**10th Meeting of the Advisory Expert Group on National Accounts,**
**13-15 April 2016, Paris, France**

**Agenda item: 8**
**Distributional information on households – Work of the OECD Expert Group on Disparities in National Accounts**

Introduction

Last year the members of the OECD Expert Group on Disparities in National Accounts (EG DNA) engaged in a second exercise to compile household distributional information on income, consumption and savings consistent with national accounts, on the basis of an improved methodology and for a more recent year. Furthermore, the Expert Group started exploring nowcasting techniques to compile more timely estimates. Results of both exercises have been discussed at the Expert Group meeting last year and will be published in working papers in 2016. On the basis of the results, a work plan has been drafted for the coming period, focusing on further improving the methodology, including wealth and exploring nowcasting techniques.

Documentation

Paper: Work of the OECD Expert Group on Disparities in National Accounts

Request to the AEG

The AEG is requested to:

- take note of the progress of the EG DNA and to reflect on the work plan for the coming period

# Work of the OECD Expert Group on Disparities in National Accounts

## 1. Introduction

1. In 2011, the OECD and Eurostat launched a joint Expert Group to carry out a feasibility study on the compilation of distributional measures of income, consumption and wealth across household groups that are consistent with national accounts definitions and totals. National experts from 16 countries performed experimental calculations using all the detailed micro and macro information available at the national level, and following the same framework and methodology[1].

2. The work on the compilation of distributional measures has been continued by an OECD Expert Group on Disparities in National Accounts (EG DNA). The aim of this group is to further improve the methodology to arrive at a robust methodology on the basis of which countries can compile and publish distributional results on a regular basis, in line with recommendation II.9 of the G20 Data Gaps Initiative. Last year, the members of the Expert Group conducted a second exercise to compile distributional results. Furthermore, the Expert Group started to explore methods to compile more timely estimates on the basis of so-called nowcasting techniques. Results of both exercises have been discussed at a meeting of the EG DNA in May last year. During that meeting it was also discussed what topics should be addressed in the near future to further improve the compilation methodology and to further explore the nowcasting techniques.

3. This short paper provides an overview of the work of the EG DNA conducted in the past two years and an overview of the work that is going to take place in the coming period. It presents the main results and main issues derived from the recent exercise in section 2, and the first experimental results from the work on nowcasting in section 3. The future work of the EG DNA is discussed in section 4.

## 2. Results from the recent exercise

4. Last year the members of the EG DNA engaged in a second exercise to compile distributional results, on the basis of improved methodology and focusing on a more recent year. Twelve countries participated in this exercise (i.e. Austria, France, Israel, Japan[2], Mexico, the Netherlands, Portugal, Slovenia, Sweden, Switzerland, the United Kingdom and the United States) and data for one country (i.e. Australia) could be obtained from their website[3]. The most recent results in the exercise referred to 2012[4]. This section shows some of the results, but first discusses the main findings related to the process information obtained from the exercise.

*Process information*

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[1] Results have been presented in Fesseau and Mattonetti (2013),"Distributional Measures Across Household Groups in a National Accounts Framework"; *OECD Statistics Working Paper No. 53*; available under http://www.oecd-ilibrary.org/economics/oecd-statistics-working-papers_18152031.

[2] Data for Japan are still under review, as a consequence of which they have not been included in the analysis.

[3] Annex 1 presents the countries involved in the exercise and the years for which they provided data.

[4] Seven countries provided data for 2012 and five for 2011 as the most recent year. Only for Japan the most recent data referred to 2009.

5. Looking at the methodologies applied by the countries, it can be concluded that all of them comply with the agreed methodology to the extent possible. Sometimes countries deviated for pragmatic reasons, but in general results are considered to be comparable in terms of definitions and coverage. The results also turn out to be relatively stable over time, implying that the methodology seems quite robust. However, to draw firm conclusions on the robustness of the methodology, longer time series would be needed.

6. Regarding the coverage of the micro data, it can be observed that most countries have micro data available for most of the detailed transaction items with usually only data lacking on items imputed in the system of national accounts and, for some countries, on a couple of other components. In respect of the latter, countries may still benefit from sharing information on the exact allocation methods used for items such as Social Transfers in Kind (STiK) and on some other items for which information is missing.

7. An area that still needs further investigation is the gaps between the aggregated micro data and the national accounts totals. As these gaps need to be allocated to the household subgroups, the quality of the final results is highly dependent on the size of these gaps. If the gaps are larger, more assumptions on the allocation will be needed. Table 1 shows the adjustment coefficients for the main income and consumption components for the most recent and second most recent year that is available from the exercise. The adjustment coefficient shows by how much the micro results need to be adjusted to align them with the national accounts total[5].

***Table 1. Adjustment coefficient for the main income and consumption items***

| Code | Instrument | Average | | Minimum | | Maximum | |
|---|---|---|---|---|---|---|---|
| | | most recent year | second most recent year | most recent year | second most recent year | most recent year | second most recent year |
| B2 | Operating surplus | 1.79 | *1.27* | 0.94 | *1.12* | 2.43 | *1.42* |
| B3 | Mixed income | 2.20 | *1.79* | 1.30 | *1.67* | 3.50 | *1.91* |
| D1R | Compensation of employees | 1.19 | … | 1.16 | … | 1.20 | … |
| D41R | Interest (not adjusted for FISIM), received | 2.08 | *1.90* | 0.66 | *0.72* | 6.40 | *4.77* |
| D42R | Distributed income of corporations | 5.06 | *10.67* | 0.70 | *3.00* | 17.76 | *23.50* |
| D41P | Interest (not adjusted for FISIM), paid | 3.58 | *2.47* | 1.02 | *1.01* | 11.31 | *4.65* |
| D5P | Current taxes on income and wealth | 1.18 | *1.19* | 0.78 | *0.74* | 1.54 | *1.78* |
| D61P | Net social contributions | 1.23 | *2.01* | 1.19 | *1.28* | 1.27 | *2.73* |
| D62R | Social benefits other than STiK | 1.22 | *1.30* | 0.97 | *0.98* | 1.55 | *1.65* |
| D63R1 | Education | 0.94 | *0.88* | 0.72 | *0.78* | 1.13 | *0.98* |
| D63R2 | Health | 1.36 | *1.37* | 1.16 | *0.99* | 1.73 | *1.75* |
| CP010 | Food and non-alcoholic beverages | 1.48 | *1.53* | 1.06 | *0.95* | 2.87 | *2.76* |
| CP020 | Alcoholic beverages, tobacco and narcotics | 3.60 | *5.37* | 1.68 | *1.13* | 12.00 | *21.03* |
| CP030 | Clothing and footwear | 1.57 | *1.70* | 1.09 | *1.03* | 2.90 | *2.80* |
| CP040 | Housing, water, electricity, gas and other fu | 1.23 | *1.16* | 0.84 | *0.87* | 2.47 | *2.30* |
| CP050 | Furnishings, households equipment & hou | 1.63 | *1.71* | 1.15 | *0.96* | 2.93 | *2.93* |
| CP060 | Health | 2.47 | *2.72* | 1.17 | *1.15* | 4.78 | *4.74* |
| CP070 | Transport | 1.56 | *1.59* | 0.98 | *0.95* | 3.18 | *2.87* |
| CP080 | Communications | 1.25 | *1.53* | 0.71 | *1.08* | 2.28 | *2.50* |
| CP090 | Recreation and culture | 1.98 | *1.85* | 1.14 | *1.01* | 4.05 | *3.50* |
| CP100 | Education | 1.07 | *0.92* | 0.19 | *0.09* | 1.87 | *1.51* |
| CP110 | Restaurants and hotels | 1.55 | *1.32* | 0.97 | *1.06* | 2.20 | *1.64* |
| CP120 | Miscellaneous goods and services | 1.90 | *1.88* | 0.97 | *1.13* | 2.63 | *2.85* |

8. Looking at the table, it can be observed that the gaps are often substantial, especially for some of the income components, such as *distributed income of corporations*, *interest received* and *paid*, and

[5] It is calculated as the adjusted national accounts aggregate divided by the micro aggregate.

*operating surplus*. The maximum adjustment recorded for the most recent year amounted to 17.76, implying that the micro results have to be multiplied by 17.76 to arrive at the macro aggregate. It is obvious that such an adjustment can have a major impact on overall distributional results. To gain more insight in the reasons for these gaps and the best way to allocate the gaps to the underlying households, a questionnaire has been sent out to the member states at the end of 2015.

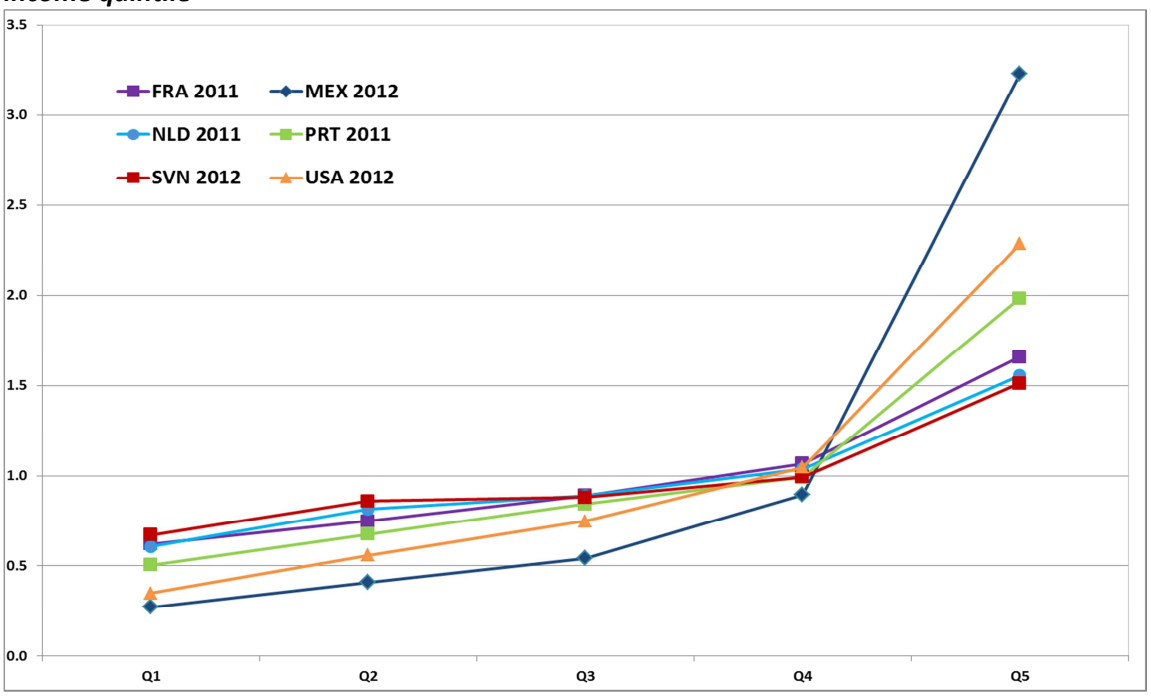
9. Another issue that needs further exploration is how countries deal with linking information across various data sources. As in most countries multiple micro data sources are used, it is very relevant how these are combined to arrive at results for specific households or household groups. If consumption expenditures are not matched the income components of the same household groups, any mismatch will automatically lead to incorrect levels of savings. This issue will be discussed at the next meeting of the Expert Group to be organised in the second half of 2016.

*Preliminary distributional results*

10. In the exercise countries amongst others provided data on adjusted disposable income, final consumption and savings broken down in income quintiles. In addition, some countries provided optional breakdowns into household groups according to the type of household and according to main source of income. Countries also provided socio-demographic information on the number of persons by age group, gender, labour market status and highest level of education achieved, on the basis of which interesting insights could be obtained on the composition of the quintiles. Below, some results are presented. More information can be found in a Working Paper that will be published in the summer of 2016.

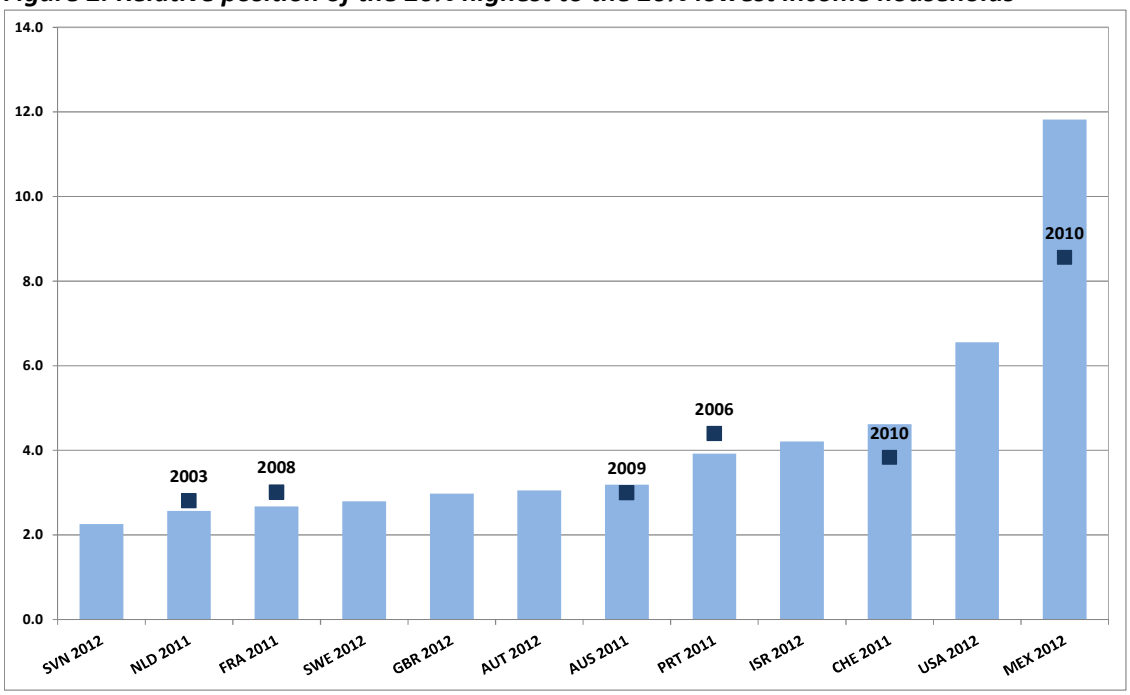
11. The 'ratio to the average' shows how household groups deviate from the average. Figure 1 shows the results for this ratio for six of the countries that participated in the exercise. The ratio for the highest income quintile is highest in Mexico and lowest in Slovenia. Mexico and the United States record the lowest ratios for the three lowest quintiles.

***Figure 1. Relative position of each household group compared to the average, by equivalized disposable income quintile***




12. The ratio highest to lowest compares the household groups with the highest income with the household groups with the lowest income. The results for the equivalized income quintiles are presented in Figure 2, with Mexico showing the highest ratio (11.8), followed by the United States (6.6), in line with the results presented in the previous figure. The lowest income disparities are observable in Slovenia, where the ratio is only 2.3. Also for France, the Netherlands, Sweden and the United Kingdom this ratio is relatively low (less than 3.0). In comparison with the second most recent year, the ratio has dropped in the Netherlands, France and Portugal. For Switzerland and Mexico, the ratio increased, as well as for Australia, although to a lesser extent.

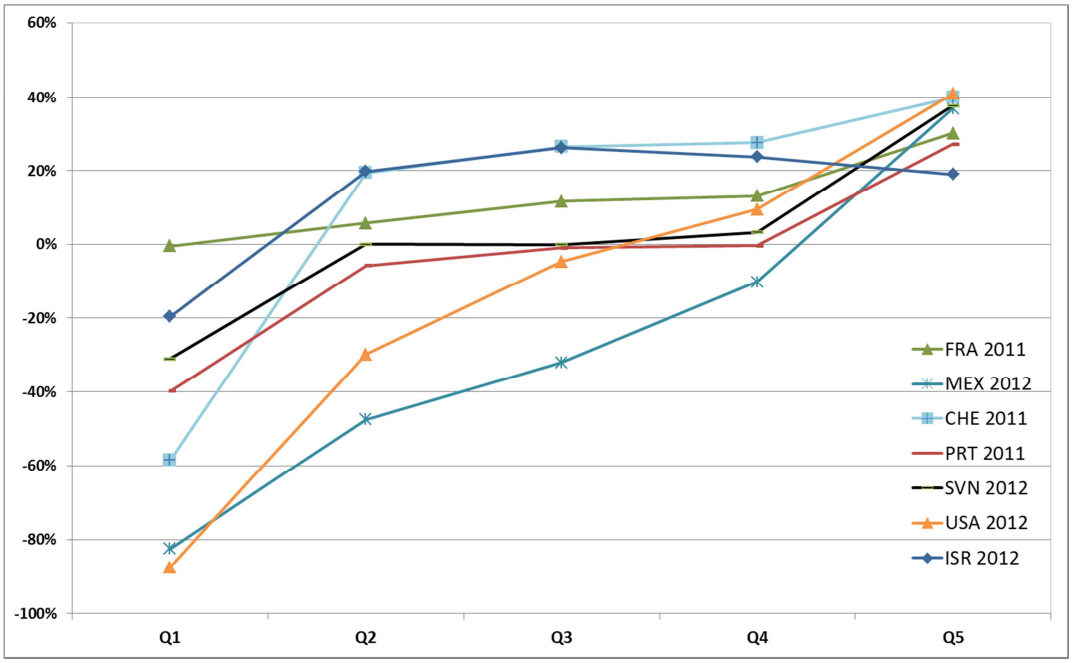
***Figure 2. Relative position of the 20% highest to the 20% lowest income households***




13. Finally, Figure 3 presents the savings per quintile as a percentage of their disposable income for a selection of six countries. The figure shows negative saving rates for the lowest income quintile in all countries, except France[6]. They record a savings ratio of approximately zero percent for the first income quintile. On the other end of the spectrum is the United States with a negative savings rate of 87%. Also Mexico and Switzerland record saving rates for the first quintile that are highly negative.

[6] In contrast to many of the other countries, in the micro surveys for France the consumption results are analysed in conjunction with the income results. In case the level of consumption is exceeding that of income without households mentioning that they have to reduce their financial wealth or incur liabilities, the level of income is adjusted to bring it in line with that of consumption, thereby focusing on the items that show the largest gaps between the micro and macro aggregates. In this way, part of the gap between micro and macro aggregates is solved by better aligning income and consumption results on the level of individual households. As a consequence of this approach French distributional results show less negative savings than other countries.

**Figure 3. Saving as a percentage of disposable income by equivalized disposable income quintile**




*Publication of the results*

14. As the main objective of the project is the regular compilation and publication of distributional results, the EG DNA also discussed whether countries would publish the results nationally. Australia, the Netherlands and the United Kingdom already publish distributional results on the basis of the methodology of the EG DNA[7]. Furthermore, Sweden, Slovenia and Mexico have expressed that they are looking into a first publication of their distributional results, probably in the course of 2016. Other countries expressed that they preferred to compile one or two additional years to test the robustness of the results before publishing.

## 3. Exploring nowcasting techniques

15. As the above methodology relies heavily on micro data sources that often only become available with a certain delay, distributional results currently have a substantial time lag. From the user's point of view, however, there is considerable demand for more timely data. Therefore, the EG DNA started exploring

[7] Links to the relevant releases:
- Australia: http://www.abs.gov.au/AUSSTATS/abs@.nsf/ProductsbyCatalogue/2A7665F5A468C0F7CA257D65001C105F?OpenDocument
- The Netherlands: http://www.cbs.nl/nl-NL/menu/themas/macro-economie/publicaties/artikelen/archief/2015/crisis-vermindert-inkomensverschillen.htm (currently only available in Dutch)
- The United Kingdom: http://www.ons.gov.uk/ons/rel/household-income/results-from-the-oecd-exercise-on-distributional-information-on-household-income/2015/index.html

possibilities to compile more timely estimates on the basis of nowcasting techniques, aiming at first results approximately nine months after the reference year.

16. Distributional results can theoretically be extrapolated using a top-down, a bottom-up or a meso-approach. Within those approaches various techniques can be applied to arrive at distributional results for a more recent year. These techniques vary from taking the distribution of the last available year, to using the average over a set of recent years, to looking at regression over time trend, or regression against an auxiliary variable. The preferred approach obviously depends on the availability of data, the patterns that can be found in the data, and the presence of additional information that can be incorporated in the nowcasts. As such, it also depends on local circumstances, and will vary across items and across countries.

17. Due to the currently rather limited availability of data, the Expert Group has so far only looked at the practical applicability of the top-down approach, on the basis of income and consumption data for Australia and the Netherlands. Preliminary results showed that the nowcasts come relatively close to the reported shares of income and consumption by quintile. However, differences between nowcasting results and actual data are observed when analysing the changes of quintile shares over time and the growth rates of disposable income for the quintiles[8]. Further investigation into the differences for the underlying transactions showed that, depending on the exact nowcasting methodology applied, the gaps for certain items were particularly high. An appropriate combination of methods across all the underlying components may in that case lead to more accurate results. Whatever the case, more research is needed on which technique to use in which case.

18. A draft working paper discussing the possible techniques and presenting experimental results for the two countries has been sent out for comments to EG DNA members in December, with an accompanying request for additional (micro or macro) data sets that can be used to test the various techniques. A larger availability of distributional data in terms of country coverage and longer time series would help in further testing the applicability and the robustness of the various top-down methods. Furthermore, the availability of micro- and meso-data would also help in extending the analyses towards the use of the micro and the meso approaches. Unfortunately, so far, most countries have expressed that these data are either not available or that it is not permitted to share these (micro) results. That would limit the possibilities of the Secretariat to further explore the various nowcasting techniques. On the other hand, as countries invest in the compilation of additional years, this would open up opportunities to at least further explore the top-down approach.

## 4. Work plan

19. In the coming period, the Expert Group will work on several topics. First of all, the results of the recent exercise will be published as a working paper in the summer of 2016. Meanwhile, the Secretariat will continue its work on improving the methodology for the compilation of distributional results, amongst others by developing guidance on how to deal with micro-macro gaps (on the basis of the results of the above mentioned questionnaire) and by further exploring how countries deal with the linking of various micro data sources. These topics will be discussed at the next meeting of the EG DNA that will be organized in the

[8] See annex 2 for some preliminary results on disposable income.

second half of 2016. The Expert Group is also considering a way to combine all the knowledge and experience from the work by the EG DNA, to provide guidance to other countries envisioning to start compiling distributional information in the context of national accounts.

20. In the light of the first publications of distributional results by some member states, the Secretariat would also like to explore possibilities to set up a regular data collection. Furthermore, together with Eurostat and the ECB, the Secretariat will further look into the possibilities to further extend the country coverage, and to also include information on the distribution of wealth across households in the exercise. In this regard, depending on the Programme of Work to be agreed by the OECD Committee on Statistics and Statistical Policy (CSSP), the OECD may also consider making own estimates on the distribution of income, consumption, savings and wealth, based on available results from micro-surveys.

21. Finally, on the nowcasting, the Expert Group will further explore the various techniques, hopefully on the basis of broader availability of micro and macro data from member states. The results will be put down in a working paper that is envisaged for the second half of 2016.

**Annex 1. Time periods for which data have been provided, according to the recent and previous exercise**

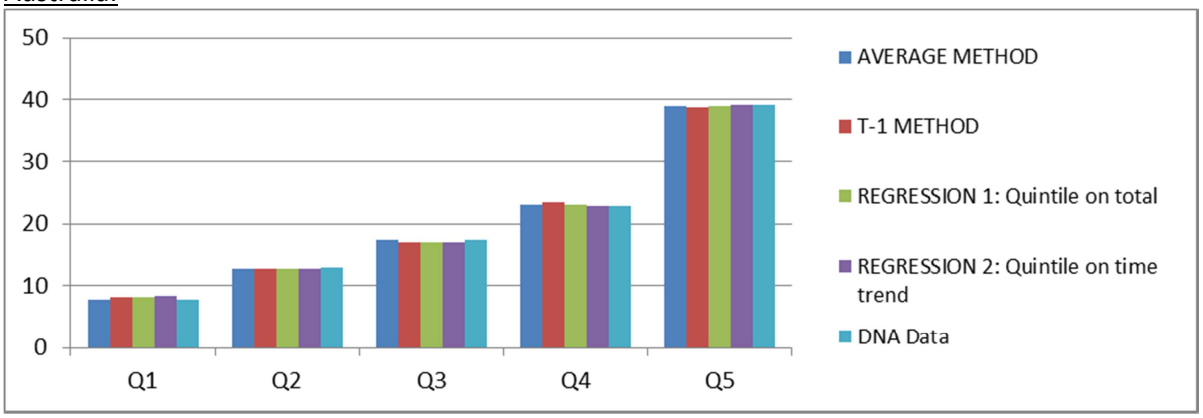
| Country | Reference years | Old exercise |
|---|---|---|
| Australia[1] (AUS) | 2003, 2005, 2007, 2009, 2011 | 2009 |
| Austria (AUT) | 2012[2] | - |
| France (FRA) | 2003, 2011 | 2003 |
| Germany (DEU) | - | 2008 |
| Israel (ISR) | 2012 | 2009 |
| Italy (ITA) | - | 2008 |
| Japan (JPN) | 2009[3] | 2009 |
| Korea (KOR) | - | 2009 |
| Mexico (MEX) | 2008, 2010, 2012 | 2008, 2010 |
| The Netherlands (NLD) | 2008, 2011 | 2008 |
| New Zealand (NZL) | - | 2007 |
| Portugal (PRT) | 2006, 2011 | 2006, 2009 |
| Slovenia (SVN) | 2012 | 2008 |
| Sweden (SWE) | 2012 | 2008 |
| Switzerland (CHE) | 2008, 2011 | 2008 |
| United Kingdom (GBR) | 2008, 2012, 2013[4 5] | - |
| United States (USA) | 2010, 2012 | 2010 |

1. The accounting years run from July t to June t+1.
2. Income components relate to 2012, consumption components to 2009.
3. Data are still under review and are not included in the results.
4. NPISHs are included in the data.
5. Results for 2008 and 2013 have been provided at the end of 2015 and will not be included in the forthcoming working paper.

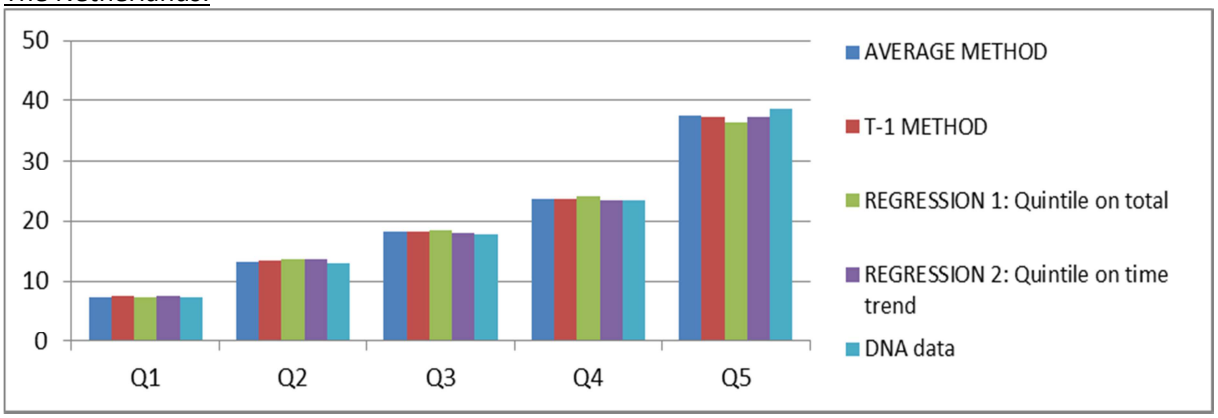
**Annex 2. Preliminary results from the nowcasting exercise**

***A. Relatives quintile shares of disposable income for Australia (2011) and the Netherlands (2009), on the basis of the various nowcast methods (applying the methods to all underlying income components).***

Australia:

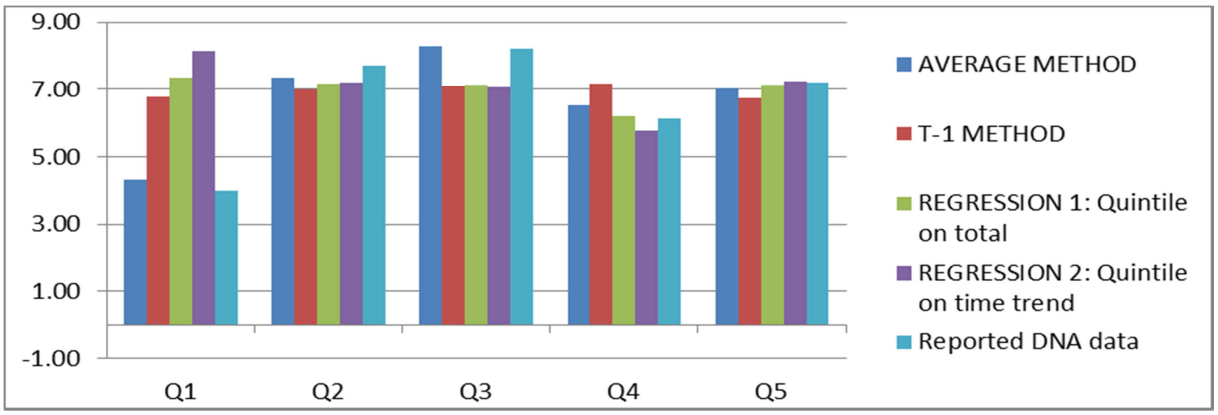



The Netherlands:

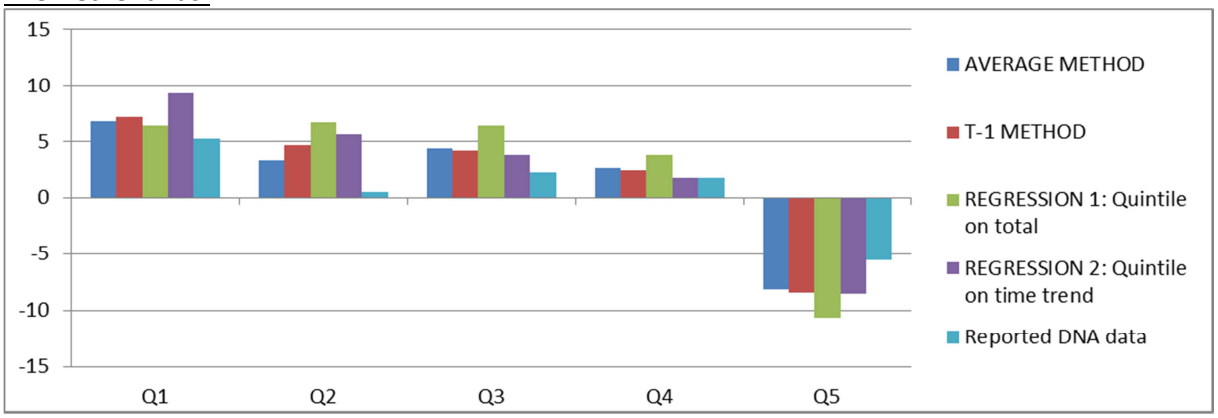



***B. Disposable income growth rates (%) per quintile for Australia (2011) and the Netherlands (2009), on the basis of the various nowcast methods (applying the methods to all underlying income components).***

Australia:




The Netherlands:




**C. Gaps between the nowcast results and the actual values for the various underlying transactions of household disposable income for Australia (2011) and the Netherlands (2009)**

Australia:

| | Instrument | Average method | t-1 method | Regression 1 | Regression 2 | "Best" choice |
|---|---|---|---|---|---|---|
| B2 | Operating surplus | 7.34 | 49.04 | 50.85 | 50.19 | Average method |
| B3 | Mixed income | 10.20 | 11.79 | 12.66 | 13.35 | Average method |
| D1R | Compensation of employees | 1.39 | 0.94 | 1.79 | 1.96 | t-1 method |
| D4N | Net property income | 18.35 | 13.32 | 16.07 | 17.82 | t-1 method |
| D41'R | Interest received (excl. FISIM) | 4.91 | 5.68 | 3.98 | 2.70 | Regression 2 |
| D42R | Distributed income of corporations | 8.43 | 10.40 | 9.08 | 9.65 | Average method |
| D45R | Rent received | 10.33 | 9.14 | 11.69 | 9.26 | t-1 method |
| D41'P | Interest paid (excl. FISIM) | 4.05 | 5.25 | 4.21 | 6.89 | Average method |
| D45P | Rent paid | 10.33 | 9.15 | 8.97 | 9.27 | Regression 1 |
| D5P | Current taxes on income and wealth | 3.57 | 1.82 | 3.74 | 2.88 | t-1 method |
| D61P | Net social contributions | 2.09 | 0.44 | 1.41 | 1.28 | t-1 method |
| D62R | Social benefits other than STiK | 4.30 | 3.07 | 3.41 | 4.79 | t-1 method |
| D71P | Non-life insurance premiums | 1.42 | 0.29 | 0.38 | 0.97 | t-1 method |

| | | | | | | |
|---|---|---|---|---|---|---|
| **D72R** | Non-life insurance claims | 1.42 | 0.29 | 0.46 | 0.97 | t-1 method |
| **D75R** | Misc. current transfers received | 14.95 | 20.08 | 13.67 | 25.78 | Regression 1 |
| **D75P** | Misc. current transfers paid | 6.29 | 1.95 | 2.30 | 3.69 | t-1 method |

The Netherlands:

| | Instrument | Average method | t-1 method | Regression 1 | Regression 2 | "Best" choice |
|---|---|---|---|---|---|---|
| **B2_B3** | Op. surplus and mixed income | 3.06 | 2.17 | 3.20 | 2.43 | t-1 method |
| **D1R** | Compensation of employees | 2.09 | 2.53 | 2.29 | 2.26 | Average method |
| **D4N** | Net property income | 3.61 | 4.43 | 5.66 | 5.83 | Average method |
| **D4R** | Property income received | 1.81 | 2.20 | 3.55 | 3.20 | Average method |
| **D4P** | Property income paid | 1.33 | 1.20 | 1.85 | 2.50 | t-1 method |
| **D5P** | Taxes paid | 6.09 | 3.30 | 4.65 | 4.07 | t-1 method |
| **D61P** | Net social contributions | 27.61 | 37.07 | 18.92 | 36.59 | Regression 1 |
| **D75N** | Net misc. current transfers | 24.48 | 37.22 | 83.21 | 50.63 | Average method |
| **D75R** | Misc. current transfers received | 3.06 | 4.14 | 6.17 | 4.88 | Average method |
| **D75P** | Misc. current transfers paid | 5.34 | 8.23 | 20.56 | 11.72 | Average method |