Regi Kusumaatmadja

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Citizenship: Indonesian Gender: M Date of Birth: 06/21/1994

Education

VU Amsterdam and Tinbergen Institute, Ph.D. in Economics, Expected Completion: 2026.
Tinbergen Institute, M.Phil. in Economics, 2021.
VU Amsterdam, M.Sc. in Economics, 2018.
University of Indonesia, B.Sc. in Physics, 2016 (Best Graduate).

Letter Writers

prof. dr. José Luis Moraga-González
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prof. dr. Eric J. Bartelsman (placement director)
Department of Economics, VU Amsterdam
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Visiting Position

2023.01 - 2023.06, the Pennsylvania State University, invited by **prof. dr. Mark J. Roberts**

Research and Teaching Areas

Primary Fields: Industrial Organization, Economics of Innovation
Secondary fields: Applied Econometrics, Applied Microeconomics

Teaching Experience

2021-2025 TA, VU Amsterdam, Introduction to Econometrics (MSc). Eval: 4.3/5.0
2021-2025 TA, VU Amsterdam, Applied Econometrics (MSc). Eval: 4.7/5.0
2021-2024 Instructor, VU Amsterdam, Math, Statistics, Micro, and R (Refresher MSc).
2022 TA, VU Amsterdam, Microeconomics I (BSc).
2021-2025 Guest Lecturer, VU Amsterdam, Urban Economic Challenges & Policies (MSc).

Relevant Experience

2023, EARIE 1st Summer School on Entry Model, LUISS - Rome.
2022, Econometric Society's Dynamic Structural Econometrics Summer School, MIT.
2019, Research on Productivity, Trade, and Growth Summer School, Tinbergen Institute.
2020-2021, RA for Eric Bartelsman and Sabien Dobbelaere, VU Amsterdam, MICROPROD project.
2018-2019, Research Associate, Institute for Economic & Social Research, University of Indonesia (LPEM FEB UI). Projects: (i) Airlines Industry Liberalization in Indonesia [funded by a private entity], (ii) Estimating the demand for social infrastructures in Asia [joint with and funded by Japan International Cooperation Agency (JICA)], (iii) Evaluating the impact of Asian Games and WB-IMF on traffic congestion [funded by Indonesian National Development Planning Agency (Bappenas) and Australian Department of Foreign Affairs and Trade (DFAT)].

Scholarships, Honors, and Awards

2023, Research Visit Grant, VU Amsterdam (monetary grant).
2019-2021, Tinbergen Institute - Full Scholarship (tuition & living cost).
2017, VU Amsterdam Fellowship Programme (tuition).
2017, Holland Scholarship Programme (living cost).
2016, Best Graduate, Department of Physics, University of Indonesia (monetary prize).
2016, Top 1 (one) Percent, Faculty of Mathematics and Natural Sciences, University of Indonesia.
2014-2016, XL-Axiata Future Leaders Scholarship (leadership programme & in-kind benefits).
2014-2015, Karya Salemba Empat Scholarship (tuition & living cost).

Publications

Evaluating the congestion-reducing effects of road rationing policy: Evidence from Jakarta's odd-even policy. *Case Studies on Transport Policy* (2025), with M. Halley Yudhistira, Y. Sofiyandi, and M. Firman Hidayat. (previously circulated as Does Traffic Management Matter? Evaluating Congestion Effect of Odd-Even Policy in Jakarta)

Theoretical exploration of optical response of Fe_3O_4-reduced graphene oxide nano-particle system within dynamical mean-field theory. *IOP Conf. Ser.: Mater. Sci. Eng.* (2017), with M.A. Majidi, A.D. Fauzi, W.Y. Phan, A. Taufik, R. Saleh, and A. Rusydi.

Research Papers

Internal and External R&D: An analysis of costs and benefits (Job Market Paper)
This paper analyzes the costs and benefits of internal and external R&D activities. Using Dutch production and innovation surveys between 2000 and 2020 focusing on the IT industry, I document an increasing trend of R&D activities across industries and present evidence suggesting that internal and external R&D are complementary. To rationalize these findings, I build and estimate a dynamic discrete choice model of R&D, which explicitly includes specific investment costs of R&D. I find that the cost of doing external R&D is $\approx$ 4 times higher than the internal R&D, reflecting the transaction costs of such contract and explaining the observed small share of external R&D firms in the data. To mimic the Dutch Tax Incentives for Innovation scheme, I simulate the effect of two types of R&D subsidization programs. I find that if the government has no preference for any particular R&D activity, the share of R&D-active firms increases the most and leads to higher change in the firm's total valuation. On the other hand, if the government

prefers the firms only to perform internal R&D, the share of R&D-active firms is practically unchanged and leads to lower change in the valuation.

Presentation: JEI - Gran Canaria (2022), Ph.D.-EVS (2022), IO/Applied Micro Brownbag - Penn State (2023), VU Amsterdam Internal Seminar (2023), EARIE - Rome (2023), Tinbergen Institute Ph.D. Seminar (2023), DKIIS - Valencia (2023), CAED - Penn State (2024), SED Meeting - Barcelona (2024), CEPR Workshop: Trade, Geography, and Industrial Organization - Erasmus Rotterdam (2024, poster), APIOC - Seoul (2024), CEPR Symposium - Paris (2024, poster), EEA-ESEM - Bordeaux (2025, scheduled)

Entry into Innovation Areas
This paper investigates the notion of innovation direction as the outcome of firms' entry decisions into specific innovation areas. Using Latent Dirichlet Allocation, a natural language processing technique in topic modeling, on 631,000 U.S. electronics patents (1990–2019), I first optimally classify each patent and firm's innovation portfolio into 20 innovation areas. Key stylized facts reveal persistent multi-domain engagement, with patents and firms averaging 2.86 and 4.68 topics respectively, alongside rising entry in software-intensive fields like user interfaces and content services, contrasted by declines in capital-intensive areas such as memory architecture. Valuation heterogeneity is evident, with patent values increasing unevenly across domains, while competitive dynamics show varying competitor numbers over time. To explain these patterns, I build an entry model estimated via moment inequalities that provides bounds on parameters, indicating that a 1% rise in competitors reduces the firm's innovation profit by 18.44 to 56.85 million USD, an increase of one standard deviation of the portfolio diversification boosts the profit by 0.57 to 36.81 million USD, and the average entry costs are bounded at 75.93 million USD.

Research in Progress

Merger and Innovation: An Exploration of Firms' Scope and Direction of Innovation, with S. Dobbelaere and J. L. Moraga-Gonzalez.
The Impact of Subsidy on Direction and Scope of Innovation, with C. Cincotta.

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