ARMANDO RUNGI married, two daughters Born in Napoli, 27th February 1978 – Italian Work address: Piazza S. Francesco 19, 55100 Lucca – Italy Phone: +39 0583 4326547; Mobile: +39 333 4621884 E-mails: armando.rungi@imtlucca.it; armando.rungi@gmail.com

WORK EXPERIENCE

12/2021 – nowadays	IMT – School for Advanced Studies – Lucca Associate Professor of Economics (AXES - Laboratory for the Analysis of Complex Economic Systems)
12/2014 - 11/2021	IMT – School for Advanced Studies – Lucca Assistant Professor of Economics (AXES - Laboratory for the Analysis of Complex Economic Systems)
02/2019 - 12/2019	Collegio Carlo Alberto – Turin Research Fellow 'Long-Term Investors' (LTI@UniTO)
07/2006 - 12/2015	Bocconi University – Milan Junior Researcher – ISLA research center for Latin America and Transition Economies
01/2008-10/2015	Fondazione ENI Enrico Mattei
	Associate Researcher on several EU-funded projects
08/2013 - 12/2014	IMT – School for Advanced Studies – Lucca
	Post-doc Researcher
	(AXES - Laboratory for the Analysis of Complex Economic Systems)
01/2012-08/2013	University of Warsaw, faculty of economic sciences – Warsaw
	Assistant Professor - Marie Curie Research Fellowship – International Trade
01/2011 -07/2011	Université Sciences Po – Paris
	Visiting lecturer - Economics of Globalization
11/2010-01/2011	Banque de France - Paris
	Visiting researcher
01/2010-07/2010	CEPII (Centre d'Études Prospectives et d'Informations Internationales) – Paris
	Visiting researcher

CONSULTANT/ADVISORY EXPERIENCE

03/2021 – nowadays	Confindustria – Observatory for Foreign Firms in Italy
	Establishing a reference center to study impact of and policies for multinational enterprises and foreign direct investment
01/2020-07/2020	European Commission - Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW)
	Service contract for EU firms and their positions on Global Value Chains
10/2015 - 06/2016	United Nations Conference on Trade and Development (UNCTAD) -
	Geneva
	Economic Affairs Consultant for drafting the World Investment Report 2016
06/2014-10/2017	Aspen Institute Italia
	Advisory for the study of regional industrial perspectives (Umbria, Piedmont)
04/2011 - 07/2011	OECD – Statistics Directorate – Paris
	Consultant for the study of Ownership and Corporate Control in Domestic and
	Multinational Business Groups

09/2007 – 06/2008	Lombardy Region -IRER (Istituto Regionale di Ricerca) Consultant for the study of the changing role of human capital and innovation in the regional specialization of Lombardy in a cross-regional and cross-country perspective.
TEACHING PORTFOLIO	
	PhD level: econometrics I, econometrics II, international trade, macroeconomics Master level: policy evaluation, health analytics
Research Interests	
	International economics; Industrial organization; Econometrics; Machine Learning; Corporate Finance; Macroeconomics; European Integration; Transition Economies
REFEREE ACTIVITY	
	Quarterly Journal of Economics, Journal of Regional Science, Review of International Economics, World Economy, Economica, Italian Economic Journal, Research Policy, Journal of Common Market Studies, Applied Network Science, PlosOne, Scientific Reports
SCIENTIFIC SOCIETIES	
	American Economic Association (AEA); Econometric Society (ES); European Economic Association (EEA); Royal Economic Society (RES) Italian Economic Association (SIECON)
EDUCATION	
• Ph.D.	Bocconi University, Milan
	October 2007 – May 2011 PhD Thesis: "Heterogeneous Firms and Heterogeneous Responses from Economic Integration: Empirical Studies". Thesis Committee: Gianmarco Ottaviano (London School of Economics), Lionel Fontagné (PSE & Paris 1-Sorbonne), Carlo Altomonte (Bocconi University).
• Master's Degree	Degree in Economics - field: International Economics - Bocconi University, final grade 110/110 September 1999 – July 2005
LANGUAGES AND Programming	
Foreign languages	Italian (native); English (advanced); German (Intermediate); French (Intermediate); Russian (basic); Hungarian (basic)
Programming	STATA, Python, Matlab, Scientific Workplace, Latex, GEPHI, C++ (basic)

PUBLISHED ARTICLES

<u>'What do firms gain from patenting? The case of the global ICT industry</u> (with Exadaktylos D. and Ghodsi M.), Technological Forecasting and Social Change, Volume 208, 123741 (2024).

'<u>Machine Learning for Zombie Hunting. Predicting Distress from Firms' Accounts and Missing Values</u>', (with Bargagli-Stoffi F., Incerti F. and Riccaboni M.), Industrial and Corporate Change, Volume 33, Issue 5, Pages 1063–1097 (2024).

"<u>Talents from Abroad. Foreign managers and productivity in the United Kingdom</u>', (with Exadaktylos D. and Riccaboni M.), International Economics, vol. 177, 100474 (2024).

'<u>Navigating Uncertainty: Multinationals' Investment Strategies after the Pandemic Shock</u>', Italian Economic Journal, vol. 9 pages 967–996 (2023), in the Special Issue 'The Future of Global Value Chains and International Trade: An EU perspective'.

'Predicting exporters with machine learning', (with Micocci F.), forthcoming on World Trade review (2023

'<u>Measuring the input rank in global supply networks</u>', (with Fattorini L. and Huremovic K.) forthcoming on World Economy (2023)

'<u>A neural network ensemble approach for GDP forecasting</u>' (with Longo L and Riccaboni M.), Journal of Economic Dynamics and Control, Volume 134, 104278 (2022).

'COVID-19, social distancing and guests' preferences: impact on peer-to-peer accommodation pricing' (with Hidalgo A., Riccaboni M., Velazquez). Current Issues in Tourism, vol. 25 (16), pages 2571-2577 (2022).

'<u>Backward and Forward Integration along Global Value Chains</u>', Review of Industrial Organization, 57: 263–283 (with Del Prete D.) (2020) in the Special Issue: 'Global Value Chains: Inter-Industry Linkages, Trade Costs, and Policies.'

'<u>Cohesion Policy Meets Heterogeneous Firms</u>', Journal of Common Market Studies, 58: 803– 817 (with Fattorini L. and Ghodsi M.) ISSN 1468-5965 (2019).

'<u>Heterogeneous Firms and the North–South Divide in Italy</u>', Italian Economic Journal 5, 325–347 (with Biancalani F.) ISSN 2199-322X (2019).

"The smile curve at the firm level: Where value is added along supply chains'. Economics Letters, 164, pp. 38-42 (with Del Prete D.). ISSN 01651765 (2018).

'<u>Organizing the Global Value Chain: A firm-level test</u>'. Journal of International Economics, 109, pp. 16-30 (with Del Prete D.). ISSN 0022-1996 (2017).

'<u>On Economic Complexity and the Fitness of Nations</u>'. Nature Scientific Reports, 7 (1). pp. 1-11 (with Morrison G., Buldyrev S. V., Imbruno M., Doria Arrieta O. A., Riccaboni M. and Pammolli, F.). ISSN 2045-2322 (2017)

"Reputation and impact in academic careers". Proceedings of the National Academy of Sciences (PNAS), 111 (43). pp. 15316-15321 (with Petersen A., Fortunato S., Pan R. K., Kaski K., Penner O., Riccaboni, M., Stanley H. E., Pammolli F.). ISSN 1091-6490 (2014).

'Import Penetration, Intermediate Inputs and Productivity: Evidence from Italian Firms'. The Journal of the Italian Economic Association, 55 (1). pp. 45-66 (with Altomonte C. and Barattieri A.). ISSN 1593-8662 (2014)

"The price of pharmaceutical products in Italy. On some recent trends'. Mercato Concorrenza Regole, 2/2014 pp. 265-282 (with Pammolli F. and Baio G.). ISSN 1590-5128.

TECHNICAL REPORTS

'A Framework to Analyze the Position of European Firms in Global Value Chains', European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, Publications Office of the European Union (2019).

'Business Groups as Hierarchies of Firms: Determinants of Vertical Integration and Performance' (with Altomonte C.). #1554/2013 European Central Bank (2013).

'<u>Global value chains during the great trade collapse: a bullwhip effect?</u>' (with Altomonte, C., Di Mauro F., Ottaviano G. and Vicard V.) #1412/2013 European Central Bank (2013).

"The Invisible Role of Business Groups is made Evident". Review of Environment, Energy and Economics. pp. 1-5 (2012).

'Le start-up come fenomeno regionale'. Impresa & Stato, 94. pp. 44-49 (2012).

'Abundant Resources and Poor Development Opportunities' (with Merler S.). Equilibri: rivista per lo sviluppo sostenibile, 3. pp. 403-420 (2010).

'Assessing the Competitive Behaviour of Firms in the Single Market: A Micro-based Approach' (with Altomonte C., Nicolini M. and Ogliari L.), #409/2010 European Economy Economic Papers (2010).

BOOKS AND CHAPTERS IN BOOKS

'Le imprese estere in Italia. Qualità, innovazione, investimenti: un'agenda per il futuro' (with Ruocco A., Faramondi A. and Monducci R.)

'Le imprese estere in Italia: tra segnali di ripresa e nuovi rischi globali ' (with Faramondi A., Majocchi A., Monducci R., Ruocco A.), Rubbettino Editore ISBN: 9788849877458 (2023).

'Le imprese estere in Italia: il ruolo nelle economie regionali' (with Faramondi A. and Ruocco A.), Rubbettino Editore ISBN 9788849875010 (2022)

'Resilience and Digital Disruption: Regional Competition in the Age of Industry 4.0' (with Geuna A., Guerzoni M., Pammolli F.). Springer Nature ISBN 978-3-030-85158-3 (2021).

'Global value networks'. In: The age of global value chains : maps and policy issues. VoxEU.org . CEPR Press, London, pp. 85-106. (with Altomonte C., Colantone I. and Sonno T.) ISBN 978-1-907142-91-8 (2015)

'The European transport system: major challenges'. In: Liberalization of Transportation Services in the EU: the Polish Perspective. Polish Studies in Economics (6). Peter Lang, pp. 13-46 (with Michalek J. and Ghodsi M.). ISBN 978-3-631-65566-5 (2015)

'Transportation services and global value chains'. In: Liberalization of Transportation Services in the EU: the Polish Perspective. Polish Studies in Economics (6). Peter Lang, pp. 47-108 (with Hagemejer, J.). ISBN 978-3-631-65566-5 (2015)

'Global value chains during the Great Trade collapse: a bullwhip effect'. In: Firms in the international economy :

firm heterogeneity meets international business. CESifo Seminar Series. MIT Press, pp. 277-308 (with Altomonte C., Di Mauro F. and Ottaviano G. and Vicard V.) ISBN 9780262019743 (2013)

'Le catene globali del valore dei gruppi multinazionali in Italia'. In: L'Italia nell'economia internazionale: Rapporto ICE 2011-2012. ISTAT – Istituto per il Commercio Estero, pp. 1-10. (2011)

Working Papers

'Business Groups as Knowledge-Based Hierarchies of Firms' (with Altomonte A, Ottaviano G., Sonno T.). CEPR Discussion Paper No. DP16677

<u>'The heterogeneous impact of the EU-Canada agreement with causal machine learning</u>' (with Fontagné L. and Micocci F.). Paris School of Economics Working Paper 2025-07

'Ownership chains in multinational enterprises' (with Miricola S. and Santoni G.)

Procompetitive effects of vertical takeovers. Evidence from the European Union' (with Bellucci C.)

'Global Ownership and Corporate Control Networks' (with Morrison G. and Pammolli F.)

'Does corporate control matter to financial volatility?' EIC working paper series #9/2017 IMT School for Advanced Studies Lucca (with Gianfagna L.)

'Access to Medicines and European Market Integration'. EIC working paper series #1/2016 IMT School for Advanced Studies Lucca (with Pammolli F.)

WORK IN PROGRESS

'Once again, learning by exporting. A dose response function.' (with Cerulli G. and Micocci F.)

'Shareholders' Foundations and Innovation in Europe' (with Regis L.)

POLICY REPORTS

'On the utility of predicting exporters with machine learning' (with Micocci F.), available at <u>https://cepr.org/voxeu/columns/utility-predicting-next-exporters-machine-learning</u>

'Remaking Umbria. Competitiveness of Firms, Industries, and Value Chains' (with Pammolli F.). A study prepared for the conference: "The requalification of industrial areas in crisis: a vision for the future. Umbria and the case of Terni and Narni", organized by the Aspen Institute Italia in May 2019. https://www.aspeninstitute.it/system/files/private_files/2019-05/doc/Report_Remaking_Umbria_Pammolli-Rungi_2019_May_10-11.pdf

'Digital disruption and the transformation of Italian manufacturing' (with Geuna A., Guerzoni M., Nuccio M. and Pammolli F.). A study prepared on occasion of the conference: "Industrial Renaissance: digital disruption and the post 4.0 economy", organized by the **ASPEN Institute Italia** in October 2017. http://www.aspeninstitute.it/system/files/private_files/2017-11/doc/REPORT_Digital_Disruption.pdf

'Ascesa e declino dei tradizionali driver dello sviluppo: nuovi scenari futuri' (wih Pammolli F.). Articles for Aspen Seminars for Leaders. **ASPEN Institute Italia** (2015). 'Global value chains are not all born identical: Policymakers beware' (with Altomonte C., Di Mauro F., Ottaviano G., and Vicard V.) **VOXEU.org CEPR policy portal** (2012) <u>http://voxeu.org/article/global-value-chains-are-not-all-born-identical-evidence-france</u>

'Mal d'Afrique: Abundance of Natural Resources and Growth Failure' (with Merler S.). Project Report #79/2012 Polinares: **EU Policy on Naturales Resources** (2012).

RESEARCH PROJECTS

FOSSR – 'Fostering Open Science in Social Science Research' (local coordinator)

PRIN2022 - 'Unprecedented shocks to G-local value chains and labor markets' (local coordinator)

THE - 'Tuscany Health Ecosystem'

Crisis Lab - 'Analytics for Crisis Prediction and Management'

Switch - 'Sustainable Welfare Innovation Competition in Health'

Global Linkages – 'Europe's Global Linkages and the Impact of Financial Crisis: Policies for Sustainable Trade, Capital Flows and Migration', European consortium funded by the Volkswagen Foundation

Dissettle - 'Disputes Settlement in Trade and Investment', 7th Framework Programme European Commission

Polinares - EU Policy for Natural Resources, 7th Framework Programme European Commission

EC-COMP - Assessing the Competitive Behavior of Firms in the Single Market: A Micro-based Approach, European Commission,

MicroDyn – Micro Dynamics. WP 5: Internationalization of corporate activity and competitiveness of the European economy, 6th Framework Programme European Commission

DynReg - Dynamic regions in a knowledge-driven global economy: lessons and policy implications for the EU, 6th Framework Programme European Commission

CONFERENCES AND WORKSHOPS

Econometric Society – European winter meeting in Palma de Mallorca 2024; European Trade Study Group – annual meeting in Athens 2024; Società Italiana Economia e Politica Industriale (SIEPI) 2023 – Annual meeting in Naples (Italy) -American Economic Association 2023 – Annual Meeting in New Orleans (USA); European Research Workshop in International Trade (ERWIT) 2022 – Annual Meeting in Lucca (Italy); European Trade Study Group 2022 – Annual Meeting in Ghent (Belgium); American Economic Association 2021 – Virtual Meeting; Empirical Investigations in International Trade 2020 – Virtual Meeting; First Credit Score and Credit Rating Conference 2020 – Chengdu, China; European Trade Study Group 2019 at the University of Bern – Switzerland; American Economic Association (ASSA) Annual Meeting 2019 in Atlanta (GA) – USA; CEPR & Bank of Italy conference on "Firm Dynamics and Economic Growth", on 19 December 2018; NBER meeting on Firms, Networks, and Trade, March 2018, Cambridge (MA) – USA; American Economic Association (ASSA) Annual Meeting 2018 in Philadelphia (PA) – USA; European Trade Study Group 2017 at European University Institute in Florence – Italy; Forum for Research on Empirical International Trade (FREIT) 2017 in Izola – Slovenia. Italian Trade Study Group 2016, at IMT Lucca – Italy (scientific committee and organizer); CEPR Second Conference on Global Value Chains, Trade and Development 2016, at Graduate Institute, Geneva – Switzerland; European Trade Study Group 2016, Helsinki

- Finland, Royal Economic Society (RES) 2016, Brighton - United Kingdom; American Economic Association (ASSA) Annual Meeting 2016 in San Francisco (CA) - USA; Italian Trade Study Group 2015, Rome - Italy; Networks, Complexity, and Economic Development 2015, workshop at the Hungarian Academy of Sciences in Budapest - Hungary; European Trade Study Group 2015 at University Paris-Sorbonne - France; Warsaw International Economic Meeting (WIEM) 2015 in Warsaw - Poland; American Economic Association (ASSA) 2015 in Boston (MA) – USA; European Conference on Complex Systems (ECCS) 2014 in Lucca - Italy; European Trade Study Group 2014 at University of Munich - Germany; Warsaw International Economic Meeting (WIEM) 2014 in Warsaw – Poland; Global Linkages 2013, 3rd Workshop, in Milan – Italy; Italian Trade Study Group 2013 in Florence – Italy; DISSETTLE (Dispute Settlement in Trade) 2013 Workshop and Round Table on the Role of Trade Disputes in International Relations in Warsaw - Poland; American Economic Association (ASSA) 2013 in San Diego (CA) – USA; Compnet 2012 - Competitiveness Research Network at European Central Bank, Frankfurt am Main - Germany; European Trade Study Group 2012 at KU Leuven - Belgium; WIEM 2012 at University of Warsaw - Poland; Forum for Research on Empirical International Trade (FREIT) 2012 at University of Ljubljana – Slovenia; Policy for Natural Resources (POLINARES) 2012 - Future policy approaches to address tension and conflict relating to access to oil, gas and minerals" - at University of Westminster, London - United Kingdom; First DISSETTLE (Dispute Settlement in Trade) Young Researcher Workshop 2012 at University of Saint Gallen – Switzerland; Policy for Natural Resources (POLINARES) 2011 - Identifying the major risks for future tension and conflict relating to access to resources at Clingendael International Energy Programme (CIEP) in The Hague - Netherlands; European Trade Study Group 2011 at Copenhagen Business School - Denmark; Mapping Global Value Chains 2011 at OECD, Paris - France; Italian Trade Study Group 2011 at Centro Studi Luca d'Agliano. Milan - Italy; ELSNIT - VIII Conference of the Euro-Latin Study Network on Integration and Trade, 2010, at Centre d'Études Prospectives et d'Informations Internationales (CEPII) in Paris - France; European Trade Study Group 2010 at University of Lausanne – Switzerland; POLINARES Thematic Workshop - Policy for Natural Resources - 2010 at University of Westminster, London - United Kingdom; 1st Conference on Microdata: "Productivity and Internationalization" 2010 organized by the Ministry of Economic Affairs in The Hague, Netherlands; GIST - Globalization, Investment and Services Trade - Summer School on "Heterogeneous firms and offshoring in services", 2010 in Paris - France; MICRO-DYNAMICS Workshop 2010 on "Knowledge and Innovation Activities of European Firms" at the Vienna Institute for Economic Studies (WIIW) in Vienna -Austria; MICRO-DYNAMICS Workshop 2009 on "Firms' internationalization and knowledge diffusion", at Fondazione ENI Enrico Mattei in Milan - Italy; DYNREG workshop 2009 - Dynamic regions in a knowledgedriven global economy: final Conference, at the European Commission in Brussels - Belgium; DYNREG workshop 2009- Dynamic regions in a knowledge-driven global economy: "The Role of Public Policies in Fostering Innovation and Growth", 2009, at University of Ljubljana - Slovenia; European Trade Study Group 2008 at University of Warsaw & Warsaw School of Economics - Poland; MICRO-DYNAMICS Public Conference 2008, University of Ljubljana - Portoroz - Slovenia.