Annual programme of activities of the Parliamentary Budget Office

2022

(as required by Law 243 of 24 December 2012, Art. 18, par. 4)

The mission of the Parliamentary Budget Office (PBO) is to contribute to the sustainability of public finance by ensuring the transparency of accounts at the service of Parliament and citizens. As established by its founding law (Law 243/2012, so-called 'reinforced' law, for the implementation of the new Art. 81 of the Constitution), the PBO shall: verify and assess macroeconomic and public finance projections; quantify the impact of major legislative measures on the macroeconomic scenario and public accounts; analyse public finance trends, including by sub-sector, and verify the long-term sustainability of public accounts; assess compliance with budget rules and monitor the implementation and use of certain provisions provided for by the European framework of fiscal rules (specifically, the correction mechanism and the authorisation in the event of exceptional circumstances). Finally, the PBO shall prepare analyses and reports upon request of the parliamentary committees responsible for public finance.

The new PBO Board was appointed on 18 January 2022 by the Presidents of the Senate of the Republic and the Chamber of Deputies.

1.   The analysis

1.1   Activity carried out in 2021

In 2021, as in previous years, the public finance policy documents (the Economic and Financial Document (EFD) and the Update to the Economic and Financial Document (NADEF)) were analysed. Specifically, the results of the validation of the official macroeconomic projections (trend and policy scenarios) and of the public finance assessment were disclosed to the Budget Committees of the Chamber of Deputies and the Senate at the hearings held during the parliamentary examination of the Government's policy documents and were then included in the *2021 Budgetary Planning Report* and the *2022 Budgetary Policy Report.*

Alongside the *Reports*, many detailed documents were drafted on specific topics, independently identified by the PBO within the scope of the duties assigned by the founding law or drafted upon requests of the parliamentary committees. Specifically, in addition to the hearings and memoranda on the Government's policy documents and on the budget law, eight hearings or memoranda on public finance-related issues were held and drafted (two on tax reform, one on the National Recovery and Resilience Plan (NRRP),

one on the Single and Universal Allowance for Dependent Children, one on the draft enabling law for the support and promotion of the family, two on the support decrees to deal with the economic and social consequences of COVID-19, one on the state of implementation of fiscal federalism) and numerous analytical papers in the various series (two Working Papers, three Focus Papers and five Flashes) were published. The issues explored in the various series included: the revision of the IRPEF (personal income tax) in the budget plan, the strengthening of the administrative capacity of public administrations, the medium-long term projections of pension expenditure in Italy, the so-called 'emergency income', the financial impact of the NRRP, the analysis of the financial impact of the 2021 budget law approved by the Parliament, the dynamics of debt-to-GDP ratio in the medium term, the effects of the coordination of budgetary policies in a currency area on the path towards public debt reduction. Specific analyses were conducted to compare the budgetary strategies of the main EU countries, set out in the April Stability and Convergence Programmes and in the October budget policy documents, and the related opinions and projections of the European Commission.

Furthermore, four editions of the Report on recent economic developments were published in 2021, which analysed the development of the Italian and international economy on a quarterly basis. Each Report included an in-depth analysis and, as customary, two Reports dealt with forecasts for the Italian economy (February and August); the other two Reports presented, in April, a counterfactual analysis on the evolution of the economy in 2020 as a result of COVID-19 whereas, in October, different scenarios on inflation trends were proposed based upon different assumptions on commodity prices.

The effort to strengthen and improve quantitative analysis tools also continued.

The macroeconomic assessment included periodic maintenance and improvement of the short-term forecast models of GDP and its components, which are used to steer the annual estimates of the macroeconomic model and for the business cycle analyses published in the *Report on recent economic developments*. The PBO models were re-estimated in order to check their statistical properties and the significance of the parameters in relation to the latest economic data. Expenditure flow data (invoicing and payments) as well as goods transport series were also introduced, tested and strengthened. Still in the context of business cycle analyses, the periodic maintenance and improvement of the indicators used for the assessment of the business cycle conducted in the *Report on recent economic developments* continued.

As for the medium-term quantitative tools, the maintenance of the macroeconomic forecasting model, MeMo-It, was based on assessing the stochastic properties of the model equations through tests of correct specification, structural stability and forecasting capacity on different historical samples. Simulation programmes capable of *Tinbergen-targeting* were also improved, being it a useful tool both for assessing the requirements for the achievement of economic policy targets and for making the harmonisation of the

main internal variables faster and more accurate when the National Statistics Institute (ISTAT) releases new annual national accounts.

Still in terms of medium-term models, the PBO model for estimating potential output was adjusted to take account of the anomalous cyclical phase caused by the economic effects of the COVID-19 pandemic. Finally, estimates of the macroeconomic impact of investment projects prepared with the NRRP were extended using the macroeconomic simulation tools MeMo-It and GEM (Global Economic Model).

As for the micro-simulation models used for sector-specific analyses, the household tax-benefit model was significantly adjusted in terms of sources used and the simulation potential. The basic procedures of the model based on the SILC sample were restructured to make them more efficient. Moreover, new simulation modules were developed thanks to the availability of new administrative data associated with the sample data.

Specifically, the procedures of the model were supplemented with the information on social security contribution statements, which are fundamental to reveal the actual and detailed occupational situation of the individuals in the SILC sample and their past careers. This data was used in various analyses, especially relating to the measures introduced to cope with the COVID-19 pandemic (for which detailed information on employment status was essential) as well as concerning the IRPEF reform. Administrative information on dependent family members was also included into the model, allowing a comparison between the tax households simulated according to the socio-economic information found in the ISTAT survey (the households made up of the persons receiving the benefits and the dependents) and the actual information found in the administrative data. This measure allows identifying the actual 'tax burden' relations between persons not belonging to the same household and to identify a flawed take up of tax deductions for dependent family members: the presence of potentially dependent persons not benefiting from the deductions they would be entitled to. This integration has allowed generating more reliable estimates in the context of the assessment of the measures related to the universal single allowance.

Still in the context of the analyses aimed at identifying the relationships between household members, information on EESI (Equivalent Economic Status Indicator) statements was included. This allowed verifying the existence of significant discrepancies between the officially registered households as recorded in the sample and the composition of the households in the EESI statement and to improve the analysis of measures regulated by the indicator. Moreover, punctual definition was ensured in terms of information requirements regarding further administrative databases concerning, on the one hand, family allowances (to conduct analyses on the impacts of the single allowance) and, on the other hand, EESI statements for several years (to capture the household composition developments), to be requested from INPS.

The cadastral data of all the properties that, even for just some months of the year, were found to be in the name of the persons in the ISTAT sample, were collected by the Department of Finance and structurally included in the model, thus filling an important information gap affecting properties. A cross-referencing operation between the information found in the IRPEF statements and the cadastral surveys was conducted, thus restructuring the property tax (IMU) simulation model. The supplementation of this information allowed developing more accurate analyses concerning measures in the property sector, such as building renovation bonuses. In addition, information from the Real Estate Market Observatory (*Osservatorio del Mercato Immobiliare - OMI*) on property prices was integrated in order to conduct analyses on the relationship between market value and property tax base.

Lastly, a first version of the full tax-benefit model was produced, based on the ISTAT sample on household consumption. In this survey, the respondents provided the same information as that available for the respondents in the SILC survey. Developing two parallel models, built on different sample surveys and supplemented with the same set of administrative information, requires a strong effort to harmonise the different sources and the estimation of variables unavailable in one of the two surveys (as, for instance, in the case of the movable assets for households in the consumption survey for which no EESI statement is available). The availability of supplemented information on the same households, relating to consumption behaviour and spending power (income, EESI), allowed analysing the distributional impact of the increase in the prices of energy goods in the first half of 2022. The available information is still being supplemented and, once the process has been completed, it will be possible to develop a single standardised simulation model, to be used to perform the same procedures on both samples. The standardisation process will also involve the supplementation of the models on direct and indirect taxes, as well as a platform for assessing the distributional impact of inflation.

As regards the microsimulation model on corporate taxation (MEDITA), the database and procedures for calculating the tax bases and rates were updated to take account of administrative data on tax returns for the 2019 tax year. Then, simulation procedures were extended to 2021 to duly consider tax measures that changed the corporate tax bases. Furthermore, Mediocredito Centrale's database on public guarantees granted to businesses and the electronic invoicing data provided monthly by the Revenue Agency were regularly updated.

The process for improving the model mainly focused on the extraordinary measures adopted to help companies in the period of the health emergency. Specifically, as far as 2020 is concerned, the model's database was supplemented: a) in advance of the ordinary activity, with the economic-financial data available in November 2021 for 55 per cent of the corporations (83 per cent of turnover); b) with data from Mediocredito Centrale on the public guarantees granted to businesses. For a relevant subset of the companies in the model, this allowed an initial assessment of both the effects of the restrictions imposed as a result of the health emergency on revenues and costs, and of the new

economic-financial condition resulting from mounting debt of companies incentivised by the granting of public guarantees.

The model for forecasting pension expenditure in the short to medium term kept being updated and improved using mesodata from the National Social Security Institute (INPS) on careers and aggregate contributions since 1995; the model for forecasting healthcare expenditure was updated and constantly maintained.

In 2021, the ordinary maintenance and management of the tax revenue forecasting tool, of the dataset containing the summary of all discretionary measures, and of the dashboards used to monitor the main public finance aggregates during the year was conducted to ensure the continuity of the predictive capacity of the public accounts.

With regard to monitoring the implementation of the NRRP, a dataset containing information on individual calls for projects and resource allocations, which mainly concern local governments as implementing actors, was set up and will be regularly updated.

As for debt sustainability analysis, the framework was improved by splitting the medium/long-term variable yield debt component between the inflation-indexed component and the short-term interest-indexed component. The main features of the framework were also documented through the publication of a specific Working Paper.

1.2   The 2022 work plan

In 2022, the main objective will remain the improvement of the tools required to carry out the Office's recurring institutional activities: the assessment of budget policy documents, in the spring and autumn sessions, by forecasting and monitoring economic and public finance trends, as well as analysing the effects of major legislative measures.

Consistently with this priority and the time spent around activities responding to specific requests, mainly coming from parliamentary committees, punctual research will then be conducted on topics having special relevance in the context of the economic policy debate.

During the first half of 2022, aside from the usual hearing on the 2022 EFD - later included with further insights into the 2022 Budgetary Planning Report - the PBO organised three hearings on: the impact of the reform of the Stability and Growth Pact budgetary rules on Italian public finance; the structure of regional finance and the lines of development of fiscal federalism also in the light of the implementation of the NRRP; the so-called 'Aid Decree' (Decree-Law 50/2022).

The analyses published concerned: the NRRP calls for regional entities; the 2022 Budget Law approved by the Parliament; the impact of the universal single allowance and its

connection with IRPEF-related measures; and the *ex-post* evaluation of the macroeconomic forecasts of the Ministry of Economy and Finance (MEF) since 2000. The 2022 Budgetary Planning Report also assessed the government's official macroeconomic forecasts for the last four years.

A preliminary working paper, in collaboration with INPS, focused on the actual use of the so-called *'Quota 100*' pension system. The aim was to identify the categories of workers who most frequently used the *'Quota 100'* pension system, the actual take-up rate compared to the potential beneficiaries, to what extent retirement has been brought forward compared to the ordinary 'Fornero' law requirements, and the costs of this additional system compared to expectations. An econometric analysis also revealed the subjective characteristics that most increased the probability of resorting to the *'Quota 100'* pension system. The result of this work may in the future be helpful to financially simulate and quantify the effects of potential pension reforms in terms of greater flexibility on retirement requirements The work was presented at a conference organised by the PBO and INPS in June.

Finally, another analysis in collaboration with IRPET (Regional Institute for Economic Planning of Tuscany) to assess the performance in the time needed to develop public projects was completed. A dataset integrating the ANAC Open Data, with the Open Coesione and BDAP archive concerning the tendering procedures carried out between 2007 and 2021, was used as a base to build an econometric model to explain the duration of public infrastructure projects based on fixed effects that can be grouped into four categories: analytical level of the lot, contracting authority, regional area and contractor. The results provide useful hints to assess possible criticalities of the new work sites financed with the resources of the NRRP and the Complementary Investment Plan and the orientations adopted by the legislative decrees to implement the lines of action of the enabling law for the reform of the Procurement Code (Law 78/2022).

Below is a short description of the activities to be carried out in the second half of 2022, regarding both the analysis tools and the permanent lines of research (par. 1.2.1) and the specific analyses (par. 1.2.2).

1.2.1 *Recurring institutional activities: development of analysis tools and permanent lines of research*

In the context of the macroeconomic analysis, the MeMo-It macroeconomic forecasting model will be maintained and further adapted to meet the specific analytical needs of the PBO. Given the high sensitivity of the business cycle to commodity prices and in order to account for potential turmoil in global supply chains, the set of international external variables considered will be extended and the relevant sections of the model will be specified accordingly. The aim is to develop a version of the MeMo-It model that can

account for more complex scenarios with respect to supply-side shocks and international external variables.

Effort will continue on maintaining and developing short-term forecasting models for GDP and its components, through the statistical validation of the economic indicators used, especially in relation to those recently introduced and the search for new indicators, in particular for the service sector.

In the area of public finance, the methodologies used will continue to be consolidated and upgraded, in order to strengthen the monitoring activity also at the sector and segment level, with a view to enriching the amount of information useful to the preparation of short-term forecasts. The tools currently used for the short-term forecasts of pension expenditure and other social benefits, healthcare expenditure, compensation of employees and individual revenue items will be further developed.

Ex-post analysis of the official public finance forecasts contained in the policy documents will continue and be compared with the actual results (with an assessment of the main causes for discrepancy), in line with the approach used for the main macroeconomic variables.

The model for forecasting interest on domestic government bonds will be maintained, updating the database feeding the model and the database published on the PBO website for consultation. From a methodological perspective, a development-oriented approach will continue by evaluating alternative strategies for simulating future issuance policy that jointly consider cost-risk objectives on the remaining life of the stock of government debt and on interest expenditure. Finally, the model will continue to be supplemented with the estimation of other components contributing to the interest expenditure of the entire public administration (PA) in addition to government bonds.

The analysis will be supported by strengthening the micro-simulation models for households and corporations, already used in past years for the *ex-ante* evaluation of some legislative measures. This will ensure the constant ability to analyse issues such as the orientations of fiscal policy and fiscal trends for specific sectors, as well as constant reliability of *ex-ante* and *ex-post* impact assessments of legislative measures.

In particular, as regards household models, the following activities will be carried out during the year: updating of the information bases of the models based on SILC and the Consumption Survey and collection of information relating to family allowances and the universal dependent child allowance; updating of the information bases of the models based on large anonymised samples relating to tax returns and EESI, with indication of the use of the Minimum Income Scheme (*RdC - Reddito di Cittadinanza*); the improvement of the model's procedures with regard to social security contributions, by using information collected from employees' and self-employed workers' social security statements; the use

of administrative information for the simulation of family measures (tax returns, family allowances and EESI).

The issues related to the use of administrative data will also continue to be studied. In the context of the PBO-IRPET Agreement, the differences between databases of different administrations will be analysed, with specific regard to: the size of the population surveyed (taxpayers, individuals and households) according to the different definitions adopted; the composition of the population surveyed (taxpayers, individuals and households) by main demographic (age, gender, nationality, etc.) and economic (dependent individuals, income-earners, income classes, employed, type of profession, etc.) factors influencing the eligibility criteria and the allocation of tax rules and/or transfers. The key economic variables will be reconciled, and the mismatches will be analysed.

Still in the context of households, an integrated micro-simulation model of direct and indirect taxes is expected to be set up for assessing the overall progressive nature of the fiscal system, including both direct income and property taxation and indirect taxes and excise duties. Until now, the analyses have been vitiated by poor information on the availability of microeconomic sources for both indirect and direct tax bases (sample surveys are bound to focus on one area only, given the complexity of collecting information on both income and consumption). This information gap has been filled by sample matching, which, however, provides inadequate results. The supplementation of the administrative data on income (tax, social security and welfare) with the Household Consumption Survey carried out by PBO, allowed to gather information on the tax bases of both direct and indirect taxes and excise duties for the households in the sample surveyed. The aim is to create a variant of the tax-benefit micro-simulation model (currently fed by the SILC Household Income Survey) to simulate taxes and social security contributions from the Household Consumption Survey supplemented with administrative data. The two models for direct and indirect taxes would thus be applied on the same microeconomic basis, allowing an overall assessment of the tax burden on Italian households.

In order to analyse different aspects of households' lives (e.g. transport habits), the study aims to extend the information set related to administrative data with data from ISTAT's Survey on households 'Aspects of Daily Life' (*Aspetti della vita quotidiana - AVQ*). The supplementation with tax-related data could be complex as the source currently used in SILC and consumption matching processed by the Department of Finance is not available and it will therefore be necessary to resort to raw data from the Revenue Agency.

During the year, an analysis will be conducted to assess the effects of discretionary measures on the main equitable and sustainable well-being (BES) indicators set out in the EFD. As from 2023, this activity will become part of the PBO's recurrent activities, given the request received from the Budget Committees of the Chamber of Deputies and the Senate of the Republic.

In order to further improve the ability to assess the impacts of public policies on the income of households and individuals, the analysis is designed to investigate the income-consumption ratio and to estimate individual evasion rate using the consumption-based method. To this end, data from ISTAT's Household Budget Survey will be used to assess the treatment of the different expenditure categories (current consumption, durable goods, investment expenditure, etc.) in relation to overall household consumption, the presence of any intra-household transfers and the temporal profile of consumption. A new information set will be developed, obtained by cross-referencing administrative data on tax returns, EESI statements, INPS contribution statements with the sample surveys on living conditions and the ISTAT household expenditure survey, in order to carry out a coherence analysis between the household's spending capacity and its taxpaying capacity. Finally, once the household consumption has been defined, the evasion of labour and business income will be estimated along with the definition of specific profiles of evaders according to their socio-economic characteristics.

With regard to the model on corporations, the 2020 balance sheet data from Bureau van Dick and data from the tax returns of corporations (Unified and Consolidated Tax Return) for the 2020 fiscal year are being collected, and the Mediocredito Centrale's data on public guarantees for companies are being updated. The model will also be enriched with the acquisition of microdata relating to: non-repayable grants disbursed in 2020 and 2021; guarantees granted by SACE under the *'Garanzia Italia'* fund in 2020-22; the tax returns of partnerships; and periodic VAT returns (Lipe). The updating of the databases is expected to allow the reconstruction of taxes and the economic-financial situation of companies in 2020. For 2021, only a partial reconstruction by macro-sectors (with electronic invoice data and estimated elasticities) will be possible. For 2022, the model will still be only partially operational, thus not allowing reliable overall revenue reconstructions due to the structural break on business caused by the health crisis.

The model, currently focused on corporations, will also be extended to partnerships (approximately 700,000), allowing the assessment of the effects of fiscal measures on businesses in general. This will depend on the availability of administrative data on the Unified Tax Return for Partnerships. Such data could allow associating the characteristics of the company with those of the partners in the personal tax model. This would create a useful tool allowing interaction between the MEDITA model for companies and the tax-benefit model for individuals.

The model for forecasting short-term pension expenditure is currently based on the database of taxpayers managed by INPS and their careers are reconstructed by applying the growth profiles for seniority estimated by INPS, broken down by sector and gender, to the most recent salary data. The objective is to calculate independent estimates using the LOSAI's sample of taxpaying backgrounds. This sample contains each individual's information on the professional positions held in each year of the career and the related salaries. The use of micro-data allows generating growth profiles with the most appropriate levels of disaggregation, depending on the situation.

To develop a dynamic micro-simulation model for medium- to long-term forecasting of pension expenditure, several steps have already been completed (reconstruction of the base year population from the most recent IT-SILC surveys, their integration with data from the INPS administrative source, estimated transition probabilities between labour market states). For it to become effective, the model requires the following additional steps: comparing the econometric estimates of the life-cycle profile of labour income currently based on the functional forms of CAPP_DYN with estimates based on original functional forms including variables relating to individuals' complete professional background, which can only be deduced from administrative information; updating the model's mechanisms determining retirement by incorporating the most recent legislation. Completing the model in the medium term will be crucial for medium to long term sustainability analyses of public finances and, within the latter, for comparing one's own forecasts with the official ones, i.e. those produced by the State General Accounting Office *(Ragioneria Generale dello Stato)* based on both national scenarios and scenarios agreed upon at European level within the Ageing Working Group (AWG).

The analysis tools also require maintenance and development in the context of debt sustainability analysis (DSA). In this regard, the deterministic DSA framework should be extended to take account of: 1) the impact of the proceeds from the taxation of Italian government bonds on the primary fiscal balance; 2) the impact of purchase policies, rollover and possible future divestment of government bonds held by the Bank of Italy on the proceeds distributed to the State deriving from its holdings of government bonds (so-called 'commissions', which impact on the revenue of the PA account under 'Interest income', i.e. part of 'Other current revenue'); 3) monetary policy multipliers (estimated through the econometric model used at the PBO), i.e. the impact of interest rate changes on real GDP growth. At the same time, the DSA framework will be used to assess proposals for reforming EU fiscal rules.

We will also explore the possibility of simulating some proposals for reforming EU budgetary rules with the QUEST dynamic general equilibrium model in order to assess their effects on macroeconomic and budgetary variables also in comparison with the results obtained with the DSA framework.

In addition, we will continue to explore the possibility of conducting stochastic DSA analysis through vector autoregressive (VAR) models in line with the methods used by the International Monetary Fund (IMF). More specifically, work will be done on the estimation of a VAR model for the simulation of the main variables determining public debt trends. Finally, the possibility of developing modules allowing a closer link between the model used for the DSA and that for estimating interest expenditure is currently being assessed.

In conclusion, in line with previous years, specific analyses will focus on comparing the budgetary strategies of the main EU countries, as set out in the stability programmes and budget planning documents, with the corresponding views of the European Commission.

1.2.2 Specific lines of analysis

As stipulated in the founding law, as part of its duties, the PBO is required to prepare analyses on 'additional economic and public finance issues relevant to the analyses, audits and assessments' independently chosen by the Office.

Below are the specific issued identified for 2022. In some cases, they refer to lines of research started in previous years but not completed due to late acquisition of mandatory information sources or because the time available for research activity was limited by institutional activities (e.g. the evaluation of the many discretionary measures introduced to mitigate the effects of the pandemic).

The following pages provide a thematic breakdown of the initiatives expected to be completed by the end of the year, consistently with other institutional priorities, and those to be launched in 2022 and expected to be completed in 2023.

Analyses on the NRRP

An updated assessment of the impact of the NRRP on economic growth was published in the *2022 Budgetary Planning Report* to take account of the adjustment of the annual distribution of expenditure for the Plan's projects. The activity was conducted with both the MeMo-It econometric model, used by the PBO for medium-term forecasts, and the QUEST model, used by the MEF for the assessments of the macroeconomic effects of the NRRP. The analysis exclusively concerns the resources for additional interventions with respect to existing legislation and measures to support capital accumulation during the Plan's planning period (up to 2026). The fiscal multipliers of the MeMo-It model were reviewed to enable such medium-term impact assessment.

In the coming months, several activities will be dedicated to the implementation of the NRRP.

Specifically, monitoring of the NRRP calls for proposals with local authorities as implementing bodies will continue alongside specific analyses on the allocation of resources to them. Great attention will be paid to the different types of rankings used in the calls for proposals (the most representative cases in terms of amount) and to the coexistence of NRRP-specific objectives (e.g. reduction of the regional gaps) with the specific objectives of the individual measures/calls (e.g. increase of available places in nursery schools).

As for nursery schools, aside from monitoring the implementation of NRRP-related measures, specific assessment will be conducted on the achievement of the Essential Level of Services (LEPs – *Livelli essenziali di prestazione*) indicated in the 2022 budget law and a reconstruction of all the funding sources of the municipalities for the provision of

the service (*Fondo di solidarietà comunale*, *Fondo 0-6*, *Bonus asili nido*, etc.). At the same time, the service will be monitored from both the supply and demand sides, with the aim of revealing any local gaps as well as gaps in the implementation methods.

Specific objectives will be analysed with regard to anti-evasion actions, represented by regulatory and operational measures that aim to make the most of the computerisation and database assets of the Revenue Agency for a better selection of taxpayers. The tools on which the objectives are based are the compliance letters and the VAT pre-filled return. The initiative aims to analyse the measures included in the NRRP on the fight against evasion, with reference to the structuring of the objectives, consistency with the planning of activities by the Revenue Agency and possible shortcomings. The initiative also aims at assessing proposals contained in the Report submitted by the MEF for the achievement of the M1C1-101 Milestone.

In the health field, the NRRP provides for a significant reorganisation of the National Health Service (NHS), although the actual implementation of innovations in this field remains uncertain. Therefore, during and after 2022, the implementation progress of the initiatives under the NRRP will be monitored. The framework of scheduled reforms planned investments and their financing will be analysed, by also assessing the availability of current resources to ensure the proper functioning of an NHS strengthened by the NRRP interventions. The analysis will also focus on the steps being taken to strengthen and reform local health care (the first pillar of the health mission), with a critical analysis of the context in which the NRRP measures are deployed, the challenges to be faced and the choices to be made. Additional analyses, likely to continue in 2023, will focus on the measures adopted in the field of hospital care, digitisation and data management, research and innovation and training (second pillar). The integration between health and social care will also be thoroughly examined, with particular regard to long-term care, taking into account the provisions of the budget law on the determination of LEPs.

Analysis on inflation-induced effects

As far as the forecasts of the main price aggregates is concerned, the set of quantitative tools being used at the PBO will be enriched with a quarterly factorial macroeconomic model, developed in the past by the PBO for GDP forecasts, with the aim of adjusting it to inflation forecasts; a full revision of the database and estimation programmes will be carried out to this end.

Subject to the possibility of accessing the micro-data of the ISTAT consumer confidence survey, inflation estimates will be again analysed, either through descriptive processing (based on trimmed averages of monthly responses, possibly by subgroups of respondents) or through econometric analyses.

The outbreak of the conflict between Russia and Ukraine, besides representing a humanitarian tragedy, requires an assessment of its economic impacts both on a global scale and for the Italian economy, especially with regard to the commodity markets and the repercussions on consumer prices. In the April's *Report on recent economic developments,* the simulations presented have already outlined the potential impacts of the war, not only with reference to the repercussions on the cost of raw materials. Further analyses on the same issue may be conducted during the year, depending on developments in the ongoing geopolitical crisis and in the relations with Russia.

As regards public finance from a 'macro' perspective, the impact of an unexpected inflation shock on the general government account will be quantified both through the direct effect connected with the indexation mechanisms characterising some PA aggregates (pensions, public wages, interest expenditure), and through the indirect effect connected with the impact of the inflation shock on the macroeconomic scenario. Therefore, the elasticities of public budget items will have to be re-adjusted to inflation, where necessary.

Finally, an assessment of the impact of rising energy prices on household budgets and their distributional effects and on the main energy poverty indicators will be conducted in collaboration with the University of Florence. Likewise, a specific analysis will focus on the impact of rising energy prices on the costs of businesses and the mitigation effects of the measures adopted by the Government. As for the analysis of the impact on households, the project will proceed upon the acquisition of specific databases, including aggregate ones, that are not yet available (from MITE).

Energy and environment

The green transition provided for by the NRRP raises the issue of *ex ante* and *ex post* evaluation of the main economic policy measures, including under the NRRP, both on growth (actual and potential) and on the reduction of climate-altering gases. The PBO wishes to initiate a process for the improvement and supplementation of the tools currently used to conduct environmental sustainability analyses. Policy-induced climate effects can only be assessed over a long period of time, thus requiring the adjustment or extension of the current databases and models.

An analysis of environmental taxation instruments in the Italian and international context will also be carried out. The objective is twofold: outline the regulatory and institutional context of current environmental taxation while providing a quantitative analysis of environmental taxes in the light of the relevance that the green transition, rising energy prices and the redefinition of energy policies in the national and European context are acquiring in terms of public policy planning. The analysis will likely support evaluations of environmental tax reform measures to prepare for the green transition, both at the

sectoral level and at the level of companies and households (e.g. evaluation of energy bonuses).

Evaluating policy measures

Some analyses will focus on the evaluation of specific public policies implemented in past years or being discussed.

Based on the available databases - and subject to the acquisition of data requested from the Revenue Agency - the potential and actual beneficiaries of the main measures adopted to mitigate the effects of the pandemic crisis and the benefit actually enjoyed by both individual companies and workers will be identified. The objectives of the work include: a) the analysis of the effectiveness of the measures in relation to their targets; b) the calculation of the financial impact on the public budget in the short and medium term by highlighting the so-called 'deadweight loss' effect; c) the analysis of the effects of the measures in terms of economic and financial indicators and the performance *of* business (the latter aspect will be analysed in collaboration with the Department of Political Science of the University of Roma Tre). Moreover, a special in-depth study will focus on the effects of tax incentives to capital - such as the enhanced AEG (Aid for Economic Growth) - and debt - with the granting of public guarantees - on the financial structure of businesses.

Still with reference to the period of the health crisis, the main budget items of the large hospitals in 2020 and 2021 will be analysed in comparison with the previous years to show the impact of the pandemic on the management of these institutions. For instance, the available data show the increase in costs (especially for personnel), the reduction in tariff revenues (due to the decrease in services provided) and the increase in grants for current expenses (due to transfers from the regions to deal with the health emergency). These trends clash with those of the pre-pandemic years, already examined by the PBO in previous studies, which were influenced by the regulations on hospital recovery plans.

The availability of administrative fiscal data allows continuing to develop the strand of *ex-post* analysis of investment incentive policies. First, as far as corporations are concerned, the availability of these data enables a distributional analysis of the main measures adopted in recent years: super depreciation, tax credits for the South and incentives for research and development. As for the latter, the impact of the recent regulatory amendment of the patent box will be analysed. The large availability of information in the database for some measures - tax credit for the South and incentives for research and development – enables the application of the most recent techniques for evaluating public policies in order to provide an assessment of the effectiveness of these measures not only in terms of increased investments but also in terms of business' profitability and employment.

As far as welfare policies are concerned, the effects of two measures will be analysed, in collaboration with INPS: the minimum income scheme (RdC) and the universal single allowance. More specifically, distributional and impact analyses will be provided after describing the monitoring data and application rates to assess the actual beneficiaries of these measures. With regard to the RdC, cross-referencing administrative data related to EESI statements, which will indicate the use of the measure, with ISTAT sample surveys used to calculate the main poverty indicators, will enable a direct comparison between the populations of persons identified as poor according to statistical criteria and the beneficiaries of RdC. Analysing this information will allow highlighting the overlaps and discrepancies (mismatching) between the different categories of persons: the poor, identified by statistics according to the different official criteria, and RdC beneficiaries.

The analysis of the available databases, suitably homogenised, based on the cross-referencing of potential and actual beneficiaries, will constitute an attempt - in collaboration with IRPET - to investigate into the causes for non-take up of some social benefits. The analysis will firstly focus on the RdC, because of the availability of administrative data of beneficiaries (source: INPS and Tuscany Region). These data will be cross-referenced with data of potential beneficiaries, available from other sources (e.g. EUSILC - EU statistics on income and living conditions), with the aim of estimating the size and possible heterogeneity of the take up among individuals and households.

As far as schools are concerned, a dedicated analysis goes over the current system of allocation of funding between schools and assesses potential reform opportunities. An original database which combines financial and structural information on Italian schools, from nursery to upper secondary schools, will be used to empirically measure the impact of the main factors standing at the base of the allocation formula currently used on the funds allocated to individual schools. It will also be used to calculate the redistributive effects between regions (and provinces) and the effects on public finance equilibrium of potential reforms aimed at promoting greater equity and effectiveness in school service provision, such as increasing full-time classes and downsizing staff recruited on fixed-term contracts.

With regard to public employment, a study will be completed in cooperation with REF.Ricerche on the provincial distribution of public employees. The study will mainly focus on geographical disparities and sectoral similarities.

An additional study will investigate into the distributional aspects of possible revision of property revenues. This will require modelling the deviation between property revenues and the Real Estate Market Observatory's values based upon tangible characteristics of properties and owners.

Public finance in the short and medium to long term

In this regard, the measures adopted to assess fiscal impulse and fiscal stance will be analysed. The indicator most commonly used at the institutional level (European Commission, IMF, European Central Bank) to measure fiscal impulse is the change in the structural or cyclically-adjusted balance. The fiscal stance is often defined as the cumulative fiscal impulse over several years. The analysis will review the advantages and disadvantages of these definitions by also comparing them with some alternatives. For instance, for the fiscal impulse, the growth of primary expenditure net of the cycle and discretionary revenue will be assessed in relation to the different benchmarks such as average potential GDP growth and population growth. Moreover, an analysis of discretionary fiscal policy measures found in scientific studies during the *post* financial crisis years will be conducted to assess their possible use as a potential alternative to fiscal impulse.

The evolution of macroeconomic and demographic variables represents another factor influencing the sustainability of public accounts in the medium and long term. It is particularly relevant to assess the impact of the progressive ageing of the population on public accounts. The analysis will focus on the comparison - both inter-temporal (between projections made in different years) and inter-institutional (between projections made in the same year by the two different institutions) - of the medium- to long-term projections of age-related expenditure and on the analysis of the sensitivity of the projections to different macroeconomic and demographic scenarios. The medium- to long-term projections of age-related expenditures will then be used to develop medium- and long-term public accounts sustainability indicators. The main methodological reference for developing these indicators is the European Commission's '*Debt Sustainability Monitor'*, which uses techniques in line with the literature on fiscal solvency and intertemporal budget constraints.

Other topics

In the past, the PBO collaborated with ISTAT to develop a credit rationing indicator for the Italian economy, developed on the basis of surveys on manufacturing business confidence. The methodology of the indicator has already been published (https://doi.org/10.1007/s10479-019-03238-7) and discussed in some external conferences. A version of the indicator that does not require the use of micro-data on enterprises can be used for periodic economic analyses on the credit sector.

The indicator used for the Italian manufacturing developed by the Office in 2018 will be extended to incorporate more recent methodological advances related to both the extraction of the cyclical component of non-seasonally adjusted series and econometric

models used to forecast time series in order to integrate the indicators in the PBO's *Report on recent economic developments.*

2.   Transparency of public accounts and communication

In 2021, the PBO significantly improved its ability to communicate with the media. An indicator of a stronger communication of the Office's activities can be found in the number of PBO appearances in newspapers (765), web pages (601) and radio-TV shows (221) in 2021 alone (in 2017, the PBO appeared 334 times in newspapers and 175 times on web pages). The objective of strengthening the information capacity to serve the public audience by fostering greater transparency in public accounts remains a staple. In this regard, the PBO's institutional website was visited approximately 160,000 times (around 800 times per working day) in 2021, i.e. around 100,000 times more compared to 2020.

The section of the PBO website concerning the dissemination of data and analyses through interactive views was improved by updating some existing sections. The sections concerning some of the topics addressed in recent PBO publications were also updated, thus allowing the public easy consultation of the information base used for the analyses. In particular, the infographics published concerned: the comparison between the Stability Programmes, the Budgetary Panning Documents and the European Commission's forecasts; and the government bond database (which provides a detailed analysis of the composition of debt). Infographics were used to quickly and simply disclose the main results of some analyses conducted during 2021 and early 2022.

3.   The organisational structure

The Office still employs twenty-four resources (nineteen economists and five administrative employees) against the forty resources required by its founding law. This reduced workforce is mainly ascribable to the difficult identification of a suitable seat for the Office. Article 17, paragraph 6 of Law No. 243 of 24 December 2012, which established the Parliamentary Budget Office, stipulates that *"The Presidents of the Senate and the Chamber of Deputies shall concur on making available premises to be used as the seat of the Office along with the necessary equipment".* The Office is currently partly hosted by the Chamber of Deputies (at Palazzo San Macuto) and partly by the Senate of the Republic (at Istituto S. Maria in Aquiro), but no solutions have been defined to provide the Office with additional space. The lack of a single seat, suitable to accommodate the forty staff units provided for by the founding law, reduces the full functionality of the Office, hinders the possibility of efficiently fulfilling its institutional mandate, and also reduces the possibility of analysing factors that are becoming fundamental in the evolution of public finance. To name but a few, the energy transition, challenges in the global economy, climate change, demographic trends and economic and social sustainability. The current

logistical inadequacy of the seat leads to organisational issues related to its location in two separate buildings and the lack of common spaces for meetings and external activities. Such inadequacy has also prevented the activation of extracurricular traineeships through special agreements with universities, as provided for in previous work programmes for specific research projects.

For 2022, the PBO wishes to launch recruitment procedures with the aim of filling gaps in the services of sectoral analysis, public finance and macroeconomic analysis, and to hand over, at the end of the Board term of office, an organisational structure similar to and more in line with the one indicated by the founding law.

4. International Activities

Still in 2022, the PBO's international activities will play a central role in its institutional action: aside from bilateral meetings with public and private actors operating at supranational level (European Commission, IMF, ECB, OECD, economic counsellors of embassies in Italy, rating agencies), it is worth reminding that the PBO is a member of the OECD *Working Party of Parliamentary Budget Offices and Independent Fiscal Institutions* (IFIs), the European Commission's EUNIFI working group and the EU's IFIs Network, i.e. the network established among the EU national fiscal councils.

In the context of this Network*,* it is also worth mentioning that the PBO is a member of the Editorial Board of the *European Fiscal Monitor* and of the Working Group on Institutional Aspects for More Effective IFIs. During 2021, the PBO also contributed to the preparation of several Network papers on different topics such as the reform of EU fiscal governance, including a greater role for IFIs, and the assumption of scenarios for *post-*COVID public debt in the EU.

The PBO was also involved by the OECD as a stakeholder in two projects that this institution is carrying out on behalf of the MEF concerning the introduction of BES and the spending review process in budgetary procedures.

5. Future outlooks

Some new lines of research mentioned in this paper, such as social and environmental sustainability, the impact of global changes in the fields of energy, environment, climate and demography will be more deeply structured in future programmes. Likewise, further research strands will be developed to combine economic and public finance outlooks and the mechanisms of interdependence between countries and markets in the global economy.

To this end, it will be fundamental to improve databases and analysis tools, by integrating the international sphere and micro- and macroeconomic approaches, as well as to acquire new skills through the recruitment of industry experts.