

EUROMOD NEWS

The tax-benefit microsimulation model for the European Union

EUROMOD is a tax-benefit microsimulation model for the European Union (EU) that enables researchers and policy analysts to calculate, in a comparable manner, the effects of taxes and benefits on household incomes and work incentives for the population of each country and for the EU as a whole.

As well as calculating the effects of actual policies it is also used to evaluate the effects of tax-benefit policy reforms and other changes on poverty, inequality, incentives and government budgets.

EUROMOD is a unique resource for cross-national research, designed to produce results that are comparable across countries and meaningful when aggregated to the EU level.

EUROMOD is managed, maintained, developed and updated by a team of researchers in ISER. ● This is done in collaboration with national experts. ●

The current version of EUROMOD represents the accumulation of technical developments and expertise over a number years and involving a large team of people. For more information on the design and development of EUROMOD click here. ●

www.iser.essex.ac.uk/euromod



Winter School on Cross Country Microsimulation held at ISER

The second Winter School on Cross Country Microsimulation using EUROMOD was held on 18-20 February 2015 at the Institute for Social and Economic Research (ISER), University of Essex

We welcomed 25 participants from a variety of institutions, including the OECD, ministries, universities, research centres and policy institutes.

Silvia Avram, a member of the EUROMOD team led the event with the support of colleagues Chrysa Leventi, Iva Tasseva and Alberto Tumino. The course covered the basics of tax-benefit microsimulation, the logic and structure of EUROMOD, its user interface, input data and special programming language.

Apart from lectures and live demonstrations of the model, participants also had the opportunity to carry out a number of hands-on exercises in order to apply their acquired skills and get a better understanding of the model.

The exercises involved the implementation of several tax and benefit reforms, policy swaps between countries and subsequent analysis of the distributional impact of these hypothetical changes.

The Winter School is part of the policy pillar of the InGRID project, which integrates and innovates existing, but distributed, European social sciences research infrastructures on 'poverty and living conditions' and 'working conditions and vulnerability' by providing transnational data access, organising mutual knowledge exchange activities and improving methods and tools for comparative research. Further information on the InGRID project can be found ● [here](#).



Research using EUROMOD: the Coalition's cash transfers, poverty and inequality record

New research by John Hills from the London School of Economics, using EUROMOD, shows how the Coalition's benefit and direct tax policies affected the distribution of incomes in the UK since 2010

The analysis draws on Paola De Agostini, John Hills and Holly Sutherland's research which suggests that changes to direct taxes, tax credits and benefits from May 2010 to 2014/15 were together fiscally neutral, rather than contributing to deficit reduction.

They were also mainly regressive: tax credit and benefit cuts took more away from those in the bottom half of the income distribution than they gained through higher income tax allowances. These studies found that:

- Longer-term plans to continue linking working-age benefits to price inflation (or less) while pensions increase faster will further tilt policy in favour of pensioners. They will also extend the generally regressive effect of policy, except that Universal Credit may deliver more money to some poorer households, if it is claimed by some who do not claim all of the benefits it replaces.
- Child and working age poverty are projected to be higher in 2014/15 than in 2012/13, with further increases forecast to 2020/21. Deeper cuts to non-pensioner benefits and tax credits after the 2015



John Hills

election would increase poverty, but the official target of eradicating child poverty by 2020, endorsed by the Coalition and Labour, already appears beyond reach.

John Hills' paper *The Coalition's Record on Cash Transfers, Poverty and Inequality 2010-2015* was prepared as part of CASE's Social Policy in a Cold Climate programme and is available to download from the LSE website [here](#). ●

Like to learn how to use EUROMOD?

The next training course for a hands-on introduction to EUROMOD will be held at ISER on 13-15 July 2015.

The aim is to introduce academics, policy practitioners and other interested users to the concepts, structure and functioning of EUROMOD, the state-of-the art tax-benefit microsimulation model linking micro-data from household surveys and policy legislation in a single user interface. It allows for complex policy impact analysis, such as evaluations of policy reforms in terms of poverty, inequality, work incentives and government budgets, assessments of EU-wide policies or estimation of the impact of changing population characteristics on the redistributive effect of existing policies. EUROMOD has now expanded to cover all 27 pre-2013 EU Member States.

The course will cover the basics of tax-benefit micro-simulation, the logic and structure behind EUROMOD, working with EUROMOD's user interface, input data, EUROMOD 'language' and using existing documentation. The course combines lectures with live demonstrations of the model. Participants also have the opportunity to carry out a number of hands-on exercises to test and refine their understanding of the model.

If you are interested in attending or would like more information, please apply [here](#) ● by 1 May 2015.

Conference presentations

Some EUROMOD-related research presented at recent conferences

Chrysa Leventi presented 'The Social Consequences of the Crisis in Europe: Poverty and Social Exclusion' at the Second Annual Conference of the Crisis Observatory, 16 December 2014, Athens, Greece ●

Iva Tasseva presented 'Naughty noughties in the UK: Decomposing income changes in the 2000s' at the Tenth Winter School on Inequality and Social Welfare Theory, January 12-15, 2015, Alba di Canazei, Italy ●

Projects using EUROMOD

Including indirect taxes in EUROMOD

This time we highlight a pair of research projects that are aiming to extend the policy scope of EUROMOD to include indirect taxes, financed by the European Commission Joint Research Centre (Institute for Prospective Technological Studies).

This will allow a more comprehensive assessment of the effects of policy changes on households than is currently possible with EUROMOD; it will enable analysis of the effects of shifting taxes away from labour; and offers the potential for tax system 'greening' assessments.

The two projects are designed to pilot a method already developed by the EUROMOD Belgian team from KU Leuven to cover four new

countries. This involves imputing expenditure information from Household Budget Survey microdata into the EU-SILC microdata used by EUROMOD. One, led by ISER, is focussing on Italy and Spain and involves the EUROMOD Italian team (Francesco Figari, Carlo Fiorio and Chiara Gigliarano) and Olga Cantó Sánchez of the University of Alcalá. The other, conducted by KU Leuven, is focussing on France and Germany. We hope that the two studies will provide a sound basis for extending indirect tax simulation in EUROMOD to more, and eventually all, the EU member states.

See [here](#) ● for a paper describing the method, as applied to Belgium for VAT.

Meet the EUROMOD national teams: the Belgian team

In this edition, we introduce you to the seven members of the Belgian team

André Decoster is full-time professor at the Faculty of Economics of KU Leuven. His research interests all belong to what can be broadly defined as 'applied welfare analysis': assessment of the impact of tax reforms, analysing changes in inequality and/or poverty, investigating the sensitivity of the assessment to the concepts used and estimation of behavioural models, especially to model labour supply behaviour. Most research is based on the empirical analysis of micro data: household budget surveys, household income surveys, and administrative data. This expertise is used in the EUROMOD consortium.

Kevin Spiritus is a PhD student at the KU Leuven and was co-responsible for the development of the MEFISTO model. He also developed the indirect tax simulator SInTax (Simulation of INdirect Taxes), which estimates Engel curves on local household budget surveys, imputes expenditures into the EU-SILC survey and simulates changes in tax liabilities in counterfactual VAT and excise tax systems. The model can be integrated into EUROMOD, and as such it has been integrated into the online MEFISTO model. The model can easily be extend to different countries, as was done for Germany by Richard Ochmann.

Toon Vanheukelom is a PhD student at the KU Leuven. He was co-responsible for the development of MEFISTO and later for the project Rekening 14, which evaluated the election proposals of Flemish parties. He now primarily works on labour supply models.

Gerlinde Verbist is senior researcher at the Centre for Social Policy Herman Deleeck (UAntwerpen). Her research work includes various European projects that use EUROMOD, such as the FP7 projects InGRID (Inclusive Growth Research Infrastructure Diffusion) and ImPROvE (Poverty Reduction in Europe: Social policy and innovation) as well as the HESTIA project in which EUROMOD was used to simulate alternative forms of housing taxation in eight EU countries. EUROMOD is also used for Belgian projects, such as research for the Minister of Finance to explore pathways for a tax reform in Belgium and research for the Flemish Government to investigate different ways of improving income targeting in the child benefit system.

Dieter Vandelannoote is a PhD Student at the Centre for Social Policy Herman Deleeck (UAntwerpen). Together with his Antwerp colleagues, he helped develop MOTYFF as part of the FLEMOSI project.

At the moment, he is mainly working on discrete labour supply models.

Tine Hufkens (UAntwerpen) is co-responsible for the EUROMOD Country Report. She helped develop MOTYFF as part of the FLEMOSI project. At present she works on childcare in the ImPROvE project. More specifically to refine childcare policies in EUROMOD for empirical analyses. For the InGRID project, the Antwerp team is working together with the EUROMOD team in Essex to develop a Hypothetical Household Tool in EUROMOD. With this tool it will be possible for EUROMOD users to do model family simulations using EUROMOD.

Josefine Vanhille is a PhD student at the Centre for Social Policy Herman Deleeck (UAntwerpen), and has worked with Euromod for a number of years. Currently her work focusses on the reconciliation of social and ecological objectives in the transition towards a low-carbon



André Decoster



Kevin Spiritus



Toon Vanheukelom



Gerlinde Verbist



Dieter Vandelannoote



Tine Hufkens

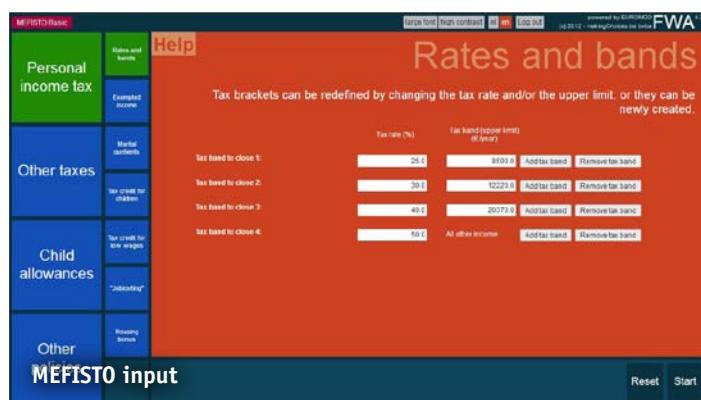


Josefine Vanhille

"The teams of Antwerp and Leuven have been involved in microsimulation modelling since the early 90s: in Antwerp the tax-benefit model MISIM was developed, while in Leuven ASTER was created..."

society; this will entail innovative microsimulation work, using new data and extending the policy scope of the simulation model.

A bit of history The teams of Antwerp and Leuven have been involved in microsimulation modelling since the early nineties: in Antwerp the tax-benefit model MISIM was developed, while in Leuven ASTER was created to simulate indirect taxes for Belgium. Through this work André Decoster and Gerlinde Verbist got into contact with Holly Sutherland. In 2003 Gerlinde went on a research visit to Cambridge for three months in order to work with EUROMOD (output ● EM WP5/04 and ● EM WP2/05) (at that time EUROMOD was based in the town at the river Cam). The formal collaboration started in early 2006, when both André and Gerlinde joined



the European project AIM-AP (Accurate Income Measurement for the Assessment of Public Policies, FP6), coordinated by Holly.

Gradually Antwerp and Leuven became the national teams for EUROMOD (which was initially in the hands of Danielle Meulders at Université Libre de Bruxelles). Kristian Orsini, who first worked at ULB, switched to KU Leuven to work with André on labour supply models using EUROMOD. Since then many more researchers have worked and helped further develop EUROMOD for Belgium. Today the focal points for EUROMOD in Belgium are Gerlinde, Dieter, Tine and Josefine in Antwerp, and André, Kevin and Toon in Leuven.

Highlights of recent research At the end of December 2013 the FLEMOSI project ended. In this project Antwerp and Leuven, together with researchers from the Vrije Universiteit Brussel, the Université de Liège and the University of Essex, conducted policy-oriented research in various fields, like personal income taxation, housing, childcare, social assistance, to name just a few.

Probably more important in terms of policy impact was the development of two spin-off microsimulation models, using EUROMOD as their engine. Antwerp developed MOTYFF, (MOdelling TTypical Families in Flanders), a microsimulation model that simulates the income effects from changes within the family and from changes in policy, for a hypothetical household. Meanwhile Leuven created MEFISTO, (Modelling and Evaluating Flanders' FIscal and Social Tomorrow), which uses the Belgian SILC and automatically generates a wide range of standard output measures for winners and losers, changes in equality and changes in poverty, and produces budgetary estimates too. The two models were developed for research purposes as well as policy advice. That is why the models are also made available online, free of charge. You can try the models for yourself [here](#).

Both Leuven and Antwerp have invested greatly in getting the models known outside of academia by demonstrating them to policy makers and experts, and through short policy briefs on topics that were being debated at the time. In the run-up to the general 2014 elections, André Decoster was then asked by Flemish media whether he could conduct a

large *ex ante* evaluation of the policies that were proposed by the political parties. They soon reached an agreement and the project was dubbed Rekening 14 (freely translated as 'Account 14'), MEFISTO would form the backbone of the analysis. Since the exercise was the first of its kind in Flanders (and Belgium), we took the *ex ante* evaluation of the UK's election proposals by the Institute of Fiscal Studies as our main example of what could and could not be simulated using microsimulation models, and which effects had to be included. All political parties agreed to work together with the initiative and to share details on their proposals to change – among other things – the personal income tax and child benefits. The results of Rekening 14 were widely cited and the project as such was by and large well-received. Moreover it has contributed to the Federal Parliament adopting a new law making it a formal task of the Federal Planning Bureau for the next elections to conduct an *ex ante* evaluation of all proposals, much like the Dutch example Keuzes in Kaart (translated as 'Mapping choices') by the Central Planning Bureau.

More recently the Antwerp team was also involved in a think tank of the Belgian Minister of Finance to explore the possibilities for a large-scale tax reform. Distributive and budgetary implications of possible alternatives were estimated using EUROMOD. EUROMOD is also being used to explore alternative scenarios in the domain of child benefits for Flemish policy makers. Competence of child benefits has recently been devolved from the federal level to the Communities, which initiated among Flemish policy makers the intention to reform the system, especially in the direction of introducing more income selectivity. Our simulations with EUROMOD help to explore the possibilities in terms of poverty and budgetary outcomes.

Meanwhile we are happy to see that the online versions of MOTYFF and MEFISTO keep playing their role as policy makers and CSO experts frequently consult the on-line tools. We also applaud that others have joined the effort in making the vast possibilities of microsimulation more accessible for the broader public, as recently our Austrian colleagues created their online model SORESI (see previous EUROMOD News here [here](#)). Hopefully others will follow suit.

Working papers

● Interactions between policy effects, population characteristics and the tax-benefit system: An illustration using child poverty and child related policies in Romania and the Czech Republic EUROMOD Working Paper Series: EM4/15

Authors ● Silvia Avram
● Eva Militaru

Publication date 4 March 2015

Abstract We investigate the impact of the Romanian and Czech family policy systems on the income distribution and poverty risk of families with children. We focus on separating out the effects of the policy design itself, size of the benefits and the interaction between policies and population characteristics. We find that interactions between population characteristics, the wider tax benefit system and child related policies are pervasive and large. Both population characteristics and the wider tax-benefit environment can dramatically alter the antipoverty effect of a given set of policies.

● Credit crunched: Single parents, universal credit and the struggle to make work pay EUROMOD Working Paper Series EM3/15

Authors ● Mike Brewer
● Paola De Agostini

Publication date 24 February 2015

Abstract This paper examines the likely impact of Universal Credit on the incomes and work incentives of single parent families. Using the UK module of EUROMOD (version F6.20), we also simulate how single parents' household income, and their work incentives, would change following adjustments to the universal credit structure. We examine four main alternative scenarios: 1) reducing the overall universal credit taper rate from 65% to 55%; 2) increasing the basic (standard) allowances in universal credit for single parents; 3) increasing the earnings disregard in universal credit for single parents; and 4) increasing the income tax threshold for the basic tax rate. We also examine the impact on single parents of an increase in the minimum wage. Finally, we examine the impact on the Exchequer of a five percentage point increase in the single parent employment rate, in terms of benefits saved and taxes paid.

● The National Minimum Wage and its interaction with the tax and benefits system: a focus on Universal Credit EUROMOD Working Paper Series EM2/15

Authors ● Mike Brewer
● Paola De Agostini

Publication date 24 February 2015

Abstract This paper uses the UK module

of EUROMOD to examine the likely impact of Universal Credit on the incomes and work incentives of families containing NMW workers ('NMW families'). It in part updates previous work done for the Low Pay Commission (Brewer, May and Phillips, 2009). The analysis was completed after the 2012 Autumn Statement, but before the Spring 2013 Budget, and so does not reflect any changes to personal taxes and benefits for 2014-15 announced then.

● Tax and transfer policies and female labor supply in the EU EUROMOD Working Paper Series EM1/15

Author ● Klára Kalíšková

Publication date 26 January 2015

Abstract This study contributes to the female labour supply responsiveness literature by measuring the effect of tax-benefit policies on female labour supply based on a broad sample of 26 European countries in 2005-2010. The tax-benefit microsimulation model EUROMOD is used to calculate a measure of work incentives at the extensive margin—the participation tax rate, which is then used as the main explanatory variable in a female employment equation. This allows me to deal with the endogeneity of income in a new way by using a simulated instrumental variable based on a fixed EU-wide sample of women. Results suggest that a 10 percentage point increase in the participation tax rate decreases the female employment probability by two percentage points. The effect is higher for single mothers, for women in the middle of the skills distribution, and in countries that have lower rates of female employment.

● Shifting taxes from labour to property. A simulation under labour market equilibrium EUROMOD Working Paper Series EM20/14

Authors ● Flavia Coda Moscarola
● Ugo Colombino
● Francesco Figari
● Marilena Locatelli

Publication date 23 December 2014

Abstract A tax shifting from labour income to housing taxation is generally advocated on efficiency grounds. However, most of the empirical literature focuses on the distributional implications of property tax reforms without paying much attention to potential consequences on the labour market. The aim of this paper is to fill this gap by investigating the effects of a tax shifting from labour income to property, guaranteeing revenue neutrality, and to assess the consequences of labour market equilibrium, both on occupation rates and income distribution. We propose to consider

a hypothetical tax reform in Italy which uses the revenue of the tax on house property (actually implemented in 2012) for increasing tax credits on low incomes and making them refundable. In order to evaluate the reform we have developed a structural model of household labour supply which takes into account the labour market equilibrium conditions. Overall, the simulated policy provides a more effective income support and better incentives to work for low wage households and determines an improvement in inequality indexes.

● Income taxation and equity: new dominance criteria and an application to Romania EUROMOD Working Paper Series EM19/14

Authors ● Paolo Brunori
● Flaviana Palmisano
● Vito Peragine

Publication date 1 December 2014

Abstract This paper addresses the problem of the normative evaluation of income tax systems and income tax reforms. While most of the existing criteria, framed in the utilitarian tradition, are uniquely based on information about individual incomes, this paper, building upon the opportunity egalitarian theory, proposes new equity criteria which take into account also the socio-economic characteristics of individuals. Suitable dominance conditions that can be used to rank alternative tax systems are derived by means of an axiomatic approach. Moreover, the theoretical results are used to assess the redistributive effects of an hypothetical tax reform in Romania through a microsimulation analysis.

Where they turned up

A selection of newly-published journal articles using EUROMOD

Figari, F. (2015) From Housewives to Independent Earners: How the Tax System Can Help Women to Work in a Context of Strong Familialism, *Journal of Social Policy* 44(1), 63-82.

Avram S., H. Levy and H. Sutherland (2014) Income redistribution in the European Union", *IZA Journal of European Labor Studies*, 3:22.

Let us know of your journal publications using EUROMOD, and don't forget to submit your articles to the EUROMOD working paper series!

EUROMOD analysis widely cited in two recently-published handbooks

Two handbooks both published over the last couple of months draw heavily on EUROMOD's microsimulation and policy analysis and include contributions from EUROMOD staff

Fifteen years after the publication of the *Handbook of Income Distribution*, Antony B. Atkinson and François Bourguignon have edited a new volume of the handbook (published by North-Holland) to cover the advances made since 2000 in the understanding of the extent, causes and consequences of inequality.

More than 2,200 pages over 24 chapters examine the concepts and approaches to economic inequality measurement, the care needed with data on inequality, the explanations of changes in various dimensions of economic inequality, most notably the distribution of income, earning and wealth, and the policies available to influence those changes or to correct those distributions.

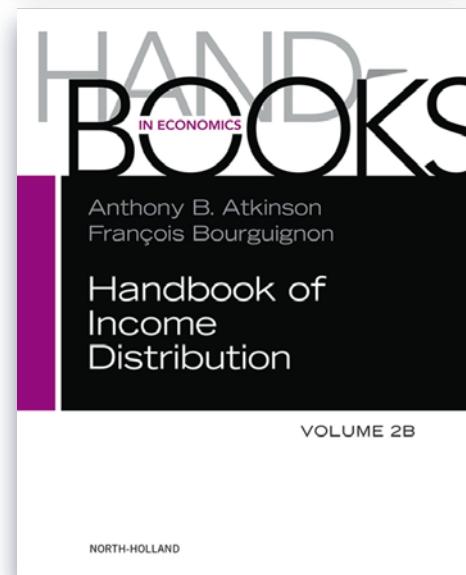
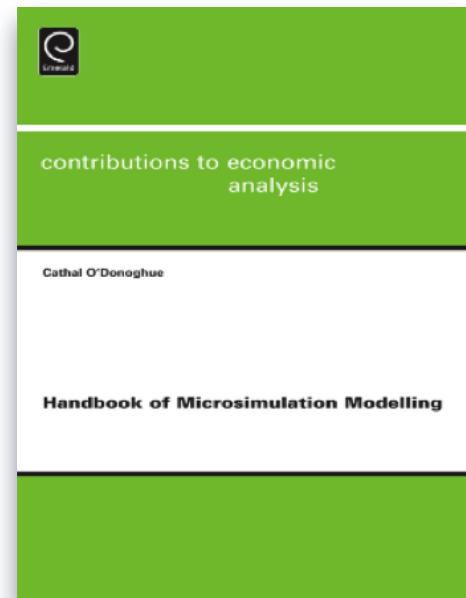
The role of policy is considered in many of the chapters, one of them explicitly devoted to Microsimulation and Policy Analysis by Francesco Figari, Alari Paulus and Holly Sutherland. The chapter provides an overview of microsimulation approaches for assessing the effects of policy on income distribution, focusing on the role of tax-benefit policies and reviewing the concept of microsimulation and how it contributes to the analysis of income distribution in general and policy evaluation in particular.

Throughout the chapter, the authors provide empirical illustrations drawing mainly on analysis using EUROMOD, to consider the main challenges and limitations of microsimulation and to discuss directions for future developments.

The Handbook of Microsimulation Modelling, edited by Cathal O'Donoghue and published by Emerald in two volumes,

provides an overview of the most important developments in the microsimulation techniques over the past 20 years and describes the current best practices in the field. The 17 chapters included in the Handbook build upon the different dimensions that microsimulation tools attempt to model. Some of the chapters are naturally closer to the direct interests of EUROMOD users than others, such as those on static models (Li, O'Donoghue, Loughrey and Harding), multi-country microsimulation (Sutherland), decomposing changes in income distribution (Bargain), labour supply models (Aaberge and Colombino), consumption and indirect taxes (Capéau, Decoster and Phillips), presenting applications, methodologies and potential future research directions.

In the chapter on multi-country microsimulation, Holly Sutherland considers the development, methodological challenges and uses of cross-country microsimulation models and highlights their potential advantages. Considering several countries within the same framework provides a 'laboratory' in which the analysis of the effects of similar policies in different contexts or different policies with common objectives is made possible. Many empirical illustrations drawn from studies using EUROMOD conclude the chapter with a forward-looking perspective: further enhancing flexibility, transparency and comparability while also facilitating linkages in a number of directions (such as labour supply models, micro-macro models or dynamic models), extending the policy scope and enlarging the geographical coverage.



Call for abstracts for the 5th World Congress of the IMA

LISER (formerly CEPS/INSTEAD) will be hosting the 5th World Congress of the International Microsimulation Association (IMA). The meeting will be held in Esch-sur-Alzette, Grand-Duchy of Luxembourg, on 2-4 September 2015.

The Congress is of interest to creators and users of microsimulation models in international organisations, academia, and also to governments/administrations and the private sector. Keynote speakers will include Theo Arentze (Eindhoven University of Technology), Olivier Bargain (Aix-Marseille School of Economics and IZA), Elsa Fornero

(University of Turin, former Minister of Labor, Social Policies and Equal Opportunities in Italy) and Luc Savard (University of Sherbrooke).

A panel of invited experts will also reflect on the importance of ensuring effective interactions between microsimulation modellers and policy makers at national and international levels and to underline strengths and weaknesses of microsimulation models in the policy assessment process from the standpoint of policy makers.

Participants are invited to register and submit their abstracts here. ● Conference registration will open by mid-April 2015.

EUROMOD: introducing the team

In this edition of EUROMOD NEWS, Kostas Manios, Euromod Software Developer, describes his work

What is your background? I was born in Leicester, UK by Greek parents and moved to Greece at a very young age. I returned to the UK for my studies and obtained a graduate degree in Computer Science as well as an MSc by Research in Natural Language Processing from the University of Salford. I then moved back to Greece where I worked as an IT Administrator, Software Developer and Project Manager for eight years. Finally I returned to the UK and joined the EUROMOD team in December 2013.

What made you apply for this post?

Having worked both in the non-academic and academic sectors in the past, I feel I am more suited to the latter, as it provides a more challenging environment open to creative ideas. This specific post required the use of some of the programming tools and technologies that I enjoy working with the most. Furthermore, the job actually required the management of diverse smaller tasks (as opposed to a single-task routine job) which I know would keep me interested and engaged.

What are your main responsibilities? My main task is to contribute to the development of the EUROMOD application, both in developing new features as well as resolving



“...the thing I enjoy the most is the nature of the job, which is constantly challenging me to think out of the box and come up with original solutions to a wide range of practical problems, using different technologies and programming languages for each task... to develop tools that, if used by the right people, can potentially have a positive impact on the lives of many...”

any existing issues. I introduced the concept of EUROMOD plugins and developed several, both private and public, which automate specific tasks for developers and enhance the functionality of the software (e.g. the

Summary Statistics plugin which will soon also include graphs).

What are you working on at the moment?

I am currently working on a Hypothetical Household plugin that will allow EUROMOD users to generate their own test data to use with the various country models. I am also developing the ‘Policy Changes’ tool that will automate the comparison of different policy systems and display a large set of distributional and fiscal estimates. Finally I am also working on the development of a major upcoming EUROMOD feature, known as the ‘Version Control’ system, which will allow for much better collaboration between EUROMOD users.

What do you enjoy most about working with EUROMOD? The thing I enjoy the most is the nature of the job, which is constantly challenging me to think out of the box and come up with original solutions to a wide range of practical problems, using different technologies and programming languages for each task. Furthermore, I really enjoy being part of an amazing team, where every person comes from a different background blending their own strengths into a greater whole. Last but not least, it is quite fulfilling to develop tools that, if used by the right people, can potentially have a positive impact on the lives of many.

Would you like to share any recent highlights? My most recent highlight would be my trip to Vienna last month, where I finally got the chance to meet in person with Christine Lietz, the main EUROMOD developer, who took an idea some years ago and turned it into the application it is today. During this meeting I got the chance to learn a lot more about the inner workings of the application, but also to make important plans for future development.



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