



INTERNATIONAL CONFERENCE

THE SOCIO-ECONOMIC IMPACT OF TECHNOLOGICAL CHANGE

Theory, empirics and policies

29-30 November 2018

National Institute for Public Policy Analysis – INAPP

Auditorium, Corso d'Italia 34, Rome

Outline

The international conference ‘THE SOCIO-ECONOMIC IMPACT OF TECHNOLOGICAL CHANGE. Theory, empirics and policies’ aims at gathering together high-level scholars and policy makers to discuss the current transformation affecting the labor market. The focus is on the *socioeconomic impact of technological change*, namely on employment dynamics and structure as well as on income distribution, preferences for redistribution and social policy and politics.

DAY ONE

10.00-10.30 *Welcome coffee*

10.30-11.00

Welcome and introduction to the Conference - Stefano Sacchi, President (*INAPP*)

11.00-13.00

Session 1 – Work in the digital age: challenges of the fourth industrial revolution

Discussion around the volume edited by Max Neufeind (Das Progressive Zentrum), Jacqueline O'Reilly (University of Sussex) and Florian Ranft (Policy Network)

Chair: **Paolo Reboani** (*Ministry of Labour and Social Policies, Italy*)

Carlotta De Franceschi (*Action Institute*)

Max Neufeind (*Das Progressive Zentrum*)

Sean O'Riain (*Maynooth University*)

Georgios Petropoulos (*Bruegel*)

Florian Ranft (*Policy Network*)

13.00-14.00 *Lunch break*

14.00 – 17.30

Session 2 – The socioeconomic impact of technological change

Chair: **Dario Guarascio** (*INAPP*)

Marius Busemeyer (*Konstanz University*)

Digitalisation, automation and the future of the Social Investment Welfare State

Aina Gallego (*Institut Barcelona d'Estudis Internacionals*)

Not so disruptive after all: how workplace digitalization affects political preferences

Zachary Parolin (*Antwerp University*)

Automation and occupational wage trends: what role for unions and collective bargaining

Stefano Sacchi (*INAPP*)

Risks of technological unemployment and support for redistributive policies

Q&A and discussion

DAY TWO

10.00-10.30 *Welcome coffee*

10.30-13.00

Session 1 – Technology, employment and distribution: theoretical approaches, empirical evidence and open questions

Chair: **Stefano Sacchi** (*President, INAPP*)

Alan Manning (*London School of Economics*)

Robot arithmetic: new technology and labour markets

Enrique Fernandez Macias (*Joint Research Center, Seville*)

Artificial intelligence and the automation of human labor

Mario Pianta (*Scuola Normale Superiore*)

Technological unemployment, skills and wages

Marco Vivarelli (*Catholic University of Sacred Heart, Milan*)

The impact of corporate R&D and embodied technological change on employment

Christian Vom Lehn (*Brigham Young University, Utah*)

How has recent technology changed the labor market? A quantitative macroeconomic perspective

Q&A and discussion

13.00-14.00 *Lunch break*

14:00-18:30

Session 2 – Technological change, employment and wages: models and evidence

Part 1

Chair: **Andrea Ricci** (*INAPP*)

Dario Guarascio (*INAPP*)

*Does routinization affect occupation dynamics? Evidence from the 'Italian O*Net' data*

Luca Marcolin (*OECD*)

Which skills for the digital era?

Giulio Perani, Fabio Rapiti and Stefano De Santis (*ISTAT*)



Technology-related investments and employment composition. Evidence from the Italian business sector, 2011-2016

Ulrich Zierahn (*ZEW, Mannheim*)

Racing with or against the machine? Evidence from Europe

Discussant: Michele Raitano (*Sapienza University of Rome*)

Coffee break

Part 2

Chair: **Dario Guarascio** (*INAPP*)

Martina Bisello (*Eurofound*)

A framework for measuring tasks across occupations: concepts and applications

Armanda Cetrulo (*Sant'Anna School of Advanced Studies*)

Looking beyond tasks and routine: the role of organization and knowledge

Emanuela Ciapanna (*Bank of Italy*)

Broadband adoption, productivity dynamics and labour demand: is there a skill bias in Italy?

Ekkehard Ernst (*International Labor Organization*)

Human vs machine intelligence: Complements not substitutes

Discussant: Paolo Naticchioni (*INPS*)

Speakers short bios

Martina Bisello is a Research Officer in the Employment unit at Eurofound. Her research interests include: structural changes in the labour market, the effects of technological change on the economy and gender gaps. Currently, she is also involved in the analysis of socio-economic convergence among Member States and regions of the European Union. Prior to joining Eurofound in 2014, she was visiting researcher at the Centre for Market and Public Organisation at the University of Bristol and at the Institute for Social and Economic Research at the University of Essex.

Marius R. Busemeyer is a Full Professor of Political Science at the University of Konstanz, Germany, and Speaker of the Cluster of Excellence "The Politics of Inequality". His research focuses on comparative political economy and welfare state research, education and social policy, public spending, theories of institutional change and, more recently, public opinion on the welfare state. Busemeyer studied political science, economics, public administration and public law at University of Heidelberg and the Harvard Kennedy School of Government and holds a doctorate in political science from the University of Heidelberg. His publications include the book *Skills and Inequality* (Cambridge University Press, Winner of the 2015 Stein Rokkan Prize for Comparative Social Science Research), an edited volume (with Christine Trampusch) on *The Political Economy of Collective Skill Formation* (Oxford University Press), a recently edited special issue of the *Socio-Economic Review* on *The political economy of skills and inequality* (with Torben Iversen) and a large number of journal articles in leading outlets of the discipline.

Armanda Cetrulo is PhD candidate in economics at the Scuola Superiore Sant'Anna. She is interested in innovation, labour economics and industrial relations. Within her PhD project, she is exploring the role of organizational innovation and organizational capabilities in explaining employment and wage dynamics.

Emanuela Ciapanna is Senior Economist at Bank of Italy, Research Department-Structural Economic Division, since 2006. She holds a PhD in economics from the Boston University. Her recent working papers include "Regulation and Investment in the broadband networks: a model of strategic interaction in the EU" (in progress), "Productivity growth in Italy: a tale of a slow-motion change", "Sectoral differences in managers' compensation: insights from a matching model", 2016 (with M. Taboga and E. Viviano), "Retail market structure and consumer prices in the euro area" 2014 (with C. Rondinelli). Emanuela's works appeared in international journals as the RAND journal.

Carlotta De Franceschi co-founded Action Institute in 2012 and has served as its president ever since. She was senior economic adviser on banking and finance to the Italian prime minister from 2014 to 2015 and head of banking solutions and public finance for Italy. Before this she worked for Credit Suisse, Morgan Stanley and Goldman Sachs. She is a member of the Bretton Woods Committee and a former Aspen junior fellow. Ms De Franceschi graduated in Business Administration from Bocconi University, Italy, and holds a master's in business administration (MBA) from Harvard Business School.

Stefano De Santis is Researcher at the Italian National Statistical Institute, Division for Data Analysis and Economic, Social and Environmental Research. He is an expert in applied econometrics and data processing and integration. He has an extensive experience in international scientific collaboration.

Ekkehard Ernst analyses the Future of Work at the International Labour Organization. He develops scenarios on how technological innovations, demographic shifts, climate change and political vagaries might impact jobs and inequality. His work is widely published in both policy reports and academic studies. His most recent work discusses the risks and opportunities of a wide-spread adoption of artificial intelligence, in particular for developing countries. Ekkehard has studied in Mannheim, Saarbrücken and Paris. He holds several academic fellowships and advises external partners on labour market issues, such as The Conference Board, the UK Productivity Insights Network or Foresight Alliances.

Enrique Fernández-Macías is Researcher working in the Joint Research Center of the European Commission. He has previously worked in Eurofound (Dublin), and as a lecturer and researcher in the University of Salamanca. He has a PhD in Economic Sociology from the University of Salamanca, and his main research interests are in the areas of job quality, technology and employment, occupational change and inequality.



Aina Gallego is Associate Professor at the Barcelona Institute of International Studies and Researcher at the Institute of Political Economy and Governance. She earned her PhD in Political Science at the Universitat Autònoma de Barcelona in 2008 and was a postdoctoral researcher at the Spanish Higher Research Council and at Stanford University. She is interested in the political representation of the poor and published a book about unequal political participation in Cambridge University Press. Her more recent projects investigate the consequences of political selection for public policy and the political consequences of technological change.

Dario Guarascio is researcher in applied economics at the National Institute for the Analysis of Public Policies (INAPP) in Rome. He is head of the research unit 'Skills and labor market transitions'. He has been research fellow at the Sant'Anna School of Advanced Studies in Pisa and obtained a PhD in Economics at the Sapienza University of Rome. His research covers innovation economics, industrial dynamics, international trade, labour studies and applied econometrics. He participates as researcher within the Horizon 2020 project "ISIGrowth" aimed at developing diagnostics and policy-oriented analysis in support of an innovation-fueled, sustainable and inclusive growth agenda.

Christian Vom Lehn is Assistant Professor of economics at Brigham Young University, specializing in macroeconomics and labor economics. He received his PhD in economics from Princeton University in 2014. His research focuses on technological change, labor supply, occupational mobility and business cycles. His work has been published in venues such as the Review of Economic Dynamics and European Economic Review.

Alan Manning is Professor of economics at the London School of Economics and is director of the Centre for Economic Performance's research programme on Community. He is currently Chair of the UK's migration advisory committee. His expertise is on labour markets including the impact of new technology, minimum wages and migration.

Luca Marcolin works as an Economist for the Organisation for Economic Co-operation and Development (OECD). Luca's research focuses on technological change, labor market dynamics and GVCs. His recent publications include: 'Routine jobs, employment and technological innovation in global value chains' (with M. Squicciarini and S. Mirodout), 'The routine content of occupations: new cross-country measures based on PIAAC' (with M. Squicciarini and S. Mirodout) and 'To be (routine) or not to be (routine), that is the question: a cross-country task-based answer' Industrial and Corporate Change.

Paolo Naticchioni is Associate Professor at the the University of Roma Tre (Department of Political Science), currently on leave for a position at the Central Directorate of Studies and Research of INPS. He holds doctoral degrees from the Université Catholique of Louvain and the Sapienza University of Rome. He is secretary of the Italian Association of Labour Economists and fellow of the IZA research centre. His research interests are in the field of labour economics (in particular issues such as inequality, union and bargaining, wage dynamics), regional economics, political economy, education economics, immigration economics, evaluation of public policies.

Max Neufeind is Researcher and Policy Advisor on the future of work with a focus on emerging technologies and innovative work practices. He is a lecturer at the Hertie School of Governance and a policy fellow at the Berlin-based thinktank Das Progressive Zentrum. Recently, he was a John F. Kennedy memorial policy fellow at the Centre for European Studies at Harvard University, US. Max holds a PhD from ETH Zurich and master's degrees from the London School of Economics and Mannheim University.

Zach Parolin is a doctoral researcher at the University of Antwerp's Herman Deleeck Centre for Social Policy. His research focuses on the measurement and determinants of poverty and social inequality across advanced welfare states. Current work with the OECD, for example, investigates the role of labour unions and bargaining coverage in the shaping the distributive effects of automation. In April, he will join the Center on Poverty & Social Policy at Columbia University in New York City.

Giulio Perani is Senior Researcher at the Italian National Statistical Institute, Division for Data Analysis and Economic, Social and Environmental Research where he is in charge of research on the digital transformation of Italian firms. He is an expert in business statistics and economics of innovation. He has been Italian delegate to European Commission and OECD statistical fora.

Georgios Petropoulos is a resident research fellow at Bruegel in Brussels. He is a Greek citizen and his research focuses on industrial organisation, competition policy and the digital economy. Georgios has extensive research experience from holding visiting positions at the European Central Bank in Frankfurt, Banque de France in Paris and the research department of Hewlett-Packard in Palo Alto, US.

Mario Pianta is Full Professor of at the Scuola Normale Superiore (Department of socio-political studies), on leave from the University of Urbino “Carlo Bo”. He has been a member for 2011-2014 of the Centro Linceo Interdisciplinare “Beniamino Segre”, Accademia Nazionale dei Lincei (Italian Academy of Sciences), Fernand Braudel Fellow at the European University Institute, Visiting scholar at the Centre for International Studies, London School of Economics, Chercheur invité at CRPS, Université Paris 1, Panthéon Sorbonne and Research fellow at Columbia University.

Michele Raitano is Associate Professor of Economic Policy at the Department of Economics and Law of “Sapienza” University of Rome. He has attained the national qualification as Full Professor of Economic Policy, Public Economics and Applied Economics. His research interests include human capital, welfare state, pension systems, labour market policies and labour market analyses, inequality and redistribution, intergenerational inequality.

Florian Ranft is Head of policy and international at Policy Network, senior research analyst at the Centre for Progressive Policy and policy fellow at Das Progressive Zentrum. He holds a diploma in politics from the University of Potsdam, and a PhD in politics from the University of Greifswald, both in Germany. Florian has lectured and undertaken research in international politics at a number of top-tier universities, research institutes and international organisations in Europe, America and Africa.

Fabio Rapiti is Research Director at the Italian National Statistical Institute, Department of Social Statistics where he is in charge of developing and producing key national indicators on labour statistics. He is an expert in business and labour statistics. He has been in charge of the coordination between ISTAT and several International Statistical Institutions.

Paolo Reboani is currently General Director of the Business Development, Work and Social Policies Italian Department. Previously, he has been Chairman of Italia Lavoro (2010-2016), the agency of the Italian Department of Work in charge of active labour policies. He graduated in economics from the University of Rome in 1989 and he pursued his studies at the London School of Economics and Political Science, particularly in industrial relations, economics and government, being awarded of some scholarships. He has heading the labour market unit at the Institute of Studies and Economic Analyses (ISAE) and had a range of appointments as adviser of Italian Vice-Prime Minister (1988-1989), the Foreign Minister (1989-1992), the Italian Prime Minister (1992-1993), and the Labour Minister (since 1997). He was the economic advisor of the Italian Ministry of Labour and Social Policies between 2001-2006 and then between 2008-2011 and one of the architects of the structural reform of labour market and pensions.

Seán Ó Riain is Professor of Sociology at the National University of Ireland Maynooth. His current research is on the comparative sociology of European workplaces, the political economy of Ireland and Denmark, and change in state and governance institutions, with a focus on new deals in the new economy. The research in this paper was funded by a European Research Council Consolidator Grant, New Deals in the New Economy.

Andrea Ricci is Senior Researcher in applied economics at the National Institute for the Analysis of Public Policies (INAPP), where he is research Manager of the Project “Strategic Analysis of the Public Policies”. Andrea holds a PhD and a Master’s degree in Economics from the University of Rome “Tor Vergata”. His current research interests are on the field of labor economics, industrial organization and econometric methods for the evaluation of public policies.

Stefano Sacchi is Associate Professor of Political Science at LUISS University in Rome (on leave from the University of Milan) and since 2016 the President of the Italian National Institute for Public Policy Analysis, INAPP, in Rome. In the Renzi government (2014-2016) he was a special adviser to the Italian Labor Minister and then to the Prime Minister’s office. In that capacity he designed and drafted several social policy reforms. He has authored or co-authored more than fifty academic publications in the field of comparative social and labor policy, and was visiting scholar or lectured in several universities worldwide, including Cornell, Princeton, Toronto, NYU, University of Washington, University of Amsterdam, University of Southern Denmark, Tokyo University and Waseda. His most recent publications are 'Conditionality by other means. EU involvement in Italy's structural reforms in the sovereign debt



crisis', in *Comparative European Politics* (2015), 'Conditionality, Austerity and Welfare: Financial crisis and its impact on welfare in Italy and Korea' (with J. Roh), in *Journal of European Social Policy* (2016), and 'The Italian Welfare State in the Crisis: Learning to Adjust?', in *South European Society and Politics* (2018).

Marco Vivarelli is Full Professor of Economics at the Università Cattolica del Sacro Cuore in Milan. He has a leading experience in research on employment dynamics and technical change. He is author and editor of various books and his papers have been published in refereed international journals such as *Applied Economics*, *Cambridge Journal of Economics*, *Canadian Journal of Economics*, *Economics Letters*, *Empirical Economics*, *Industrial and Corporate Change*, *International Journal of Industrial Organization*, *Journal of Economics*, *Journal of Evolutionary Economics*, *Journal of Population Economics*, *Journal of Productivity Analysis*, *Labour Economics*, *Oxford Bulletin of Economics and Statistics*, *Regional Studies*, *Research Policy*, *Small Business Economics*, *Southern Economic Journal*, *World Bank Research Observer*, *World Development*. His current research interests include the relationship between innovation, employment and skills; the labour market and income distribution impacts of globalization; the entry and post-entry performance of firms.

Ulrich Zierahn is Researcher at the ZEW Research Department "Labour Markets and Human Resources" in the Research Area "Changing Labour Markets" since October 2012. He became Senior Researcher in October 2014. His research currently focuses on the consequences of technological change, international trade and offshoring for both, the dynamics of individual labour market careers and for the economic performance of regional labour markets. Moreover, he investigates the effects of agglomeration of economic activities on the disparities between regional labour markets.