous Year's Prices)

It can be seen that the calculation of quantitative change for each quintile is volatile from year to year, and does not truly explain the developments of each quintile in relation to the other quintiles. This is because it does not take into account the weights of each quintile in the total expenditure for any given period. Therefore, we calculated the contribution of the quintiles.

*Excluding non-residents

3.3. Calculation of the Contribution of the Quintiles to Quantitative Change of a Year Compared with the Previous Year

The calculation of the contribution of each quintile to the quantitative change, as it was published in the National Accounts, reflects the development of each quintile’s consumption expenditure relative to the other quintiles in the given period.

The contribution of each quintile is a function of its share of the total expenditure, together with the quantitative change, compared to the previous year.

The quantitative change is very volatile, and does not reflect truly the situation of each quintile, since it does not take into account the quintile's share of the total consumption expenditure, as illustrated in the following diagram.

For example, the quantitative change in 2010 of the third and fourth quintiles was 3.5% for each one, and their contribution was 0.6 and 0.8, respectively. However, the quantitative change of the lowest quintile was 5.4%, and its contribution was only 0.6%, less than that of the third quintile.
An analysis of the findings from the calculations of contributions of each quintile shows that:

- In expenditure items in which the distribution of quintiles was similar and equal (food and non-alcoholic beverages, alcoholic beverages, and electricity, natural gas and fuel) – it appears that in some of the quintiles (first and fourth) the contribution of each quintile was similar over the period, whereas in the rest of the quintiles, the contribution was not uniform. It would have been expected that the contribution of each quintile would be the similar and uniform over the period.

- In most expenditure items (42%) where there is a large gap in the distribution of expenditure among quintiles (furnishings and equipment, restaurants and hotels, maintenance of motor vehicles, final domestic consumption) the contribution is not uniform.
vehicles), it was found that the contribution of each quintile changed very much over the period and was not capable of being explained, which can justify the need for analysis and publication of the consumption expenditure of population groups, as recommended in the Stiglitz report.

- In expenditure items where the distribution was similar to the total private consumption expenditure (clothing and footwear, household maintenance, water supply), it was also found that the that the contribution of each quintile changed very much over the period and was not capable of being explained, which can justify the need for analysis and publication of the consumption expenditure of population groups, as recommended in the Stiglitz report.
Regarding the housing expenditure:

- In the housing market as well, the contribution of each quintile changed very much over the period and was not capable of being explained, which, as previously mentioned, can justify the need for analysis and publication of the consumption expenditure of population groups, as recommended in the Stiglitz report.

- It was found that in each quintile, the contribution towards the quantitative change of the expenditure on housing rentals was inversely proportional to the contribution of that quintile to the imputed expenditure on owned dwellings. In other words, to the extent that the contribution of quintile \( i \) was positive or high towards the expenditure on housing rentals, then the contribution of that same quintile to the quantitative change of expenditure on owned dwellings was lower or negative.

- The contribution of the lowest two quintiles to the quantitative change in housing rentals was zero in 2011, while the contribution of the three upper quintiles was about 2% for each quintile. This is probably due to the housing crisis regarding owned dwellings which created excess demand for housing rentals. This, in turn, caused a decline in the share of the two lowest quintiles and in their quantitative change, so that their contribution to the total quantitative change was zero expenditure in relation to the other quintiles.

- The contribution of the lower quintiles increased and was similar to the others in 2012 and 2013, with an increase in their share of total consumption and with an increase in their quantitative share compared with the previous year. This was apparently due to a decrease in the price of rent.

*Excluded non-residents*
4. Summary and Conclusions

4.1. The distribution of private consumption expenditure by quintile shows that the share of the lowest quintile was the lowest (11% -12%), the share of the second quintile was larger, and so on until the fifth quintile, which accounts for about 31% of the consumption expenditure. In addition, the consumption expenditure of the first three quintiles was less (46% of total expenditure) than the expenditure of the upper two quintiles (54% of total expenditure).

4.2. The distribution of expenditure by quintiles is dependent on the various expenditure items: There are items in which the distribution of expenditure between the quintiles is similar (food, alcoholic beverages and water consumption); there are items in which there are significant differences (furnishings and equipment, recreation and culture, restaurants and hotels), and there are items in which the differences are extremely large (purchase of motor vehicles).

4.3. The distribution of expenditure on housing among the quintiles shows a similar distribution for expenditure on housing rentals and expenditure on owned dwellings, except for the two lower quintiles, where the gap between them is reduced regarding expenditure on owned dwelling (the share of the lowest quintile is greater in expenditure on owned dwellings and respectively smaller in expenditure on housing rentals).

4.4. Since in most of the private consumption expenditure items the distribution is not equal, the calculation of the quantitative change does not provide good information on the distribution of consumption among quintiles, as recommended by the Stiglitz report. This is because it does not take into account the share of each quintile in the total expenditure.

4.5. Calculating the contribution of each quintile towards the quantitative change provides information about the distribution of consumption among different households, as required by the Stiglitz report. This is because the contribution of each quintile is a function of its share of the total expenditure, together with the quantitative change, compared to the previous year.

4.6. My recommendation is to use more detailed expenditure items in calculating the contribution of each quintile, thus making it possible to derive a more specific price index and a clearer result.

4.7. An additional recommendation is to once again examine the macro-data obtained from the Household Expenditure Survey and determine how extreme reporting impacts the distribution of expenditure among the quintiles (referring mainly to expenditure items in which the number of cases was small). Perhaps, extreme reports should be excluded from the calculation of the distribution among quintiles.

4.8. Potentially, a similar analysis for a longer term would make it possible to learn about developments occurring over the years in the distribution of consumption expenditures of the quintiles.